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DEPARTMENT OF NATURAL RESOURCES

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July 28, 2011

Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street N.E.
Washington, D.C. 20426

Subject: Lake Powell Hydroelectric Project No. 12966
Response to Comments on the Draft Study Reports and Initial Study Report Meeting

Dear Secretary Bose:

In accordance with Title 18 Code of Federal Regulations (18 CFR), Section 5.15 (c)(5), of the regulations of the Federal Energy Regulatory Commission (Commission) and extensions granted by the Commission, the Utah Board of Water Resources (UBWR) files this response to comments on the draft study reports (ISR) and initial study report meetings.

On March 11, 2011, the UBWR filed its ISR with the Commission as required by Section 5.15 (c)(1) of the Commission's regulations. The ISR provided the information and data gathered and analyses performed by UBWR to date, as well as a detailed description of the UBWR's progress in executing the Commission-approved study plan. The ISR meetings were held on March 22 and 23, 2011 and UBWR subsequently filed its ISR meeting summary on April 7, 2011. Government agencies and participants filed their written comments on the ISR and ISR meeting with the Commission by May 8, 2011, including Commission staff, Bureau of Land Management (BLM), Bureau of Indian Affairs (BIA), US Fish and Wildlife Service (USFWS), Kaibab Band of Paiute Indians (KBPI), Colorado Water Conservation Board (CWCB), Lake Powell Pipeline Coalition (LPPC), Western Resource Advocates (WRA), Environmental Defense Fund (EDF), Glen Canyon Institute (GCI), The Wilderness Society (TWS), and 11 interested participants. Attachment A includes a list of the commenters and the abbreviations assigned to them for brevity in the comment and response document (Attachment B).

In this response document, the UDWR addresses participants requests for clarification and expansion of the data and analyses in the draft study reports submitted as part of the ISR. Additionally, the UDWR responds to participant's requests for expanded analyses in the draft study reports prepared to meet the Commission-approved study plan. This response document includes information to support UDWR's disagreements with participant's comments involving assumptions, data, analyses and conclusions that may lead to disputes.

The participant's comments have been reproduced verbatim in the attached comment and response document and are shown in italicized text. The UDWR responses are shown in blue highlighted text.



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The UDWR appreciates the work and involvement of Commission staff, resource management agencies, Native American tribes, non-governmental organizations, and individual participants in the development and work completed in the Integrated Licensing Process to date. Please contact Mr. Eric Millis, Deputy Director of the Utah Division of Water Resources (UDWR) at (801) 538-7298 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Dennis J. Strong". The signature is fluid and cursive, with a large, sweeping flourish at the end.

Dennis J. Strong, P.E.
Director

DJS/bdl

Attachments

cc: James Fargo, FERC

Attachment A

Lake Powell Pipeline Project List of Draft Study Report Commenters and Abbreviations

Commenter Name	Abbreviation
LeaRae Atwood	Atwood
Ronald Carter	Carter
Melanie Florence	Florence
Greta Hyland	Hyland
Ellen Janis	Janis
Peter Kirk	Kirk
Andrew Kramer	Kramer
John Landon	Landon
Lisa Rutherford	Rutherford
Paul Van Dam	Van Dam
Terry Wenstrand	Wenstrand
Environmental Defense Fund	EDF
Glen Canyon Institute	GCI
Lake Powell Pipeline Coalition	LPPC
The Wilderness Society	TWS
Western Resource Advocates	WRA
Colorado Water Conservation Board	CWCB
Kaibab Band of Paiute Indians	KBPI
Bureau of Indian Affairs	BIA
Bureau of Land Management	BLM
Federal Energy Regulatory Commission	FERC
United States Fish and Wildlife Service	USFWS
National Park Service	NPS

Attachment B

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

General Comments

Landon Comment 1:

I am completely opposed to the proposed Lake Powell pipeline project. This project will place an enormous financial burden on the residents of Washington County Utah. It will only benefit the local politicians and developers.

UDWR Response:

Your comment has been noted.

Landon Comment 2:

In my opinion it is not good to play with mother nature. She has given us enough water for approximately 500,000 people. There are currently 140,000 people in the county. This should be enough for the local developers to make money and for the citizens to have a good environment. We do not want to become a Tucson size city!!

UDWR Response:

Your comment has been noted.

Atwood Comment:

In spite of the fact that we in the southwest don't have much water, we must NOT allow the Lake Powell pipeline project to go forward. People must start to realize that this is a DESERT and take appropriate action such as cutting back in water consumption. People in this area already use more water per capita than almost anywhere! Also, most of that goes for yard maintenance. Ridiculous in the desert. People should be discouraged from moving to areas that do not have abundant available resources locally. They should instead be steered as much as possible to alternate more desirable locations. This to me makes much more sense than bringing water from such a long distance from the much overused Colorado River to an area where people can't seem to realize they live in the DESERT and act accordingly.

UDWR Response:

Your comment has been noted.

Carter Comment:

I am strongly opposed to the construction of a pipeline from Lake Powell to the St. George area for two reasons: 1) I feel the project is too risky financially. Local taxpayers will have to take a big hit if development and growth do not materialize. I do not feel it is wise to put the county at risk for such an expensive project. 2) Growth has to be stopped or slowed at some point. I do not feel the county has an obligation to find water for every developer who decides to build here. Conservation can support a reasonable growth rate, one that doesn't end with St. George becoming another Las Vegas.

UDWR Response:

Your comment has been noted.

Kirk Comment 1:

This project does not appear to be economically feasible and its cost will burden the residents of Washington, Kane and Iron counties for the next 50 years. The population growth assumptions used to

justify the need and as a way of paying for the pipeline appear overly optimistic for the three counties and aggressive even for Washington County. Some of the projected future water needs could be achieved through conservation efforts at little or no cost to the tax payers.

UDWR Response:

Your comment has been noted.

Kirk Comment 2:

The applicants should submit various revenue scenarios (i.e. 0% growth, 1%, 2%) and discuss the impact on the local taxpayer if new construction fees do not cover the cost. These projections should be made available to the tax payers of the counties involved.

UDWR Response:

The study plan was not required to analyze various revenue scenarios with 0 percent growth, 1 percent growth and 2 percent growth or to include analysis of impacts on local taxpayers if new construction fees do not cover the cost. The License Application will include a financial analysis of the project and will be made available to the public as part of the filing made to FERC. Information submitted to FERC is available to the public.

Janis Comment:

My husband and I, being retirees from S. California, are very much opposed to the pipeline. We have seen first hand over 30 years the problems that growth causes to an area. Do we really want to have the congested streets, crime, pollution, crowding, etc. that have befallen other locales that have made growth, not quality of living, the top priority?? We are sure water consumption could be vastly curtailed in the area, or at least should be tried first, with the public's education of its importance. Also, as with any major project, no doubt the final cost would be three times or so the estimated cost, which would be totally unreasonable for this area's residents. If this is such a necessary project, why is not the federal gov't assisting, as it does for bridges, roads, canala, and other projects deemed essential to an area??

UDWR Response:

Your comment has been noted.

Kramer Comment 1:

1. POPULATION PROJECTIONS. The original projection by the Utah Governor's Office was based on an annual growth rate of 5% for the next 20 years in Washington County and a build-out population of approximately 1,000,000. This projection is driven by development interests who wish to exaggerate the need and has NO BASIS IN REALITY. The county economist recently predicted the growth rate to be closer to 2%.

UDWR Response:

Your comment has been noted.

Kramer Comment 2:

According to NOAA and nineteen studies by separate climate groups around the world, the Southwestern United States will be returning to "dust bowl" conditions by mid-century. The Colorado River's annual flow is projected to decrease from the current 15 million acre-feet to 7 million acre-feet. The water surplus currently enjoyed by the Upper Basin states, which includes Utah, is rapidly vanishing. In fact, the states within the Colorado River Compact are already renegotiating allocations based on the projected extreme drought conditions. Because the water rights of the Lower Basin States have priority over the Upper Basin states and because California agriculture and cities like Los Angeles and San Diego have enormous political power, present day water allocations for Utah are meaningless. If the

pipeline is built, there simply may be NO water available to fill it. BUILDING THE PIPELINE WOULD BE AN INVESTMENT IN UNCERTAINTY.

UDWR Response:

Your comment has been noted.

Kramer Comment 3:

3. WATER CONSERVATION. In 2008, a study by MWH showed that Washington County residents used 328 gallons of water per person per day. Currently, usage has decreased to 294 gallons per person per day. While we are moving in the right direction, this is still among the highest usage rates in the Southwest. By comparison, Albuquerque uses 167 gallons per capita per day and Tucson uses 156 gcpd. Again by comparison, Washington County's existing water resources of 80,000 AF/year serve our population of 168,000 while Albuquerque serves 540,000 people with only 100,000 AF/year. BY IMPLEMENTING SOUND WATER CONSERVATION PRACTICES, STUDIES SHOW THAT A POPULATION OF 500,000 CAN BE SERVED WITHOUT THE NEED FOR THE PIPELINE. Proponents of the pipeline conveniently ignore or distort these facts. THIS APPROACH MUST BE GIVEN FULL ATTENTION BEFORE THE PIPELINE IS CONSIDERED.

UDWR Response:

Your comment has been noted.

Kramer Comment 4:

4. CITIZENS WANT SMART GROWTH. Between 2006 and 2008, a professional planning firm conducted public meetings in virtually all communities in Washington County to understand the desires of our citizens and develop strategies for future growth. Commissioned by the State and County, this \$500,000. study, called Vision Dixie, shows clearly that the citizens want future development to be based on Smart Growth principles - strategies that preserve the quality of life we enjoy and provide for a sensible balance between economic and environmental considerations. This requires well managed and thoughtful planning, and controlled growth with a build-out population of 300,00 to 500,000. A build-out population that exceeds this number would violate Smart Growth principles, make a mockery of Vision Dixie, and ignore the strongly expressed desires of our citizens to preserve our quality of life. THE CITIZENS HAVE MADE IT CLEAR THAT WE DO NOT WANT TO BECOME ANOTHER SALT LAKE CITY OR LAS VEGAS.

UDWR Response:

Your comment has been noted.

Kramer Comment 5:

5. TAXATION WITHOUT REPRESENTATION. If built, the pipeline could easily cost \$3 billion or more when cost overruns, bond interest and maintenance is included. The \$1.64 billion estimate touted by public officials is simply not realistic. If built, the Lake Powell Pipeline would be the largest single public works project in Utah without state or federal assistance. Not only would the citizens be required to pay for this project through taxes and impact fees, but the sponsors of the pipeline are expecting us to bear this burden without having a say in this matter. A REFERENDUM VOTE MUST BE A MANDATORY PART OF THE PROCESS. Requiring us to pay for an expensive project that many of us don't want is unconscionable. If this project proceeds without a public referendum, then the citizens should take legal action to ensure our right of fair representation is guaranteed.

UDWR Response:

Your comment has been noted.

Kramer Comment 6:

CONCLUSION. IT'S CLEAR THAT THE PIPELINE IS NEITHER NECESSARY NOR DESIRED BY THE VAST MAJORITY OF CITIZENS. From the outset, the pipeline project has been promoted by developers who have distorted the facts and manipulated data to suit their agenda - an agenda that places the narrow interests of a few above the well-being of the majority. For example, the NAA and AD alternatives presented by proponents of the pipeline are based on false information and are an attempt to mislead the public. The fundamental concerns described above must be addressed and take precedence before further development of the pipeline project proceeds. The planning process must be redesigned to include these concerns.

UDWR Response:

Your comment has been noted.

Rutherford Comment 25:

*BMP (Best Management Practices) were mentioned repeatedly at the March 22, 2011 Lake Powell Pipeline Project update meeting. My experience with BMP during twenty-year career with a major oil company showed that BMPs are only as good as the people involved and they are **not** a silver bullet for a bad project.*

UDWR Response:

Your comment has been noted. Best management practices (BMPs) will be described in the applicable final study reports.

Van Dam Comment 1:

If for any reason, the population projections made by the WCWCD and State of growth up to 800,000 people does not occur, the debt will be overwhelming to this county. In this period of shortfalls in State revenues, it would not be possible for the State to either create such bonded indebtedness or assist in paying off the debt. This is an unwise and risky plan for Washington County and the State of Utah.

UDWR Response:

Your comment has been noted.

Van Dam Comment 2:

Currently Utah believes it is entitled to at least 100,000 acre feet of water from the Colorado. The river has been declining in volume for a decade. Lake Powell is only half full and Lake Meade has reached an all-time low, under 30 percent. In addition, with the reduced flow of the river, it is fully in not over allocated, considering Utah's and the upper basin's water rights are inferior to California and other lower basins states. Should the river remain flowing at the current lower rate, the reservoirs will continue to decline and Utah's share (23%) of the Upper basin's volume will also decline. It is predicted that Utah's share of the river is fully allocated even now and with Native American rights being considered and superior to Utah's, Utah has no further claim to the Colorado River. It would be a ridiculous exercise in governmental inefficiency to approve a project that has a high chance of both water failure and financial inadequacy.

UDWR Response:

Your comment has been noted.

Van Dam Comment 3:

Finally, there is sufficient water available in Washington County to grow the population to its maximum projected number with the water available in the County. There is currently developed, 72,000 acre feet of water, with the potential of developing another 25 to 50 thousand acre feet. In addition, agriculture in

Washington County used 80 percent of the existing water and the county will be able to buy and use a portion of this water, as has been done in many States, especially California. Per capita water use in Washington county is very high (270-324 gallons per person per day) and an effective program of conservation could cut that number in half, thus providing water for another large growth segment.

UDWR Response:

Your comment has been noted.

Van Dam Comment 4:

Finally, the yearly cost of maintenance and operation (M&O) has not yet been honestly calculated. Because of the 2000 ft lift of 100,000 AF of water and the electricity or gas cost to get the water to St George and then the additional 2000 ft lift from St George to Iron County, the cost will be extreme. The cost will be increased by the plan to place generators in-line on the downhill side of the pipeline. It is calculated by some that the yearly M&O cost will run from a low of 24 million to a high of 45 million.

UDWR Response:

Your comment has been noted.

Van Dam Comment 5:

There is not justification for this project given a reasonable evaluation of this project. It is, no doubt, possible to build it, but the consequences of such a project for the people of Washington County are horrendous.

UDWR Response:

Your comment has been noted.

WRA Comment 1:

I. a. The Draft Studies fail to comport with the Approved Study Plan.- Under FERC regulations, “good cause” justifying modification of an ongoing study includes, but is not limited to, that “[a]pproved studies were not conducted as provided for in the approved study plan,” 18 C.F.R. § 5.15(d). For the reasons stated below, there is ample good cause to modify at least the following Draft Reports:

- *Draft Study Report 1 – Air Quality*
- *Draft Study Report 2 – Aquatic Resources*
- *Draft Study Report 10 – Socioeconomics and Water Resource Economics*
- *Draft Study Report 19 – Climate Change*
- *Draft Study Report 19 – Water Needs Assessment*
- *Draft Study Report 22 – Alternatives Development*

FERC should require the Utah Division of Water Resources to revise the Draft Reports, consistent with these comments.

UDWR Response:

The UDWR will revise and update the listed draft study reports as necessary to comply with the approved study plan(s). The final study reports submitted by the UBWR to FERC with the license application will incorporate the required information and analyses provided for in the approved study plan(s).

WRA Comment 61:

VIII. Overarching Concerns

Additionally, we believe it is essential that the NEPA process is transparent and integrate the concerns of affected stakeholders, including the interests of potential project proponents, conservation

organizations and the general public. Indeed, the U.S. Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Land Resources Implementation Studies (Mar. 10, 1983) specifies that "[i]nterested and affected agencies, groups, and individuals should be provided opportunities to participate throughout the planning process" and that "[r]eview and consultation with interested and affected agencies, groups, and individuals are needed in the planning process." Recently, the Council of Environmental Quality's Draft Updated Principles and Guidelines for Water and Land Related Resources Implementation Studies reaffirms this principle and directs Federal agencies to

collaborate fully on water resources studies with other affected Federal agencies and with Tribal, regional, state, local, and non-governmental entities to realize more comprehensive and better informed problem resolutions.

Standard M, p. 13.

UDWR Response:

The LPP Project is proposed and sponsored by the Utah Board of Water Resources, and it is not proposed or sponsored by any Federal agencies. It will require obtaining regulatory approvals from Federal agencies such as FERC, Reclamation, BLM and NPS, along with compliance with NEPA, Section 7 of the Endangered Species Act, Section 106 of the National Historic Preservation Act and other Federal acts and statutes. Applications for regulatory approvals submitted to Federal agencies are much different than planning for Federal water resource projects. The comment refers to the "Council of Environmental Quality's Draft Updated Principles and Guidelines for Water and Land Related Resources Implementation Studies" which is listed on the Council on Environmental Quality's website as the "Proposed National Objectives, Principles and Standards for Water and Related Resources Implementation Studies" dated December 3, 2009. These proposed "National Objectives, Principles and Standards apply to Federal water and related resources implementation studies" and constitute "a draft of the Principles & Standards (P&S), the first Chapter of the Principles and Guidelines, which establishes the National water resources planning policy and framework for the planning process." The UDWR has planned the LPP Project using the 1983 Principles and Guidelines document as a guideline.

WRA Comment 62:

FERC's public outreach in this docket falls far short of the broad collaboration in water and land resource planning contemplated in these guidance documents. FERC appears to have done little to provide stakeholders and the public notice of this opportunity to comment on the Draft Reports. Indeed, most of the pertinent primary-source information regarding this commenting opportunity is found buried in the State of Utah's Initial Study Report Meeting Summary.

UDWR Response:

Your comment has been noted.

WRA Comment 63:

Additionally, FERC's website is difficult to use, frequently unavailable, and omits key information. In fact, the LPP is not found in FERC's list of Southwestern regional projects. Only a word or docket number search – thereby requiring prior knowledge of the project – reveals the existence of the LPP preapplication process. But the word search only reveals the notice of the preliminary permit application, and omits this opportunity to comment on the Draft Study Reports. Indeed, the most comprehensive single web address providing information about this comment opportunity appears to be maintained by the non-profit conservation group, Citizens for Dixie's Future. In our view, FERC is far behind its sister agencies in providing accessible information to the public regarding opportunities to comment on application processes.

UDWR Response:

Your comment has been noted.

WRA Comment 64:

Finally, FERC and the other permitting federal agencies should reevaluate whether FERC is the proper lead agency to prepare an environmental impact statement for the LPP under NEPA. The Socioeconomics Study admits that the project's benefit/cost ratio is significantly less than 1 if only the hydroelectric components are considered. During the first scoping period, WRA and other conservation groups noted that the project is primarily a water supply project, not a hydroelectric project, and that other federal agencies have greater jurisdiction over the project. We also noted that other federal agencies have more comprehensive knowledge of the associated environmental issues and are better suited to being the lead agency for the NEPA process. Cf. 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 economic analysis of the hydroelectric project underscores this point. The lead agency should be one with more experience in water supply projects.

UDWR Response:

Your comment has been noted. Representatives of the U.S. Department of the Interior agencies met with FERC before the Pre-Application Document was filed and agreed that FERC would be the lead agency for the LPP Project NEPA compliance and the BLM, NPS and Reclamation would be cooperating agencies, each with separate decision documents.

CWCB Comment 1:

The LPPP is a very complex undertaking that raises a number of legal issues, involving the Colorado River Company of 1922 and other elements of the Law of the River. Utah has discussed some of these issues through information communications or consultations among the Basin States. Before the FERC licensing and NEPA permitting processes are completed, it will be essential for Utah to formally document how the LPPP will be implemented consistent with the Law of the River.

UDWR Response:

General information on LPP Project operation is presented in Draft Study Report 10 – Socioeconomics and Water Resource Economics, Draft Study Report 11 - Special Status Aquatic Species, Draft Study Report 17 - Surface Water Quality and Draft Study Report 18 – Surface Water Resources.

CWCB Comment 2:

The CWCB understood the LPPP would be based on water rights upstream of Lake Powell that could then be wheeled through the Lake Powell facility for delivery to the southwestern corner of the state. In contrast, the Studies describe the LPPP as contemplating use of "Lake Powell water". Because any use of Lake Powell storage supply or capacity directly implicates the interests and rights of the Upper Division States, it is important that LPPP licensing and permitting documents (including the Studies) clearly specify the source of water and water right for the LPPP. Furthermore, Colorado requests that Utah clarify how use of said water will be integrated into the Law of the River to avoid injuring the interests of the other Upper Division states.

UDWR Response:

Water being released from Flaming Gorge Reservoir by the Bureau of Reclamation to Lake Powell includes UBWR water rights and will be diverted at Lake Powell for the Lake Powell Pipeline. UDWR will not use Lake Powell storage for the project but intends to enter into water service agreements with the Bureau of Reclamation to withdraw UBWR water from Lake Powell. UDWR will revise the draft study reports and other documents to reflect this.

CWCB Comment 4:

The CWCB recommends that Study descriptions of the Colorado River and its operations be reviewed and edited to assure their accuracy – e.g. Draft Water Quality, Surface Water Resources, and Climate Change reports (Reports, 17, 18 and 19). Although these descriptions are summary in nature, it is important that they not misstate or mischaracterize the law – i.e., definition of Upper and Lower Basins; description of releases from Glen Canyon Dam (timing of Secretary determinations, summary of operation tiers); discussion of the Article III(d) non-depletion obligation; identification of the Secretary of the Interior’s role as water master; water apportioned under the Upper Basin compact, etc. Additionally, the Study descriptions on the available yield in the Upper Colorado River Basin do not necessarily reflect the position of all Upper Basin states or how they operate. As such, Colorado recommends that these descriptions focus on Utah’s position and operations and not speak on behalf of the other basin states – i.e., the Climate Change Study’s description of water availability as viewed by the Upper Basin states.

UDWR Response:

Appropriate revisions will be made to the draft study reports.

KBPI Comment 1:

Nearly all of the draft study reports state that the cumulative impacts analyses are not complete, and, therefore, are not included with the draft study reports.

UDWR Response:

The final study reports will incorporate the cumulative effects analysis.

KBPI Comment 2:

Discussion of tribal consultation is absent from the majority of the draft study reports.

UDWR Response:

There is no requirement for the draft study reports to include discussion of tribal consultation. Specific study plans identified that Indian tribes would be consulted for information regarding resources and/or development of mitigation measures for potential impacts on resources.

KBPI Comment 3:

The Study Plan, as approved by the Commission and as discussed below, requires the UBWR to engage in consultation with affected Indian tribes. The majority of the draft study reports fail to discuss whether consultation occurred with the Kaibab Tribe. The absence of this critically important element of the Study Plan in the draft study reports renders them noncompliant with the Study Plan. Accordingly, where consultation or documentation demonstrating consultation is lacking, the Commission should remand the draft study reports to the UBWR for further work and analysis consistent with the consultation requirements of the Study Plan.

UDWR Response:

The study plan, as approved by the Commission, does not specifically require the UBWR to report consultations with affected Indian tribes in all of the draft study reports. The regulations at 18 CFR 5.1(d) require an applicant to consult “with ... any Indian tribe that may be affected by the project...” The UDWR, as agent for the UBWR, has consulted with the Kaibab Band of Paiute Indians and other potentially affected Indian tribes and nations throughout the LPP Project planning as part of the pre-application activities, including during scoping, development of the study plans, and conduct of specific studies. Eight of the study plans approved by FERC specifically refer to consultation with Indian tribes and/or with the Kaibab Band of Paiute Indians. Of these eight approved study plans, five address consultation with Indian tribes and/or with the Kaibab Band of Paiute Indians only regarding mitigation

measures for potential impacts on resources. The UDWR will include descriptions of consultation with the Kaibab Band of Paiute Indians in the eight final study reports. Fifteen of the study plans approved by FERC do not include any reference to consultation with the Kaibab Band of Paiute Indians. The regulations at 18 CFR 5.15 regarding conduct of studies contain no requirement that draft study reports document consultation with affected Indian tribes.

BIA Comment 100:

GENERAL - When completed, will the Cumulative Effects Report be available for comment, if so when?

UDWR Response:

The final study reports will incorporate the cumulative effects analysis. The final study reports will be submitted to FERC as part of the license application.

BLM Comment 79:

General Comments

Alternatives - The development of viable alternatives is lacking, a major concern for the legal sufficiency of the EIS, as outlined in the CEQ Regulations (43 CFR 1500). In particular, the No Lake Powell Water alternative appears to lack any realistic analysis. It reads more like a justification for constructing the pipeline instead of being a viable alternative to the pipeline.

UDWR Response:

The Alternatives Development draft study report was performed as specified by FERC to identify and define an action alternative to the LPP Project that would not involve conveying water from Lake Powell to the three southwest Utah sponsoring water conservancy districts. . The UDWR disagrees that the No Lake Powell Water Alternative is a justification for constructing the pipeline instead of being a viable alternative to the pipeline.

BLM Comment 80:

Omnibus Public Lands Act - In March 2009, Congress passed the Omnibus Public Lands Act (P.L. 111-11). This legislation created 15 wilderness areas, two National Conservation Areas, and 12 Wild and Scenic River segments on BLM-managed lands in Washington County, Utah. So when the LPP study plans describe the “Canaan Mountain WSA,” - that is now wrong. There are no WSA’s left in the St. George Field Office. The appropriate GIS data can be supplied by the UTSO by contacting the BLM National Project Manager.

UDWR Response:

The UDWR will contact the BLM National Project Manager to obtain the updated GIS data representing the current status of potentially affected public lands under the Omnibus Public Lands Act. The updated GIS data will be incorporated into the analyses presented in the final study reports as applicable.

BLM Comment 81:

Coordination with BLM Planning efforts - In addition, the passage of P.L.111-11 mandated an EIS-level planning effort in the St. George Field Office. That effort is currently underway and it includes the development of new resource management plans for the Red Cliffs and Beaver Dam Wash NCA’s, a comprehensive travel management plan for all BLM-managed lands in Washington County, and the identification and protection of priority biological areas. This last item is of particular interest to the LPP project. The only mechanism the BLM has for the “identification and protection of priority biological areas” is the designation of ACEC’s. As part of the scoping process for the planning effort, the BLM, St. George Field Office (SGFO) accepted nominations for new ACEC’s. Following the standard land-use planning guidelines, these proposals were analyzed for relevance and importance. The proposals were then manipulated so they reflect viable ACEC proposals that will then be carried forward

into the EIS for further analysis. One of the proposed areas is the Hurricane Cliffs. With the forebay above the cliffs and the afterbay below, this could have a significant impact on the LPP project, depending on the outcome of the SGFO EIS, which will likely be completed prior to the LPP DEIS. This information and an appropriate analysis should be included in the DEIS.

UDWR Response:

The UDWR was not aware of the SGFO EIS and the ACEC proposal considering the Hurricane Cliffs as a priority biological area after numerous meetings with the BLM National Project Manager and SGFO resource specialists between March 2009 and May 2011. The impact analysis of the proposed Hurricane Cliffs ACEC will be incorporated into the final study reports when the information and impact analyses are available from the BLM. The final study reports will be submitted to FERC with the license application and FERC will prepare the LPP DEIS using the final study reports as supporting information and materials.

BLM Comment 82:

Format - As a general note, the study reports are not user friendly. The reader is forced to constantly flip back and forth in the document between Chapters three and four, and sometimes the appendices. This is necessary to compare the affected environment description with the analyzed impacts. This is frustrating and time consuming. Considering the amount of scrutiny this project is receiving, this format should be changed in the EIS, and should coincide better with the CEQ Regulations (40 CFR 1500).

UDWR Response:

Your comment has been noted. The UDWR will prepare the environmental document (to be submitted to FERC as part of the license application) with a combined Affected Environment and Environmental Consequences chapter. FERC will prepare the EIS, based on the information and documents submitted by UBWR in the license application, in conjunction with the DOI cooperating agencies.

BLM Comment 83:

One office recommends that projects which involve lengthy, linear features, such as pipelines and transmission lines, may be better served by an EIS that combines Chapters 3 and 4, as being used effectively in the recently completed DEIS for the Sigurd-Red Butte transmission line. When the affected environment and environmental impacts are combined, the need to constantly flip back and forth in the document is eliminated and the reader receives a comprehensive, easy to read analysis. For example: visual resources for the LPP project are broken up into visual assessment units (VAU). In a combined format, the reader would read the description of VAU 13, see the map of VAU 13 on the next page, and read the environmental impacts on the page after that.

UDWR Response:

Your comment has been noted. Please refer to the UDWR response to BLM Comment 82.

USFWS Comment 1:

Indirect Effects of the Project

As we indicated in our November 19, 2008, letter concerning the Proposed Study Plans (PSP), we believe the proposed action will facilitate induced urban and suburban growth in the Project area. The impacts of this induced growth to environmental resources must be considered during the Federal Review process, including, but not limited to, ESA section 7 consultation.

UDWR Response:

The LPP Project has not been designed to bring growth but rather to address the water demand that will be created by reasonably expected population growth. The objective information available to UDWR, considered in conjunction with the principles that have been elucidated in previous NEPA compliance

documents and reviews, provides no basis to conclude that the Project “will facilitate induced urban and suburban growth.” There is no objective information provided in the comment that would further elucidate this issue. The comment assumes that water conveyed from Lake Powell will induce growth and development which in turn will cause indirect effects on environmental resources.

The Washington County population increased from 49,183 in 1990 to 133,447 in 2007 (Draft Socioeconomics and Water Resource Economics Study Report, Section 8.1, page 8-1) without any new sources of water being conveyed into Washington County. The Washington County population growth rate averaged 6 percent annually during the period from 1990 through 2007. The Washington County population growth rate is projected to continue growing at an average annual rate of 3.48 percent from 2009 through 2060 (Draft Water Needs Assessment, page 3-3, Table 3-1), which would not result from the LPP Project. The salient data all show that Washington County population will continue to grow and that development will continue to occur with or without the Lake Powell Pipeline, which is planned and necessary to serve areas already determined to be major growth areas.

This is the same conclusion that Utah Department of Transportation (UDOT), Federal Highway Administration (FHWA), and USFWS reached in the Southern Corridor Final EIS (April 2005) regarding indirect growth-related impacts of the Southern Corridor highway (page 4-99): “A planning study was performed to determine indirect growth-related impacts from the Southern Corridor. The results of the study showed that the rate of development would be similar under both the No-Build and build alternatives, and by 2020 the entire area would be developed.” The same section of the Southern Corridor Final EIS states “Based on the analysis of the No-Build and build alternatives, few indirect growth-induced impacts on threatened and endangered species would be caused by the Southern Corridor compared to the No-Build Alternative. The few indirect impacts that might occur would be associated with interchanges because of the more likely commercial development.” The USFWS was a cooperating agency on the Southern Corridor EIS and was involved from the beginning of the EIS and participated in the Southern Corridor Committee. Furthermore, the USFWS issued a biological opinion in January 2005 based on the results of the indirect growth-related impacts analysis for the Southern Corridor highway.

There are alternative methods of accommodating anticipated growth and there is no reason to believe that people will not continue to choose to move to the area. Given the certainty of future growth, there is no reasonable basis to identify reasonably foreseeable, sufficiently definite, and significant development activities that would occur if the LPP Project is built. Furthermore, existing land use plans, zoning, permitting requirements, economic forecasts, demographics, available utilities and land use practices all lead to ongoing changes that are independent of the Project. Development in the area is already planned, committed, zoned and in progress irrespective of the pipeline. The growth rate slowed in 2008 through 2010; however, growth still continues and, over time, the need for water will grow, with or without the Project. Identification of impacts on specific locations would be speculative, particularly because they are subject to multiple factors, many of which are unknown and unpredictable. For example, we know what is provided in current land use plans and zoning ordinances; however, there is a strong likelihood those will change by the time the Project comes on line. The same would be true for utility locations, which will undoubtedly continue to be constructed over the many years before the pipeline is complete. Any growth inducing component of this water supply would be impossible to distinguish from normal growth patterns and so minor that there would be no reasonable, objective method to separately address such indirect impacts.

Draft Study Report 1 – Air Quality

WRA Comment 29:

IV. Draft Study Report 1 – Air Quality

Draft Study Report 1 fails to consider the indirect impacts of the LPP to air quality. Specifically, The Draft Study should:

- 1) Include air quality impacts from power generation facilities;*
- 2) Include GHG emissions in the air quality impacts assessment;*
- 3) Define “impact corridor” more clearly; and*
- 4) Clearly explain and define (spatially) exceedances of the NAAQS.*

The Draft Report improperly disregards the LPP’s significant impacts to air quality. Compare Study Plan at 1 (air quality objectives include, “quantify Project operation emissions and the associated air quality impacts including ancillary facilities and structures”). Section ES-3.8 of the Draft Report states that the “LPP project would not cause indirect air quality impacts resulting from new power generation emissions” because new facilities do not need to be built to supply the power. This sleight of hand has no factual support.

UDWR Response:

1) The Western Area Power Administration (WAPA) and Garkane Electric Cooperative have indicated to UDWR that adequate generating capacity from existing power sources in Arizona and Utah are currently available for transmission to the Glen Canyon substation and for use in powering the LPP Project pumping stations. The final study report will address the specific power source(s) and account for the impacts of any additional emissions. 2) Evaluation of greenhouse gases was not required by the approved study plan. 3) The impact corridor(s) will be defined more clearly in the final study report. 4) Figures 3-1 through 3-13 spatially define the NAAQS exceedences by identifying the area in which pollutant levels exceed NAAQS (dispersion corridor). Pollutants have dispersed to below NAAQS levels outside the dispersion corridor. This will be more clearly explained in the final study report, including rewording of the figure titles.

WRA Comment 30:

The energy demands of LPP are new and additional demands that will result additional emissions. Even if existing facilities are used to generate power for the pipeline, they will be operated during a greater portion of time. The power source for the electricity is not stated, but is likely to be coal-fired power plants, since the majority of Utah’s electricity generation is coal-fired. Air emissions from coal-fired power plants include sulfur oxides (SOx) and nitrogen oxides (NOx), of which the NO2 and SO2 emissions which are criteria pollutants and thus subject to NAAQS. The net energy consumption of the pipeline is over 500 GWh annually, which, with an average emissions rate, would result in approximately 2.3 million pounds of carbon dioxide, 13,000 pounds of sulfur dioxide and 6,000 pounds of nitrogen oxides. These are significant air quality impacts and must be included in the analysis.

UDWR Response:

The final study report will address the specific power source(s) and account for the impacts of any additional emissions.

WRA Comment 31:

The emissions associated with energy demand should be taken seriously by the project proponents. First, FERC must report emissions associated with increased energy demand in the Draft Environmental Impact Statements (DEIS) during the NEPA process, should that come to pass. See, e.g., Mid States Coal.

for Progress v. Surface Transp. Bd., 345 F.3d 520, 549-50 (8th Cir. 2003) (agencies must look at the reasonably foreseeable indirect adverse effects of a major federal action, including an increased demand for energy). This precedent has already been set by other, recently proposed water supply projects like the Southern Delivery System (SDS) and the Northern Integrated Supply Project (NISP), both in Colorado. Secondly, the evaluation of greenhouse gas emissions from the proposed project and the alternatives has been proposed as a mandatory inclusion in the NEPA process. Thus to prepare for this pending regulation, it is important that all emissions, including greenhouse gas emissions, from energy demand be accurately quantified.

UDWR Response:

Please refer to response to WRA Comments 29 and 30. UDWR will adhere to all applicable Federal requirements and regulations.

WRA Comment 32:

Surprisingly, greenhouse gases emissions were not addressed in this Draft Report, despite the fact that in the record of comments at the St. George meeting on March 22 it was noted that “the gas pipeline alternative will include an evaluation of greenhouse gases and how much CO2 would be emitted.” Since these emissions will be evaluated for the gas pipeline alternative, they should be evaluated for the other potential power generation sources, as well as for the No Lake Powell Water and No Action Alternatives. The difference in emissions levels between these alternatives is likely to be significant, as explained below.

UDWR Response:

The final study report will address the impacts of electrical generation air emissions on air quality.

WRA Comment 33:

Thus, a change in the system configuration for the provision of new water supplies can lead to dramatically different energy requirements. The No Lake Powell Water Alternative would result in high energy use from the reverse osmosis operations and additional groundwater pumping, but would also result in energy decreases from water conservation measures due to the reductions in treatment, delivery, heating and wastewater treatment requirements. Under the No Action Alternative, the change in energy demands is likely negligible if no major changes in water supply or usage occur. And each of the energy demands have an associated air quality impact, depending on the source of energy (e.g. coal, gas, or renewable power plant). A full, proper comparison of all the propose pipeline and all alternatives should take into account the energy demands from the entire water system configuration.

UDWR Response:

The draft study report was prepared to comply with the approved study plan. The air quality impacts of the alternatives will be addressed in the final study report.

WRA Comment 34:

The definition of the “impact corridor” is not sufficiently defined in the Draft Report despite the fact that one of the goals of the Study Plan as stated in Section 1.2.1 is to “determine and explain the appropriateness of width of impact corridor.” Section 3.1 in the Draft Report attempts to define the impact area by stating that it “encompasses the areas surrounding the LPP Project features shown in Figures 1-1 through 1-9,” but there is no discernable area shown on the maps, nor is a quantified area provided (e.g. as distance from the pipeline, measured in meters). Thus, neither the definition nor the “appropriateness” are stated clearly enough in the Draft Report.

UDWR Response:

The “impact corridor” will be defined more clearly in the final study report.

WRA Comment 35:

We recommend that the area of impact be more fully explained, and that it be expanded to include emissions from generating stations. In addition, it will be important to address whether these power plants are located in non-attainment areas. These recommendations are fully within the purview of the stated goals in the Study Plan, which aims to “quantify Project operation emissions and the associated air quality impacts including ancillary facilities and structures.”

UDWR Response:

Please refer to response to WRA Comment 29. Figures 3-1 through 3-13 define the area of impact; however, this will be more clearly explained in the final study report. Please refer to response to WRA Comment 30 regarding air quality impacts from generating stations.

WRA Comment 36:

Sections 3.3.12, 3.3.13 and 3.3.14 of the Draft Report indicate that emissions from the project would not exceed NAAQS levels, and that the maps show the extent of the projected pollution concentration above the NAAQS levels. This is not in fact shown on the map, nor is there substantive discussion of the exceedance levels and their locations. Particularly with respect to potentially impacted Class 1 airsheds, this section needs to be more clearly explained.

UDWR Response:

NAAQS exceedance levels and locations will be clarified in the final study report.

KBPI Comment 4:

Section 1.5.2 Identified Issues - Draft Report 1 fails to identify any issue related to culturally sensitive areas, such as traditional cultural properties (“TCPs”), landscapes, or other issues of concern to the Kaibab Tribe. This failure directly contravenes sections 1.4.2 and 1.4.3, Study Plan 1, which state that such areas will be addressed in Draft Report 1. It also contravenes section 1.3 of Study Plan 1, which states that tribal resource management goals regarding air quality “will be incorporated into the studies.” The failure to include tribal resource management goals renders Draft Report 1 noncompliant with Study Plan 1.

UDWR Response:

The approved study plan does not specify study of culturally sensitive areas, such as traditional cultural properties (TCPs) and cultural landscapes because these are part of the information being developed under the approved Ethnographic Resources study plan and will be addressed in the draft Ethnographic Resources Study Report. The Kaibab Band of Paiute Indians (KBPI) and other Indian tribes have conducted ethnographic studies that specifically identify TCPs and cultural landscapes; however, the final report approved by the KBPI and provided to the UDWR by the KBPI consultant has 291 pages redacted from the document (Chapters 3 through 7, portions of the Table of Contents, and the full references section are not included in the final report) to protect culturally sensitive sites from the public. Therefore, the information necessary to define baseline conditions and perform and complete the impact analyses requested by the KBPI in the comment is being withheld from UDWR. The final Ethnographic Resources study report will identify culturally sensitive areas for other Indian tribes, insofar as those areas have been disclosed to UDWR.

KBPI Comment 5:

Section 1.6 Impact Topics - Draft Report 1 fails to identify any impact topic related to culturally sensitive areas, such as TCPs, landscapes, or other issues of concern to the Kaibab Tribe. This failure directly contravenes sections 1.4.2 and 1.4.3 of Study Plan 1, which state that such areas will be addressed in Draft Report 1. It also contravenes section 1.3 of Study Plan 1, which states that tribal resource

management goals regarding air quality “will be incorporated into the studies.” This failure renders Draft Report 1 noncompliant with Study Plan 1.

UDWR Response:

Please refer to response to KBPI comment 4.

KBPI Comment 6:

Section 2.2 Data Used - Draft Report 1 includes an extensive list of data sources, Draft Report 1 at 2-1, but fails to include any tribal sources or to indicate whether an effort was made to obtain such data. This failure to include tribal data, including the Kaibab Tribe’s Ecology Code, contravenes section 1.3 of Study Plan 1, which states that tribal resource management goals regarding air quality “will be incorporated into the studies.” Further, section 1.4.3 of Study Plan 1 indicates numerous data needs that go unmentioned in Draft Report 1, including for “[c]ulturally sensitive areas,” but Draft Report 1 fails to list data sources that will facilitate this analysis, which renders Draft Report 1 noncompliant with Study Plan 1.

UDWR Response:

The KBPI Comprehensive Cultural Ecology Code of the Kaibab Band of Paiute Indians does not include any specific air quality management goals, data, or other information.

KBPI Comment 7:

Section 2.2.1.4 Kaibab Band of Paiute Indians - In accordance with section 1.3 of Study Plan 1, therefore, Draft Report 1 must reference and account for the Kaibab Tribe’s Ecology Code. Draft Report 1 completely fails to adhere to this stated study report requirement, which renders Draft Report 1 noncompliant with Study Plan 1.

UDWR Response:

Please refer to the response to KBPI comment 6.

KBPI Comment 8:

Section 2.4.2 Field Investigations - In contravention of Study Plan 1, Draft Report 1 fails to indicate whether “[p]articulate attention” was paid to “culturally, economically, and environmentally sensitive areas” and whether the specific tasks listed were completed during the field investigations, Study Plan 1 § 1.6.2.2, which renders Draft Report 1 noncompliant with Study Plan 1.

UDWR Response:

Please refer to responses to KBPI comment 4.

KBPI Comment 9:

Section 2.4.3 Perceived Aesthetic Valuable Areas - Draft Report 1 identifies certain areas as “visually valuable” and states that they “are generally in the State and National Parks,” Draft Report 1 at 2-5, but fails to acknowledge the existence of cultural landscapes that are visually significant to the Kaibab Tribe. This failure directly contravenes sections 1.4.2 and 1.4.3 of Study Plan 1, which state that such areas will be addressed in Draft Report 1. It also contravenes section 1.3 of Study Plan 1, which states that tribal resource management goals regarding air quality “will be incorporated into the studies.” These failures render Draft Report 1 noncompliant with Study Plan 1.

UDWR Response:

Please refer to response to KBPI comments 4 and 6.

KBPI Comment 10:

Section 3.1 Impact Area - Draft Report 1 describes the impact area as simply “encompass[ing] the areas surrounding the LPP project features,” Draft Report 1 at 3-1, and fails to define the impact corridor. Section 1.2.1 of Study Plan 1 indicates that a “primary objective” of Draft Report 1 is to “determine and explain [the] appropriateness of [the] width of [the] impact corridor.” This failure to determine and explain the width of the impact corridor directly contravenes section 1.2.1 of Study Plan 1. Moreover, the Kaibab Tribe noted that the Commission established a two-mile-wide area of potential effects 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, Federal Energy Regulatory Commission, to Eric Millis, P.E., Utah Division of Water Resources at Attachment A (May 7, 2009). The failure to define the impact corridor renders Draft Report 1 noncompliant with Study Plan 1.

UDWR Response:

The final study report will define and explain the impact corridor. Please refer to the response to KBPI comment 4 regarding the adequacy of the final KBPI ethnographic resources report to perform impact analyses on historic properties or other culturally important sites from LPP Project air emissions.

KBPI Comment 11:

Section 3.3.1 Air Pollutants of Concern - Draft Report 1 indicates that “direct contacts with ADEQ and UDEQ staff and other officials” were made in order to determine “the primary air quality concerns,” Draft Report 1 at 3-4, but this does not appear to include direct contacts with tribal agencies. This failure to indicate whether the Kaibab Tribe was contacted, whether tribal agencies were included, or whether tribal concerns were considered directly contravenes section 1.3 of Study Plan 1, which states that tribal resource management goals regarding air quality “will be incorporated into the studies,” and renders Draft Report 1 noncompliant with Study Plan 1.

UDWR Response:

The final study report will describe contacts and concerns identified by tribal agencies.

KBPI Comment 12:

Section 4.1.1 Human Receptors - Table 4-1 in Draft Report 1 indicates that the Pipe Spring area is “residential.” Draft Report 1 at 4-1. While residences exist in this area, they are somewhat removed from the proposed highway alternative route. Immediately adjacent to the proposed highway alternative route, however, are the Kaibab Tribe’s government headquarters, the Tribal Court, the Kaibab Tribe’s RV Park, as well as a gas station and Pipe Spring National Monument. Both the tribal headquarters and the gas station are within 150 feet of the proposed highway alternative route, which is within the limits of the construction area. See Draft Report 1 at 3-5 (650 feet “largely within the limits of the construction area”). In accordance with section 1.2 of Study Plan 1, which provides that Draft Report 1 “will address local and regional air quality conditions that might reasonably be affected by construction, operations, and maintenance of the Project,” Draft Report 1 should account for the employees and visitors to the tribal headquarters, gas station, and Pipe Spring National Monument; however, it has failed to do so, which renders Draft Report 1 noncompliant with Study Plan 1.

UDWR Response:

The final study report will clarify that the Pipe Springs area is a business area, including tribal headquarters, gas station, and Pipe Spring National Monument. However, this should not affect the results of the analysis as residential areas are as sensitive, if not more sensitive, than business areas to temporary air quality impacts from construction. The Best Management Practices (BMPs) identified in draft study report Chapter 5 are adequate for residential and business areas.

KBPI Comment 13:

Section 4.2 Potential Impacts Eliminated From Further Analysis - Draft Report 1 indicates that “because of the temporary nature of the construction activities and the accomplishment of work in accordance with OSHA guidelines[,] . . . [e]xposure of construction workers to emissions as an air quality impact was eliminated from further consideration.” Draft Report 1 at 4-3. As explained above, however, employees and visitors to the tribal headquarters and gas station are within the limits of the construction area. It is not clear how impacts from air pollutants will be mitigated for employees and visitors at the tribal headquarters, gas station, and Pipe Spring National Monument. Draft Report 1 must address such impacts in accordance with section 1.2 of Study Plan 1, which provides that Draft Report 1 “will address local and regional air quality conditions that might reasonably be affected by construction, operations, and maintenance of the Project.” As it stands, Draft Report 1 is noncompliant with Study Plan 1.

UDWR Response:

The final study report will address the potential impacts from air pollutants on employees and visitors in the Pipe Springs vicinity and any necessary mitigation measures. Please refer to response to KBPI comment 12 regarding air quality BMP’s during construction activities.

KBPI Comment 14:

Section 5.1.1 LPP Alternative (Intake System, Water Conveyance System, Hydro System, Cedar Valley Pipeline System and Transmission Lines) - Draft Report 1 indicates that “[a]ll dust suppression would be performed to meet federal, state and local requirements and according to standard construction practices,” Draft Report 1 at 5-1, but fails to expressly include tribal requirements. Section 1.3 of Study Plan 1 requires compliance with tribal dust suppression requirements. The failure of Draft Report 1 to consider compliance with tribal requirements renders Draft Report 1 noncompliant with Study Plan 1.

UDWR Response:

The UDWR is not aware of any tribal requirements for dust suppression, and such requirements were not identified during consultations with the KBPI.

KBPI Comment 15:

Chapter 7 Cumulative Impacts - Other than for the “No Action Alternative,” which “would have no cumulative impacts,” Draft Report 1 indicates that “cumulative impacts analysis is pending completion for identification of inter-related projects that would cause cumulative impacts with the LPP project.” Draft Report 1 at 7-1. Section 1.2.1 of Study Plan 1 indicates that a “primary objective” of Draft Report 1 is to “analyze any cumulative impacts on air quality within the study area using the EPA preferred (or similar) model” and section 1.5.2 of Draft Report 1 identifies cumulative impacts as an issue requiring analysis. As a result, the cumulative impacts analysis must be completed as soon as possible and the Kaibab Tribe hereby requests additional time to submit comments on the cumulative impacts analysis.

UDWR Response:

The UDWR is completing the cumulative effects analysis and will incorporate it into the final study report.

BIA Comment 32:

3.2.1.2 - Should UDAQ be UDEQ?

UDWR Response:

UDAQ is an acronym for Utah Division of Air Quality, which is a division of the Utah Department of Environmental Quality (UDEQ). The final study report will include a list of abbreviations and acronyms.

BIA Comment 33:

5.1.1. - How will air quality monitoring during construction be performed? What kind of equipment, and where will it be stationed?

UDWR Response:

Your comment has been noted. Specific air quality monitoring equipment and locations will be included in the project construction specifications.

BLM Comment 84:

01 Draft Air Quality Study Report

Page 2-2, second paragraph - It seems that there is an initial sentence missing. It states what happens when an area in nonattainment meets the NAAQS (20 yrs of maintenance plans), but does not state how an area becomes in the nonattainment category, or how an area is classified if no monitoring data exists. It is recommended that you add language that states an area that meets NAAQS is classified attainment, an area that has monitored "exceedences" of the NAAQS is classified as nonattainment, and in areas where the air quality has improved...(use rest of existing language).

UDWR Response:

The final study report will include revisions in accordance with the comment.

BLM Comment 85:

Page 3-1, Table 3-1 - The highest concentration average for PM2.5 in St George is given as "<15ug/m3" and "<35ug/m3", which are also the regulatory standards for these pollutants. All the other highest concentration averages in this table are actual measurements (e.g. 31ug/m3 for the PM10 standard of 50ug/m3). Why is this portrayed this way? Given that PM2.5 has been specifically identified as a pollutant of concern in the St George area, actual measurements, instead of just saying it's less than the standard, would seem appropriate. If there is a reason the actual highest concentration can't be reported, then this should be specifically stated.

UDWR Response:

Your comment has been noted.

BLM Comment 86:

Page 3-10, Table 3-5 – There is no reason to keep the old 1997 ozone 8 hour standard (0.08ppm) in the table. It has been replaced by the new 8 hour standard (0.075) which is also in the table. So, this should be deleted. There is also a new 1 hour NO2 standard (100 ppb) and new 1 hour SO2 standard 75 ppb) both promulgated last year. These new standards need to be included in this table.

UDWR Response:

The final study report will include revisions in accordance with the comment.

BLM Comment 87:

Page 3-11, Section 3.3.1.2 Nitrogen Dioxide (NO2) - Modeling for the 1 hour NO2 standard was not performed for this project. Given that these are temporary mobile sources, modeling is not typically required, however since modeling was conducted to determine compliance with the annual NO2 standard, it would not be unreasonable to evaluate whether project emissions also comply with this standard.

UDWR Response:

The final study report will include an evaluation of project emissions in accordance with the 1-hour NO₂ standard. The 1-hour standard will also be included in Table 3-5.

BLM Comment 88:

Page 3-11, Section 3.3.1.4 Sulfur Dioxide (SO₂) and Other Pollutants - Same issue as for NO₂ above. Modeling for the 1 hour SO₂ standard was not performed for this project. Given that these are temporary mobile sources, modeling is not typically required, however since modeling was conducted to determine compliance with the annual SO₂ standard, it would not be unreasonable to evaluate whether project emissions also comply with this standard.

UDWR Response:

The final study report will include an evaluation of project emissions in accordance with the 1-hour SO₂ standard. The 1-hour standard will also be included in Table 3-5.

BLM Comment 89:

Page 3-22, Table 3-6 and Table 3-7 - NO₂ and SO₂ pollutant dispersion characteristics, compared to the respective 1 hour NAAQS for these pollutants should also be presented. See above for background.

UDWR Response:

The final study report will summarize the 1-hour standard evaluations for NO₂ and SO₂ in Tables 3-6 and 3-7.

Draft Study Report 2 – Aquatic Resources

FERC Comment 1:

Provide an analysis of the potential effects upon the aquatic habitat of the Sand Hollow Reservoir System, including Quail Creek Reservoir, due to the transfer of water.

UDWR Response:

The final study report will include an analysis of the potential effects of the LPP Project water transfer on the aquatic habitat of the Sand Hollow Reservoir System, including Quail Creek Reservoir.

FERC Comment 2:

List the relevant agencies/entities that have ongoing studies and /or monitoring programs for aquatic species in the live streams of the LPP Project study area, objectives of the ongoing monitoring programs or studies, periodicity of the monitoring programs or studies, and the general location or water body where the monitoring programs or studies take place.

UDWR Response:

The final study report will incorporate a list of the relevant agencies/entities that have ongoing studies and/or monitoring programs for aquatic species in the live streams of the LPP Project study area, objectives of the ongoing monitoring programs or studies, periodicity of the monitoring programs or studies, and the general location or water body where the monitoring programs or studies take place.

KBPI Comment 16:

Section 1.2 Summary Description of Alignment Alternatives - Draft Report 2 contains the same pipeline and alignment description as is included in most of the other draft reports. Draft Report 2 at 1-1 to 1-19. Section 2.4.2 of Study Plan 2 indicates that “[a] description and location of all outlets along the pipeline route (supply discharge, blowoff valves, etc.) will be provided” and that “[t]his information would identify locations where introduction of invasive species to natural drainages from the Project could potentially occur.” Draft Report 2 fails to include the required description, which renders Draft Report 2 noncompliant with Study Plan 2.

UDWR Response:

The final study report will be revised to include a description and location of all outlets along the pipeline route (supply discharge, blowoff valves, etc.) and identify locations where introduction of invasive species to natural drainages from the Project could potentially occur. Please refer to the response to USFWS comment 17.

KBPI Comment 17:

Section 1.5 Identified Issues and Topics - Draft Report 2 identifies seven significant issues and impact topics relating to aquatic resources, Draft Report 2 at 1-20, but they are not the same as those identified in sections 2.1 and 2.2.1 of Study Plan 2. While certain issues and impact topics appear in both Study Plan 2 and Draft Report 2, Draft Report 2 must explain why some issues and impact topics listed in Study Plan 2 were either modified or excluded from the report. See Study Plan 2 § 2.6.5 (requiring explanation for deviation from study plan). As it stands, Draft Report 2 is noncompliant with Study Plan 2.

UDWR Response:

The final study report will address the issues and impact topics listed in study plan 2, including those issues and impact topics either modified or excluded from the draft report.

KBPI Comment 18:

Section 2.2 Data Used - Draft Report 2 indicates that “[n]o original field work, sampling, surveys or other site-specific investigations were performed.” Draft Report 2 at 2-1. Section 2.4.4 of Study Plan 2 requires “[f]ield reconnaissance and review by an aquatic biologist to evaluate pipeline alignment and stream crossings, reservoirs and the Lake Powell intake structure,” which data is required in order “to perform detailed analysis of impacts on aquatic species and habitat for the Project alternatives.” Draft Report 2 contravenes section 2.4.4 of Study Plan 2 by failing to conduct field investigations and failing to explain why such field investigations were subsequently deemed unnecessary and not performed, which renders Draft Report 2 noncompliant with Study Plan 2.

UDWR Response:

The final study report will clarify that field reconnaissance and review was performed by an aquatic biologist to evaluate pipeline alignment and stream crossings, reservoirs and the Lake Powell Pipeline intake structure to perform detailed analysis of impacts on aquatic species and habitat for the Project alternatives.

KBPI Comment 19:

Section 3.1 Study Area - Draft Report 2 states that “[t]he LPP Project . . . crosses a variety of federal, state and privately managed property,” Draft Report 2 at 3-1, but fails to mention tribally managed property. Section 2.1 of Study Plan 2 states that the pipeline may cross “tribal lands.” Draft Report 2 must also analyze the places where the proposed pipeline would cross tribal land, and its failure to do so renders it noncompliant with Study Plan 2.

UDWR Response:

The final study report will clarify that applicable LPP Project alternatives may cross the Kaibab-Paiute Indian Reservation, which is tribally managed property, and will include analysis of aquatic resource habitats on tribally managed land that could be affected by the proposed pipeline alternatives.

KBPI Comment 20:

Section 3.2.2 Aquatic Resources in Perennial Drainages - Draft Report 2 fails to comply with Study Plan 2 by not identifying the non-fish species that are present in the various drainages. If no non-fish species

are present in a particular drainage, Draft Report 2 should state that fact, and its failure to do so renders it noncompliant with Study Plan 2.

UDWR Response:

The final study report will clarify if non-fish species are present or not present in potentially affected drainages.

KBPI Comment 21:

Section 3.2.2.2 Paria River Drainage - By failing to identify the objectives of the Paria River Management Plan and not explaining how the pipeline will affect those objectives, Draft Report 2 directly contravenes section 2.2.1 of Study Plan 2, and is noncompliant with Study Plan 2.

UDWR Response:

The final study report will identify the objectives of the Paria River Management Plan and explain if the pipeline may affect those objectives.

KBPI Comment 22:

Section 3.2.2.3 Kanab Creek Drainage - Draft Report 2 states that “[t]he lower reach [of Kanab Creek] through the Kaibab-Paiute Indian Reservation is not considered to have the same recreational opportunities or support any aquatic resources,” Draft Report 2 at 3-13, but it fails to identify a source for this conclusion. Section 2.3 of Study Plan 2 states that “[i]dentifying the existing habitat condition . . . is critical to providing a realistic assessment of project effects and their relationship to defined agency management goals” and indicates that “baseline conditions” will be confirmed utilizing “[t]he existing information base for aquatic resources.” Section 2.4.2 of Study Plan 2 indicates that the existing information regarding Kanab Creek pertains to fish species only. Sections 2.1 and 2.2.1 of Study Plan 2 require that in addition to impacts on fish species, Draft Report 2 must also address impacts on non-fish species. Draft Report 2 fails to comply with Study Plan 2 by not identifying the source for its conclusion and by apparently failing to consider non-fish species.

UDWR Response:

The final study report will address potential impacts on non-fish species in Kanab Creek and will clarify the text in Section 3.2.2.3 regarding the lower reach of Kanab Creek through the Kaibab-Paiute Indian Reservation or identify the source for the conclusion.

KBPI Comment 23:

Section 3.2.2.3 Kanab Creek Drainage - Draft Report 2 fails to mention or otherwise account for any management plans related to Kanab Creek. Section 2.2.1 of Study Plan 2 states that a goal of Draft Report 2 is to determine how the pipeline could affect the objectives of various “management programs,” and section 2.4.3 of Study Plan 2 identifies several management plans potentially related to Kanab Creek. By failing to identify whether any management plans relate to Kanab Creek, and if so, by failing to identify the objectives of any management plan for Kanab Creek and not explaining how the pipeline will affect those objectives, Draft Report 2 directly contravenes section 2.2.1 of Study Plan 2 and is noncompliant with Study Plan 2.

UDWR Response:

The final study report will identify whether any management plans we are aware of relate to Kanab Creek, and if so, identify the objectives of management plan(s) for Kanab Creek and explain if the pipeline may affect those objectives.

KBPI Comment 24:

Section 3.2.2.5 Virgin River Drainage - Draft Report 2 notes that the Virgin River Resource Management and Recovery Program was established to assist with the recovery of sensitive and listed species, Draft Report 2 at 3-15, but fails to identify any specifics regarding that program. Draft Report 2 makes no mention of any other management programs related to the Virgin River. Section 2.2.1 of Study Plan 2 states that a goal of Draft Report 2 is to determine “how the Project operation could affect the objectives of the Virgin River Management Plan and other management programs,” and section 2.4.3 of Study Plan 2 identifies several other management plans related to the Virgin River. By failing to identify the specifics, or objectives, of any management plan and not explaining how the pipeline will affect those objectives, Draft Report 2 directly contravenes section 2.2.1 of Study Plan 2 and is noncompliant with Study Plan 2.

UDWR Response:

The final study report will identify the objectives of the Virgin River Management and Recovery Plan and other related management programs and plans and explain if the pipeline may affect those objectives.

KBPI Comment 25:

Section 4.3 Assessment of Environmental Consequences - Section 2.4.2 of Study Plan 2 indicates that “[a] description and location of all outlets along the pipeline route (supply discharge, blowoff valves, etc.) will be provided” and that “[t]his information would identify locations where introduction of invasive species to natural drainages from the Project could potentially occur.” Draft Report 2 contains no such description, however, and lacking such analysis, it is difficult to understand how Draft Report 2 could reach these conclusions. Draft Report 2 contravenes section 2.4.2 of Study Plan 2 by failing to describe the location of all outlets on the pipeline, and is, therefore, noncompliant with Study Plan 2.

UDWR Response:

Please refer to the response to KBPI comment 16.

KBPI Comment 26:

Section 4.4 Summary - Section 2.4.2 of Study Plan 2 requires that “[a] description and location of all outlets along the pipeline route (supply discharge, blowoff valves, etc.) will be provided” and that “[t]his information would identify locations where introduction of invasive species to natural drainages from the Project could potentially occur.” Draft Report 2, however, contains no such description. Draft Report 2 must explain its conclusion that water discharge will not affect perennial streams. Study Plan 2 § 2.4.2. In the event an outlet is located near a stream or within a watershed, Draft Report 2 must also describe the potential effects of applying water discharges to land near that stream or within the watershed. Study Plan 2 § 2.4.2. Draft Report 2 contravenes section 2.4.2 of Study Plan 2 by failing to describe the location of all outlets along the pipeline and is, therefore, noncompliant with Study Plan 2.

UDWR Response:

Please refer to the response to KBPI comment 16. The final study report will include analysis of potential effects of land application of water on aquatic resources within a watershed.

KBPI Comment 27:

Chapter 7 Cumulative Impacts - Other than for the “No Action Alternative,” which “would have no cumulative impacts,” Draft Report 2 states that “cumulative impacts analysis is pending completion for identification of inter-related projects that would cause cumulative impacts with the LPP project.” Draft Report 2 at 7-1. The cumulative impacts analysis must be completed as soon as possible and the Kaibab Tribe hereby requests that the Commission allow additional time for comments on the cumulative impacts analysis.

UDWR Response:

The UDWR is completing the cumulative effects analysis and will incorporate it into the final study report.

KBPI Comment 28:

References Used and Cited - To be consistent with the Table of Contents in Draft Report 2 and with the other draft reports, the page numbers in this section of Draft Report 2 should be preceded with an “R,” not an “8.”

UDWR Response:

Your comment has been noted. The suggested edits will be incorporated into the final study report.

BIA Comment 101:

Report 2 – Aquatic Resources - This section presents hydrologic modeling done by Bureau of Reclamation in 2010. This is important to the BIA because it establishes no measurable difference (for downstream temperature profiles, total dissolved solids, dissolved oxygen and nutrients) between the proposed action and the no action alternative in the water released from Glen Canyon Dam. There are a half dozen reservations downstream. This is an inadequate presentation of the model, its assumptions, and its results given the potential impact to BIA trust assets. For instance, did the model include climate change and other depletion scenarios as NPS requested in its comments to the study plan? If not, why not?

UDWR Response:

The text in Section 3.1.1 will be clarified to include references to final study report 17, Surface Water Quality and final study report 18, Surface Water Resources, which include detailed descriptions of the Reclamation water quality modeling and hydrologic modeling, assumptions and results. The Reclamation CRSS modeling included input hydrology based on nonparametric paleo-conditioned inflows with annual streamflow reconstructions from tree-ring chronologies between 762 and 2005 on the Colorado River at Lees Ferry that provide for greater variety in hydrologic sequencing of wet and dry periods, which represent hydrologic variability during the past 1200 years. Reclamation modeled the depletion scenario requested by NPS and the results were reported in Section 4.3.1 of the draft Surface Water Resources study report and Section 4.2.4 of the draft Surface Water Quality study report.

BLM Comment 90:**03 Draft Aquatic Species Study Report**

Section 3.1.1, Project Diversions from Lake Powell and the Colorado River section discusses the potential effects on aquatic species from diversions from Lake Powell, and the Colorado River. The impacts on downstream flows and water quality were modeled by Bureau of Reclamation in 2010 during the period from 2020 through 2060. The conclusion presented, based upon the model results, was that Lake Powell elevations and the flow in the Colorado below Glen Canyon Dam were essentially the same with or without the project (under the proposed annual withdrawal of 86,249 acre feet of water. How can potential effects be determined, when the cumulative effects of other inter-related projects (cumulative) have not been included in these model? (refer to section 7.1, cumulative effects pending completion).

UDWR Response:

The cumulative effects chapter of the draft Aquatic Resources study report was not completed at the time the draft study reports were submitted to FERC. The cumulative effects analysis of other inter-related projects was included in Reclamation CRSS modeling performed on Lake Powell elevations and the Colorado River flows below Glen Canyon Dam. The Final Planning Study Analysis (which included all past, present and future depletions and operations in the Upper Colorado River Basin), and the No Additional Depletions Analysis (which included past, present and reasonably foreseeable future

depletions and operations in the Upper Colorado River Basin consistent with DOI regulations at 43 CFR 46.20 regarding the definition of “reasonably foreseeable”) incorporate the effects of other inter-related projects affecting Lake Powell levels and Colorado River flows below Glen Canyon Dam as described in Section 4.3.1 and Appendix 2 of the draft Surface Water Resources study report and Section 4.2.4 and Appendix A of the draft Surface Water Quality study report. The cumulative effects chapter of the Final Aquatic Resources Study Report and the other applicable final study reports will identify the inter-related projects that could result in cumulative effects, explain the Reclamation modeling which incorporated cumulative effects into the modeled analyses, and present the Reclamation modeling results.

BLM Comment 91:

02 Draft Aquatic Resources Study Report

It is agreed that potential impacts are minimal as far as the Monument is concerned. The only live water the project would cross is the Paria River. Their document suggests that the Paria has four species of fish. However, there is no agreement with that statement. The only fish documented in Monument portions is the speckled dace, a minnow that is found in the Paria Box, upstream from the project area. Perhaps near the confluence with the Colorado River more species are found but either way, this project will do nothing to increase sediment flow since the Paria is already flowing a very high sediment load. It sounds misleading to claim that trout are in the Paria. Trout could not survive in the Paria for more than a few days at a time. It is suggested that there be more specificity about potential impacts at the point of crossing, instead of focusing on impacts 20 miles downstream.

UDWR Response:

The text in Section 3.2.2.2 will be clarified to be more specific about potential impacts at the point of the pipeline crossing.

BLM Comment 92:

Pg. 3-11, 1st paragraph, line 6 ““muddy” river – “Paria” is an anglicized Paiute term (not Spanish; turbido, lleno de barro, terroso for muddy), Pah-uwee “flooding water” (personal communication, C. Bullets, Southern Paiute Tribe, 2008).

UDWR Response:

Your comment has been noted.

USFWS Comment 17:

The Draft Study Report #2 concludes that AIS treatment will be added as a contingency for the design of the LPP (page 3-10) if AIS are found to occur in Lake Powell. However, during recent discussions between our office and the Project proponent, the UBWR indicated that they plan on having AIS prevention measures active from Day 1 of LPP operation. Because of their control efforts, the State of Utah is aware that testing for AIS presence is a very difficult task that requires the collection of many samples over time and geographic area. Thus, we request that the commitment to initial and long-term monitoring and treatment plans be clearly identified in the Draft Study Reports and in the environmental commitments section of future FERC and project documents to ensure adequate AIS response measures during all Project planning, construction, and implementation activities.

UDWR Response:

The Final Aquatic Resources Study Report will be revised to incorporate the UDWR commitment to provide initial and long-term monitoring and treatment plans for the LPP Project to control the spread of aquatic invasive species (AIS) and make sure adequate AIS response measures are included in all LPP Project planning, construction and implementation activities.

USFWS Comment 18:**Draft Study Report 2: Aquatic Resources**

- *Section 4.3: Assessment of Environmental Consequences: The Study Report states:*

“The restrictions on residential outdoor watering would significantly reduce recharge and are expected to result in changing the Virgin River from a gaining stream during the summer and fall months to a losing stream year round.” (Page 4-6)

Please explain in detail how this conclusion was reached—the study report should identify if this conclusion was based on a quantitative analysis or a modeling effort. We also recommend that the Project proponent consider mitigation efforts; for example, the utilization of urban runoff for groundwater recharge. Ensuring adequate Virgin River flows is important for the conservation and recovery of the endangered Virgin River chub and woundfin.

UDWR Response:

The draft Aquatic Resources study report will be revised to incorporate a reference to the clarified groundwater recharge analysis in the Final Groundwater Resources Study Report (Section 4.7.1.2). The Virgin River streamflow analysis presented in the Final Surface Water Resources Study Report (Section 3.2.2) demonstrates the annual cycle of existing return flows to the Virgin River and also will be referenced in the Final Aquatic Resources Study Report.

The comment suggests a mitigation measure involving utilization of urban runoff for groundwater recharge. The annual precipitation in the St. George metropolitan area averages 8.24 inches compared to the annual average pan evaporation of 74.68 inches, which means that much of the urban runoff from precipitation events would be quickly evaporated if stored at the surface for groundwater recharge. Most of the soils in the St. George metropolitan area are shallow, are classified as hydrologic group C or D (high infiltration rates) with moderate to high permeability, and have depths to bedrock ranging from one to five feet. These characteristics do not allow much water to be stored in the soil profile or recharged to groundwater aquifers except where bedrock is fractured or water can gradually recharge rock types such as Navajo sandstone. The relatively high permeability rates and bedrock sloping toward the river result in the annual cycle of the Virgin River through the St. George metropolitan area functioning as a gaining stream from September through December and functioning as a losing stream from January through August (please refer to Figure 3-13 in draft study report 18, Surface Water Resources). The U.S. Geological Survey stream gage data from Virgin to the Utah-Arizona state line indicate that the return flow period in the St. George metropolitan area ranges from one to two months following water application to vegetated urban and agricultural areas. All these factors dictate that local aquifer recharge using urban runoff is not feasible. Local stream gauge data indicate that urban runoff and urban irrigation return flow water provides increased river discharge as a result of the urban presence. Therefore, the suggested mitigation measure would not be feasible nor would it ensure adequate Virgin River flows for the conservation and recovery of the endangered Virgin River chub and woundfin.

Draft Study Report 3 – Archaeological and Historic-Era Resources**FERC Comment 44:**

Consolidate both the May and December 2010 draft Class III study reports into a single hard-copy document with attached appendices (can be separate volumes) and distribute hard copies, including three copies to the Commission, for final review. Site record forms do not need to be included with report and can remain as separate CD files.

UDWR Response:

The May and December 2010 draft Class III study reports will be consolidated into a single hard-copy document with attached appendices and three hard copies will be provided to the Commission for final review.

FERC Comment 45:

To enable us to better understand the distribution and overall status of cultural resources sites within the APE, please revise the study report to include a single set of color APE maps that depicts all previously recorded sites, newly recorded sites, GLO sites, land ownership, proposed alignments (one color), alternative alignments (another color), outer APE lines, National Register of Historic Places (National Register) eligibility, and any other information that would be of importance. This will allow us to get a comprehensive view of the APE with all of the necessary components. Also integrate the information from the Kaibab Reservation.

UDWR Response:

The study report will be revised to include a single set of color APE maps depicting all previously recorded sites, newly recorded sites, GLO sites, land ownership, proposed alignments (one color), alternative alignments (another color), outer APE lines, National Register of Historic Places (National Register) eligibility, information from the Kaibab-Paiute Indian Reservation and any other information of importance.

FERC Comment 46:

Clarify or correct site counts and revise the draft study report to ensure that all site counts are consistent throughout the entire document.

UDWR Response:

The final study report will clarify or correct site counts and present all site counts consistently throughout the entire document.

FERC Comment 47:

The last paragraph in section 1.5 states, "This effort continued August 2110." This sentence is incomplete. Please revise the draft study report to complete this statement and re-check all text for similar irregularities.

UDWR Response:

Section 1.5 in the final study report will provide a complete statement and the text will be checked and edited to correct similar irregularities.

FERC Comment 48:

Revise the study report to address the Pipe Springs National Monument in section 3.3.3.

UDWR Response:

The final study report will address the Pipe Springs National Monument in section 3.3.3.

FERC Comment 49:

In section 4.4, you generally discuss how the site records and reports from the file search were used to make recommendations or determinations, and you describe five categories that were used in the report: eligible or not eligible (consultant recommendation), NR eligible or NR ineligible (formal determinations), and unevaluated. However, these classifications are not consistent with the categories used in tables 5-1 and 5-3. No sites are either listed as "NR eligible" or "NR ineligible" and instead the terms "Determined Eligible" and "Determined Not Eligible" are used. Additionally, this section

requires more discussion of what remains to be done regarding determining National Register eligibilities (i.e., once informal recommendations have been made, then you will first submit your informal National Register recommendations to the respective land management agency (federal or state) for concurrence, then resubmit the National Register recommendations to the Utah and Arizona State Historic Preservation Officers (SHPO) for concurrence). If the SHPOs prefer that the Commission submits the National Register-eligibility recommendations for concurrence, that is also acceptable. Also, please consult with each of the federal land management agencies to identify their protocols with regard to National Register-eligibility determinations.

UDWR Response:

The final study report will present consistent descriptions of National Register eligibility and provide additional discussion on remaining tasks for determining National Register eligibility. The Federal land-management agencies will be consulted to identify their protocols for National Register-eligibility determinations and the results of these consultations will be incorporated into the final study report.

FERC Comment 50:

Revise the draft study report to use consistent terminology with regard to National Register eligibility classifications and also add more discussion in this section on the proportion of sites that have been formally evaluated for inclusion in the National Register versus those that have not been formally evaluated.

UDWR Response:

The final study report will present consistent terminology of National Register eligibility classifications and include additional discussion on the proportion of sites that have been formally evaluated for inclusion in the National Register versus those that have not been formally evaluated.

FERC Comment 51:

Add a column to tables 5-1 and 5-3 that provides the dates of any formal determinations of eligibility. If possible, please include documentation of these formal determinations (e.g., copies of previous SHPO concurrence letters, etc.) in a consultation appendix.

UDWR Response:

The final study report will include a column in Tables 5-1 and 5-3 providing the dates of any formal determinations of National Register eligibility. Documentation of these formal determinations (e.g., copies of previous SHPO concurrence letters, etc.) will be provided in a consultation appendix.

FERC Comment 52:

In section 4.5.2, it is not clear if any subsurface archeological testing (i.e. shovel tests) was undertaken on documented sites to determine depth of deposits or site integrity. If such testing was undertaken, it is not discussed and the tested sites are not identified. If testing was not undertaken, there is no discussion of why not. Please revise the draft study report to identify which sites were tested, which were not, and provide a rationale. It would be helpful if tested sites were identified in tables 5-1 and 5-3. Please also add a column addressing the results of geoaerchaeological report where subsurface observations were made on some sites.

UDWR Response:

No subsurface archaeological testing was undertaken on documented sites to determine the depth of deposits or site integrity. The final study report will include a column in Tables 5-1 and 5-3 addressing the results of the geoaerchaeological report where subsurface observations were made on some sites.

FERC Comment 53:

In section 5.2.1, you state that there were 308 sites documented within the APE in Utah (206 prehistoric, 50 historic non-linear, 34 multi-component, and 18 historic linear). This conflicts with what is mentioned in the Abstract, which states that 302 sites were identified (see above comment). Additionally, table 5-1 depicts a total of 312 sites (some of these comprise multiple smaller sites). We subtracted the sites that could not be relocated in the field (14 sites) and were still unable to verify site counts. Additionally, when assigning these resources to the four categories, our counts are not consistent with those identified in the report. As mentioned above, please revise the draft study report to clarify site counts and types and add a column to table 5-1 and table 5-3 to clearly identify which sites are prehistoric, historic non-linear, historic linear, and multi-component resources. Ensure that references to site counts throughout the document (including appendices B and C) are consistent and that all numbers are correct.

UDWR Response:

The final study report will clarify site counts and types and include a column in Table 5-1 and Table 5-3 to clearly identify which sites are prehistoric, historic non-linear, historic linear, and multi-component resources. References to site counts throughout the document (including appendices B and C) will be checked and edited for consistency and to make sure all numbers are correct.

FERC Comment 54:

In section 5.2.1, you state that sites were analyzed for their archaeological integrity, but integrity is not further discussed in the document. Section 4.5.2 also states that condition and integrity were assessed for each site. Please revise the draft study report to provide this information and describe how integrity was assessed and considered during National Register evaluation. This should also be discussed as part of section 5.2.4 (eligibility recommendations discussion). It would also be helpful if you would add a column to table 5-1 and table 5-3 to provide a brief description of site integrity (e.g., excellent, good, fair, and poor, with definitions).

UDWR Response:

The final study report will provide condition and integrity information and describe how integrity was assessed and considered during National Register evaluation. The same information will be added to Section 5.2.4 (eligibility recommendations discussion). A column will be added to Table 5-1 and Table 5-3 to provide a brief description of site integrity (e.g., excellent, good, fair, and poor, with definitions).

FERC Comment 55:

In tables 5-1 and 5-3, it would be helpful if you would add another column to designate what component the respective sites contains, based on presence of diagnostic artifacts. For example, if site contains middle Archaic projectile points, Pueblo II ceramics, or nineteenth century bottle glass, then the respective components (and dates) should be listed in this column. If no diagnostics are found on site, then the column for that respective site should say something such as, "unidentified prehistoric", etc. In your revisions to the draft study report, please include this information in the two tables.

UDWR Response:

The final study report will include a column in Tables 5-1 and 5-3 to designate what component (and dates) the respective sites contain, based on presence of diagnostic artifacts.

FERC Comment 56:

Also in tables 5-1 and 5-3, you use the terms surface scatter and lithic scatter. In your revisions to the draft study report, please explain or clarify the difference between these two types of properties. Also, if the site is truly a surface manifestation, this should be listed as such in the column that addresses geoarcheology (see above comment).

UDWR Response:

The final study report will clarify the difference between the terms surface scatter and lithic scatter. Any surface sites identified will be listed in the geoarchaeology column added to Tables 5-1 and 5-3.

FERC Comment 57:

In table 5-1, for site 42KA6804, you mention that a lanceolate point (presumably Paleo Indian) was identified. Please revise the draft study report to clarify why this site is considered not eligible for the National Register.

UDWR Response:

The final study report will clarify why site 42KA6804 is considered not eligible for the National Register.

FERC Comment 58:

In section 5.2.2, you provide a discussion of the prehistoric sites identified in each of four study areas in Utah. Please revise your draft study report to include tables that synthesize site information and a corresponding general map. Having this information will help the reader get a better understanding of what types of site there are and how they are distributed throughout the area. Perhaps you could color-code high, medium, and low dense areas on a map as well.

UDWR Response:

Section 5.2.2 of the final study report will include tables that synthesize site information and a corresponding general map of the identified prehistoric sites in each of four study areas in Utah. The map will present site density information using a color-code for high, medium, and low dense areas.

FERC Comment 59:

Section 5.2.4 provides a discussion of National Register eligibility of identified sites. However, in order for us to better understand recommendations that have been made, please revise your draft Study Report to describe in more detail your reasoning for how sites were determined as either ineligible or eligible for inclusion in the National Register. For example, characteristics such as sites only having surface manifestations, low artifact density (quantify), lack of diagnostics or features could be used to determine that such sites are not eligible, while other sites with depth of deposits (use geoarchaeological information), high artifact densities, presences of features, and diagnostics would be reasons for other sites to be considered eligible. Also use the existing information about site-specific eligibility determinations that are noted in the site record forms. Keep in mind that the corresponding site tables should have the same elemental information. This section, and the corresponding site-specific information, will be vital for you to make your case to the respective land managers, SHPOs, and the Commission about which sites are or are not eligible. This also applies to sites located in Arizona and on the Kaibab-Paiute Indian Reservation.

UDWR Response:

Section 5.2.4 of the final study report will describe the reasoning for how sites were determined as either ineligible or eligible for inclusion in the National Register. The description will include existing information about site-specific eligibility determinations that are noted in the site record forms. The same revisions will be made regarding sites located in Arizona and on the Kaibab-Paiute Indian Reservation.

FERC Comment 60:

Do not only rely on criterion D for prehistoric sites because the pending ethnographic information could be applied to some of the aboriginal occupations that make some of the "prehistoric" sites eligible under criterion A. Some discussion on this should be added in section 5.2.4.

UDWR Response:

Section 5.2.4 of the final study report will remove criterion D for eligibility determinations of “prehistoric” sites that may be determined eligible under criterion A resulting from the pending ethnographic information, and applicable discussion will be added to Section 5.2.4.

FERC Comment 61:

In section 5.3.2, you state that 143 cultural resource sites were identified in Arizona (excluding Kaibab-Paiute Indian Reservation lands). Table 5-3 only lists 107 resources, and we counted 105 from appendix C (Page Area – 24, Johnson – 34, Pipe Springs – 28, Vermilion Cliffs – 19). Please revise the draft study report to clarify or correct site counts.

UDWR Response:

Section 5.3.2, Table 5-3 and Appendix C of the final study report will clarify site counts and make sure consistent information is presented throughout the study report.

FERC Comment 62:

Table 5-3 contains a site description column. However, the artifacts contained at Arizona sites should be quantified as they are in table 5-1 involving Utah sites. Please revise the draft study report to ensure that both site tables in the two states are the same. For example, there is no geoarcheological column in table 5-3.

UDWR Response:

The final study report will include the same information in Tables 5-1 and 5-3 for both states.

FERC Comment 63:

Section 5.3.5 provides a discussion of National Register eligibility of identified sites in Arizona. Please revise the draft study report to describe in more detail your reasoning for how sites were determined as either ineligible or eligible for inclusion in the National Register, as in section 5.2.4.

UDWR Response:

Section 5.3.5 of the final study report will describe the reasoning for how sites were determined as either ineligible or eligible for inclusion in the National Register. The description will include existing information about site-specific eligibility determinations that are noted in the site record forms.

FERC Comment 64:

Section 6.2 provides a description of the methodology used to analyze project-related impacts to identified sites. As with sections 5.2.4 and 5.3.5, there is a lot of decision-making resting on this part of the report. Although analytical criteria are used to back up the site impact methodology, it would be useful to provide a generalized APE map that depicts areas where recorded site densities are highly correlated with areas thought to contain a high probability of buried cultural deposits relative to the project alignments. Please include such a map when you revise the draft study report. Also, please add a discussion about other project effects related to visual, audible, and air quality factors to sites within the 2-mile -wide corridor from the APE center line. You may need to note that additional information from the ethnographic reports will need to be considered, and that other resource sections (e.g., air quality, aesthetics) also will address these effects on cultural resources.

UDWR Response:

Section 6.2 of the final study report will include a generalized APE map depicting areas where recorded site densities are highly correlated with areas thought to contain a high probability of buried cultural deposits relative to the project alignment alternatives. The final study report will include discussion about

visual, audible and air-quality effects on cultural resources within the 2-mile-wide corridor comprising the APE.

FERC Comment 65:

It appears that section 6.2 and table 6-3 are missing site 42KA3415, which is shown as not being relocated in table 5-1. In your revisions to the draft study report, please clarify or correct.

UDWR Response:

Section 6.2 and Table 6-3 of the final study report will clarify information on site 42KA3415.

FERC Comment 66:

Revise appendix B of your Study Report to provide a more detailed discussion of the results of the Utah Class III pedestrian inventory. This appendix should discuss, at a minimum, how individual National Register evaluations were undertaken (including how integrity was assessed and used in the evaluations) and provide summaries of existing impacts observed at each site. The main body of the Class III report would then provide a summary of these results.

UDWR Response:

Appendix B of the final study report will provide a discussion of Utah Class III pedestrian survey results, including how individual National Register evaluations were undertaken, how integrity was assessed and used in the evaluations, and summaries of existing impacts observed at each site. The main body of the Class III study report will provide a summary of the results described in Appendix B.

FERC Comment 67:

Figure B.3-3 is missing from section B.3.2.10 of appendix B. Please include this figure in your revised study report.

UDWR Response:

The final study report will include Figure B.3-3 in Section B.3.2.10 of Appendix B.

FERC Comment 68:

The heading for section C.1.2 of appendix C implies that this section addresses linear resources and their associated features only, but the first paragraph discusses historic trash scatters. Are these the eight historic-era sites that were identified? Please clarify in your revised study report or perhaps change the heading to reflect that this section addresses all historic-era resources, including non-linear ones.

UDWR Response:

The final study report Appendix C will clarify the eight historic-era sites identified and section labeling of linear and non-linear historic-era resources.

FERC Comment 69:

As with Appendix B, please revise appendix C to discuss, at a minimum, how individual National Register evaluations were undertaken (including how integrity was assessed and used in the evaluations) and provide summaries of existing impacts observed at each site. The main body of the Class III report would then provide a summary of these results.

UDWR Response:

Appendix C of the final study report will provide a discussion of Arizona Class III pedestrian survey results, including how individual National Register evaluations were undertaken, how integrity was assessed and used in the evaluations, and summaries of existing impacts observed at each site. The main

body of the Class III study report will be revised to provide a summary of the results described in Appendix C.

FERC Comment 70:

Appendix I provides the results of geoarcheological studies undertaken at 58 sites within the project APE. However, there is no discussion of how these sites were selected for assessment. Please revise this appendix of your study report to discuss criteria that were used to determine which sites were assessed.

UDWR Response:

Appendix I of the final study report will provide a discussion of the criteria used to determine which sites were assessed for geoarcheological studies.

FERC Comment 71:

While appendix J provides a discussion of sites identified within the APE on the Kaibab-Paiute Indian Reservation, this appendix should discuss how many new sites were recorded versus how many were previously recorded, discuss how individual National Register evaluations were undertaken (including how integrity was assessed and used in the evaluations), and provide summaries of existing impacts observed at each site. Please provide this information in your revised Initial Study Report. The main body of the Class III report would then provide a summary of these results.

UDWR Response:

Appendix J of the final study report will provide a discussion of how many new sites were recorded versus how many were previously recorded, how individual National Register evaluations were undertaken, how integrity was assessed and used in the evaluations, and summaries of existing impacts observed at each site. The main body of the Class III study report will be revised provide a summary of the results described in Appendix J.

Draft Study Report 4 – Geology and Soil Resources

Rutherford Comment 14:

...I reviewed the “Paleoseismic Investigation and Long-term Slip History of The Hurricane Fault in Southwestern Utah” by William R. Lund, Michael J. Hozik, and Stanley C. Hatfield to get a better understanding of the Hurricane Fault (which the MWH studies euphemistically term “Hurricane Cliffs”). Lund is with the Utah Geological Survey, Hozik is with The Richard Stockton College of New Jersey, and Hatfield is with Southwestern Illinois College. Given the information provided above from the Lund study, I challenge what the draft study plan #4 asserts for the south alternative (information for others reads similarly).

UDWR Response:

Your comment has been noted. The fault movement and seismic activity text in Sections 4.3, 4.4 and 4.6 and in the Executive Summary will be clarified in the Final Geology and Soil Resources Study Report to include discussion of the Hurricane fault and Sand Mountain – West Grass Valley fault.

FERC Comment 3:

Include estimated quantities of excavation, backfill and acreage of potential borrow and spoil sites that would allow the reader to determine if sufficient borrow and spoil sites have been identified.

UDWR Response:

The final study report will include estimated quantities of excavation, backfill and acreage of potential borrow and spoil sites.

FERC Comment 4:

Include or append the technical report that summarizes bedrock excavation quantities and provides the breakdown in terms of blasted, ripped, and tunneled bedrock.

UDWR Response:

The final study report will include estimated bedrock excavation quantities and the breakdown of estimated blasted, ripped, and tunneled bedrock.

FERC Comment 5:

It is not clear from the maps and text, including Tables 3-2 and 3-15, where the tunnels and shafts would be located and what type of bedrock is anticipated in these areas.

UDWR Response:

The final study report text, figures and Tables 3-2 and 3-15 will clarify where the tunnels and shafts would be located and what type of bedrock is anticipated in these areas.

FERC Comment 6:

The coring information at the Lake Powell intake should be included in the final report.

UDWR Response:

The final study report will include coring information and data collected at the LPP Project intake site.

FERC Comment 7:

Revise the draft study report to include more detailed description of the BMPs you propose to use during Project construction, operation, and maintenance.

UDWR Response:

The final study report will include more detailed descriptions of the BMPs proposed for use during LPP Project construction, operation and maintenance.

FERC Comment 8:

Provide or reference the results of the field investigation (coring, deep boring, geophysical testing, and observation wells) anticipated in section 4.6.2.2 of the Revised Study Plan.

UDWR Response:

The final study report will include the results of the field investigations performed and explain why some field investigations were not performed as described in Section 4.6.2.2 of the approved study plan.

FERC Comment 9:

Revise the report in accordance with section 4.2.1 of the Revised Study Plan to include a determination of where groundwater infiltration may occur into tunnel shafts or excavation trenches in sufficient quantities to require dewatering, an estimate of how much water will need to be removed, and the means of removal.

UDWR Response:

The final study report will include a determination of where groundwater infiltration may occur into tunnel shafts or excavation trenches in sufficient quantities to require dewatering, an estimate of how much water will need to be removed, and the means of removal.

FERC Comment 10:

Estimate the rock strength characteristics for foundations at pump stations and hydroelectric plant sites in accordance with section 4.2.1 of the Revised Study Plan. If rock cores were taken at these locations, the data should be provided in an appendix, and an interpretation of these data with respect to rock strength and quality should be included.

UDWR Response:

The final study report will include estimates of rock strength characteristics for foundations at pump stations and hydroelectric plant sites. The BLM did not allow collection of subsurface geological data from Federal lands they administer except in the vicinity of the Hurricane Cliffs.

FERC Comment 11:

Identify permitting requirements pertaining to removal and disposal of minerals associated with pipeline excavation and/or installation in accordance with section 4.2.1 of the Revised Study Plan.

UDWR Response:

The final study report will identify permitting requirements pertaining to removal and disposal of minerals associated with pipeline excavation and/or installation.

FERC Comment 12:

In section 4.4.6 of the Revised Study Plan, you propose to recommend mitigation measures for problems and hazards associated with geologic and soils features. The Study Plan objectives include erosion but the draft study report does not clearly define erosion potential and there is little discussion of the effects of project construction on the existing soil conditions and processes. Revise the report to include estimates of the relative proportion of disturbed area, borrow, and spoil materials to help in this regard.

UDWR Response:

The final study report will include estimates of the relative proportion of disturbed area, borrow and spoil materials, erosion potential, effects of project construction on existing soil conditions and processes, and measures to mitigate LPP Project impacts on geologic and soil features.

FERC Comment 13:

Provide soil and rock strength characteristics relative to their suitability for the Lake Powell Intake and Hurricane Cliffs facility foundations in accordance with section 4.4.6 of the Revised Study Plan.

UDWR Response:

The final study report will provide soil and rock strength characteristics relative to their suitability for the LPP Project intake and Hurricane Cliffs facility foundations.

KBPI Comment 29:

Section 1.5.2 Identified Issues - Section 4.3 of Study Plan 4 requires that Draft Report 4 address the resource management goals of Indian tribes. Draft Report 4 must explicitly identify culturally significant sites and similar resources as potentially being affected by blasting. By failing to do so, Draft Report 4 is noncompliant with Study Plan 4.

UDWR Response:

The final study report will include a description of consultation with potentially affected Indian tribes and include applicable resource management goals of the Indian tribes. Please refer to the response to KBPI comment 4.

KBPI Comment 30:

Section 1.6 Impact Topics - Section 4.3 of Study Plan 4 requires that Draft Report 4 address the resource management goals of Indian tribes. Draft Report 4 fails to determine whether blasting and other construction activities will affect culturally significant sites and similar resources, which renders Draft Report 4 noncompliant with Study Plan 4.

UDWR Response:

The final study report will include a description of consultation with potentially affected Indian tribes and include applicable resource management goals of the Indian tribes. Please refer to the response to KBPI comment 4.

KBPI Comment 31:

Section 2.3 Data Used - Draft Report 4 includes an extensive list of data sources, Draft Report 4 at 2-2 to 2-4, but fails to include any tribal sources of data or indicate whether any attempt was made to obtain tribal data. This failure directly contravenes section 4.3 of Study Plan 4, which states that Draft Report 4 will address tribal resource management goals regarding groundwater. Draft Report 4 is, as a result, noncompliant with Study Plan 4.

UDWR Response:

The final study report will include tribal sources of geological and soils data applicable to the LPP Project alignments. The comment incorrectly states the agency resource management goals in Section 4.3 of the approved study plan.

KBPI Comment 32:

Section 2.3 Data Used - Draft Report 4 states that “complete references are found in Chapter 8,” Draft Report 4 at 2-2, but there is no Chapter 8.

UDWR Response:

The final study report will clarify that complete references are found in the Reference section.

KBPI Comment 33:

Section 2.4.6 Impacts on Important Structures or Mineral Resources - Draft Report 4 states that important features “may be impacted by pipeline construction,” Draft Report 4 at 2-5, but fails to mention culturally significant sites and similar resources as potentially being affected. Section 4.3 of Study Plan 4 requires that the resource management goals of “Indian tribes” be addressed. Draft Report 4 fails to determine whether blasting and other construction activities will affect culturally significant sites and similar resources, which renders Draft Report 4 noncompliant with Study Plan 4.

UDWR Response:

The final study report will include a description of consultation with potentially affected Indian tribes and include applicable resource management goals of the Indian tribes. Please refer to the response to KBPI comment 4.

KBPI Comment 34:

Section 3.1.2 Area of Potential Effect - Draft Report 4 states that the corridor extends “1,000 feet on each side of each alignment for evaluating potential impacts on important structures and mineral resources,” Draft Report 4 at 3-1, but fails to mention culturally significant sites and similar resources as potentially being affected. Section 4.3 of Study Plan 4 requires that Draft Report 4 address the resource management goals of Indian tribes. Draft Report 4 fails to evaluate whether blasting and other construction activities will impact culturally significant sites and similar resources within the corridor, which renders Draft Report 4 noncompliant with Study Plan 4.

UDWR Response:

The final study report will include a description of consultation with potentially affected Indian tribes and include applicable resource management goals of the Indian tribes. Please refer to the response to KBPI comment 4.

KBPI Comment 35:

Section 3.2.1.6 Borrow and Spoil - Table 3-13 of Draft Report 4 indicates that at least one borrow and spoil site is located within the Kaibab Tribe's Reservation and that it is not suitable for Project use, Draft Report 4 at 3-32, but fails to indicate how this site was identified or determined to be unsuitable. Nor does Draft Report 4 state whether the analyst consulted with the Kaibab Tribe regarding this issue, or regarding the overall resource management goals of the Kaibab Tribe. Section 4.3 of Study Plan 4 states that the resource management goals of Indian tribes will be addressed. Draft Report 4 fails to explain its determination that the Reservation borrow site was unsuitable, which renders Draft Report 4 noncompliant with Study Plan 4.

UDWR Response:

The final study report will clarify how the borrow and spoil site located within the Kaibab-Paiute Indian Reservation was identified or determined unsuitable for LPP Project use. Regarding consultation with the Kaibab Band of Paiute Indians, please refer to the response to KBPI comment 3.

KBPI Comment 36:

Section 4.1 Significance Criteria - Draft Report 4 identifies seven impacts associated with the Project that will be "significant" if they occur, Draft Report 4 at 4-1 to 4-2, but fails to consider impacts to culturally significant sites and similar resources. Section 4.3 of Study Plan 4 requires that Draft Report 4 address the resource management goals of Indian tribes. Draft Report 4 fails to identify potential impacts to culturally significant sites and similar resources as significant, which renders Draft Report 4 noncompliant with Study Plan 4.

UDWR Response:

The final study report will include a description of consultation with potentially affected Indian tribes and include applicable resource management goals of the Indian tribes. Please refer to the response to KBPI comment 4.

KBPI Comment 37:

Section 4.3 South Alternative Impacts - Draft Report 4 applies the significance criteria to the South Alternative pipeline route, Draft Report 4 at 4-2 to 4-5, but fails to mention culturally significant sites and similar resources as potentially being affected. Section 4.3 of Study Plan 4 requires that Draft Report 4 address the resource management goals of Indian tribes. Draft Report 4 fails to evaluate whether blasting and other construction activities will impact culturally significant sites and similar resources along the South Alternative route, which renders Draft Report 4 noncompliant with Study Plan 4.

UDWR Response:

The final study report will include a description of consultation with potentially affected Indian tribes and include applicable resource management goals of the Indian tribes. Please refer to the response to KBPI comment 4.

KBPI Comment 38:

Section 4.4 Existing Highway Alternative Impacts - Draft Report 4 applies the significance criteria to the Existing Highway Alternative pipeline route, Draft Report 4 at 4-5 to 4-7, but fails to mention culturally significant sites and similar resources as potentially being affected. Section 4.3 of Study Plan 4 requires

that Draft Report 4 address the resource management goals of Indian tribes, thus, Draft Report 4 must evaluate whether blasting and other construction activities will impact culturally significant sites and similar resources along the Existing Highway Alternative route. Further, the Existing Highway Alternative route crosses tribal lands, so Draft Report 4 must describe all efforts to consult with the Kaibab Tribe regarding potential impacts, including the results of such consultation. There is no evidence or statement that the analyst consulted with the Kaibab Tribe, which renders Draft Report 4 noncompliant with Study Plan 4.

UDWR Response:

The final study report will include a description of consultation with potentially affected Indian tribes and include applicable resource management goals of the Indian tribes. Please refer to the response to KBPI comment 4. Regarding consultation with the Kaibab Band of Paiute Indians, please refer to the response to KBPI comment 3.

KBPI Comment 39:

Section 4.4.1.7 Borrow and Spoil - Draft Report 4 states that “[i]mpacts associated with borrow and spoils for the Existing Highway Alternative would be the same as for the South Alternative. Therefore no significant impacts would occur.” Draft Report 4 at 4-6. With respect to borrow and spoil sites along the Southeast Corner Alternative, however, section 4.5.1.7 of Draft Report 4 states that the spreading of spoils “will be in accordance with practices that would be reviewed and approved by the governing public agencies and Indian tribe, including BLM, NPS, Kaibab Band of Paiute Indians, UDOT and ADOT as well as on private lands.” Draft Report 4 at 4-8. Section 4.3 of Study Plan 4 requires that Draft Report 4 address the resource management goals of Indian tribes. Draft Report 4 fails to make the same assurances regarding tribal approval with respect to the Existing Highway Alternative route, which also crosses tribal lands, which renders Draft Report 4 noncompliant with Study Plan 4.

UDWR Response:

Section 4.4.1.7 of the final study report will clarify that the spreading of spoils will be in accordance with practices that would be reviewed and approved by the governing public agencies and Indian tribe, including BLM, NPS, Kaibab Band of Paiute Indians, UDOT and ADOT as well as on private lands.

KBPI Comment 40:

Chapter 7 Cumulative Impacts - Other than for the “No Action Alternative,” which “would have no cumulative impacts,” Draft Report 4 indicates that “cumulative impacts analysis is pending completion for identification of inter-related projects that would cause cumulative impacts with the LPP project.” Draft Report 4 at 7-1. The cumulative impacts analysis must be completed as soon as possible and the Kaibab Tribe hereby requests that it be allowed additional time to submit comments on cumulative impacts.

UDWR Response:

The UDWR is completing the cumulative effects analysis and will incorporate it into the final study report.

BLM Comment 97:

04 Draft Geology and Soil Resources Study Report

This is primarily a geotechnical report. It would, however, be beneficial if there were pipeline construction details provided here, so that the potential effects to soils could be better evaluated. These would include specifics such as the width and depth of trench construction, the width of total disturbance, the handling of surface soils, and finished surface elevations for drainage.

UDWR Response:

Figures 4-1 and 4-2 in the draft Land Use Plans and Conflicts study report depict generalized cross sections of the pipeline construction adjacent to a highway and not adjacent to a highway. These figures show right-of-way widths and temporary construction easement widths, which constitute the total disturbance width of 120 feet. The trench construction width and depth varies with the type of soil and rock material and local topographical variation; the average trench depth ranges from 12 to 15 feet. Surface soils would be stripped as available and stockpiled on-site for use during construction site restoration. The finished soil surface over the backfilled pipeline trench would match the existing ground. The final study report will include this information.

BLM Comment 98:

Pg. 2-1 Assumptions – Disposal of spoils will be allowed on-site by spreading of excess excavated materials in a thin layer across the pipeline right-of-way.

UDWR Response:

Your comment has been noted.

BLM Comment 99:

Pg. 3-25 – There will be huge impacts to materials pits, and that should be better spelled out in the document as best as possible, so that impacts may be analyzed. Existing mineral material borrow sites along the corridor could serve to dispose of excess excavated trench materials (spoils) and/or borrow areas for pipeline bedding. This is the preferred method of disposal of excess spoil materials.

UDWR Response:

Please refer to the response to FERC comment 3. Sections 4.3.1.7, 4.4.1.7, 4.5.1.7 and 4.6.1.7 in the final study report will explain the estimated impacts on material pits for borrow and spoil disposal.

BLM Comment 100:

Pg. 4-4 - It is indicated that the excess spoil material to be spread could result in a thickness of up to 1 foot - The spoils are not equivalent plant growth medium. They would be difficult to re-vegetate and would elevate the finished surface potentially altering surface drainage. If revegetation is not achieved, the surface would not be stable and then subject to soil and wind erosion as well as visual impacts. The existing surface soils to a depth of 6 inches minimum preferably to 12 inches should be stripped over areas of disturbance and stockpiled. These soils would be respread at conclusion to provide surface soils for revegetation. The spoils from the excavation could be spread below this layer of topsoil, but the finished surface elevations should be in-line with pre-disturbance elevations to maintain existing drainage.

UDWR Response:

The final study report will clarify the disposal of excess spoil material along the pipeline ROW and measures that would be implemented to control soil erosion and to provide for revegetation. Please refer to the response to BLM comment 97 regarding construction site restoration and finished surfaces over the backfilled pipeline trench.

BLM Comment 101:

Pg. 4-5 There are 5 locations identified along the corridor with unstable slopes. These sites and any other sloped sites should be evaluated for the need of Best Management Practices to provide surface stability during reclamation.

UDWR Response:

The final study report will clarify the need for BMPs and/or mitigation measures that would provide surface stability in areas with unstable slopes during construction site reclamation under all action alternatives.

Draft Study Report 5 – Groundwater Resources

FERC Comment 14:

Provide a quantitative analysis of the effect of recharge on groundwater levels and aquifer hydraulic conditions at Sand Hollow Reservoir, southwestern Cedar Valley, and Hurricane Cliffs afterbay. Quantify recharge capacity, increased groundwater, hydraulic conductivity, and pumping capacity at the potential recharge locations identified in the report. The report is lacking data to support the notion that recharge facilities will effectively increase pumping capacity. Revise the study report to include a quantitative analysis of the effect of recharge on groundwater resources.

UDWR Response:

The final study report will include a quantitative analysis of the effects of recharge on groundwater resources, including recharge capacity, increased groundwater levels, hydraulic connectivity, and pumping capacity as applicable at Sand Hollow Reservoir, southwestern Cedar Valley and the proposed Hurricane Cliffs afterbay site.

KBPI Comment 41:

Section 2.3 Data Used - Draft Report 5 includes an extensive list of data sources, Draft Report 5 at 2-2, but fails to include any tribal data or indicate whether any attempt was made to obtain tribal data. This failure contravenes section 5.3 of Study Plan 5, which states that tribal resource management goals regarding groundwater will be addressed. Further, section 5.4.3 of Study Plan 5 identifies numerous issues and data needs. Draft Report 5 should clarify whether the data sources used satisfied the previously identified data needs.

UDWR Response:

The final study report will include tribal sources of groundwater data applicable to the LPP Project alignments. The comment incorrectly states the agency resource management goals in Section 5.3 of the approved study plan. The approved study plan at Section 5.3 states the "...study plan will address resource management goals of the ... Indian tribes with jurisdiction over the resources to be studied." The final study report will clarify whether or not the data source used satisfied the previously identified data needs, and if not, why the previously identified data need is not relevant to the LPP Project as it is currently planned.

KBPI Comment 42:

Section 2.3 Data Used - Draft Report 5 states that "complete references are found in Chapter 8," but there is no Chapter 8.

UDWR Response:

The final study report will clarify that complete references are found in the Reference section.

KBPI Comment 43:

Section 3.2.1.1.1 Stream Channel Crossings - Draft Report 5 (including Table 3-1) lists "stream crossings and washes along the alignments and the estimated probability of encountering groundwater during construction, requiring dewatering," Draft Report 5 at 3-1 to 3-2, but fails to include stream and/or wash crossings along the Existing Highway Alternative that are within the Kaibab Tribe's

Reservation. Draft Report 5 fails to address Sand Wash, for example, but addresses Bitter Seeps Wash, which is formed by the confluence of Sand Wash and Two-Mile Wash and would be crossed by the South Pipeline Alternative just outside of the Reservation's boundaries. Section 5.3 of Study Plan 5 states that Draft Report 5 must address tribal resource management goals regarding groundwater. Section 5.4.3 of Study Plan 5 states that Draft Report 5 will address "[g]roundwater levels at locations where the pipeline would cross streams." This failure to address stream and/or wash crossings within the Reservation directly contravenes Study Plan 5, and renders Draft Report 5 noncompliant with the study plan.

UDWR Response:

Section 3.2.1.1.1 of the final study report will address groundwater levels where the Existing Highway Alternative would cross Cottonwood Wash, Sand Wash and other wash crossings on the Kaibab-Paiute Indian Reservation, which were dry where they cross under Arizona State Route 389 during every field reconnaissance visit and vehicle trip across the Kaibab-Paiute Indian Reservation on Arizona State Route 389 throughout the study. The comment incorrectly states the agency resource management goals in Section 5.3 of the approved study plan. The approved study plan at Section 5.3 states the "...study plan will address resource management goals of the ... Indian tribes with jurisdiction over the resources to be studied."

KBPI Comment 44:

Section 3.2.1.4 Water Quality - Draft Report 5 directly contravenes Study Plan 5 by failing to either address groundwater quality at the Afterbay location or explain why it was not addressed, and is, therefore, noncompliant with Study Plan 5.

UDWR Response:

The comment is incorrect. The best available information was used to prepare Section 3.2.1.4 of the draft study report, which stated "No water quality data were identified for groundwater in the vicinity of the Afterbay. Therefore it is not possible to identify baseline conditions at this location."

KBPI Comment 45:

Section 4.3.2.4 Groundwater Recharge - Draft Report 5 directly contravenes Study Plan 5 by failing to either address groundwater quality at the Afterbay location or explain why it was not addressed, and is, therefore, noncompliant with Study Plan 5.

UDWR Response:

The comment is incorrect. The best available information was used to prepare Section 4.3.2.4 of the draft study report, which stated "Recharge at the Afterbay 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 significant impacts are expected to occur."

KBPI Comment 46:

Section 4.4 Existing Highway Alternative Impacts - Draft Report 5 concludes that no significant impacts would occur to shallow groundwater, groundwater recharge, groundwater-surface water interactions and water quality during the construction or operation of the pipeline, Draft Report 5 at 4-3 to 4-4, but it fails to indicate whether the Kaibab Tribe was consulted in making this determination. This failure contravenes section 5.3 of Study Plan 5, which states that Draft Report 5 must address tribal resource management goals regarding groundwater. Draft Report 5 is, therefore, noncompliant with Study Plan 5.

UDWR Response:

Please refer to the response to KBPI comment 3 regarding consultation with the Kaibab Band of Paiute Indians. The comment incorrectly states the agency resource management goals in Section 5.3 of the

approved study plan. The approved study plan at Section 5.3 states the "...study plan will address resource management goals of the ... Indian tribes with jurisdiction over the resources to be studied."

KBPI Comment 47:

Chapter 7 Cumulative Impacts - Other than for the "No Action Alternative," which "would have no cumulative impacts," Draft Report 5 indicates that "cumulative impacts analysis is pending completion for identification of inter-related projects that would cause cumulative impacts with the LPP project." Draft Report 5 at 7-1. The cumulative impacts analysis must be completed as soon as possible and the Kaibab Tribe hereby requests that it be allowed additional time to submit comments on the cumulative impacts analysis.

UDWR Response:

The UDWR is completing the cumulative effects analysis and will incorporate it into the final study report.

BIA Comment 102:

Report 5 Groundwater – Sec. 2.2 - Are the temporary groundwater wells to be located within the pipeline ROW or on adjacent lands? The Kaibab Tribe and BIA will need to be appropriately notified and approval provided prior to any well drilling on Indian Trust lands. If on Indian Trust lands, the wells should be abandoned per applicable tribal requirements. Will the temporary wells also be needed for transmission line alignments?

UDWR Response:

Temporary groundwater wells used to supply construction water most likely would be located on lands adjacent to the ROW and would utilize existing wells where available. Temporary groundwater wells would not be needed for transmission line alignments because of the limited disturbance areas for tower bases and access roads.

BIA Comment 103:

Report 5 – Groundwater – Secs 4.7.1 & 4.7.2 - Groundwater Recharge – A more detailed explanation is needed to support the estimated significant long-term impacts on the groundwater recharge. Is there a technical study that details these impacts, if so, should reference it.

UDWR Response:

The final study report will include a reference to the detailed explanation to support the estimated significant long-term impacts on groundwater recharge in Sections 4.7.1 and 4.7.2. Please refer to the response to USFWS comment 18 for additional information.

USFWS Comment 19:

Section 7: Cumulative Impacts: This section should include the possible impairment of water quality due to urbanization for all scenarios. Known effects of urbanization include degradation of water quality due to bacteria, nutrients, and heavy metals.

UDWR Response:

UDWR disagrees with the comment. Please refer to the response to USFWS comment 1. The comment incorrectly assumes the LPP Project would directly or indirectly cause urban development to occur.

Draft Study Report 6 – Land Use Plans and Conflicts

Rutherford Comment 15:

Since the focus of this study is “growth” and that is a key issue that is driving this project – along with excessive consumption – I will just comment on pieces of the report. The study report acknowledges that “management of growth” on the part of the area’s leaders could change the outcome of the study findings. In fact, the study is based on past growth conditions, which have been excessive in the opinion of many. A more effective job of actually “managing” the growth in the area could result in not needing this expensive project – a project that will encourage more growth since growth is required to help pay for the project!

UDWR Response:

Your comment has been noted.

Rutherford Comment 16:

The following excerpt from the draft study report is the most telling for me. I read this and think that the No LP Water Alternative could be the answer to our prayers! Rather than expecting – but not receiving – some effort by local and state politicians to actually “manage” growth, having no LP water would do their job for them. They can then continue business as usual and allow natural forces (i.e., limited water resources) to help people determine if they want to live in the area or not.

UDWR Response:

Your comment has been noted.

Rutherford Comment 17:

The pressures – described in ES-3.2 – to convert agricultural irrigation water to raw water supply for treatment by reverse osmosis processes will not diminish just because the pipeline is not built. After the pipeline water has been exhausted due to population buildout – around 2060 apparently – the pressure will again be brought to bear, so this study finding is without merit.

UDWR Response:

Your comment has been noted.

Rutherford Comment 18:

The dire consequences presented in the following excerpt from the draft study report reads like something directly out of the water district’s literature and ongoing propaganda about not building the pipeline – draconian results, no hope in sight, we’re all doomed! This is just the district and the State of Utah kicking the can down the road for the future generations that will face the same tough decisions we’re facing now, only they will be saddled with a larger-than-needed population dependent on a scarce resource and repaying a huge bill.

UDWR Response:

Your comment has been noted.

Rutherford Comment 19:

The following provides an interesting bit of history on how and why growth has occurred in our area. It mentions that “people began to migrate from colder climates to a warmer year-round climate.” What it fails to address is the issue of “limited resources.” Prior to around 2006, in my experience, the topic of water limitations was not in the headlines. People had no “reason” to not want to move to a warm, sunny location. The problem with the study plan assumption is just that: they “assume” the growth will

continue unabated even with the predictions being made about demands on the Colorado River, climate change and the limited water in the area by virtue of it being a desert.

UDWR Response:

Your comment has been noted.

Rutherford Comment 20:

While reading through the draft study plan, there was consistent mention of Xeriscaping causing problems: too much dust, no water to take care of the dust, etc. Considering that we live in a desert environment, it seems disingenuous to say that Xeriscaping will have a negative impact on this area and that we need more water for more vegetation. In fact, Xeriscaping will provide more ground cover than the existing desert vegetation that exists all around us. Xeriscaping should be compared to the natural existing environment not some man-made environment that serves to be used to justify this project.

UDWR Response:

Your comment has been noted. Impact analysis involves estimating the difference between the projected conditions proposed for change (environmental consequences) to the existing conditions (affected environment). There is no basis for comparing xeriscape landscapes with existing desert vegetation cover because existing desert vegetation cover would not change under the No Lake Powell Water Alternative.

FERC Comment 15:

Quantify the amount of construction waste anticipated from the project and the amount each disposal facility could handle to allow the reader to determine if the appropriate number of waste disposal sites has been identified.

UDWR Response:

The final study report will include the estimated quantity of construction waste anticipated from the project and the amount each disposal facility could handle to demonstrate the appropriate number of waste disposal sites has been identified.

LPPC Comment 1:

The 2008 Study Plan's purpose was to analyze the impacts and land use effects the Lake Powell Pipeline would have on the region. The report misinterpreted key data, skipped essential steps and varied from the study plans intent. In addition, the report was conducted based on anomalous conditions for growth assumptions. We outline our basis for asserting that this report is not complete below.

6.2 Study Description and Objective

Source identified in the land use analysis pertaining to development and growth will be utilized in the socioeconomic study as well as other resource area studies evaluation project effects on growth.

Comment. *The over-all basis and approach to this growth study report is flawed. Between Scenario 1 and Scenario 2B available lands are simply reduced by environmental and other development constraints, these constrains, soils, rock out crops, endangered species, flood plains , proximity of services, washes, etc, should all be considered up front when determining the amount of land available for development. Therefore, available lands should begin with 2-B, leveling the unfavorable lands permanently unavailable in Scenario 3.*

UDWR Response:

Section 4.3.2 states that "Scenario 1 excludes the lands described above" referring to all of the exclusions listed in the first paragraph on page 4-19. Between Scenario 1 and Scenario 2, the draft study report states

on page 4-22 “Developable land within the growth study area not connected to municipal boundaries, not proximate to existing or planned transportation networks, and not having infrastructure to support new development are excluded...” Scenario 2A excludes land with high hazard rock and soil characteristics. Scenario 2 incorporates smart growth principles that are not included in Scenario 1, with Scenario 1 representing the potential for urban sprawl if all the developable land is developed. The only difference between Scenarios 2A and 2B is exclusion of land with moderate hazard rock and soil characteristics under Scenario 2B.

LPPC Comment 2:

The second flaw with the study report is that all scenario's assume that the growth number is a constant and that only density would change based on non-available lands. If this document is to create scenarios for growth that are to be used as a basis for deciding how much potential water will be need by the county and to justify the construction of a pipeline, the study should be creating scenarios that alter density, land use patterns, and possibly waster use practices.

UDWR Response:

The draft study report is not intended to create scenarios for growth; it represents the best estimate based on historical records and professional judgement, and is used as a basis for deciding how much water would be needed by the county population as it increases in the future. The draft study report analyzes different growth scenarios that could occur based on GOPB population projections independent of whether or not the LPP Project is constructed and operated. The growth analysis does not assume a constant population growth rate within the growth study area; the GOPB projected population growth rates range from 5.59 percent annual growth rate to 1.93 percent annual growth rate, refer to Section 3.1.1.1.

LPPC Comment 3:

Third, this study report assumes a growth rate as a constant far into the future. As discussed previously, this protection is based on inflated numbers. Further, because the county population was at such a rapid rate of increase at the time population numbers were gathered it is faulty to assume that this number would remain a constant for 50 years and beyond. Instead the study could use that figure as a worst case scenario, and then demonstrate other, lesser growth rate scenarios to determine the correct growth demand on the St George region.

UDWR Response:

The growth analysis does not assume a constant population growth rate within the growth study area; the GOPB projected population growth rates range from 5.59 percent annual growth rate to 1.93 percent annual growth rate from 2020 through 2060. The GOPB population projections have historically underestimated the population growth in Washington County (refer to Section 3.1.1.1 and Figure 3-1 in the draft Water Needs Assessment study report). The GOPB population projections are based on long-term data and are not significantly influenced by short-term fluctuations, including rapid growth rates or slower growth rates. The growth analysis is not intended to determine the growth demand on the St. George metropolitan area; it analyzes growth scenarios based on land use preference and conflicts between different types of land uses that are suitable for urban and suburban development.

LPPC Comment 4:

The study report is not sufficient because the Applicant varied from the specific requirements of the study plan in that the effects of growth would also be in the Socioeconomic Study Report #10 and other resource area studies that would be related and the approved studies were not conducted as provided for in the approved study plan.

UDWR Response:

The draft study reports for Socioeconomics and Water Resource Economics, Special Status Plant Species and Noxious Weeds Assessment, Special Status Wildlife Species and other applicable draft study reports will be revised to include results of and references to the growth analysis presented in the draft Land Use Plans and Conflicts study report.

LPPC Comment 6:

We echo the comments of the FWS and emphasize the importance of analyzing the impacts of a new water supply on land use and regional growth. In their scoping comments, the Environmental Protection Agency (EPA) offered to do an analysis on the environmental impacts of population growth.

UDWR Response:

Please refer to the response to USFWS comment 1.

LPPC Comment 7:**6.3.1.9 Growth Trends Analysis**

To extent possible, the growth analysis will rely and be documented based upon published plans and polices addressing growth issues. It is recognized that the types of growth and how and where growth will be a result of current and future land use ordinances, building and zoning codes that get formally adopted through State, county, and municipal general and comprehensive planning processes.

Comment *The approved studies were not conducted as provided for the in the approved study plan because it included BLM land in the growth analysis thus they used the wrong data. The Applicant should not have used 498,580 acres in the growth analysis study area that includes BLM land. It should have followed the study plan and just used state, county and municipal general and comprehensive planning. The Applicant should have used state land which is about 101,040 acres and private land 255,060 in the analysis instead.*

UDWR Response:

Section 4.1.3 in the draft study report states “In the initial screening, land excluded from potential development includes existing developed land, state parks, BLM land, ...” This explanation was provided in the draft study report to demonstrate that BLM administered land and other land under Federal land management was excluded from the growth analysis.

LPPC Comment 8:***BLM land***

The Applicant should take into consideration that BLM is doing a Resource Plan Amendment to its 1999 Resource Management Plan and coordinate information for this study report with their comprehensive land use planning BLM is currently doing. This BLM planning will identify land for special protection of special status species. The Applicant included BLM land in the assumptions that BLM land will be sold, however, BLM land should be deleted from the amount of developable land. In the Vision Dixie results, people want to retain BLM lands in public ownership for recreation and preservation of scenic open space. The Applicant identifies BLM land for development and misinterprets that all BLM land is up for sale.

UDWR Response:

The comment is incorrect that the growth analysis identifies BLM land for development and misinterprets that all BLM land is up for sale. The final study report will clarify that BLM land identified for disposal is not included in the potentially developable lands described in the growth analysis. BLM land that has been disposed and is not longer identified as BLM land in county parcel data is included as developable land if not excluded for other reasons. UDWR will coordinate with the BLM on the Resource Plan

Amendment and incorporate impact analysis results into the environmental documents submitted to FERC as part of the license application.

LPPC Comment 9:

There are land use conflicts in Figure 4-8 Scenario 1 Developable Areas, on the east side of I-15 next to urban core where the public wants open lands for recreation and not to be developed. Many special status species also occupy the land there. Also, more land in Warner Valley is home to special status species and there would be conflicts with that area being developed. The area identified as conflict could be enlarged.

UDWR Response:

Your comment has been noted.

LPPC Comment 10:

The Applicant should not include BLM land in the developable acres in the county, because it confuses the public on what may or may not be available for sale. Using BLM land skews the model numbers.

UDWR Response:

Please refer to the response to LPPC comment 8.

LPPC Comment 11:

Study Report Comment

The Applicant used the Wrong Data in the Study Report:

We disagree with the Applicant's population projections as the basis for the study report due to they used they used the wrong data. The current estimates used in the study report are from January 2008 population estimates released by the Governor's Office of Planning and Budgets (GOPB). Growth, and therefore land-use considerations have changed dramatically since 2008. In the GOPB 2011 Economic Outlook Report, State wide growth has gone down dramatically and is now projected much lower at only 65% of 2008 projections. The GOPB is aware of the change in growth climate and will be releasing revised and current reports in 2012. We recommend that this study report not be considered complete until more current and accurate population projections to 2020 are taken into consideration.

UDWR Response:

Your comment has been noted. UDWR will review the current GOPB population projections.

LPPC Comment 12:

ES-3.11 Growth

We disagree with the sufficiency of the model and question if the correct data was used for the study report that concludes: the growth area population would have an average housing density of 2 units per acre for a 500,000 projected population. The Applicant's assumption in the study is not correct, and the density will be denser in the future. The Applicant including BLM land for development in the scenarios skews the model. In St George they are building 12 units per acre for new housing developments. We very seldom would you find less than 4 units per acre now.

UDWR Response:

The UDWR disagrees with the comment. Growth housing models are required to comply with the requirements of the approved study plan, which requires use of published plans and policies. The housing unit densities used in the models are consistent with the 2008 GOPB Report.

LPPC Comment 13:

We also disagree with the assumption that migrants will not want to move here because of landscape ordinances and restrictions on water use. People move to Scottsdale, Las Vegas and many other desert communities that conserve much more water than our area. The Applicant's description of a No Lake Powell Water Alternative is not based on fact or reason and should be deleted from the study report.

UDWR Response:

Your comment has been noted.

LPPC Comment 14:

The study needs to consider people may not move here in the future because of high water impacts fees in future that have to pay for Lake Powell Pipeline (LPP). In 2006 the state legislature approved that repayment of the debt incurred for building the Pipeline will come from impact fees. However, since the cost of constructing the pipeline has tripled, the assumption that impact fees will fund the pipeline is no longer valid. The 2006 WCWCD report listed the price of LPP about \$562,000,000 and impact fees by 2040 would be \$24,000 per water hook up. A new analysis must be completed in the study report to determine impact fees required to cover current cost estimates. As impact fees increase to pay for the pipeline, the increased building costs will put downward pressure on an already depressed new construction market.

UDWR Response:

Your comment has been noted.

LPPC Comment 15:

Any significant increase in water impact fees, and cost of living, through property taxes or water rates, would reasonably effect the housing market in the future growth. This issue was a major concern of the public in scoping. Thus, the Commission should not consider this report complete until the Applicant clearly explains how the LPP will be paid for. These costs should be included in the growth analysis before this study report is considered complete. The increase in impact fees should be as considered an adverse impact on the local economy in the future in the report.

UDWR Response:

Your comment has been noted.

LPPC Comment 16:

The Applicant did not properly conduct a study on the topic of growth diminishing quality of life. Quality of life issues was the purpose of growth being included in the EIS. This study report does not answer the core concern brought up in scoping above that supplying water to allow the predicted population growth will diminish the quality of life in the region.." The Applicant missed the point why the conflicts of growth are included in this report.

UDWR Response:

The growth trends analysis described in the Land Use Plans and Conflicts approved study plan Section 6.3.1.9 does not discuss studying the topic of growth diminishing quality of life. The comment incorrectly assumes that the LPP Project water will allow the predicted population growth and will diminish the quality of life the region. The Utah GOPB population projections are independent of whether or not the LPP Project is constructed and operated. The population of the St. George metropolitan area is projected by the GOPB to grow without the LPP Project. The UDWR and the sponsoring water districts for the LPP Project do not have responsibility or authority to manage growth in cities, counties or geographic regions of Utah. The counties and cities in Utah are responsible for land use planning within their boundaries,

including zoning, regulation, public services, utilities, transportation facilities, and other functions often associated with community growth.

LPPC Comment 17:

The assumptions within the study report, that all available land should be filled to capacity are in conflict with residents desires. The Applicant should include a growth scenario in a manner that consistent with Vision Dixie report and principles, rather than assuming the county is filled to capacity.

UDWR Response:

Your comment has been noted. The study report does not assume that all the available land for development will be developed.

LPPC Comment 18:

The Applicant Used the Wrong Data

The Applicant did not use the results in Vision Dixie Report and polling results in the study report. We recommend community desires expressed in Vision Dixie be included as part of this study report. The study report does mention smart growth but, does not include the results of Vision Dixie's year and half land use planning exercise where 3000 people participated. The Vision Dixie process revealed that 75% of residents polled felt inward growth and compact communities with open space surrounding it should be encouraged and protects the quality of life. We submit Vision Dixie data for the study report. Inclusion of community perceptions and desires for each scenario is essential if this study report is to be considered complete. Polling of residents and reflection of their general desires should be included in this section as well as in the #22 Alternatives Development Study Report.

UDWR Response:

The approved Land Use Plans and Conflicts study plan does not require reference to the Vision Dixie Report. The growth trends analysis included in the draft study report incorporated data and information from the Vision Dixie process as described in Section 2.4.11 of the draft study report.

LPPC Comment 19:

We recommend that the Commission not consider this report complete until the study report addresses the core growth concerns of the public in this section of Land Use Plans and Conflicts study report. For example, the impact of air pollution from increased traffic; urban water runoff into the streams degrading water quality; taxes increasing to pay for schools, police, fire protection and other community services; high water impacts fees just to name a few. The concern about the diminishing quality of life issues is what people are concerned about.

UDWR Response:

Your comment has been noted.

LPPC Comments 20 and 21:

3.2.11 Growth

Between 2000 and 2009, Washington County Utah was the 16th fastest growing county in the nation in terms of housing units with an increase of 20,571 new units, an increase of 56.4 percent (U.S. Census Bureau, 2010).

The Applicant is not using the correct data in the study report. If the Applicant is able to include data from the US Census 2010, then base 2010 population estimates should be adjusted to reflect this actual information. The 2008 GOPB Report projected Washington County 2010 population to be at 168,078. Yet, the 2010 US Census reported population 18% below this estimate. Using selective data to build the

case for the pipeline would show bias. Consideration of the census population estimates should be included in the study reports.

UDWR Response:

The draft study report was prepared with the best available information at the time of the analysis. The 2010 US Census Bureau housing unit data was the best available information on housing units for Washington County. The 2008 GOPB population numbers were the best available data and are required by the State of Utah to be used in all State of Utah Projects, including those sponsored by UDWR. The final study report will incorporate the currently available GOPB population projections. The final study report will include the 2010 U.S. Census Bureau population data as another estimate of the county population.

LPPC Comment 22:

4.4.1.11 Growth

We disagree with the conclusion in the study report that the LPP does not have an impact on growth because it clearly does. We would assert that increased impact fees to pay for the pipeline will directly impact future growth in a negative way. This adverse effect must be considered in conjunction with current, relevant growth projections by the Applicant for this report to be considered complete.

We disagree with the data used and the sufficiency of the study results to arrive at the proposed LPP Alternatives.

UDWR Response:

Your comment has been noted. The approved Land Use Plans and Conflicts study plan does not identify or describe analysis of impact fees. The approved Socioeconomics and Water Resource Economics study plan does not identify or describe analysis of impact fees; however, the Socioeconomics and Water Resource Economics final study report will consider impacts of the WCWCD Water Availability Charge (impact fee) on growth in Washington County.

LPPC Comment 23:

5.2 No Lake Powell Water Alternative

5.2.1.1 Land Ownership and Management

We recommend this section be deleted because it misinterpreted the results of the study that considered the wrong data on environmental impacts of xeriscapes. The Applicant has no basis in fact or reason that communities would have to implement dust and particulate suppression and controls on residential landscape and common area converted to desert xeriscapes. The Applicant shows a real bias against the success of using xeriscape landscaping that is used in all the desert communities of the southwest.

UDWR Response:

Your comment has been noted.

LPPC Comment 24:

6.2.1 Land Ownership and Management

We recommend this section be deleted because it misinterpreted the results of study due to the using the wrong facts. The Applicant has no basis in fact or reason that communities would have uncontrolled particulate emissions causing chronic unavoidable adverse impacts on soil erosion, visibility, and air quality during wind storms.

UDWR Response:

Your comment has been noted.

LPPC Comment 25:

Specific comments on maps:

Figure 4-7. Many of the lands on the urban interface of St George City slated for disposal in the BLM's 1999 Land Use Plan (LUP) have been determined not suitable for development /disposal due to , but not limited to, Sensitive or endangered plants and archeological resources. This research and analysis does not take into consideration current activity level planning, including the Red Bluff ACEC, Santa Clara River Reserve and others.

UDWR Response:

Your comment has been noted. The Red Bluff ACEC and Santa Clara River Reserve are identified in Figure 4-7 as being on land excluded from future development, as are all BLM-administered lands.

LPPC Comment 26:

Most of the State Trust Lands known as the "Tonaquint parcel" have been slated for open space and are 95% bed rock. City of ST George.

UDWR Response:

Your comment has been noted.

LPPC Comment 27:

Scenario 1 is faulty as it assumes lands available for development can be developed that are not available as set forth in the criteria for this study. Check for recent and current conditions and analysis of the lands available for development.

UDWR Response:

The intent of the comment is unclear. It is not reasonable or practical to check recent and current conditions for every plat of land in the study area; the assumptions used for preparation of the draft study report are consistent with the approved study plan.

LPPC Comment 28:

Lands shown for development in R 16 W Sec 10 & 11 contain bear claw poppy habitat and are currently being managed for its protection.

UDWR Response:

The comment provides only incomplete information on the location of bear claw poppy habitat, having excluded the township designation, therefore this specific instance cannot be verified based on this location. Designated listed species habitats were excluded in the lands identified for development in the draft study report.

LPPC Comment 29:

Parcels in Warner Valley are shown ideal for water storage in the WCWCD Master Plan Sections on Sand Mountain are located on active dunes.

UDWR Response:

Your comment has been noted.

LPPC Comment 30:

Figure 4-8, change favorable development to available for development and analyze only the lands in the category " highly favorable " to get a more realistic picture of growth patterns within the study area.

UDWR Response:

Your comment has been noted.

TWS Comment 1:

Wilderness quality lands outside of congressionally designated areas were not addressed in this report. This oversight must be remedied before going forward.

UDWR Response:

UDWR will review this comment with BLM.

TWS Comment 2:

BLM is required under FLPMA, S.O. 3310 and BLM policy guidance to inventory and management lands with wilderness characteristics. BLM must complete the inventory and management prescriptions for these areas prior to approving the project.

UDWR Response:

UDWR will review this comment with BLM.

KBPI Comment 48:

Section 1.5.2 Identified Issues - Draft Report 6 identifies various land use issues, Draft Report 6 at 1-20 to 1-21, but fails to identify issues related to tribal lands or culturally sensitive areas, such as TCPs and landscapes. Section 6.3 of Study Plan 6 states that tribal resource management goals will be identified and accounted for. Section 6.6.1 of Study Plan 6 states that “[t]he study team will continue to gather relevant management plans, zoning criteria, resource management plans, regional planning reports, and other documentation to best understand all land management constraints associated with the Project area” and that the study team will coordinate with Indian tribes in order to obtain additional information, as needed. This failure to account for culturally sensitive areas directly contravenes Study Plan 6, and, therefore, Draft Report 6 is noncompliant with Study Plan 6.

UDWR Response:

Please refer to the response to KBPI comment 4.

KBPI Comment 49:

Section 1.6 Impact Topics - Draft Report 6 lists various impact topics, Draft Report 6 at 1-21, but fails to identify tribal lands or culturally sensitive areas, such as TCPs and landscapes. Sections 6.3 and 6.6.1 of Study Plan 6 require that Draft Report 6 identify and account for tribal resource management goals. This failure to account for culturally sensitive areas directly contravenes Study Plan 6, and, therefore, Draft Report 6 is noncompliant with Study Plan 6.

UDWR Response:

Please refer to the response to KBPI comment 4

KBPI Comment 50:

Chapter 2 Methodology - Draft Report 6 must state whether field investigations were performed and, if so and when applicable, whether permission to enter tribal lands was obtained. The failure to discuss the conduct of field investigations directly contravenes Study Plan 6 and renders Draft Report 6 noncompliant with Study Plan 6.

UDWR Response:

The UDWR disagrees with the comment. The approved Land Use Plans and Conflicts study plan at Section 6.6.1 does not specify that the study report must state whether field investigations were

performed. The approved Land Use Plans and Conflicts study plan at Section 6.6.1 states: “Field reconnaissance will include a physical inspection of the Project area. Where applicable, field reconnaissance teams will obtain permission to enter any private, sensitive, or restricted lands during the field reconnaissance.” Field reconnaissance across the Kaibab-Paiute Indian Reservation was performed from vehicles driving on Arizona State Highway 389, which is public right-of-way and does not require permission to access. The final study report will clarify that field reconnaissance for the Land Use Plans and Conflicts study was performed along Arizona State Highway 389 parallel to the Existing Highway Alternative alignment from vehicles operating within the highway right-of-way.

KBPI Comment 51:

Section 2.2 Data Used - Draft Report 6 includes an extensive list of data sources, Draft Report 6 at 2-1 to 2-2, but fails to include any tribal sources of data or indicate whether any attempt was made to obtain tribal data. Sections 6.3 and 6.6.1 of Study Plan 6 require that Draft Report 6 identify and account for tribal resource management goals. Draft Report 6 does not clarify whether tribal data was sought. The failure to either include the tribal data or account for its absence directly contravenes sections 6.3 and 6.6.1 of Study Plan 6, and Draft Report 6 is, therefore, noncompliant with Study Plan 6.

UDWR Response:

The final Land Use Plans and Conflicts study report will include the tribal resource management goals relevant to land use plans and conflicts. Relevant management plans, zoning criteria, resource management plans, regional planning reports, and other documentation to best understand all land management constraints associated with the Project area provided by Indian tribes in response to UDWR requests will be considered and incorporated as applicable into the final study report. Any identified land use conflicts will be discussed and measures that may be needed to resolve identified land use conflicts will be discussed in the final study report.

KBPI Comment 52:

Draft Report 6 states that “complete references can be found in Chapter 8,” but there is no Chapter 8.

UDWR Response:

The final study report will clarify that complete references are found in the Reference section.

KBPI Comment 53:

Section 2.3 Assumptions - Section 6.6.3 of Study Plan 6 requires Draft Report 6, among other things, to identify land uses and conflicts and to “discuss any measures that may be needed to resolve any identified conflicts.” Draft Report 6, therefore, must demonstrate that it takes into account and does not impede land use goals; the report cannot simply assume that the land use goals were considered. Moreover, Draft Report 6 fails to mention whether tribal land use goals were identified and will be taken into account. Sections 6.3 and 6.6.1 of Study Plan 6 state that Draft Report 6 must identify and account for tribal resource management goals. Draft Report 6 directly contravenes Study Plan 6 by failing to identify and account for such goals, and is, therefore, noncompliant with Study Plan 6.

UDWR Response:

Please refer to the response to KBPI comment 51.

KBPI Comment 54:

Section 2.4.11 Growth - Draft Report 6 states that “screening factors” were used to categorize certain lands, including “Indian Reservations,” as “undevelopable.” Draft Report 6 at 2-7. Other “undevelopable” lands include, but are not limited to state parks, water bodies, wetlands, lava beds, and hazardous soils. This categorization suggests that no growth can or will occur on tribal lands, which is simply inaccurate and implies that tribal resource management goals are irrelevant. Section 6.6.3 of

Study Plan 6 requires that Draft Report 6 will “present the methods used to identify land uses and conflicts” and “describe the constraints associated with specific areas.” Sections 6.3 and 6.6.1 of Study Plan 6 require that Draft Report 6 must identify and account for tribal resource management goals. Draft Report 6, therefore, must describe the “screening factors” used to determine that tribal lands are “undevelopable.” Tribal lands cannot simply be written off and lumped together with various types of economically useless lands and other lands that are, unlike tribal lands, physically and/or legally off-limits to development. The failure to account for tribal resource management goals, and explain the conclusion that Indian reservation land is undevelopable directly contravenes Study Plan 6 and renders Draft Report 6 noncompliant with Study Plan 6.

UDWR Response:

The draft study report states in Section 3.2.1.7 that “Tribal land is held in trust by the U.S. Department of the Interior, Bureau of Indian Affairs.” The term “undevelopable” as used in the growth trends analysis is meant to exclude Federally-managed lands (such as those administered by the BLM and NPS) and lands held in trust by Federal agencies. These Federal lands are not available for development without either being disposed by Congressional approval or permitted by the Federal land management agency. The growth trends analysis does not intend to suggest that no growth can or will occur on tribal lands or imply that tribal resource management goals are irrelevant. Please refer to the response to KBPI comment 51. The final study report will clarify the term “undevelopable” as used in the growth trends analysis.

KBPI Comment 55:

Section 3.2 Description of Baseline Conditions - Draft Report 6 lists various “topics that are generally associated with land management plans and policies,” Draft Report 6 at 3-1, but fails to list tribal lands or culturally sensitive areas, such as TCPs and landscapes. While section 3.2.1.7 of Draft Report 6 simply notes that tribal land is held in trust by the United States, the report makes no mention of culturally sensitive areas. Sections 6.3 and 6.6.1 of Study Plan 6 require that Draft Report 6 identify and account for tribal resource management goals. This failure to account for and describe the baseline conditions of culturally sensitive areas directly contravenes Study Plan 6 and renders Draft Report 6 noncompliant with Study Plan 6.

UDWR Response:

Please refer to the response to KBPI comment 4.

KBPI Comment 56:

Section 3.2.1.7 Kaibab-Paiute Indian Reservation - Draft Report 6 notes that the United States holds tribal land in trust for the benefit of the Kaibab Tribe. Draft Report 6 at 3-4. It also notes that the Kaibab Tribe may require the Project to be located “in a designated energy transport corridor.” Draft Report 6 at 3-4. Sections 6.3 and 6.6.1 of Study Plan 6 require that Draft Report 6 identify and account for tribal resource management goals. Draft Report 6 should include more information here regarding such goals. The failure to account for tribal resource goals directly contravenes Study Plan 6 and renders Draft Report 6 noncompliant with Study Plan 6.

UDWR Response:

Please refer to the response to KBPI comment 51.

KBPI Comment 57:

Section 3.2.8 Rights-of-Way - Section 6.3.1.5 of Study Plan 6 states that Draft Report 6 must identify the “compliance needs” for the acquisition of rights-of-way. Draft Report 6 incorrectly states that 25 C.F.R. pt. 169 governs the acquisition of rights-of-way across tribal lands for the pipeline. Draft Report 6 at 3-16. Draft Report 6 cites to the Arizona Department of Transportation Intermodal Transportation Division’s Right of Way Procedures Manual (2010) in support of this conclusion, but that manual relates

to highways, not pipelines. Indeed, 25 C.F.R. § 169.2(c) provides that part 169 does “not cover the granting of rights-of-way upon tribal lands within a reservation for the purpose of constructing, operating, or maintaining dams, water conduits, reservoirs, powerhouses, transmission lines or other works which shall constitute a part of any project for which a license is required by the Federal Power Act.” Thus, rights-of-way across tribal lands for the Lake Powell Pipeline must be acquired in accordance with 16 U.S.C. §§ 797 and 803, not 25 C.F.R. pt. 169.

UDWR Response:

The final study plan will clarify that rights-of-way across tribal lands for the Lake Powell Pipeline must be acquired in accordance with 16 U.S.C. §§ 797 and 803. References to 25 C.F.R. part 169 will be removed from the draft study report text as applicable.

KBPI Comment 58:

Section 3.2.8 Rights-of-Way - This section of Draft Report 6 should also clarify, as is done in the report’s section 4.3.8, that “[t]he State of Utah would have to negotiate an easement with the Kaibab Band of Paiute Indians to obtain access through the Kaibab-Paiute Indian Reservation.” Draft Report 6 at 4-17. In accordance with section 6.3.1.5 of Study Plan 6, Draft Report 6 must correctly identify the legal requirements for the acquisition of rights-of-way across tribal lands. The failure to do so directly contravenes Study Plan 6 and renders Draft Report 6 noncompliant with Study Plan 6.

UDWR Response:

Section 3.2.8 in the final study plan will clarify that the UDWR would have to negotiate an easement with the Kaibab Band of Paiute Indians to obtain access through the Kaibab-Paiute Indian Reservation. The final study report will identify the legal requirements for the acquisition of rights-of-way across tribal lands.

KBPI Comment 59:

Section 4.1 Significance Criteria - Draft Report 6 lists the potential significant impacts on various types of land, but fails to identify potential impacts to tribal lands or culturally sensitive areas, such as TCPs and landscapes. Draft Report 6 at 4-1 to 4-2. Sections 6.3 and 6.6.1 of Study Plan 6 require that Draft Report 6 identify and account for tribal resource management goals. This failure to account for culturally sensitive areas directly contravenes Study Plan 6 and renders Draft Report 6 noncompliant with Study Plan 6.

UDWR Response:

Please refer to the response to KBPI comment 4.

KBPI Comment 60:

Section 4.3 Impacts - As noted above, Draft Report 6 fails to recognize that impacts to culturally sensitive areas would be significant. As a result, Draft Report 6 also fails to assess whether such impacts will occur. This failure directly contravenes sections 6.3 and 6.6.1 of Study Plan 6 and renders Draft Report 6 noncompliant with Study Plan 6.

UDWR Response:

Please refer to the response to KBPI comment 4.

KBPI Comment 61:

Section 4.3.1 Land Ownership and Management - Draft Report 6 indicates that the Existing Highway Alternative “would affect approximately 16.5 miles of Kaibab-Paiute Indian Reservation land.” Draft Report 6 at 4-4. It also states that since “there is no energy corridor in the vicinity,” pipeline construction “would result in a significant land use impact on Reservation land” and “LPP Project

sponsors would need to complete all necessary applications and studies outlined in the Energy Transport Corridor Siting for Tribal Planners Guidance Manual (BIA 2010).” Draft Report 6 at 4-4. Section 6.3.1.5 of Study Plan 6 states that Draft Report 6 must identify the “compliance needs” for the acquisition of rights-of-way. Consistent with Study Plan 6, Draft Report 6 must identify the specific laws, such as 16 U.S.C. §§ 797 and 803, with which the Project proponent must comply. This section of Draft Report 6 should also clarify, as is done in section 4.3.8 of the report, that “[t]he State of Utah would have to negotiate an easement with the Kaibab Band of Paiute Indians to obtain access through the Kaibab-Paiute Indian Reservation.” Draft Report 6 at 4-17. Since there is not an energy corridor in the vicinity of the Existing Highway Alternative, Draft Report 6 at 4-4, it is not readily apparent that the Energy Transport Corridor Siting for Tribal Planners Guidance Manual (BIA 2010) is applicable. Section 4.4.3.1 of Draft Report 6 states, for example, that the absence of an energy corridor would cause “the penstock alignment [to] contradict guidelines in the Energy Transport Corridor Siting for Tribal Planners Guidance Manual (BIA 2010).” Draft Report 6 at 4-37. As required by section 6.3.1.5 of Study Plan 6, Draft Report 6 should clarify the “compliance needs” with respect to this issue. This lack of clarity regarding compliance requirements for utilizing the Existing Highway Alternative directly contravenes Study Plan 6 and renders Draft Report 6 noncompliant with Study Plan 6.

UDWR Response:

Please refer to the response to KBPI comment 58. The final study report will clarify the compliance needs regarding the Energy Transport Corridor Siting for Tribal Planners Guidance Manual (BIA 2010).

KBPI Comment 62:

Section 4.3.4.2 Hazardous Waste - Consistent with Study Plan 6, Draft Report 6 must state that the Kaibab Tribe will be contacted in the event a previously unidentified hazardous waste site is encountered on or near tribal lands. The failure to do so renders Draft Report 6 noncompliant with Study Plan 6.

UDWR Response:

The approved Land Use Plans and Conflicts study plan does not require the study report to state that the Kaibab Band of Paiute Indians will be contacted in the event of a previously unidentified hazardous waste site is encountered on or near tribal lands. The final study report will clarify that if a previously unidentified hazardous waste site is encountered on or adjacent to the Kaibab-Paiute Indian Reservation, the Kaibab Band of Paiute Indians will be contacted.

KBPI Comment 63:

Section 4.4.3.1 Land Ownership and Management - Draft Report 6 states that the Existing Highway Alternative “would not follow a designated energy corridor,” which will result in “a significant impact on land use and management within the Kaibab-Paiute Indian Reservation boundaries because the penstock alignment would contradict the guidelines in Energy Transport Corridor Siting for Tribal Planners Guidance Manual (BIA 2010).” Draft Report 6 at 4-37. As previously discussed, section 4.3.1 of Draft Report 6 states that “LPP Project sponsors would need to complete all necessary applications and studies outlined in the Energy Transport Corridor Siting for Tribal Planners Guidance Manual (BIA 2010).” Draft Report 6 at 4-4. Since there is not an energy corridor in the Existing Highway Alternative and the penstock alignment would contradict the guidelines set forth in the Energy Transport Corridor Siting for Tribal Planners Guidance Manual (BIA 2010), it is not readily apparent that the manual even applies. As required by section 6.3.1.5 of Study Plan 6, Draft Report 6 should clarify the “compliance needs” with respect to this issue. This lack of clarity directly contravenes Study Plan 6 and renders Draft Report 6 noncompliant with Study Plan 6.

UDWR Response:

Section 4.4.3.1 in the final study plan will clarify the compliance needs regarding the Energy Transport Corridor Siting for Tribal Planners Guidance Manual (BIA 2010).

KBPI Comment 64:

Section 4.4.4.1 Land Ownership and Management - Draft Report 6 states that the “temporary direct land use impacts” of placing the pipeline parallel to the Navajo-McCullough Transmission Line corridor for 3.8 miles across the southeast corner of the Kaibab Tribe’s Reservation “would not be a significant impact on land use and management within the Kaibab-Paiute Indian Reservation boundaries because the penstock would be within an established energy corridor and consistent with the Energy Transport Corridor Siting for Tribal Planners Guidance Manual (BIA 2010).” Draft Report 6 at 4-38. Sections 6.3 and 6.6.1 of Study Plan 6 require that Draft Report 6 identify and account for tribal resource management goals. Draft Report 6 makes no mention of any tribal resource management goals, nor does it explain why compliance with the Energy Transport Corridor Siting for Tribal Planners Guidance Manual (BIA 2010) automatically ensures that no significant impacts would result. Study Plan 6 requires that Draft Report 6 account for tribal resource management goals and the failure to do so renders Draft Report 6 noncompliant with Study Plan 6.

UDWR Response:

Please refer to the response to KBPI comment 51. Section 4.4.4.1 in the final study report will clarify the compliance needs regarding the Energy Transport Corridor Siting for Tribal Planners Guidance Manual (BIA 2010).

KBPI Comment 65:

Chapter 7 Cumulative Impacts - Other than for the “No Action Alternative,” which “would have no cumulative impacts,” Draft Report 6 indicates that “cumulative impacts analysis is pending completion for identification of inter-related projects that would cause cumulative impacts with the LPP project.” Draft Report 6 at 7-1. The cumulative impacts analysis must be completed as soon as possible and the Kaibab Tribe hereby requests additional time to submit comments on the cumulative impacts analysis.

UDWR Response:

The UDWR is completing the cumulative effects analysis and will incorporate it into the final study report.

BIA Comment 34:

1.1 - Figure 1-1 -some map layers appear to be turned off -legend appears to be missing symbols, scale bar is missing, labels are unclear, and linear system alternatives are not shown.

UDWR Response:

The comment indicates the user has an outdated version of Adobe Acrobat Reader. All PDF versions of the draft study reports are fully readable with Adobe Reader 8.

BIA Comment 35:

1.2.1 - Figure 1-2 -some map layers appear to be turned off -legend appears to be missing symbols, scale bar is missing, labels are unclear, and linear system alternatives are not shown.

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 36:

1.2.1, 1.2.2 - Figure 1-3 -some map layers appear to be turned off -legend appears to be missing symbols, scale bar is missing, labels are unclear, and linear system alternatives are not shown; where are K4020, K3290, etc. roads?

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 37:

1.2.1 - Figure 1-4 – same comments regarding legend, scale, labels, and linear system alternatives (Cedar Valley Pipeline System?).

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 38:

1.2.2 - Figure 1-5 – same comments regarding legend, scale, labels, and linear system alternatives (Hydro System? Kane County Pipeline System?).

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 39:

1.2.3. - Figure 1-6 -same comments regarding legend, scale, labels, and linear system alternatives (Hydro System?).

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 40:

1.2.4 - Figure 1-7 -same comments regarding legend, scale, labels, and transmission lines.

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 41:

1.2.4 - Figure 1-8 -same comments regarding legend, scale, labels, and transmission lines.

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 42:

1.2.4 - Figure 1-9 -same comments regarding legend, scale, labels, and transmission lines.

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 43:

2.4.11 - Figure 2-1 -same comments regarding legend and scale; roads not shown.

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 44:

3.1 - Figure 3-1 -same comments regarding legend, scale, and labels; land ownership designations not clear in legend.

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 45:

3.2.5 - Figure 3-2 -same comments regarding legend, scale, and labels; what is the difference between the orange and green?

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 46:

3.2.7 - Figure 3-3 -same comments regarding legend, scale, and labels; can't tell where the grazing allotment boundaries are located.

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 47:

3.2.11 - Figure 3-5 -same comments regarding legend, scale, and labels; roads/highways not delineated, city names are difficult to see.

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 48:

3.2.11 - Figure 3-6 -same comments as Figure 3-5

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 49:

3.2.11 - Figure 3-7 -same comments regarding legend, scale, and labels; roads/highways not delineated; what do the colors represent?

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 50:

3.2.11 - Figure 3-8 -same comments as Figure 3-7.

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 51:

4.3.2 - Figure 4-4 -same comments regarding legend, scale, and labels; are there layers missing? Where is the potential prime farmland?

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 52:

4.3.2. - Figure 4-5 -same comments as Figure 4-4.

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 53:

4.3.2. - Figure 4-6 -same comments as Figure 4-4.

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 54:

4.3.7 - 1st paragraph, 1st sentence: Is the 120 foot temporary construction easement mentioned here different from what is stated in Section 4.3 where it mentions a 120 foot construction footprint (ROW) along the pipeline and shows 30 foot and 20 foot TCEs in Figures 4-1 and 4-2? Or is the TCE different for areas of grazing land? This is confusing. 3rd paragraph, 1st sentence: Isn't this "additional 30 foot path of disturbance" what is being called a TCE for alignments along highway ROW? If so, call it out as that here.

UDWR Response:

The 120 foot ROW is not the same as a TCE, in that the ROW is permanent for future access and the TCE would be utilized only during construction. The final study report will clarify the intent of ROWs and TCEs and the intent associated with grazing lands.

BIA Comment 55:

4.3.7 - Tables 4-2, 4-3, and 4-5 in Notes: "120-foot wide path" and "120-foot wide temporary construction easement"-are these the same thing? And is this talking about the 100 foot construction footprint (ROW) plus 20 foot TCE for alignments not adjacent to highways, similar to comment above on p.77?

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 56:

4.3.11 - Figure 4-7 -same previous map comments regarding legend and scale; are there layers missing? roads/highways not delineated; what do the colors represent?

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 57:

4.3.11 - Figure 4-8 -same map comments as Figure 4-7.

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 58:

4.3.11 - Figure 4-9 -same map comments as Figure 4-7.

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 59:

4.3.11 - Figure 4-10 -same map comments as Figure 4-7.

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 60:

4.3.11 - Figure 4-11 -same map comments as Figure 4-7.

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 61:

4.3.11 - Figure 4-12 -same map comments as Figure 4-7.

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 62:

4.3.11 - Figure 4-13 -same map comments as Figure 4-7.

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 63:

4.3.11 - Figure 4-14 -same map comments as Figure 4-7.

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 64:

4.3.11 - Figure 4-15 -same comments regarding legend and scale; roads not shown.

UDWR Response:

Please refer to the response to BIA comment 34.

BIA Comment 65:

General - A Glossary at the beginning or end of the Report would be helpful to describe some terms such as penstock, reverse osmosis, temporary construction easement.

UDWR Response:

A glossary will be provided in the revised study report.

BIA Comment 104:

Report 6 – Land use – Page ES-1 - Wouldn't the Southeast Corner alignment also have a significant impact on the Kaibab Reservation?

UDWR Response:

Impacts would not be considered significant if they did not meet or exceed the significance criteria identified in section 4.1. None of these criteria were met crossing the Kaibab-Paiute Indian Reservation under the Southeast Corner Alignment Alternative.

BLM Comment 1:

Report 6. This map should highlight GWENM (and other NLCS units as well as Wilderness and WSAs. It has Wilderness in the legend but that layer must not have been turned on). Vermillion Cliffs NM? – Page 45

UDWR Response:

Presumably the comment refers to GSENM rather than GWENM. The final study report will clarify the wilderness and national monument boundaries designated in Figure 3-2.

BLM Comment 2:

Report 6. I believe it would more appropriate to discuss Arizona Strips (which in the project area includes NLCS units) and SGFO (which now have several new NLCS units) in similar fashion as KFO. And CCFO is currently revising their plan..this sentence is not appropriate. – Page 47.

UDWR Response:

Your comment has been noted. Arizona Strip, SGFO, and CCFO plans will be revisited and the final study report will include pertinent information regarding NLCS units.

BLM Comment 3:

Report 6. Wild Lands now means something a bit different...probably want to update this information...or reword it. – Page 51.

UDWR Response:

UDWR will review its use of “wild land” and will update content or revise terms in the final study report.

BLM Comment 4:

Report 6. Designated Wilderness now exists and map should reflect that. – Page 62.

UDWR Response:

The final study report will include a revised Figure 3-2 showing designated wilderness boundaries, which were inadvertently left off the map.

BLM Comment 5:

Report 6. BLM protects its N@HTs through designation as such. VRM Management Class designation typically supplements the management objectives for the trail corridor. A report of the Analysis of VRM management class designations can be found in the LPP VRM Study Report. (there is no such thing as “VRM-designated land”...all BLM land should have a VRM objective. – Page 59.

UDWR Response:

The comment presumably refers to NHTs, or National Historic Trails, rather than N@HTs. The final study report will clarify that NHTs are established by BLM designation and that VRM class designations are used to supplement trail management objectives. The reference to VRM-designated land was a misstatement of the concept of using VRM class designations and will be clarified in the final study report.

BLM Comment 6:

Report 6. Access roads should not be 30’ wide. – Page 70.

UDWR Response:

To facilitate safe and efficient two-way construction traffic for a project of this magnitude, a 30-foot access road is recommended where feasible.

BLM Comment 7:

Report 6. Re-establishment will take YEARS. – Page 85.

UDWR Response:

UDWR agrees that, in many or most locations, re-establishment of vegetation may take several growing seasons to achieve. The final study report will include this clarification.

BLM Comment 102:***06 Draft Land Use Plan and Conflicts Study Report***

Wilderness Characteristics in Non-WSA areas are not analyzed as per Secretarial Order 3310.

Currently, no wilderness characteristic inventory exists for this resource on GSENM south of HWY-89.

UDWR Response:

The WSA boundaries are exclusive of the UDOT right-of-way within which the pipeline corridor would be constructed.

BLM Comment 103:

Agreements with existing use in the extant utility corridors, does not appear to have been analyzed, and most definitely need to. Local existing ROWs need to be considered in the project design, and requires coordination with local utility companies and other entities to ensure minimal conflict and disruption.

UDWR Response:

Although analysis of existing use in utility corridors will need to be considered, this is beyond the scope of the approved study plan and will not be addressed in the final study report. Utility corridor issues would be addressed as part of the detailed design report, not resource studies.

USFWS Comment 2:

In response to our PSP comments on induced growth, we note that the applicant added a growth analysis section to the Revised Study Plan (RSP) #6: Land Use Plans and Conflicts. After reviewing this addition, we submitted specific requests for the growth analysis in our January 8, 2009, letter concerning the RSP. We conclude that the growth analysis in DSR #6 is inadequate for Federal Review of environmental impacts. Additionally, specific requests outlined in our January 8, 2009, letter were not acknowledged or incorporated into the DSR. The growth analysis is based largely on assumptions that are not consistent with policy guiding the analysis of indirect effects for Federal Review, such as ESA compliance. For example, there is no analysis of the indirect effects of the proposed action, and its associated induced growth, to Federally listed plants and animals—this analysis will be necessary to complete ESA section 7 consultation. As a result of these deficiencies, we conclude that additional analyses must occur before the DSR can be considered sufficient for Federal review, including but not limited to ESA section 7 consultation. Below, we provide further guidance for consideration of these impacts in the DSR.

UDWR Response:

Please refer to the response to USFWS comment 1. The following statement is from the USFWS January 8, 2009 letter commenting on the approved study plan: “Study Plan 6: Land Use Plans and Conflicts – The RSP incorporates a growth trends analysis that appears to be thorough and high quality. However, the analysis does not mention that maps of growth trends and development would be overlaid with maps of threatened, endangered, and sensitive species habitat as study plans are developed and implemented. The

USFWS recommends that the RSP do so, and will require this type of analysis for formal Section 7 consultation.” The UDWR performed the growth trends analysis and overlaid potential development areas with maps of threatened, endangered, and sensitive species habitat, as directed by FERC in their January 21, 2009 Study Plan Determination, and presented the results and maps in the draft Land Use Plans and Conflicts study report.

The final study reports for Special Status Aquatic Species, Special Status Plant Species and Noxious Weed Assessment and Special Status Wildlife Species will include references to the growth trends analysis in the final Land Use Plans and Conflicts study report, and will incorporate key results and maps showing overlays of listed species habitats, designated critical habitat, and listed species’ occupied habitat with the growth trends analysis.

USFWS Comment 3:

While there are other alternatives that could support the projected growth, if the LPP was constructed, it would allow urban and suburban growth in the area. In fact, the need of the Project is to support continued growth in the project-affected area. In other words, continued population and municipal growth will not occur but for this Project. While the Draft Study Report agrees that the Project would support growth of the area, it characterizes this support as an insignificant action.

“The LPP project would supply water to meet Washington County needs through approximately 2037, when the growth study area population would be slightly less than 500,000 with an average housing unit density of 2 units per acre. Therefore, the potential indirect effects of the LPP operation on urban and suburban growth within the Washington County growth study area would not be significant.” (Page 4-34; emphasis added)

UDWR Response:

Please refer to the response to USFWS comment 1.

USFWS Comment 4:

We fail to see how supporting a population growth of 380,000, or a 300% increase (based on a 2009 population of approximately 120,000, as presented in Table 3-3) is insignificant. If the impact on growth is insignificant, then the purpose and need statements of the Project are invalid.

UDWR Response:

Please refer to the responses to USFWS comment 1.

USFWS Comment 5:

*In summary, we conclude that the indirect effects, including induced growth, associated with the construction, operation, and maintenance of the LPP must be considered in the environmental evaluation, and in fact, we conclude that these indirect effects are likely significant. Multiple court cases support our interpretation that if a project will facilitate population growth or development, then that growth must be considered as an indirect effect under ESA consultation (See *City of Davis v. T Coleman* 521 F2d 661; *Florida Key Deer v. Stickney* 864 F. Supp. 1222). We will evaluate all indirect effects of the Project, including induced growth, during ESA section 7 consultation for this Project, and therefore it is important that the Draft Study Plan contain adequate information to assist in this process as further described below.*

UDWR Response:

Please refer to the response to USFWS comment 1.

USFWS Comment 6:

We agree that certain areas can be excluded from the growth analysis for physical, legal, and economic reasons; however, there are two major flaws with the current exclusion of “threatened and endangered species habitat” from future development scenarios:

- 1) The definition of “threatened and endangered species habitat” is not clearly defined in the document. From the analysis we can see, this definition far underestimates even a conservative definition of the term; and*
- 2) No regulatory mechanism exists that legally protects all threatened and endangered species habitat from development, causing the reasoning for their exclusion from the analysis to be erroneous.*

UDWR Response:

The final study report will clearly define threatened and endangered species habitat. The draft study report analyses will be revised to include GIS shape files recently obtained from the USFWS that includes data not available from the Utah Natural Heritage GIS data base regarding designated critical habitat. These data will be included in the revised growth trend analyses incorporated into the final study report. The growth trends analysis excludes all identified listed species habitat from development because it is consistent with Utah Department of Natural Resources (UDNR) policy (UDWR is an agency within UDNR) and with the Washington County Habitat Conservation Plan, Virgin River Resource Management and Recovery Program, and individual species conservation agreements and strategies. The USFWS and WCWCD (a sponsoring water conservancy district of the LPP Project) have been active participants with other agencies and participants in developing and implementing the Washington County Habitat Conservation Plan, Virgin River Resource Management and Recovery Program, and individual species conservation agreements and strategies, all of which seek to avoid or minimize effects on listed species and their habitats. The growth trends analysis for the LPP Project is intended to demonstrate where growth and development could occur within the identified Washington County growth analysis study area. The analysis demonstrates that suitable lands are available for projected future population increases while excluding land area for protection of listed species habitats, designated critical habitats, and occupied habitats. The UDWR recognizes there is a the lack of a regulatory mechanism to legally protect listed species habitat from development on private lands; however, the growth trends analysis excludes listed species habitats, designated critical habitats and occupied habitats as a prudent and responsible consideration.

USFWS Comment 7:

Our first major concern with the assumption that threatened and endangered species habitat is excluded from all future growth scenarios is that the term ‘habitat’ is not defined in the document. The context of excluding ‘threatened and endangered species habitat’ leads the reader to believe that at minimum, either all occupied habitat or all Federally designated critical habitat is excluded from possible development; however, neither is the case. For example, developable areas identified in all scenarios of Draft Study Plan #6 (Figure 4-7; 4-8, 4-11) include areas designated as critical habitat (defined as: specific geographic areas that are essential for a species conservation and recovery) for federally listed species. Similarly, there is overlap between threatened and endangered species occupied habitats and potentially developed areas in Draft Study Report #6.

UDWR Response:

Please refer to the response to USFWS comment 6.

USFWS Comment 8:

We request that Draft Study Plan #6 provide a clear definition of ‘threatened and endangered species habitat’ as it relates to the exclusion of said areas, and provide a methodology as to how these areas

were defined. Once a clear definition has been defined and a methodology explained, it may be necessary to re-run the analyses based on changes to excluded areas. We offer our assistance in both of these changes, such as providing designated critical habitat polygons.

UDWR Response:

Please refer to the response to USFWS comment 6.

USFWS Comment 9:

However, even if a consistent definition of ‘threatened and endangered species habitat’ is chosen, we disagree with the exclusion of these areas from potential development in the study report analysis. Suitable, occupied, and federally designated critical threatened and endangered species habitats are zoned as developable areas. For example, the St. George Master Plan Map zones large portions of Astragalus holmgreniorum designated critical habitat as residential, indicating development is planned on these areas. The current St. George City ordinance regulating development on the Virgin River floodplain does not exclude commercial development from the 100 year floodplain which is critical habitat for woundfin and Virgin River chub. In addition, regulations under section 10 of the Endangered Species Act provide mechanisms that allow development and authorize incidental take of endangered species and their habitats; such as the desert tortoise and Utah prairie dog Habitat Conservation Plans in Washington and Iron Counties, respectively.

UDWR Response:

Please refer to the response to USFWS comment 6.

USFWS Comment 10:

Thus, the final study report of future growth in the area must include a complete analysis of the amount of occupied, suitable, and Federally designated critical habitat that would likely be developed in each scenario. In addition, threatened and endangered species habitat should be added to the land use conflicts portion of Draft Study Report #6. Where available, mapped species’ distributions and designated critical habitat polygons can be overlaid with an updated Figure 4-8 (based on a clear definition of habitat as discussed above) to determine the acres and percentage of habitat that will be lost to the Project and its associated induced growth (as described above). Additional field studies can be conducted where needed to determine the distribution and scale of Project impacts to threatened and endangered species. We previously asked for this type of analysis in our January 8, 2009, letter concerning the RSP, but it was not included in the Draft Study Report. The analysis should also be added to the Special Status Aquatics, Special Status Wildlife, and Special Status Plants reports on a species-specific basis, to facilitate the section 7 consultation process.

UDWR Response:

Please refer to the response to USFWS comments 1, 2 and 6.

USFWS Comment 11:

Conservation and Mitigation Planning for Induced Growth

The high level of projected population and municipal growth in the project-affected area increases the importance of successfully ensuring the continued conservation of federally listed species under the proposed action. Conservation and mitigation measures must be developed to offset the effects of induced population growth such as residential and commercial development of occupied and suitable habitats; habitat fragmentation; increased road mortality; increased recreational use of species’ habitats; and increased dust from recreational traffic with its effects to plant pollination. We recommend that the Project proponent consider protecting occupied or designated critical habitats in perpetuity, either through land purchases, land exchanges, conservation easements, or local ordinances. This type

of conservation and mitigation effort would offset impacts and assist with the recovery of listed species, thus supporting the 'smart growth' principles outlined in Draft Study Report #6.

UDWR Response:

Please refer to the responses to USFWS comments 1 and 2.

Draft Study Report 7 - Noise

KBPI Comment 66:

Section 1.5.2 Identified Issues - Draft Report 7 states that as part of its analysis, it will “[d]etermine the regulations and requirements regarding noise at Federal, State, Tribal, and local levels.” Draft Report 7 at 1-20. Beyond this sentence, however, Draft Report 7 contains no discussion of whether tribal regulations and requirements were evaluated or if the Kaibab Tribe was even contacted. This failure to indicate whether the Kaibab Tribe was contacted or whether tribal concerns were considered directly contravenes Study Plan 7. Study Plan 7 § 7.3 (requiring that tribal resource management goals regarding noise “will be incorporated into the studies”). Draft Report 7 also indicates that it will “[e]stimate historical background noise for the LPP Project area.” Draft Report 7 at 1-20. Draft Report 7 never identifies what historical period was used. The only mention of historical data occurs in Section 3.2 of the report, which states that historically the noise level was “assumed [to be] typical of high desert rural areas.” Draft Report at 3-1. Draft Report 7 declares that it will “[d]efine significant impact levels for humans and wildlife” and “[a]nalyze cumulative impacts within the LPP Project area from construction and operation noise,” Draft Report 7 at 1-20; however, Draft Report 7 makes no mention of plant life, even though Study Plan 7 requires that it identify “potential impacts on local plant, animal and human environments.” Study Plan 7 § 7.2.1 Draft Report 7 does not indicate at any point whether tribal concerns regarding impact levels or cumulative impacts were considered, Study Plan 7 § 7.6.2.3, contrary to the requirements of Study Plan 7. This failure to consider tribal concerns directly contravenes Study Plan 7 and renders Draft Report 7 noncompliant with Study Plan 7.

UDWR Response:

Section 7.6.2.3 of the study plan states: “Mitigation measures regarding impacts on tribal land will be determined in consultation with the Kaibab Band of Paiute Indians.” The final study report will include applicable tribal regulations and resource management goals of the Kaibab Band of Paiute Indians regarding noise on the Kaibab-Paiute Indian Reservation, to clarify the historical period used to estimate background noise for the affected environment and impact analyses, to define significant noise impact levels for humans and wildlife and analyze cumulative impacts within the LPP Project area from construction and operation noise, to identify potential impacts on local plant, animal and human environments, and to include results of consultation with the Kaibab Band of Paiute Indians on mitigation measures regarding noise impacts on tribal land.

KBPI Comment 67:

Section 2.2 Data Used - Draft Report 7 includes an extensive list of data sources, Draft Report 7 at 2-1, but lists no tribal sources. The first bullet point is “Agency resource management goals from various agencies (detailed below),” Draft Report 7 at 2-1, but this does not appear to include tribal agencies. This failure to indicate whether tribal agencies were included directly contravenes Study Plan 7. Study Plan 7 § 7.3 (indicating that tribal resource management goals regarding noise “will be incorporated into the studies”); see Study Plan 7 § 7.6.2.3. Moreover, Study Plan 7 indicates numerous data needs that go unmentioned in Draft Report 7. Study Plan 7 § 7.4.3. Specifically, Study Plan 7 requires analyses of “[c]ulturally sensitive areas,” “[e]nvironmentally sensitive areas,” and “[e]conomically important areas.” Study Plan 7 § 7.4.3. Draft Report 7, however, does not identify the data sources for these analyses, which renders Draft Report 7 noncompliant with Study Plan 7.

UDWR Response:

Please refer to the response to KBPI comment 66. The approved study plan does not specify study of culturally sensitive areas, such as traditional cultural properties (TCPs) and cultural landscapes because these are part of the information being developed under the approved Ethnographic Resources study plan and will be addressed in the draft Ethnographic Resources Study Report. The Kaibab Band of Paiute Indians (KBPI) and other Indian tribes have conducted ethnographic studies that specifically identify TCPs and cultural landscapes; however, the final report approved by the KBPI and provided to the UDWR by the KBPI consultant (the only ethnographic consultant acceptable to the KBPI) has 291 pages redacted from the document (Chapters 3 through 7, portions of the Table of Contents, and the full references section are not included in the final report) to protect culturally sensitive sites from the public. Therefore, the information necessary to define baseline conditions and perform and complete the impact analyses requested by the KBPI in the comment is being withheld from UDWR by the KBPI. The final Ethnographic Resources study report will identify culturally sensitive areas for other Indian tribes, insofar as those areas have been disclosed to UDWR.

KBPI Comment 68:

Section 2.2.1 Agency Resource Management Goals - Draft Report 7 includes a section for the U.S. Forest Service ("USFS") in order to specifically note that no Project activity occurs on or affect USFS land, Draft Report 7 at 2-2, but does not list any tribal agencies. Section 2.2.1.2 of Draft Report 7 lists Utah and Arizona state agencies, the Bureau of Land Management, and "Counties and Local Agencies" as having no standards or goals regarding noise. Draft Report 7 at 2-2. There is no indication that Draft Report 7 considered tribal agencies or that they were contacted, in direct contravention of Study Plan 7. Study Plan 7 §§ 7.3, 7.6.2.1, 7.6.2.3. This failure to indicate whether the Kaibab Tribe was contacted, whether tribal agencies were included, or whether tribal concerns were considered directly contravenes Study Plan 7 and renders Draft Report 7 noncompliant with Study Plan 7.

UDWR Response:

The final study report will include documentation on consultation with tribal agencies.

KBPI Comment 69:

Section 2.3 Assumptions - Draft Report 7 indicates that "the assumption was made that long term noises over 60 dBA are potentially disruptive and disturbing to humans" and that "[a] 60 dBA sound level was assumed to be the impact level for potential reduction of habitat value for wildlife." Draft Report 7 at 2-3. These assumptions do not reference tribal issues and concerns. In other words, impacts to humans and impacts to wildlife are addressed, but Draft Report 7 fails completely to address the unique concerns of the Kaibab Tribe. Draft Report 7 also declares that "[a]dditive noise from multiple construction sites would not occur because the noise from each site would decay to baseline levels when it reaches another construction site." Draft Report 7 at 2-3. This statement needs more support, because even if true, the cumulative effect of noise might drive wildlife away. For example, assume two sites are 4 miles apart, and the noise from each site extends 1.75 miles, leaving a .5 mile "noise free" buffer. Would wildlife freely use that buffer zone, or would the noise from both sites lead wildlife to avoid the entire area? Draft Report 7 fails to address this potential impact because it dismisses any permanent impacts to wildlife by construction noise. See infra, discussion of Draft Report 7 § 4.1.2; Study Plan 7 §§ 7.2.1, 7.3, 7.4.3, 7.6.2.3. The failure to consider the unique concerns of the Kaibab Tribe directly contravenes Study Plan 7 and renders Draft Report 7 noncompliant with Study Plan 7.

UDWR Response:

The final study report will incorporate the noise impacts concerning the Kaibab Band of Paiute Indians. The final study report will clarify the discussion on additive noise from multiple construction sites. The comment involving the stated example makes an incorrect assumption. Simultaneous construction

activities at multiple sites near the Kaibab-Paiute Indian Reservation would be at least 15 miles apart. The comment is incorrect that the cumulative effect of noise from the stated example might drive wildlife away. If simultaneous construction at multiple LPP Project sites was close enough to have combined effects, the noise would be additive as described in Section 2.4.3, not cumulative. The only cumulative effect of noise that could occur on the LPP Project would be if the LPP Project construction noise was combined with noise from another project or from highway traffic noise, resulting in an incremental noise impact. The final study report will clarify why temporary construction noise would not have permanent impacts on wildlife.

KBPI Comment 70:

Overall, this section of Draft Report 7 is lacking in citations to relevant authorities. Given that this section contains assumptions upon which the analysis is based, such assumptions should be backed by citations to relevant authorities or, where no authority exists, the assumptions should contain supporting discussion.

UDWR Response:

Your comment has been noted.

KBPI Comment 71:

Section 2.4.4 Operations Noise Calculations - Draft Report 7 basically eliminates from further analysis operation noises generated by facilities and maintenance activities, without any discussion. Draft Report 7 at 2-5. Maintenance activities are presumed to just include traffic to and from the site, Draft Report 7 at 2-5, without discussion to support the validity of that assumption, including no discussion of whether maintenance includes repairs (which might, presumably, involve more than simple traffic noise). Draft Report 7 presents no data regarding the likely noise from operations and there is no discussion of how that noise might impact wildlife. This failure to consider noise impacts on wildlife directly contravenes Study Plan 7 §§ 7.2.1, 7.4.3, 7.6.2.3, and renders Draft Report 7 noncompliant with Study Plan 7.

UDWR Response:

Section 2.4.4 explains that sound attenuation measures incorporated into the preliminary design of buildings housing pumps and motors would result in noise levels at or below 60 dBA outside each building. Maintenance activities including repairs of moving parts (only at pump stations and hydro stations) would be performed within the buildings equipped with sound attenuation measures, resulting in noise levels at or below 60 dBA during such maintenance activities. The final study report will clarify the potential noise impacts from operation and maintenance activities and the potential noise impacts or lack thereof on wildlife.

KBPI Comment 72:

Section 3.1 Impact Area - Draft Report 7 states that “[t]he study involved reviewing potential noise impacts on areas of possible cultural sensitivity,” “environmental sensitivity,” and “sensitive wildlife habitats,” among other things. Draft Report 7 at 3-1. It does not indicate whether consideration of impacts on wildlife might have cultural impacts. This failure to consider the cultural impacts of the impacts on wildlife directly contravenes Study Plan 7 §§ 7.2.1, 7.3, 7.4.3, 7.6.2.3, and renders Draft Report 7 noncompliant with Study Plan 7.

UDWR Response:

The approved Noise study plan at Sections 7.2.1, 7.3, 7.4.3 and 7.6.2.3 and any other sections of the approved Noise study plan do not require consideration of cultural impacts of the impacts on wildlife. If the final ethnographic resources study report prepared by the KBPI-approved consultant refers to noise impacts on wildlife potentially having cultural impacts, such information is not available to the UDWR because the KBPI has redacted 291 pages from the document (Chapters 3 through 7, portions of the Table

of Contents, and the full references section are not included in the final report) to protect culturally sensitive sites from the public. Therefore, the information necessary to define baseline conditions and perform and complete the impact analyses requested by the KBPI in the comment is being withheld from UDWR. Without the information on culturally sensitive areas, the noise impact analyses on such TCPs and other culturally sensitive areas cannot be completed.

KBPI Comment 73:

Section 3.2.1 Existing Noise Data - Draft Report 7 lists equipment noise values, and not one piece of equipment, not even a helicopter, equals the listed noise of a blender. See Draft Report 7 at 3-2 to 3-3. According to Draft Report 7, the peak noise of a jackhammer is less than a farm tractor and below the “Sustained Exposure May Cause Hearing Loss” level. Draft Report 7 at 3-2 to 3-3. These listed noise values belie common experience; a helicopter is surely louder than a blender and a jack hammer is surely louder than a tractor. Draft Report 7 also describes construction noise peak decibel levels, which again peak at the noise level of a blender. Draft Report 7 at 3-2 to 3-3. This failure to explain what appear to be nonsensical conclusions contravenes Study Plan 7. See Study Plan 7 §§ 7.2.1 (requiring quantification of construction and operation noises), 7.4.3 (requiring investigation into noise levels resulting from construction), 7.6.2.3 (requiring analysis and reporting of noise generated from the Project). Draft Report 7 is, therefore, noncompliant with Study Plan 7.

UDWR Response:

The referenced data presented in Tables 3-1 and 3-2 are based on consistent distances from noise sources measured with sound pressure level instruments and are published data commonly used in noise impact analyses. The data presented in the draft study report comply with the approved Noise study plan at Sections 7.2.1, 7.4.3, and 7.6.2.3.

KBPI Comment 74:

Section 4.1.1 Human Receptors - Table 4-1 of Draft Report 7 states that the Pipe Spring area is “residential.” Draft Report 7 at 4-1. Immediately adjacent to the Existing Highway Alternative route are the Kaibab Tribe’s governmental headquarters as well as a gas station and Pipe Spring National Monument.

UDWR Response:

The final study report will clarify that the Pipe Spring area is residential and that the Kaibab Band of Paiute Indians’ governmental headquarters, a gas station with convenience store, and Pipe Spring National Monument are immediately adjacent to the Existing Highway Alternative alignment.

KBPI Comment 75:

Draft Report 7 states that “[t]he minimum distance for the maximum calculated construction noise levels to decay to 90 dBA is approximately 150 feet.” Draft Report 7 at 4-2. The 90 dBA value “was chosen as the significant impact level on humans as OSHA allows up to 8 hours per day at” this exposure. Draft Report 7 at 4-2. Both the tribal headquarters and the gas station are within 150 feet of the Existing Highway Alternative. Moreover, Draft Report 7 states that construction noise could reach levels of 100 dBA, a level that OSHA limits to 2 hours of exposure. Draft Report 7 at 4-2. Draft Report 7 dismisses the impact of these noise levels, declaring that “[i]t is not anticipated the noise levels would be hazardous . . . assuming adequate hearing protection is worn and OSHA and State guidelines are followed.” Draft Report 7 at 4-2. It is not clear how impacts from construction noise will be mitigated for those located in the tribal headquarters and for employees and visitors of the gas station and national monument. The dismissive nature with which the report addresses noise impacts and its failure to identify noise mitigation measures on these populations directly contravenes Study Plan 7 §§ 7.2.1, 7.6.2.3, and renders Draft Report 7 noncompliant with Study Plan 7.

UDWR Response:

The final study report will clarify that peak, maximum and average noise levels for people working inside the tribal headquarters would be attenuated by the building and would be less than 90 dBA. The only construction activities that would be performed for the Existing Highway Alternative near the Pipe Spring/tribal headquarters area would include clearing and grubbing/earthwork (peak noise level \leq 99 dBA, un-sustained; average noise level \leq 88 dBA) and piping installation (peak noise level \leq 92 dBA, un-sustained; average noise level \leq 85 dBA). Clearing and grubbing/earthwork would last less than two hours near the gas station/convenience store and the parking lot surrounding the tribal headquarters. The maximum noise levels at the gas station would be less than 99 dBA during clearing and grubbing/earthwork, and potential exposure would be less than the OSHA limits described in Table 4-2 of the draft study report. Peak construction noise levels (temporary) at Pipe Spring National Monument would be decayed from the source to about 72 dBA over the 1,090 feet distance. Average construction noise levels (temporary) at Pipe Spring National Monument would be decayed from the source to about 58 dBA over the 1,090 feet distance. The final study report will include this analysis and clarify why the noise impacts on people working in the tribal headquarters, visitors and workers at the gas station and convenience store and visitors to the Pipe Spring National Monument would not be significantly impacted by noise during the temporary construction activities that would be associated with the Existing Highway Alternative alignment. The final study report will address noise mitigation measures that are determined necessary in consultation with the Kaibab Band of Paiute Indians regarding temporary construction noise in the vicinity of the tribal headquarters, gas station and convenience store, and Pipe Spring National Monument.

KBPI Comment 76:

Section 4.1.2 Wildlife Receptors - Citing just one 1988 reference, Draft Report 7 essentially dismisses the notion that noise will impact wildlife in any permanent way. Draft Report 7 at 4-3. Furthermore, the 1988 citation does not appear in the "References Cited" section of Draft Report 7 on page R-1. Draft Report 7 states that "[i]t appears that many species become tolerant of sound over time . . . and would resume use of habitat that may have been initially abandoned even as the noise continues." Draft Report 7 at 4-3. "Many" is not the same as "all," yet there is no discussion of noise impacts on specific species in the area. Similarly, Draft Report 7 states that the "[g]eneral population health and reproductive success of most species are not documented to be affected by moderately loud sounds." Draft Report 7 at 4-3. Again, "most" is not "all," yet Draft Report 7 makes no attempt to discuss specific species. Moreover, it is not clear if there is a lack of documentation on the subject, or if it has been shown that most species are not affected. If the former, then Draft Report 7 improperly assumes that lack of documentation equals no impact, in violation of Study Plan 7. See Study Plan 7 §§ 7.6.2.3, 7.6.2.4. If the latter, then Draft Report 7 inadequately demonstrates that fact. The failure to provide documentation and citation to support Draft Report 7's conclusion that most species are not affected directly contravenes Study Plan 7 §§ 7.6.2.3, 7.6.2.4, and renders Draft Report 7 noncompliant with Study Plan 7.

UDWR Response:

The final study report will include the referenced document in the References section. The referenced document is a literature review and synthesis prepared and jointly published by the U.S. Fish and Wildlife Service, National Ecology Research Center in Ft. Collins, Colorado and the U.S. Air Force, Engineering Services Center. The literature review includes more than 190 documents published by U.S. government agencies and from refereed scientific journals. The final study report will clarify the discussions of noise impacts on various wildlife species in the LPP Project alignments.

KBPI Comment 77:

Overall, Draft Report 7 is extraordinarily brief and dismissive of the effects of construction noise on wildlife. Citing a single 23 year old source (again, a source that is not further included in the References Cited section) is inadequate. If Draft Report 7's conclusion with respect to wildlife and

construction is widely accepted by biologists, more support is needed to demonstrate that conclusion, as required by Study Plan 7. Study Plan 7 §§ 7.6.2.3, 7.6.2.4. The failure to provide such support renders Draft Report 7 noncompliant with Study Plan 7.

UDWR Response:

Please refer to the response to KBPI comment 76.

KBPI Comment 78:

Section 4.3.3 Hydro System South Alternative - Draft Report 7 declares that “[w]ildlife sensitive receptors in the area could temporarily be affected by the noise although it is not expected to be an insignificant impact because of its temporary nature.” Draft Report 7 at 4-4. It appears that Draft Report 7 intended to state that it is not expected to be a significant impact, not that it is not expected to be an insignificant impact. Assuming that is the case, see the discussion of Section 4.1.2, supra. Such an improperly supported dismissal of the impact of Project noise on wildlife directly contravenes Study Plan 7 §§ 7.6.2.3, 7.6.2.4, and renders Draft Report 7 noncompliant with Study Plan 7.

UDWR Response:

Your comment has been noted.

KBPI Comment 79:

Section 4.4 Environmentally Preferred Alternative - Draft Report 7 states that the South Alternative and the Southeast Corner Alternative are the “lowest noise producing alternative alignments” and says that “[t]hese alignments have fewer potential human receptors which could be impacted from construction activity noise.” Draft Report 7 at 4-5. Draft Report 7 never actually declares that these are the environmentally preferred alternatives, although that can be inferred from the section heading. Draft Report 7 does not explain why these alternatives produce less noise; perhaps Draft Report 7 intended to state that these alternatives would have fewer noise impacts because of the lack of human receptors, since nothing in Draft Report 7 indicates that construction of these alternatives would be quieter. In fact, these alternatives require some rudimentary road construction or road improvement not required by the Existing Highway Alternative, presumably leading to more aggregated noise, not less. The failure to provide documentation or support for the apparently premature conclusion that the southern alignment is the preferred alternative for noise reasons directly contravenes Study Plan 7 §§ 7.6.2.3, 7.6.2.4, and renders Draft Report 7 noncompliant with Study Plan 7.

UDWR Response:

The final study report will clarify the text on noise impacts of the alignment alternatives and human receptors. Building construction roads or improving roads along the South Alignment and Southeast Corner alignment would not lead to more aggregated noise. The final study report will clarify that the Existing Highway Alternative alignment has potential to generate higher noise levels than the other alternatives because of its proximity to existing highways that would cause a cumulative noise impact.

KBPI Comment 80:

The conclusion contained in this section entirely rests upon the assumption of Section 4.1.2 of Draft Report 7, that wildlife would be minimally impacted by noise. The reasoning appears to be that highway noise would still exist and the construction noise would exist a few miles away, but impacts to wildlife would not increase because noise has no permanent impact on wildlife and the “separated” noises do not accumulate. See Draft Report 7 at 4-3. If, however, wildlife effects would be more than extremely temporary, the effect of having highway noise and construction noise a few miles apart might be greater than the effect of combining the highway noise and construction noise in one location. Draft Report 7 does not consider that possibility because of its assumption regarding the lack of impact of noise on wildlife. Moreover, this conclusion disregards the fact that human receptors may regularly be located in

the area along the Southern Alternative and the Southeast Corner Alternative, since the Kaibab Indian Reservation extends all the way to the southern alignments and the members of the Kaibab Tribe use their entire Reservation as their permanent homeland. The failure to consider the potential for considerable human presence in the vicinity of the southern pipeline alignments, and the failure to provide documentation or support for the conclusion that the southern alignments will overall produce less noise than the northern alignment directly contravenes Study Plan 7 §§ 7.2.1, 7.3, 7.4.2, 7.4.3, 7.6.2.1, 7.6.2.3, 7.6.2.4, and renders Draft Report 7 noncompliant with Study Plan 7.

UDWR Response: Data presented in Table 3-6 in Section 3.2.3 of the draft study report demonstrate that average and peak noise levels would decay to below baseline levels (<50 dBA) with a maximum of 2.4 miles at peak noise levels of 99 dBA. The distance between the South Alternative alignment and Arizona State Highway 389 ranges from 4.5 miles to 5.5 miles across the Kaibab-Paiute Indian Reservation. Therefore, the peak noise levels generated by construction activities along the South Alignment could not be measured or distinguished 2.1 miles away from Highway 389. The peak noise level generated by traffic and recorded along the Existing Highway Alternative alignment during numerous measurements on the Kaibab-Paiute Indian Reservation was 78 dBA, which would decay to below baseline levels (<50 dBA) within 0.3 mile from the highway. The combined peak noise from highway traffic and average noise from adjacent pipeline construction under the Existing Highway Alternative alignment would be at least one decibel higher than the noise generated from constructing either the South Alternative alignment or the Southeast Corner Alternative alignment. The final study report will include noise impact analyses on wildlife receptors as stated in the response to KBPI comment 69.

The final study report will clarify the potential construction noise impacts on human receptors across the Kaibab-Paiute Indian Reservation. Much of the South Alternative alignment is more than a mile south of the Reservation boundary, and average construction noise levels from this alignment alternative would decay to below baseline levels within 0.6 mile from the construction activities. Where the South Alternative alignment is parallel to the Reservation boundary near the southeast corner of the Reservation for about 3.5 miles, the alignment center line would be 300 feet south of the Reservation boundary. The temporary construction noise (average levels) extending onto the Reservation in this extremely rugged area would be about 79 dBA. This compares to temporary construction noise generated along the Existing Highway Alternative alignment at average levels of 88 dBA 50 feet from the noise source.

KBPI Comment 81:

Section 5.1 Best Management Practices - This section contains a one paragraph discussion of noise mitigation efforts. Draft Report 7 at 5-1. This discussion is cursory and contains no citations. Moreover, the Kaibab Tribe has previously declared “that the development of any mitigation measures regarding impacts to tribal lands must be made in consultation with the Tribe.” Kaibab Tribe’s Reply Comments at 7. Draft Report 7 does not address the Kaibab Tribe’s comments regarding mitigation and does not indicate that efforts to mitigate the effects of noise on the Kaibab Tribe and its members will be made in consultation with the Kaibab Tribe, contrary to Study Plan 7. Study Plan 7 § 7.6.2.3. Study Plan 7 requires the analysis of mitigation measures. Study Plan 7 §§ 7.6.2.3, 7.6.2.4. The failure to analyze mitigation measures directly contravenes Study Plan 7 and renders Draft Report 7 noncompliant with Study Plan 7.

UDWR Response:

The final study report will include results of consultation with the Kaibab Band of Paiute Indians regarding noise mitigation measures for potential noise impacts on the Kaibab-Paiute Indian Reservation. Please refer to the response to KBPI comment 66.

BIA Comment 66:

1.1 - Figure 1-1 -some map layers appear to be turned off -legend appears to be missing symbols, scale bar is missing, labels are unclear, and linear system alternatives are not shown.

UDWR Response:

The comment indicates the user has an outdated version of Adobe Acrobat Reader. All PDF versions of the draft study reports are fully readable with Adobe Reader 8.

BIA Comment 67:

1.2.1 - Figure 1-2 -some map layers appear to be turned off -legend appears to be missing symbols, scale bar is missing, labels are unclear, and linear system alternatives are not shown.

UDWR Response:

Please refer to the response to BIA comment 66.

BIA Comment 68:

1.2.1, 1.2.2 - Figure 1-3 -some map layers appear to be turned off -legend appears to be missing symbols, scale bar is missing, labels are unclear, and linear system alternatives are not shown; where are K4020, K3290, etc. roads?

UDWR Response:

Please refer to the response to BIA comment 66.

BIA Comment 69:

1.2.1 - Figure 1-4 – same comments regarding legend, scale, labels, and linear system alternatives (Cedar Valley Pipeline System?).

UDWR Response:

Please refer to the response to BIA comment 66.

BIA Comment 70:

1.2.2 - Figure 1-5 – same comments regarding legend, scale, labels, and linear system alternatives (Hydro System? Kane County Pipeline System?).

UDWR Response:

Please refer to the response to BIA comment 66.

BIA Comment 71:

1.2.3 - Figure 1-6 -same comments regarding legend, scale, labels, and linear system alternatives (Hydro System?).

UDWR Response:

Please refer to the response to BIA comment 66.

BIA Comment 72:

1.2.4 - Figure 1-7 -same comments regarding legend, scale, labels, and transmission lines.

UDWR Response:

Please refer to the response to BIA comment 66.

BIA Comment 73:

1.2.4 - Figure 1-8 -same comments regarding legend, scale, labels, and transmission lines.

UDWR Response:

Please refer to the response to BIA comment 66.

BIA Comment 74:

1.2.4 - Figure 1-9 -same comments regarding legend, scale, labels, and transmission lines.

UDWR Response:

Please refer to the response to BIA comment 66.

BIA Comment 75:

3.2.2 - Figure 3-1 -some map layers appear to be turned off -legend appears to be missing symbols and scale bar is missing.

UDWR Response:

Please refer to the response to BIA comment 66.

BIA Comment 76:

3.2.2 - Figure 3-2 -some map layers appear to be turned off -legend appears to be missing symbols, scale bar is missing, labels are unclear, and contour level areas not shown.

UDWR Response:

Please refer to the response to BIA comment 66.

BIA Comment 77:

3.2.2 - Figure 3-3 -some map layers appear to be turned off -legend appears to be missing symbols, scale bar is missing, labels are unclear, and contour level areas not shown.

UDWR Response:

Please refer to the response to BIA comment 66.

BIA Comment 78:

3.2.2 - Figure 3-4 -some map layers appear to be turned off -legend appears to be missing symbols, scale bar is missing, labels are unclear, and contour level areas not shown.

UDWR Response:

Please refer to the response to BIA comment 66.

BIA Comment 79:

3.2.3 - Figure 3-5 -same comments regarding legend, scale, labels, and contour level areas.

UDWR Response:

Please refer to the response to BIA comment 66.

BIA Comment 80:

3.2.3 - Figure 3-6 -same comments regarding legend, scale, labels, and contour level areas.

UDWR Response:

Please refer to the response to BIA comment 66.

BIA Comment 81:

3.2.3 - Figure 3-7 -same comments regarding legend, scale, labels, and contour level areas.

UDWR Response:

Please refer to the response to BIA comment 66.

BLM Comment 8:

Report 7. Wouldn't pump stations be more noisy than water line? Thus the contours should extend out further? – Page 44.

UDWR Response:

The comment presumably refers to noise contours shown in Figures 3-2 through 3-7. All of the contours shown on these figures pertain to pipeline and facility construction, not to operations, therefore the comment is incorrect. Because estimates of noise generated by pipeline operations, including pump stations that would be contained in buildings and with noise attenuation, buried pipelines, and other features, would be no greater than 60 db and therefore would not exceed significance criteria, therefore no noise contour maps were prepared for operations. Revised noise contour maps will be included in the final study report to clarify that the noise contours are for construction only, and the text of section 3.2.7 will explain why no noise contour maps were prepared for operations.

BLM Comment 9:

Report 7. Will these guarantee low level noise? What are design features of the facilities that would provide sound attenuation? – Page 50.

UDWR Response:

The comment apparently refers to sound attenuation features that would be incorporated for pump stations and other system components, as identified in section 4.2. Pump stations and other facilities housing mechanical facilities are, when required, routinely contained in sound attenuating buildings that prevent high levels of noise from emanating away from the structures. This is a common engineering practice and would be a requirement of the detailed design.

Draft Study Report 8 – Paleontological Resources

FERC Comment 16:

Revise the draft study report to clarify if any of the previously recorded fossil locations within the area could be affected by the project, discuss if those locations were re-visited in the field or re-recorded, and include those locations in tables D-1 and D-2.

UDWR Response:

The final study report will clarify if any previously-recorded fossil locations could be affected, identify any revisited sites, and include the locations of those sites in tables D-1 and D-2.

FERC Comment 17:

In accordance with the Revised Study Plan, please include the following in your revised study report: (1) more descriptive information about each individual resource, (2) sensitivity classifications for each location, (3) discussions of general and specific conditions, including current disturbances identified at each location and an analysis of impacts that may occur as a result of project construction, and (4) recommendations of mitigation measures to reduce any significant impacts.

UDWR Response:

The final study report will provide the information, discussions, and recommendations requested in the comment.

FERC Comment 18:

The maps of the previously recorded paleontological locations provided in appendix C depict only 43 of 58 reported locations in Utah and only 6 of 11 locations reported in Arizona. Please clarify or correct this discrepancy in your revised study report, or include maps depicting the locations of all of the previously recorded locations identified during the literature search.

UDWR Response:

The final study report will clarify or correct this apparent discrepancy.

FERC Comment 19:

In appendix D, Paleontological Site Locality Maps, only 24 of the 49 newly documented paleontological locations recorded in Utah and Arizona are plotted on these maps. Include the missing maps in your revised study report and ensure that all of the locations identified in tables D-1 and D-2 (including previously recorded locations within the study area) are shown on the maps. Include a column in both tables that identifies the map number that correlates with each location. Previously recorded and new locations should be shown on the maps in two different colors. Identify on the maps the location of each of the geologic formations identified in Chapter 2 relative to the project area.

UDWR Response:

The final study report will clarify and correct the apparent paleontological location map discrepancies, with new and previously recorded sites identified in different colors. Tables D-1 and D-2 will be modified to be consistent with the maps, with correlating identity numbers, and associated geologic formations identified in Chapter 2 will be identified on the maps within the project area.

KBPI Comment 82:

The Lake Powell Pipeline Draft Study Report 8: Paleontological Resources (Mar. 10, 2011) (“Draft Report 8”) presents a review of existing literature and describes the existing geological formations, as required by Study Plan 8. See Study Plan 8 §§ 8.6.2.1, 8.6.2.3. It also presents findings from field investigations, pursuant to Study Plan 8. See Study Plan 8 § 8.6.2.2. Draft Report 8 fails, however, to adhere to Study Plan 8 beyond that point. Draft Report 8 simply presents a review of existing literature, describes the relevant geologic formations, describes the results of field investigations, and ends. Draft Report 8 never discusses the “sensitivity classification of fossil localities,” as required by Study Plan 8. Study Plan 8 § 8.6.2.3 (“A sensitivity classification of fossil localities . . . will be used.”). More importantly, Draft Report 8 never analyzes the data that has been collected and reviewed, contrary to the requirements of Study Plan 8. Study Plan 8 §§ 8.6.2.3 (discussing analysis of paleontological impacts), 8.6.2.4 (“Results will be discussed with a focus on the study objectives.”).

UDWR Response:

The final study report will include discussion on sensitivity classification of fossil localities, analysis of data collected and reviewed, impacts on paleontological resources for each LPP Project alternative, and mitigation measures to avoid or minimize impacts on paleontological resources.

KBPI Comment 83:

While Draft Report 8 does indicate where each geological formation is located with respect to the Project, e.g., Draft Report 8 at 2-1, it never provides a discussion of each Project alternative with respect to each alternative’s impacts on paleontological resources, which is the very core of what Draft Report 8

should address. Study Plan 8 § 8.1 (“This study plan presents an approach for advancing knowledge and understanding of paleontological resources as they pertain to the Project’s south alignment alternative, existing highway alignment alternative, and the no action alternative.”). Without such analysis, the reader is left to compile Draft Report 8’s descriptions of geologic formations and field survey results along with the Project alternative descriptions to attempt to deduce the paleontological impacts of the various alternatives. This failure to consider the likely paleontological impacts of each Project alternative violates Study Plan 8, Study Plan 8 §§ 8.2 (“The study will identify potential impacts of the Project on paleontological resources during Project construction, operation and maintenance activities.”), 8.2.1 (“Specific paleontological resource related objectives include determination of how Project construction and operation will affect paleontological resources along the alternative alignments.”), and renders Draft Report 8 noncompliant with Study Plan 8.

UDWR Response:

Please refer to the response to KBPI comment 82.

KBPI Comment 84:

Draft Report 8 does not discuss mitigation measures, as required by Study Plan 8. Study Plan 8 § 8.6.2.4 (“The technical report will include mitigation measures to reduce significant paleontological resource impacts resulting from the Project.”). Of course, it is difficult to address mitigation measures when, as noted above, Draft Report 8 never discusses how paleontological resources might be affected by each of the proposed Project alternatives, in violation of Study Plan 8. Study Plan 8 § 8.2.1 (“Specific paleontological resource related objectives include determination of how Project construction and operation will affect paleontological resources along the alternative alignments.”). Nevertheless, a discussion of mitigation measures must be included, Study Plan 8 § 8.6.2.4, otherwise Draft Report 8 is noncompliant with Study Plan 8.

UDWR Response:

Please refer to the response to KBPI comment 82.

BLM Comment 104:

08 Draft Paleontological Resources Report

OVERALL COMMENT: Report does not include any discussion of the significance - scientific or otherwise - of any of these fossils – a major oversight in this report. For decision makers, significance is the single most important attribute for determining an action outcome. This needs to be well addressed and added to chapter 3 or 4. However, the overall content is fine. The report is correct, the fossil resources along the pipeline, for the most part, are pretty sparse.

UDWR Response:

Please refer to the response to KBPI comment 82.

BLM Comment 105:

8.2.4 5th sentence. - Need to include Dinosaur Canyon Member in the list of Moenave members.

UDWR Response:

The final study report will include the Dinosaur Canyon Member in the list of Moenave members.

BLM Comment 106:

8.3.2 - Ammonite left out of list of fossils found in the Timpoweap.

UDWR Response:

The final study report will include Ammonite in the list of fossils found in the Timpoweap.

BLM Comment 107:

Check PFYC rating numbers in Table ES-1. They do not correspond with new AMS data Paleo Chart for the RMP amendment.

UDWR Response:

The final study report will clarify PFYC rating numbers and to correspond with the new AMS data Paleo Chart for the BLM Resource Management Plan amendment.

Draft Study Report 9 – Recreation Resources

KBPI Comment 85:

Section 4.1 Introduction - The *Lake Powell Pipeline Draft Study Report 9: Recreation Resources* (Mar. 10, 2011) (“Draft Report 9”) analyzes the consequences of construction and operation of the Project on recreation resources in the Project area, as required by the study plan for Draft Report 9. See Study Plan 9 §§ 9.1, 9.6.2.4. In presenting its analysis, Draft Report 9 applies a “significance criterion for determining if impacts on recreation resources are significant.” Draft Report 9 at 41. The criterion “is permanent loss of recreation resource area, facility or use as a result of the LPP Project construction or operation.” Draft Report 9 at 4-1. Study Plan 9, however, provides entirely different guidance, stating that,

[i]mpacts on recreation are considered significant if construction, operation or maintenance activities would result in any of the following conditions: [c]hanges to [Recreation Opportunity Spectrum (ROS)] settings[, c]hanges to [Recreation Management Areas (RMAs)] and ROS settings within RMAs[, c]hanges to existing and proposed recreation sites[, c]hanges to Special Recreation Permitting[, a] reduction or increase in recreation visitation at existing recreation sites during construction or extending beyond the construction period[, or c]hanges in the overall operation of existing and proposed recreational facilities.

UDWR Response:

The final study report will clarify the significance criteria discussion and resolve differences with the significance criteria identified in the approved Recreation Resources study plan.

KBPI Comment 86:

Study Plan 9 § 9.6.2.3 (emphasis added). Draft Report 9’s use, therefore, of “permanent loss” as its significance criterion violates Study Plan 9. Study Plan 9 recognizes that many different impacts from construction and operation of the Project, not solely permanent loss, could be significant. For example, increased use of certain sites based on the temporary or permanent loss of use of other sites would be a significant impact under Study Plan 9, as would other temporary or permanent changes to recreation sites or usage patterns. See Study Plan 9 § 9.6.2.3.

UDWR Response:

The final study report will clarify the significance criteria discussion and resolve differences with the significance criteria identified in the approved Recreation Resources study plan.

KBPI Comment 87:

The failure of Draft Report 9 to apply the significance criteria mandated by Study Plan 9 invalidates much of the overall analysis in Draft Report 9. For example, by failing to consider changes in temporary use patterns as significant, as required by section 9.6.2.3 of Study Plan 9, Draft Report 9 never considers whether changes in use patterns caused by a temporary construction disturbance might result in permanent use pattern changes. To illustrate, Draft Report 9 concludes that impacts of construction on Grand Staircase-Escalante National Monument tour operators would be temporary, Draft Report 9 at 4-5, yet a tour operator that loses business over a temporary time period could be permanently affected, either because the temporary downturn forced it out of business or because use patterns of customers and potential customers could be permanently affected by loss of return customers or loss of referrals. Under Study Plan 9, such effects would be considered permanent impacts on recreation resources within the Project area. See Study Plan 9 § 9.6.2.3. Similarly, Draft Report 9 states that construction of a transmission line would have “minor temporary direct impacts” on the Paria Outpost Resort because construction “would temporarily delay or disrupt access to and from the resort for up to a maximum of 8 hours.” Draft Report 9 at 4-17. Such a disruption of access, however, could be much more than minor for visitors hoping to stay at the resort and such a disruption, even if temporary, could potentially be devastating to the ability of the resort to survive financially. Again, under the directive of Study Plan 9, this could be a permanent impact on recreation resources within the Project area. See Study Plan at 9.6.2.3. These are but a few examples of the failure of Draft Report 9 to apply Study Plan 9’s significance criteria, which renders Draft Report 9 noncompliant with Study Plan 9.

UDWR Response:

The final study report will clarify the significance criteria discussion and resolve differences with the significance criteria identified in the approved Recreation Resources study plan. The final study report will include updated impact analyses results and conclusions as modified by clarifications involving the significance criteria for impacts on recreation resources.

KBPI Comment 88:

Section 4.2.2.3 Kaibab-Paiute Indian Reservation - This section of Draft Report 9 discusses impacts of construction and operation on the recreational resources of the Reservation. With respect to the campground and RV park, Draft Report 9 only notes the temporary and insignificant effect of air pollutants caused by construction of the Project. Draft Report 9 at 4-21. However, Draft Report 9 cites traffic and noise impacts to Pipe Spring National Monument caused by Project construction. Draft Report 9 at 4-22. Given that the campground and RV park are located in close proximity to and share the same access road as Pipe Spring National Monument, Draft Report 9 provides no explanation for the difference in impacts. The failure to consider such impacts on the campground and RV park suggests incomplete field reconnaissance, as required by Study Plan 9 § 9.6.2.2, and renders Draft Report 9 noncompliant with Study Plan 9.

UDWR Response:

The final study report will clarify the potential construction and operation impacts of the Existing Highway Alternative on Pipe Spring National Monument and the Kaibab-Paiute Indian Reservation campground and RV park.

KBPI Comment 89:

Section 6.2.2.1.2 Indirect Impacts - This section of Draft Report 9 discusses the unavoidable, adverse impacts of construction of the Existing Highway Alternative. Draft Report 9 at 6-2. Draft Report 9 notes that Pipe Spring National Monument could experience temporary air pollution as well as temporary access delays during construction across Pipe Spring Road. Draft Report 9 at 6-2. Draft Report 9 makes no mention of such unavoidable, adverse impacts on the campground and RV park even though they are located in close proximity to and share the same access road as Pipe Spring National Monument. Draft

Report 9 provides no explanation for the difference in impacts. The failure to consider such unavoidable, adverse impacts on the campground and RV park suggests incomplete field reconnaissance, as required by Study Plan 9 § 9.6.2.2, and renders Draft Report 9 noncompliant with Study Plan 9.

UDWR Response:

The final study report will clarify the potential indirect impacts of the Existing Highway Alternative on Pipe Spring National Monument and the Kaibab-Paiute Indian Reservation campground and RV park.

KBPI Comment 90:

Chapter 7 Cumulative Impacts - Study Plan 9 requires extensive data analysis. See Study Plan 9 § 9.6.2.3. Among other things, Study Plan 9 requires that Draft Report 9 use “[e]stimates of potential population changes . . . to determine any increase in recreation resources use.” Study Plan 9 § 9.6.2.3. Study Plan 9 also mandates that Draft Report 9 develop “[a] ratio of amount of recreation resources use and population levels . . . from data presented in the Utah and Arizona [State Comprehensive Outdoor Recreation Plans].” Study Plan § 9.6.2.3. But Draft Report 9 contains no such analyses, contrary to the mandates of Study Plan 9 § 9.6.2.3, rendering Draft Report 9 noncompliant with Study Plan 9. Once these analyses are complete, the Kaibab Tribe hereby requests additional time to submit comments on the cumulative impacts.

UDWR Response:

The UDWR is completing the cumulative impacts analysis and will incorporate it into the final study report. The approved Recreation Resources study plan states: “Cumulative impact analysis will be based on the list of other projects that may occur in the future. These will be examined to determine what impacts on recreation resources may occur that would cause a cumulative impact with the impacts projected to occur from the Project.”

BIA Comment 82:

3.3 identified Recreation Areas - What does “No recreation needs relevant to the LPP or hydropower system have been identified” mean exactly? More explanation can be given as to why no needs were identified like the previous section (3.3.3). Were there conversations with the management agency? Was there review of a management plan? This is repeated several times throughout this section.

UDWR Response:

The meaning of “relevant needs” as they relate to the LPP project and hydropower system will be clarified in the final study report. The draft study report states in section 3.1 that the study included a review of recreation needs identified Federal land management plans and State Comprehensive Outdoor Recreation Plans for Utah and Arizona. The final study report will clarify which land management plans were reviewed to identify recreation needs.

BIA Comment 83:

Chapter 4 – Environmental Consequences - When stating that the “LLP construction/operation would have no direct or indirect impacts on recreational use” indicate why. Is it because of the proximity of the recreation area to the project? This is repeated several times throughout this section.

UDWR Response:

Chapter 4 of the final study report will clarify why the LPP construction/operation would have no direct or indirect impacts on recreational use.

BIA Comment 84:

Chapter 5 Mitigation and Monitoring - A significant impact is identified. The construction of the Hurricane Cliffs afterbay reservoir within the Sand Mountain Special Recreation Management Area

under all of the LPP action alternatives would result in permanent loss of 200 acres of designated recreation land. Is there proposed mitigation to offset the area lost for recreation? Or is this an acceptable impact because greater impacts would result under the No Action alternative?

UDWR Response:

The UDWR will consult with BLM on potential mitigation measures and document the results of the consultation in the final study report.

BLM Comment 108:

09 Draft Recreation Resources Report

The impacts to motorized and non-motorized recreation in the vicinity of the proposed afterbay at the base of the Hurricane Cliffs were not adequately analyzed. Traffic counter data collected during 2010 shows that 10,931 vehicles used the 2800 South Road that leads from downtown Hurricane, south into Warner Valley. Even if traffic is rerouted during construction, given the large number of users, there would be significant impacts to recreational use in this area.

UDWR Response:

The final study report will include an updated analysis on recreation use impacts during construction of the Hurricane Cliffs hydroelectric facilities and afterbay reservoir near the base of the Hurricane Cliffs.

BLM Comment 109:

Also lacking analysis are the potential impacts to commercial/competitive/group event recreational use. Roads and trails in this area are used for motorcycle, ATV, mountain bike, and equestrian events. The cumulative economic effect of these events is significant as they attract a large number of out-of-town visitors. The 200 acres listed for the afterbay will directly impact these events and could possibly eliminate the Cholla Challenge mountain bike race and the Color Country Endurance Ride (equestrian) since the staging areas for both events are in the direct vicinity of the afterbay.

UDWR Response:

The final study report will include an updated analysis of potential impacts on commercial/competitive/group event recreational use of the proposed Hurricane Cliffs afterbay reservoir, such as the Cholla Challenge mountain bike race and the Color Country Endurance Ride (equestrian) events. Please refer to the response to BIA comment 84.

BLM Comment 110:

The Hurricane Cliffs non-motorized trail system is the location of three major off-road races every fall. The 25 and 6 Hours of Frog Hollow are mountain bike races that attract a large number of participants. A "Hurricane JEM" is a trail marathon that utilizes all of this trail system. All three events occur between mid-October and early November and any construction activity could have major impacts.

UDWR Response:

The final study report will include an updated impact analysis of the three major off-road races identified, including the 25 and 6 Hours of Frog Hollow mountain bike races and Hurricane JEM trail marathon that utilizes all of the Hurricane Cliffs non-motorized trail system. Please refer to the response to BIA comment 84.

BLM Comment 111:

3.2.4.1 Guided Trips - *There are currently 80 authorized providers offering services.*

UDWR Response:

Your comment has been noted.

BLM Comment 112:

3.2.4.3 Wahweap Wilderness Study Area - There are no “OHV roads” in GSENM. The correct designations are Open Roads or Open/ATV roads. In this case, “and a series of rugged OHV roads” Needs to be deleted.

UDWR Response:

Your comment has been noted.

BLM Comment 113:

3.2.4.4 US Highway 89 Special Recreation Management Area - There is a Whitehouse Campground and Trailhead but not a Whitehouse Trail. Replace “Whitehouse Trail” with Paria River Canyon.

UDWR Response:

Your comment has been noted..

BLM Comment 114:

3.2.4.7 Big Water Visitor Center - The heading should read “GSENM Visitor Center in Big Water” (same with Kanab). The picnic tables, shade structures and loop road have been installed and constructed.

UDWR Response:

Your comment has been noted.

BLM Comment 115:

3.2.4.8 Paria Contact Station, White House Campground, and White House Trail - There is a Whitehouse Campground and Trailhead, but not a Whitehouse Trail. The trail or route is the Paria River Canyon. The Paria Contact Station is not a trailhead. The Paria Contact Station has modern restrooms. There are no “outhouses”. In the busy season, port-a-potties are rented to accommodate increased demand for restroom facilities. The Whitehouse Campground access road does not cross the Paria River; rather it runs parallel on the east side. The visitation numbers represent people who camped in the campground, not visitors to the Paria River Canyon.

UDWR Response:

The final study report will refer to the Paria River Canyon and incorporate the other changes identified in the comment.

BLM Comment 116:

3.2.4.10 Catstair Canyon Trailhead - Catstair Canyon Trailhead does not exist. Catstair Canyon is a “point of interest” at best. The site is simply a pull-off from Highway 89 and does not rate high on the GSENM priority list for facility development. There are definitely ingress/egress safety issues.

UDWR Response:

The final study report will remove the reference to the Catstair Canyon Trailhead and incorporate the other changes identified in the comment.

BLM Comment 117:

3.2.4.11 House Rock Valley Road - The “Paria point of interest” should be replaced with the “Paria Movie Set road”.

UDWR Response:

The final study report will replace the reference to the Paria point of interest with the Paria Movie Set road.

BLM Comment 118:

3.2.4.13 Off Highway Vehicle Use and Hunting - There are no "OHV roads" in GSENM. The correct designations are "Open Roads or Open/ATV roads".

UDWR Response:

Please refer to the response to BLM comment 112.

BLM Comment 119:

3.2.4.14 Great Western Trail - There is also a graveled parking area on the north side of US 89.

UDWR Response:

The final study report will clarify the Great Western Trailhead has a graveled parking area on the north side of US 89.

BLM Comment 120:

3.2.4.15 Kanab Visitor Center - The GSENM Visitor Center in Kanab is located on the east side of Kanab but within city limits. The percentage of European visitors is way too high. We do not track the particular continent where our visitors are from. If I were to guess, it would be about 30-40% foreigners for both VCs.

UDWR Response:

The final study report will clarify the GSENM Visitor Center in Kanab is located on the east side of Kanab within city limits and that foreign visitors to both Visitor Centers is estimated by the BLM to be about 30 to 40 percent of the total visitors.

BLM Comment 121:

4.2.1.4.6 Paria Canyons and Plateaus Special Recreation Management Area - The Cottonwood Canyon Road is only north of US 89. Directly south of Cottonwood Canyon road and across US 89 is East Clark Bench which is mostly State of Utah land.

UDWR Response:

The final study report will clarify the Cottonwood Canyon Road is north of US 89 and the East Clark Bench road is south of US 89 and mostly on State of Utah land.

BLM Comment 122:

There is no Whitehouse Trail. It should be called the Whitehouse Campground road.

UDWR Response:

Please refer to the response to BLM comment 115.

BLM Comment 123:

4.2.1.14 Private Recreational Facilities - Failed to include Paria Canyon Adventure Ranch near the Paria Outpost.

UDWR Response:

The final study report will include the Paria Canyon Adventure Ranch near the Paria Outpost Resort.

BLM Comment 124:

6.1.1.1 Existing and Proposed Recreation Facilities and Use - Some construction closures will be longer than 8 hours.

UDWR Response:

The final study report will clarify that some construction closures will be longer than eight hours.

BLM Comment 125:

7.1.3.2 Grand Staircase-Escalante National Monument - The Paria Movie Set will be a day-use site for all types of recreation users, not solely for equestrian users.

UDWR Response:

The final study report will clarify that the Paria Movie Set will be a day-use site for all types of recreation users, not solely for equestrian users.

Draft Study Report 10 – Socioeconomics and Water Resource Economics

Rutherford Comment 1:

“What do the people of Washington County do when they exhaust the Lake Powell Pipeline water after the growth it encourages happens?”

UDWR Response:

Your comment has been noted.

Rutherford Comment 2:

Given the concerns that citizens and others have about this project and the effects it will have on our county’s growth, perhaps the decision to stop the pipeline now would be best rather than subjecting our small counties to an outrageous expense that will only create problems, not solve them. If you have the ability to decommission the project at the end of the licensing period, you certainly should consider stopping what recent polls show is an unpopular project now.

UDWR Response:

Your comment has been noted.

Rutherford Comment 2:

Although FERC’s website information indicates that a “short-term” view on decisions (30-50 years) is their position, at the March 22, 2011 meeting a question regarding “escalation factor” was raised: “Have there been any adjustments to the escalation factor based on the crisis in Japan and China’s demand?” The response was interesting and challenges the “short-term” view position that FERC and MWH assert is the “guideline” for the Lake Powell Project licensing process study plans. The response included the comment: “The analysis considers long term (since the 1930’s) escalation rates.” That’s 81 years by my calculation – more than the 30 to 50 year period FERC purports to be using to evaluate the project under consideration.

UDWR Response:

Your comment has been noted.

Rutherford Comment 3:

At the March 22, 2011 update meeting the question, “Was there any cost of financing include in the LPP costs?” The answer, “Financing costs are not included in this draft study report; the financing is a

separate analysis from the socioeconomics impact analyses.” The cost of this pipeline – currently \$1.06 BILLION without financing and O&M – is a huge part of the issue surrounding the “worth” of this project to this area’s taxpayers. With our state’s politicians willing to burden their citizens with a debt that far exceeds what many feel is acceptable or needed, having FERC consider this effect on the “socioeconomics” of these communities is a reasonable expectation.

UDWR Response:

The final Socioeconomics/Water Resource Economics study report will incorporate current user costs and evaluate increased user costs associated with the project financing.

Rutherford Comment 4:

During my discussions with people of many different persuasions, political (not involved in the process!) and religious – I have heard no one say this is a good project. Even the LDS community members comment against the project, mostly behind closed doors due to the demands their religion places on them to “follow the leaders.” So, I have a pretty good idea who is part of the 39.1% shown in the poll: developers, state and local politicians, construction groups, realtors – people who stand to gain financially or otherwise from this project while the rest of us pay. As people learn more about the project and the escalating costs, the poll percentages have moved heavily to the “no” side.

UDWR Response:

Your comment has been noted.

Rutherford Comment 5:

*The final bullet from the 4.2.9 scoping document on page 4 **has NOT been addressed adequately.** Federal Reserve Chairman Ben Bernanke announced at a news conference on April 27, 2011 that the recession has hit lower-income people hardest. Washington County, Utah, has suffered more during the recent recession due to the excessive growth during the 2000 to 2009 period (16th fastest growing county in the nation in terms of housing units). This explosive growth encouraged low-income workers into the area. I do not believe the study has addressed the harm done to the low-income populations adequately, and if the pipeline water encourages more excessive growth what effect that will have in the future on these low-income populations.*

UDWR Response:

The Environmental Justice analysis of economically disadvantaged populations will be provided in the final study report.

Rutherford Comment 6:

A comment at the March 22, 2011 project update meeting, from I believe Jim Fargo or a MWH representative, was that they have “never been involved in a project that didn’t have public opposition.” That is probably true. What’s also probably true is that many of the projects that have been approved – over the public’s opposition – have turned out to be bad projects that should have been stopped given the effects they ultimately had on the areas where they were built.

UDWR Response:

Your comment has been noted.

Rutherford Comment 7:

The study presenters on March 22 stated that comparing usage rates (gpcd) is very difficult because different cities/areas compute usage differently. Apparently, only the MWH group (which answers to the Utah state water division) has problems with this since other entities have successfully studied different usage rates across the state and the Southwest. Western Resource Advocates published an extensive

report several years ago, and the University of Utah's Bureau of Economic and Business Research David Eccles School of Business in their Utah Economic & Business Review article by Alan E. Isaacson, Research Analyst titled "Water Use and Residential Rate Structure in the Intermountain West" clearly identified usage rates throughout Utah and in other Southwestern states.

From: Utah Economic and Business Review

Bureau of Economic and Business Research
David Eccles School of Business
University of Utah
March/April 2005
Volume 65 Numbers 3&4

A water use study that compared several Utah areas with other areas showed: "The area with the lowest water use was Lewiston, Idaho at 154 gallons per person per day, or 63 percent of the 25 area average. The Lewiston Orchards Irrigation District, the largest water utility in Nez Perce County, Idaho operates a dual system which supplies pressurized irrigation water to each residence the district serves. The presence of this irrigation system results in little drinking water being used for landscape watering during the summer months."

Although Lewiston's summer temperatures (high 80s) are lower than Washington County's and the area gets a few more inches of rain annually, some lessons can be derived from their efforts to reduce the amount of water used for landscaping in the summer months. The Lake Powell project supporters purport that our area's high summer temps require higher gpcd usage for outside watering, but other areas have found ways to work around these problems. Are our water managers working hard enough for answers or just focused on the Lake Powell Pipeline to provide additional, potentially unneeded water?

UDWR Response:

The two examples stated in the comment, upon closer review, illustrate the difficulty in comparing water use rates between cities/communities. The first example, assumed to be a Western Resource Advocates 2006 report titled *Water in the Urban Southwest: An Updated Analysis of Water Use in Albuquerque, Las Vegas Valley, and Tucson* displays the water use rates of three cities/communities but does not compare them. Part of the difficulty is what each city's water use rate data represent; for example: does single-family residential total consumption include single-family culinary water consumption (metered or un-metered), single-family secondary water consumption (metered or un-metered), single-family culinary outdoor water consumption, and/or single-family culinary water indoor consumption. The cities in the example account for the various uses of the water in their systems differently from each other, and this is true for other cities that may be compared as well, which influences the use rate in gallons per capita per day (gpcd). The total system-wide water consumption by city/community displayed in the Western Resource Advocates 2006 document varies by entity, with Las Vegas Valley including unaccounted-for water in total system-wide consumption adjusted for weather conditions, and Albuquerque and Tucson not documented to include unaccounted-for water in total system-wide consumption, which influences the use rate in gpcd. UDWR meetings with Southern Nevada Water Authority (SNWA) regarding their water conservation program confirmed that [] of water use rates is only appropriate between years within a city/community, as displayed in the Western Resource Advocates 2006 report, and not between cities/communities because of many variables such as what the water use rate data represent, dynamic population numbers, climate, weather conditions, length of growing season, maximum temperatures, average temperatures, elevation, evaporation and evapotranspiration rates, water conservation measures, and others.

The second example referenced in the comment as the *Utah Economic and Business Review*, March/April 2005, Vol. 65, Numbers 3 and 4, titled *Water Use and Residential Rate Structures in the Intermountain West* (BEBR article) also illustrates the difficulty in comparing water use rates between metropolitan areas, especially upon comparison with the data reported in the Western Resource Advocates 2006 report.

The BEBR article shows the U.S. Geological Survey data presented in Figure 1, which is stated to represent year 2000, and shows the Albuquerque metropolitan area with 178 daily per capita withdrawal (gallons), while the Western Resource Advocates 2006 report (Figure 4) shows system-wide consumption in 2001 (closest year reported to 2000) of 205 gpcd, not including 23 gpcd of unaccounted-for water. The BEBR article (Figure 1) shows the Las Vegas-Paradise metropolitan area with 370 daily per capita withdrawal (gallons), while the Western Resource Advocates 2006 report (Figure 12) shows system-wide consumption (including unaccounted-for water) in 2003 (closest year reported to 2000) of 283 gpcd and 294 gpcd system-wide weather-adjusted use. The BEBR article (Figure 1) shows the Tucson metropolitan area with 201 daily per capita withdrawal (gallons), while the Western Resource Advocates 2006 report (Figure 19) shows system-wide consumption in 2001 (closest reported year to 2000) of 170 gpcd, not including 20 gpcd unaccounted-for water. The discrepancies between water use rates reported for the same metropolitan areas in the two example reports demonstrate the difficulties in reporting water use rates and therefore comparing water use rates between cities or metropolitan areas. Further, an addendum to the BEBR article clarifies that the “Data compiled by the U.S. Geological Survey for 2000 indicate that out of 25 Intermountain *metropolitan areas* (emphasis) St. George leads in per capita daily water use at 391 gallons. The water use refers to the St. George Metropolitan Area (all of Washington County) not St. George City.” Draft Study Report 19 (Water Needs Assessment) Figure 3-15 shows historical culinary water use by the six largest cities in Washington County (St. George, Washington, Hurricane, Santa Clara, LaVerkin, and Ivins) in 2000 at 325.3 gpcd, which includes outdoor watering with culinary water but does not include secondary (irrigation) water that may be available to water users. The difference between the documented year 2000 culinary water use rate of 325.3 gpcd in Draft Study Report 19 and the 391 per capita daily water use (gallons) in the BEBR article may account for the remaining cities in Washington County and the secondary water use but cannot be verified. The comment also refers to the Lewiston, Idaho metropolitan area water use rate of 154 gpcd as an example for lessons which “can be derived from their efforts to reduce the amount of water used for landscaping in the summer months” and much lower reported water use rates than Washington County. Accurate comparisons can be made of climate data between two areas, particularly when the data are from the same database. The Western Region Climate Center, referenced in the BEBR article, shows Lewiston, ID (Station 105241) with annual average total precipitation of 12.58 inches (1948 through 2010) and St. George, UT (Station 427516) with annual average total precipitation of 8.24 inches (1862 through 2010), a 4.34-inch difference. The Western Region Climate Center shows the nearest pan evaporation site to Lewiston, ID as University of Idaho, Moscow (1893 to 2005) with annual average pan evaporation of 47.09 inches occurring from March through November and St. George, UT (1862 to 2005) annual average pan evaporation of 74.68 inches occurring from March through November, a 27.59-inch difference. The Western Region Climate Center shows Lewiston, ID (Station 105241) with monthly average maximum air temperatures (°F) of 70.8 in May, 78.8 in June, 89.3 in July, 88.1 in August, and 78.0 in September (1948 through 2010) and St. George, UT (Station 427516) with monthly average maximum air temperatures (°F) of 86.0 in May, 96.2 in June, 101.7 in July, 99.5 in August, and 92.6 in September (1862 through 2010). The Western Region Climate Center shows Lewiston, ID (Station 105241) with annual average growing degree days at a 40°F base temperature of 5250 growing degree days (1948 through 2010) and St. George, UT (Station 427516) with annual average growing degree days at a 40°F base temperature of 7975 growing degree days (1862 through 2010), a 2725 growing degree day difference. A soil temperature of 41°F and greater represents the temperatures seeds will germinate and plants will grow. Based upon the Western Region Climate Center data, St. George, UT has significantly higher annual average growing degree days, higher monthly average maximum air temperatures (ranging from 11.4 to 17.4 °F higher for the listed months), higher annual average pan evaporation, and higher annual average total precipitation than Lewiston, ID. Therefore, Lewiston, ID (with the lowest reported per capita daily water use and the highest latitude of the 25 Intermountain metropolitan areas in the BEBR article) has climatic factors that are significantly different from St. George and does not provide any lessons to be derived from their efforts to reduce the amount of water used for landscaping in the summer months. The City of Lewiston website page on water conservation doesn’t refer to xeriscape as an outdoor water use tip; the Lewiston Orchards Irrigation

District website page on xeriscape/water-wise landscaping encourages homeowners to add a few drought-tolerant plants to enhance yards and reduce mowing time, and states “we are not asking you to tear out your grass.” Further, the Lewiston Orchards Irrigation District only delivers pressurized irrigation water to subscribed residences from a surface water supply that is not treated (i.e., secondary water) and the only culinary water supplied to subscribed residences is from groundwater wells. The readily available pressurized irrigation water is not assessed on consumption, it is based on property size with an annual assessment of \$125.48 per lot and \$141.75 per acre proportionately adjusted for lots larger or smaller than one acre. The website states: “The Lewiston Orchards Irrigation District has worked very hard to provide inexpensive irrigation water to our patrons.” Culinary water supply is billed on a consumption plus fixed operation and maintenance charge plus fixed bond repayment charge. Therefore, homeowners in the Lewiston Orchards Irrigation District have an incentive to use only the pressurized irrigation water for outdoor landscaping.

Rutherford Comment 8:

Also from the Utah Economic and Business Review referenced above, the graph on the following page (although 2005 information) clearly shows the discrepancy between our area’s water usage and that of other areas both inside and outside of Utah. Even the U.S. Geological Survey (source of graph) has no problem with comparing usage rates as shown on this graph.

UDWR Response:

Please refer to the response to Rutherford comment 7. The U.S. Geological Survey is the source of the water use data, not the graph. The U.S. Geological Survey data are available at <http://water.usgs.gov/watuse/data/2000/index.html>. The U.S. Geological Survey did not compare water use rates; the water use data for each county are reported in Public Supply, Total Withdrawals, million gallons per day and the total county population is reported. Therefore, the BEBR apparently used the U.S. Geological Survey 2000 data reported for Intermountain West counties, assumed the county population and water use rate represented a metropolitan area, divided the public water supply total withdrawals by the total county population and constructed the graph presented in Figure 1 of the BEBR article. The U.S. Geological Survey data include total groundwater and surface water used for public supply; however, there is no breakdown of how much water is used for indoor or outdoor watering or how much is used for residential, commercial, industrial, institutional and other public water supply uses.

Rutherford Comment 9:

I challenge the district’s use of this as a way of excusing away the high water use figures for our area. Are they suggesting that Las Vegas, Albuquerque and Phoenix do not have high numbers of second homes, visitors and students? I do not believe that is true.

UDWR Response:

Your comment has been noted.

FERC Comment 20:

The preliminary Opinion of Probable Capital Costs (MWH 2009) should be included as an appendix to the study report and the construction, operation, and maintenance costs should be clearly stated in the body of the report for the proposed project and each alternative analyzed. The cost estimate should be consistent with the latest pipeline estimates regarding the quantities of excavation, backfill, blasting, and ripping and should include the estimated cost of a system for controlling quagga mussels.

UDWR Response:

The final study report will include revisions in accordance with the comment.

FERC Comment 21:

Chapter 5 of the study report presents NED analysis results. However, the summary refers to the proposed project as a pipeline project without the proposed pumped storage development. The section should be corrected in the final report so that the analysis of the proposed project includes the pumped storage development. The analysis of how the pumped storage development affects the proposed project's economic benefits should be presented separately.

UDWR Response:

The final study report will include revisions in accordance with the comment.

FERC Comment 22:

Chapter 6 of the study report shows an analysis of the proposed project using FERC's current cost economic evaluation approach. FERC does not assume an escalation of costs in its method. Therefore, you should revise the escalation rate to equal 0% in your revised report.

UDWR Response:

The final study report will include revisions in accordance with the comment.

FERC Comment 23:

The revised study report should include additional justification and details on the costs included in the analysis: discount rate, avoided power costs (\$64/MWh); power operations costs (\$42/MWh); and power benefits (\$85/MWh).

UDWR Response:

The final study report will include revisions in accordance with the comment.

FERC Comment 24:

Provide additional description regarding the economic development perspectives of the area, regional industry growth potential, and information related to public perspectives related to the use of Colorado River water.

UDWR Response:

The final study report will include revisions in accordance with the comment.

FERC Comment 25:

Present the cost effectiveness analysis in the revised study report as proposed in section 10.6.1 of the Revised Study Plan and alluded to in section 2.2.1.1 of the revised study report. Include justification for the new water treatment facility cost estimates in section 4.2.

UDWR Response:

The final study report will include revisions in accordance with the comment.

FERC Comment 26:

Chapter 5 of the draft study report presents the tables of the NED analysis (table 5-1 through 5-4). Provide a paragraph description of each of the benefit and costs line items to help the reader understand the methods and assumptions inherent in this analysis.

UDWR Response:

The final study report will include revisions in accordance with the comment.

FERC Comment 27:

Table 7-1 summarizes the RED analysis and the source includes both the Utah IO multipliers and the IMPLAN model. It is not clear which model you used to identify the secondary effects. Please identify which model was used to estimate the secondary effects when you revise the report.

UDWR Response:

The final study report will include revisions in accordance with the comment.

FERC Comment 28:

The draft study report lacks the additional analysis on project consistency with state and regional planning efforts. Please complete this analysis in the revised study report.

UDWR Response:

The final study report will include revisions in accordance with the comment.

FERC Comment 29:

The draft study report lacks project financing and cost allocations to Districts, it also lacks user costs; the revised study report should provide current user costs and evaluate increased user costs associated with the project financing.

UDWR Response:

The final study report will include revisions in accordance with the comment.

FERC Comment 30:

Provide the review of regional population and economic growth forecasts in southwest Utah, along with the explicit review of the key economic assumptions/variables used in the forecasts, proposed in section 10.4.3 of the Revised Study Plan.

UDWR Response:

The final study report will include revisions in accordance with the comment.

EDF Comment 9:

The study reports fail to assess how limitations on water supply for the proposed project, either due to physical shortages or legal requirements, may affect water users throughout Utah. The Commission should require all analyses of cascading impacts of the proposed project to reflect water supply conditions for the proposed project under projected climate change, specifically also including implementation of the 1922 Colorado River Compact.

As explained in comments above, climate change projections suggest that physical supply may not be available to the proposed project in 2737% of all years through the next century. Study report #10, socioeconomics and water resource economics, does not address the impacts of a proposed project that fails to deliver water. We urge the Commission to find study report #10 incomplete because it fails to address relevant issues such as the cost to both Utah's taxpayers, and rate payers in the service area of the proposed project, of a physical water shortage for multiple years, which presumably include continued project repayment costs in addition to substitute water supply costs.

We also urge the Commission to find study report 10 incomplete because it fails to analyze the probability that, due to a 'call' on the 1922 Compact, the proposed project would be subject to a legal requirement to curtail water use. Moreover, as a hedge against this risk, the managers of the proposed project may enter into a dryyear lease arrangement, or another type of temporary transfer arrangement, in which the proposed project's water supply would remain intact while other water

users in Utah would forgo use of their water rights. The most probable water users to enter such an agreement with the managers of the proposed project are Utah farmers who irrigate with Colorado River water. We urge the Commission to find that study report 10 is incomplete because it fails to analyze the potential impact of such a transfer of water rights, not only on all parties that hold Colorado River water rights in Utah, but also on the third parties that may be impacted by such a transfer, such as county governments (which would see declines in tax revenues), farm workers, and businesses that supply irrigated farms.

UDWR Response:

Please refer to the response to LPPC comment 45.

LPPC Comment 31:

10.2.1 Primary Goals and Objectives

the economics of conservation measures and available water right changes/transfers from irrigated agriculture or other water supply sources, as designated by the water supply study.

Comments

The Applicant varies from the specific requirement of the approved study plan by not including the economics of water conservation measures and available water changes from irrigated agriculture water to culinary and also an inventory of all water supply sources to account for the water not counted by the Water District.

UDWR Response:

The marginal costs of conservation and water market transactions are provided and compared with the marginal cost of the base Project costs on page 4-4. An inventory of the WCWCD water supply sources is included in draft study report 19, Water Needs Assessment.

LPPC Comment 31.5:

10.3 Agency Resource Management Goals

Determine the supply and cost-effectiveness of water conservation and management programs that may be developed, with or without the Project.

Comments

The approved study report did not determine the cost effectiveness of water conservation and management programs thus, it was not conducted as provided for the in the approved study plan

UDWR Response:

Please refer to the response to FERC comment 25.

LPPC Comment 32:

10.3 Agency Resource Management Goals

In terms of new water supply options and marginal costs, consider the general economic impacts to the districts and to the state; clarify the likely fiscal impacts.

Comments

The study report did not include this goal above thus, the study was not conducted as provided for the in the approved study plan.

UDWR Response:

This goal was included in the draft study report on page 1-20 under Section 1.5.1, Water Resource Economics.

LPPC Comment 33:

The public's interest of being informed on how the project will be financed and repaid is not included in the study report. This is the main concern of residents, and the controversy needs to be addressed this study report.

Numerous people commented during scoping that a major concern was,

"that 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."

UDWR Response:

Please refer to the response to FERC comment 29.

LPPC Comment 34:

We recommend in the study report the Applicant disclose how the cost of the Lake Powell Pipeline (LPP) will be financed and how the debt will be paid for and by whom. The following issues need to be included in the study report, they include:

The cost and benefits of water conservation.

UDWR Response:

Please refer to the response to FERC comment 29 regarding financing, and LPPC comments 31 and 31.5 regarding water conservation.

LPPC Comment 35:

What is the financial impact if the water supply for LPP is reduced by shortage or drought?

UDWR Response:

This will be addressed in the final study report.

LPPC Comment 36:

Explain the effects of the pipeline not being full of water until 2037 and is this considered in the economic analysis? The Applicant will only receive 2000 ac ft initially in 2020 and that doubles each year; does this change the economic benefit of the LPP in the current analysis?

UDWR Response:

Tables 5-1 through 5-4 indicate that an average annual delivery of 65,898 acre-feet from 2021-2060 was used in the economic analyses. The average annual figure accounts for the lower deliveries in the initial years.

LPPC Comment 37:

The Lake Powell Pipeline pumps are at ground level 3745 (msl). Is the cost of pumping from different intakes being considered in the economic analysis? The report should include what the cost difference is of pumping from the different pipe intake level into Lake Powell from 3575 (msl) the pipe would be 170 feet long, at intake level 3475 (msl) it would be 100 feet more and at proposed intake level 3375 (msl) the pipe would be another 100 feet longer.

UDWR Response:

Please refer to the response to FERC comment 20. These types of operational costs will be shown in the cost estimates and will be included in an appendix.

LPPC Comment 38:

How will the state finance the project? Detailed information of financing terms should be included.

UDWR Response:

This will be included in the license application.

LPPC Comment 39:

How will financing this project affect the states bond rating?

UDWR Response:

Please refer to the response to FERC comment 29 for general information on project financing. An evaluation of the potential fiscal impacts on the State of Utah for funding (bonding) the Project will be included in the license application.

LPPC Comment 40:

How will the residents pay the state back?

UDWR Response:

Residents will not pay the state back. Project costs will be paid by impact fees associated with new residential and commercial construction. Impact fees are distinctly different that both fees from residents and fees from water users.

LPPC Comment 41:

How much will impact fees have to go up now that the project has tripled in price to pay for the project? What will the steep increase of impact fees have on the housing industry in the future?

UDWR Response:

Please refer to the response to FERC comment 29 for impacts on water users' costs. An analysis of impact fees and their impact on the housing industry was not included in the approved study plan and will not be included in the final study report. Impact fees must be assessed in accordance with applicable law. Accordingly, impact fee analyses are updated from time to time. The impact fee analysis that will apply in ten years cannot be completed today.

LPPC Comment 42:

Does the state have a contingency plan if impact fees are not enough to cover the payments? Has a thorough probability analysis of each repayment option been constructed?

UDWR Response:

Your comment and questions have been noted.

LPPC Comment 43:

Page Electric has said they do not have the capacity in the switchyard for the pipeline pumps and state will have to pay for the upgrade; this should be included in the study report.

UDWR Response:

Please refer to the response to FERC comment 20. These types of construction costs will be shown in the cost estimates and will be included in an appendix to the final study report.

LPPC Comment 44:

This study report does not comply with the Commission's regulations in CFR Title 18, 5.18. in that it does not explain the effects of the applicants proposal on resources in the No Action Alternatives; it also does not include any unavoidable adverse impacts. It does not discuss whether any such impacts are short-or long-term, minor or major, cumulative or site-specific. It does not discuss the plans and ability of the applicant to operate and maintain the project in a manner most likely to provide efficient and reliable electric service, including efforts and plans to (1) increase capacity or generation at the project; or (2) discuss the need of the applicant over the short and long term for the electricity generated by the project.

UDWR Response:

The approved study plan discusses the determination of impacts of the No Action Alternative, unavoidable adverse impacts and cumulative impacts of the alternatives. These issues will be addressed in the final study report. The license application will include the required operation and maintenance information.

LPPC Comment 45:

The Applicant did not include all the procedures of the National Economic Development Procedures (NED) in this study report to address the Risk and Uncertainty Sensitivity Analysis of the LPP. NED should address how drought and uncertainty of the water supply for LPP should be considered in the economic analysis of the project. Also, as reservoir levels fall environmental impacts increase must be an economic consideration.

UDWR Response:

The approved study plan states that one of the primary water resource goals/objectives of the study is to ensure compliance with the Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies (P&Gs). The P&Gs state that "the planner's primary role in dealing with risk and uncertainty is to identify the areas of sensitivity and describe them clearly so that decisions can be made with knowledge of the degree of reliability of available information." The draft study report performs sensitivity analyses with a range of discount rates and escalation rates to understand the potential economic impacts from these financial uncertainties. The draft Water Supply and Climate Change Study Report addresses the risk and uncertainty from a hydrologic and operational perspective, and the resulting determinations of water supply availability have been incorporated into the analysis of this study. The final study report will include a discussion of the risk and uncertainty inherent in the socioeconomic and water resource economic evaluations, including financial, hydrologic, operational, and contractual risks and uncertainties.

LPPC Comment 45.5:

Include NED 2.2.3 to the study plan report:

(1) Existing water supplies. Existing water supplies are included in the with or without-project condition. Make adjustments to account for anticipated changes in water supply availability because of the age of facilities or changed environmental requirements.

(3) Additional water supplies. The without-project condition includes water supplies that are under construction or authorized and likely to be constructed during the forecast period.

- (4) Probability of water supply. Include calculation and specification of the probability of delivery for each source of water supply in the analysis.*
- (5) Water quality. Water use is based on both the quantity and the quality of water supply. Different uses may require different qualities as well as quantities of water. Supplies also vary according to quality and quantity. Because water quality is a critical factor in water supply, it should be specified in any consideration or presentation related to water quantity. The degree of detail used to describe water quality should be suitable to permit differentiation among water sectors or available water supply sources.*
- (6) Nonstructural measures and conservation. The without-project condition includes the effects of implementing all reasonably expected nonstructural and conservation measures. These measures include:*
- (1) Reducing the level and/or altering the time pattern of demand by metering, leak detection and repair, rate structure changes, regulations on use (ie, plumbing codes), education programs, drought contingency planning; and*
 - (2) Modifying management of existing water development and supplies by recycling, reuse, and pressure reduction; and*
 - (3) Increasing upstream watershed management and conjunctive use of ground and surface waters.*

UDWR Response:

Items (1) through (6) have been taken into consideration in the development of alternatives in draft Study Report 22.

LPPC Comment 46:

NED should also consider the risk of a quagga mussel invasion into the pipeline system for the 50 year term of license and what that will do to future costs of LPP in the economic analysis.

UDWR Response:

Please refer to the response to LPPC comment 45.

LPPC Comment 47:

The Washington County Water Conservancy District's (Water District) existing 147 water right certificates with amount of water need to be included in the report. Available at:

<http://www.powellpipelinefacts.org/images/pdf/WCWCD%20water%20rights.pdf>

UDWR Response:

Your comment has been noted.

LPPC Comment 48:

The accounting of Water District's Quail Creek project of how much water annually is diverted off the Virgin River and how much is returned through its hydropower plants to the Virgin River needs to be part of the report. The regional pipeline is built to link all the community water systems together.

UDWR Response:

Your comment has been noted.

LPPC Comment 49:

10.3 Agency Resource Management Goals

Costs of meeting new water resource needs for the Project area, including conservation and Project alternative costs.

Comments

The study report did not include costs of meeting new resource needs in common sense dollar amount so the public could understand the costs of the alternatives, thus it was not conducted as provided for in the intent of approved study plan.

UDWR Response:

Please refer to the response to LPPC Comment 31.

LPPC Comment 50:

10.4.3 Issues and Data Needs

Availability and costs of new electric power supplies directly related to Project.

Comments

The study report did not include this goal, thus, the study report was not conducted as provided for the in the intent of approved study plan.

UDWR Response:

The cost of new electric power supplies is addressed in Section 2.2.1.1, NED Analyses Assumptions. A discussion on availability of electric power supplies will be included in the final study report.

LPPC Comment 51:

10.4.3 Issues and Data Needs

An accounting of the State's Colorado river water rights allocated to the Project; any potential water right impairment issues

Comments

The study report did not include this issue of water impairment due to reduced flows, thus, the study results do not represent conditions over the term of the license.

UDWR Response:

Please refer to the response to LPPC comment 45. The discussion on contractual risk and uncertainty will address any potential water right impairment issues.

LPPC Comment 52:

The Coalition's is concerned the State of Utah has a potential water right impairment issue and does not actually have the legal right to take water at the low reservoir level they claim assures water for a permanent water project at the same amount of water until 2070.

UDWR Response:

Through the Law of the River, Utah has both an allocation of water in the Colorado River and a Utah water right sufficient in quantity to fully supply the project. UDWR will comply with the Law of the River and Utah water law to ensure adequate water for the project, even in low water years. The Federal agencies and the seven Colorado River Basin states have historically, and will continue to, refine operations to adaptively meet demands with the available supply.

LPPC Comment 53:

According to the Utah State Engineer's powerpoint from 2009 it seems there is a question whether the LPP can legally divert at low levels for example:

In the presentation mentioned above, it states Utah currently consumes 1,007,500 acre-feet of its apportionment of the Colorado River.

- It says also that about 185,000 acre-feet is reserved for the tribes, Ute and Navajo. These are very old water rights, that can't be ignored. The state acknowledges this fact in their powerpoint.
- The current consumption plus Indian water rights equals 1.193 maf
- 8.23 (maf) must be delivered to the lower basin states
- Utah gets 23% of the Upper Colorado Basin allocation
- Factor in an 8 to 14% reduction in flows at Lees Ferry (conclusion of Reclamation's new report¹²).
- 14% reduction in flow equals 2.1 maf at Lees Ferry
- Equals only 12.9 maf (total river flows) at Lees Ferry -8.23 (maf) (lower basin allocation) = 4.67 (maf) (upper basin allocation in 2050)
- Utah's Colorado River share of 23% of 4.67 maf = 1.0741 maf
- With the reduction in river flows and the current Utah consumption plus Indian water rights equals 1.193 maf which does not leave enough water for the LPP after you subtract the projected reduction in flow.

UDWR Response:

Your comment has been noted. UDWR disagrees with the comment's assumptions and conclusions, which were not based on the correct range of flow reductions. Please refer to the response to LPPC comment 52.

LPPC Comment 54: (Intentionally left blank)**LPPC Comment 55:**

In the range of probabilities, there is not enough water for the LPP because Utah has a junior water right of (1996) and with predictions of less future flow by the Bureau of Reclamation's new report the amount of water available will be reduced. The Applicant claims it can divert water to the pipeline even in dire conditions. We recommend the study report verify how the Applicant can legally divert water in dire conditions with a zero active pool of water in Lake Powell; the same amount of water until 2070 for the LPP. Water availability is a key nexus of the Climate Change Study Plan #19.

UDWR Response:

The comment erroneously states the UDWR water right has a priority of 1996. The correct priority date is 1958. Please refer to the response to LPPC comment 52.

WRA Comment 49:**VII. Draft Study Report 10 – Socioeconomics and Water Resource Economics**

The Socioeconomics and Water Resource Economics study has several critical omissions or flaws. Prior to Commission approval of the study, the State of Utah must correct these flaws and modify the study. The following issues are critical errors:

- 1) The study assumes the full 86,000 AF of water will be available to LPP project participants, regardless of the impacts of climate change;

UDWR Response:

The draft Water Supply and Climate Change Study Report addresses the risk and uncertainty from a hydrologic and operational perspective, and the resulting determinations of water supply availability have been incorporated into the analysis of this study. The impacts of climate change have been considered.

WRA Comment 50:

The measures chosen for the LPP alternative artificially inflate the cost of project alternatives; and

UDWR Response:

The draft Alternatives Development Report, Study Report 22, provides a detailed description of the alternatives development process, including the rationale behind the water supply measures chosen for the No Lake Powell Water Alternative. In accordance with NEPA requirements, the No Lake Powell Water Alternative must be an equivalent alternative, providing an equal amount of water on a similar schedule. A range of available water supplies were considered and evaluated for inclusion in the No Lake Powell Water Alternative.

WRA Comment 51:

The study does not accurately evaluate the cost of energy used to power the pipeline. FERC and the State must evaluate the project's benefit/cost ratio if less water is available than projected, and must develop a benefit/cost analysis of a realistic, grounded alternative.

UDWR Response:

The power costs assumptions, and the rationale behind these assumptions, are described in Section 2.2.1.1, NED Analyses Assumptions. Further details will be included in the final study report (please refer to the response to FERC comment 23). With regard to the Project's benefit/cost ratio if less water is available, the draft Water Supply and Climate Change Study Report addresses the risk and uncertainty from a hydrologic and operational perspective, and the resulting determinations of water supply availability have been incorporated into the analysis of this study. With regard to the need to develop a benefit/cost ratio on a realistic, grounded alternative, please refer to the response to WRA comment 50.

WRA Comment 52:

a. The presumption that Colorado River water will be available in every year skews the economic analysis.

The Socioeconomics and Water Resource Economics study assumes that climate change or additional Colorado River diversions will not reduce the amount of water available to the Lake Powell Pipeline. This is a critically flawed assumption with a direct bearing on the benefit/cost analysis. If climate change reduces runoff in the basin, the legal availability of Colorado River water could be reduced, thereby reducing the economic benefits of the project (while costs remain constant). This pertains directly to objectives outlined in study plan Section 10.4.3, including, "An accounting of the State's Colorado River water rights allocated to the Project; any potential water right impairment issues" [emphasis added].

UDWR Response:

Please refer to the response to LPPC comments 45 and 51.

WRA Comment 53:

Rather than assume that water will be available in every year, under every hydrologic condition, the analysis should evaluate the benefit/cost ratio under different scenarios of availability (e.g. water is not available in 1 out of 10 years; only a portion of the water is available each year; and water is not available for several years in a row). These scenarios will enable project proponents to accurately

assess the risk of investing in the project in a changing climate, and are an essential component of the benefit/cost analysis (outlined in Study Plan Section 10.6.1). The Draft Report acknowledges that climate change may reduce annual runoff. However, the bare assertion that “management may mitigate” is not a sufficient approach to evaluating the economic risks associated with climate change.

UDWR Response:

Please refer to the response to LPPC comment 45.

WRA Comment 54:

The Council of Environmental Quality released Updated Principles and Guidelines for Water and Land Related Resources Implementation Studies in 2009. These principles are currently in draft form, but will likely be finalized before FERC releases the Lake Powell Pipeline’s Draft EIS. We encourage FERC to follow the standards outlined in the Draft Principles and Guidelines, which emphasize the importance of developing sustainable water supply projects, balancing monetary and non-monetary benefits, and “achieving coequal goals” of protecting and restoring the environment and improving the economic well-being of the nation. We expect these co-equal goals, and the accompanying economic analysis, to be reflected in the NEPA analysis.

UDWR Response:

Please refer to the response to WRA comment 61.

WRA Comment 55:

b. Project alternatives do not represent a realistic alternative to the LPP, inflating costs.

As described in our comments on Alternatives and the Water Needs Assessment, the proposed LPP alternative represents an unrealistic and unlikely strategy for meeting the region’s water needs. The alternative relies exclusively on reductions in outdoor water use, while ignoring potential for reducing indoor water use. Around the region, water utilities are pursuing conservation measures that reduce both indoor and outdoor water use. These conservation measures generally cost less than reverse osmosis, the presumed alternative (marginal) water supply for the LPP. According to the Colorado Water Conservation Board (CWCB), reverse osmosis treatment facilities cost approximately \$3.75/gallon of treatment capacity, or \$1.2 million/AF. In comparison, a recent analysis of the cost of conservation plans in Colorado found that, on average, conservation savings cost approximately \$5,200/AF--less than 1% of the cost of RO.

UDWR Response:

Please refer to the response to WRA comment 50.

WRA Comment 56:

The Study Plan included tasks that directed the agency and consultants to compile and present the costs of conservation, as reported by reputable agencies from around the region. See, e.g. Study Plan Section 10.2.1 and 10.6.1: “Reviewing existing marginal cost data for West-wide water resources projects, including conservation costs.” The study includes a brief note that the cost of conservation varies, with some costs as low as \$250/AF. This does not meet the standard established in the study plan. Following the study plan as outlined, the study must include a list of conservation measures and relative costs before it can be accepted by the State as complete. (See, e.g. Study Plan Section 10.6.1, “Reviewing existing marginal cost data for West-wide water resources projects, including conservation costs.”)

UDWR Response:

The final study report will provide backup documentation on the origin of the conservation cost.

WRA Comment 57:

In sum, by relying on an unrealistic alternative, the benefit/cost evaluation of the pipeline and its alternative is skewed. Before FERC finalizes the Socioeconomic Study, the State of Utah must develop a more realistic alternative that considers reasonably available conservation measures, and reassess the costs and benefits of this alternative.

UDWR Response:

Please refer to the response to WRA comment 50.

WRA Comment 58:

c. The study does not accurately assess the future costs of energy.

The Socioeconomics study does not adequately address the economic impacts associated with power losses and generation. Under the Study Plan, the Draft Report must:

Identify the net economic impacts associated with the loss of power generation at Glen Canyon Dam

- *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.*

UDWR Response:

The power costs assumptions, and the rationale behind these assumptions, are described in Section 2.2.1.1, NED Analyses Assumptions. The impacts described above have been addressed in Tables 5-1 through 5-4. However, additional description of each of the power cost assumptions and benefit and costs line items will be provided to facilitate understanding of the methods and assumptions inherent in the analysis (please refer to the response to FERC comments 23 and 26).

WRA Comment 59:

Study Plan at 96. The State of Utah should evaluate the benefits and costs under different energy price scenarios. Energy prices have been volatile in the past. Furthermore, over the lifetime of the project, climate change regulation is likely; this regulation would add an additional fee to any carbon-intensive power supplies. As described in our comments on the Air Quality study, Utah relies on carbon-intensive energy. The Socioeconomic analysis should perform the benefit/cost analysis using several different energy costs, including a cost of energy that reflects a cost of carbon.

UDWR Response:

The power costs assumptions, and the rationale behind these assumptions, are described in Section 2.2.1.1, NED Analyses Assumptions. Additional explanation will be provided (please refer to the response to FERC comment 23).

WRA Comment 60:

In addition, we find it improbable that the power generated by the pipeline would qualify for green power premium charges, particularly if the pumping stations use carbon-intensive sources of energy to convey the water to the pipeline's high point. At present, Utah does not require Renewable Energy Credits (RECs), and neighboring states, where RECs might be sold, have varying regulations. For example, in Colorado, Xcel Energy's Cabin Creek pumped-hydro facility does not qualify for RECs. Likewise, a hydro facility might qualify for RECs in Nevada, but not in Oregon. The benefit/cost analysis should be performed using a regular electricity rate, not the green power rate. In order to use the "green power" pricing premium, the study must provide sufficient data (including states where power could legally be marketed) as justification. Furthermore, the concept that the energy generated would receive a carbon

credit implies that carbon is regulated and accompanied by an economic cost. If carbon credits are available and modeled, the cost of carbon should also be modeled.

UDWR Response:

Additional explanation for the use of green power premium charges will be provided in the final study report (Please refer to the response to FERC comment 23).

KBPI Comment 91:

Generally - Draft Report 10 is incomplete. It fails, for example, to describe any significance criteria for impacts or to apply them to the impacts identified therein. Section 10.6.1.3 of Study Plan 10 describes the applicable significance criteria and states that they will “be applied to determine if any impact would be significant.” Draft Report 10 directly contravenes Study Plan 10 by failing to describe or apply the significance criteria.

UDWR Response:

The final study report will include a description of the significance criteria and the application of the criteria on the identified impacts.

KBPI Comment 92:

Additionally, Draft Report 10 fails to address mitigation measures. Section 10.2 of Study Plan 10 states that Draft Report 10 must “identify measures to mitigate . . . impacts, where necessary.” Section 10.2.1 of Study Plan 10 states that a primary goal and/or objective of Draft Report 10 is to describe the “mitigation needs[] related to resource management on the Kaibab Indian Reservation.” Section 10.6.1.3 of Study Plan 10 states that after the significance criteria are applied, “[m]itigation measures would then be developed to offset negative significant impacts.” Moreover, section 1.5.2 of Draft Report 10 states that “mitigation needs” on the Reservation must be addressed therein. Draft Report 10 at 1-21. Draft Report 10 directly contravenes Study Plan 10 by failing to address mitigation, and is, therefore, noncompliant with Study Plan 10.

UDWR Response:

The final study report will include a description of the measures necessary to mitigate the identified impacts.

KBPI Comment 93:

Draft Report 10 fails to discuss cumulative impacts. As with the other draft reports, Draft Report 10 must address cumulative impacts. Once the cumulative impacts analysis is complete, the Kaibab Tribe hereby requests additional time to submit comments on cumulative impacts.

UDWR Response:

The UDWR is completing the cumulative effects analysis and will incorporate it into the final study report.

KBPI Comment 94:

Section ES-1.1.1 NED or State Direct Economic Impacts Perspective - The Executive Summary in Draft Report 10 appears to misstate the pipeline project’s costs as ranging “from about \$1.8 to \$2.7 billion (2010\$, present value).” Draft Report 10 at ES2. To explain, Chapter 5 of Draft Report 10 states that “the Project costs range from about \$1.5 to \$1.8 billion (2010\$, present value, rounded).” Draft Report 10 at 5-1. The latter figures are also confirmed in Tables 5-1 and 5-2 of Draft Report 10. Draft Report 10 at 5-2 to 5-3. Thus, the Executive Summary appears to be in error.

UDWR Response:

The Project costs in the Executive Summary were misstated. The total present value Project costs range from about \$1.5 to \$1.8 billion as stated in Chapter 5. The final study report will include an estimate of the Project construction cost.

KBPI Comment 95:

Section 1.5.1 Water Resource Economics - Draft Report 10 identifies several issues related to water resource economics that will be addressed therein. Draft Report 10 at 1-20 to 1-21. The issues identified mostly align with those identified in section 10.2.1 of Study Plan 10, except the last issue identified in Draft Report 10 was not listed in Study Plan 10 and the last issue identified in section 10.2.1 of Study Plan 10 is not included in Draft Report 10. Draft Report 10 must either include the last issue identified in section 10.2.1 of Study Plan 10 or explain this discrepancy. As it stands, Draft Report 10 is noncompliant with Study Plan 10.

UDWR Response:

The final study report will identify and address the last water resource economics goal listed in the approved study plan at section 10.2.1, or explain why it was replaced or discarded.

KBPI Comment 96:

Chapter 9 Kaibab-Paiute Indian Reservation Baseline and Impacts - Draft Report 10 purports to describe the impact of the Project socioeconomic and water resources on the Kaibab Tribe, but it completely fails to do so. Instead, Draft Report 10 states that “[a]dditional analyses are forthcoming to determine Project construction, income, and potential tax opportunities for Tribal members and the Tribal government. The Project economic impacts on the Kaibab Band of Paiute Indians will be influenced by the Project configuration and proximity of construction staging areas to the Kaibab-Paiute Indian Reservation.” Draft Report 10 at 9-2. Not only is this not helpful for the purpose of commenting on Draft Report 10, but sections 10.2.1 and 10.4.3 of Study Plan 10 and section 1.5.2 of Draft Report 10 state that “economic impacts” on the Kaibab Tribe’s Reservation will be addressed. Draft Report 10 directly contravenes these statements by failing to address such impacts, which renders Draft Report 10 noncompliant with Study Plan 10.

UDWR Response:

The final study report will include identification and evaluation of economic impacts on the Kaibab Tribe Reservation.

KBPI Comment 97:

Draft Report 10 fails to clarify whether the Kaibab Tribe was, or will be, consulted in the gathering of baseline data and in the performance of future analyses. Section 10.3 of Study Plan 10 states that Draft Report 10 must address the Kaibab Tribe’s resource management goals. Section 10.6.1.2 of Study Plan 10 states that “[a] field reconnaissance will be performed of the communities where the water would be used and of the alternative alignments to collect data and information for establishing baseline conditions.” It is not apparent from Draft Report 10 that field reconnaissance was performed on the Reservation, which renders Draft Report 10 noncompliant with Study Plan 10.

UDWR Response:

The final study report will describe any resource management goals identified by the Kaibab Tribe and any field reconnaissance activities performed on the Kaibab Tribe Reservation.

KBPI Comment 98:

Draft Report 10 states that “[i]t is assumed that any Executive Order Environmental Justice issues would be reconciled, or mitigated, per consultations with the Kaibab Band of Paiute Indians.” Draft Report 10

at 9-2. Section 10.2.1 of Study Plan 10 and section 1.5.2 of Draft Report 10 state that “specific attention to the agency guidelines outlined under Executive Order 12898 for Environmental Justice compliance” is required. Section 10.3 of Study Plan 10 identifies a need to specify any “Project-induced factors affecting Environmental Justice considerations.” Draft Report 10 directly contravenes these statements by simply assuming, rather than ensuring, that such issues will be reconciled or mitigated, which renders Draft Report 10 noncompliant with Study Plan 10.

UDWR Response:

The final study report will identify any specific Project-induced factors affecting Environmental Justice considerations and potential mitigation needs.

KBPI Comment 99:

Chapter 10 Qualitative Economic Issues and Impacts - Draft Report 10 states that “[a]dditional analyses are forthcoming to better assess and describe the more qualitative (non-quantified economic impacts at this time) surrounding LPP project development.” Draft Report 10 at 10-1. “Forthcoming” analyses are not helpful for the purpose of commenting on Draft Report 10. The Kaibab Tribe hereby requests additional time to submit comments on these analyses when they are completed.

UDWR Response:

The final study report will provide the additional qualitative analyses.

BIA Comment 109:

Page ES1, ES-1.1.1, first bullet: how can there be a flat prediction of 3.1% for an area with or without adequate water. . . .WCWCD estimates >400,000 people over the next 40 years in Washington County but that's only IF they have adequate water supplies. . . .water is a limiting resource. Arp

UDWR Response:

Please refer to the response to USFWS comment 1.

BIA Comment 110:

Page ES2, ES-1.1.1, fifth bullet: these are the exact same values. . . .seems rather sketchy.

UDWR Response:

Please refer to the response to KBPI comment 94.

BIA Comment 111:

Page ES3, ES-1.1.2, first bullet: The contrast in benefit/cost ratio here ought to be examined, given that the Commission works with these types of projects routinely across the country.

UDWR Response:

Your comment has been noted.

BIA Comment 112:

Page ES3, ES-1.1.2, third bullet: see the previous two bullets here . . .

UDWR Response:

Your comment has been noted.

BIA Comment 113:

Page ES4, ES1.1.4, first bullet: How is it that there is virtually no information on this after two years in. . . the proposed pipeline will have a HUGE effect on the local Tribal economy and way of life no matter which route is chosen. . .

UDWR Response:

This information will be provided in the final study report.

BIA Comment 114:

Page ES4, ES1.1.4, second bullet: Again, what are they, why are they not discussed? What alternative does the Tribe favor? What about touching on the potential for the Tribe to realize some "wet" water through a quantification of their reserved water rights? Where is the State of AZ here?

UDWR Response:

Please refer to the response to KBPI comment 98.

BIA Comment 115:

Page 1-20, 1.5, 3rd paragraph: No discussion included for any potential socio-economic effects to the Paiute Indian Tribe of Utah. . . the proposed pipeline goes through the trust lands of the Cedar Band. . . what about the Tribes reserved water rights that were never realized as wet water?

UDWR Response:

Please refer to the response to KBPI comment 98.

BIA Comment 116:

Page 1-20, 1.5.1, second check mark: There is no appropriate application of RED analyses if there is no discussion at all regarding the Paiute Tribe of Utah? The have several parcels in Iron County that were restored in the early 1980's WITHOUT WATER. . .

UDWR Response:

Please refer to the response to KBPI comment 98.

BIA Comment 117:

Page 1-21, 1.5.2, first bullet: Again, no acknowledgement of PITU in context to the past, present, or future. . .

UDWR Response:

Please refer to the response to KBPI comment 98.

BIA Comment 118:

Page 1-21, 1.5.2, last bullet: Again, if the State of Utah has no plans or intent to make water available to the Kaibab Paiute Tribe because of the Colorado River Compact, then that should be discussed. . . as well as having some kind of input from the Tribe somewhere here. . .

UDWR Response:

Please refer to the response to KBPI comment 98.

BIA Comment 119:

Page 3-1, 3.1, 2nd paragraph: What about the Shivwits, Cedar and Indian Peaks Bands? It's as if they were never here. . . Between the 3 Bands, more than 30,000 acres of trust land are here. One of the leading IT companies in the country is Suh dutsing (Cedar Band owned). . .???

UDWR Response:

Please refer to the response to KBPI comment 98.

BIA Comment 120:

Page 3-2, 3.2, 3rd bullet: Again, it is appropriate to discuss kaibab Paiute but shouldn't there also be a discussion of the Paiute Indian Tribe of Utah given that they ARE WITHIN the state of Utah and, at some point, negotiate (or litigate) for their federal reserved water rights??

UDWR Response:

Please refer to the response to KBPI comment 98.

BIA Comment 121:

Page 8-5, 8.2.1, 2nd paragraph: Does this population estimate account for projections with and without adequate water to support such numbers? Surely, there would be a significant difference between St. George with 70,000 acre feet per year guaranteed and St. George getting by using conservation measures?

UDWR Response:

As stated in the text, this population estimate is from the State of Utah Governor's Office of Planning and Budget (GOPB), which apply regardless of which future water supply scenario might reach fruition. Please refer to the response to USFWS comment 1 for additional discussion on water supply and growth.

BIA Comment 122:

Page 8-5, 8.2.2, 2nd paragraph: Same question, are there projections for the population totals with and without water from lake Powell?

UDWR Response:

Please refer to the response to BIA comment 121.

BIA Comment 123:

Page 9-1, Figure 9.1: Is that the best map available? Where are the roads, topography, labels of points of interest?

UDWR Response:

A more descriptive map with additional points of reference will be provided in the final study report.

BIA Comment 124:

Page 9-2, 3rd paragrph: What is the status of the additional analyses?

UDWR Response:

These analyses will be provided in the final study report.

BIA Comment 125:

Page 9-2, 4th paragraph: Assuming the reconciliation or mitigation of environmental justice issues is based on what exactly? when are the consultations going to take place? We are a few years in on this project and there is nothing here. . . .

UDWR Response:

Please refer to the response to KBPI comment 98.

BLM Comment 10:

Report 10. No discussion of cumulative impacts to socioeconomic and water economics in this report. – Page 1.

UDWR Response:

The cumulative impact analyses will be provided in the final study report.

BLM Comment 11:

Report 10. shouldn't this look at an assessment more fitting to the greatest impacts beneficial and - Page 8.

UDWR Response:

This is intended to be a conservative estimate, so as not to over exaggerate the Project benefits.

BLM Comment 12:

Report 10. These should be at least briefly summarized here. –Page 9.

UDWR Response:

The economic variables and assumptions will be clarified in the final study report.

BLM Comment 13:

Report 10. this doesn't define sensitivity analysis perspective term – Page 9

UDWR Response:

This term will be clarified in the final study report.

BLM Comment 14:

Report 10. What about the 2 other analysis' reference din the ES? – Page 31.

UDWR Response:

The evaluation of FERC's economic perspective and the qualitative economic analysis are located in draft study report Chapters 6 and 10, respectively.

BLM Comment 15:

Report 10. Why relative costs of other alternatives and “costs and cost-effectiveness” of just the baseline condition? – Page 31.

UDWR Response:

This process was outlined in the approved study plan in section 10.2.1, Primary Goals and Objectives.

BLM Comment 16:

Report 10. Wasn't St. George mentioned as the 3rd fastest growing in UT earlier? – Page 39.

UDWR Response:

It was stated earlier in the draft study report that Washington County is projected to have the third largest population increase during the projection period (2008-2060) among the 29 counties in Utah.

BLM Comment 17:

Report 10. See above comments. – Page 48.

UDWR Response:

Please refer to the response to BLM comment 13.

BLM Comment 18:

Report 10. If it isn't representative, then why is it presented her? – Page 81.

UDWR Response:

The final study report will clarify this text.

BLM Comment 19:

Report 10. This analysis is primarily qualitative and does not parallel the level of detail analysis in previous sections. – Page 103.

UDWR Response:

Additional analyses will be included in the final study report and will provide detailed analysis comparable to the previous sections.

USFWS Comment 20:

Draft Study Report 10: Socioeconomics and Water Resource Economics

- *Section 4.2: Please clarify if this section is reporting the cost of delivered water to the Washington County Water District or to all Water Conservation Districts, with and without the LPP. In this section, the LPP project is estimated to cost \$1,114/acre-ft of M&I delivered water vs. \$1,150/acre-ft of water delivered for the No LPP Alternative. However, the report (as well as Draft Study Report #19) also concludes that the No LPP Alternative is significantly more expensive than the LPP alternative. Please provide information that clearly identifies all costs associated with the alternatives so that they can be easily compared.*

UDWR Response:

This draft study report section is reporting the cost per acre-foot of the No Lake Powell Water Alternative to demonstrate the marginal benefit of the LPP Project. As such, these costs represent the cost to provide a similar amount of water to the same areas and users that would be served by the LPP. Please refer to the responses to FERC comments 20 and 29 regarding the request for more detailed cost information for comparative purposes.

Draft Study Report 11 – Special Status Aquatic Resources

WRA Comment 46:

VI. Draft Study Report 11 – Special Status Aquatic Species and Habitats

The Draft Report fails to acknowledge the threat posed by aquatic disease/invasive species transfers into Sand Hollow Reservoir, and subsequently into the Virgin River. In addition, the distribution of two species identified in the Draft Report, the Virgin River Chub and Flannelmouth, are not properly

characterized. These issues should have been addressed, per the objectives set forth in the Study Plan, section 11.2:

The goal of this study plan is to... address the potential effects of Project construction, operation and maintenance activities on special status aquatic species and their habitat. The specific information to be obtained is the type, abundance, and general distribution of special status aquatic species within the Project area, required to assess the potential effect of the Project on these species.

UDWR Response:

The aquatic invasive species analysis is incorporated into the draft Aquatic Species study report. The final study report will clarify that analysis of aquatic disease/invasive species transfers into Sand Hollow Reservoir via the LPP Project is addressed in the Aquatic Resources study report. The comment incorrectly assumes that LPP Project water will be discharged into the Virgin River from Sand Hollow Reservoir. The water supply line from Sand Hollow Reservoir conveys water to the Quail Creek Water Treatment Plant, which then distributes treated water through the culinary water distribution system to customers throughout the St. George metropolitan area. The LPP Project would have no direct surface water discharges to the Virgin River. The draft study report Section 3.3.8.2 on distribution of the Virgin River chub is consistent with the current distribution description of US Fish and Wildlife Service (USFWS) websites at http://www.fws.gov/nevada/protected_species/fish/species/vr_chub.html, http://www.fws.gov/ecos/ajax/docs/life_histories/E02A.html, and recent biological assessments submitted to the USFWS. The final study report will include distribution information for flannelmouth sucker in the Virgin River.

WRA Comment 47:

In Section 4.3, no acknowledgment is given to the threat of aquatic disease/invasive species transfers into Sand Hollow Reservoir, which would most certainly become a point source of concern for interbasin disease/invasive species transfers. Sand Hollow is approximately 3 miles from the Virgin River proper, and it is our understanding that the Pump Back Project, which was built to deliver from to the Virgin River from the Sand Hollow Reservoir. This proposed pipeline project thus elevates the threat of such transfers through the Pump Back Project and even through inadvertent, or intentional, public “bait bucket” problems. This threat should be explicitly considered in Section 4.3.5, as well as in Chapters 5, 6 and 7. Aquatic disease/invasive species transfers into Sand Hollow Reservoir might also require mitigation measures as well. This issue is conceptually and functionally no different than the leaks/spills described in Chapter 6, and likely is even more of a direct threat.

UDWR Response:

Please refer to the response to WRA comment 46 regarding the aquatic disease/invasive species analysis. The comment incorrectly describes the recently completed pump-back project involving Sand Hollow Reservoir and Virgin River flows. The Virgin River Resource Management and Recovery Program funded the pump-back project. During low Virgin River flow conditions that generally occur during July and August, water can be pumped up the pipeline from Sand Hollow Reservoir to Hurricane Valley irrigators. The water pumped from Sand Hollow displaces river water which would normally be diverted from the river for irrigation uses. River water remains in the river during pump-back operation, which provides additional river flows to help maintain endangered and sensitive fish habitat conditions. No water from Sand Hollow Reservoir is pumped back into or released into the Virgin River; the Sand Hollow Reservoir water conveyed through the pump-back system is applied to irrigated crops and agricultural lands in the Hurricane Valley. Therefore, the LPP Project would not result in elevating the threat of aquatic invasive species through the pump-back project or through inadvertent or intentional bait bucket problems. It should be noted that Sand Hollow has been declared by the Utah Division of Wildlife Resources as infested by quagga mussel. Lake Powell is not currently considered infested.

WRA Comment 48:

Section 3.3.8.2 mischaracterizes the Virgin River Chub distribution in the lower Virgin River. Their distribution extends at least to the Bunkerville Diversion, not just to “at least the Mesquite Diversion.” Flannelmouth sucker are also found within the Virgin River system, though this is not acknowledged in Section 3.4.1. Use of the Virgin River by this species is not documented throughout this Draft Report, but should be included to the same degree that the other Virgin River fishes are throughout the document, particularly since it is listed as a species of concern within table ES-2. In addition, it should be noted in Section 4.4 that Flannelmouth sucker may also occur within LaVerkin Creek, and so should be described similarly to the other species, unless it can be made certain that the potential for Flannelmouth sucker within that location does not exist.

UDWR Response:

Please refer to the response to WRA comment 46 regarding distribution of Virgin River chub and flannelmouth sucker. The final study report will include the distribution of flannelmouth sucker in LaVerkin Creek as applicable.

KBPI Comment 100:

Section 1.5 Identified Issues and Topics - Draft Report 11 identifies several “potential specific significant issues,” Draft Report 11 at 1-20, but fails to mention aquatic species of specific concern to the Kaibab Tribe. Section 11.3 of Study Plan 11 requires that Draft Report 11 address the resource management goals of Indian tribes. Section 11.4.3 of Study Plan 11 states that the Commission must decide whether to license the Project “in consultation with . . . tribal . . . entities.” Section 11.4.3.7 of Study Plan 11 requires that “[s]pecial status species lists maintained by tribes within the Project Impact Area will be evaluated and documented.”² Draft Report 11 directly contravenes Study Plan 11 by failing to identify any issues of tribal concern and failing to explain the lack of discussion of such issues, which renders Draft Report 11 noncompliant with Study Plan 11.

UDWR Response:

The final study report will address the resource management goals of the Kaibab Band of Paiute Indians and other Indian tribes regarding aquatic species of concern. The UDWR consulted with the Kaibab Band of Paiute Indians regarding special status species lists and received a list of Plants of Cultural Concern to the Kaibab Band of Paiute Indians of Northern Arizona and a list of Wildlife Species of Concern to the Kaibab Band of Paiute Indians of Northern Arizona on July 8, 2008; however, the UDWR did not receive a special status aquatic species list from the Kaibab Band of Paiute Indians. The final study report will clarify that the Kaibab Band of Paiute Indians was consulted by the UDWR regarding special status species lists and no list was provided by the Kaibab Band of Paiute Indians for special status aquatic species or aquatic species of cultural concern.

KBPI Comment 101:

Section 2.1 Introduction - Draft Report 11 states that “[n]o tribal aquatic species of cultural concern were identified.” Draft Report 11 at 2-1. Section 11.3 of Study Plan 11 requires that Draft Report 11 address the resource management goals of Indian tribes. Section 11.4.3 of Study Plan 11 states that the Commission must decide whether to license the Project “in consultation with . . . tribal . . . entities.” Section 11.4.3.7 of Study Plan 11 states that “[s]pecial status species lists maintained by tribes within the Project Impact Area will be evaluated and documented.” While Draft Report 11 asserts that no species of cultural concern were identified, it fails to describe what efforts were made to obtain such information. Further, Draft Report 11 fails to state whether it identified aquatic species of general concern to Indian tribes, not only species of “cultural concern.” These failures directly contravene Study Plan 11, and render Draft Report 11 noncompliant with the study plan.

UDWR Response:

Please refer to the response to KBPI comment 100.

KBPI Comment 102:

Section 2.2 Data Used - Draft Report 11 lists the data used to prepare the study, Draft Report 11 at 2-1, but fails to include any tribal data. Section 11.3 of Study Plan 11 states that the resource management goals of Indian tribes will be addressed. Section 11.4.3 of Study Plan 11 states that the Commission must decide whether to license the Project “in consultation with . . . tribal . . . entities.” Section 11.4.3.7 of Study Plan 11 requires that “[s]pecial status species lists maintained by tribes within the Project Impact Area will be evaluated and documented.” The failure to include tribal data, or to explain why tribal data was not included, directly contravenes Study Plan 11 and renders Draft Report 11 noncompliant with the study plan.

UDWR Response:

Please refer to the response to KBPI comment 100.

KBPI Comment 103:

Section 5.1.1.1 Virgin River Chub and Woundfin - Draft Report 11 describes the conservation measures that will be implemented in order to protect the Virgin River chub and the woundfin, Draft Report 11 at 5-1 to 5-2, but fails to mention other species. Section 11.2 of Study Plan 11 states that the information obtained “will be used to determine how potential effects can be avoided, minimized, or mitigated” and “[a] plan will be prepared as part of the study to address conservation and mitigation measures and concepts.” Section 11.6.2.4 of Study Plan 11 states that Draft Report 11 must “provide an analysis of conservation measures to ameliorate Project effects and protect or enhance those identified at-risk species.” Section 4.4 of Draft Report 11 concludes that the Project will adversely affect the Virgin River chub, woundfin, desert sucker, and Virgin spinedace, and indicates that mitigation of these effects will be addressed in Chapter 5 of the Draft Report. Draft Report 11 at 4-13 to 4-15. Each of these species are either listed or of special concern, but Draft Report 11 only identifies conservation and mitigation measures for two species. While the conservation/mitigation measures described in Draft Report 11 may not differ with respect to the various species, Draft Report 11 directly contravenes Study Plan 11 by failing to at least indicate that it addresses adverse effects and identifies conservation/mitigation measures for all species of concern, which renders Draft Report 11 noncompliant with Study Plan 11.

UDWR Response:

The comment is incorrect. Section 5.2.1.1 in the draft study report addresses the mitigation measures for desert sucker and Virgin spinedace, which are analyzed in the draft study report as sensitive species. The Virgin River chub and woundfin are analyzed in the draft study report as endangered species and Section 5.1.1.1 addresses the conservation measures for these Federally listed species.

KBPI Comment 104:

Chapter 7 Cumulative Impacts - Other than for the “No Action Alternative,” which “would have no cumulative impacts,” Draft Report 11 indicates that “cumulative impacts analysis is pending completion for identification of inter-related projects that would cause cumulative impacts with the LPP project.” Draft Report 11 at 7-1. The cumulative impacts analysis must be completed as soon as possible. The Kaibab Tribe hereby requests additional time to submit comments on the cumulative impacts analysis.

UDWR Response:

The UDWR is completing the cumulative effects analysis and will incorporate it into the final study report.

BIA Comment 24:

Page 4-13 - *“The LPP Project construction would not occur within ten miles of any known Kanab ambersnail population. LPP Project operation would not measurably affect Colorado River flows in the Grand Canyon and would affect the spring flows at known population locations. The LPP Project construction and operation would have no effect on Kanab ambersnail or its habitat.” -Is this supposed to read “...and would not affect the spring flows at known population locations”? If not, the effects determination is not justified.*

UDWR Response:

The final study report will correct the statement to read “LPP Project operation would not measurably affect Colorado River flows in the Grand Canyon and would not affect the spring flows at known population locations.”

BIA Comment 25:

Page 2-1 - *How was it determined that no tribal aquatic species of cultural concern were present? Were the tribes in area contacted?*

UDWR Response:

The final study report will clarify how a determination was made that no tribal aquatic species of cultural concern were identified.

BIA Comment 26:

Page 2-1 - *In general, BIA shares concerns with FWS and NPS about the effects of the alternatives on habitats downstream of Lake Powell. Tribes that may be affected, including the Colorado River Indian Tribes, should be contacted for lists of sensitive aquatic species.*

UDWR Response:

Discharges downstream of Glen Canyon Dam and other hydrologic features were modeled by Reclamation. Section 4.3.6.3 includes the following summary of findings with regard to impacts on streamflow hydrology and reservoir water levels: “The Reclamation hydrologic modeling of Lake Powell levels and Glen Canyon Dam releases demonstrate that the hydrologic impacts of the LPP Project would not be measurable, particularly within the variation of river flows resulting from Glen Canyon Dam water releases. The Reclamation model results indicate that the LPP Project would not measurably or adversely affect river flows or hydrology in the Colorado River downstream from Glen Canyon Dam. The LPP Project would have no effect on the four listed fish species in the Colorado River and would have no effect on their critical habitat. The potential hydrologic effects of the LPP Project on the listed aquatic species and their critical habitat in the Colorado River are eliminated from further analysis.” Similarly, water quality modeling performed by Reclamation resulted in findings that are summarized in section 4.3.6.4: “The Reclamation water quality modeling of Lake Powell and Glen Canyon Dam releases demonstrate that the water quality impacts of the LPP Project would not be measurable, especially within the variation of conditions resulting from Glen Canyon Dam water releases. The Reclamation water quality modeling results indicate that the LPP Project would not measurably or adversely affect water quality in the Colorado River downstream from Glen Canyon Dam. The LPP Project would have no effect on the four listed fish species in the Colorado River and would have no effect on their critical habitat. The potential water quality effects of the LPP Project on the listed aquatic species and their critical habitat in the Colorado River are eliminated from further analysis.”

BIA Comment 27:

Page 2-2 - *“Special status aquatic species habitat includes the lotic or lentic components and surrounding riparian areas which provide allochthonous sources of organic matter and is an integral part of the food chain in aquatic ecosystems.” This stated assumption seems to indicate that affects to*

riparian areas surrounding lakes and streams should be evaluated as part of the aquatic resources, but there is no further discussion of effects to riparian areas in the document.

UDWR Response:

Impacts on Lake Powell and the Colorado River were determined to be negligible based on Reclamation hydrology and water quality modeling results. Please refer to the response to BIA comment 26. Therefore, impacts on the associated riparian areas would also be negligible. Potential effects on riparian resources are described draft study report 20, Wetlands and Riparian Resources. Additionally, the LPP Project construction and operation would have no direct or indirect effects on riparian resources along the Virgin River. The final study report will reference the Wetlands and Riparian Resources study report.

BIA Comment 28:

Page 4-13 to 4-16 - In general, the direct impact sections within this section re-state life history facts , then make a determination that there will be no direct impact. The connection between life history and the no direct impacts determination should be more explicit.

UDWR Response:

The Effects and Impacts Analysis described in Section 4.4 explains where (if at all) each aquatic species inhabits the identified streams, the conditions under which the stream might be inhabited, and how the project might affect those conditions (if at all). Although this relationship should be clear, the final study report will explicitly explain how a determination of no direct impact was found in each instance.

BLM Comment 93:

Sections 3.4, Federal, State and Local Agency Aquatic Species of Concern section needs additional and more specific information on aquatic species in the Virgin River, Paria River, and LaVerkin Creek. For example: flannel-mouth sucker occurs in the Virgin River, and LaVerkin Creek but is not included as species occurring in these streams. Do the sensitive fish in the Paria River use the reach at the proposed crossing during part of the year?, and if not how far down stream do fish occur, what species, how many, and is it yearlong use. If sufficient information is not available, then additional surveys in the Paria River may be warranted.

UDWR Response:

The final study report will include distribution of the flannelmouth sucker in the Virgin River and lower LaVerkin Creek. The sensitive fish in the Paria River do not use the reach at the proposed pipeline crossing during any part of the year. The known distribution and use of the Paria River by sensitive fish species, including the flannelmouth sucker and bluehead sucker, occurs in the lower Paria River downstream from the Utah-Arizona state line (more than 10 miles downstream from the US Highway 89 crossing). Flannelmouth sucker are known to currently use the lower Paria River when sufficient stream flows are available. Bluehead sucker historically used the lower Paria River; however, their current distribution in and use of the lower Paria River is unknown (Statewide Conservation Agreement for six non-listed native fish in Arizona, December 2006). The final study report will clarify the sensitive fish species distribution in the lower Paria River.

BLM Comment 94:

Section 4.3.6, Project Diversions from Lake Powell and the Colorado River section discusses the potential effects on special status aquatic species from diversions from Lake Powell, and the Colorado River. Several hydrologic simulation models are used to predict potential flows due to these diversions. The interpretation is quiet lengthy, and confusing. Please, use tables and/or graphs in this section if possible. This analysis is found in Section 4.3, Potential Effects and Impacts and Alternatives Eliminated from Further Analysis. How can potential effects be eliminated from further analysis, when the

cumulative effects of other inter-related projects (cumulative impacts) have not been included in these models? (refer to section 7.1, cumulative effects pending completion).

UDWR Response:

The cumulative effects analysis of other inter-related projects was included in Reclamation CRSS modeling performed on Lake Powell elevations and the Colorado River flows below Glen Canyon Dam. The Final Planning Study Analysis (which included all past, present and future depletions and operations in the Upper Colorado River Basin), and the No Additional Depletions Analysis (which included past, present and reasonably foreseeable future depletions and operations in the Upper Colorado River Basin consistent with DOI regulations at 43 CFR 46.20 regarding the definition of “reasonably foreseeable”) incorporate the effects of other inter-related projects affecting Lake Powell levels and Colorado River flows below Glen Canyon Dam as described in Section 4.3.1 and Appendix 2 of the draft Surface Water Resources study report and Section 4.2.4 and Appendix A of the draft Surface Water Quality study report. The cumulative effects chapter of the Final Aquatic Resources Study Report and the other applicable final study reports will identify the inter-related projects that could result in cumulative effects, explain the Reclamation modeling which incorporated cumulative effects into the modeled analyses, and present the Reclamation modeling results.

BLM Comment 95:

Sections 4.3.3, 4.4.1, 4.4.2, 5.2.1.1, and 6.3.2 do not include flannel-mouth sucker, and should because the flannel-mouth sucker occurs in the Virgin River and LaVerkin Creek.

UDWR Response:

The final Special Status Aquatic Species study report will be revised to include flannelmouth sucker distribution, habitat, potential impacts and potential mitigation measures in the Virgin River and lower LaVerkin Creek.

BLM Comment 96:

Sections 4.4.1.3, and 4.4.1.4 state that desert sucker, and Virgin spinedace (flannel-mouth sucker should be included) are not known to inhabit LaVerkin Creek at the proposed Cedar Valley Pipeline crossing. This may not be accurate. Additional surveys along LaVerkin Creek maybe warranted.

UDWR Response:

The final Special Status Aquatic Species study report will be revised to describe desert sucker, Virgin spinedace, and flannelmouth sucker habitat, distribution, potential impacts, and potential mitigation measures in LaVerkin Creek at the proposed Cedar Valley Pipeline crossing, as applicable.

USFWS Comment 21:

Draft Study Report 11: Special Status Aquatic Species and Habitats

Section 3.4: Federal, State, & Local Agency Aquatic Species of Concern, pages 3-14 through 3-15: The discussions of the Paria River crossing at US Hwy 89 should specify the timing of proposed construction activities—i.e., pre-monsoon, during, or after the monsoon rain season. Work occurring during the monsoon season could cause significant effects to all special status species of fish.

UDWR Response:

The final study report will address construction activities at the Paria River crossing at US Highway 89 to avoid or minimize impacts on special status fish species downstream of the highway bridge crossing.

USFWS Comment 22:

Section 3.4.5: Virgin Spinedace, page 3-16: The document is correct in identifying that the Virgin spinedace is cooperatively managed under a Conservation Agreement. However, it will be important for the Project design and implementation to fully incorporate appropriate conservation measures into the planning and implementation processes to ensure protection of this species.

UDWR Response:

The final study report will incorporate appropriate conservation measures for Virgin spinedace.

USFWS Comment 23:

Section 4.2.1: Federally Listed Species, page 4-2: The first paragraph should be rewritten to more clearly describe the ESA section 7 consultation process. The proposed action should be reviewed and a determination made if the action may affect any listed species or their critical habitat. If it is determined by the Federal agency, with the written concurrence of the U.S. Fish and Wildlife Service, that the action is not likely to adversely affect listed species or critical habitat, the consultation process is complete, and no further action is necessary.

UDWR Response:

The final study report will clarify the ESA section 7 consultation process.

USFWS Comment 24:

Formal consultation (50 CFR 402.14) is required if the Federal agency determines that an action is “likely to adversely affect” a listed species or will result in jeopardy or adverse modification of critical habitat (50 CFR 402.02). Federal agencies should also confer with the U.S. Fish and Wildlife Service on any action which is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat (50 CFR 402.10). A written request for formal consultation or conference should be submitted to the U.S. Fish and Wildlife Service with a completed biological assessment and any other relevant information (50 CFR 402.12).

UDWR Response:

The final study report will clarify the ESA section 7 consultation process.

USFWS Comment 25:

Section 4.2.1: Federally Listed Species, page 4-2: Please clarify that Reasonable and Prudent Measures and associated Terms and Conditions in the biological opinion are nondiscretionary and must be undertaken by the agency for the incidental take statement to be valid. Without a valid incidental take statement, the agency and Project proponent can be held liable under ESA section 9 for any take that occurs.

UDWR Response:

This comment is a legal conclusion concerning interpretation of the Endangered Species Act and its implementing regulations, and has no bearing on whether the approved study plan has been followed or whether additional studies or information are needed.

USFWS Comment 26:

Section 4.3.5: Interbasin Transfer of LPP Water, page 4-5: This paragraph discusses designing the LPP to avoid transfer of aquatic organisms from Lake Powell to Sand Hollow Reservoir. However, Draft Study Report # 2 clearly states that AIS transfer will only be addressed through a contingency plan if AIS are detected. These two statements seem to be contradictory—please ensure that the effects of interbasin transfer of invasive or exotic aquatic species are fully addressed during the LPP planning process (see General Comments, Aquatic Invasive Species, above).

UDWR Response:

Please refer to the response to USFWS comment 17 in the Aquatic Resources section of this document.

USFWS Comment 27:

Section 4.3.7: Apache Trout, page 4-12: This section should be corrected to identify that the Colorado River has several tributary streams, including North Canyon. The Verde River eventually flows into the Salt River and has no connections to North Canyon on the Kaibab National Forest.

UDWR Response:

The final study report will identify that the Colorado River has several tributary streams, including North Canyon, and that the Verde River flows into the Salt River and has no connections to North Canyon on the Kaibab National Forest.

USFWS Comment 28:

Section 4.4.1: LPP Project Alignment Alternatives, pages 4-13 and 4-14: The impact analyses for Virgin River chub (4.4.1.1) and woundfin (4.4.1.2) must specifically address the Project's effects to the primary constituent elements (PCE) of critical habitat. For example, water quality degradation can be measured and is a direct effect to the PCEs of both species' critical habitat.

UDWR Response:

The final study report will address the LPP Project effects on primary constituent elements (PCE) of designated critical habitat for Virgin River chub and woundfin.

USFWS Comment 29:

Section 4.4.2: No Lake Powell Water Alternative, page 4-15: Same comment as above. The effects to critical habitat PCEs for both listed fish species should be discussed.

UDWR Response:

Please refer to the response to USFWS comment 28.

USFWS Comment 30:

Section 5.1: Conservation Measures, pages 5-1 and 5-2: Please remove the mitigation measure (5.1.1.1 Virgin River Chub and Woundfin, 3rd bullet) of coordinating with Federal and state agencies regarding the effects of stream crossings. We acknowledge that interagency coordination will be an essential part of the planning process for the LPP. However, we do not consider coordination to be a "mitigation" measure. In addition, please provide specific information on the steps that will be taken if water quality and turbidity are not maintained under the proposed action—see the last bullet on page 5-2.

UDWR Response:

The final study report will remove coordinating with Federal and state agencies from the conservation measures. The final study report will clarify contingency measures if monitoring indicates water quality and turbidity conditions are not maintained within surface water quality standards under the proposed action.

Draft Study Report 12 – Special Status Plant Species and Noxious Weeds Assessment

FERC Comment 31:

A special-status plant protection plan and weed management plan should be included in the draft license application, in coordination with all relevant local, state, and federal agencies and tribes.

UDWR 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.

KBPI Comment 105:

Section 3.1 Pre-survey Preparations, Field Equipment, and Materials - Draft Report 12 states that lists provided by various federal, state and tribal agencies were used to create an exclusion table of species of rare plants. Draft Report 12 at 3-1. Draft Report 12 then states that “[t]he exclusion table was reviewed and approved by USFWS and BLM each year of the project.” Draft Report 12 at 3-2. Study Plan 12 requires that “[o]n an annual basis until the completion of all construction activities, each land and resource management agency will be contacted to review and modify (e.g., remove or add) the list of special status plant species being considered for project impact assessment.” Study Plan 12 § 12.6.1. As a governmental agency with jurisdiction over a portion of the Project area, the Kaibab Tribe should be consulted annually regarding the exclusion table. See Study Plan 12 § 12.6.1. Furthermore, while the text of Draft Report 12 indicates communication with the Kaibab Tribe, Draft Report at 3-1, Table 3-1 itself does not. See Draft Report at 3-2 to 3-14 (status definitions coding for identified species does not include the Kaibab Tribe and “Sources” at the end of the table do not include the Kaibab Tribe). If the Kaibab Tribe was a source for some of the species listed in Table 3-1, as required by Study Plan 12, Table 3-1 should be changed to reflect the Kaibab Tribe’s input; if the Kaibab Tribe was not a source for any of the species listed in Table 3-1, the Tribe’s input regarding special status species must be considered. See Study Plan 12 § 12.6.1 (requiring consultation with the Kaibab Tribe in compiling the list of special status plant species). The failure to either acknowledge tribal input or obtain it at all renders Draft Report 12 noncompliant with Study Plan 12.

UDWR Response:

The final study report will clarify the annual consultations with the Kaibab Band of Paiute Indians regarding the plant species exclusion table. Table 3-1 in the final study report will include the Kaibab Band of Paiute Indians in the sources listed at the end of the table to reflect their input on the plant species exclusion list.

KBPI Comment 106:

Section 4.1 Introduction - Draft Report 12 presents Table 4-1 as a list of the special status plant species that might occur in the Project survey area. Draft Report 12 at 4-1 to 4-5. Draft Report 12 states that the list was compiled with input from various sources, yet the Kaibab Tribe is not one of the sources listed. Draft Report 12 at 4-1. The Kaibab Tribe’s input is required by Study Plan 12. Study Plan 12 § 12.6.1. In Draft Report 12’s discussions of each individual species, there is no indication that tribal consultation occurred. See Draft Report 12 at 4-6 to 4-170. Draft Report 12 must reflect consultation with the Kaibab Tribe in compiling its list of special status plant species that might occur in the Project survey area. Study Plan 12 § 12.6.1. The failure to either acknowledge tribal input or obtain it at all renders Draft Report 12 noncompliant with Study Plan 12.

UDWR Response:

The final study report will clarify consultations held with the Kaibab Band of Paiute Indians regarding the special status plant species with the potential to occur within the LPP survey area. The text and tables in Chapter 4 of the final study report will include the Kaibab Band of Paiute Indians as a source of input on the plant list and discussions of individual species accounts, as applicable.

KBPI Comment 107:

Section 6.1.4 Special Status Plants Draft Report 12 states that,

[s]pecial status plants include any species listed, or proposed for listing, as threatened or endangered by the USFWS under the provisions of the ESA; any species designated by the USFWS as a “listed,” “candidate,” “sensitive” or “species of concern,” and any species which is listed by a federal or state land and resource management agency for special management consideration.

Draft Report 12 at 6-4. This directly conflicts with Study Plan 12, which declares that “[s]pecial-status plant species include federally listed threatened and endangered species, proposed species, and candidate species under the ESA; BLM sensitive species; NPS species of concern; state protected species; Natural Heritage Program watch-list species; and tribal designated species of concern.” Study Plan 12 § 12.2 (emphasis added). Draft Report 12’s failure to adhere to Study Plan 12’s definition of “special status plants,” the very heart of this study, calls into question the legitimacy of the entire Draft Report 12. Pursuant to Study Plan 12, Draft Report 12 must analyze all special status plants, including those identified by the Kaibab Tribe. See Study Plan 12 § 12.2. This significant omission renders Draft Report 12 noncompliant with Study Plan 12.

UDWR Response:

The text in Section 6.1.4 of the final study report will include the Kaibab Band of Paiute Indians’ identified plants of cultural concern as special status plants.

KBPI Comment 108:

Section 7.1 Special Status Plants Locations - Draft Report 12 states that “[a] list of special status species (as designated by federal and state land and resource management agencies) with the potential to occur in the LPP survey area was compiled.” Draft Report at 7-1. This directly conflicts with Study Plan 12, which declares that “[s]pecial-status plant species include federally listed threatened and endangered species, proposed species, and candidate species under the ESA; BLM sensitive species; NPS species of concern; state protected species; Natural Heritage Program watch-list species; and tribal designated species of concern.” Study Plan 12 § 12.2 (emphasis added). Draft Report 12’s failure to adhere to Study Plan 12’s definition of “special status plants,” the very heart of this study, calls into question the legitimacy of the entire Draft Report 12. Pursuant to Study Plan 12, Draft Report 12 must analyze all special status plants, including those identified by the Kaibab Tribe. See Study Plan § 12.2. This significant omission renders Draft Report 12 noncompliant with Study Plan 12.

UDWR Response:

The text in Section 7.1 of the final study report will include the Kaibab Band of Paiute Indians’ identified plants of cultural concern as special status plants.

BIA Comment 29:

Page ES-3 - Since vegetation alliances and associations are defined here and this is a results section, there should be information on what alliances and associations occur in the project area.

UDWR Response:

UDWR disagrees that this information should be presented in the Executive Summary. The alliances and associations in the LPP Project study area are identified and discussed in draft study report Chapter 4.

BIA Comment 30:

Page 1-20 - “*Jones cycladea*” should be “*Jones cycladenia*”.

UDWR Response:

The final study report will change “*Jones cycladea*” to “*Jones cycladenia*”.

BIA Comment 31:

Chapter 6 - The BMP requiring equipment to be power-washed when entering reservation lands on back roads in accordance with the tribal weed management program that is included in the Segment 25 section, should be included in all segments containing tribal land (Segments 21 and 23).

UDWR Response:

Section 6.5.25 of the draft study report identifies a tribal requirement for power washing of tires when entering tribal lands by back roads, but states that Reach 20 of Segment 25 is exempt from this requirement. This is a tribal requirement, not a LPP Project BMP. No BMPs or revisions to existing practices were made because no intended purpose for the LPP Project has been identified for this road segment. UDWR does not wish to impose BMPs on the Tribe or on users of reservation back roads when there is no identified need. It is the Tribe’s prerogative to consider modifying current BMPs.

BLM Comment 126:

12 Draft Special Status Plant Species and Noxious Weeds Assessment Report

Pg 4-168, 4.3.56 *Spiranthes diluvialis* (Ute ladies’-tresses) 4.3.56.1 Natural history, 2nd paragraph, 2nd line and 6th line - Does *S. demissum* = *S. diluvialis*?

UDWR Response:

The final study report will clarify and address this comment question, if warranted.

BLM Comment 127:

Best Management Practices and Effects Analysis, Pg 6-2 - BMP-G11 : Ensure that no servicing or refueling of equipment occurs within or immediately adjacent to wellheads, streams, reservoirs, or associated wetlands.

UDWR Response:

The final study report will add this requirement to BMP-G11.

BLM Comment 128:

Consider using refueling containment structures as an additional precaution.

UDWR Response:

The final study report will include refueling containment structures as a BMP where feasible; however, other refueling containment precautions such as portable containment may be applied where appropriate and safe to implement.

BLM Comment 129:

6.1.5.1 Invasive Species - Prevention and Monitoring ,Pg. 6-5, - BMP-IS1: Minimize soil disturbance whenever possible. Invasive plants readily colonize areas of disturbed soil. Monitor recent work sites for the emergence of invasive plants for a minimum of two years after project completion.

UDWR Response:

Your comment has been noted.

BLM Comment 130:

BMP-IS3: Newly constructed access routes could be monitored for noxious and invasive weed infestations and treated during construction.

UDWR Response:

Your comment has been noted.

BLM Comment 131:

BMP-IS4: Post-construction and post-decommissioning monitoring for invasive plant species.

UDWR Response:

Your comment has been noted.

BLM Comment 132:

Who is responsible for monitoring and follow-up treatment - FERC, BLM, NPS, State, County, etc? This needs to be clearly established and identified.

UDWR Response:

The final study report will clarify who will be responsible for monitoring and follow-up treatment.

BLM Comment 133:

6.1.5.4 Invasive Species - Disposal of Plant Materials, Pg. 6-6 - BMP-IS15: Herbicide use should be limited to non-persistent, immobile herbicides and should be applied only by licensed applicators in accordance with label and application permit directions and stipulations for terrestrial and aquatic applications.

UDWR Response:

Your comment has been noted.

BLM Comment 134:

Who is responsible for spraying?

UDWR Response:

The final study report will clarify who will be responsible for spraying herbicides.

USFWS Comment 31:

Draft Study Report 12: Special Status Plants and Noxious Weeds

*In our January 8, 2009, letter we recommended that the Revised Study Plan incorporate recovery plan actions for *Astragalus holmgreniorum*, *A. ampullarioides*, *Pediocactus sileri*, and *Arctomecon humilis*. The purpose of incorporating recovery plan actions and goals is to ensure that the Project does not impede or appreciably reduce the recovery potential of these 4 species. Please add an analysis on how the Project will incorporate or affect recovery plan actions.*

UDWR Response:

The final study report will state that the LPP Project would not affect the recovery plan actions of the four species referred to in the comment.

USFWS Comment 32:

We previously recommended that the noxious weed list be updated to include an additional 4 species (Bromus tectorum, B. rubens, Erodium cicutarium, and Malcolmia africana) (Scoping Document 2, enclosure 1, August 21, 2008). Malcolmia africana is not addressed in the noxious weed report. Please include this species.

UDWR Response:

The final study report will include *Malcolmia africana* in the noxious weed report.

USFWS Comment 33:

Chapter 3: The extent of the surveys in this report is not clear. For example, the report should identify and map the locations of the 300 and 600 foot corridors; and the rationale for implementing different survey corridor widths. In addition, the report should specify if surveys were completed at staging areas and associated facilities, and the buffer width of those surveys. The report should also identify any areas that were not surveyed because of private property access restrictions, and how these areas will be evaluated for potential impacts to threatened and endangered species.

UDWR Response:

Map 2-3 in Section 2.6 of the draft study report identifies and displays the locations of the 300- and 600-foot wide survey corridors. The text in Section 2.6 describes the rationale for implementing different corridor widths based on the geologic origin of soils. The text in Section 3.2 describes that surveys were completed at staging areas and associated facilities. The final study report will clarify the buffer width of special status plant surveys around staging areas and associated facilities. The draft study report includes references to private property not surveyed because of access restrictions. The final study report will clarify areas not surveyed because of private property access restrictions and will describe how these areas will be evaluated for potential impacts on threatened and endangered species.

USFWS Comment 34:

*Chapter 4: Surveys for *Asclepias welshii* need to be completed during the appropriate survey season in all suitable habitats for the species.*

UDWR Response:

The final study report will clarify that Welsh's Milkweed was surveyed in the study area and was not found during the survey season. No further surveys are warranted.

USFWS Comment 35:

*Section 4.3: Species Accounts: This section should include the status of Morton's wild-buckwheat and Smooth catseye (*Pipe Springs cryptantha*). We recently published substantial 90-day findings for these species, and we will thus be conducting 12-month status reviews. We recommend that you evaluate impacts of the proposed action to these species.*

UDWR Response:

The status of Morton's wild buckwheat and Smooth catseye are included in the draft study report Table 3-1. Your comment has been noted.

USFWS Comment 36:

Section 4.3.5: Welsh's Milkweed, pages 4-10 and 4-11: This section should include a complete analysis of the effects of the proposed action on designated critical habitat for Welsh's milkweed. All conservation measures and effects analyses should consider the 1992 recovery plan for this species.

UDWR Response:

Please refer to the response to USFWS comment 34. There are no critical habitat areas for Welsh's milkweed in the study survey area. No additional analyses will be performed.

USFWS Comment 37:

Section 4.3.6: Shivwits Milkvetch, pages 4-11 and 4-12: This section should include a complete analysis of the effects of the proposed action on designated critical habitat for Shivwits milkvetch. In addition, please revise the discussion in section 4.3.6.3—while we acknowledge that the Project area in critical habitat subunit 4a was affected by a wildfire, and now contains exotics, the area is still considered critical habitat and is thus important for the long-term survival and recovery of the species. Measures should be taken to ensure that the Project does not increase exotic species, and more importantly that conservation measures are considered to improve the habitat long-term.

UDWR Response:

The final study report will clarify that Shivwits milkvetch was not encountered in the study area during the survey. Areas disturbed by construction in designated critical habitat, as elsewhere, would be restored to natural conditions as much as practicable. No further analysis is warranted.

USFWS Comment 38:

Section 4.3.22: Las Vegas Buckwheat, pages 4-55: The discussion of transplantation and propagation should include Project-specific conditions to determine if this is an appropriate conservation measure. For example, although the species was successfully transplanted and propagated into managed preserve in Las Vegas, we do not know if transplantations in the wild will be effective. Wild transplants for example do not have the benefit of monitoring and watering.

UDWR Response:

The final study report will include an expanded discussion of transplanting and seed propagation as conservation measures and the probability of their success within the study area.

USFWS Comment 39:

Section 4.3.23: Morton's Wild Buckwheat, pages 4-66 through 4-71: It is unclear why this section only evaluates impacts to 85 individual plants found during recent surveys. The discussion should evaluate impacts to the approximately 58,000 individual plants mentioned in Table 4-23.

UDWR Response:

Table 4-23 indicates that 85 individual plants were identified in the survey within the survey transect, a corridor wider than the proposed construction corridor through the identified habitat for this plant. The reference to 58,000 individual plants is extrapolated into the same vegetation community from plant densities in the surveyed transect. Outside of the proposed construction disturbance area (where the 85 plants were documented), protection of habitat for this plant is a land management issue and not the responsibility of UDWR or the sponsoring water districts associated with the LPP Project.

USFWS Comment 40:

Section 4.3.37: Siler's Pincushion Cactus, pages 4-94 through 4-107: We are not convinced that transplantation of Siler's pincushion cactus 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 transplanting efforts. In addition, avoidance of impacts should always be the first option to avoid long-term population effects. Habitat improvements and protections should be considered a priority to offset any unavoidable impacts to this cactus and its habitat. Development of conservation measures should be consistent with the 1986 recovery plan.

UDWR Response:

The final study report will clarify the conservation measures, including avoidance as the first option.

USFWS Comment 41:

Chapter 6: The analysis only includes Best Management Practices (BMP) as proposed conservation measures for plants. However, we believe that additional conservation measures are needed to ensure that the recovery potential of the species is not appreciably lowered by the proposed action (see recovery actions listed each species' recovery plan). For example, avoidance of threatened and endangered plants by moving pipelines, transmission towers and associated facilities is a viable conservation measure and should be considered.

UDWR Response:

The final study report will include avoidance of threatened and endangered plants as the first conservation measure.

USFWS Comment 42:

Chapter 6: The species-specific impact analysis is inconsistent, using alternating terms stating that plants will be 'removed', 'may be adversely affected', or simply 'affected'. In addition, some sections do not identify if impacts will occur in areas occupied by plants. Please use consistent wording with clear definitions.

UDWR Response:

Your comment has been noted. The final study report will clarify inconsistent wording.

USFWS Comment 43:

Chapter 6: Best Management Practices and Effect Analysis: Please add an effects analysis for Asclepias welshii.

UDWR Response:

The effects analysis in Chapter 6 is based on biographically distinct segments, not plant species *per se*. Please refer to the response to USFWS comment 34.

USFWS Comment 44:

Chapter 6: Best Management Practices: Transplanting and salvaging plants should not be conducted unless there are extensive data indicating high survival rates for these species, especially the soil-specific species. Propagation trials/experiments are mentioned in the species' recovery plans, but translocation/salvaging is not discussed as a viable method to aid in recovery of the species. All Best Management Practices and additional conservation measures should include action items from recovery plans, when available.

UDWR Response:

Your comment has been noted. BMPs identified in the draft study report will be reviewed to determine whether transplanting and salvaging plants would be consistent with species' recovery plans, and whether additional conservation measures should incorporate additional action items from the recovery plans.

USFWS Comment 45:

Section 6.1.4: Special Status Plants BMPs - BMP-SS2, page 6-4: Transplanting special status plants without an established and proven transplant protocol is considered highly experimental and should not be proposed as a viable conservation measure.

UDWR Response:

Please refer to the response to USFWS comment 44.

USFWS Comment 46:

Section 6.1.4: Special Status Plants BMPs - BMP -SS3, page 6-4: This BMP should include annual species. Seeds should be collected prior to construction and returned to the site for revegetation and restoration efforts.

UDWR Response:

Your comment has been noted. BMP-SS3 will be reviewed to determine whether this BMP is a viable option for annual species.

USFWS Comment 47:

Section 6.1.5: Noxious and Invasive Species, pages 6-4 and 6-5: Invasive species control should include an evaluation of the potential impacts of herbicides on special status plants.

UDWR Response:

Your comment has been noted. Herbicides, by definition, would be detrimental to most special status plants if applied directly or too closely. As noted in section 6.1.5.4:

BMP-IS14: When an herbicide is used to control vegetation, the climate, soil type, slope, and vegetation type could be considered in determining the risk of herbicide contamination.

BMP-IS15: Herbicide use should be limited to nonpersistent, immobile herbicides and should be applied only by licensed applicators in accordance with label and application permit directions and stipulations for terrestrial and aquatic applications.

BMP-IS14 in the final study report will indicate specifically that the toxicity to special status plants would be considered in determining risk of herbicide contamination. BMP-IS15 addresses the issue of long-term contamination of soil preventing re-establishment of special status plants in applied areas.

USFWS Comment 48:

Section 6.5: Effect Analysis Segment Description: Although Astragalus ampullarioides was not found during the surveys, a segment of the Project goes through designated critical habitat of this species (Chapter 4.3.6). Please analyze the proposed action's impact to critical habitat for A. ampullarioides.

UDWR Response:

Your comment has been noted. Please refer to the response to USFWS comment 37.

USFWS Comment 49:

Section 6.5: Effect Analysis Segment Description: This section states that no impact analysis could be performed for several of the surveyed segments (e.g., 6.5.38). Please provide a clear rationale for the exclusion of these segments.

UDWR Response:

In most if not all instances, segments that could not be surveyed occur on private land for which no access was authorized by the land owners. The final study report will clarify why survey segments could not be accessed.

USFWS Comment 50:

Section 6.5.22: Three sensitive species were found along survey segment 22 (Fredonia to Kaibab Indian Reservation East Boundary)—Pediocactus sileri, Cryptantha semiglabra, and Eriogonum mortonianum.

However, Project impacts are only listed for *P. sileri*. Please provide analyses for Project impacts to *C. semiglabra* and *E. mortonianum*, even if there are no potential impacts from the proposed action.

UDWR Response:

The final study report will address project impacts on *Cryptantha semiglabra* and *Eriogonum mortonianum* in the impacts portion of section 6.5.22.

USFWS Comment 51:

Section 6.5.23: Survey segment 23 (Kaibab Indian Reservation along AZ 389) contains the largest population of *Siler pincushion cactus*—the effects analysis for this species should thus be more detailed. In addition, this section acknowledges a lack of data supporting salvage and transplantation, yet these techniques are discussed as conservation measures in previous sections of the document (see our comments in Chapter 6, above for more information).

UDWR Response:

Your comment has been noted. The comment does not identify deficiencies in the effects analysis of *Siler pincushion cactus*. UDWR believes that the effects analysis provided in the draft report is adequate. Salvage and transplantation are identified in a more extensive list of BMPs, and as noted in the response to USFWS comment 40, avoiding impacts on habitat is the first conservation measure where practicable. Also, please refer to the response to USFWS comment 44.

USFWS Comment 52:

Section 7.1: Conclusion – Special Status Plants Locations: Please include a discussion of the effects of the proposed action to *Asclepias welshii*.

UDWR Response:

Your comment has been noted. Section 4.3.5.2 describes that no *Asclepias welshii* were found during the project plant surveys. Please refer to the response to USFWS comment 34.

Draft Study Report 13 – Special Status Wildlife Species

FERC Comment 32:

Protection plans for the Utah prairie dog and Mohave desert tortoise should be included in the draft license application, in coordination with all relevant local, state, and federal agencies and tribes.

UDWR Response:

The final study report will address the addition of protection plans for Utah prairie dog and Mohave Desert tortoise. If it is possible to develop such plans within the ILP timeframes, UDWR will include the proposed plans in the draft or final license application. If not, the application will propose that the license include an article requiring UDWR to submit such plans within one year of license issuance.

LPPC Comment 56:

The Draft Study Report 13 Special Status Wildlife Species (UDNR 2011a:4-35) offers a systematic summary of the anticipated affects on special status wildlife. We are very concerned that the proposed project, along with its other numerous economic and environmental liabilities, will simply exacerbate deterioration of public lands locate on the Arizona Strip and southwestern Utah.

UDWR Response:

Your comment has been noted.

KBPI Comment 108:

Section 2.2 Data Used - Draft Report 13 describes the data used to prepare the study, Draft Report 13 at 2-1, but fails to mention any tribal data used or to describe any attempts to obtain tribal data. Section 13.3 of Study Plan 13 requires that Draft Report 13 address the resource management goals of Indian tribes. Section 13.9.3.2 of Study Plan 13 states that Draft Report 13 will address measures to protect “wildlife species of cultural concern.” Draft Report 13 directly contravenes Study Plan 13 by failing to list what, if any, tribal data was used in order to address species of cultural concern, and that failure renders Draft Report 13 noncompliant with Study Plan 13.

UDWR Response:

The final study report will address the resource management goals of the Kaibab Band of Paiute Indians and other Indian tribes regarding wildlife species of concern to the degree that the Tribes have provided them to UDWR. The UDWR consulted with the Kaibab Band of Paiute Indians regarding special status species lists and received a list of Wildlife Species of Concern to the Kaibab Band of Paiute Indians of Northern Arizona on July 8, 2008. The final study report will clarify the UDWR consultations with the Kaibab Band of Paiute Indians on special status wildlife species and data.

KBPI Comment 109:

Draft Report 13 also indicates that “[t]argeted field studies were performed for federally listed wildlife species.” Draft Report 13 at 2-1. Section 13.5 of Study Plan 13 states that “[a]ll field surveys and habitat assessments, including aerial surveys or videography, on the Kaibab Reservation of the Kaibab Band of Paiute Indians will require permission from the Tribe.” Draft Report 13 fails to indicate where the “[t]argeted field studies” occurred. If such studies occurred on or over tribal lands, Draft Report 13 must indicate whether tribal permission was obtained. The failure to document tribal permission or the failure to obtain it renders Draft Report 13 noncompliant with Study Plan 13.

UDWR Response:

The final study report will indicate that permission was granted by the Kaibab Band of Paiute Indians for multiple field studies for surveys and habitat assessments.

KBPI Comment 110:

Section 3.4 Federal, State and Agency Wildlife Species of Concern and Tribal Wildlife Species of Cultural Concern - Table 3-2 in Draft Report 13 lists species of concern and highlights those species of special concern with a potential Project nexus. Draft Report 13 at 3-16 to 3-18. Species of concern that are not highlighted represent species without a potential Project nexus. Table 3-3 in Draft Report 13 lists those species not highlighted in Table 3-2 and briefly summarizes why they would not be ecologically affected by the proposed Project. Draft Report 13 at 3-18 to 3-22. Table 3-2 highlights several species that are also included in Table 3-3. For example, the Leconte’s thrasher, Lewis’s woodpecker, and Northern goshawk are each highlighted in Table 32, indicating they have a potential Project nexus, but they are also included in Table 3-3, indicating they do not have a potential Project nexus. Further, the potential Project nexus is individually described for each of those species in sections 3.4.2.24, 3.4.2.25, and 3.4.2.29 of Draft Report 13, respectively. Draft Report 13 at 3-27, 3-28. Section 13.9.4 of Study Plan 13 states that Draft Report 13 will identify, describe, and assess “the extent to which project-related actions and activities may affect special-status wildlife and their habitat.” So as to accord with Study Plan 13, Draft Report 13 must clarify these inconsistencies. The absence of such clarification renders Draft Report 13 noncompliant with Study Plan 13.

UDWR Response:

The final study report will clarify inconsistencies between Tables 3-2 and 3-3 regarding special status wildlife species with a potential Project nexus.

KBPI Comment 111:

Table 3-3 also fails to list several species not highlighted in Table 3-2. For example, the blue grouse, desert iguana, desert night lizard, Mojave rattlesnake, and speckled rattlesnake are not highlighted in Table 3-2, indicating they do not have a potential Project nexus, but Table 3-3 fails to list those species and summarize why they will not be ecologically affected. Again, so as to accord with Study Plan 13, Draft Report 13 must clarify these inconsistencies. The absence of such clarification renders Draft Report 13 noncompliant with Study Plan 13.

UDWR Response:

The final study report will clarify inconsistencies between Tables 3-2 and 3-3 regarding special status wildlife species with a potential Project nexus and summarize why the species would not be ecologically affected by the LPP Project.

KBPI Comment 112:

Section 3.4.3 Tribal Wildlife Species of Cultural Concern - Draft Report 13, together with Table 3-4, lists the wildlife species of tribal concern, but states that “[m]ost 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.” Draft Report 13 at 3-33. Section 13.3 of Study Plan 13 requires that the resource management goals of Indian tribes be addressed. Section 13.9.3.2 of Study Plan 13 states that the Kaibab Tribe’s list of species of cultural concern “will be narrowed by the Tribe to include those species of particular importance and interest to Tribal members.” The same section also states that Draft Report 13 will address measures to protect “wildlife species of cultural concern.” Draft Report 13 mostly dismisses species of cultural concern and attempts to lump them in with the wildlife species described in other sections of the report. Bighorn sheep, mule deer, mountain lions, and morning doves are examples of species, but not the only ones, that were listed by the Kaibab Tribe, Kaibab Tribe’s Opening Comments at Attachment 2, but other than brief mention of mammals and birds generally, not addressed elsewhere in Draft Report 13. This failure to specifically address species of cultural concern directly contravenes Study Plan 13. Further, Draft Report 13 fails to describe whether attempts were made to have the Kaibab Tribe narrow its list of species of cultural concern. This failure also directly contravenes Study Plan 13. As it stands, Draft Report 13 is noncompliant with Study Plan 13.

UDWR Response:

The final study report will address all identified wildlife of cultural concern to the Kaibab Band of Paiute Indians. The list provided by the Kaibab Band of Paiute Indians included common names for types of wildlife but did not identify any wildlife by species names. The final study report will describe UDWR’s efforts to consult with the Kaibab Band of Paiute Indians on this matter.

KBPI Comment 113:

Section 4.2.2 Federal, State, Agency Wildlife Species of Concern and Tribal Wildlife Species of Cultural Concern - Draft Report 13 states that significance criteria for “tribal wildlife species of cultural concern would be the same as those for general wildlife,” Draft Report 13 at 4-2, but fails to indicate whether it consulted with the Kaibab Tribe to reach this conclusion. Section 13.3 of Study Plan 13 requires that the resource management goals of Indian tribes be addressed. Section 13.9.3.2 of Study Plan 13 states that the Kaibab Tribe’s list of species of cultural concern “will be narrowed by the Tribe to include those species of particular importance and interest to Tribal members.” The same section of Study Plan 13 also states that Draft Report 13 will address measures to protect “wildlife species of cultural concern.” Further, the American Indian Religious Freedom Act, 42 U.S.C. § 1996, and other federal laws potentially afford special protections upon species of cultural concern. Thus, Draft Report 13 must indicate how it

determined that the significance criteria for wildlife species of cultural concern to the Kaibab Tribe are “the same as those for general wildlife.” Draft Report 13 at 4-2.

UDWR Response:

The list provided by the Kaibab Band of Paiute Indians to UDWR consisted of common names for general types of wildlife (e.g., rabbits, bats, frogs, etc.) but did not identify any wildlife by species names. UDWR has no basis on which to conclude that any of the named wildlife have special significance because the list of wildlife provided by the Kaibab Band of Paiute Indians did not identify specific species or the nature of its concerns, except in very general terms. This will be reflected in the final report. The final study report will clarify how the significance criteria for wildlife of cultural concern were determined to be the same as those for general wildlife.

KBPI Comment 114:

Chapter 7 Cumulative Impacts - Other than for the “No Action Alternative,” which “would have no cumulative impacts,” Draft Report 13 indicates that “cumulative impacts analysis is pending completion for identification of inter-related projects that would cause cumulative impacts with the LPP project.” Draft Report 13 at 7-1. The cumulative impacts analysis must be completed as soon as possible and the Kaibab Tribe hereby requests additional time to submit comments on the cumulative impacts analysis.

UDWR Response:

The UDWR is completing the cumulative effects analysis and will incorporate it into the final study report.

BIA Comment 1:

General - How were tribal species of concern identified?

UDWR Response:

The UDWR consulted with the Kaibab Band of Paiute Indians regarding special status species lists and received a list of Plants of Cultural Concern to the Kaibab Band of Paiute Indians of Northern Arizona and a list of Wildlife Species of Concern to the Kaibab Band of Paiute Indians of Northern Arizona on July 8, 2008; however, the UDWR did not receive a special status aquatic species list from the Kaibab Band of Paiute Indians. The final study report will clarify that the Kaibab Band of Paiute Indians was consulted by the UDWR regarding special status species lists and no list was provided by the Kaibab Band of Paiute Indians for special status aquatic species or aquatic species of cultural concern.

BIA Comment 2:

General - Tribal species of concern are listed as “impact topics” and “identified issues,” but there is very minimal analysis of them throughout the document.

UDWR Response:

Please refer to the response to BIA Comment 1.

BIA Comment 3:

General - No tribal species were identified?

UDWR Response:

Please refer to the response to BIA Comment 1.

BIA Comment 4:

General - Few of the species in this table are mentioned in the text, and “no impacts” are stated. Most of these species and groupings would be impacted by the project on a minor scale.

UDWR Response:

The comment does not specify which table is indicated.

BIA Comment 5:

4.4.1.1 - Are there any potential impacts to avian species from transmission line components that should be discussed here?

UDWR Response:

This was addressed in section 4.4.1.1.1 and 5.2 of the report.

BIA Comment 6:

4.4.1.2.3 - The effects summary should include a statement of how critical habitat would be affected.

UDWR Response:

Your comment has been noted.

BIA Comment 7:

4.4.1.4.1 - No mitigation measures are proposed for the Utah prairie dog? Things like construction timing, monitoring, or silt fencing can be used to reduce impacts to the prairie dog.

UDWR Response:

This was addressed in section 5.5 of the report.

BIA Comment 8

4.4.1.4.1 - While no critical habitat is designated, there are recovery units. This section should mention which, if any, the project falls within.

UDWR Response:

The final study report will identify recovery units, if any, that could be impacted by the project.

BIA Comment 9:

4.4.1.4.2 - Are new transmission lines going to be placed in Utah prairie dog habitat? If so, predation could increase due to increased perch availability.

UDWR Response:

This was addressed in section 5.5.1 of the report.

BIA Comment 10:

4.4.1.4.2 - Are new access roads going to be placed in tortoise habitat? Would this increase the fragmentation of the habitat?

UDWR Response:

The final study report will clarify that no new access roads are planned to be constructed in existing tortoise habitat.

BIA Comment 11:

4.4.1.5 - Information in this section should be mentioned earlier – prior section indicate that tribal species weren't considered in detail, but do not mention why – this section suggests that they are dealt with in another report, although other reports don't seem to mention them in detail.

UDWR Response:

Please refer to the response to BIA Comment 1.

BIA Comment 12:

4.5.1.2 - Impacts to Mexican spotted owl critical habitat should be mentioned for all alternatives (even if there are none.)

UDWR Response:

Your comment has been noted.

BIA Comment 13:

4.7.1.4 - This section should mention potential for increased predation on Utah prairie dog colonies.

UDWR Response:

The final study report will mention the potential for increased predation on Utah prairie dog colonies associated with raptors perched in LPP Project transmission lines. Mitigation for this risk is identified in Section 5.5.1.

BIA Comment 14:

5.3.1 - This mentions that new transmission lines would be placed in Mexican spotted owl critical habitat – I thought that only pipeline would be constructed in this habitat? If transmission lines (i.e. permanent impacts) are anticipated in critical habitat, a protocol level survey for the species would be justified, regardless of seasonal construction windows.

UDWR Response:

There are no new transmission lines in Mexican spotted owl critical habitat areas. The final study report will be revised to reflect this.

BIA Comment 15:

5.5.1 - Would a new HCP be required? How does this affect the existing Iron County HCP?

UDWR Response:

The final study report will clarify whether a new HCP is required or if use of existing HCPs is sufficient and to include and reference the Iron County HCP.

BIA Comment 16:

5.6 - Avoiding the yellow billed cuckoo breeding season was mentioned as a conservation measure previously, why is it not included here?

UDWR Response:

This is addressed in section 5.6.

BIA Comment 17:

5.8.1 - This section should include what constitutes a “qualified” biologist, as the term has a different connotation when used referring to the tortoise.

UDWR Response:

Your comment has been noted.

BIA Comment 20:

Avian Survey 2009 – Site Descriptions and Evaluations - While I appreciate the discussion of factors used in deciding whether to survey sites, there is no discussion of the different habitat requirements of SWFL and YBCU. While YBCU is only a candidate species and so warrants a briefer discussion, if there are going to be sites where SWFL surveys were required but YBCU surveys were not, there should be a brief explanation here of the habitat differences that dictated this.

UDWR Response:

The final study report Appendix B will clarify the different habitat requirements of southwestern willow flycatcher and yellow-billed cuckoo relative to the field surveys conducted.

BIA Comment 21:

Avian Survey 2009 – Blue Pool Wash -While it may be perfectly valid to have not completed further surveys at Blue Pool Wash, there should be more justification for this decision here.

UDWR Response:

The final study report Appendix B will clarify the decision to not perform further avian surveys at Blue Pool Wash.

BIA Comment 22:

Avian Survey 2010 – Introduction - In the introduction it says that 7 of the 8 sites with suitable habitat were surveyed in 2009, but then there are only 6 2009 survey sites on the map. After some digging I figured out that this must be because Blue Pool Wash was only surveyed once in 2009 because there was limited avian activity there, but perhaps this could be clarified in the text since I would not have figured it out if I did not have the 2009 report to look at.

UDWR Response:

The final study report Appendix C will clarify that avian surveys at Blue Pool Wash were not performed in 2010 because of limited avian activity in 2009.

BIA Comment 23:

Avian Survey 2009 and Avian Survey 2010 - The titles of these reports are misleading. They really specifically address two species, not the avian community in general.

UDWR Response:

The draft study report Appendices B and C specifically address two species and their habitats because they are special status species with potential to occur at the proposed LPP Project crossings of riparian areas.

BLM Comment 135:

13 Draft Special Status Wildlife Species Report

The nearest Mexican spotted owl habitat is to the north of the project area, enough that the impact should be nullified.

UDWR Response:

Your comment has been noted.

BLM Comment 136:

There is, however, potential Southwestern Willow Flycatcher habitat near the Paria River and U.S. 89 crossing. SWWFL have been located during several surveys over the past decade, but they appear to be migrants as this habitat still lacks the needed components for nesting. Also, there is a possibility that the

detected birds are WFFL (willow fly catchers) instead of SWWFL. The birds look and sound exactly alike the only difference being that WFFL tolerate higher elevations. The local DWR biologist is hesitant to say that the Paria has SWWFL. When FWS came up with critical habitat in their recovery plan, they said that there is potential habitat from U.S. 89 north to confluence with Cottonwood Wash. This suggests that the necessary components are not all present for nesting although habitat appears to be improving slowly. Where these birds appear to be migrants, I feel that the potential impact is nil.

UDWR Response:

Your comment has been noted.

USFWS Comment 53:

Draft Study Report 13: Special Status Wildlife Species

Section 3.4: Federal, State and Agency Wildlife Species of Concern and Tribal Wildlife Species of Cultural Concern, page 3-15: This section 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.

UDWR Response:

The final study report will clarify that the Utah Division of Wildlife Resources' Comprehensive Wildlife Conservation Strategy was the source of the Utah Species of Concern designated in Section 3.4.

USFWS Comment 54:

Section 4.2.2: Federal, State and Agency Wildlife Species of Concern and Tribal Wildlife Species of Cultural Concern, page 4-2 and 4-3: Unlike the MBTA, removal of an unoccupied eagle nest without a permit is a violation of the Bald and Golden Eagle Act. 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).

UDWR Response:

Your comment has been noted.

USFWS Comment 55:

Section 4.2.2: Federal, State and Agency Wildlife Species of Concern and Tribal Wildlife Species of Cultural Concern, page 4-3: Contrary to the statement in the document, the definitions of "take" differ between the Endangered Species Act, the Migratory Bird Treaty Act, and the Eagle Act. Particularly, the ESA includes "harm and harass" and the Eagle Act includes "molest and disturb." These terms are not included in the MBTA definition of take. Please ensure that all definitions are accurate.

UDWR Response:

The final study report will include accurate definitions of take for the Endangered Species Act, the Migratory Bird Treaty Act, and the Bald and Golden Eagle Act.

USFWS Comment 56:

Section 4.3.3: Virgin River Return Flows From LPP Water, page 4-3: 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.

UDWR Response:

The UDWR believes additional analysis is not necessary. Section 4.3.3 refers to the Virgin River Daily Simulation Model (VRDSM) results, which show that LPP Project water would not affect special status wildlife species and critical habitat along the Virgin River. Measurable changes in Virgin River flows, timing of water delivery, changes in points of diversion, changes in points of return flows, and changes in water quality would not occur either directly or indirectly as a result of the LPP Project. The VRDSM results, as referenced to the full discussion of the model analysis and results in the draft Surface Water Resources study report, demonstrate that LPP Project return flows would be within the measurement accuracy of the U.S. Geological Survey gages on the Virgin River and any changes would not be measurable. These are the same gages that the USFWS and the Virgin River Resource Management and Recovery Program rely upon to manage the recovery efforts in the Virgin River.

USFWS Comment 57:

This is an incomplete and inaccurate effects discussion. For example, we recommend using scientific literature and studies as references, not citations from local newspaper articles. Furthermore, the Golf Course is not a natural environment to predict the behavior of Utah prairie dogs, or to form biological conclusions regarding effects of the LPP on the species and its habitat.

UDWR Response:

The final study report will include additional analyses of effects on the Utah prairie dog, including references to scientific literature and studies. Citations from local newspaper articles have been deleted from the revised draft study report. The reference to Utah prairie dog behavior at the Cedar City golf course has been removed from the draft study report and replaced with revised text, referenced scientific literature and biological conclusions based on the revised text.

USFWS Comment 58:

Section 4.4.2.2.1: Construction Impacts, page 4-18: The document proposes a 0.25-mile buffer around occupied nests and roosts of raptors, including bald eagles and golden eagles. In some situations (e.g., undisturbed habitats with little human activities), a 0.25-mile buffer may not be adequate to prevent nest abandonment during the breeding season. Therefore, we highly recommend that you adhere to the buffer distances contained in the Utah Raptor Guidelines (Romín 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 we recommend you start with the Guidelines. A larger 1.0-mile buffer is highly recommended for bald eagles and golden eagles, because of the possibility of take associated with disturbance (50 CFR 22.3).

UDWR Response:

The final study report will include adherence to the Utah Raptor Guidelines for spatial and temporal buffers.

USFWS Comment 59:

Section 4.7.1.7: Mohave Desert Tortoise, page 4-31: Common ravens are predators of the desert tortoise, and the number of ravens may increase with power lines associated with the proposed action. Perch deterrents should be used to discourage raven nesting and perching within desert tortoise habitat.

UDWR Response:

The final study report will include discussion of perch deterrents to discourage raven nesting and perching.

USFWS Comment 60:

Section 5.5: Utah Prairie Dog, page 5-3: This section should include additional conservation measures to avoid and minimize impacts to the Utah prairie dog, including the use of on-site biological monitors, seasonal timing restrictions, and construction barrier fencing. We recommend beginning discussions with our Utah Ecological Services field office regarding section 7(a)(1) responsibilities and mitigation options for reducing impacts to occupied Utah prairie dog habitat (temporary and permanent impacts).

UDWR Response:

The final study report will incorporate biological monitors, construction during periods outside of the breeding/rearing season, and use of barrier fencing as conservation measures, insofar as they relate to potential effects and impacts associated with this project.

USFWS Comment 61:

This section also discusses the development of a Habitat Conservation Plan (HCP) to mitigate for lethal and non-lethal take arising from construction of the Cedar Valley Pipeline and associated transmission lines. Please note that an HCP is not the appropriate mechanism for projects if there is a federal nexus—section 7 consultation is then the appropriate mechanism for effects analyses and development of conservation measures.

UDWR Response:

The final study report will clarify the discussion on development of HCP to mitigate for lethal and non-lethal take arising from CVP and transmission line construction. The effects analysis leads to a determination of “likely to adversely affect” the Utah prairie dog, therefore, section 7 consultation has been presumed. A preliminary draft Biological Assessment is being prepared in parallel to the Special Status Species study reports.

USFWS Comment 62:

Appendix B: 2009 Avian Survey Report

Section 2: Species Background, Southwestern Willow Flycatcher, page 1: 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.

UDWR Response:

The final study report Appendix B will clarify that designated critical habitat for the southwestern willow flycatcher occurs only along the Virgin River in Utah.

USFWS Comment 63:

Section 2: Species Background, Southwestern Willow Flycatcher, page 1: 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.

UDWR Response:

The final study report Appendix B will clarify that the LPP Project would occur within the Powell Management Unit and the Middle and Virgin Management Units within the Lower Colorado Recovery Unit of the southwestern willow flycatcher. Surveys of potentially affected management units would be performed as applicable within suitable and potentially suitable habitat.

USFWS Comment 64:

Section 3: Site Descriptions and Evaluations, page 3: Table 1: In Table 1 of the 2009 report and the subsequent discussion there are six sites where WIFL 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.

UDWR Response:

The final study report Appendix B will explain in detail why future surveys of the six areas described as having suitable habitat are not recommended.

USFWS Comment 65:

Section 3: Site Descriptions and Evaluations, page 3: Table 1: We recommend that 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.

UDWR Response:

Please refer to the response to USFWS comment 65.

USFWS Comment 66:

Appendix C: 2010 Avian Survey Report

Section 2: Species Background, Southwestern Willow Flycatcher, page 5: 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.

UDWR Response:

Please refer to the response to USFWS comment 63.

USFWS Comment 67:

Appendix D: Mohave Desert tortoise Survey Report

Entire: The survey report should clearly articulate if all the possible alternatives/alignments were surveyed. Please include details and maps of all potential alignments and survey areas.

UDWR Response:

The final study report Appendix D will clarify if all possible alternatives/alignments were surveyed. The final study report Appendix D will include details and maps showing potential alignments and survey areas.

USFWS Comment 68:

Section 1: Introduction, page 1: Please include the beginning and ending dates of all surveys.

UDWR Response:

The final study report Appendix D will include the beginning and ending dates of all surveys.

USFWS Comment 69:

Maps 4 and 5: The report indicates that “steep lands” and “private lands” within the Project area were not surveyed (Map 4). However, Map 5 erroneously labels some unsurveyed areas as being “unoccupied”. If an area was not surveyed, the area should be assumed to be “occupied” unless there is compelling evidence that the species does not occur. The lack of survey information on this portion of the Project may otherwise hinder our ability to accurately evaluate effects to the species during section 7 consultation.

UDWR Response:

The final study report Appendix D maps will clarify unsurveyed areas and distinguish them from unoccupied areas.

USFWS Comment 70:

Section 4: Results, page 8: In the habitat description, the paragraph describing the top of the Hurricane Cliffs discusses two potential tortoise burrows, but then concludes it is unlikely tortoises use them because they are isolated from additional tortoise sign. However, the document should instead indicate that tortoises use multiple burrows within a home range, and are likely to use these sites during some time periods. Recent data (Esque and DeFalco per DTRO) also suggest that tortoises will use low-quality habitat if it is adjacent to high-quality habitat

UDWR Response:

The final study report Appendix D will indicate that tortoises use multiple burrows within a home range, are likely to use these sites during some time periods, and may use low-quality habitat if it is adjacent to high-quality habitat.

USFWS Comment 71:

If translocation of desert tortoises is considered a conservation option, we recommend beginning discussions with state and federal agencies to ensure that the specific details are agreed upon at an early stage.

UDWR Response:

Your comment has been noted.

USFWS Comment 72:

Section 5: Conclusions, page 12: The information provided in the conclusion section is a very general summary. Please include a more detailed summary of the overall acreages of occupied, unoccupied, and unsurveyed areas (presumed as occupied) for each alignment. Also provide the acreages of areas that will be permanently and temporarily disturbed.

UDWR Response:

The final study report Appendix D will provide a more detailed summary of the overall acreages of occupied, unoccupied, and unsurveyed areas (presumed as occupied) for each alignment, and acreages of areas that would be permanently and temporarily disturbed.

USFWS Comment 73:**Appendix E: Utah Prairie Dog**

As noted in the Utah Prairie Dog Survey Protocol (inserted into the Survey Report), these surveys are only valid from the date conducted until the following March 31. As the LPP project will not be implemented for years, new surveys will be required closer to construction time.

UDWR Response:

Your comment has been noted. The reports will note this requirement.

USFWS Comment 74:

The Utah prairie dog survey area encompassed approximately 3,600 acres, however approximately 1700 acres were determined to be inaccessible and surveyed with binoculars in the public right-of-ways. The inaccessible area is almost ½ of the entire survey area. Thus, we recommend increased efforts to gain access to survey more of this area with 100% coverage. If there are still inaccessible areas, we recommend coupling binocular surveys with UDWR mapped habitat layers to obtain the most accurate

occupancy information possible. If an area cannot be surveyed, the area should be assumed to be “occupied” unless there is compelling evidence that the species does not occur. It would be helpful to have one set of maps that presents the areas that were ground surveyed and binocular surveyed, as well as the occupied and unoccupied habitats.

UDWR Response:

The final study report Appendix E will include descriptions of the binocular surveys with UDWR mapped habitat layers to obtain the most accurate occupancy information possible for Utah prairie dog, in lieu of performing transect surveys because access to private property has been denied. Areas that cannot be surveyed are assumed to be occupied unless evidence can be provided that the species doesn’t occur within the area. One set of maps will be prepared to display areas that were ground-surveyed and binocular surveyed, with indications of occupied and unoccupied habitats.

USFWS Comment 75:

A table should be included to show the total acres of occupied and unoccupied/suitable habitat that will be impacted in the Project area, both temporarily and permanently.

UDWR Response:

The draft study report Appendix E will include a table showing the total acres of occupied and unoccupied/suitable habitat that would be impacted by the CVP, both temporarily and permanently.

Draft Study Report 14 - Transportation

FERC Comment 33:

In section 2.2 of the draft study report you state vehicles added to local traffic from facility, pipeline and reservoir construction would not exceed 28 vehicles per day and vehicles added to local traffic from transmission line construction would not exceed 8 vehicles per day as calculated from estimated construction spreads. However, in section 3.3.5 you state it is expected that a cumulative maximum of 120 vehicles per day would be added to the region from all construction activities associated with the LPP Project. Please clarify or correct this discrepancy when you revise the draft study report.

UDWR Response:

The stated assumption in Section 2.2 refers to “local” traffic, which as clarified in the footnote to Table 3-8 in Section 3.3.5 refers to specific segments of highway that would be affected by construction nearby. As noted in the same footnote in Table 3-8, the 120 vehicles per day and refers to traffic cumulatively added to the entire region during construction, not just a local segment of highway. The final study report will clarify that the assumption stated in Section 2.2 will clarify that “local” means a specific highway segment, not the entire region.

FERC Comment 34:

Provide a preliminary Traffic Management Plan in coordination with all relevant local, state, and federal agencies as proposed in section 14.2.1 of the Revised Study Plan.

UDWR Response:

As noted in Section 14.2.1 of the approved study plan, the preliminary traffic management plan is an objective of the study, specifically for NPS land, not for the entire project area. The final study report will include a preliminary traffic management plan for the NPS administered land and immediate vicinity, and will address coordination with other relevant federal land management agencies, state and local agencies.

TWS Comment 5:

Because R.S. 2477 was repealed in 1976 and there is a question of law as to whether rights-of-way existing across public lands before that date, the state or county has the burden to provide that a valid existing right-of-way was constructed and used for the requisite time period at some time before 1976. This can be done through a Quiet Title Action in a court of law. However, until these are adjudicated as such, BLM cannot consider mere claims of R.S. 2477 rights-of-ways as valid existing rights, and the agencies should not take such claims under consideration for the proposed project.

UDWR Response:

As noted in Section 2.4.4.4, “Roadways in the LPP Project route that potentially could be in the RS 2477 dispute will be under continued investigation.” No clarification is required.

KBPI Comment 115:

Section 1.5.2 Identified Issues - Draft Report 14 states lists issues requiring analysis, including the need to “[i]dentify Federal, State, and local roadway construction requirements.” Draft Report 14 at 1-20. Section 14.3 of Study Plan 14 states that Draft Report 14 “will address resource management goals of . . . Indian tribes” and that “tribal statutes and regulations and the Bureau of Indian Affairs regulations will be addressed as applicable.” In accordance with Study Plan 14, Draft Report 14 must identify and address tribal laws. However, Draft Report 14 nowhere identifies or addresses Indian tribal management goals, or tribal laws. Relatedly, Study Plan 14 identifies “[r]ights of way along proposed impacted roads,” Study Plan 14 § 14.2.1, including on tribal lands, as an issue to be addressed, but Draft Report 14 fails to mention this issue. This failure directly contravenes Study Plan 14 and renders Draft Report 14 noncompliant with Study Plan 14.

UDWR Response:

On April 15, 2009, a request was extended to the Kaibab Band of Paiute Indians to provide tribal management goals pertaining to transportation, but none were provided. The final study report will include this effort to consult with the Kaibab Band of Paiute Indians.

KBPI Comment 116:

In addition, section 14.4.2 of Study Plan 14 states that “particular attention will be required for . . . [c]ultural or historically sensitive areas,” and section 14.4.3 identifies “[c]ultural, environmental and economically sensitive areas” as an issue that Draft Report 14 must address, but Draft Report 14 fails to address the issue. This failure directly contravenes Study Plan 14 and renders Draft Report 14 noncompliant with Study Plan 14.

UDWR Response:

Please refer to the response to KBPI comment 4.

KBPI Comment 117:

Section 2.2 Assumptions - Draft Report 14 lists numerous assumptions, including that “[t]he LPP Project will take into account Utah and Arizona transportation goals and will not adversely affect the effort to maintain these goals.” Draft Report 14 at 2-1. As a preliminary matter, such an assumption is not appropriate. Section 14.3 of Study Plan 14 states that Draft Report 14 “will address resource management goals of the States of Utah and Arizona. . . and Indian tribes” and that “tribal statutes and regulations and the Bureau of Indian Affairs regulations will be addressed as applicable.” Draft Report 14, therefore, must demonstrate that it takes transportation goals into account; it cannot simply assume that the proposed Project will take the transportation goals into account. Moreover, Draft Report 14 fails to mention that tribal transportation goals must also be identified and taken into account. Draft Report 14 contravenes Study Plan 14 by making inappropriate assumptions and failing to identify and account for tribal transportation goals, which renders Draft Report 14 noncompliant with Study Plan 14.

UDWR Response:

UDWR could not specifically address Kaibab Band of Paiute Indians' goals because they were not provided upon request; please refer to the response to KBPI Comment 115.

KBPI Comment 118:

Section 2.4 Agency Resource Management Goals - Draft Report 14 describes the resource management goals of various agencies and other entities, Draft Report at 2-2 to 2-6, but fails to mention tribal goals or state whether such goals were identified and addressed. Section 14.3 of Study Plan 14 states that Draft Report 14 "will address resource management goals of . . . Indian tribes" and that "tribal statutes and regulations and the Bureau of Indian Affairs regulations will be addressed as applicable." This failure directly contravenes Study Plan 14 and renders Draft Report 14 noncompliant with Study Plan 14.

UDWR Response:

Please refer to the response to KBPI comment 115.

KBPI Comment 119:

Section 2.5.2 Field Investigations - Draft Report 14 states that field investigations were conducted, Draft Report 14 at 2-6, but provides little detail regarding those investigations. Section 14.6.2.2 of Study Plan 14 lists specific tasks that were to be performed during field investigations. Draft Report 14 should state which tasks listed in Study Plan 14 were performed and, if certain tasks were not completed, it should explain why not.

UDWR Response:

The final study report will provide more specific information pertaining to field investigation activities and information on any tasks that were not performed.

KBPI Comment 120:

Section 3.2.1.2 Rights-of-Way - Draft Report 14 lists "[t]ypical ROWs for Federal and State roads and highways through Federal, State, county, city, and private lands," Draft Report 14 at 3-8, but fails to mention tribal lands. Section 14.4.3 of Study Plan 14 recognizes that rights-of-way across tribal lands will be necessary if the proposed pipeline crosses tribal lands and requires that "[t]he State will consult with the Kaibab Tribe regarding rights-of-way issues on the Reservation." Draft Report 14 should include an analysis of the possible crossing of tribal lands and discuss consultation efforts that were made with the Kaibab Tribe, if any. In addition, as it does for federal and state rights-of-way, Draft Report 14 should describe the general legal requirements for acquiring rights-of-way across tribal lands, such as the needs to negotiate with the Kaibab Tribe and to comply with 16 U.S.C. §§ 797 and 803.

UDWR Response:

The final study report will include analysis of ROW issues associated with crossing tribal land and a general discussion of associated legal requirements for crossing tribal land.

KBPI Comment 121:

Section 4.1 Significance Criteria - Draft Report 14 lists potential significant impacts, Draft Report 14 at 4-1, but fails to identify potential impacts to tribal lands or culturally sensitive areas. Section 14.3 of Study Plan 14 states that Draft Report 14 "will address resource management goals of . . . Indian tribes" and that "tribal statutes and regulations and the Bureau of Indian Affairs regulations will be addressed as applicable." Section 14.4.2 of Study Plan 14 states that "particular attention will be required for . . . [c]ultural or historically sensitive areas." Section 14.4.3 identifies "[c]ultural, environmental and economically sensitive areas" as an issue that Draft Report 14 must address. Consistent with Study Plan 14, Draft Report 14 must identify impacts to culturally sensitive areas as significant. The failure to pay

particular attention to culturally sensitive areas directly contravenes Study Plan 14 and renders Draft Report 14 noncompliant with Study Plan 14.

UDWR Response:

Please refer to the response to KBPI comment 117.

KBPI Comment 122:

Section 4.1.3 Resource Management Goals - Draft Report 14 states that “[p]erforming projects in conflict with Federal, State and local resource management goals would be a significant impact,” Draft Report 14 at 4-1, but fails to include tribal resource management goals. Section 14.3 of Study Plan 14 states that Draft Report 14 “will address resource management goals of . . . Indian tribes” and that “tribal statutes and regulations and the Bureau of Indian Affairs regulations will be addressed as applicable.” These failures directly contravene Study Plan 14 and render Draft Report 14 noncompliant with Study Plan 14.

UDWR Response:

The final study report will include tribal resource management goals pertaining to transportation if they are provided by Kaibab Band of Paiute Indians. Please refer to the response to KBPI comment 115.

KBPI Comment 123:

Section 4.1.4 ROW Compliance - Draft Report 14 states “[n]on-compliance with Federal and State ROW requirements would be a significant impact,” Draft Report 14 at 4-1, but fails to acknowledge that non-compliance with tribal rights-of-way will also be a significant impact. Section 14.4.3 of Study Plan 14 recognizes that rights-of-way across tribal lands will be necessary if the pipeline crosses tribal lands and requires that “[t]he State will consult with the Kaibab Tribe regarding rights-of-way issues on the Reservation.” This failure directly contravenes Study Plan 14 and renders Draft Report 14 noncompliant with Study Plan 14.

UDWR Response:

The final study report will acknowledge that noncompliance with tribal rights-of-way would be a significant impact and to include information on consultation with the Kaibab Band of Paiute Indians.

KBPI Comment 124:

Section 4.3 Impacts - Draft Report 14 fails to acknowledge that impacts to culturally sensitive areas would be significant. Draft Report 14 at 4-2 to 4-4. As a result, Draft Report 14 also fails to assess whether such impacts will occur. This failure directly contravenes sections 14.3, 14.4.2, and 14.4.3 of Study Plan 14 and renders Draft Report 14 noncompliant with Study Plan 14.

UDWR Response:

Please refer to the response to KBPI comment 116.

KBPI Comment 125:

Section 5.1.1 Mitigation - Draft Report 14 states that Best Management Practices “would include coordination with appropriate Federal, State and local agencies to acquire required permits for traffic controls and closures, development of traffic control plans, and scheduling construction during off-peak traffic hours as necessary,” Draft Report 14 at 5-1, but it fails to include coordination with the Kaibab Tribe. Section 14.5 of Study Plan 14 requires that “[m]itigation measures regarding impacts to transportation on tribal lands will be made in consultation with the Kaibab Band of Paiute Indians.” The failure to document any coordination or consultation with the Kaibab Tribe contradicts Study Plan 14 and renders Draft Report 14 noncompliant with Study Plan 14.

UDWR Response:

The final study report will identify the need for coordination with the Kaibab Tribe on transportation control issues as part of the required BMPs.

KBPI Comment 126:

Chapter 7 Cumulative Impacts - Other than for the “No Action Alternative,” which “would have no cumulative impacts,” Draft Report 14 indicates that “cumulative impacts analysis is pending completion for identification of inter-related projects that would cause cumulative impacts with the LPP project.” Draft Report 14 at 7-1. Section 14.2.1 of Study Plan 14 states that a goal of Draft Report 14 is to “[a]nalyze cumulative impacts to transportation within the Project area.” Consistent with Study Plan 14, the cumulative impacts analysis must be completed as soon as possible and the Kaibab Tribe hereby requests additional time to submit comments on the cumulative impacts analysis.

UDWR Response:

The UDWR is completing the cumulative effects analysis and will incorporate it into the final study report.

BIA Comment 85:

2.2, 2.54., 3.3.1, 4.2 - Open cut construction (same as boring?) vs trenchless technologies– please explain briefly the difference in these two methods, what these entail. Add both terms to the Glossary.

UDWR Response:

The final study report will provide more detail regarding open cut construction (trenching) and trenchless (boring) technologies and will add the appropriate terms to the Glossary.

BIA Comment 86:

1.2.1, 3.2.1.2 - On page 43, first paragraph (Federal Highways) it states: “Pipelines are not allowed to be installed in and parallel to Federal highway ROWs.” This seems to conflict with what is said in the Cedar Valley Pipeline System description along I-15 in the first paragraph of page 14 and what is shown on Figure 1-4 on page 13. Please clarify.

UDWR Response:

The final study report will clarify how far from the Federal highway ROW the pipeline must be to comply with Federal law regarding pipelines and facilities that are “parallel” to the highway.

BLM Comment 137:

14 Draft Transportation Report

Table 3-1 LPP Project Road Crossings/Parallel Alignments, Common to All -Change Whitehouse Trail Road to Whitehouse Campground Road.

UDWR Response:

The final study report, Table 3-1 will incorporate the suggested corrections.

BLM Comment 138:

Throughout the document - Change SR-89 with US-89.

UDWR Response:

The final study report will incorporate the suggested corrections.

Draft Study Report 15 – Vegetation Communities

KBPI Comment 127:

Chapter 3 Methodology - Draft Report 15 describes extensive field surveys along the impact corridor for the purpose of vegetation community mapping, Draft Report 15 at 3-1 to 3-12, but fails to specify actions taken with respect to tribal lands and plants of cultural concern to the Kaibab Tribe. Section 3.3 of Draft Report 15, for example, states that “[a]reas along the pipeline were revisited as late as mid-September 2009 if private land access was granted.” Draft Report 15 at 3-2. It also states that field studies of “[t]he entire 600-foot survey area (100 percent),” which includes tribal lands, “were completed by pedestrian survey.” Draft Report 15 at 3-3. Section 15.3 of Study Plan 15 states that “ongoing consultation” with Indian tribes will occur in order to address their resource management goals and that the Kaibab Tribe “must be included among all fish and wildlife agencies that are consulted in the analysis of vegetation resources.” Section 15.6.3 of Study Plan 15 states that “[p]lant species of cultural interest to the Kaibab Band of Paiute Indians that are common regionally may be addressed as part of the vegetation community mapping study, as determined in coordination with the Tribe.” That same section also requires that the State of Utah “obtain permission from the Kaibab Band of Paiute Indians to conduct field research and collect data on the Reservation or take aerial photographs above the Reservation for the development of a baseline for vegetation conditions and analysis of impacts on vegetation resources.” Draft Report 15 directly contravenes Study Plan 15 by failing to state whether tribal permission was obtained prior to conducting field surveys on tribal lands. It also contravenes Study Plan 15 by failing to describe any specific efforts, in consultation with the Kaibab Tribe, to obtain data and map plants of cultural concern. As a result, Draft Report 15 is noncompliant with Study Plan 15.

UDWR Response:

The final study report will address the resource management goals of the Kaibab Band of Paiute Indians and other Indian tribes regarding vegetation communities. The UDWR consulted with the Kaibab Band of Paiute Indians regarding vegetation communities and received a list of Plant Species of Concern to the Kaibab Band of Paiute Indians of Northern Arizona on July 8, 2008. Additional consultations were held with the Kaibab Band of Paiute Indians, including requested presentations of field study results to the tribal council. Permissions to conduct field research and collect data on the Kaibab-Paiute Indian Reservation were requested and granted for every field study performed, each under the supervision of a designated member of the Kaibab Band of Paiute Indians. The final study report will clarify the UDWR consultations with and the written permissions to perform field studies of vegetation communities received from the Kaibab Band of Paiute Indians.

KBPI Comment 128:

Chapter 4 Vegetation Communities - Draft Report 15 provides detailed descriptions of the various vegetation communities in the Project area, Draft Report 15 at 4-1 to 4-160, but fails to pay any particular attention to tribal lands or plants of cultural concern to the Kaibab Tribe. Section 15.3 of Study Plan 15 states that “ongoing consultation” with Indian tribes will occur in order to address their resource management goals and that the Kaibab Tribe “must be included among all fish and wildlife agencies that are consulted in the analysis of vegetation resources.” Section 15.6.3 of Study Plan 15 states that “[p]lant species of cultural interest to the Kaibab Band of Paiute Indians that are common regionally may be addressed as part of the vegetation community mapping study, as determined in coordination with the Tribe.” Draft Report 15 directly contravenes Study Plan 15 by failing to specifically address plants of cultural concern to the Kaibab Tribe. So as to accord with Study Plan 15, Draft Report 15 must include a separate section that specifically relates to the Kaibab Tribe’s list of Plants of Cultural Concern. See Kaibab Tribe’s Opening Comments at Attachment 1. As it stands, Draft Report 15 is noncompliant with Study Plan 15.

UDWR Response:

Please see the response to KBPI comment 127. The comment incorrectly states that “Draft Report 15 must include a separate section that specifically relates to the Kaibab Tribe’s list of Plants of Cultural Concern.” The approved Vegetation Communities study plan states in Section 15.6.3 that “Plant species of cultural interest to the Kaibab Band of Paiute Indians that are common regionally may be addressed as part of the vegetation community mapping study, as determined in coordination with the Tribe.” Plants of cultural concern to the Kaibab Band of Paiute Indians are addressed in the draft Special Status Plant Species and Noxious Weeds Assessment study report. The final study report will reference that the data and analyses of plants of cultural concern to the Kaibab Band of Paiute Indians is incorporated into the Special Status Plant Species and Noxious Weeds Assessment study report.

KBPI Comment 129:

Chapter 5 Conclusion - Draft Report 15 concludes by briefly summarizing the results of the vegetation mapping, Draft Report 15 at 5-1, but fails to identify significance criteria, describe the Project’s impacts on the various vegetation communities, or incorporate a mitigation plan. Draft Report 15 is, therefore, incomplete. Section 15.2 of Study Plan 15 states that “[a] mitigation plan will be prepared as part of the study and incorporated into the study report to address mitigation measures and concepts.” Section 15.3 of Study Plan 15 states that “[t]he Kaibab Band of Paiute Indians requires that the development of any mitigation measures regarding impacts in vegetation conditions on tribal lands be made in consultation with the Tribe.” Section 15.6.5 of Study Plan requires that Draft Report 15 “include an analysis of the effects of Project implementation, and discuss any measures that may be recommended to minimize project-related effects based on vegetative communities. The study report will incorporate a mitigation plan to document mitigation measures identified to avoid, minimize or reduce impacts on vegetative communities.” Again, Draft Report 15 directly contravenes Study Plan 15 by failing to identify significance criteria, describe the impacts to the vegetation communities, and incorporate a mitigation plan into the report. As a result, Draft Report 15 is noncompliant with Study Plan 15.

UDWR Response:

The final study report will include the significance criteria, describe the impacts on vegetation communities and incorporate a mitigation plan prepared in consultation with the Kaibab Band of Paiute Indians.

Draft Study Report 16 – Visual Resources

FERC Comment 35:

As stated in the January 21, 2009, Study Plan Determination you were directed to include the Kaibab Tribe’s (Tribe) goals and objectives for the protection of visual resources that are traditional cultural properties (TCPS) that may be affected by the project. However, the Tribe’s goals and objectives were not included in your draft study report. Revise the study report to include the Kaibab Tribe’s goals and objectives for traditional cultural properties (TCPs) and include any landscape modification which adversely affects the traditional use of TCPs associated with the project.

UDWR Response:

The final study report will be revised in accordance with the comment. Please refer to the response to KBPI comment 4.

TWS Comment 3:

The draft report mentions some of the visual impacts to Wilderness, WSAs, and ACECs from the project. Draft Visual Resources Study Report at 3-18. However, the report fails to show how the agencies will meet their burden to manage to preserve or retain the existing character of the landscape in VRM Class I

and II areas. The Kanab Creek ACEC is a VRM Class II area, meaning, “any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristics landscape”. Thus, the agencies are proposing modifications to the visual qualities of the landscape in violation of the VRM Class within the existing lands use plans. In addition, from the description of this area in the report (Draft Visual Resources Study Report at 4-14), the agencies seem to be using a relative cultural modification standard, rather than the predominant natural features standard required. The same is true with the report’s discussion of Wilderness Areas and WSAs. However, the important distinction is that BLM WSAs that were classified prior to March 20, 2000 must automatically designated Class I in RMPs. See, Instruction Memorandum No. 2000-096 (2009). The agencies should take strong note of this since there are WSAs, like the Cockscomb WSA in the GSENM, that were designated as Class II in the RMP, but should truly be VRM Class I.

UDWR Response:

Your comment has been noted.

TWS Comment 4:

The draft report does not sufficiently address visual resources management on BLM lands, especially with regard to VRM Class I and II areas. The agencies must take the modifications to these areas under consideration. The impacts to these resources as described now violate the BLM regulations and policies.

UDWR Response:

Your comment has been noted.

KBPI Comment 130:

Section 2.3.1 Visual Resource Methodology - Draft Report 16 indicates that a distance-based classification was applied to evaluate visual impacts. Draft Report 16 at 2-2. The “foreground” was defined as within 0.5 miles. Draft Report 16 at 2-2. However, Study Plan 16, as part of its significance criteria, defines the “foreground distance zone” as “within 0.75 miles of project.” Study Plan 16 § 16.6. Study Plan 16 is internally inconsistent, because it also defines the same zone as “up to 0.5 miles” in its discussion of baseline conditions. Study Plan 16 § 16.6.2. Nevertheless, Draft Report 16 applies a significance criteria that is inconsistent with the significance criteria contained in Study Plan 16. See Study Plan 16 § 16.6, which renders Draft Report 16 noncompliant with Study Plan 16.

UDWR Response:

The inconsistency in the foreground distance zone description will be clarified and explained in the final study report.

KBPI Comment 131:

Section 2.3.2 Magnitude of Change in Landscape Character - Draft Report 16 describes four categories for rating the “Magnitude of Change in Landscape Character,” Draft Report 16 at 2-3, but these categories differ in name and description from the four categories in the identically named section of Study Plan 16. Study Plan 16 § 16.6.3.1. It is not clear how else the Draft Report 16 categories differ, if at all, from the Study Plan 16 categories. Draft Report 16, however, must follow Study Plan 16 and use its categories to evaluate the magnitude of change in landscape character. See Study Plan 16 § 16.6.3.1.

UDWR Response:

The inconsistency in the magnitude of change in landscape character criteria will be clarified and explained in the final study report.

KBPI Comment 132:

Draft Report 16 also bases much of its analysis on the use of Visual Assessment Units (“VAUs”), Draft Report 16 at 2-3, a term that is not included in Study Plan 16. Draft Report 16 does not provide a definition of this term nor does it describe how use of VAUs facilitates the analysis required by Study Plan 16. Draft Report 16 must provide an explanation for how the use of VAUs comports with the analysis required by Study Plan 16. The failure to adhere to Study Plan 16’s categories for changes in landscape character and to explain the use of VAUs renders Draft Report 16 noncompliant with Study Plan 16.

UDWR Response:

Visual Assessment Units (VAUs) will be defined in the final study report. An explanation will be provided on how the use of VAUs comports with the analysis required by approved study plan 16.

KBPI Comment 133:

Chapter 3 Affected Environment - At no point in the description of the affected environment of the Project, including the discussion of agency management objectives, does Draft Report 16 indicate that the Kaibab Tribe was consulted. Such consultation is required by Study Plan 16. Study Plan 16 §§ 16.3.2 (declaring that the study team must identify tribal goals and objectives for visual resources); 16.6 (defining significance criteria for effects to “areas identified by tribal entities”); 16.6.2 (“Specific consultation with the Kaibab [Tribe] and other tribal entities will be performed . . .”); 16.6.4 (indicating that data will be collected from relevant tribal entities). Without such consultation, Draft Report 16 cannot adequately assess impacts to visual resources, see Study Plan 16 §§ 16.3.2, 16.6, 16.6.2, 16.6.4, and the complete failure to document any efforts at tribal consultation calls into question the overall legitimacy of the effort expended on Draft Report 16. The failure to document consultation efforts, if any, renders Draft Report 16 noncompliant with Study Plan 16.

UDWR Response:

The final study report will identify consultations with the Kaibab Tribe in accordance with the approved study plan. Please refer to the response to FERC comment 35.

KBPI Comment 134:

Section 3.1.2 Cultural Context - In discussing the cultural context of the Project alternatives, Draft Report 16 states that the Existing Highway Alternative would cross the Reservation but does not acknowledge that the Southeast Corner Alternative would also cross the Reservation. Draft Report 16 at 3-3; see Draft Report 16 at 1-8 to 1-10. Draft Report 16 must be corrected to indicate that the Southeast Corner Alternative crosses the Reservation and the Kaibab Tribe must be consulted regarding visual impacts on the Southeast Corner Alternative. Study Plan 16 §§ 16.3.2 (declaring that the study team must identify tribal goals and objectives for visual resources); 16.6 (defining significance criteria for effects to “areas identified by tribal entities”); 16.6.2 (“Specific consultation with the Kaibab [Tribe] and other tribal entities will be performed . . .”); 16.6.4 (indicating that data will be collected from relevant tribal entities). The failure to document consultation efforts, if any, renders Draft Report 16 noncompliant with Study Plan 16.

UDWR Response:

The final study report will clarify that the Southeast Corner Alternative also crosses the Kaibab-Paiute Indian Reservation. Please refer to the response to FERC comment 35.

KBPI Comment 135:

4.1 Significance Criteria - Draft Report 16 restates the significance criteria from Study Plan 16 with some notable exceptions. Compare Draft Report 16 at 4-1, with Study Plan 16 § 16.6. Draft Report 16 does not include the “within 0.75 miles of project” as the definition of “foreground distance zone.”

Compare Draft Report 16 at 4-1, with Study Plan 16 § 16.6. Draft Report 16 does not indicate what distance was used, but presumably it was 0.5 miles as discussed previously. See Draft Report 16 at 2-2. This difference in distances must be reconciled.

UDWR Response:

Please refer to the response to KBPI comment 130.

KBPI Comment 136:

Draft Report 16 also contains no mention of significance criteria for impacts to TCPs or other sensitive areas identified by tribal entities. Compare Draft Report 16 at 4-1, with Study Plan 16 § 16.6. This complete failure to acknowledge impacts to TCPs or other sensitive areas identified by tribal entities violates Study Plan 16 § 16.6, and calls into question the overall legitimacy of the effort expended on Draft Report 16. As a result of this failure, Draft Report 16 is noncompliant with Study Plan 16.

UDWR Response:

The final study report will include the significance criteria described in the approved study plan or explain why the criteria were modified or eliminated. Please refer to the response to FERC comment 35.

KBPI Comment 137:

4.5.1 Direct Impacts on Visual Resources - Draft Report 16 compares the Southeast Corner Alternative with the South Alternative, Draft Report 16 at 4-26 to 4-27, but its references appear to be muddled. Draft Report 16 states that “[r]ather than jogging around the Kaibab Indian Reservation as identified in the South Alternative, the South Alternative alignment would follow the Navajo-McCullough transmission line corridor through reservation land.” Draft Report 16 at 4-26. The second reference to the South Alternative should likely read “Southeast Alternative.”

UDWR Response:

The final study report will be clarified in accordance with the comment.

KBPI Comment 138:

Chapter 5 Mitigation and Monitoring - Study Plan 16 explicitly directs that “mitigation measures will be based on applicable, Kaibab [T]ribe and other tribal, state and Federal statutes and regulations,” Study Plan 16 § 16.6.3.8, yet Draft Report 16 provides no indication of any tribal consultation regarding mitigation, see Draft Report 16 at 5-1 to 5-3, in direct violation of Study Plan 16. See Study Plan 16 § 16.6.3.8. As a result, Draft Report 16 is noncompliant with Study Plan 16.

UDWR Response:

The final study report will identify any tribal mitigation measures.

KBPI Comment 139:

Chapter 7 Cumulative Impacts - This chapter is incomplete and, therefore, cannot be evaluated. Draft Report 16 must include an analysis of cumulative impacts. Study Plan 16 § 16.6.3.7. The Kaibab Tribe hereby requests additional time to submit comments on the cumulative impacts analysis once it is available for review.

UDWR Response:

The final study report will include an evaluation of cumulative impacts.

BIA Comment 87:

General - Maps are hard to read. Too much information conveyed on one map. Hard to know what are the project elements on the map versus base information. Simplify to improve effectiveness.

UDWR Response:

Your comment has been noted.

BIA Comment 88:

1.2.4 - Why are there 10+ alternatives? It seems that several of these alternatives could be eliminated. Are several alternatives essential to make one overall alternative? Could they be grouped?

UDWR Response:

There are several alternative transmission line alignments to serve each project facility (e.g. BPS-3). Each alternative alignment provides unique benefits or advantages to a project facility in terms of constructability, cost, environmental acceptability, right-of-way, etc. Several alternative alignments will be necessary to create one overall project alternative since each alternative alignment typically serves only one project facility. Grouping the alternatives would not be practical. Each alternative alignment provides unique benefits to each facility that do not correlate with the benefits provided by other alternative alignments to other facilities.

BIA Comment 89:

2.3.1 - “Contrast rating evaluations were conducted from key observation points (KOPs) within the project area.” Where are these contrast ratings located?

UDWR Response:

The visual contrast rating worksheets are located in Appendix C, Visual Contrast Rating Worksheets and Visual Simulations.

BIA Comment 90:

2.3.1 - Why was no background-zone visibility analysis performed?

UDWR Response:

The final report will clarify why background-zone visibility analysis was not performed.

BIA Comment 91:

2.3.1 - Principles from the manual were also used in development of mitigation measures to reduce potential visual impacts. Where were these principles used?

UDWR Response:

These principles were used in the development of the mitigation measures identified in Chapter 5.

BIA Comment 92:

CONTRAST RATING WORKSHEETS – page 122 of PDF - Entitling the contrast ratings as “BUILDING VISIBILITY ANALYSIS” makes it seem like the project only entails a building when it includes primarily linear elements.

UDWR Response:

The final study report will include a revised heading on page 123 of the PDF to read “Visual Contrast Rating Worksheet” consistent with the other worksheets in Appendix C.

BIA Comment 93:

Simulation – page 126 of PDF - I see no change in the existing condition photo, from the zero to one year post-construction sim. A simulation should depict something. If no change is estimated explain that and

move on. If the sim does show some very slight changes, point them out. Point out project impacts. SAME GOES FOR KOP 37 Sims.

UDWR Response:

The point of including the simulations is for the reader to ascertain for themselves whether or not a visual impact has occurred. If the reader cannot discern an impact, then the impact is likely minimal. The reader can also verify this by reviewing the contrast rating in section IV of the Visual Contrast Rating Worksheet. With regard to KOP 2 (page 126 of PDF), the contrast rating is from “weak” to “none,” which is consistent with the observation made in the comment. In the visual simulation for KOP 37, the new reservoir is noticeable in the zero to one year simulation photo. This is consistent with the “moderate” contrast rating given in the land/waterbody category.

BIA Comment 94:

General Simulations - On several KOPS there is no simulation why Not? Make mention of it in KOP contrast rating.

UDWR Response:

As stated in section 2.3.1, Visual Resource Methodology, simulations were prepared for the most critical KOPs, as coordinated with BLM and NPS.

BIA Comment 95:

General Simulations - KOPS 4 and 5 show almost the exact same thing, why are there two sims from almost the same location?

UDWR Response:

KOP 4 is a view from the Chains Day Use Area and KOP 5 is a view from the Lake Powell lake surface near the Chains Day Use Area. Please refer to the response to BIA comment 94.

BIA Comment 96:

General Simulations - In some sims you show a 5-10 year post construction and in others you don't. Eliminate or explain why there is this inconsistency.

UDWR Response:

The final study report will include 5 to 10 year post construction simulations for all KOPs that were simulated, or will explain why they are not included.

BIA Comment 97:

Simulation BPS 3 Hydro Station WCH 1 from US 89 Westbound – page 191 of PDF - On the simulation one year post construction, what is the big black smudgey thing? Why isn't the existing condition photo the same as the simulation?

UDWR Response:

The final study report will provide the same reference point for the existing condition photo and simulation, or explain why they are different.

BIA Comment 98:

General Simulations - I didn't see the steps that you used to create you simulations. What was used? Where is it found? Why is it used?

UDWR Response:

The description of the visual simulations is included in section 2.3.1, Visual Resource Methodology. The simulations are used to evaluate the visual contrast of project facilities and construction impacts with existing conditions at Key Observation Points (KOPs).

BIA Comment 99:

General Simulations KOPS - KOPs were selected because they are “Visually sensitive areas” but this should be further defined within each KOP (maybe in the appendix.) Is it a trailhead? Major transportation corridor? For instance why was KOP 2 Gravel Pullout near Bridge selected as a significant enough to be a KOP?

UDWR Response:

Section 2.3.1, Visual Resource Methodology, states that “the KOPs were coordinated with the BLM field offices and the National Park Service (NPS). A total of 42 KOPs were identified as visually sensitive locations within the project area. Visually sensitive areas are those in which the maintenance of scenic quality is of considerable public concern.”

BLM Comment 20:

Report 16. Colorado Plateau description should include mountains, deep canyons, etc. Page 7.

UDWR Response:

The final study report will provide this clarification.

BLM Comment 21:

Report 16. objectives. – Page 7.

UDWR Response:

The final study report will provide this clarification.

BLM Comment 22:

Report 16. ...class objectives in... - Page 8.

UDWR Response:

The final study report will provide this clarification.

BLM Comment 23:

Report 16. objectives – Page 8.

UDWR Response:

The final study report will provide this clarification.

BLM Comment 24:

Early on it would helpful to understand what the various facilities proposed look like. Since this section is about visuals, more photos should be used to explain the concepts, instead of pages and pages of text. I have to go to the Appendix to actually understand what most of this is getting at. – Page 10.

UDWR Response:

The final study report will provide photos of typical project facilities and summary descriptions to facilitate the reader’s understanding of the concepts presented.

BLM Comment 25:

What are the characteristics of the facilities? – Page 13

UDWR Response:

Please refer to the response to BLM comment 24.

BLM Comment 26:

Where is this on map? – Page 13.

UDWR Response:

This will be clarified in the final study report.

BLM Comment 27:

What facilities do these include? What are the characteristics of the facilities? – Page 13

UDWR Response:

Please refer to the response to BLM comment 24.

BLM Comment 28:

Characteristics of transmission line infrastructure and related facilities??? Details of types and sizes of poles, additional infrastructure at substations? The physical details of these are not described. More discussion of the proposal alignments for these needs to occur with GSENM staff. Previous site visits were focused on pump stations and hydro stations, no transmission lines. – Page 19.

UDWR Response:

Please refer to the response to BLM comment 24.

BLM Comment 29:

What does these entail? – Page 19

UDWR Response:

Please refer to the response to BLM comment 24.

BLM Comment 30:

These are impossible to read and understand at this scale. – Page 21

UDWR Response:

The figures in the PDF version of the draft study report are 11x17 in size and are legible.

BLM Comment 31:

Wilderness and Wilderness Study Areas. – Page 30.

UDWR Response:

The approved study plan refers to existing and planned wilderness areas in section 16.6.4, Data Collection.

BLM Comment 32:

If this chapter can include a veg map, I'd like to see the VRM Class map. Having to go dig in the Appendix for this could be avoided...something like with the maps used in the Alternatives section. – Page 30.

UDWR Response:

Your comment has been noted. The final study report will include a VRM class map.

BLM Comment 33:

GSENM Big Water Visitor Center. – Page 36.

UDWR Response:

This will be clarified in the final study report.

BLM Comment 34:

GSENM Big Water Visitor Center. – Page 36.

UDWR Response:

This will be clarified in the final study report.

BLM Comment 35:

Toadstools and two GWT Trailheads (one on the north side of HWY 89 and one on the south side) are located within GSENM. Catstair is NOT a designated trailhead. – Page 36.

UDWR Response:

This will be clarified in the final study report.

BLM Comment 36:

Add GSENM passage zone wayside at the Cottonwood Road junction, - Page 37.

UDWR Response:

This will be clarified in the final study report.

BLM Comment 37:

Suggesting that Cedar City is comparable...Kanab and Fredonia isn't accurate. May...these by population...cities over XX pop...towns below XX population. – Page 37.

UDWR Response:

This will be clarified in the final study report.

BLM Comment 38:

Include what percentages of each VRM Class are included in the alternatives. This could be supported by map I request at beginning of this chapter. – Page 39.

UDWR Response:

This will be clarified in the final study report.

BLM Comment 39:

Where is information on line? – Page 40.

UDWR Response:

This comment is unclear.

BLM Comment 40:

highway. – Page 41.

UDWR Response:

This will be clarified in the final study report.

BLM Comment 41:

See Next Page for Corrections. – Page 47.

Visual Resource Management (VRM-02): All proposed actions must consider the importance of visual values and must minimize the impacts the project may have on these values. While performing an environmental analysis for projects, the visual resource contrast rating system will be utilized as a guide to analyze potential visual impacts of the proposal. Projects will be designed to mitigate impacts and conform to the assigned VRM Class objective and other objectives including: (1) using natural or natural appearing material as a priority, (2) meeting restoration/vegetation objectives,...

Utility rights-of-way and Communication Sites (LAND-05): In the Frontcountry and Passage zones, communication sites and utility rights-of-way will be allowed, but will have to meet visual resource objectives.

Utility Rights-of-Way and Communication Sites (LAND-06): In the Outback Zone, communication sites and utility rights-of-way will be allowed within the constraints of the zone, where no other reasonable location exists, and will meet the visual objectives.

Utility Rights-of-Way and Communication Sites (LAND-08): The following criteria and/or stipulations apply to the management of all rights-of-way in the Monument where they are allows:

- *Bury new and reconstructed utility lines (including powerlines up to 34.5 kilovolts) unless: visual quality objectives can be met without burying; geologic conditions make burying infeasible; or burying will produce greater long-term site disturbance.*
- *Construct all power lines using non-reflective wire. Steel towers will be constructed using galvanized steel. Powerlines will not be high-lined unless no other location exists.*

UDWR Response:

This will be clarified in the final study report.

BLM Comment 42:

Wilderness and WSAs are managed as VRM Class 1. – Page 51.

UDWR Response:

This will be clarified in the final study report.

BLM Comment 43:

Non-consistency with VRM objectives that would require a Plan Amendment to change VRM Class objectives. – Page 52.

UDWR Response:

This will be clarified in the final study report.

BLM Comment 44:

What is VRM Class for these areas? ...change is allowed per VRM objective... - Page 53.

UDWR Response:

This will be clarified in the final study report.

BLM Comment 45:

Show image or diagram. – Page 56.

UDWR Response:

This will be clarified in the final study report.

BLM Comment 46:

Images, diagrams, sketches to show what these would generally look like? – Page 58.

UDWR Response:

This will be clarified in the final study report.

BLM Comment 47:

This intro should clearly tat how many features of project do and don't meet VRM objectives. – Page 65.

UDWR Response:

This will be clarified in the final study report.

BLM Comment 48:

This is important information and it should be included earlier on in the intro. – Page 81.

UDWR Response:

Please refer to the response to BLM comment 24.

BLM Comment 49:

75 power poles and lines – low to moderante change? Not sure about this. – Page 81.

UDWR Response:

Your comment has been noted.

BLM Comment 50:

These measures shouldn't be “as practicable”, they should just be what is expected. – Page 84.

UDWR Response:

This will be clarified in the final study report.

BLM Comment 51:

instead of clearing entire ROW – Page 84

UDWR Response:

This will be clarified in the final study report.

BLM Comment 52:

Is it understood what ‘feather trees’ means? – Page 84.

UDWR Response:

This will be clarified in the final study report.

BLM Comment 53:

See note on previous page. – Page 85.

UDWR Response:

This will be clarified in the final study report.

BLM Comment 54:

Why is this called out specifically? When this project crosses several areas that are specially designated? – Page 85

UDWR Response:

This will be clarified in the final study report.

BLM Comment 55:

Use non-specular surface finished for all facilities and associates parts at substations. – Page 85.

UDWR Response:

This will be clarified in the final study report.

BLM Comment 56:

Actually, leaving metal poles non-reflective gray will cause them to be less noticeable than paint. and wires – Page 85.

UDWR Response:

This will be clarified in the final study report.

BLM Comment 57:

and wires – Page 85

UDWR Response:

This will be clarified in the final study report.

BLM Comment 58:

What about impacts of transmission lines??? I didn't notice any simulations showing the new powerlines...am I missing something? – Page 103.

UDWR Response:

This will be clarified and/or addressed in the final study report.

BLM Comment 59:

Where are rating sheets and vis sims for transmission lines? – Page 121.

UDWR Response:

Please refer to the response to BLM comment 58.

BLM Comment 60:

Is this scale accurate? Wouldn't the clearing be wider than shown? – Page 150

UDWR Response:

This will be reviewed and clarified if necessary in the final study report.

BLM Comment 61:

Well, at least it blocks the view of the coal stacks. – Page 154.

UDWR Response:

Your comment has been noted.

BLM Comment 62:

Why would the fence have to be this la.... – Page 161.

UDWR Response:

This will be reviewed and clarified if necessary in the final study report.

BLM Comment 63:

Shifting this facility to the east could greatly increase the opportunity to screen it from view. – Page 174.

UDWR Response:

This will be reviewed and addressed if necessary in the final study report.

BLM Comment 64:

This doesn't look like 130' wide. – Page 180.

UDWR Response:

This will be reviewed and addressed if necessary in the final study report; however, in general, objects and features tend to appear smaller when dealing with such large, open vistas.

BLM Comment 65:

Is scale accurate? – Page 189.

UDWR Response:

Please refer to the response to BLM comment 58.

BLM Comment 66:

Scale? – Page 192.

UDWR Response:

Please refer to the response to BLM comment 58.

BLM Comment 67:

scale? – Page 197.

UDWR Response:

Please refer to the response to BLM comment 58.

BLM Comment 68:

Scale? – Page 213.

UDWR Response:

Please refer to the response to BLM comment 58.

BLM Comment 69:

Is this disturbance width really 130'? – Page 221.

UDWR Response:

Please refer to the response to BLM comment 58.

BLM Comment 70:

This is optimistic, in my opinion, in terms of how much it resembles the existing condition. – Page 238.

UDWR Response:

Your comment has been noted.

BLM Comment 71:

So, we're putting a pipeline under a wash?? Don't think it will look like that post construction unless you have really, really good machinery operation – Page 261.

UDWR Response:

Your comment has been noted.

BLM Comment 72:

Shifting this thing to the least visible locations needs to be considered. Where is now in both alters are not the best options. – Page 289.

UDWR Response:

This will be reviewed and addressed if necessary in the final study report.

BLM Comment 73:

This needs an intro to explain what the maps details. – Page 296.

UDWR Response:

This will be clarified in the final study report.

BLM Comment 74:

Shifting this one less than a mile would greatly reduce visibility. – Page 298.

UDWR Response:

This will be reviewed and addressed if necessary in the final study report.

BLM Comment 75:

Shifting this one would greatly reduce visibility, - Page 298.

UDWR Response:

This will be reviewed and addressed if necessary in the final study report.

BLM Comment 76:

Move it just a bit further east and it would be out of the visible area. – Page 299.

UDWR Response:

This will be reviewed and addressed if necessary in the final study report.

BLM Comment 139:

16 Draft Visual Resources Report

There is overall a lack of information about the type of structures and their locations that are in Visual Assessment Unit (VAU) 20 at the base of the Hurricane Cliffs. The impacts were addressed correctly, being described as “substantially changing the landscape character, and dominating the landscape.” However, without engineering drawings or structure locations, visual simulations were not possible. This

makes it impossible to adequately describe just what the public will see when they head south from Hurricane towards Warner Valley.

UDWR Response:

This information will be provided in the final study report.

BLM Comment 140:

In addition, there is no detailed discussion that describes ancillary facilities in this area. Fences, power lines, parking lots, outbuildings, and all other structures need to be described and then shown in a realistic visual simulation. This is important from both a visual and recreational perspective, given that traffic counter data shows that 10,931 vehicles used that particular road in 2010, the vast majority being recreational users.

UDWR Response:

This information will be provided in the final study report.

BLM Comment 141:

Appendix B should be moved into the body of the document. This table makes it easier to understand the proposed impacts because each VAU is analyzed separately. An 11"x17" map showing the extent of each VAU should also be included in Chapter 3.

UDWR Response:

This will be clarified in the final study report.

Draft Study Report 17 – Surface Water Quality

Wenstrand Comment:

The Uranium tailing piles by Moab have been eroding sediments into the Colorado River just upstream from Lake Powell for decades. Since the pipeline will bring water which has been in contact with the river and lake sediments what will be the soluble and suspended concentrations of radioactive elements such as Radium 226, Radium 228, Radon, Uranium, and Lead 210? How do these levels compare to the EPA drinking water standards? In addition the tailings from the Uranium mining were high in other elements that would not be desirable in our drinking water such as Arsenic. Will any of these elements concentrate in the fish population or other flora and fauna in water reservoirs on the pipeline route? The concentrations of the above elements may increase during high river flows or even with depth in Lake Powell. Investigation of these unknown seems prudent.

UDWR Response:

The cumulative effects analysis is being completed to address the Moab uranium mill tailings and will be provided in the final study reports on surface water quality and aquatic resources.

FERC Comment 36:

File the Technical Memorandum 5.13, A Review of Water Quality and Treatment Issues (MWH 2008), with your revised Study Report as part of this proceeding.

UDWR Response:

Technical Memorandum 5.13, A Review of Water Quality and Treatment Issues (MWH 2008) will be filed with the final study report as part of this proceeding.

FERC Comment 37:

In section 4.2.2.1.1, Pipeline Flushing, you propose that pipeline flushing would discharge the flushed water into the LPP Project forebay reservoir above Hurricane Cliffs. However, in the subsequent paragraph, you state that it is anticipated that standard operating procedures for the project would include measures to divert flows generated from flushing operations away from surface water bodies, to settling tanks and/or retention/percolation basins. Please clarify why the LLP Project forebay reservoir would be used to flush the pipe.

UDWR Response:

The final study report will clarify that flushing operations of the Hydro System (west of the topographical high point) may involve the LPP Project forebay reservoir above the Hurricane Cliffs during the initial operating years to receive small particles that may have settled in the penstock under low-velocity water conveyance conditions. The final study report will clarify that flushing operations of the Water Conveyance System (east of the topographical high point) may involve diverting water from the pipeline during the initial operating years into retention ponds or percolation basins to receive small particles that may have settled in the pipeline under low-velocity conveyance conditions.

GCI Comment 1:

a. The report fails to take into account the impacts of climate change. - There is ample scientific evidence that water flows in the Colorado River Basin will be significantly reduced in the future do to the effects of drought and/or climate change. Even the cursory literature review done for LPP Draft Study Report 19: Climate Change (Report 19) results in the conclusion that:

“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. Streamflow in the Virgin River is likely to decline because of future climate change, although there have been no published studies to indicate the magnitude of the decline. 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.” (p. ES-3)

The assumptions in Report 17 are not consistent with this finding. Report 17 concludes that:

“With implementation of standard operation procedures to control pipeline discharges, operation of the LPP would not result in the violation of applicable surface water quality standards, or cause substantial degradation of surface water quality, or cause substantial alteration of the existing drainage pattern of the site or area.” (p. ES-1)

This conclusion is predicated on assumptions of water flow that do not take into account the potential impacts of climate change. The computer modeling utilized to evaluate potential effects of the proposed Lake Powell Pipeline on water quality was based on the Colorado River Simulation System (CRSS) and Lake Powell CE QUAL W2 (Report 17, Appendix A: Water Quality Modeling Documentation, p. A-5). CE-QUAL-W2 is a hydrodynamic and water quality model that can be used to simulate hydrodynamics, temperature, total dissolved solids, and dissolved oxygen. CRSS is the BOR’s long-term planning and policy model for the Colorado River Basin. It was originally developed in the early 1970s and has some significant shortcomings. Neither of these models is able to adequately incorporate projected climate information into their projections.

The LPP projections in Report 17 do not address the potential impacts of climate change. As a result, they cannot be considered credible for the purpose of planning a major water project. This is a fundamental flaw that must be remedied.

Among the most serious potential flaws in the LPP projections in Report 17 is the failure to anticipate potential impacts on water quality in Lake Powell, the Grand Canyon, and Lake Mead as a result of climate change. Reduced flows due to drought have already caused Lake Powell and Lake Mead reservoirs to drop to record lows during the last decade. A series of studies have indicated that climate change could cause even greater lowering of the reservoirs, potentially including their depletion (LPP Draft Study Report 19: Climate Change, pp. ES-1 to ES-3). The diversion of the LPP's proposed additional 86,249 acre-feet of water annually – almost one-third of Las Vegas' annual water allocation - could cause unexpected negative impacts on an already stressed reservoir.

The impacts of very low reservoir levels on water quality have been a serious concern during the last decade. The significant depletion of Lake Powell in 2005 resulted the lowest level of dissolved oxygen on record, with potentially damaging impacts on the Colorado River ecosystem below Glen Canyon Dam (Vernieu, William S. 2010. Effects of Drought on Water Quality of Lake Powell and Glen Canyon Dam Releases, USGS, presented at Colorado River Commission of Nevada conference on Implications of Lower Lake Levels April 21, 2010). The dramatic decline in recent years of Lake Mead, which supplies water to 22 million people, has caused growing concern regarding elevated temperatures, low concentrations of dissolved oxygen, algae blooms, potential for greater microbial degradation, and increased concentrations of perchlorate, selenium, endocrine disrupting compounds, and personal care products (Tietjen, Todd. 2010. Impact of Falling Lake Levels on the Water Quality of Lake Mead. Regional Water Quality Division, Southern Nevada Water Authority).

UDWR Response:

The draft study report was prepared as defined in the approved Surface Water Quality study plan.

The draft study report relies on the Bureau of Reclamation's CRSS modeling to develop natural inflows representative of hydrologic conditions that occurred during the 101-year period from 1906 through 2006 (Direct Natural Flow, index sequential method) and paleo-hydrologic data derived from annual streamflow reconstructions performed using tree-ring chronologies representing the period 762 to 2005 applied to the historic inflow data to represent more variety in the sequencing of wet and dry periods (Nonparametric Paleo-Conditioned inflows) sampled to simulate inflows into Lake Powell. The inflow data sets represent streamflow variability and incorporates the best available information from the U.S. Department of the Interior's recognized expert agency, the Bureau of Reclamation, in simulating the hydrologic conditions of the Colorado River and Lake Powell.

The CRSS model run by Reclamation for the LPP Project included two scenarios, each consisting of a proposed action (diversion of 86,249 acre-feet annually) and no action. One scenario evaluated the impacts of diverting the LPP water out of Lake Powell near Glen Canyon Dam versus diverting the UBWR water rights for a different use out of the Green River as it flows through the Uinta Basin, including all future upper basin depletions from the Colorado River. The second scenario, requested by the National Park Service, evaluated the impacts of diverting the LPP water out of Lake Powell near Glen Canyon Dam versus not diverting the UBWR water rights from Lake Powell, including only depletions from the Colorado River that are reasonably foreseeable. Both scenarios involve annual releases of 8.23 million acre-feet from Glen Canyon Dam to supply the lower Colorado River basin states of Arizona, Nevada and California with their annual share of water plus about 750,000 acre-feet annually for delivery to Mexico.

Reclamation uses the CRSS to model hydrology of the Colorado River, Lake Powell and other reservoirs to plan for the fluctuations that occur in the system and still meet the demands for water. Drought periods in the Colorado River basin such as the one beginning around 2001 leading to recent lower levels in Lake Powell and Lake Mead are incorporated into the Reclamation CRSS model because the “lakes” are designed and operated as impoundments to store and release water with annual and periodic fluctuations.

The 2011 spring runoff inflows from the upper Colorado River basin have exceeded Reclamation’s preliminary projections for inflow to Lake Powell and balancing releases to Lake Mead. The June 24-month study now projects the 2011 Lake Powell water year release at 12.44 million acre-feet, which is not expected to achieve the reservoir balancing objectives because of increasing inflow forecasts to Lake Powell. The projected Lake Powell high elevation for 2011 is about 3,665 feet mean sea level during late July to mid-August, 35 feet below the full pool elevation of 3,700 feet. The significant increase in Lake Powell elevations during 2011 to its highest level since 2001 combined with the 12.44 million acre-feet releases to help achieve reservoir balancing in Lake Mead were unexpected in early 2011, which demonstrates that there is variability on both sides of the climate change equation. The variability and unknowns of precipitation and runoff from year to year are part of the reason why reservoirs are operated on the Colorado River and why Reclamation uses the CRSS model to plan for a range of hydrologic conditions to occur as they manage inflows, releases and power operations.

The Reclamation-modeled changes in surface water quality of Lake Powell and releases to the Colorado River from Glen Canyon dam account for the fluctuations that occur as part of the reservoir operations as influenced by fluctuations in precipitation, runoff and climate patterns. The draft study report concludes that the LPP Project at full diversion of 86,249 acre-feet would not have measureable impacts on any surface water quality parameters, in part because the volume of water diverted for the LPP Project is a fraction of the volume of water that annually flows through and is stored in Lake Powell, and in part because Lake Powell is operated to annually deliver 8.23 million acre-feet downstream.

GCI Comment 2:

b. Summary - There is a real threat that the effects of climate change could reduce water quality in Lake Powell, the Grand Canyon, and Lake Mead. If this situation occurs, the construction of the LPP could exacerbate an already serious problem. This could have negative impacts the health of the Colorado River ecosystem and the millions of people who depend on water from the Colorado. The failure of Report 17 to take climate change into account in addressing water quality on the Colorado River is a fundamental flaw that undermines the entire analysis. This deficiency must be corrected in a revised study and report.

UDWR Response:

Please refer to the response to GCI comment 1.

LPPC Comment 5:

SD2 states that “FWS recommends the EIS evaluate the cumulative impacts of project induced land development, urbanization, and population growth on surface water quality, included nutrient loading, pollutant runoff, and sediment loads.” SD2, p. 16. The Commission responded: “we have modified section 4.2.2 of SD2 to include indirect effects of induced growth on water quality parameters, where such effects can be reasonably foreseen, and are due to building the pipeline or an alternative.”

UDWR Response:

The cumulative impacts analyses were not completed when the draft study reports were filed with FERC. Sections 7.1 through 7.5 in the final study report will address cumulative impacts of project-induced land development, urbanization and population growth on surface water quality, including nutrient loading, pollutant runoff, and sediment loads, where such effects can be reasonably foreseen. Sections 4.2 and 4.3

of the final study report will be revised to address the potential indirect effects of induced growth on water quality parameters, where such effects can be reasonably foreseen, and are caused by building the pipeline or an alternative.

LPPC Comment 57:

17.2 Study Description

The study will identify potential impacts and measures to protect surface water quality from potentially adverse effects associated with the Project.

Comments

The study results did not represent water quality conditions of reduced river flows over the term of license and used the wrong data and skipped a critical step in not considering conditions of reduced flows into Lake Powell.

UDWR Response:

Please refer to the response to GCI comment 1. The surface water quality modeling results from Reclamation account for a range of hydrologic inflows, including low and high inflows, from the rivers tributary to Lake Powell, and the model results do not show measurable surface water quality impacts.

LPPC Comment 58:

17.2.1. Goals and Objectives

Determine what impacts, if any, may occur on Lake Powell water quality

Comments

The study results did not represent water quality conditions of reduced river flows over the term of license. Thus, we disagree with the sufficiency of the study results.

UDWR Response:

Please refer to the response to GCI comment 1. The surface water quality modeling results from Reclamation account for a range of hydrologic inflows, including low and high inflows, from the rivers tributary to Lake Powell, and the model results do not show measurable surface water quality impacts on Lake Powell water quality.

LPPC Comment 59:

The study report states quagga mussels will be managed by the agencies which is not and a sufficient conclusion to protect the environment and mitigate the potential spread of quagga mussels.

UDWR Response:

Please refer to the response to USFWS comment 17 in the Aquatic Species section of this comment and response document.

LPPC Comment 60:

4.2.2.3 Quagga Mussel Control

The eventual environmental consequences of quagga mussels being transported from Lake Powell to Sand Hollow Reservoir over the 50 year term of license is not considered in the study report. Treating quagga mussels poses water quality concerns because the treatment used creates Trihalomethanes (THM's) when chlorine reacts with organic matter in water. This combination of organic material and chlorine could cause high THM concentrations that could not only violate EPA standards, but also make the pipeline water carcinogenic. THM's are carcinogenic and are subject to federally regulated standards set by the EPA. THM's are a real issue with highly chlorinated water. The cost of treating water with THM's is very expensive because THMs cannot be filtered out through standard culinary water filtration systems. The primary treatment protocol for culinary systems is to avoid creating THM's in the first place; otherwise reverse osmosis treatment is required. This is the same reverse osmosis that

the Water District claims is too expensive for treating Virgin River water. But the issue is, that once mussels enter the pipeline, high concentrations of chlorine and the resulting THM concentrations would be the costly solution for controlling the mussels spread.

UDWR Response:

The analysis of aquatic invasive species (including quagga mussels) is presented in the draft Aquatic Resources study report. The draft Surface Water Quality study report Section 4.2.2.3 will be revised to include a reference to the aquatic invasive species analysis in the Aquatic Resources study report. The comment incorrectly assumes that quagga mussels are established in Lake Powell, and that the raw water would be treated with chlorine compounds leading to creation of trihalomethanes to prevent transfer of quagga mussels to Sand Hollow Reservoir. There are currently no known quagga mussel infestations established in Lake Powell; however, Sand Hollow Reservoir has been confirmed to have quagga mussels and has been declared infested by the State of Utah. There are numerous, effective, existing aquatic invasive species control treatments which do not involve the use of chlorine compounds, and emerging technologies are currently undergoing testing which involve biological measures to control quagga mussels with no residual effects on other organisms or water quality.

Please refer to the response to USFWS comment 17 in the Aquatic Species section of this comment and response document. The final Aquatic Resources study report will be revised to incorporate the UDWR commitment to provide initial and long-term monitoring and treatment plans for the LPP Project to control the spread of aquatic invasive species (AIS) and make sure adequate AIS response measures are included in all LPP Project planning, construction and implementation activities.

LPPC Comment 61:

Another concern is the warming temperatures will cause mussels to spread more widely and be more of a problem in water systems. "Projected climate changes are likely to have an array of interrelated and cascading ecosystem impacts (Janetos et. Al.2008). Warmer air and water temperatures could potentially improve habitat for quagga mussels and other invasive species that, in turn may additionally impact hydraulic structures.

UDWR Response:

The analysis of aquatic invasive species (including quagga mussels) is presented in the draft Aquatic Resources study report. The draft Surface Water Quality study report Section 4.2.2.3 will be revised to include a reference to the aquatic invasive species analysis in the Aquatic Resources study report. The UDWR commitment to the USFWS, stated in the response to USFWS comment 17 includes design, construction and implementation recommendations to control quagga mussel at the Lake Powell intake and prevent aquatic invasive species transfer through the pipeline.

LPPC Comment 62:

We recommend, due to temperature warming, invasive species will become more of a problem in Lake Powell during the term of license by 2020-2070 and these adverse impacts need to be discussed in cumulative impact section of the study report. Stating in the report agencies will manage the quagga mussels is not sufficient and we need to know what are the costs and process of the mitigation program is to prevent this from occurring. There is an overarching concern of the effect on communities if the Washington County Water Conservancy District's regional pipeline, which spreads out all over the county, becomes infested. Discussion of the effects on various city water systems should be included in this study report.

UDWR Response:

Please refer to the response to LPPC comment 61. LPP Project operation to control aquatic invasive species at the intake would prevent project-related infestation in the Lake Powell Pipeline, Sand Hollow

Reservoir and WCWCD conveyance systems. The WCWCD is already investigating and implementing control measures to control the spread of quagga mussels from Sand Hollow to its raw water pipeline system and associated structures. The District's regional water line and distribution lines to cities are isolated from effects of the mussels by the Quail Creek Water Treatment Plant which currently employs technologies which effectively treat mussels and prevent transfer into drinking water transmission and distribution lines leaving the water treatment plant.

LPPC Comment 63:

4.2.3.1 Inflows

The study results do not consider the possibility of low lake levels thus, it uses the wrong data. The Total Dissolved Solids (TDS) concentration in the raw water is assumed to be 540 mg/L from Lake Powell via LPP at a pipe intake level of 3575 (msl).

UDWR Response:

The water quality modeling of Lake Powell performed by Reclamation accounts for the hydrologic variability and range of conditions that could occur during the analysis period, including Lake Powell water surface elevation fluctuations. The TDS concentration of 540 mg/L used as input data for modeling TDS concentrations in Sand Hollow Reservoir is near the higher end of modeled TDS concentrations in Lake Powell throughout the analysis period (please refer to Section E.1.3 in Appendix A of the draft Surface Water Quality study report). Reclamation TDS data collected from Lake Powell near Glen Canyon Dam and the proposed intake site during the period September 1992 through October 2007 around the elevation of the lowest intake tunnel (3,375 feet MSL) range from extremes of 411 to 659 mg/L. The average TDS concentration near the lowest intake tunnel elevation during the data period is 554 mg/L. These data are not directly correlated to the TDS concentrations that would occur at the lowest water elevations; however, they are included in the model calibration runs and input data for the water quality modeling in Lake Powell.

LPPC Comment 64:

However, the study report's raw water analysis at the lowest pipe intake levels of 3475 (msl) and 3375 (msl) also be included in the study report. If it is the applicant's conclusion that they will be able to draw water in dire low lake conditions, then this option needs to be included in the study report to be considered complete by the Commission.

UDWR Response:

The final study report will clarify that the TDS concentration of 540 mg/L used as input data for modeling TDS concentrations in Sand Hollow Reservoir is near the higher end of modeled TDS concentrations in Lake Powell throughout the analysis period (please refer to Section E.1.3 in Appendix A of the draft Surface Water Quality study report). Please refer to the response to LPPC comment 63.

LPPC Comment 65:

4.2.4 Water Quality Impacts on Lake Powell

We recommend that the effects of drought and low reservoir levels on water quality must be included in the report for the 50 year term of the license until 2070.

UDWR Response:

Please refer to the response to LPPC comment 63.

LPPC Comment 66:

4.2.5 Water Quality on the Virgin River

In some sections of the study report it mentions the LPP water will not get to river so there will be no change in the river's flow however that conflicts with the conclusion in the cumulative effect in the Surface Water Resources Study Report #18. Chapter 7 Cumulative Impacts, page 71, that concludes that urban growth from the Lake Powell Pipeline will impact water quality of the Virgin River.

UDWR Response:

The comment incorrectly interprets and misrepresents the conclusion of the cumulative impacts discussion in Chapter 7 of the draft Surface Water Resources study report 18. The draft study report text does not conclude that urban growth from the Lake Powell Pipeline will impact water quality of the Virgin River; the text contains no statement about water quality impacts. The LPP Project would not result in direct releases of LPP water into the Virgin River or measurably change the river flows. Please refer to the response to USFWS comment 1.

LPPC Comment 67:

The Water District has a million dollar pump back project that will pump water back into the Virgin River from Sand Hollow Reservoir and this should be included in the report. They would pump water back into the river to lower the temperature for the endangered Virgin River fishes. The future plans and uses for this pumping system, along with any effects on water supply and quality should be included in the study report.

UDWR Response:

The comment incorrectly represents the WCWCD pump-back system, which is not part of the LPP Project, nor does the system pump water from Sand Hollow Reservoir to the river. Please refer to the response to WRA comment 47 in the Special Status Aquatic Species section of this comment and response document.

LPPC Comment 68:

Study Plan

Identify measures for mitigating impacts to surface water quality

Comments

The study report did not point out the study were not conducted as provided for in the approved study plan, No mitigating impacts were identified in the study report, thus they did not consider represent low Lake conditions and its impact on water quality over the term of license.

UDWR Response:

The Reclamation water quality modeling accounts for fluctuating water levels in Lake Powell (i.e., 90th percentile, 50th percentile and 10th percentile conditions) and the results demonstrate there would be no measurable difference in water quality, therefore no mitigation measures need to be implemented because there would be no measurable impacts on water quality.

LPPC Comment 69:

17.5 Nexus to Project

Water would be pumped from Lake Powell at multiple depths. That may affect stratification of water. FERC licensing, other federal agency permits, and Utah State Engineer approval of the Project design will require demonstration that these potential adverse impacts on surface water quality have been identified and avoided or mitigated in such a way that surface water quality is not adversely affected.

Comments

We disagree with the sufficiency of the study results because the report does not consider multiple depths of the LPP intake pipe. No environmental evaluation of low lake levels or different intake pipe levels on water quality or temperature at different depths. We recommend the study report describe any anticipated environmental impacts of the continued operation of the project in the cumulative effects section over the term of license to 2070.

UDWR Response:

Please refer to the response to LPPC comment 68. Ongoing Reclamation operations of Lake Powell elevations and releases will be considered as a potential inter-related action that could cause cumulative effects; however, the Reclamation modeling of surface water quality and hydrology already accounts for the reservoir fluctuations during the analysis period. The Reclamation modeling of water quality in Lake Powell resulted in determining the LPP Project would have no measureable impacts on water temperatures and therefore the LPP Project would not affect reservoir stratification. The final study report will clarify that the water quality modeling results demonstrate no measurable impacts on reservoir stratification.

LPPC Comment 70:

The Commission in SD 2 stated:

“We have modified 4.2.2 of SD 2 to include the cumulative effect of low Lake Powell water levels on water quality relative to human health.”¹⁵

Thus, this issue should be included into the report to be considered complete by the Commission.

UDWR Response:

Please refer to the response to LPPC comment 68. No surface water quality impacts (i.e., differences between water quality conditions under the LPP Project and No Action, as modeled by Reclamation) were determined to occur under the fluctuating levels of Lake Powell, therefore there would be no cumulative effects of low Lake Powell water levels on water quality relative to human health. The final study report will include the cumulative impacts analysis and clarify that cumulative impacts could result from the incremental impact of the LPP Project when considered with the impacts of other inter-related projects or actions.

LPPC Comment 71:

The Surface Water Resources Study Report at 3.4.1 Lake Powell , notes the pipeline intakes are proposed at three intake elevations 3575 mean sea level (msl) 3475 (msl) and 3375 (msl). The water quality and temperature at each level needs to be included in the report. The 3375 (msl) elevation is 5 feet above dead pool and there is no active storage in Lake Powell. The Applicant needs to show their junior water rights with a late priority date of 1996 would have priority over all the other senior water rights holders and be able to withdraw water at such low lake levels.

UDWR Response:

The draft study report conforms to the approved Surface Water Quality study plan, which does not specify determination of water quality and temperature at each intake tunnel elevation. Please refer to the responses to LPPC comments 68 and 69. Utah water law does not control or restrict design of water withdrawal structures based on water right priorities. Under drought conditions, Utah Water law recognizes that many upstream or headwater river water users, even higher priority water rights, may not be physically capable of withdrawing allowed water right quantities, while water right owners downstream may observe water accumulating in the river system and have the ability to withdraw their full water right. The comment erroneously states the UBRW water right has a priority of 1996. The correct priority date is 1958.

LPPC Comment 72:

We recommend the environmental consequences of different pipe intake levels be included in the study report to be considered complete.

“At the elevation of 3575 (msl) Lake Powell active storage is 9.52 (maf) At the elevation of 3475 (msl) Lake Powell active storage is <5.93 (maf) At the elevation of 3375 (msl) Lake Powell active storage is 0”^{16,17}

UDWR Response:

The draft study report conforms to the approved Surface Water Quality study plan, which does not require determination of environmental consequences of LPP Project water quality impacts at each intake tunnel elevation. The Reclamation water quality modeling results demonstrate no measurable difference in water quality conditions between the LPP Project and No Action in Lake Powell.

LPPC Comment 73:

The Coalition requests that the Applicant provide more information in the study report before the Commission considers it complete. The Applicant should answer these questions below in the report, they include:

- 1 Why the LPP intake design does not drop into the dead pool zone?*
- 2 The Salt River Project at Navajo Generating Station is modifying their intake at elevation into dead pool at 3370 feet (msl).*
- 3 Is there a reason why the LPP is forbidden to drop their intake into dead pool because they have a junior water right?*
- 4 Is this merely a demonstration by the Applicant to show confidence that reservoir levels will never drop to the dead pool elevation?*
- 5 If the reservoir drops to dead pool, will LPP then extend their intake into the dead pool zone?*

UDWR Response:

The draft study report conforms to the approved Surface Water Quality study plan, which does not require addressing the water quality impacts of the questions asked in the comment.

USFWS Comment 76:

Draft Study Report 17: Surface Water quality

Section 4.3: No Lake Powell Water Alternative, page 4-14: The authors do not offer any evidence for the statement: “The restrictions on residential outdoor watering would significantly reduce recharge and are expected to result in changing the Virgin River from a gaining stream during the summer and fall months to a losing stream year round. This indirect impact would cause the stream water temperatures to increase because the cooler groundwater discharging to the stream under baseline conditions helps control the water temperature during the summer and fall months.” Please identify if this statement is a result of a quantitative analysis or modeling effort. Methodology and results must be clearly presented. Also, please identify if mitigation efforts were considered; for example: the utilization of urban runoff for.

UDWR Response:

The final Surface Water Quality study report will incorporate a reference to the clarified groundwater recharge analysis in the final Groundwater Resources study report (Section 4.7.1.2). The Virgin River streamflow analysis presented in the Surface Water Resources study report (Section 3.2.2) demonstrates the annual cycle of existing return flows to the Virgin River and also will be referenced in the final Surface Water Quality study report. The final study report will identify the statement quoted in the

comment is the result of a quantitative analysis included in the revised draft Groundwater Resources study report, which will include a description of the methodology and results. Please refer to the response to USFWS comment 18 regarding the comment's suggested utilization of urban runoff.

USFWS Comment 77:

In previous correspondence we requested analyses of LPP project-related effects on Virgin River surface water quality, with particular emphasis on selenium and total dissolved solids (TDS). The Virgin River system is high in TDS and selenium from both natural and man-made sources, and in 2004 a Total Maximum Daily Load (TMDL) was approved for the Virgin River for TDS and selenium. We are concerned that impounding and storing water in new reservoirs creates the opportunity for leaching of salts, including selenium, from underlying soils and transportation downstream to wetlands and the Virgin River system. Also the Draft Study Reports state that the LPP project will add to Virgin River flows as a result of groundwater recharge from residential outdoor watering. If this is indeed the case, ???then this water has the potential to transport additional selenium and TDS to the surface water in the Virgin River.

UDWR Response:

The approved Surface Water Quality study plan does not identify analysis of selenium in the Virgin River surface water quality. The comment incorrectly assumes that water will be impounded and stored in new reservoirs that could transport leached salts, including selenium, from underlying soils and transport them downstream to wetlands and the Virgin River system. The LPP Project would involve one new unlined reservoir at the Hurricane Cliffs afterbay, which would be constructed over Navajo sandstone and potentially could increase deep aquifer elevations about 500 feet below the ground surface. Navajo sandstone is not known to contain leachable quantities of salts, selenium or other dissolvable solids and is cemented together with silica-based minerals of low solubility. The closest surface soils and rocks containing gypsum-bearing minerals in the drainage direction from the proposed afterbay reservoir are 3.5 miles south, at a slightly lower elevation in the valley below the Hurricane Cliffs. The Navajo sandstone at the afterbay reservoir site is underlain by older Kayenta sandstone. The Virgin River and any associated wetlands are 19.5 miles away from the proposed afterbay reservoir site. Potential increases in groundwater aquifer levels resulting from recharge of LPP water in the Navajo sandstone bedrock at the afterbay site could form a slight groundwater mound under the afterbay reservoir and slope gradually away to meet the existing deep aquifer elevation. No surface water quality impacts have the potential to occur in wetlands or the Virgin River resulting from groundwater recharge in the Navajo sandstone underlying the proposed afterbay reservoir. The final study report will include this analysis, with references to supporting documentation. The LPP project would not induce additional residences or residential watering.

USFWS Comment 78:

We do not agree that because changes to Virgin River flows are “within the measurement accuracy of the USGS gages” (Study 17, page 4-13) there are no resultant effects at a biological level to environmental resources. The Service recommends that changes in instream flow be analyzed for effects to aquatic species of concern as a result of changes to water quality parameters such as TDS and selenium.

UDWR Response:

Please refer to the response to USFWS comment 77 regarding water quality parameters such as TDS and selenium.

BLM Comment 142:

17 Draft Surface Water Quality Study Report

The open trench construction should be adequate for the ephemeral wash crossings, however, with approved BMPs implemented. The trenchless construction if practical would be preferred for the Paria

crossing to minimize water quality impacts. If open trench is proposed for the Paria crossing, then adequate mitigation through BMPs must be designed and implemented. Their proposed BMPs for mitigation of potential water quality impacts are listed on pages 4-4 and 4-5:

- Construction at the Paria crossing will occur either when the stream is at low flow or dry. With this, there is the potential for high flow flood events to occur at the Paria crossing during any season of the year, and these events must be planned for. Assuming the crossing can be constructed in segments, then there needs to be construction of an earthen diversion berm, armored as necessary with rip rap, to divert flows away from the area of construction. The diversion berm will need to be designed sufficiently to divert potential flood flow events as well as base flows.

UDWR Response:

Your comment has been noted.

BLM Comment 143:

- Utilize silt fences and/or straw bales upstream to protect riparian areas and downstream in the channel to collect sediment generating from the construction. The use of silt fences and/or straw bales is impractical at any location subject to concentrated flows such as the Paria channel. A sufficient containment system needs to be designed to contain potential sediment and contaminants generated from construction activities during the Paria crossing.

UDWR Response:

Your comment has been noted.

BLM Comment 144:

- Water bladder dams or similar structures would be used as necessary to form temporary coffer dams upstream of pipeline crossing for diversion of Paria River flows during construction. Culvert pipes would be installed at the existing slope of the streams to divert flow around the pipeline crossing work area. Stream flows would be diverted through the culvert pipes to control turbidity during construction of the pipeline crossings. All diversions around the pipeline construction area should be designed to provide for fish passage.

UDWR Response:

Your comment has been noted.

BLM Comment 145:

- Construction trenches within the dewatered stream reaches would be pumped as necessary to remove subsurface water. The water would be pumped into portable tanks for settling, and then land applied away from the streams for disposal. Insure that adequate storage will be available in case there are large amounts of groundwater present at the Paria crossing. The use of sediment basins as described in Chap. 5 on page 5-3 could be considered.

UDWR Response:

Your comment has been noted.

BLM Comment 146:

In Chap. 5 the BMPs in support of SWPPP development are well described. On page 5-4 Final Site Stabilization is described. As an addition to the proposed bank re-contouring and revegetation, there needs to be use of Mattings as described on page 5-2 to stabilize new banks until revegetation is complete.

UDWR Response:

Your comment has been noted.

BLM Comment 147:

Chap. 7, the cumulative impact section, is not complete.

UDWR Response:

The final study report will identify and discuss cumulative impacts associated with inter-related projects.

Draft Study Report 18 – Surface Water Resources

Rutherford Comment 11:

The next item I found interesting also: (Question stated in the Initial Study Report Meeting Summary)

*Why wouldn't flow rates change between alternatives? Earlier it was said that there would be less return flows to the Virgin River under the No Lake Powell Water Alternative. **Response:** The draft study reports evaluate different alternatives and are not comparable. Return flows to the Virgin River would be lower under the No Lake Powell Water Alternative because groundwater recharge would be reduced from restrictions on residential outdoor watering.*

Here's what I determined from a conversation with Albuquerque's water conservation manager, Katherine Uhoss. Apparently, there's some discrepancy between water "experts" on the issue:

Q: *Do water conservation efforts hurt the area's aquifers and ground water as alleged by the WCWCD?*

A: *No! Most water used on lawns is lost to evaporation before working its way to an aquifer or ground water. If the water that's being used is coming from an aquifer or ground water source, then the less you take from that source for use, the better. So, arguing that using more will help the aquifer or ground water source doesn't make sense either.*

UDWR Response:

As irrigation water is applied during the outdoor watering season, a portion of that water seeps into the ground (recharge), travels through the alluvium or colluvium, reaches the bedrock, and flows along the path of least resistance, which is toward the river, and discharges into the Virgin River beginning in May and ending in December (about two months after the irrigation season ends in October). Under the No Lake Powell Water Alternative, culinary water used for outdoor irrigation would be significantly reduced, which would eliminate the culinary water recharging to the ground in the St. George metropolitan area and significantly reduce the subsurface return flows to the Virgin River from May through December. This means the No Lake Powell Water Alternative would result in the Virgin River being a losing stream through St. George throughout the year, including the period from September through December. Water conservation measures reducing outdoor water consumption have been and will continue to be implemented under any action alternative, and they will reduce the quantity of surface water recharge to the shallow subsurface alluvium or colluvium, which in turn will reduce the quantity of subsurface water discharging as return flows to the Virgin River in the St. George metropolitan area.

FERC Comment 38:

Include the effects of the project on storage in Quail Creek and Sand Hollow reservoirs in the revised study report in accordance with section 18.4.2 of the Revised Study Plan.

UDWR Response:

The final study report will include an analysis of the effects on storage in Quail Creek Reservoir and Sand Hollow Reservoir.

FERC Comment 39:

Provide specific examples of the best management practices you propose in the revised study report in accordance with section 18.2.1 of the Revised Study Plan.

UDWR Response:

The final study report will include specific BMPs that will be recommended.

GCI Comment 3:

a. The report fails to address the impacts of climate change. - There is ample scientific evidence that water flows in the Colorado River Basin will be significantly reduced in the future do to the effects of drought and/or climate change. Even the cursory literature review done for LPP Draft Study Report 19: Climate Change (Report 19) involved more than three-dozen references from a wide variety of sources (p. R-1 to R-3). Based on this review, the Report 19 concludes that:

“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. Streamflow in the Virgin River is likely to decline because of future climate change, although there have been no published studies to indicate the magnitude of the decline. 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. (p. ES-3)

Instead of incorporating these findings into its hydrological modeling, Report 19 bases its projections on data derived from the Colorado River Simulation System (CRSS) model. CRSS is the BOR’s long-term planning and policy model for the Colorado River Basin. It was originally developed in the early 1970s and has some significant shortcomings. The most notable of these shortcomings is that CRSS in its current form is unable to adequately project the impacts of climate change. This approach was also used

18:

Though the potential impacts of climate change have been studied in the Colorado Riverbasin, the data needed to quantitatively evaluate these potential impacts with CRSS was not yet available at the time of this study. Therefore, the paleo-hydrologic record was chosen as a means to evaluate the potential impacts from a wider range of dry and wet spells in the Colorado Riverbasin than is represented by the observed hydrologic record. (Report 18, Lake Powell Pipeline Hydrologic Modeling, Executive Summary, p. 2)

The substitution of paleo-hydrologic data may improve the accuracy of the CRSS projections to some extent. However, these data do not reflect the current and future impacts of climate change. This is a highly inadequate basis for making the assumptions and findings in Report 18. It is a fundamental flaw that undermines the credibility of the entire report.

The failure to consider the impacts of climate change are not just an academic question. As Report 19 acknowledges, “Commonly cited studies relating climate change to runoff in the Colorado River Basin are shown in Table ES-1.... This most recent synopsis of climate studies estimates declines in runoff to be between 4 and 18 percent by 2050 depending on the temperature and precipitation scenarios evaluated” (p. ES-1). An 18 percent reduction in runoff to the Colorado River Basin would have profound impacts on water supply. The assumptions on which the LPP are based would be rendered irrelevant.

Based on the lack of consideration for climate change impacts, the conclusion that there would be no significant difference in impacts between the No Action alternative and the proposed LPP project is unsupported. The report needs to be revised to incorporate potential climate change impacts on water resources, and a new analysis done based on these more realistic projections.

UDWR Response:

There is a considerable range of projections pertaining to the impacts of climate change on surface water resources. The draft study report, of necessity, had to be prepared using existing data and tools based on historical information. CRSS is widely accepted as the best available tool and, while all simulation models have limitations, it is the most comprehensive single tool available for this study. The draft study report did address climate change; as noted by the comment and consistent with the need to use defensible, existing data, the incorporation of paleo-hydrologic records provides a means for taking into account a wider range of climate conditions. The draft study report meets the requirements of the approved study plan.

GCI Comment 4:

b. The report does not take into account important recent climate change-related studies, data, and programs. - Report 19 acknowledges that there are major studies that have not been incorporated into the LPP studies.

“At the time this document was authored, there were three prominent studies being conducted that address climate change and hydrology in the Colorado River Basin. These include the Joint Front Range Climate Change Vulnerability Study (JFRCCVS), the Colorado River Water Availability Study (CRWAS) and the Colorado River Basin Water Supply and Demand Study, being conducted as part of the Basin Study Program. Of these, only the CRWAS has released a draft report. None of the studies have been finalized.” (p. 3-9)

The results of these studies could well lead to huge changes in the operation of the Colorado River system. However, the LPP application apparently considers the fact that “none of the studies have been finalized” to be an excuse to ignore their implications. In fact, these studies will have major implications for

1. Failure to take into account the SECURE Water Act Report.

On April 25, Secretary of the Interior Ken Salazar released a report by the Bureau of Reclamation (BOR) titled SECURE Water Act Section 9503(c) – Reclamation Climate Change and Water 2011 (SECURE Water Act Report). According to a Department of the Interior (DOI) news release, the report:

“assesses climate change risks and how these risks could impact water operations, hydropower, flood control, and fish and wildlife in the western United States. The report to Congress, prepared by Interior’s Bureau of Reclamation, represents the first consistent and coordinated assessment of risks to future water supplies across eight major Reclamation river basins, including the Colorado, Rio Grande and Missouri river basins....

“Water is the lifeblood of our communities, rural and urban economies, and our environment,” said Secretary Salazar, “and small changes in water supplies or the timing of precipitation can have a big impact on all of us. This report provides the foundation for understanding the long-term impacts of climate change on Western water supplies and will help us identify and implement appropriate mitigation and adaptation strategies for sustainable water resource management.”

“The report, which responds to requirements under the SECURE Water Act of 2009, shows several increased risks to western United States water resources during the 21st century. Specific projections include:

- a temperature increase of 5-7 degrees Fahrenheit;*
- a precipitation increase over the northwestern and north-central portions of the western United States and a decrease over the southwestern and south-central areas;*
- a decrease for almost all of the April 1st snowpack, a standard benchmark measurement used to project river basin runoff; and*
- an 8 to 20 percent decrease in average annual stream flow in several river basins, including the Colorado, the Rio Grande, and the San Joaquin.*

“The report notes that projected changes in temperature and precipitation are likely to impact the timing and quantity of stream flows in all western basins, which could impact water available to farms and cities, hydropower generation, fish and wildlife, and other uses such as recreation.

“‘Impacts to water are on the leading edge of global climate change, and these changes pose a significant challenge and risk to adequate water supplies, which are critical for the health, economy, and ecology of the United States,’ added Reclamation Commissioner Mike Connor.” (Interior Releases Report Highlighting Impacts of Climate Change to Western Water Resources, Department of the Interior, April 25, 2011 <http://www.doi.gov/news/pressreleases/Interior-Releases-Report-Highlighting-Impacts-ofClimate-Change-to-Western-Water-Resources.cfm>)

The findings of the study call into serious question the assumptions and projections in Report 18. As Secretary Salazar states in the news release, “This report...will help us identify and implement appropriate mitigation and adaptation strategies for sustainable water resource management.” This is clearly a milestone report that could have a huge impact on the operation of the Colorado River system – including major reservoirs such as Lake Powell. It makes no sense to move forward with the LPP application process based on assumptions of the operation of the Colorado River system that can no longer be counted on. The applicant needs to revise Report 18 to take into account this new information.

2. Failure to take into account the WaterSMART Secretarial Order and programs.

Secretary of the Interior Ken Salazar signed the WaterSMART Secretarial Order in February 2010. It directs the first comprehensive assessment of water availability for our nation since 1978. A part of this effort will be the Colorado River Basin Geographic Focus Study, to be conducted by the U.S. Geological Survey (USGS). The study will be conducted over a three-year period and is intended to provide a platform on how much water is needed to support ecosystems amid significant competition over water resources. It will complement the study being done by the Bureau of Reclamation.

In announcing the study, Secretary Salazar was quoted as saying:

“You can't manage a resource that you don't measure.... The WaterSMART initiative is all about measuring our water supplies and how we use them. This water census will provide crucial information to water managers to improve our efforts to wisely balance competing demands.” (Salazar announces Colorado River inventory, Deseret News, Oct. 21, 2010 <http://www.deseretnews.com/article/700075342/Salazar-announcesColorado-River-inventory.html>)

This study is a major initiative and a major priority for the Department of the Interior. Because the Bureau of Reclamation is within the DOI, the outcome of this study could have significant implications for BOR's management of Colorado River reservoirs. Report 18 makes no mention of this study, even

though it was announced in 2010. This is a major flaw, compounding the report's lack of consideration of the SECURE Water Act Report.

UDWR Response:

Both the SECURE Water Act Report and the WaterSMART 2011 report were released to the public after completion of the Draft Study Report and were not available sources of information in preparing the Draft Study Report. Note that the WaterSMART 2011 report contains the following disclaimer that is pertinent to this comment: "Lack of the calibration of the hydrologic models [used in the WaterSMART report] is a real issue that needs to be addressed and should be addressed before these models are used in future assessments." For these reasons, the draft study report properly excluded information from either of these reports.

GCI Comment 5:

c. The report does not consider the potential for major changes in Glen Canyon Dam operations and the impacts of such changes on the Lake Powell Pipeline Project. - Report 18 includes a general discussion of the Colorado River flows, including releases from Glen Canyon Dam (p. 3-2 to 3-8). This section mentions the 2007 Colorado River Interim Guidelines for Lower Basin Shortages and Lake Powell and Lake Mead (Interim Guidelines) and the Grand Canyon Protection Act of 1992 (Public Law 102-575, GCPA) (p. 3-3, 3-4). Later in the report, there is a brief discussion of the geomorphology of the Grand Canyon, the Glen Canyon Dam Adaptive Management Program (AMP), and high-flow releases from Glen Canyon Dam that have been performed several times — the most recent in 2008 — under the aegis of the AMP. (p. 3-47).

Report 18 fails to mention that there is growing controversy regarding the effectiveness of the AMP and its high-flow water release strategy in implementing the mandates of the Grand Canyon Protection Act, the Endangered Species Act, and other federal laws and regulations. The Grand Canyon Protection Act directs that

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

In 1991, before the passage of the GCPA, Senator John McCain spoke on the floor of the Senate of the urgent need for strong action:

"[T]ime is running out for Grand Canyon National Park. Time is running out on the park's beaches—so many of which have been scoured away by the erratic release of water from Glen Canyon Dam. Time is running out for ancient Indian ruins and cultural sites. Time is running out for the disappearing riparian vegetation and the wildlife it supports. Time is running out for endangered fish species. And time is running out for us to do the right thing." (Congressional Record, September 13, 1991, page S12940)

On January 18, 2011, the Bureau of Reclamation (BOR) released the latest in a series of plans for trying to address these issues: the Draft Environmental Assessment: Development and Implementation of a Protocol for High-flow Experimental Releases from Glen Canyon Dam, Arizona, 2011-2020 (Draft EA). The Draft EA's "Proposed Action" is "to better determine whether and how sand conservation can be improved in the Colorado River corridor downstream of Glen Canyon Dam, including areas within Grand Canyon National Park" (p. ix). The Draft EA states that "This protocol for high-flow experimental

releases is part of the ongoing implementation of the Glen Canyon Dam Adaptive Management Program, and is a component of Interior's compliance with the Grand Canyon Protection Act" p. ix).

There is increasing evidence that the high-flow experimental strategy being pursued under the AMP is not working. For example, many of the beaches rebuilt during the 2008 high-flow release were subsequently eroded by a reversion to standard dam operations (p. 56). This has been confirmed by the U.S. Geological Survey (USGS, 2011. Three Experimental High-Flow Releases from Glen Canyon Dam, Arizona—Effects on the Downstream Colorado River Ecosystem, Fact Sheet 2011–3012.) The Draft EA also acknowledges that the humpback chub continues to be highly endangered as a result of degradation of habitat and predation by nonnative fish downstream from Glen Canyon Dam (p. 67-68). In short, the overall health of the Grand Canyon ecosystem continues to decline.

There is a growing consensus among scientists, conservationists, recreationists, legal experts, and Indian tribes that the AMP and its approach to Glen Canyon Dam operations is a failure. A recent law review article bluntly concluded that, "After thirteen years and millions of dollars, the AMP has failed to stabilize or otherwise improve the quality of the fragile downstream ecosystem." (Susskind, Lawrence, et al. 2010. Collaborative Planning and Adaptive Management in Glen Canyon: A Cautionary Tale, Columbia Journal of Environmental Law, Vol. 35:1, p. 4). Another law review article found that "The Glen Canyon Dam Adaptive Management Program has substituted collaborative decisionmaking among stakeholders for the hierarchy of priorities created by law. The AMP has thereby facilitated non-compliance with the Endangered Species Act by the Bureau of Reclamation, which operates the dam, and has effectively given hydroelectric power production and non-native fisheries higher priorities than they are legally entitled to." (Feller, Joseph M. 2010. Collaborative Management of Glen Canyon Dam: The Elevation of Social Engineering Over Law. 8 Nev. L.J. 896, p. 1)

Thus far, these protests have not resulted in changes in Glen Canyon Dam operations. However, the BOR has decided to issue a full environmental impact statement later in 2011 to address these issues more fully. Among the changes that have been suggested by conservationists are shifting most water storage from Lake Powell to Lake Mead; transporting sediment from within Lake Powell below the dam; installing a temperature control device at the dam; implementing Seasonally Adjusted Steady Flows to better simulate natural river flows; and restoring natural or near-natural seasonal flows in the Colorado River by opening new tunnels to bypass Glen Canyon Dam and using mechanical means to transport sediment past the dam.

The bottom line is that the operation of the dam is constrained by the Grand Canyon Protection Act and the Endangered Species Act. Unless the BOR can show concrete progress in protecting the wildlife, archeological, and recreational resources of the Grand Canyon soon, it is possible that the agency will be forced to make dramatic changes in its operation of Glen Canyon Dam. Those changes could seriously curtail the amount of water available for the proposed LPP. Conversely, if already constructed, the operation of the LPP could be determined to be inconsistent with the BOR's mandate under the Grand Canyon Protection Act and Endangered Species Act.

This possibility has not been anticipated or considered in Report 18. It is a major oversight that seriously undermines the credibility of the report and its findings.

UDWR Response:

As summarized in the draft study report, Executive Summary Section ES-3 and elsewhere, "Reclamation's CRSS model showed negligible differences in storage in Lake Powell and releases to the Colorado River when the Proposed Action was compared to the No Action for the Final Planning Study analysis where total depletions are equal. For the No Additional Depletions analysis, there were some minor effects, particularly at lower storage levels and higher release rates at Glen Canyon Dam..."

Differences in releases are minor for all of the cases evaluated. The minor differences in releases would have a negligible effect on stage in the lower Colorado River. Differences between the Proposed Action and No Action Alternative storage were greater for the No Additional Depletions analysis. The relatively minor effects on Lake Powell storage are unlikely to affect Reclamation's ability to make planned high flow releases from Lake Powell for downstream habitat and geomorphology purposes."

Because any of the Action Alternatives considered in the Draft Study Report would have negligible to very minor impacts on storage in Lake Powell, they are unlikely to affect any foreseeable revisions to operations at Glen Canyon Dam. For the purposes of this Study, UDWR cannot foresee what those changes, if any, might be, or what the probability of such changes would be, and therefore must proceed with the most likely scenario, which is that current and planned operations will continue.

GCI Comment 6:

d. The report does not take into account the potential water management implications of the 2007 Colorado River Interim Guidelines. - In 2007, the Bureau of Reclamation finalized its Colorado River Interim Guidelines for Lower Basin Shortages and Lake Powell and Lake Mead (Interim Guidelines), to "address the operations of Lake Powell and Lake Mead during drought and low reservoir conditions." However, the guidelines give little consideration to the potential impacts of climate change on future water supplies.

Some scientists have already concluded that the Interim Guidelines cannot be depended on to adequately ensure sustainable water supplies. They urge much stronger action be taken now to head off potential Colorado Basin water shortages before they can happen. For example:

[P]recipitative action and hastily made policies carry risk. Our concern is that this appears to be the path laid out by the interim guidelines. If Lake Mead elevation did fall to 1025 feet (312.4 m) above sea level, triggering the interim guideline's call for a meeting, storage in Mead would be only 1.5 MAF above the level currently needed to maintain uninterrupted water supplies to Las Vegas and surrounding communities. [This] shows that this could leave an uncomfortably short margin of safety, perhaps only a few years, before Lake Mead's level could fall below Las Vegas' current intake, depending on exactly how Lake Powell were handled in such a contingency. Such a situation may well lead to...hasty, ineffective, and inefficient action. (Barnett, T.P. and D.W. Pierce. 2008. Reply to Comment by J.J. Barsugli et al. on "When Will Lake Mead Go Dry?," Water Resources Research, 45, W09602, doi:10.1029/2009WR008219)

There is a consensus among hydrologists that Lake Powell and Lake Mead are unlikely ever to both fill again. Since 1999, inflow to Lake Powell has been below average in every year except water years 2005 and 2008. In the summer of 1999, Lake Powell was close to full with reservoir storage at 23.5 million acre-feet, or 97 percent of capacity. As of February 9, 2011, the storage in Lake Powell was approximately 13.61 million acre-feet, or 56.0 % of capacity. The overall reservoir storage in the Colorado River Basin in February 2011 was just 53.8 percent of capacity. Lake Mead has declined to record low levels. On November 27, 2010, Mead fell to 1081.85 feet — the lowest elevation since it was still filling in 1937.

This is less than 7 feet above the 1,075-foot level. Under the Interim Guidelines, if Lake Mead dropped to 1,075 feet, it would have triggered a determination by the Secretary of the Interior that a "shortage condition" exists (i.e., that insufficient mainstream water is available to satisfy 7.5 maf of annual consumptive use in the Lower Basin states). In a desperate move to raise Lake Mead and avoid a shortage condition, in April 2011, the BOR instituted equalization" for the first time in history. This will allow unusually large releases from Glen Canyon Dam through the summer.

The unusually large amount of precipitation and snowpack in the Upper Colorado region this winter has eased the immediate crisis. However, as a BOR official reports, “The Upper Colorado River Basin continues to experience a protracted multi-year drought.” (Clayton, Rick. Glen Canyon Dam / Lake Powell: Current Status. Bureau of Reclamation website. May 4, 2011. <http://www.usbr.gov/uc/water/crsp/cs/gcd.html> (accessed 5/2/11)). Despite this past wet winter, the long-term trend is toward less water in the Colorado River Basin.

The triggering of a shortage condition under the Interim Guidelines would be a major event, with far-reaching impacts on millions of people. Under shortage conditions, the Interim Guidelines call for the overall apportionment of water to the Lower Basin states to be reduced to 7.167 maf, with 2.48 maf apportioned to Arizona, 4.4 maf to California, and 287,000 acre-feet (af) to Nevada.

The next trigger would have far greater impacts. It would be activated if Lake Mead is projected to fall below elevation 1,050 feet, the Interim Guidelines call for a reduction in Lower Basin allocation to 7.083 maf. This includes an allocation of 2.4 maf to Arizona, 4.4 maf to California, and 283,000 af to Nevada. The pumping units at the Southern Nevada Water Authority’s (SNWA) original intake facility would no longer be able to operate. This facility is critical to the SNWA’s ability to divert its full Colorado River water entitlement. It is also the minimum elevation for the effective generation of power.

A projected January 1 drop of Lake Mead’s level below elevation 1,025 feet — only 56 feet below November 27, 2010 level of 1081.85 feet and 50.42 feet below the lowest level in the “Minimum Probable” inflow scenario — would open the door to a whole host of unpredictable events. This trigger would further reduce water apportioned to the Lower Basin to 7.0 maf. This includes an allocation of 2.32 maf to Arizona, 4.4 maf to California, and 280,000 af to Nevada. It would bring Lake Mead elevation to only 25 feet above the SNWA’s second remaining intake facility, a highly risky situation. Moreover, a drop to the 1,025-foot level would require the Secretary of the Interior to consult with the Basin States to consider whether the elevation of Lake Mead is likely to fall below 1,000 feet, and implement additional measures if necessary.

The Bureau of Reclamation has never declared a shortage condition. We are experiencing the first sustained drought in the Colorado River Basin when all major storage facilities are in place, and when use by the Lower Basin states meets or exceeds the annual “normal” apportionment of 7.5 maf. The Colorado River water supply system has never been severely tested. At the same time, there are significant questions regarding whether the Interim Guidelines provide adequate safeguards to address the full range of potential problems. One example is the possibility of a sustained severe drought that would cause Lake Powell to drop much faster than the Interim Guidelines anticipate.

The declaration of a shortage condition could potentially begin the unraveling of the delicately constructed structure of treaties, laws, regulations, and guidelines that comprise the “Law of the River.” We face tremendous unknowns with potential implications that are staggering.

Who will get some and who will not? ... There is danger that litigation, associated with water right claims and environmental issues, will compound and put off any rational decisions on this matter until serious damage has been done to the diverse users of the Colorado River. Much of this litigation might be avoided if time dependent water solutions are crafted to reflect today’s and tomorrow’s water realities. (Barnett, T.P. and D.W. Pierce. 2008. When will Lake Mead go dry? Water Resources Research, 10.1029/2007WR006704.)

Report 18 claims that the proposed LPP annual withdrawal of 86,249 acre-feet would have “relatively minor effects on Lake Powell storage” (p. ES-1). In an era of shortages, this is clearly not true. The LPP proposed annual withdrawal is close to one-third of the total annual allocation from the Colorado River

to the city of Las Vegas. If a shortage condition is declared, a withdrawal of “only” 86,249 will be highly contested by multiple water users. The failure of Report 18 to take into account the potential impacts of climate change, which are likely to greatly exacerbate an already difficult situation, is a fatal flaw that must be corrected.

UDWR Response:

The comment is incorrect in stating that the draft study report fails to consider the implications of the Interim Guidelines. Please refer to Sections 3.2.1 and 4.3.1.1. UDWR has not been advised as to what action, if any, would be taken pertaining to LPP water in the event that extended drought conditions trigger reallocations of water throughout the Colorado River Basin under the Interim Guidelines. Therefore any attempt to address these implications would be speculation.

As of July 1, 2011, the water level in Lake Powell is at 70 percent of capacity, with a water level of 3648 ft MSL, having benefited from high snowpack and precipitation in the Upper Basin. Lake Mead is at 45 percent of capacity, with a water level of 1102 ft MSL. These levels are still below normal but are consistent with the operation of reservoirs, which are designed to manage increases and decreases in storage. The comment does not document where a “consensus of hydrologists” states that Lake Powell and Lake Mead will not fill again; as experienced this year, reservoirs can recover rather quickly when precipitation is high. The comment suggests a misunderstanding of the concept of “normal” precipitation, which really is just a mean condition between wetter and drier years.

The 2011 spring runoff inflows from the upper Colorado River basin have exceeded Reclamation’s preliminary projections for inflow to Lake Powell and balancing releases to Lake Mead. The June 24-month study now projects the 2011 Lake Powell water year release at 12.44 million acre-feet, which is not expected to achieve the reservoir balancing objectives because of increasing inflow forecasts to Lake Powell. The projected Lake Powell high elevation for 2011 is about 3,665 feet mean sea level during late July to mid-August, 35 feet below the full pool elevation of 3,700 feet. The significant increase in Lake Powell elevations during 2011 to its highest level since 2001 combined with the 12.44 million acre-feet releases to help achieve reservoir balancing in Lake Mead were unexpected in early 2011, which demonstrates that there is variability on both sides of the climate change equation. The variability and unknowns of precipitation and runoff from year to year are part of the reason why reservoirs are operated on the Colorado River and why Reclamation uses the CRSS model to plan for a range of hydrologic conditions to occur as they manage inflows, releases and power operations.

GCI Comment 7:

e. Conclusion. - Report 18 fails to address the impacts of climate change; fails to take into account recent climate change-related studies, data, and programs; fails to consider the potential for major changes in Glen Canyon Dam operations; and fails to take into account the potential water management implications of the 2007 Colorado River Interim Guidelines. These are fundamental flaws that undermine the credibility of this report and make it impossible to fairly and accurately assess the benefits, costs, and potential impacts of the proposed LPP project. These profound flaws must be corrected through further study and revised reports.

UDWR Response:

Your comment has been noted. Please refer to the responses to GCI comments 3, 4, 5, and 6.

LPPC Comment 74:

Study Report (Section 4)

(Page 4-19 to 4-26) However, the hydrologic model charts used in this report do not anticipate the continuing environmental effects of a change in hydrology of reduced river flows based on the term of the

50 year license. We suggest using a range of flows be used to evaluate future availability of water for the LPP.

UDWR Response:

The charts and tables presented in draft study report Section 4, including those on Page 4-19 through 4-26, include a wide range of river flows and reservoir storage, from 10th percentiles to 90th percentiles. The range of reservoir water levels reflect potential higher or lower inflow levels. As noted in Section 4.3.1, “More than 100 inflow hydrology datasets each are run for the DNF and NPC scenarios resulting in over 100 sets of model results for both inflow hydrology approaches. These time series results, or traces, are summarized by ranking the results at each timestep and determining the 10th, 50th, and 90th percentiles at each time step. These percentiles are presented to summarize DNF and NPC results based on their probability of occurring.”

LPPC Comment 75:

Study Report (Section 4)

(page 4-19 to 4-26) However, the study report results do not represent conditions over the term of license on reservoir storage with the predicted flow reduction. On the regional level, numerous analyses have suggested that climate change will impact the Colorado River over the coming decades. Consensus is growing about the nature and magnitude of those changes and the effects they will have on the patterns of precipitation, runoff, evapotranspiration, over allocation and other related forces. As a result, the Lake Powell Pipeline effects on Lake Powell and the Colorado River system will also change over the 50 year term of the license.

UDWR Response:

Please refer to the response to LPPC comment 74. Based on Reclamation’s WaterSMART 2011 report addressing climate change, the range of flows and associated water levels would be expected to fall within the ranges included in the draft study report. The Reclamation report, *West-Wide Climate Risk Assessments: Bias-Corrected and Spatially Downscaled Surface Water Projections*, for the Colorado River Basin, Section 5.2.1, Hydroclimate Projections, states that “[t]he annual runoff [in the Colorado River Basin] has a very nominal declining trend” from the 1990s to the 2070s, and projects an increase in upper basin precipitation. Section 5.2.2 of that report includes a projection of a shift in the timing of runoff, with more runoff in winter months and less runoff in spring and summer, but projects “no appreciable differences between the decades” in overall runoff from the 1990s to the 2070s. The report does project a gradual, small overall decline in runoff in the Colorado River at Lee Ferry over this time period, which extends beyond the period of study for the LPP.

LPPC Comment 76:

Chapter 4. Environmental Consequences

The Colorado River Simulated System (CRSS) modeling (Page 4-19 to 4-26) used in the Interim Guidelines for Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lakes Powell and Mead, U.S. Bureau of Reclamation (2007) (Interim Guidelines) is very optimistic that reservoir and river levels will be robust in the future. These higher levels are predicted based on Bureau of Reclamation’s (BOR) use of a 100 year average (1906-2010) of the river’s natural flow of 15 million acre feet (maf) measured at Lees Ferry gauging station below Glen Canyon Dam. Assuming flows of 15 (maf) to assess environmental impacts, water quality and quantity in their simulated hydrologic CRSS river modeling gives them the robust levels in the reservoirs and river flows. They are assuming that the past will predict the future. However, due to the 10 year drought the BOR stated in their “provisional calculations of natural flow of the Colorado River at Lee Ferry, Arizona, show that the average natural flow since calendar year 2000-2009 was only 11.982 million acre feet, the lowest ten-year average in over 100 years of record keeping on the Colorado River” BOR’s use of 15 (maf) creates the false sense that there is adequate water supply to keep reservoirs supplied with enough water for all

the demands. The CRSS model does not include the Colorado River Compact apportionments which total 16.5 (maf) or water rights established before the Colorado River Compact was established called “Present Perfected Rights”.

UDWR Response:

The study plan relies on Reclamation’s CRSS modeling to develop natural inflows representative of hydrologic conditions that occurred during the 101-year period from 1906 through 2006 (Direct Natural Flow, index sequential method) and paleo-hydrologic data derived from annual streamflow reconstructions performed using tree-ring chronologies representing the period 762 to 2005 applied to the historic inflow data to represent more variety in the sequencing of wet and dry periods (Nonparametric Paleo-Conditioned inflows) sampled to simulate inflows into Lake Powell. The inflow data sets represent streamflow variability and incorporates the best available information from the U.S. Department of the Interior’s recognized expert agency, the Bureau of Reclamation, in simulating the hydrologic conditions of the Colorado River and Lake Powell.

The CRSS model run by Reclamation for the LPP Project included two scenarios, each consisting of a proposed action (diversion of 86,249 acre-feet annually) and no action. One scenario evaluated the impacts of diverting the LPP water out of Lake Powell near Glen Canyon Dam versus diverting the UBWR water rights for a different use out of the Green River as it flows through the Uinta Basin, including all future upper basin depletions from the Colorado River. The second scenario, requested by the National Park Service, evaluated the impacts of diverting the LPP water out of Lake Powell near Glen Canyon Dam versus not diverting the UBWR water rights from Lake Powell, including only depletions from the Colorado River that are reasonably foreseeable. Both scenarios involve annual releases of 8.23 million acre-feet from Glen Canyon Dam to supply the lower Colorado River basin states of Arizona, Nevada and California with their annual share of water plus about 750,000 acre-feet annually for delivery to Mexico.

Reclamation uses the CRSS to model hydrology of the Colorado River, Lake Powell and other reservoirs to plan for the fluctuations that occur in the system and still meet the demands for water. Drought periods in the Colorado River basin such as the one beginning around 2001 leading to recent lower levels in Lake Powell and Lake Mead are incorporated into the Reclamation CRSS model because the “lakes” are designed and operated as impoundments to store and release water with annual and periodic fluctuations.

The 2011 spring runoff inflows from the upper Colorado River basin have exceeded Reclamation’s preliminary projections for inflow to Lake Powell and balancing releases to Lake Mead. The June 24-month study now projects the 2011 Lake Powell water year release at 12.44 million acre-feet, which is not expected to achieve the reservoir balancing objectives because on increasing inflow forecasts to Lake Powell. The projected Lake Powell high elevation for 2011 is about 3,665 feet mean sea level during late July to mid-August, 35 feet below the full pool elevation of 3,700 feet. The significant increase in Lake Powell elevations during 2011 to its highest level since 2001 combined with the 12.44 million acre-feet releases to help achieve reservoir balancing in Lake Mead were unexpected in early 2011, which demonstrates that there is variability on both sides of the climate change equation. The variability and unknowns of precipitation and runoff from year to year are part of the reason why reservoirs are operated on the Colorado River and why Reclamation uses the CRSS model to plan for a range of hydrologic conditions to occur as they manage inflows, releases and power operations.

The Reclamation-modeled changes in surface water flows and levels of Lake Powell and releases to the Colorado River from Glen Canyon dam account for the fluctuations that occur as part of the reservoir operations as influenced by fluctuations in precipitation, runoff and climate patterns. The draft study report concludes that the LPP Project at full diversion of 86,249 acre-feet would not have significant impacts on surface water resource parameters, in part because the volume of water diverted for the LPP

Project is a fraction of the volume of water that annually flows through and is stored in Lake Powell, and in part because Lake Powell is operated to annually deliver 8.23 million acre-feet downstream.

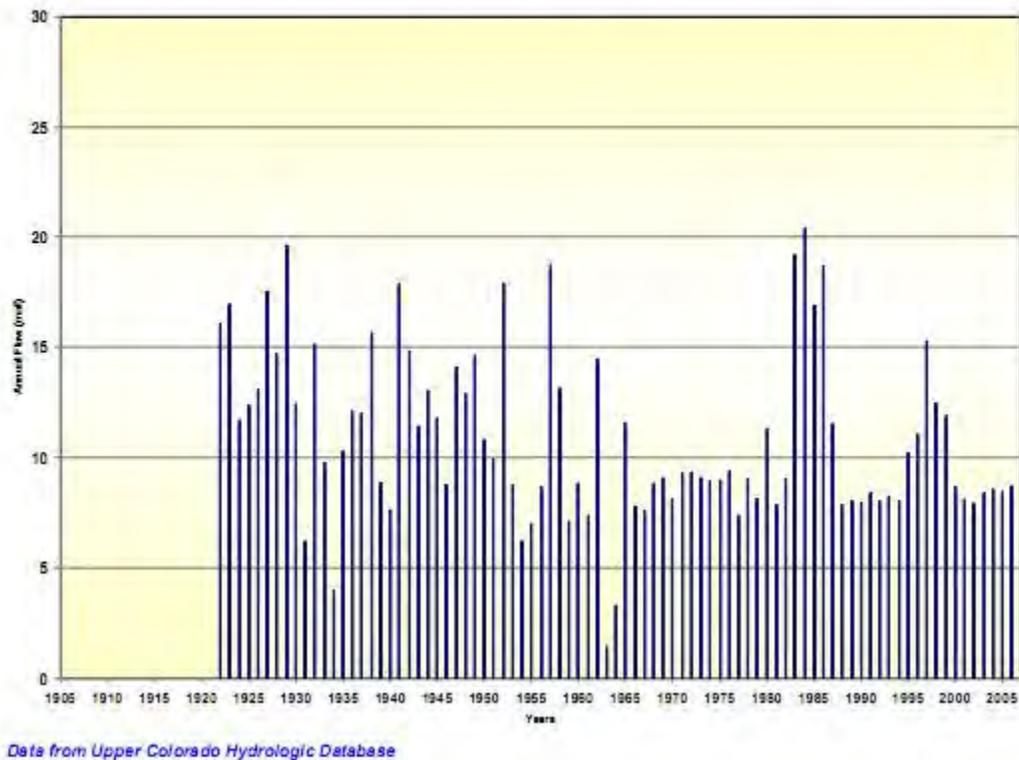
LPPC Comment 77:

We disagree with continuing to use of 15 (maf) as the average flow to assess environmental impact of the LPP. The study report should consider a range of flows at the Lees Ferry gauging station. Chart 1 shows the historic annual flow 15 (maf) as an average is an optimistic assumption for future water availability.

Chart 1

Interim Guidelines EIS 2007 Chapter 3 Affected Environment Page 3-17

Figure 3.3-2
Historic Annual Flow of the Colorado River at Lees Ferry Gaging Station, Arizona
1922 through 2005



UDWR Response:

The CRSS model uses 15 maf as a calculated “natural flow” that takes into account upstream depletions. The natural flow of 15 maf is a planning component that enables the CRSS model to make projections which include those depletions, and help provide for them in planning. For the purposes of the LPP Water Resources Study, the CRSS model run by Reclamation for the LPP Project included two scenarios, each consisting of a proposed action (diversion of 86,249 acre-feet annually) and no action. One scenario evaluated the impacts of diverting the LPP water out of Lake Powell near Glen Canyon Dam versus diverting the UBWR water rights for a different use out of the Green River as it flows through the Uinta Basin, including all future upper basin depletions from the Colorado River. The second scenario, requested by the National Park Service, evaluated the impacts of diverting the LPP water out of Lake Powell near Glen Canyon Dam versus not diverting the UBWR water rights from Lake Powell, including only depletions from the Colorado River that are reasonably foreseeable. Both scenarios involve annual

releases of 8.23 million acre-feet from Glen Canyon Dam (just upstream of Lee Ferry) to supply the lower Colorado River basin states of Arizona, Nevada and California with their annual share of water plus about 750,000 acre-feet annually for delivery to Mexico. The graph depicted in this comment from the November 2007 *Final Environmental Impact Statement, Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lakes Powell and Mead*, represents actual measured annual flows and is consistent with the annual releases of 8.23 million acre-feet from Glen Canyon Dam.

LPPC Comment 78:

To protect everyone’s interest, it is time for BOR to abandon the scientifically unsound position that historical data provides the best basis for analyzing ongoing and future river management activities. The BOR has been dangerously slow in acknowledging climate change and its impacts on water resources. Virtually all aspects of water management, from timing and availability of supply and demand are based on past conditions; past conditions are no longer a reliable predictor for future conditions. Yet, this is the currently the way the Applicant and BOR are evaluating the LPP.

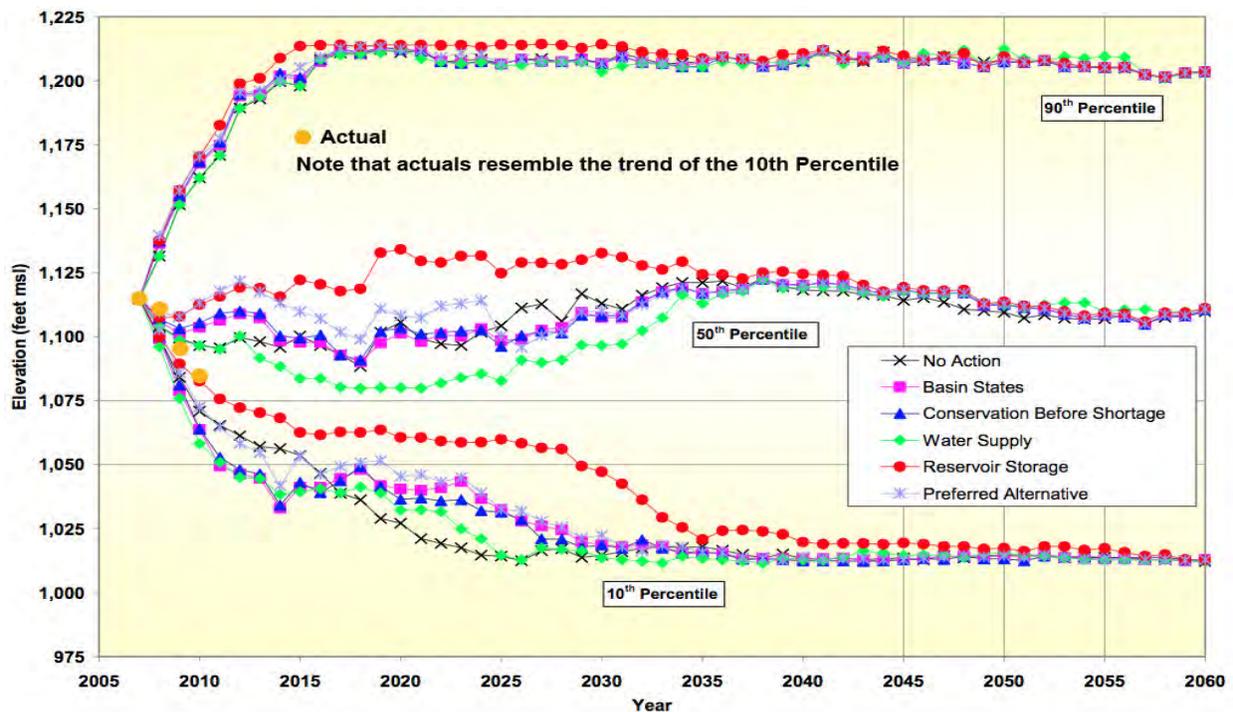
UDWR Response:

UDWR disagrees with the comment. Although no methodology is perfect, use of historical hydrologic data in developing simulations that allow for projections of future hydrologic events is by far the most widely accepted, defensible, and scientifically sound approach.

LPPC Comment 79:

The model used for the Interim Guidelines predicted most probable 50th percentile and did not predict the fall of Lake Mead. The 10% percentile (minimum probable) correctly predicted the fall of Lake Mead. Using the 10th percentile as most probable is proving to be a better predictor of future conditions and could be used for a range of conditions to assess future environmental impacts on elevation and storage in Lake Powell.

Chart 11



**Special note-This is not a Reclamation graphic. It is altered to illustrate Reclamation's modeling in the Interim Guidelines was not according to reality. The orange dots represent the actual elevation at Lake Mead from Dec 31, 2006 to Dec 31, 2010 which was predicted as the 10th percentile (minimum probable) and not the most probable at 50percentile. (the formula moves from minimum probable (10percentile), most probable (50percentile), and maximum probable (90th percentile).*

UDWR Response:

As of July 1, 2011, the water level in Lake Mead is at 1102 ft MSL. This is below the 50th percentile but much closer to the 50th percentile than the 10th percentile. The chart above plots only four points for Lake Mead, which is insufficient to establish a trend. Water levels will not track exactly along any projected line due to variation in weather and climate from year to year, but it is expected that over a long period of time, the lake water levels will alternate above and below the 50th percentile and generally within the range of conditions simulated.

LPPC Comment 80:

Study Report (Chapter 7) Cumulative Impacts

(page 7-1) This study report reads:

“Population growth would result in urban development and land use changes that would cause increased runoff from impermeable surfaces. Within WCWCD the population is expected to increase by more than 6 times the 2005 level of 127,090 to 860,378 by 2060. Increased runoff could affect peak flows and geomorphology in the urban centers in Kane, Iron, and Washington Counties. Impervious areas directly connected to channels and storm sewers can transport runoff more quickly than natural conveyances. The shortening of travel time quickens the rainfall-runoff response, causing flows in streams to peak faster and higher than under pre-developed site conditions.”

We recommend the study report assess the runoff and the effects on the endangered Virgin River Fishes over the 50 year term of the license before the Commission considers this report complete.

UDWR Response:

Impacts on Special Status Aquatic Species, including endangered fish and other species, are addressed in Draft Study Report 11. The comment assumes that water conveyed from Lake Powell would induce growth and development which in turn would cause indirect effects on environmental resources. Please refer to the response to USFWS comment 1.

LPPC Comment 81:

Study Report (Chapter 4)

(page 4-19 to 4-26) Yet, the study results do not represent conditions and limitations on streamflow over the term of the license as we mentioned above thus, the report used the wrong data and was not conducted as provided for in the approved study plan that would consider limitations on streamflow.

UDWR Response:

Please refer to the responses to LPPC comments 74 to 79.

CWCB Comment 3:

The Draft Surface Water Resources Study (Report 18) describes how operation of the LPPP could affect flows in the Virgin River drainage – a Lower Basin tributary that flows to Lake Mead. The Study does not, however, adequately address how the LPPP's affect on Virgin River flows will be accounted for in a manner consistent with the Law of the River. This issue should be contemplated as the LPPP feasibility, licensing and permitting processes progress.

UDWR Response:

The comment calls for a legal analysis, which is not the purpose of the study reports.

KBPI Comment 144:

Section 5.1 Mitigation - Draft Report 18 indicates that “[m]itigation measures would not be necessary because the impacts on streams, reservoirs, lakes, peak flows and geomorphology would not be measurable.” Draft Report 18 at 5-1. However, Draft Report 18 earlier indicates that construction of the Project would require crossing some streams with a live flow. See Draft Report 18 at 4-16 to 4-17. Draft Report 18 dismisses any effect on stream flow, even as it notes that stream flow would be diverted and that some water “would be pumped out . . . and disposed,” Draft Report 18 at 4-16, that construction “could result in different flow velocities” Draft Report 18 at 4-16 to 4-17, and construction “could result in . . . erosion of bank and bed materials.” Draft Report 18 at 4-16 and 4-17. Study Plan 18 requires that Draft Report 18 “summarize potential mitigation . . . methods for the proposed Project.” Study Plan 18 § 18.6.4. By summarily dismissing the need for mitigation without any description or analysis, Draft Report 18 violates Study Plan 18. Draft Report 18 must provide a more thorough and verifiable explanation for why mitigation measures are unnecessary or it must provide a description of mitigation measures. Absent such explanation, Draft Report 18 is noncompliant with Study Plan 18.

UDWR Response:

The incorporation of the Best Management Practices (BMPs) identified in sections 4.3.2.1 and 4.3.3.2, Stream Crossings, is anticipated to eliminate the need for mitigation measures. The BMPs include constructing the pipeline across intermittent streams and washes during the dry season to avoid any impacts on surface water resources, and having adequate equipment and materials on site to divert any flows caused by storms or flash floods. The BMPs at perennial stream crossings would include constructing the pipeline during low flow periods and only constructing half of the crossing at a time. The amount of water that is expected to seep into the construction site and require disposal is minimal, as are the changes in flow velocities and erosion. This will be clarified in the final study report.

KBPI Comment 145:

Chapter 6 Unavoidable Adverse Impacts - Draft Report 18 indicates that while the Project alternatives would alter the hydrologic regime of streams within Washington County, such impacts “would not be measurable.” Draft Report 18 at 6-1. The basis for this assertion is not entirely clear. Draft Report 18 earlier notes that certain USGS stream gages are unable to gage streamflow beyond a certain accuracy. Draft Report 18 at 4-9. If the assertion that impacts would not be measurable is based on the accuracy of the gages, Draft Report 18 should explain this more clearly and also evaluate whether improved monitoring is required. See Study Plan 18 § 18.6.4 (requiring a summary of “monitoring methods”); Draft Report 18 at 5-1 (indicating that streamflow monitoring is conducted by the USGS and local water conservancy districts). If the assertion that impacts would not be measurable is based on other reasoning, Draft Report 18 should explain this more clearly. Absent such explanation, Draft Report 18 is noncompliant with Study Plan 18.

UDWR Response:

As stated in Chapter 6, “these hydrologic impacts would not be measurable at USGS gages in the Virgin River.” The accuracy of the USGS gages in the Virgin River is similar to the accuracy of USGS gages in other watersheds. There is a practical limit to the accuracy of stream flow measurement, and the USGS gages in the Virgin River are within this practical accuracy range.

KBPI Comment 146:

Chapter 7 Cumulative Impacts - Draft Report 18 provides a cursory explanation of cumulative impacts and indicates that “[t]he remainder of the cumulative impacts analysis is pending completion for

identification of interrelated projects that would cause cumulative impacts with the LPP project.” Draft Report 18 at 7-1. Study Plan 18 requires that Draft Report 18 “document any significant cumulative impacts estimated to occur for water resources.” Study Plan 18 § 18.6.4. Postponing the inclusion of cumulative impacts analysis in Draft Report 18 limits the ability of interested parties to comment on Draft Report 18. Draft Report 18 must include a full analysis of cumulative impacts, as required by Study Plan 18. The Kaibab Tribe hereby requests additional time to submit comments on the cumulative impacts analysis once that analysis is complete.

UDWR Response:

UDWR is currently completing the cumulative impacts analysis and will include the analysis in the final study report.

USFWS Comment 70:

Draft Study Report 18: Surface Water Resources Hydrologic Modeling

Please include additional explanation of the Virgin River Draft Simulation Model (VRDSM). For example, the document should describe the input into the VRDSM and the corresponding modeling assumptions and limitations. Documentation of the model needs to be made available to outside agencies, such as the referenced “Utah Department of Natural Resources Division of Water Resources (UDWR) 1998. Virgin River Daily Simulation Model. April.”

UDWR Response:

Section 2.2.2.1, Virgin River Daily Simulation Model, and Appendix 1, Virgin River Daily Simulation Model and Description, describe the assumptions and mechanics of the VRDSM at an appropriate level of detail for this study report. References have been provided and more detailed documentation of the model is available upon request. UDWR will treat this comment as a request for the documentation and will provide it to USFWS. Please refer to the response to USFWS comment 84.

USFWS Comment 80:

If the VRDSM was described and published in a peer-reviewed journal, this reference should be included.

UDWR Response:

This will be clarified in the final study report.

USFWS Comment 81:

Section 4.3.2: Virgin River Drainages, page 4-8: The authors state that since the differences between scenario 1 and scenario 2 are less than the published USGS gage error, they are not significant. Inspection of Table 4-4 reveals that simulation results for USGS gages 09408150 and 09413200 are greater for scenario 1 seven and nine times, respectively. There is only one instance where scenario 2 was greater than scenario 1 (during March at node QX21). The remaining gage locations all have larger flows resulting from scenario two, except for April and May when scenario 1 flows are greater. These trends appear to be significant and should not be dismissed because they are smaller than the USGS measurement error.

UDWR Response:

The accuracy of water measurements in the field represents a practical guideline for the determination of significant impacts, any accuracy that goes beyond the accuracy of the river gages is not justifiable by the best available data set. Furthermore, the difference between Scenarios 1 and 2 in Table 4-4 are typically less than five percent, which is half the measurement accuracy. If field conditions can only be verified within a specific degree of confidence, and the modeling is based directly or indirectly on historic measurements, the modeling cannot provide more accurate results.

USFWS Comment 82:

The VRDSM scenario exercise should be expanded to include present conditions and the No Action scenario.

UDWR Response:

Scenario 1 represents the base case, or No Action scenario. It simulates full utilization of Virgin River water rights, without any additional storage or Lake Powell Pipeline deliveries. Scenario 2 represents the Proposed Action scenario. It simulates future conditions with the expanded secondary system utilizing 2,500 acre feet of re-regulating storage and 69,000 acre feet of annual Lake Powell Pipeline deliveries into Sand Hollow Reservoir. These two scenarios are adequate to determine the impacts of the Proposed Action.

USFWS Comment 83:

On page 13 of “DRAFT Lake Powell Pipeline Hydrologic Modeling” the text on the top of the graph indicates that the plot is for June. In contrast, the caption on the bottom of the graph indicates that the data is for May. Please be consistent.

UDWR Response:

This will be clarified in the final study report.

USFWS Comment 84:

We were not able to obtain the attachments listed for the report, thus we are unable to provide comments at this time. We recommend that you provide these attachments at a later date so we have an opportunity to review.

UDWR Response:

The attachments were part of the draft study report PDF. They included Appendix 1, Virgin River Daily Simulation Model and Description, and Appendix 2, Reclamation Colorado River Model Report. Copies of these attachments have been forwarded to the USFWS.

USFWS Comment 85:

We believe that the analysis in the Draft Study Report 18, Surface Water Resources does not accurately assess the effects of the LPP project flow changes to the Virgin River. Thus, the report incorrectly minimizes the potential effects to aquatic species of concern. For example, page 4-9 states that Project changes to water flow are within the measurement accuracy of the USGS gages and therefore not measureable between the two flow scenarios. However, Table 4-4, shows that for multiple months and at multiple gages there are flow decreases on the Virgin River. It is unclear from the analysis why the percent of gage accuracy was arbitrarily chosen to determine if impacts would result from flow changes. Instead, we recommend that impacts to aquatic species of concern resulting from changes in flow be assessed using biological criteria such as changes in water temperatures, and quality/quantity of spawning habitat, rearing habitat, adult habitat, food availability. For example, researchers determined that in 2007 the wild woundfin population was functionally extirpated throughout its designated critical habitat. Although woundfin were since restocked into the Virgin River, causes for the decline in woundfin numbers was largely attributed to environmental conditions including continued drought with summer temperatures exceeding behavioral thermal maximum and critical thermal maximum. Thus, Virgin River fishes are extremely susceptible to high water temperatures which are more apt to occur during low flow or drought events. Also, the existing analysis used average monthly flows at several Virgin River gages to compare flow related changes between the two scenarios. However, as we previously noted drought-induced low instream flows and high water temperatures have at times had dire effects on wild populations of native fish. Thus, we recommend that the impact analysis use worst-case instream flow scenarios to determine potential effects to aquatic species of concern. Analyses of the hygrograph should

be completed to determine the projected frequency of drought in the future and how Project related changes to Virgin River flows would affect instream flow conditions, and the ecological functions of Virgin River fishes that relate to these functions (breeding, feeding, sheltering, etc.).

UDWR Response:

The LPP Project would have no measureable impacts on surface water flows, and consequently, no “worst-case instream flow scenario” would differ from existing conditions. The VRDSM model was developed by UDWR. The USFWS, Utah Division of Wildlife Resources and other participants in the Virgin River Resource Management and Recovery Program used the VRDSM to monitor water development depletions from the Virgin River as part of the recovery effort for endangered fishes.

Draft Study Report 19 – Water Supply and Climate Change

Florence Comment 1:

According to the study, Washington County estimated the maximum water conservation people would tolerate would be 241 gallons/per person/day (GPPD), implemented by 2060, based on permanent resident use. According to the chart, Washington County residents used 291 GPPD in 2010. With future conservation that amount would be reduced by approximately 10 GPPD per decade.

To get the 241 GPPD amount, they asked County people and others how much water they would like to use. This is based on people’s preferences, which would probably be green lawns, watering those lawns at their convenience, and minimal watering restrictions. The 241 GPPD amount should not be based upon what people are used to but what we need to live on. Washington County is a desert and extensive lawns don’t belong here.

UDWR Response:

Your comment has been noted.

Florence Comment 2:

My opinion is that Washington County needs to educate, encourage through incentives, and institute water conservation practices immediately. The County also should make people pay the full price of their water usage. People will naturally start conserving if they have to pay more.

UDWR Response:

Your comment has been noted.

Rutherford Comment 10:

Number used to forecast our area’s water demand is out of line with other cities: Using .89 ac ft per unit for forecasting water demand gives an artificially high number compared with other similar desert communities. ... While reviewing the minutes from the March 22, 2011 project update meeting in St. George, I noted the following two items that reference the .89 ac/ft per unit (home) issue:

*Did you use 0.89 acre-feet per housing unit for the water needs analysis as recommended by the County Planning Department? **Response:** Yes.*

And this:

*Clarification: Did you use historical usage for the various districts, as opposed to using a set number such as 0.89 acre-feet per unit and were the conservation estimates applied to these historical usage numbers? **Response:** Yes, historical usage for each water conservancy district was used in the analysis and conservation estimates were applied to the historical usage numbers.*

As a resident, who FERC will obligate financially through their licensing decision, I have to ask, “Which

is it? Did they use .89 ac/ft per unit or not?” To the average person reading these two answers this would not be very clear.

UDWR Response:

Please refer to UDWR responses to Rutherford comments 7 and 8 (Draft Study Report 10 – Socioeconomics and Water Resource Economics) regarding comparisons in water use between cities. The 0.89 acre-foot per equivalent residential unit value is the minimum standard of the Utah State Drinking Water Board for minimum level of service used in planning projects and calculation of impact fees. This minimum value has been adopted by the WCWCD as required by the Utah State Drinking Water standards. The text of the final Water Needs Assessment study report on page 4-3, Section 4.1.2 will be amended to clarify the 0.89 acre-foot per equivalent residential unit is the minimum standard of the Utah State Drinking Water Board for minimum level of service used in planning projects and calculation of impact fees. The 0.89 acre-foot per equivalent residential unit was used in the water needs analysis, as required by the Utah State Drinking Water Board (not the County Planning Department as stated in the comment) as the basis for impact fees. The clarification question on historical use versus the 0.89 acre-foot per unit responded to in the Initial Study Report Meeting Summary was misinterpreted. Historical water usage for each water conservancy district was used in the water needs assessment as part of the analysis of conservation estimates, as implied in the response to the Clarification question. The 0.89 acre-foot per equivalent residential unit was not used to analyze water conservation; it was used to explain the impact fee structure that provides a baseline amount of water for lots up to 10,000 square feet.

Rutherford Comment 12:

Water pricing is another issue that has not been adequately addressed in our area. No significant attempt to price water to achieve greater conservation has been witnessed. The following question and subsequent answer from the March 22 meeting minutes indicate that FERC seems to have little interest in demanding a real evaluation via these studies to assess the real “need” for this additional water.

*(Question stated in the Initial Study Report Meeting Summary) Has reduction in demand due to rising water prices been included in the analysis? **Response:** Reduction in demand from rising water prices has not been included in the analysis.*

UDWR Response:

The comment incorrectly assumes there has been a reduction in demand for water and that a reduction in demand in the WCWCD service area has resulted from rising water prices. Water resources planning projects and their analyses are not based on short-term trends. The overall per capita rate of consumption has been reduced as a result of water conservation measures implemented in the WCWCD service area; however, the overall demand for water continues to increase with increasing population. The WCWCD has an increasing block rate structure where the price of water increases with increases in water usage as part of their water conservation program (please refer to the response to WRA comment 16). The Regional Water Supply Agreement with cities in the St. George metropolitan area (please refer to Table 5-1 on pages 5-5 and 5-6 in the draft Water Needs Assessment study report) requires water conservation rate structures. Some of the cities in the WCWCD service area have increasing block rate structures for increased water usage (please refer to Section 5.2.2.2 in the draft Water Needs Assessment study report) as part of their water conservation programs. Additionally, the WCWCD has a water availability charge for new development that increases with the size of landscaped area and thus discourages expansion of water demand for landscape irrigation.

Rutherford Comment 13:

Answers to questions such as shown below, indicate clearly that our excessive usage is driving the decision-making process and study process for this project. This is like the tail wagging the dog. Although our local politicians and water leaders have made no significant effort to encourage (or require) reduced water usage, they are condemning us to an expensive project based on that lack of

effort.

(Question stated in the Initial Study Report Meeting Summary) *Where does the 34,000 acre-feet of outdoor water use reduction come from in the No Lake Powell Water Alternative? **Response:** Based on the water needs analysis, the alternatives study evaluated how to develop equivalent water supplies without the LPP project. The 32,721 acre-feet in the No Lake Powell Water Alternative is based on existing per capita outdoor water use of culinary supplies.*

Let's face it, no matter how you calculate the usage numbers (massage them, use new math, whatever!), Washington County does not stack up when it comes to water conservation!

UDWR Response:

Your comment has been noted. Please refer to the responses to Rutherford comments 7 and 8 regarding comparison of water usage rates between cities. Water conservation comparisons between cities are not appropriate for the same reasons water usage rate comparisons between cities are not appropriate, as explained in the responses to Rutherford comments 7 and 8. The appropriate use of water conservation data is to measure progress between points in time within a city or water district toward achieving water conservation goals.

Rutherford Comment 21:

I do not see where the effects of other proposed projects upstream of the proposed Lake Powell Pipeline are being considered in determining what effects all projects would have on the Colorado River and her ability to sustain the communities that are now reliant on her water. Projects such as the proposed Million pipeline project, the northern Utah proposed nuclear plant, etc., need to be factored in along with climate change projections that attest to the fact that lower levels will be seen in the future in the river.

UDWR Response:

The Bureau of Reclamation CRSS model, used to analyze the LPP impacts on Lake Powell and the Colorado River, incorporated the depletions of existing and proposed water projects within the Upper Basin of the Colorado River that are reasonably foreseeable according to the U.S Department of the Interior's regulations at 43 CFR 46.30. The modeling analysis assumptions and results are described in the draft Surface Water Resources study report (please refer to Sections 2.2.2.2, 4.3.1.2, 4.4.1.2, and Appendix 2, Reclamation Colorado River Model Report).

Rutherford Comment 22:

The use of a 30-50 year period to determine cumulative effects as the study plans have been allowed to do, it not enough to answer the tough questions that will affect this area's future residents. The excerpt below from FERC's licensing handbook leads me to the conclusion that FERC must consider long-term cumulative effects on the Colorado River:

The Commission must ensure that the project to be licensed is best adapted to a comprehensive plan for developing the waterway for beneficial public purposes. In making this judgment, the Commission considers comprehensive plans (including those that are resource-specific) prepared by federal and state entities, and the recommendations of federal and state resource agencies, Indian tribes, and the public.

FPA Section 10(a), Comprehensive Development Standard

UDWR Response:

Your comment has been noted.

FERC Comment 40:

It is not clear from the discussion in Chapter 4 of the Climate Change portion of the draft study report what other foreseeable projects are considered in the analysis other than the LPP. Please revise the study report to identify the other foreseeable projects used in the CRSS model.

UDWR Response:

The final study report will identify the other reasonably foreseeable projects included in the Reclamation CRSS model.

FERC Comment 41:

Revise the study report to include an evaluation of the cost of alternatives for existing and potential future supplies in accordance with section 19.6.5 of the Revised Study Plan.

UDWR Response:

The final study report will include an evaluation of the cost of alternatives for existing and potential future supplies as described in Section 19.6.5 of the approved study plan.

EDF Comment 1:

Comments in this letter are limited to how the draft study reports assess the impacts of climate change on water supply in the Colorado River Basin, the concomitant effects on water availability for the proposed project, the effects of limited water supply on the ability of the proposed project to and deliver water, and the cascading impacts on water users and third parties both within and outside of the service area of the proposed project. Significantly, this letter includes analyses conducted independently by EDF. We urge the Federal Energy Regulatory Commission (Commission) to consider these new analyses, and we furthermore urge the Commission to require the project proponents to replicate these analyses in the study reports.

UDWR Response:

The draft study report on Climate Change has been prepared to comply with the study plan as approved by FERC. The new independent analyses referenced in the comment do not conform to the approved study plan.

EDF Comment 2:

The Colorado River basin is ground zero for the hydrologic impacts of climate change. For years studies of climate change on global hydrologic patterns have predicted drier conditions in the desert southwest of North America (see IPCC, 2007). Recent improvement in the downscaling of global circulation models has led to greater specificity in the geospatial representation of results, and paved the way for assessing river system operations under climate change conditions. The Commission, as a federal agency with permitting authority for water resources development projects, has a special obligation to ensure use of the best available climate change science, as state and local agencies are typically not yet equipped to do so themselves.

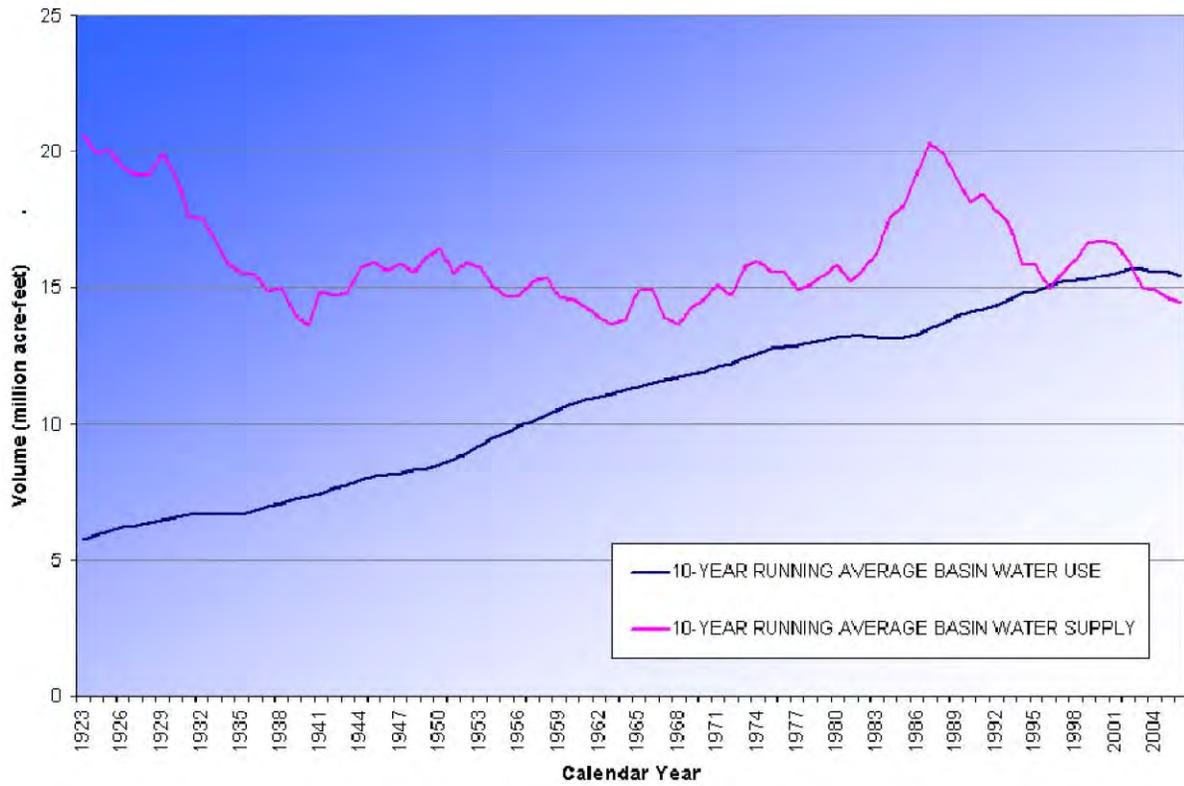
UDWR Response:

Your comment has been noted.

EDF Comment 3:

Significantly, the Colorado River has entered the age of limits. Figure 1, prepared by Reclamation, depicts 10year 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 Commission and 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, longterm 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.

Figure 1. Colorado River Basin Historical Supply and Use (figure prepared by Reclamation and published in Reclamation et al., 2009).

UDWR Response:

The 2011 spring runoff inflows from the upper Colorado River basin have exceeded Reclamation's preliminary projections for inflow to Lake Powell and balancing releases to Lake Mead. The June 24-month study now projects the 2011 Lake Powell water year release at 12.44 million acre-feet, which is not expected to achieve the reservoir balancing objectives because of increasing inflow forecasts to Lake Powell. The projected Lake Powell high elevation for 2011 is about 3,665 feet mean sea level during late July to mid-August, 35 feet below the full pool elevation of 3,700 feet. The significant increase in Lake Powell elevations during 2011 to its highest level since 2001 combined with the 12.44 million acre-feet releases to help achieve reservoir balancing in Lake Mead were unexpected in early 2011, which demonstrates that there is variability on both sides of the climate change equation. The variability and unknowns of precipitation and runoff from year to year are part of the reason why reservoirs are operated on the Colorado River and why Reclamation uses the CRSS model to plan for a range of hydrologic conditions to occur as they manage inflows, releases and power operations. The Federal agencies and the seven Colorado River Basin states, have historically and, will continue, to refine operations to adaptively meet demands with the available supply.

EDF Comment 4:

In considering the adequacy of the draft study reports as the basis for the Commission's decisions on the Lake Powell EIS, the Commission should look carefully at how the analyses address three critical issues: how climate change is projected to impact Colorado River Basin water supply; how physical water availability for the project may be affected by climate change; and how the proposed project will operate

in the future if climate change diminishes Colorado River Basin water supply. We recommend to the Commission that study reports #19 and #10 are not complete and request that the Commission not approve the study reports as complete and ready for environment analysis for the EIS until our concerns below are included in the study reports.

UDWR Response:

The UDWR assumptions, analyses and conclusions conform to the requirements of the approved study plan. The Reclamation SECURE Water Act Section 9503(c) report was not available to UDWR during preparation of either the Climate Change approved study plan or the Draft Climate Change Study Report. The final study report will incorporate appropriate information from the Reclamation SECURE Water Act Section 9503(c) report into the information presented and summarized.

EDF Comment 5:

- 1. Climate science is improving rapidly and the Commission should require use of the best available information to date in assessments of climate impacts on the proposed project. Specifically, the Commission should require study plan analyses to use Reclamation’s April 25, 2011 data as well as any additional climate change inflows data developed by Reclamation.***

Findings regarding water supply in Lake Powell as reported in study report 19: Climate Change are based on rapidly emerging science of downscaling global circulation models. On April 25, 2011 U.S. Bureau of Reclamation released “SECURE Water Act Section 9503(c) – Reclamation Climate Change and Water 2011” that includes projections for Colorado River Basin water supply through the 21st century. Specifically, Reclamation’s report projects a decrease in mean annual runoff of 8.5% for the basin above Lees Ferry. In a separate effort, the Upper and Lower Colorado regional offices of Reclamation are developing climate change projections for Colorado River inflows through the 21st century which are expected to be published mid2011.

UDWR Response:

Please refer to the response to EDF comment 4.

EDF Comment 6:

- 2. The study reports fail to assess how physical water supply may affect the ability of the Lake Powell Pipeline to deliver water. The Commission should require the project proponent to update study report 19 to include analyses of how climate change is projected to impact water availability for the proposed project, specifically also including implementation of the 1922 Colorado River Compact in the modeling analysis.***

Study report 19 briefly addresses the potential impact of climate change on water supply at Lake Powell, noting a 2008 study that projected inflow reductions of 1020% correlate to a 2651% probability that Lake Powell would go dry at some point by midcentury, assuming the extension of today’s management strategies, and furthermore noting “even without climate change, there is a 50% chance the system would go dry by 2037.” This is an important finding that has significant implications for the ability of the proposed project to deliver water (not to mention its ability to offset the energy demand of pumping water for the proposed project with hydroelectric power generation).

However, the study report fails to address an important corollary question: to what extent would limits on water supply in Lake Powell impact the physical ability of the Lake Powell Pipeline to deliver water? Chapter 4 of the same study report 19 assesses water availability in Lake Powell under two hydrologic scenarios, a) “direct natural” (projecting the 19062006 hydrologic record into

the future), and b) “nonparametric, paleoconditioned inflows” (projecting longterm past records of inflows, generated through study of tree ring records, into the future). Significantly, neither of these hydrologic scenarios is informed by climate change projections. Moreover, this analysis fails to address the finding reported earlier in the chapter that climate change impacts may cause Lake Powell to go dry. Figure 2, below, compares total basin inflows under three hydrologic inflow scenarios developed by Reclamation (direct natural, nonparametric paleoconditioned, and climate change) and demonstrates that the climate change flow scenario is considerably drier than either the direct natural or nonparametric paleoconditioned flow scenarios.

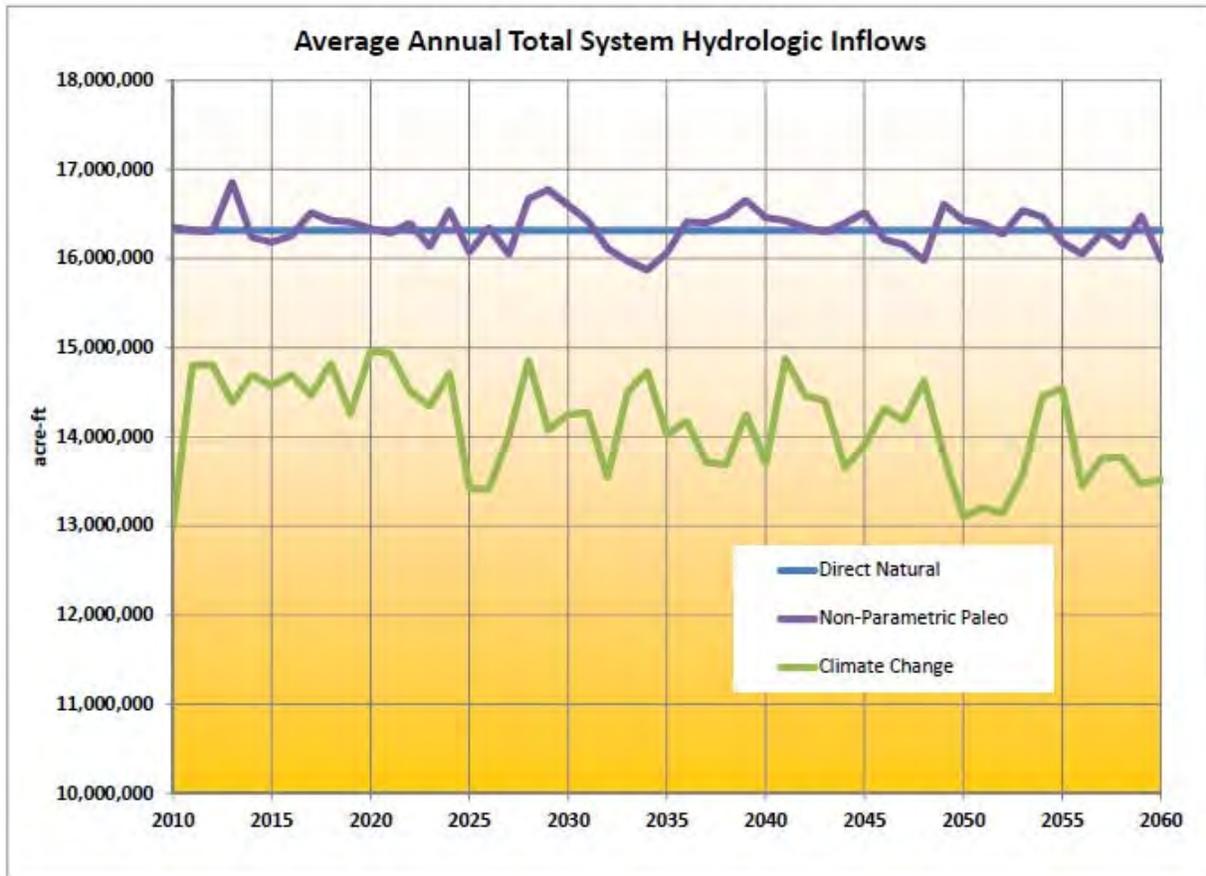


Figure 2. Average annual total system hydrologic inflows for the Colorado River Basin through 2060

UDWR Response:

Please refer to the response to EDF comment 4.

EDF Comment 7:

Moreover, analysis in chapter 4 of study report 19 fails to project implementation of the Colorado River Compact (Compact), a legally binding interstate compact that has been in effect since 1922. The version of the Colorado River Simulation System (CRSS) model used for analysis in the study report does not include a “rule” for ensuring deliveries from the Upper Basin to the Lower Basin as required by the Compact. The direct natural inflow hydrology used in CRSS is not sufficiently dry as to warrant this analysis. However, the nonparametric paleo inflow hydrology does result in projections that show Upper Basin deliveries to the Lower Basin as insufficient to comply with the with the Compact. The climate

change inflow scenario results in a significant probability that the Upper Basin will at some point be required to make additional releases from Lake Powell and possibly curtail water uses in order to ensure compliance with the Colorado River compact. A remaining uncertainty is the volume of deliveries required from the Upper Basin to the Lower Basin under the Compact. One interpretation suggests that 75 million acrefeet is required over any 10-year period. Another interpretation suggests that 82.5 million acrefeet is required over any 10-year period.

UDWR Response:

Please refer to the response to EDF comment 4. The final study report will clarify the deliveries from the Upper Basin to the Lower Basin.

EDF Comment 8:

We prepared an independent CRSS analysis of Lake Powell water supply that uses a climate change inflow scenario similar to that published in Reclamation’s SECURE report, and assumes Compact deliveries at the 75 million acrefoot level. This analysis projects a 27% probability that the water surface elevation in Lake Powell would be below 3375 feet msl (the stated intake level for the proposed project) in any given year between 2010 and 2099 (see figures 3 and 4). If the compact delivery obligation is assumed to be 82.5 million acrefeet the probability of Lake Powell falling below 3375 feet msl increases to as much as 37%. We urge the Commission to require the project proponent, working with Reclamation, to replicate these analyses themselves. We urge the Commission to find that study report 19 has not been properly conducted because the analysis does not consider hydrologic conditions projected for the time period during which the project is proposed to be operational, and because the CRSS analysis used is flawed in that it does not demonstrate implementation of the Compact.

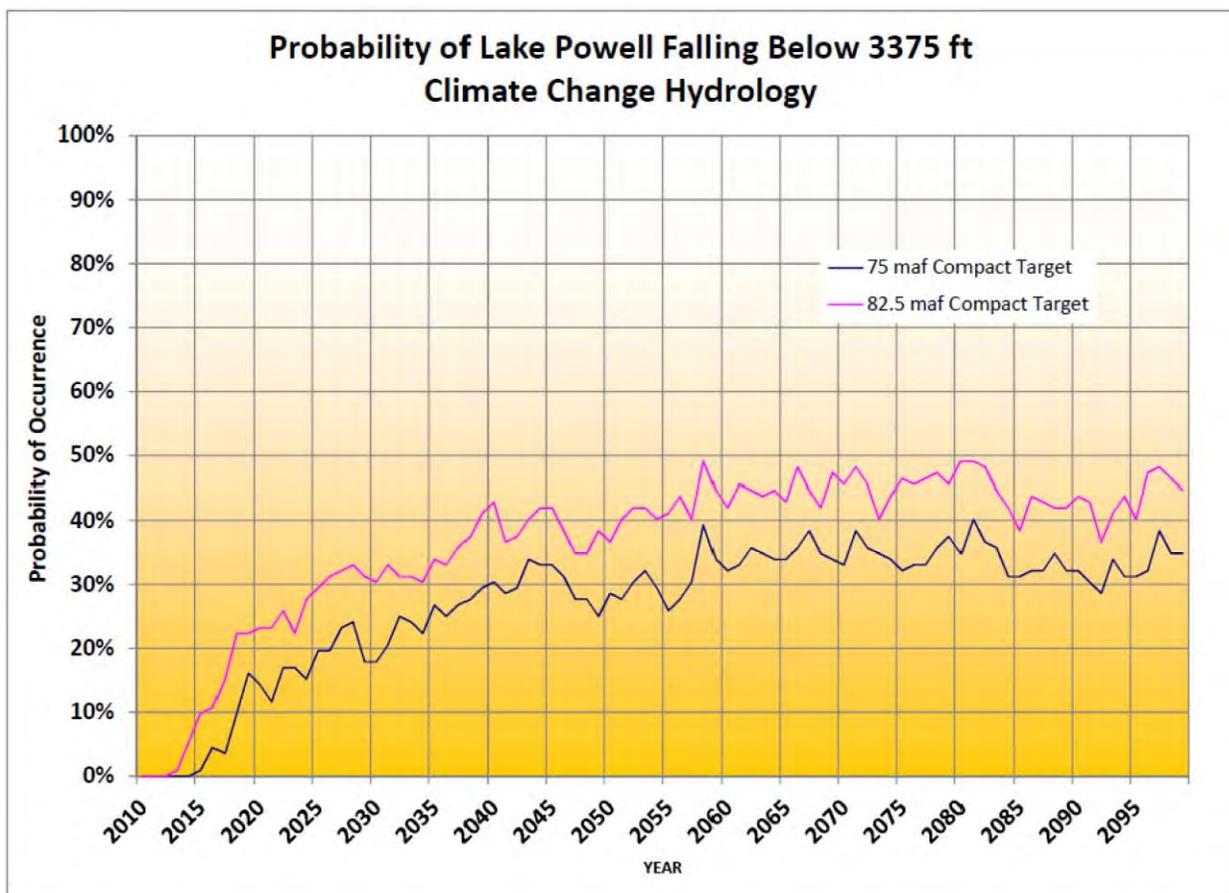


Figure 3. Projections under climate change scenario of the probability of Lake Powell falling below 3375 feet through 2060.

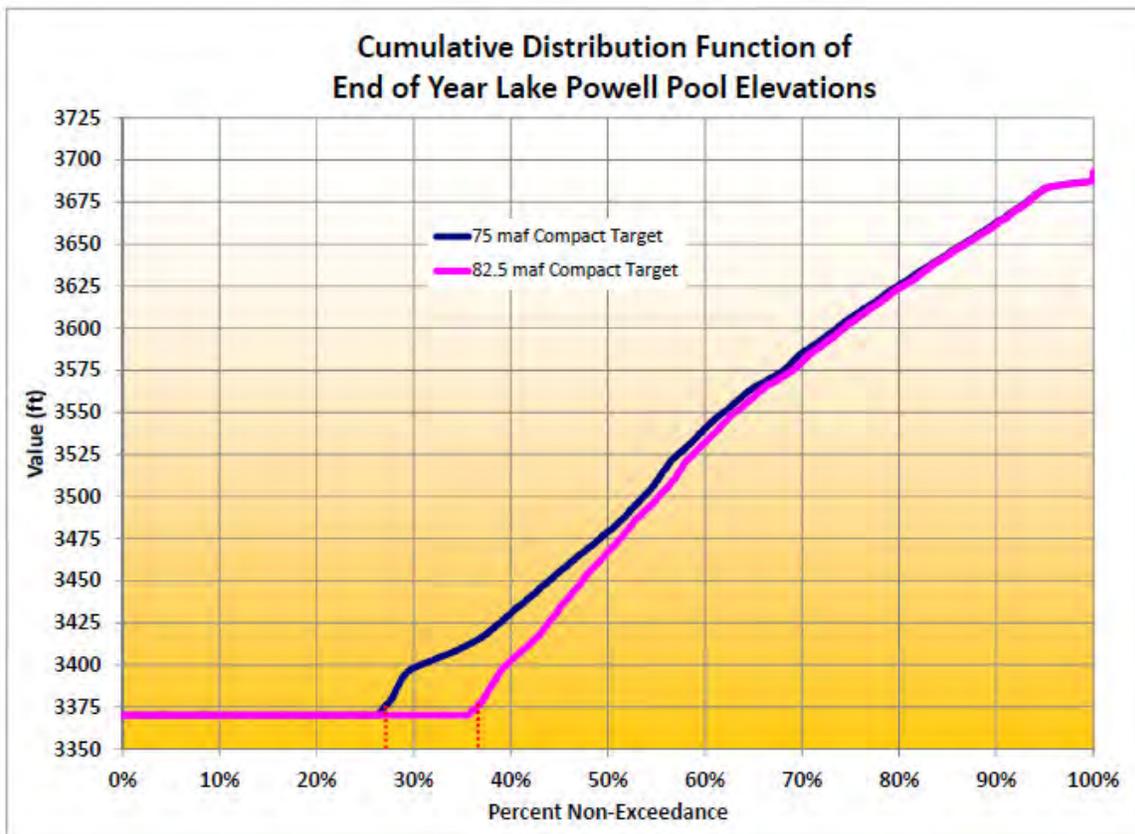


Figure 4. Probability under climate change inflows scenario that the endofyear Lake Powell elevation would be below elevation 3375 over the course of the 21st century.

UDWR Response:

The UBWR assumptions, analyses and conclusions conform to the requirements of the approved study plan. The Reclamation SECURE Water Act Section 9503(c) report was not available to UDWR during preparation of either the Climate Change approved study plan or the Draft Climate Change Study Report. The final study report will incorporate appropriate information from the Reclamation SECURE Water Act Section 9503(c) report into the information presented and summarized. The UDWR cannot verify the EDF’s modeling output results based on Reclamation’s model. The results of Reclamation’s modeling of Lake Powell water levels using Reclamation’s model and incorporating the project’s water demand, the foreseeable water use in Utah, and supplying the required water demand to the Lower Basin is documented in the draft Surface Water Resources study report.

LPPC Comment 82:

Study Report (Chapter 4)

(page 4-19 to 4-26) *The results of the studies were not conducted as provided for in the approved study plan. The study report results do not represent conditions over the term of the license.*

One of major issues identified by the public to be addressed in the environmental analysis was that continued droughts and climate effects from human activity could put the supply of water from Lake Powell Reservoir at risk.” It is not addressed in the study report.

UDWR Response:

The comment reference to draft study report page numbers 4-19 to 4-26 do not match the information included in the comment. The approved study plan includes the following issue: “The effects of the long-term drought affecting the Colorado River water supply will be assessed to determine the associated effects on the proposed LPP diversion.” Historical and potential future droughts in the Colorado River basin are reviewed in the draft study report as projected by referenced climate change literature. The final study report will include an assessment of the drought conditions on Colorado River water supply to determine associated effects on the proposed LPP diversion.

LPPC Comment 83:

The Commission in SD2 comments, at 4.2.2 Water Resources also stated: Effects of project proposal on water availability and water use, including water availability during droughts or under other adverse hydrologic conditions. would be part of the study.

UDWR Response:

The draft study report addressed water availability in Section 3.5 including a review of the Colorado River Water Availability Study which examined future water availability using records of historical water supplies, extended hydrology using tree ring studies, and potential hydrologic conditions that may exist because of predicted climate change.

LPPC Comment 84:

Study Plan 19.2.2. Goals and Objectives

The study plan (p.215) provides the following objective: “Provide a summary of the long-term water supply to Lake Powell and the potential effects on water supply from climate variation.”

Study Report (Chapter 4)

(page 4-1 to 4-4) The Applicant did not properly conduct a study on this topic. The results of the study are not representative of conditions over the term of the license.

UDWR Response:

The draft study report incorporated a summary of the Reclamation CRSS modeling studies into Chapter 4 as the best available information from the Bureau of Reclamation. The modeling results project long-term water supply to Lake Powell from 2009 through 2060 and consider the potential effects on water supply from climate variation. The comment assumes that climate change conditions reviewed in the study are not representative over an undefined license term.

LPPC Comment 85:

Study Plan (19.2.2.) Goals and Objectives

The study plan (p.216) provides the following objective: ...include an analysis of long-term water availability from Lake Powell under various water supply scenarios.

Study Report (Chapter 4)

(page 4-1 to 4-4) The Applicant did not properly conduct a study on this topic. The results of the study are not representative of conditions over the term of the license.

UDWR Response:

The draft study report incorporated a summary of the Reclamation CRSS modeling studies into Chapter 4 as the best available information from the Bureau of Reclamation. The modeling results include an analysis of long-term water availability from Lake Powell (2009 through 2060) under various water

supply scenarios (Direct Natural Flow inflow hydrology and Nonparametric Paleo-Conditioned inflow hydrology). The UDWR summary and review contains the required analysis of long-term water availability from Lake Powell under various water supply scenarios. The comment assumes that long-term water availability conditions reviewed in the study are not representative over an undefined license term.

LPPC Comment 86:

Study Plan (19.4.3) Issues and Data Needs

The study plan (page 218.) provides the following objective: The effects of the long-term drought affecting the Colorado River water supply will be assessed to determine the associated effects on the proposed LPP diversion.

Study Report (Chapter 4)

(page 4-1 to 4-4) The study was not conducted as provided for in the approved study plan and did not represent the conditions over the term of the license.

UDWR Response:

The draft study report incorporated a summary of the Reclamation CRSS modeling studies into Chapter 4 as the best available information from the Bureau of Reclamation. The modeling results incorporate the effects of the long-term drought that has affected the Colorado River water supply and determined the associated effects on the proposed LPP diversion. The UDWR summary and review contains the required analysis of long-term drought affecting the Colorado River water supply and associated effects on the proposed LPP diversion. The comment assumes that long-term drought conditions reviewed in the study are not representative over an undefined license term.

LPPC Comment 87:

Study Plan (19.2.2) Goals and Objectives

The study plan (page 216.) provides the following objective:

Potential impacts to water supply associated with reasonably foreseeable activities such as other proposed diversion from Lake Powell will be estimated.

Study Report (#19)

#19 Study Report was not conducted as provided for in the approved study plan and the report did not include that information.

UDWR Response:

The final study report will identify the other reasonably foreseeable projects included in the Reclamation CRSS model.

LPPC Comment 88:

Study Plan (19.6.3 task 2)

The study plan (page 222.) provides the following objective: Determine a reasonable range of future hydrologic conditions in the Colorado River Basin and Lake Powell, and assess the availability of water for the LPP diversion under these hydrologic conditions. This will include use of the Bureau of Reclamation's CRSS hydrologic simulation model to simulate effects of different hydrologic scenarios on LPP diversions. Various hydrologic scenarios will be determined by USBR by using long-term hydrology generated from tree ring data and input to the CRSS model. The combined effects of dry periods and the proposed LPP diversions on Colorado River streamflow will be evaluated with the CRSS model.

Study Report (Chapter 4)

(page 4-1 to 4-4) The study did not determine a range of future hydrologic conditions in the Colorado River Basin and thus, the approved studies were not conducted as provided for in the approved study report. The study results do not represent conditions over the term of license according to the new study just released from the Bureau of Reclamation that predicts flow reduction for the Colorado River. The

Applicant also misrepresented the science of the paleohydrology studies. The Commission should consider the Colorado River Basin as a whole and do what is best to balance the protection of the environment with water and power development. The study report just concludes the Colorado River is likely to decline from climate change and this not sufficient. This would be a permanent water project that communities will depend on as a reliable source of water. The Commission should consider an improved hydrological base line for the Colorado River management become a part of these environmental studies. This would entail a new estimate of long-term mean annual Colorado River Flows for sound water management decisions. It is critical to future sustainability of the Colorado River system to meet all the existing and future demand.

UDWR Response:

The final study report will reference the methodology and results of the Reclamation CRSS modeling in the draft Surface Water Resources study report and Appendix 2, Reclamation Colorado River Model Report prepared by Reclamation.

LPPC Comment 89:

In the report, the Applicant does review all the climate change studies on estimated shortage, yet, does not relate those studies to the physical risk of shortage to the LPP during the 50 year license. The applicant also misinterprets the science on paleohydrology in the report from the Interim Guidelines Appendix U and N. (see chart 13) for a drought predicted drought scenario.

UDWR Response:

The approved study plan does not specify that the results of climate change studies, which have widely ranging conclusions based on the assumptions and model characteristics, are to be applied to determine a physical risk of shortage to the LPP. The Reclamation CRSS model, run by Reclamation experts, incorporated the best available information including hydrologic variability to determine the potential impacts of the LPP project diversions on Lake Powell and potential for shortage to the LPP Project throughout the analysis period from 2009 to 2060. The model results for Lake Powell elevations in December at 90th, 50th and 10th percentiles are shown in Figure 4-1 and probabilities of not exceeding the minimum power pool in March are shown in Figure 4-2.

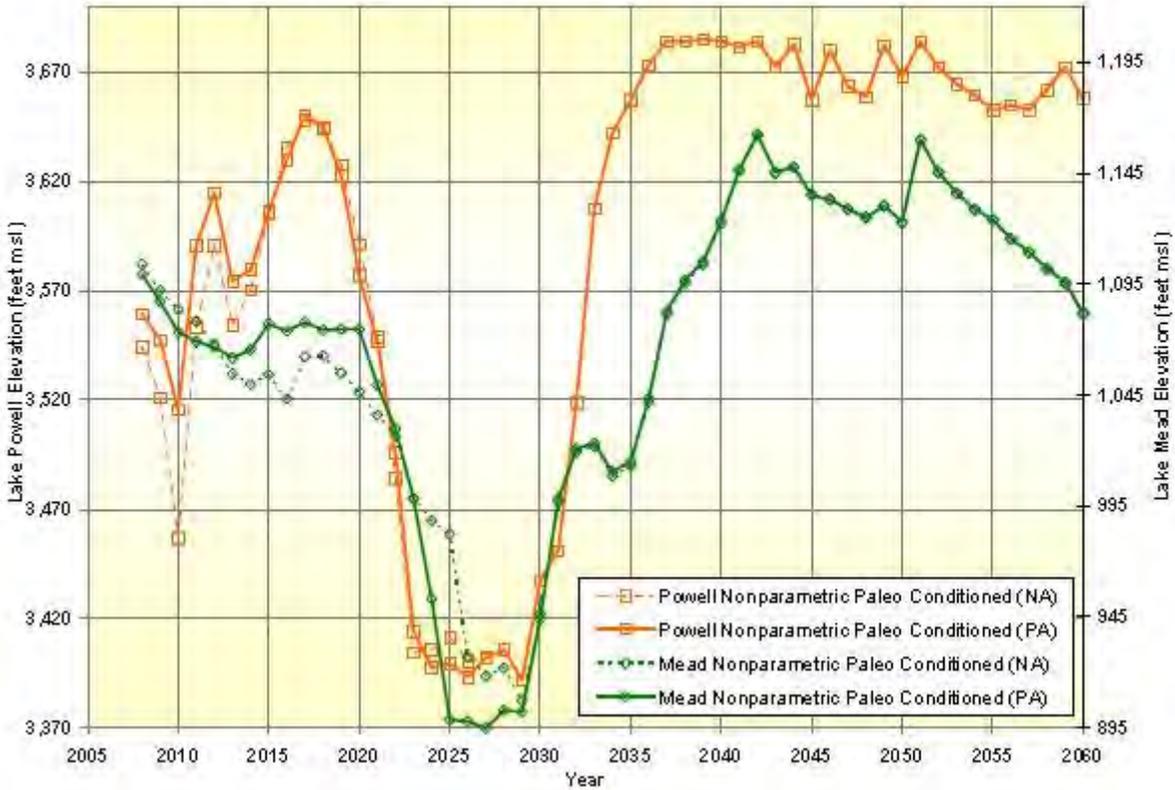
LPPC Comment 90:

The Applicant states in the report: When comparing the four models of hydrologic inflows to the likelihood of being below the minimum power pool elevation (3490 feet msl) for Lake Powell, the DNF model run shows nearly no chance of falling below, where the Nonparametric Paleo-Conditioned) (NPC) Inflow model (NPC) indicates the highest likelihood of occurrence by 26 percent after 2055. However, in Chart 12 below, the NPC predicts drought at 2025 in the Interim Guidelines. The report also continues to misinterpret the science to state the highest probability of shortage for lower basin is after 2055. However, in reviewing chart 13 below, drought and shortage are predicted for the Lower Basin within 50 years term of the license and risk of shortage is why the Interim Guidelines were developed for the Lower Basin States. In addition, in the Interim Guidelines EIS, under Environmental Consequences, page 4-101, figure 4.4-2 shows Lower basin shortage occurring in the 50th percentile, most probable, occurring by 2025. Scientific studies and evidence pointing to the possible risks of shortage to the LPP and Lower Basin cannot be ignored in these study reports.

Chart 12

Interim Guidelines EIS 2007 Appendix N, page N-18 Analysis of Hydrologic Variability Sensitivity

Figure N-10
End-of-December Elevations
Comparison of Single Trace using Nonparametric Paleo Conditioning with
Meko et al. Reconstruction for No Action Alternative (NA) and Preferred Alternative (PA)

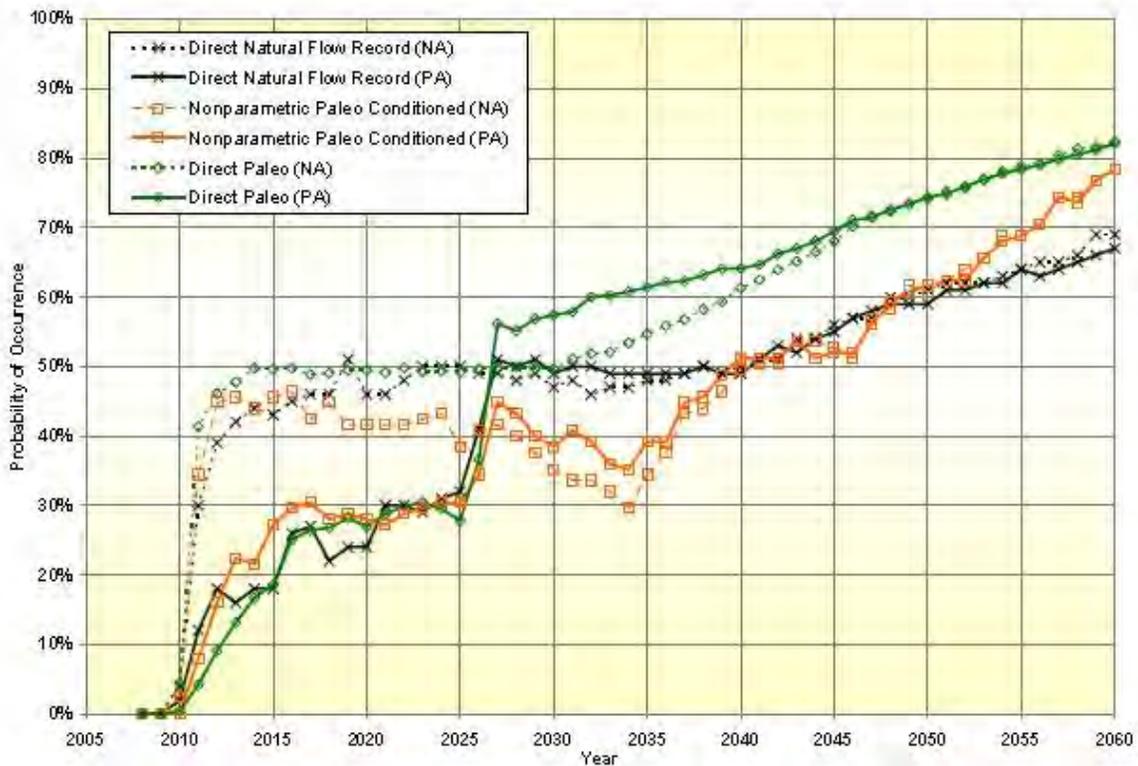


This chart shows drought occurring before 2055 as predicted in the report

Chart 13

Interim Guidelines EIS 2007 Appendix N page N-23 Figure N-15, shows high probability of shortages in Lower Basin

Figure N-15
Lower Basin Shortages
Comparison of Direct Natural Flow Record to Meko et al. Reconstruction
No Action Alternative (NA) and Preferred Alternative (PA)
Probability of Occurrence



UDWR Response:

The comment incorrectly represents the inflow hydrology as documented in Appendix N of the Interim Guidelines FEIS prepared by Reclamation and disagrees with the UDWR review of the Interim Guidelines hydrology. The text in Section 2.3 of the draft study report states: “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.” This text paraphrases the following text from Appendix N, Section N.3.3 Probability of Being Below Key Elevations : “Figure N-11 presents a comparison of the likelihood of Lake Powell end-of-December elevations being at or below the minimum power pool (elevation 3,490 feet msl) for DNF and for the two alternative hydrologic inflow scenarios. DNF shows nearly no chance of Lake Powell elevations falling below minimum power pool. NPC indicates the highest likelihood of occurrence at 26 percent...” which Figure N-11 shows occurring in 2056. The comment includes Figure N-10 from Appendix N and states that “the NPC predicts drought at 2025 in the Interim Guidelines.” The comment misrepresents Figure N-10 as an NPC prediction, particularly because Figure N-10 shows a single trace out of 125 traces for NPC inflow hydrology, with the single trace displaying the “increased drawdown seen under the Preferred Alternative is a result of the modeling assumption that includes a maximum shortage amount of 600 kaf while the No Action

Alternative includes absolute protection of Lake Mead at elevation 1,000 feet msl, which can result in shortages as large as 3,300 kaf which prevent the reservoirs from dropping to the elevations seen under the Preferred Alternative” as quoted from the text explanation of Figure N-10 in Appendix N of the Interim Guidelines FEIS.

The comment incorrectly states: “The report also continues to misinterpret the science to state the highest probability of shortage for lower basin is after 2055.” The draft study report text states: “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” with a reference citation to Reclamation 2007, Appendix N, Attachment A. This text paraphrases the following text from Section A.3.1.3 Lower Basin Shortage, which states: “Figure Att. A-7 shows the probability of shortage to the Lower Basin and Mexico under the No Action Alternative obtained for DNF and the three alternative hydrologic inflow scenarios. The higher variability observed with the NPC and PS methods are a function of sample size, as described under Section A.3.1.1. NPC and PS have a lower probability of shortage than DNF for most of the period of analysis due to the extended wet periods in both data sets. The highest probability of shortage for each alternative occurs after 2055 with the following approximate values: DNF, 69 percent; DP, 80 percent; NPC, 62 percent; and PS, 71 percent.”

The comment includes Figure N-15 and incorrectly interprets it as follows, stating: “...drought and shortage are predicted for the Lower Basin within 50 years term of the license and risk of shortage is why the Interim Guidelines were developed for the Lower Basin States.” This conclusion is drawn on Appendix N, which is introduced as “the analysis of the sensitivity of the hydrologic resources to alternative hydrologic inflow scenarios” as stated in Section N.1 Introduction, Appendix N. The draft study report text in Section 2.3 states: “These differences are noted in the sensitivity analysis, and the DNF hydrology was used for the modeling of alternatives in the final EIS.” The UDWR concludes that the review of the Interim Guidelines FEIS Hydrology as presented in the draft study report is correctly interpreted.

The comment incorrectly interprets Figure 4.4-2 from the Chapter 4 of the Interim Guidelines FEIS, stating : “...figure 4.4-2 shows Lower basin shortage occurring in the 50th percentile, most probable, occurring by 2025.” Figure 4.4-2 is titled “Involuntary and Voluntary Lower Basin Shortages, Comparison of Action Alternatives to No Action Alternative, Probability of Occurrence of Any Shortage Volume” and compares the probabilities of involuntary and voluntary Lower Basin shortages between alternatives. The Preferred Alternative probability of occurrence in 2025 is 32 percent, which can be compared with the probabilities of occurrence of the other alternatives in 2025; the figure does not show a 50th percentile shortage for the Lower Basin. More importantly, the figure compares the magnitudes of probability of occurrence of Lower Basin shortages between six alternatives (including the Preferred Alternative); however, it is not appropriate to assign absolute values of shortage to individual alternatives because the graphed values represent probabilities of occurrence, not absolute values.

The comment concludes: “Scientific studies and evidence pointing to the possible risks of shortage to the LPP and Lower Basin cannot be ignored in these study reports.” The examples the comment refers to as scientific studies and evidence have been incorrectly interpreted as possible risks of shortage to the LPP and Lower Basin. The comment’s interpretations of the examples of risks of shortage to the LPP and Lower Basin cannot be justified by objective, rational analysis.

LPPC Comments 91 and 92:

Study Report ES-2

The long-term average annual flow was 14.7 MAF year which is lower than the long-term gaged record mean of 15.1 MAF year (source Woodhouse, et al 2006).

The Applicant did not interpret the paleoclimate studies in the Interim Guidelines correctly, and stated the studies predicted a flow of 14.7 (maf) at Lees Ferry. However, the range was much lower from 13 (maf). see Appendix U, page U-72,

“This set of tree-ring based reconstructions illustrates the robustness of the estimated flows with regard to the temporal patter of flow over the past five centuries. One difference between the reconstructions is the long-term averages, which range from 13.014-7 maf, all of which are significantly less than the gage records average, 1906-1995, 15.2 maf.”

UDWR Response:

The comment incorrectly takes the referenced statement out of context from the review of inflow hydrologic variability and references discussion text from Appendix U (Climate Technical Work Group Report) as representative of the inflow hydrologic variability for the Interim Guidelines FEIS.

LPPC Comments 93 and 94:

The Applicant took the highest estimated flow of 14.7 and used that in the study report. However, Connie Woodhouse studies varied from 14.1,14.5, 14.6, 14.7 maf. Further, on page U-83,

“Paleoclimate information suggests that long-term average of natural flows the upper Colorado River Basin is 13.0 to 14.7 maf, compared to the gage record average 15.2 maf. The paleoclimate information may not necessarily represent future climate scenarios, but could be useful in framing assumed variability in future planning hydrologic sequences, with or without the joint consideration of future climate change.”

The Coalition suggests there is enough science to consider a drought scenario of 13 maf to assess impacts of the LPP in drought. The study was not conducted as provided for in the approved study plan and did not represent the reduction in flow conditions over the term of the license.

UDWR Response:

The UDWR literature review summarized in the draft study report Executive Summary and Climate Change draft study report sections meet the requirements of the approved study plan. Please refer to the response to LPPC comment 91/92. The approved study plan does not require climate change modeling of a drought scenario to assess impacts of the LPP Project in a drought.

LPPC Comments 95 and 96:

The chart below show predictions of lower flows for the Colorado River and should be included in this study report. The Applicant must include effects on resources and water availability over the term of license from 2020-2070 that include the estimated flow reductions of the Colorado River predicted in Reclamation’s new report. The Applicant must disclose these possible impacts of reduced flow in the study report so the Commission can make informed decisions on an adequate impact analysis and make a look before you leap approach.

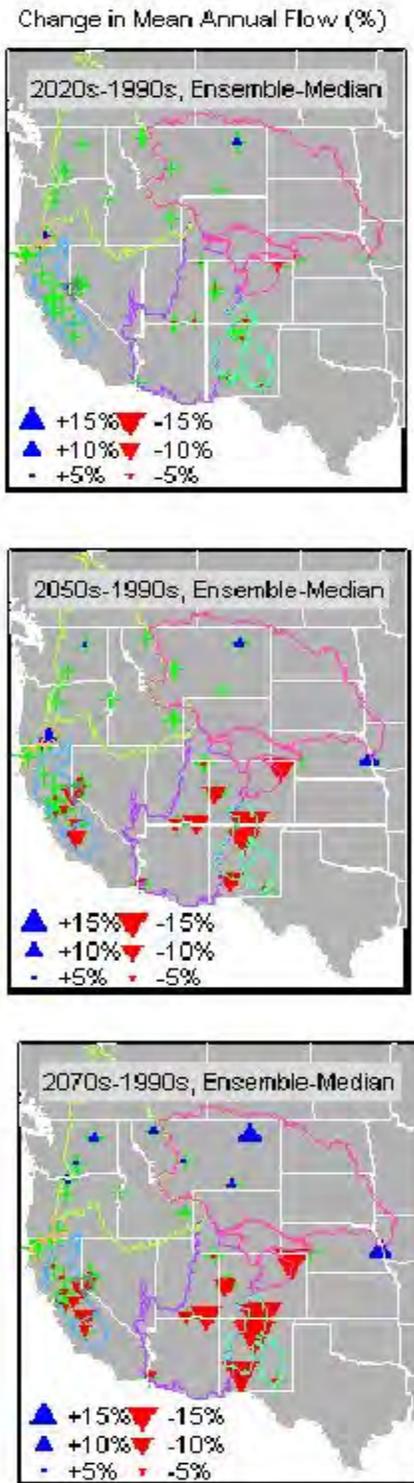


Figure 66. Change in percentage mean annual runoff distributed over the West.

In light of this new Bureau of Reclamation (BOR) report *Reclamation Managing Water in the West, Secure Water Act Section 9503 (c)-Reclamation Climate Change and Water 2011*. There is solid scientific evidence of climate change in the Colorado River Basin is on pages 17-40, 179-183. This report is a more accurate reflection of BOR's prediction of reduced future flow of the Colorado River due to Climate change.

Maps show a geographic consolidation of changes already occurring based on Reclamation's (2011a) simulated hydrologic effects under climate change.

As of the publication date of report, three of the four water supply scenarios have been quantified and analyzed in the Colorado River Basin Study.

Snow water equivalent will be down by 50% in 2020, down by 60% by 2050, and down by 66% in 2070.

(All happening within the 50 year license for the Lake Powell Pipeline 2020-2070)

UDWR Response:

The UDWR literature review summarized in the draft study report complies with the approved study plan. Figure 66 from the 2011 Reclamation Secure Water Act section 9503 (c) Report, incorporated into the comment, is accompanied by the following text: “Changes in surface water runoff are more complex than projections of snowpack. Analyses of historical runoff suggest that any trends in annual or seasonal runoff are weak. Hydrologic analyses based on future climate projections suggest that geographic trends may emerge (figures 66 and 67). The Southwestern United States to the Southern Rockies may experience gradual runoff declines during the 21st century and the Northwest to north-central United States may experience little change through the mid-21st century with increases projected for the late 21st century (figure 66).” The introduction to the West-wide Summary of Hydroclimate Changes section (which includes figure 66) of the 2011 Reclamation Secure Water Act Section 9503 (c) Report states: “It is noted that these summary statements reflect regionally averaged changes and that projected changes have geographic variation; they vary through time; and the progression of change varies among climate projection ensembles...” The comment misrepresents the 2011 Reclamation Secure Water Act Section 9503 (c) Report regarding snow water equivalent: “Snow water equivalent will be down by 50% in 2020, down by 60% by 2050, and down by 66% in 2070.” Section 2.4.1 of the report summarizes climate and hydrologic changes in Table 1, which reflect a subbasin-average view and measured relative to 1990s baseline conditions. The summary of simulated changes in decade-mean hydroclimate for the Colorado River at Lees Ferry subbasin in Table 1 shows the mean April 1st snow water equivalent (percent) as -50.0 in the 2020s, -60.6 in the 2050s, and -66.9 in the 2070s. The comment incorrectly assumes a 50 year license period, which has not yet been determined by FERC.

LPPC Comment 97:***Executive Summary ES-1 Introduction*****Applicant:**

ES-1 This document was prepared to further the understanding of climate change and its potential effects on LPP water supply resources and environmental effects.

Coalition Response:

The report does include all the climate change studies. However, the report ignores all the future predictions of lower flows outlined in those studies in the analysis. The report fails to make the connection of the potential effects of climate change on the water supply for the LPP and the effects on resources based on the 50 year license.

UDWR Response:

Your comment has been noted.

LPPC Comment 98:**Applicant:**

ES-1 In general, a 10% reduction in precipitation results in a 20 percent decline in runoff.

Coalition Response:

Yet, the report does not relate that effect on the water availability for the LPP in the analysis. The report should answer what a 10% -20% decline in flow over the 50 year life of the project will do to the water availability for the LPP.

UDWR Response:

Your comment has been noted.

LPPC Comment 99:**Applicant:**

ES-2 If Interim Guidelines are adhered to, a 10 percent reduction in basin wide runoff would result in a 26 % chance Lake Powell could go dry by 2056 (Interim Guidelines 2007) at least once.

Coalition Response:

It is not clear how the Applicant could make this conclusion that the Interim Guidelines go past 2026 and relate that to water availability for the LPP. The Applicant using the Interim Guidelines for Lower Basin shortages as a guarantee of future water available by 2070 in the Upper Basin and the LPP misinterprets and shortage criteria in the Interim Guidelines.

UDWR Response:

The UDWR literature review summarized in the draft study report complies with the approved study plan. The final study report Executive Summary will clarify the literature review presentation.

LPPC Comment 100:

Applicant:

Aggressive shortage and demand management would reduce risk because federal agencies will act before Lake Powell goes dry.

Coalition Response:

It is not sufficient to say there is no risk to availability of water for LPP and federal agencies will act before Lake Powell goes dry. The Applicant is planning on an LPP intake only 5 five feet above dead pool. The Commission's regulations for a license require the studies must describe any anticipated continuing environmental impact of the continued operation of the project over the term of license which would be 2020-2070 and the report does not.

UDWR Response:

The UDWR literature review summarized in the draft study report complies with the approved study plan. The comment challenges a suggestion by Rajagopalan et al 2009 that aggressive shortage and demand management could reduce risk of additional potential future curtailments. The Federal agencies and the seven Colorado River Basin states have historically, and will continue to, refine operations to adaptively meet demands with the available supply.

LPPC Comment 101:

Applicant:

The LPP intake elevation is low enough to physically receive water from the reservoir under the most dire storage scenario.

Coalition Response:

The Applicant's conclusion that they do not have to consider future impacts on water availability because they can draw water in dire storage conditions is not correct and would not meet the Commission's regulations on getting a license to consider conditions from 2020-2070. In the report, the Applicant must illustrate that at low reservoir levels with only 103,764 acre feet active storage the Applicant would still have the legal right to divert remaining water through the proposed LPP intake of 3,375 volume (msl). The Applicant's 1996 water right is junior to senior water rights holders in the Upper and Lower Basin States. Our research questions if the LPP can draw water at that level.

UDWR Response:

The UDWR literature review summarized in the draft study report complies with the approved study plan. The draft study plan states: "Additional potential future curtailments could affect deliveries through the Lake Powell Pipeline, although the intake elevation of the pipeline is low enough to physically receive water from the reservoir under the most dire storage scenario." Through the Law of the River, UBRW has both an allocation of water in the Colorado River and a water right sufficient in quantity to fully supply the project. UDWR will comply with the Law of the River and Utah water law to ensure adequate water for the project, even in low water years. The UBRW water right for the project has a 1958 priority rather than the 1996 date incorrectly stated in the comment.

LPPC Comment 102:

Applicant:

Shortages will be handled by the 2007 EIS Interim Guidelines already in place.

Coalition Response:

The Applicant's conclusion in the report is not correct. The Interim Guidelines criteria to manage shortages are only interim to 2026 and explained in detail in our comments above. Since this is a permanent water project to supply water to homes and communities that are yet to be built the residents will expect a permanent project. For that reason, the approach used in the Interim Guidelines is not appropriate.

UDWR Response:

The UDWR literature review summarized in the draft study report complies with the approved study plan. The UDWR understands that the Interim Guidelines FEIS criteria to manage shortages are interim to 2026 and then shortages will be managed by the Secretary of the Interior's annual determinations at the beginning of each operating year through the development and execution of the AOP, including the water supply available to users in the Lower Basin and the annual release from Lake Powell.

LPPC Comment 103:

Applicant:

ES-3 Future inflow to Lake Powell is likely to decline because of Climate Change.

Coalition Response:

The Applicant's conclusion is not sufficient to meet the Commission's licensing requirements for cumulative effects mentioned in our comments above. The report must list cumulatively the affected resources based on the Commission's Scoping Document and their effects on resources based on their term of the 50 year License from 2020-2070. In addition, the Applicant must evaluate in the study report the potential impact of reduced levels into Lake Powell as a result of changing climate on hydrologic regime of the Colorado River Basin.

UDWR Response:

The UDWR literature review summarized in the draft study report complies with the approved study plan. The draft study report Executive Summary states: "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." The Reclamation CRSS modeling of Lake Powell accounts for reasonably foreseeable depletions from the upper basin and provides estimates of the LPP Project impacts on Lake Powell elevations under the proposed project and no action, which is a cumulative effects analysis.

LPPC Comment 104:

Applicant

ES-3 It is unknown at this time what impacts more stringent management strategies might have on Utah or LPP project. Currently no plans to curtail Upper Basin States water use.

Coalition response:

It is the responsibility of the applicant to take a hard look at the possible future shortages and impacts to the LPP from the predicted low future flows.

UDWR Response:

The UDWR literature review summarized in the draft study report complies with the approved study plan. The draft study report Executive Summary states: "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." The UDWR has coordinated the LPP Project analysis with Reclamation, and Reclamation has modeled the LPP Project to include potential future shortages.

LPPC Comment 105:

Chapter 1

Applicant:

1.1 Introduction

To further understand climate change and its potential effects on LPP water supply resources.

Coalition Response:

But, the report does not provide any results on how climate change may affect water supply for LPP.

UDWR Response:

UDWR believes the analysis set forth in the draft study report sufficiently addresses the potential effects of climate change on the LPP Project water supply. Please refer to the response to EDF comment 4.

LPPC Comment 106:

Applicant:

1.2 Methodology

All conclusions are based on interpretation of results from previous studies by others.

Coalition Response:

Yet, the applicant misinterprets climate change studies' conclusions and the Nonparametric Paleo-Conditioned studies and does not apply them to the analysis of water availability for the LPP.

UDWR Response:

The UDWR literature review summarized in the draft study report complies with the approved study plan. The draft study report Section 1.1 Methodology states: "No new river system modeling or analysis was performed as part of this review. All conclusions are based on interpretation of results from previous studies by others." Please refer to the responses to LPPC comments 91 and 92. Reclamation modeling of the LPP Project using the CRSS incorporated the nonparametric paleo-conditioned inflow hydrology documented in the draft Surface Water Hydrology study report and considered the effects on LPP water availability.

LPPC Comment 107:

Chapter 3 Literature review

Applicant:

3-1 Introduction. *If Upper basin states are required to curtail uses to meet Lower Basin obligations, there could be upper basin water in Lake Powell most of the time because any Upper Basin water in Lake Powell cannot be diverted except through the LPP.*

Coalition Response:

We do not agree if Lake Powell falls to low levels the Applicant still has the legal right to divert water. The Upper Basin water rights are junior to the lower basin. They are also junior to Present Perfected Rights and other more senior rights like the power plant. It is the responsibility of the Applicant to show that water near or at dead pool will be available for LPP.

UDWR Response:

The UDWR literature review summarized in the draft study report complies with the approved study plan. Please refer to the response to LPPC comment 101.

LPPC Comment 108:

Water Supply and Climate Change Study Plan #19 approved in 2008.

It is not clear where the results of the 2008 Water Supply part of the approved study plan goals, and objectives are reported. The 2011 #19 study report is now just about Climate Change. The question is, does the Water Needs Assessment meet the Commission's licensing requirement as a completed study

report for water supply which is the key component of the proposed action? The Coalition does not believe so, as it does not clearly lay out the Commission's regulation requirements of the license in CFR 18, 5.18 in the Water Needs Assessment. The Water Needs Assessment should be changed to focus on why the proposed action of 69,000 acre feet of water from Lake Powell will be needed by 2020. It should be required to verify using high quality data with professional integrity that the county will run out of water in just 9 years.

The Water Needs Assessment does not have these elements of the 2008 study plan:

UDWR Response:

The UDWR assumptions, analyses and conclusions based upon the draft Water Needs Assessment submitted as the water supply part of the draft study report meet the requirements of the approved Water Supply and Climate Change study plan. The final Water Needs Assessment study report will clarify that it has been prepared to meet the water supply part of the approved Water Supply and Climate Change study plan.

LPPC Comment 109:

Study Plan 19.2. Study Description

19.2.2. Goals and Objectives

Determine the validity of the participates' water supply requests based on estimates of future supplies and demands.

Water Needs Assessment

The Water Needs Assessment (WNA) does not follow the Commission's regulations for study plans and is not similar to all the other study plans or study plan reports. It should explain to the reader why agency action is necessary and serves as the basis for identifying the reasonable alternatives that meet the purpose and need of this project. To be considered complete, the Water Needs Assessment should be revised to fit the parameters set out in the 2008 Water Supply Study Plan goals and the Commission's regulations for licensing. The WNA needs to make it clear its purpose. It should be clarified that it is the basis of the Purpose and Need for the Lake Powell Pipeline. The structure of the WNA needs to show the data that supports the need for the LPP by 2020. Importing of 69,000 acre feet of water from Lake Powell should be its focus.

UDWR Response:

The final Water Needs Assessment study report will identify and address the applicable goals and objectives in the approved Water Supply and Climate Change study plan. The final Water Needs Assessment study report will clarify its purpose and that it is the basis of the purpose and need for the LPP Project.

LPPC Comment 110:

Our research shows the water district is not counting all the available water in the county that could be developed. A comprehensive inventory of all available water supplies must be included in the WNA.

UDWR Response:

The draft Water Needs Assessment report addresses all available water in the three southwest Utah water conservancy district's service areas that could be developed. Chapter 4, Water Supply Conditions, describes existing and future planned and potential water supplies available to the water conservancy districts and water users within the district's service areas. Water supplies were quantified based on reliable supplies, not average discharge or water rights on paper which may not be reliable supplies.

LPPC Comment 111:

The Coalition submitted extensive comments on the WNA to the Commission during SD2 comments and is part of the record. We request that this report not be considered as complete until all the water districts water in storage is also counted and as well as other private water rights. An open and accurate assessment of available water resources is necessary.

UDWR Response:

Section 4.1.3.1 of the draft Water Needs Assessment study report describes the storage facilities and water stored within the WCWCD. Section 4.1.4 of the draft Water Needs Assessment study report describes total Washington County municipal and industrial water supplies, including potable water supplies, secondary water supplies and reuse water. This section of the draft study report also includes the annual reliable yield of reservoirs. Section 4.2 of the draft Water Needs Assessment study report describes the existing and future planned and potential supplies to meet the water demands in the Central Iron County Water Conservancy District service area. Section 4.3 of the draft Water Needs Assessment study report describes the existing and future planned and potential supplies to meet the water demands in KCWCD. Private water rights are not available to meet public water system demands and needs and cannot be considered by the UDWR in assessing available water resources for a public water supply project.

LPPC Comment 112:

The applicants Purpose and Need in these environmental studies are based on faulty population and water demand estimates that are basis for the need for the Lake Powell Pipeline project by 2020. The study report needs to address this short coming to accurately reflect the actual needs of the Applicant by 2020.

UDWR Response:

Your comment has been noted.

LPPC Comment 113:

Study Plan #19 Water Supply

The studies below were not conducted as provided for in the approved study plan:

19.6.2.1 Task 1a Water Efficiency Study (Evaluation of Potential Conservation)

Comments

The Applicant did not implement the study plan tasks above from the Commission's approved study plan into the Water Supply part of study report. We recommend that these studies be included in the report before the Commission considers it complete.

UDWR Response:

The evaluation of potential water conservation is included in Chapter 5, Water Conservation Programs, in the draft Water Needs Assessment report. The evaluation of water reuse potential is included in Chapter 4, Water Supply Conditions. The final study report will include alternative components cost estimates.

LPPC Comment 114:

Water Needs Assessment

ES-2.3 Conservation

We disagree that the Washington County Water Conservancy has a water conservation plan that meets state requirements stated in the WNA. The plan puts off implementation of many conservation measures until 2020 and 2035. The Washington County Water Conservancy District could save more water by 2020 if it implemented more water conservation measures.

UDWR Response:

The WCWCD water conservation plan was developed and implemented before the UDWR required water conservancy districts to prepare and implement water conservation plans. The WCWCD water conservation plan was used by UDWR to develop the statewide water conservation plan and requirements. WCWCD has regularly updated its water conservation plan and has realized significant water savings through implementation of the water conservation measures described in the plan. WCWCD continues to implement its water conservation plan to meet the UDWR goal of 25 percent reduction in water use from 2000 to 2050.

LPPC Comment 115:***Potential Conservation Savings and Future Demand***

The WNA's estimate of future water demands in Washington County is artificially high. Incorporation of unrealistic population forecasts, outdated water use data, and unreasonably low estimates of future water conservation make these estimates unreasonable. More realistic future water demands can be estimated by using:

- 1) population forecasts that are more accurate*
- 2) a more aggressive, but achievable estimate of future conservation.*
- 3) a standard for accounting for water use so conservation can be measured; everyone accounts for water differently*
- 4) Better management of peak water use*

UDWR Response:

Your comment has been noted. UDWR intends to use the assumptions, analyses and conclusions presented in the draft Water Needs Assessment study report.

LPPC Comment 116:***ES-2-1 Population Projections***

The WNA uses the wrong data to make their conclusions of the need for the LPP. If more accurate population projections were used, demand would be significantly lowered, eliminating the need for the LPP by 2020.

UDWR Response:

The UDWR is required to use current Utah GOPB population projections for planning State of Utah water projects. Please refer to the response to LPPC comments 20 and 21 in the Land Use Plans and Conflicts section of this comment and response document.

LPPC Comment 117:***ES-3.1***

The WCWCD area is considered to be fully appropriated and closed to further appropriations. However, for the study report to be complete all current already appropriated water rights need to be included so the Applicants can verify the conclusion the county is out of water by 2020 and the gpcd will have to be restricted to 10 gpcd.

UDWR Response:

The existing and future water supplies of WCWCD are described in Section 4.1 in the draft Water Needs Assessment report. Not all water rights are viable and reliable sources of water. The comment incorrectly identifies that "gpcd will have to be restricted to 10 gpcd." This is not stated in Section ES-3.1 or elsewhere in the draft Water Needs Assessment report.

LPPC Comment 118:

4.1.8 Water Quality Effects of WCWC Future Supplies

The applicant states that the samples for TDS water quality were only taken from the 100 foot level. However, pipeline intakes are proposed at three intake elevations 3575 (msl), 3475 (msl) and 3375 (msl) and reevaluation at the different intake levels need to be included for the study report to be complete.

UDWR Response:

Section 4.1.8 in the draft study report states: “TDS concentrations of untreated Lake Powell water within the top 100 feet ranges from 350 to 600 mg/L depending on seasonal fluctuations in water quality. The design and operation of the Lake Powell Pipeline intake at Lake Powell would ensure that water would be taken from the top 100 feet of Lake Powell to optimize water quality of the supply that would be taken through the pipeline.” Data collected and analyzed near Glen Canyon Dam and the intake site by Reclamation indicates the consistently lowest TDS concentrations in Lake Powell are within the top 100 to 150 feet of the water column. The multiple levels of intakes would allow the LPP Project to divert water from the top 100 feet of Lake Powell, regardless of the elevation of the water surface within the operating range of fluctuations.

LPPC Comment 119:

4.1.5.14 Lake Powell Pipeline

In this section it mentions more storage facilities may need to be built to utilize the LPP water and in other sections it states there are no areas for more storage. This needs to be clarified in the study report.

UDWR Response:

The final study report will clarify the need for additional storage required as part of the Project.

LPPC Comment 120:

4.1.6.1 Additional Virgin River Water

The Water District will use utilize 45,000 ac ft of Virgin River water to be stored in Warner Valley reservoir. Another alternative would be to consider diverting this water at the Quail Lake Diversion with redesign of the diversion and pipeline system. If the Virgin River high water is diverted above the Pah Tempe Hot Springs it could be piped to the proposed Sand Mountain Reservoir for storage near Leeds and there would be no need to treat the water through Reverse Osmosis. In this section it states rebuilding the diversion and pipeline would be needed to capture more the high flow. This is a clear alternative and needs be included in Conceptual No Lake Powell Water Alternative in the Alternative Developments Study report #22.

UDWR Response:

Section 4.1.6.1 of the draft study report states: “After numerous studies by various State and Federal agencies, the DWRe and WCWCD have concluded there is no additional Virgin River water available to be developed for water supply in Washington County because of variable streamflow, poor water quality, lack of storage options, minimum streamflow requirements, and the potential for sedimentation of possible reservoir sites. An evaluation was completed for this analysis to confirm the above conclusions that there is no additional Virgin River water available for development.”

LPPC Comment 144:

III. PROPOSED MODIFICATIONS AND NEW STUDIES

We ask that the Commission require the Applicant to perform studies which it has not conducted per the approved study plan, or add a new study where the ISR demonstrates that study objectives cannot be met pursuant to the existing study plan. We believe that absent the recommended changes the scientific record on which the new license is based will be fundamentally flawed due to its failure to consider Climate

Change projected reductions in flow to the Colorado River, and its unsupported assumptions regarding projected population growth and water demand.

UDWR Response:

The draft study report was prepared with the best available information at the time of the analysis. The 2010 US Census Bureau housing unit data was the best available information on housing units for Washington County. The 2008 GOPB population numbers were the best available data and are required by the State of Utah to be used in all State of Utah Projects, including those sponsored by UDWR. The final study report will incorporate the currently available GOPB population projections. The final study report will include the 2010 U.S. Census Bureau population data as another estimate of the county population. Please refer to the response to LPPC comment 145.

LPPC Comment 145:

In light of this new information from the Bureau of Reclamation (BOR) report Reclamation Managing Water in the West, Secure Water Act Section 9503 (c)–Reclamation Climate Change and Water 2011, it appears there is solid scientific evidence of climate change in the Colorado River Basin. We submit the report with our comments (Attachment A), and request that its impact of future flow reductions be included in the environmental analysis of the Lake Powell Pipeline project. This report is a more accurate reflection of BOR’s current prediction of reduced future flow of the Colorado River due to climate change.

UDWR Response:

The Reclamation SECURE Water Act Section 9503(c) report was not available to UDWR during preparation of either the Climate Change approved study plan or the Draft Climate Change Study Report. The final study report will incorporate appropriate information from the Reclamation SECURE Water Act Section 9503(c) report into the information presented and summarized.

LPPC Comment 146:

We ask the Commission to require the Applicant to implement Study Plan #19 goals and objectives, and tasks listed in approved plan detailed in our comments. We also ask the Commission to require the Applicant to implement other study plan requirements omitted from the study reports listed in our comments. The requested information is very important because it influences communities’ decisions to build a billion dollar project and then depend on this project to provide the same amount of water until 2070, the term of license. We request that Commission Staff modify the study plan consistent with our recommendations to assure the adequacy of the licensing record.

UDWR Response:

The final study report will include revisions as noted in previous responses to LPPC comments on draft study report 19.

WRA Comment 2:

a. The participants’ estimates of future water demands appear invalid and should be revised. Population projections form the core basis for water supply planning, therefore accurate population growth forecasts are essential. Study Plan at 216 (study objectives include “Determine the validity of the participants’ water supply requests based on estimates of future supplies and demands.”). The March 2011 Draft Water Needs Assessment (herein “WNA”) projects future populations based on forecasts generated in 2008 by Utah’s Governor’s Office of Planning and Budget (GOPB). These population growth forecasts overstate future population growth, do not reflect impacts of the recent economic slowdown, and do not provide an adequate basis for “robust” water supply planning. As a result, the validity of the participants’ purported demands should be seriously questioned.

UDWR Response:

The final study report will incorporate the currently available GOPB population projections. The 2008 projections are the most current projections available. Please refer to the response to LPPC comments 20 and 21 in the Land Use Plans and Conflicts section of this comment and response document.

WRA Comment 3:

The WNA uses old, 2008 GOPB data, and has not incorporated the more up-to-date and accurate population projections available from GOPB and the U.S. Census. For instance, the GOPB estimated the 2009 population of Washington County at 145,466 residents, almost 10% lower than the WNA's estimate of 159,880 residents. Perhaps more striking, the 2010 U.S. Census estimated the population of Washington County at 138,115, nearly 18% lower than the WNA estimate of 168,078 – which when combined with the 2009 data actually indicate a declining population in Washington County between 2009 and 2010.

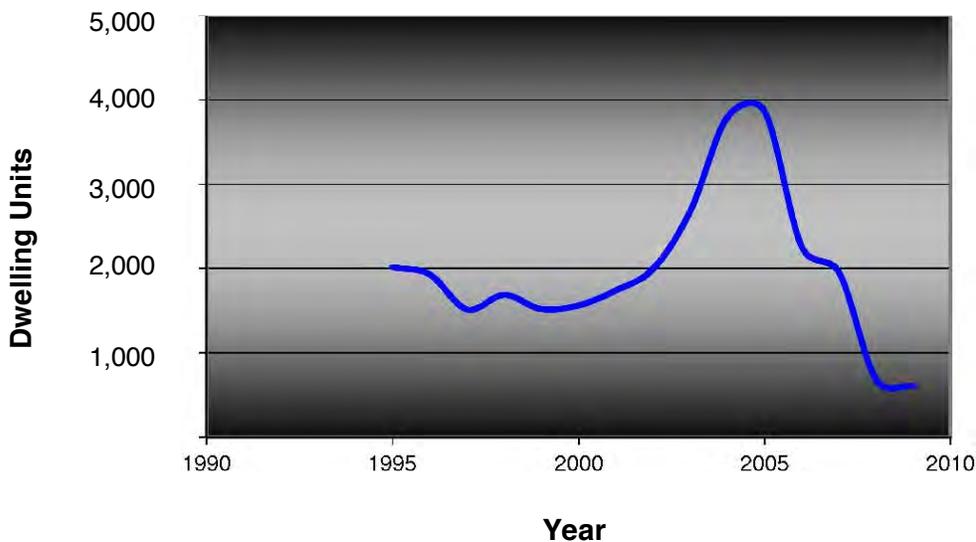
UDWR Response:

Please refer to the response to WRA comment 2. The 2009 GOPB estimate and the 2010 U.S. Census numbers are point-in-time estimates.

WRA Comment 4:

Population projections are heavily dependent on the initial estimate of population and the rate of population growth, where errors in the first few years are compounded greatly over time. The current economic slowdown in Utah will play a significant role in reducing estimated future water demands by decreasing population growth rates over the next few years. Importantly, foreclosures in Washington County are the second highest in the state (1 in every 168 homes) and building permits have decreased precipitously since 2005 (Figure 1), strongly indicating that future growth rates should be much lower than those projected in the WNA. Future demands will not be as high as currently projected, even if growth continues at the expected rate ten or more years from now, because growth is held up at this time.

Figure 1. Residential building permits in Washington County.



UDWR Response:

Please refer to the response to WRA comment 2. During the month of May 2011, WCWCD recorded the highest number of residential lots paying impact fees in one month since the start of its impact fee

program. Spikes in building permit numbers similar to that of 2005 have occurred on two other occasions since 1985.

WRA Comment 5:

An example for Washington County illustrates the compounding effect of using unsupportably-high growth rates on population projections. According to the WNA, Washington County has a population of 168,000 in 2010 and grows at upwards of 5% per year for the first 20 years, and then at a slower rate to 2060. In 2060, the population is projected to be approximately 860,000 (Table 1). However, by using the Washington County population as determined by the 2010 U.S. Census, and using a more moderate growth rate of 3% in the first 20 years – still impressive growth by any measure – while maintaining equivalent growth rates in the latter 30 years, population by 2060 is only 623,000 residents. By changing the initial starting point, and using growth rates more consistent with the influence of an economic slowdown, Washington County could see nearly 240,000 fewer residents by 2060. Using an average per capita water use of 302 gpcfd, this translates into 81,000 acre-feet less demand in 2060.

Table 1. Washington County population growth comparing WNA projections with a lower starting population and slower growth in the first 20 years.

	2010	2020	2030	2040	2050	2060
<i>Population -WNA</i>	<i>168,078</i>	<i>279,864</i>	<i>415,510</i>	<i>559,670</i>	<i>709,674</i>	<i>860,378</i>
<i>Growth Rate</i>	<i>5.00%</i>	<i>5.10%</i>	<i>3.95%</i>	<i>2.98%</i>	<i>2.37%</i>	<i>1.93%</i>
<i>Population -Revised</i>	<i>138,115</i>	<i>185,615</i>	<i>249,451</i>	<i>367,477</i>	<i>492,900</i>	<i>622,997</i>
<i>Growth Rate</i>	<i>3.00%</i>	<i>3.00%</i>	<i>3.95%</i>	<i>2.98%</i>	<i>2.37%</i>	<i>1.93%</i>

UDWR Response:

The final study report will incorporate the currently available GOPB population projections. The final study report will include a comparative analysis of an alternate population growth rate as suggested by the comment. Please refer to the response to LPPC comments 20 and 21 in the Land Use Plans and Conflicts section of this comment and response document.

WRA Comment 6:

b. The participants’ estimates of future viable local water supplies appear invalid and incomplete and should be revised.

Aquifer Storage and Recovery

Conjunctive management of surface water and groundwater can provide additional supplies to Washington County. In conjunctive management, utilities store water in underground aquifers when surplus supplies are available and withdraw it in periods of shortage. As an example, the Washington County Water Conservation District (WCWCD) currently uses the Navajo Sandstone Aquifer for recharge in their Quail Creek/Sand Hollow system. WCWCD estimates that the Navajo Aquifer currently holds approximately 50,000 AF of groundwater and has 110,000 AF of additional storage capacity.

UDWR Response:

The WCWCD aquifer storage and recovery program utilizing the Navajo sandstone aquifer beneath Sand Hollow Reservoir is described in Section 4.1.3.2 of the draft study report. The potential for developing aquifer storage and recovery in the Cedar Valley was analyzed and is documented in the draft Groundwater Resources study report, Appendix A, Section 5.13C.9. The final Water Needs Assessment study report will reference the draft Groundwater Resources study report, Appendix A. Section 4.3.4 of the draft Water Needs Assessment study report describes the potential for groundwater aquifer recharge with LPP Project water in portions of the KCWCD service area.

WRA Comment 7:

Optimizing conjunctive management of the Virgin River and Sand Hollow system by capturing and recharging greater flow volumes has the potential to provide additional water supply for WCWCD. A report from the Utah Department of Water Resources on conjunctive use also suggests other areas of the central Virgin River have the potential to store winter flows and flood flows.

UDWR Response:

Please refer to the response to LPPC comment 120.

WRA Comment 8:*Agricultural Transfers*

The WNA dismisses agricultural transfers (not associated with urban sprawl) as a viable supply because of the cost associated with reverse osmosis water quality treatment. A financial and energy analysis comparing the cost of reverse osmosis treatment of local agricultural water to the Lake Powell Pipeline should be made before eliminating this opportunity.

UDWR Response:

Your comment has been noted.

WRA Comment 9:*Water Conservation*

As described further in our comments on Study Report 22: Alternatives Development (Section V), water conservation opportunities are not fully investigated or optimized in the WNA. The potential for water conservation to increase future supply should be pursued much more aggressively.

UDWR Response:

Water conservation programs are described in Chapter 5 of the draft study report. Please refer to the response to LPPC comment 114.

WRA Comment 10:

Washington County is aiming for an 18% reduction in water use over the next 50 years, resulting in a per capita water use of 242 gpcd in 2060. Unfortunately, this goal sets an extremely low bar that neither promotes nor maximizes the water savings achievable through conservation. Water providers in Washington County achieved a 13% reduction in water use between 2000 and 2009 – it is highly unrealistic to assume that providers will only gain another 18% reduction over the next 50 years.

UDWR Response:

The 13 percent reduction in WCWCD water use achieved between 2000 and 2009 resulted from implementing water conservation measures that maximized conservation in a short period of time in balance with manageable costs and water user acceptance. The water conservation potential decreases as measures become more costly, require more technology, and have less social acceptance. Implementation of water conservation measures and programs do not result in a straight-line rate of conservation savings over time. The 17.9 percent reduction in water use rates by implementing water conservation measures between 2010 and 2060 is realistic and was determined through input received from water users.

WRA Comment 11:

Many utilities throughout the West expect to reduce per capita water use by 1% per year over the next decade or two. This represents a reasonable estimate of what is achievable for Washington County as well, especially considering water use has been reduced by 3 to 4 percent per year over the past decade. A target to reduce per capita water use 40% by 2060 is a more appropriate and achievable conservation goal.

UDWR Response:

Please refer to the response to WRA comment 10.

WRA Comment 12:

The State of Utah's Water Plan recommends all of these measures, which, importantly, are almost always cheaper and faster to implement than new supply projects. Conservation programs offer an additional benefit – they remain under the direct control of local organizations, and are not subject to interstate compacts or climate change. New development in the region deserves special attention, as the potential conservation savings for new residential development is tremendous. New, denser developments place much less demand on the water distribution system than traditional suburbs with large irrigated areas; and plumbing codes that require installation of efficient appliances, such as EPA-certified WaterSense products, can reduce indoor per capita use to less than 45 gallons per day. Example “water-smart” developments across the southwest show that water use reductions of 35-50% are readily attainable by comparison to existing homes in the local area. Future development in the region will have lower water demands than current developments, especially considering local planning efforts such as Vision Dixie.

UDWR Response:

Please refer to the response to WRA comment 10.

WRA Comment 13:

Finally, comparing water use in other Southwest communities to Washington County provides valuable insight into the potential for water conservation. Tucson, Albuquerque, and Las Vegas have similar average temperatures and rainfall as southwestern Utah. The significant differences between these communities are their rates of water use and approach to water conservation.

UDWR Response:

Please refer to the response to Rutherford comment 7.

WRA Comment 14:

Washington County does not have the highest temperature, lowest rainfall, or highest evapotranspiration rate when compared to Albuquerque, Tucson, or the Las Vegas Valley, but it does have the highest residential water use, highest outdoor water use, and highest system-wide water use (Table 2). Washington County outdoor water use is almost triple that of Albuquerque, and system-wide water use is almost double that of Tucson. Achieving a 40% reduction in water use for Washington County by 2060 would bring water use in line with these other community's current water use.

Table 2. Water Use and Climatic Comparison of Washington County to Other Southwest Communities.¹²

Entity	Total Res. Use (gpcd)	Outdoor Use (gpcd)	System-wide Use (gpcd)	Avg. Annual Temp (F)	Avg. Annual Precip. (in)	Annual ET (in)
<i>Albuquerque</i>	110	42	173	56.0	8.9	38.1
<i>Tucson</i>	114	57	156	68.4	12.0	58.0
<i>Las Vegas</i>	174	105	276	68.0	4.5	74.8
<i>St. George</i>	183	113	316	62.0	8.0	55.0
<i>Washington County</i>	185	113	302	61.8	8.0	55.0

UDWR Response:

Please refer to the response to Rutherford comment 7.

WRA Comment 15:

Adopting an effective conservation rate structure has been a key strategy for reducing water use in these other Southwest communities. Water rates are one of the most effective – and cost effective – conservation measures. When designed properly, conservation rate structures provide a stable revenue stream for the utility and encourage efficient use of water.

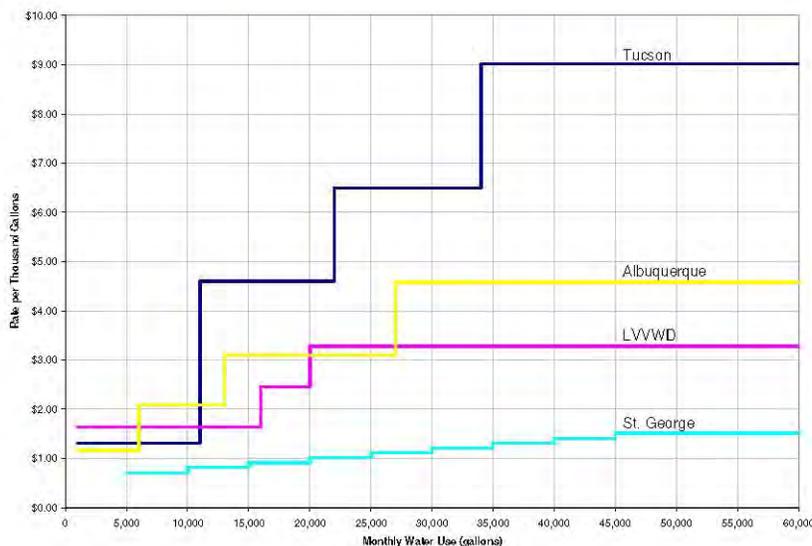
UDWR Response:

Section 5.2.2.1 of the draft Water Needs Assessment report describes the WCWCD conservation program and lists the cities in the St. George metropolitan area that have converted to an increasing block rate structure as part of their water conservation programs. WCWCD has an increasing block rate structure as part of its water conservation program.

WRA Comment 16:

16. As one local example, St. George’s increasing block rate structure does not provide an adequate conservation price signal (Figure 2). Because the price differential between blocks in St. George’s water rate structure is small and the fixed price is high, customers receive no financial signal when they consume excessive amounts of water. This is in direct contrast to customers in Tucson or Albuquerque which see the average price of water increase dramatically as their water use increases.

Figure 2. Marginal Price Curve of Water Rate Structures for Southwest Communities.



UDWR Response:

The WCWCD block rate structure for increasing water consumption is \$15.00 minimum for each connected user, plus \$2.00 per thousand gallons for the first 12,000 gallons, \$2.50 per thousand gallons for the next 5,000 gallons, \$3.00 per thousand gallons for the next 5,000 gallons, \$3.50 per thousand gallons for the next 5,000 gallons, \$6.00 per thousand gallons for the next 5,000 gallons, \$10.00 per thousand gallons for usage over 32,000 gallons up to 290,000 gallons per calendar year (does not apply if impact fee was paid for acreage over 10,000 square feet or more than one connection right was paid).

WRA Comment 17:

c. The Draft Report misstates the timing of the participants' need for additional water supplies. Given the overestimate of demands and lack of rigorous analysis of supply opportunities, the timing of need for the Lake Powell Pipeline in the WNA is inaccurate. Compare LPP Study Plan at 216 (study objectives include "Determine the likely timing of the need for the LPP supply when integrated with other potential supplies."). Using a correct estimate of current population and more realistic growth rates for the region will significantly decrease the need for the pipeline. Developing aquifer storage and recovery, utilizing agricultural water, and maximizing water conservation opportunities will provide additional supply not currently considered.

UDWR Response:

Please refer to the responses to WRA comments 2,5,6, and 9; and refer to the responses to LPPC comments 20, 21 and 114.

WRA Comment 18:

The Draft Report's consideration of water supply and demands should be modified, consistent with these comments.

UDWR Response:

Your comment has been noted.

WRA Comment 19:

III. Draft Study Report 19 -Climate Change

a. The Draft Report should be consistent with Council on Environmental Quality’s “Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions.”

Under NEPA, agencies are required to consider climate change and all reasonably foreseeable greenhouse gas emissions that result from agency’s action. Pursuant to NEPA’s “hard look” requirement, 42 U.S.C. § 4332(2)(C), agency “assessment of all ‘reasonably foreseeable’ impacts **must occur at the earliest practicable point**, and must take place before an ‘irretrievable commitment of resources’ is made.” *New Mexico ex rel. Richardson v. Bureau of Land Mgmt.*, 565 F.3d 683, 718 (10th Cir. 2009) (emphasis added) (holding that the Bureau of Land Management failed to comply with NEPA in its plan-level analysis); see also 40 C.F.R. § 1501.2 (“Agencies shall integrate the NEPA process at the earliest possible time to insure that planning and decisions reflect environmental values.”). “[D]ilatory or ex post facto environmental review cannot cure an initial failure to undertake environmental review.” *Pit River Tribe v. U.S. Forest Serv.*, 469 F.3d 768, 785 (9th Cir. 2006). Under NEPA, “the fact that climate change is largely a global phenomenon that includes actions that are outside of the agency’s control does not release the agency from the duty of assessing the effects of its actions on global warming within the context of other actions that also affect global warming.” *Center for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1217 (9th Cir. 2008) (emphasis in original; internal quotations omitted).

UDWR Response:

The Council on Environmental Quality’s “Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions” as referenced in the comment states that “CEQ does not intend this guidance to become effective until its issuance in final form.” FERC will prepare the NEPA compliance documents using the information submitted in the license application, which will include Exhibit E. The cumulative effects analyses incorporated into the final study reports will include consideration of the effects of climate change and greenhouse gas emissions.

WRA Comment 20:

b. The Draft Report fails to adequately consider water availability in light of climate change.

“Availability” of water should include a quantification of the water that is physically and legally available to be released through the pipeline. One of the stated goals in Section 19.6.3 of the Study Plan is to “Determine a reasonable range of future hydrologic conditions in the Colorado River Basin and Lake Powell, and assess the availability of water for the LPP diversion under these hydrologic conditions. This will include use of the Bureau of Reclamation’s CRSS hydrologic simulation model to simulate effects of different hydrologic scenarios on LPP diversions” (emphasis added). The CRSS model results show the probabilities for which water in Lake Powell would exceed or fall below the pipeline intake level (3,375 ft). However, the physical ability of water to flow through the pipeline due to its elevation is not equivalent to determining the availability of water for the LPP diversion.

UDWR Response:

The Reclamation CRSS model assesses the physical availability of water. Issues concerning UBWR rights under the law to divert water from Lake Powell for the LPP Project will be addressed in the license application.

WRA Comment 21:

In the event of a water shortage due to periodic hydrologic fluctuations and/or climate change, the LPP is not guaranteed to receive water even if the water can physically flow through the pipeline. A Compact Call could place mandatory restrictions on Utah’s Colorado River water users. Such a call could reduce the volume of water available for delivery through the LPP. This is also critically important to the cost-

benefit analysis: the cost of the pipeline per acre foot of water delivered will increase if the amount of water available decreases. While it is not possible to definitively predict the outcome of a Compact Call or Utah's allocation under other severe drought conditions, it is important to estimate to some degree how much water will be availability for the pipeline under these scenarios. Thus, we recommend that the Draft Report include a range of volumes of water both physically and legally available for delivery through the Lake Powell Pipeline under climate change scenarios.

UDWR Response:

Please refer to the response to WRA comment 20 and the response to LPPC comment 100.

WRA Comment 22:

Climate change impacts are an additional influence that should be factored into the CRSS model and future water predictions. Another goal in Section 19.6.3 of the Study Plan is to “Estimate potential effects on Colorado River streamflow associated with the combined influence of climate change and the proposed LPP diversion. This will include use of the Bureau of Reclamation’s CRSS hydrologic simulation model” (emphasis added). Chapter 4 in the Draft Report shows the difference between the observed hydrologic record (DNF) and the paleo-conditioned inflows (NPC) CRSS models, but it does not apply the effects of climate change to those hydrologic scenarios. The NPC model is not a proxy for climate change impacts, but rather it is a model of potential future river flows based on historical fluctuations. The Draft Report’s failure to include climate impacts is inconsistent with the Study Plan.

UDWR Response:

The Reclamation CRSS model was used by Reclamation to simulate conditions in Lake Powell and the Colorado River from 2009 through 2060 with and without the LPP Project, using the best available information. The Reclamation CRSS model results demonstrated the LPP Project diversion effects on Colorado River streamflows through comparison of the proposed project and no action alternative. The final study report will clarify how the combined influence of climate change and the proposed LPP Project diversion would affect Colorado River streamflow.

WRA Comment 23:

The Draft Report also misrepresents the impact of climate change in Chapter 5 by stating that “..Lake Powell is likely to decline in the future, either because of predicted climate change or to natural reversion toward the long-term historical mean determined from the tree ring studies” (emphasis added). This is not an either/or situation. Many statements in the literature review (see, e.g. Chapter 3 of the Draft Study) properly reflect the potential for the combined influence of climate change and historic hydrologic variation, but Chapter 4 does not present modeled results of this combined influence.

UDWR Response:

Please refer to the response to EDF comment 4.

WRA Comment 24:

Because climate change impacts are not accounted for, the probabilities of Lake Powell elevations and water releases as presented in this Report are not reliable. In order to adequately meet the study plan goals, the State of Utah must evaluate the impacts of climate change on the long-term historical runoff patterns. Ideally these would be integrated into the USBR’s CRSS model, but an acceptable alternative would be the USBR’s forthcoming Basin Study Report, which will more thoroughly incorporate the effects of climate change on water availability in the Colorado River Basin.

UDWR Response:

The final study report will incorporate appropriate information from the Reclamation SECURE Water Act Section 9503(c) report into the information presented and summarized.

WRA Comment 25:

In addition, not enough information about the CRSS was provided in a readily available and comprehensible format, and does not sufficiently address the goal in Section 19.6.3 of the Study Plan to: Summarize potential climate change effects in a Climate Change Technical Report. This technical report will include a description of the assumptions made for the Bureau of Reclamation’s CRSS modeling. Additionally, CRSS model output will be provided in the technical report.

UDWR Response:

The final study report will reference the Reclamation CRSS modeling and output (results) incorporated as Appendix 2 to the draft Surface Water Resources study report.

WRA Comment 26:

First, it is not clear which document is meant to serve as the “Technical Report.” Second, not enough detailed information is provided in Study Report 19 -the diversions from the Colorado River that were included in the model are not listed or quantified. This is especially relevant for potential, future diversion such as the proposed Regional Watershed Supply Project (“Million Pipeline”). Although more detailed information about the CRSS model is supposedly available in multiple attachments to Report 18, no attachments are in fact included.

UDWR Response:

The final study report will include a list of the diversions incorporated into the model. The final study report will reference the Reclamation CRSS modeling and output (results) incorporated as Appendix 2, Reclamation Colorado River Modeling Report to the draft Surface Water Resources study report.

WRA Comment 27:

c. The Study Report should incorporate USBR’s SECURE Water Act Section 9503(c)-Reclamation: Climate Change and Water 2011.

A recent report published by the USBR – SECURE Water Act Section 9503(c)Reclamation: Climate Change and Water 2011 has particular relevance to this proposed project, and though released after the Draft Reports, should be included in any subsequent revisions or updates. The Climate Change and Water 2011 report is intended as an assessment with a consistent methodology for eight Reclamation River basins, one of which is the Colorado River. It may be seen as a precursor to the Basin study, which intended to be a more detailed assessment of future water supply and demand in the Colorado Basin. When the Basin Study becomes available, we also recommend that it be incorporated into the Climate Change Study.

UDWR Response:

Please refer to the response to EDF comment 4.

WRA Comment 28:

The Climate Change and Water 2011 report presents results for the years 2020, 2050 and 2070. Most relevant to the Lake Powell Pipeline are the results that indicate an annual decrease in runoff at Lees Ferry of about 3% in 2020, 9% in 2050 and 7% in 2070, as shown in Figure 11 in their report. We recommend that this new study be incorporated into the Climate Change Study, and also apply the results of decreased runoff levels to the availability of water for the Lake Powell Pipeline.

UDWR Response:

Please refer to the response to EDF comment 4.

KBPI Comment 147:

Study Plan 19 calls for the completion of a number of tasks. Study Plan 19 §§ 19.6.1 to 19.6.6. For the first task, Study Plan 19 requires the extensive revision of the Water Needs Assessment that had been previously prepared. Study Plan 19 § 19.6.6. The previously issued Water Needs Assessment is described in Study Plan 19 as Phase I, and the revised Water Needs Assessment is described as Phase II. For the second task, Study Plan 19 requires the preparation of a report on the potential effects of climate change on water availability for the Project. Study Plan 19 § 19.6.3. Both the Phase II Water Needs Assessment and the climate change report have been provided. The third and fourth tasks indicated in Study Plan 19, however, do not appear to have been included as part of the analysis in the draft reports. The third task requires the analysis of the potential effects of the Project on other water users in the Colorado River Basin, including the potential effects on several Indian tribes. Study Plan 19 § 19.6.4. The fourth task requires the provision of cost estimates for the various water supply options, including cost estimates for the Project as well as all other water supply options that have been considered. Study Plan 19 § 19.6.5. The analysis for these two tasks must be provided as part of this study, otherwise the Lake Powell Pipeline Draft Study Report 19: Climate Change (Mar. 10, 2011) (“Draft Report 19”) will remain noncompliant with Study Plan 19.

UDWR Response:

The final study report will incorporate analyses of effects on other water users as described in Section 19.6.4 of the approved study plan. The final study report will include the cost estimates of alternative components as described in Section 19.6.5 of the approved study plan.

KBPI Comment 148:

Section 4.1 Overview - Draft Report 19 indicates that “[t]he model and hydrologic inflows analyzed in the Interim Guidelines EIS . . . are summarized in Section 0.” Draft Report 19 at 4-1. No “Section 0” appears in Draft Report 19, making it impossible to evaluate this portion of Draft Report 19.

UDWR Response:

The final study report will clarify the reference to the model and hydrologic inflows analyzed in the Interim Guidelines EIS.

KBPI Comment 149:

Study Plan 19 requires that “[e]ffects of each of the Project alternatives will be simulated using the [Colorado River Simulation System (“CRSS”)] model” and that “CRSS model output will be provided in the [climate change] technical report.” Study Plan 19 § 19.6.3. Draft Report 19 indicates that an analysis of the Project alternatives in light of the results of the climate change study “can be found in the LPP Surface Water Report.” Draft Report 19 at 4-1. Because this analysis is required as part of Study Plan 19 for the climate change report, see Study Plan 19 § 19.6.3, the results should be summarized here.

UDWR Response:

The final study report will summarize the analysis of Project alternatives in light of the results of the climate change study.

BIA Comment 105:

Report 19 – Water Needs Assessment – Sec. 3.4.2 - It is good the report mentions the possibility of the Paiute Tribes obtaining and using LPP water in the future since they have lands in the proximity of the LPP study area. Is the 500 af/yr included in CICWCD’s requested amount from the LPP?

UDWR Response:

The draft study report discusses that for the purposes of the Water Needs Assessment report, the CICWCD may be requested to provide a total of 500 acre-feet per year to two bands of the Paiute Indian Tribe of Utah within the water district's service area.

BIA Comment 106:

Report 19 – Water Needs Assessment – Sec. 4.2.5.7 - Central Iron County Water Conservation District – How does the groundwater applications filed by CICWCD (West Basin rights) relate to the 13,000 afy they will get from the LPP? For CICWCD, why were the West Basin groundwater rights not considered as reasonably foreseeable? Development of the West Basin groundwater rights is probably not any more controversial or uncertain than the LPP.

UDWR Response:

Your comment has been noted. The LPP Project water rights are existing rights held by the UBWR. The CICWCD groundwater applications for West Basin water rights are not reasonably foreseeable because the Utah State Engineer has not approved them.

Draft Study Report 20 – Wetlands and Riparian Resources

FERC Comment 42:

Include a detailed wetlands and riparian resources mitigation plan in the draft license application, in coordination with all relevant local, state, and federal agencies and tribes.

UDWR Response:

The draft license application will include a detailed wetlands and riparian resources mitigation plan, developed in coordination with all relevant local, state, and federal agencies and tribes.

KBPI Comment 150:

Section 2.1.1 Background/Literature Review - Draft Report 20 lists the data used in preparing the study, including “[v]egetation mapping,” Draft Report 20 at 2-1, but fails to include any tribal data or sources. Section 20.4.3 of Study Plan 20 states that the Kaibab Tribe’s “list of Plants of Cultural Concern . . . will be referenced in evaluation of wetland and riparian vegetation.” Draft Report 20 directly contravenes Study Plan 20 by failing to reference the Kaibab Tribe’s list, and Draft Report 20 is, therefore, noncompliant with Study Plan 20.

UDWR Response:

The final study report will include the Kaibab Band of Paiute Indians’ List of Plants of Cultural Concern in evaluation of wetland and riparian vegetation.

KBPI Comment 151:

Section 2.1.2.1 Wetland Determination - Draft Report 20 states that the “wetland determination . . . included an evaluation of vegetation,” Draft Report 20 at 2-1, but fails to reference the Kaibab Tribe’s list of Plants of Cultural Concern. Draft Report 20 also states that Appendix A “contains more specific information,” Draft Report 20 at 2-1, but Appendix A also fails to reference the Kaibab Tribe’s list of Plants of Cultural Concern. Section 20.4.3 of Study Plan 20 states that the Kaibab Tribe’s “list of Plants of Cultural Concern . . . will be referenced in evaluation of wetland and riparian vegetation.” Draft Report 20, in fact, fails to mention the Kaibab Tribe’s List of Plants of Cultural Concern anywhere in the report, which failure directly contravenes Study Plan 20 and renders Draft Report 20 noncompliant with Study Plan 20.

UDWR Response:

Please refer to the response to KBPI comment 150.

KBPI Comment 152:

Section 2.1.2.3 Scour Chains and Crest Gages - Draft Report 20, including Table 2-1, indicates that scour chains were installed and removed during field surveys on tribal lands, such as at Two Mile Wash and Cottonwood Creek, Draft Report 20 at 2-3, but fails to indicate whether tribal permission was obtained prior to performing such surveys. Section 20.6.2.2 of Study Plan 20 states that “[t]ribal permission will be obtained prior to conducting field surveys . . . on . . . the Kaibab Indian Reservation.” So as to accord with Study Plan 20, Draft Report 20 must state whether tribal permission was obtained. As it stands, Draft Report 20 is noncompliant with Study Plan 20.

UDWR Response:

The final study report will clarify that the Kaibab Band of Paiute Indians granted permission to UDWR prior to conducting wetland and riparian area field surveys and studies on the Kaibab-Paiute Indian Reservation.

KBPI Comment 153:

Section 3.2 Overview - Draft Report 20, including Table 3-1 and Figure 3-1, indicates that field surveys were performed at numerous locations within the Kaibab Tribe’s Reservation, Draft Report 20 at 3-1 to 3-4, 3-5, but fails to indicate whether tribal permission was obtained prior to performing such surveys. Section 20.6.2.2 of Study Plan 20 states that “[t]ribal permission will be obtained prior to conducting field surveys . . . on . . . the Kaibab Indian Reservation.” So as to accord with Study Plan 20, Draft Report 20 must state whether tribal permission was obtained. As it stands, Draft Report 20 is noncompliant with Study Plan 20.

UDWR Response:

Please refer to the response to KBPI comment 152.

KBPI Comment 154:

Section 3.5.6 Two-Mile Wash - Draft Report 20 indicates that a scour chain was installed and removed on tribal lands at Two-Mile Wash, Draft Report 20 at 3-10, but fails to indicate whether tribal permission was obtained prior to performing such activity. Section 20.6.2.2 of Study Plan 20 states that “[t]ribal permission will be obtained prior to conducting field surveys . . . on . . . the Kaibab Indian Reservation.” So as to accord with Study Plan 20, Draft Report 20 must state whether tribal permission was obtained. As it stands, Draft Report 20 is noncompliant with Study Plan 20.

UDWR Response:

The final study report will clarify that the Kaibab Band of Paiute Indians granted permission to UDWR prior to installing, monitoring and removing the scour chain at Two-Mile Wash as part of the wetland and riparian area field surveys and studies on the Kaibab-Paiute Indian Reservation.

KBPI Comment 155:

Section 3.5.7 Cottonwood Wash - Draft Report 20 indicates that a scour chain was installed and removed on tribal lands at Cottonwood Wash, Draft Report 20 at 3-10, but fails to indicate whether tribal permission was obtained prior to performing such activity. Section 20.6.2.2 of Study Plan 20 states that “[t]ribal permission will be obtained prior to conducting field surveys . . . on . . . the Kaibab Indian Reservation.” So as to accord with Study Plan 20, Draft Report 20 must indicate whether tribal permission was obtained. As it stands, Draft Report 20 is noncompliant with Study Plan 20.

UDWR Response:

The final study report will clarify that the Kaibab Band of Paiute Indians granted permission to UDWR prior to installing, monitoring and removing the scour chain at Cottonwood Wash as part of the wetland and riparian area field surveys and studies on the Kaibab-Paiute Indian Reservation.

KBPI Comment 156:

Section 3.6 Jurisdictional Waters - Draft Report 20 states “[t]he area of waters indicated to be jurisdictional was estimated from digital photography and field data collected based on the potential location of ordinary high water mark.” Draft Report 20 at 3-12. Table 3-6 indicates that numerous locations on tribal lands were evaluated by such methods. Draft Report 20 at 3-12 to 3-13. Section 20.6.2.2 of Study Plan 20 states that “[t]ribal permission will be obtained prior to conducting field surveys and mapping on, and aerial photography over, the Kaibab Indian Reservation for the analysis of . . . jurisdictional waters.” So as to accord with Study Plan 20, Draft Report 20 must state whether tribal permission was obtained. As it stands, Draft Report 20 is noncompliant with Study Plan 20.

UDWR Response:

The final study report will clarify that the Kaibab Band of Paiute Indians granted permission to UDWR prior to performing wetland and riparian area field surveys and studies on the Kaibab-Paiute Indian Reservation. Aerial photography used to perform analysis of riparian areas on the Kaibab-Paiute Indian Reservation were not taken by UDWR; it was obtained from data collected by the U.S. Government and from commercially available data via Internet sites.

KBPI Comment 157:

Chapter 5 Mitigation and Monitoring - Draft Report 20 describes the mitigation measures that will be implemented during construction to avoid or minimize impacts on wetlands and riparian areas, Draft Report 20 at 5-1 to 5-3, but fails to describe how these measures were developed and whether the Kaibab Tribe participated in such development. Section 20.6.2.5 of Study Plan 20 states that “mitigation options will be developed in consultation with and evaluated by . . . tribes . . . and factored into the respective decision documents.” So as to accord with Study Plan 20, Draft Report 20 must describe its consultation efforts with the Kaibab Tribe and how such consultations factored into the final mitigation measures. Specifically, in accordance with section 20.4.3 of Study Plan 20, Draft Report 20 must describe the mitigation measures developed, in consultation with the Kaibab Tribe, in order to protect plants of cultural concern. In the absence of such description of mitigation measures, Draft Report 20 is noncompliant with Study Plan 20.

UDWR Response:

The final study report will include mitigation measures developed in consultation with the Kaibab Band of Paiute Indians to protect plants of cultural concern.

KBPI Comment 158:

Chapter 7 Cumulative Impacts - Other than for the “No Action Alternative,” which “would have no cumulative impacts,” Draft Report 20 states that “cumulative impacts analysis is pending completion for identification of inter-related projects that would cause cumulative impacts with the LPP project.” Draft Report 20 at 7-1. The cumulative impacts analysis must be completed as soon as possible and the Kaibab Tribe hereby requests additional time to submit comments on the cumulative impacts analysis.

UDWR Response:

The UDWR is completing the cumulative effects analysis and will incorporate it into the final study report.

BIA Comment 107:

Report 20 – Wetlands & Riparian - The most affected riparian resource on the Kaibab Paiute reservation is Kanab Creek. At both Fredonia and Jacob Canyon is rated as Functional – At Risk with trend either not apparent or downward. Above Kanab, the creek is perennial and supports speckled dace and flannelmouth sucker among other biota. The reach on the reservation has lost habitat and become dominated by salt cedar due to lack of water. Restoration would have benefits for quality of life, harvesting, and tourism assets on the reservation. It is not too late for this creek; it can be restored and water is the key.

UDWR Response:

Your comment has been noted.

BLM Comment 148:**20 Draft Riparian and Wetland Resources Study Report**

Pg. 3-2 Table 3-1 - Johnson Wash and Buckskin Gulch are listed as perennial in table. They are more in line with intermittent status.

UDWR Response:

The designations of perennial in Table 3-1 in the draft study report are made by the USGS and cannot be changed by UDWR.

BLM Comment 149:

Pg. 3-12 – It is not clear how the jurisdictional water status was determined in relation to Buckskin Gulch. Buckskin is not listed as jurisdictional. Buckskin Gulch is an intermittent stream with a large contributing watershed area.

UDWR Response:

The final study report will address Buckskin Gulch, which was determined by UDWR during field studies to not be a jurisdictional water at the proposed LPP Project crossing along US Highway 89. This determination was made based on the lack of hydrophytic vegetation, hydrologic and soil conditions and indicators.

BLM Comment 150:

Pg. 4-2 - The riparian acreage for the Paria River is 42.23 acres. Much of this area is along Sand Gulch and has tamarisk cover.

UDWR Response:

The final study report will clarify in Table 4-1 that the Paria River area includes portions of Sand Gulch, which has a predominantly tamarisk vegetation cover.

BLM Comment 151:

Pg. 5-1 - Mitigation and Monitoring: Silt fences and/or straw bales are not effective against concentrated flows that would occur in the Paria channel; see related comments as described in Report 17.

UDWR Response:

The use of silt fences and/or straw bales to filter suspended and bedload sediments in and along the Paria River channel would only occur when the river is at low flow or dry, as indicated on the previous bullet item on page 5-1 of the draft study report.

BLM Comment 152:

Pg. 5-1 - What are the riparian shrub species that would need to be salvaged and re-planted? On the Paria, it appears to be tamarisk.

UDWR Response:

During UDWR field reviews of LPP Project stream crossing sites with a Corps of Engineers representative, the mitigation measure in the comment was identified and discussed. The Corps of Engineers representative indicated that in riparian areas dominated by tamarisk, other riparian plant species such as coyote willow could be substituted for tamarisk in restoring riparian vegetation.

BLM Comment 153:

Chapter 5: Mitigation and Monitoring - Pg.5-2, last paragraph 1st line, “Monitoring would be performed to make sure riparian revegetation measures result in restoring riparian...” Who is responsible for monitoring during, and specifically three years after construction?

UDWR Response:

Monitoring of riparian revegetation measures would be performed by qualified biologists under the supervision of the UDWR.

Draft Study Report 21 – Wildlife Resources

FERC Comment 43:

Include a detailed wildlife mitigation plan in the draft license application, in coordination with all relevant local, state, and federal agencies and tribes.

UDWR Response:

The draft license application will include a detailed wildlife mitigation plan, developed in coordination with all relevant local, state, and federal agencies and tribes.

KBPI Comment 159:

Section 1.5 Identified Issues - Draft Report 21 claims that only two “issues were raised during the public and agency scoping and informational process,” Draft Report 21 at 1-20, both of which are very broad and neither of which relate specifically to the Kaibab Tribe. Sections 21.4.2 and 21.4.3 of Study Plan 21 identify numerous issues with greater specificity than Draft Report 21. Section 21.4.2 of Study Plan 21 states, for example, that “particular attention” must be paid to “[c]ulturally sensitive areas.” Also, even though the Kaibab Tribe raised it during the scoping and informational process, Draft Report 21 fails to identify impacts to wildlife habitats and species that are of particular importance to the Kaibab Tribe as an issue to be addressed. See Kaibab Tribe’s Opening Comments at Attachment 2. Consistent with Study Plan 21, Draft Report 21 must identify impacts to wildlife habitats and species that the Kaibab Tribe places importance on as an issue to be addressed. Relatedly, Draft Report 21 must also provide greater specificity to the issues that are already identified. As it stands, Draft Report 21 is noncompliant with Study Plan 21.

UDWR Response:

The final study report will incorporate the wildlife issues and impacts on wildlife habitats and species of cultural importance to the Kaibab Band of Paiute Indians. Please refer to the response to KBPI comment 4.

KBPI Comment 160:

Section 1.6 Impact Topics - Draft Report 21 lists only three impact topics, each of which are extremely broad: “Wildlife habitats,” “Wildlife populations,” and “Big game critical seasonal ranges and migration routes.” Draft Report 21 at 1-20. Draft Report 21 fails to mention impacts to the wildlife habitats and species that are important to the Kaibab Tribe. Section 21.4.2 of Study Plan 21 states that “particular attention” must be paid to “[c]ulturally sensitive areas” and, as discussed above, the Kaibab Tribe provided a list of wildlife species that are culturally significant. Draft Report 21 must identify impacts to culturally sensitive areas, including the wildlife habitats that are culturally significant to the Kaibab Tribe, however, the failure to identify such impacts renders Draft Report 21 noncompliant with Study Plan 21.

UDWR Response:

The final study report will incorporate the list of wildlife that are culturally significant and include impacts on wildlife habitats on the Kaibab-Paiute Indian Reservation that are culturally significant to the Kaibab Band of Paiute Indians. Please refer to the response to KBPI comment 4.

KBPI Comment 161:

Section 2.2 Data Used - Draft Report 21 describes the data used to analyze wildlife and habitat, Draft Report 21 at 2-1, but fails to list any tribal sources of data or indicate whether any attempt was made to obtain tribal data. Section 21.6.2.1 of Study Plan 21 states that the literature review will include various state and federal materials “and other undetermined sources.” The use of tribal data should be an integral part of the analysis of wildlife and habitat. Further, section 21.4.3 of Study Plan 21 identifies several data needs. Draft Report 21 should clarify if the listed data sources satisfied these data needs, however, the failure to identify tribal data sources renders Draft Report 21 noncompliant with Study Plan 21.

UDWR Response:

The final study report will include Kaibab Band of Paiute Indians’ data sources for wildlife and clarify that the listed data sources satisfy the data needs.

KBPI Comment 162:

Chapter 3 Affected Environment (Baseline Conditions) - Draft Report 21 describes the study area and baseline conditions for various wildlife habitats, Draft Report 21 at 3-1 to 3-22, but fails to specify culturally sensitive areas. Section 21.4.2 of Study Plan 21 states that in defining the study area, “particular attention” must be paid to “[c]ulturally sensitive areas.” Draft Report 21 must identify and describe the baseline conditions for those wildlife habitats that also have cultural significance. The failure to analyze impacts to culturally sensitive areas renders Draft Report 21 noncompliant with Study Plan 21.

UDWR Response:

The final study report will include a description of baseline conditions for wildlife habitats that have cultural significance to the Kaibab Band of Paiute Indians, provided that such data is made available to the UDWR by the Kaibab Band of Paiute Indians. Please refer to the response to KBPI comment 4.

KBPI Comment 163:

Chapter 7 Cumulative Impacts - Other than for the “No Action Alternative,” which “would have no cumulative impacts,” Draft Report 21 indicates that “cumulative impacts analysis is pending completion for identification of inter-related projects that would cause cumulative impacts with the LPP project.” Draft Report 21 at 7-1. The cumulative impacts analysis must be completed as soon as possible and the Kaibab Tribe hereby requests additional time to submit comments on the cumulative impacts analysis.

UDWR Response:

The UDWR is completing the cumulative effects analysis and will incorporate it into the final study report.

BIA Comment 18:

General - Significant criteria are mentioned a lot throughout the early sections of the document, with impacts mentioned as not significant, or not reaching significance criteria thresholds, however, they are not defined until much later in the document

UDWR Response:

The wildlife impact significance criteria are referenced in the Executive Summary and methodology sections of the draft study report. Chapter 4 in the draft study report defines the significance criteria and then applies them to potential impacts analyzed throughout the remainder of the chapter to determine the impact significance.

BIA Comment 19:

General - Is there any habitat for the elk within the project area? This species is included on the “species observed” table (3.2), but not discussed with other big game animals.

UDWR Response:

The final study report will clarify the occurrence of elk habitat within the project study area.

BLM Comment 154:***21 Draft Wildlife Resources Study Report***

A very major concern on the Monument portion is the timing of the project. Thousands of mule deer cross U.S. 89 during the spring and fall to access wintering grounds and return to summer grounds. The most concerning area is between Johnson Canyon turnoff and the Fivemile Mountain turnoff. Dozens of deer are hit by vehicles in this area each year. They mention that project work would not take place in this area between November 1 to April 15. The restriction needs to go beyond this, since mule deer cross on the Buckskin as early as mid September and as late as early May. Therefore, construction needs to cease from October 1 to May 1, to allow these deer to migrate without the added stress of construction activities. There needs to be further analysis about the impacts from the new buildings along this same critical migration route. There can be no construction or any permanent building between Johnson Canyon and the Fivemile Mountain turnoff if at all possible. If not practicable, then it needs to be as close to the Johnson Canyon side as possible to avoid the Buckskin mountain area.

UDWR Response:

The periods for deer migration across the GSENM between the Johnson Canyon turnoff and the Fivemile Mountain turnoff were determined in consultation with the Utah Division of Wildlife Resources and the Arizona Department of Fish and Game. The final study report will address the mule deer migration period. Proposed LPP Project facilities, including buildings above the ground surface, would include one in-line hydroelectric plant along the pipeline alignment near the west boundary of the GSENM and expansion of the Buckskin substation. The proposed regulation tank at the high point along US Highway 89 would be buried.

USFWS Comment 86:***Draft Study Report 21: Wildlife Resources***

Section 2.3: Assumptions, page 2-1: This section should clarify that the true impacts of noise is to individual animals and not the habitat, per se. Certainly, noise affects the use of habitats by wildlife.

UDWR Response:

The final study report will clarify that “the analysis used the following assumptions of noise impacts on wildlife and their use of habitat affected by noise”.

USFWS Comment 87:

Section 3.3: Wildlife Habitat, pages 3-6 through 3-13: All of the existing vegetation communities are described in detail in Study #15 Vegetation Communities. Instead of repeating the descriptions of vegetation communities, we recommend simply referencing Study Plan 15. This will make the document more readable.

UDWR Response:

Each draft study report is intended to stand on its own, with references to other study reports as necessary to incorporate more detailed analyses. The vegetation community descriptions in the Wildlife Resources study report were highly condensed to provide a summary picture of the wildlife habitat present in the study area.

USFWS Comment 88:

Section 4.4.1.2: Wildlife Habitats, page 4-3: 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.

UDWR Response:

The final study report will eliminate the term “stock pond” from the text in Section 4.4.1.2 to avoid the implication that they have no habitat values. There would be temporary disturbance of only 0.01 acre identified as a “stock pond” from South Alternative construction and less than 0.1 acre from Cedar Valley Pipeline construction.

USFWS Comment 89:

Section 4.4.1.2.2: Mojave Desert Ecological Region, page 4-4: All permanent and temporary impacts to Mojave Desert habitats should be considered significant, especially because these habitats can take anywhere from decades to centuries to recover. Please address the long-term effects and recovery of Mojave Desert habitats.

UDWR Response:

The UDWR appreciates the USFWS perspective on Mohave Desert habitat impacts, and the UDWR accepts the longer term horizon for restoration of the special habitats in the Mohave Desert Ecological Region. While the tables of permanent and temporary habitat disturbance are accurate, based on GIS analysis of the construction corridors, nevertheless the draft study report discussion of effects will be edited to place all disturbances in a “total” category, reflecting the long recovery times of desert habitats. None the less, the total area of habitat disturbed (172.8 acres) is not large enough to change the overall assessment of not exceeding significance criteria for Mohave Desert habitat disturbance.

USFWS Comment 90:

Section 4.4.1.3.2: Indirect Impacts to Wildlife Populations, page 4-6: 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).

UDWR Response:

Please refer to the response to USFWS comment 89. The final study report text will be changed from “regain most of their habitat value” to “regain some of their habitat value” wherever that phrase was used.

USFWS Comment 91:

Section 4.4.2.1.1.1: General Wildlife Habitats, page 4-7: 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 LPP, release of any water into drainages can be very detrimental to native species downstream.

UDWR Response:

The final study report will clarify inconsistencies between the draft Aquatic Resources study report and the draft Wildlife Resources study report with respect to infrequent releases of LPP water into washes and dry stream beds during maintenance activities between the water intake and the high point in the GSENM. In no case would any water be released from the LPP which would contain aquatic invasive species. The UDWR has committed to provide initial and long-term monitoring and treatment plans for the LPP Project to control the spread of aquatic invasive species (AIS) and make sure adequate AIS response measures are included in all LPP Project planning, construction and implementation activities.

Draft Study Report 22 – Alternatives Development

Rutherford Comment 9:

From the March 22, 2011 meeting notes:

*Was there any consideration given to how water is being used by WCWCD, whether it is being effectively used or not? How about commercial/institutional/industrial (CII) uses? **Response:** Culinary water is currently being used for residential outdoor landscape watering. That component of the water is considered available to be used for indoor culinary purposes with potential future outdoor watering restrictions. The data are not available from the State of Utah’s Municipal and Industrial Water Use Reports to analyze the outdoor watering portion of CII.*

*I consider the above answer patently incorrect. This information should be available and should have been sought by MWH for their studies. CII water use is not insignificant in Washington County as is clear from the Washington County Water District’s own publication “Water Line” where their graph shows that **47% of our water goes to CII! – no significant effort is being made to effectively lower this and bring in line with other desert cities that use 20-30%.** ... It seems clear to me that the District has removed items from conservation efforts that clearly relate to the overuse of water for CII in our area. To expect taxpayers to pick up the tab for the State to secure their remaining Colorado River water rights when our local water authority and politicians are making no effort to deal with “overuse” issues is not right.*

UDWR Response:

UDWR disagrees with the comment and conclusions made in the comment. The UDWR website contains a link to the most recent “Municipal and Industrial Water Supply and Uses report for the Kanab Creek/Virgin River Basin” (January 2009, using data collected from 2005, prepared by the UDWR): http://www.water.utah.gov/m&i/PDF/KanabVirgin/09KCVR_M&I_2005.pdf. Table 16 in this report displays the Washington County Water Use for Public Community Systems, Potable Usage (acre-feet per year) for residential indoor, residential outdoor, commercial total, institutional total, industrial total and total Municipal and Industrial (M&I). Water conservation measures implemented during the period 1997 to 2005 have reduced Washington County CII water use from 36.6 to 32.2 percent of the total M&I

potable usage, based on the UDWR M&I reports for the Kanab Creek/Virgin River Basin. Additional water conservation measures have been identified to reduce usage from all categories between 2010 and 2020 and onto 2050 to achieve or exceed the Utah per capita water use reduction goal. From page 5-1, Section 5.1 in the Draft Water Needs Assessment study report, the UDWR established statewide water conservation goals to reduce 1995 per capita water demand at least 25 percent by 2050. Based on recent progress made in implementing water conservation programs and measures, UDWR revised the water conservation goal to be 25 percent reduction from 2000 per capita use by 2050. From page 5-11, Section 5.2.3 in the Draft Water Needs Assessment study report, WCWCD achieved approximately 13 percent reduction in per capita water user between 2000 and 2009, and has approximately 12 percent conservation (water use reduction) remaining to achieve the UDWR goal by 2050.

Rutherford Comment 23:

Quote from 1.4 Summary Description of the No Action Alternative: “.. would continue to flow into the Lake until the water is used for another State of Utah purpose or released according to the operating guidelines.” What greater “use” or “value” does this water have for the State of Utah and the citizens of the three affected counties? Can the State “market” this water as has been discussed at earlier times – for example by Gov. Mike Leavitt?

UDWR Response:

Your comment has been noted. Utah does not intend to market its Colorado River water and does not have the required authorizations to even do so.

Rutherford Comment 24:

*The “no action alternative” and “no Lake Powell water alternative” are structured in a way that seems to doom them to failure when it comes to “providing water.” ... **WHAT DO WE DO WHEN WE RUN OUT OF LAKE POWELL WATER?***

UDWR Response:

Your comment has been noted.

LPPC Comment 121:

Study Plan (22.2.1) Study Description

This study plan will involve combinations of potential future sources, increased water conservation, reuse and recycling, and reverse osmosis treatment of Virgin River water.

We disagree with the sufficiency of the study results. The studies were not conducted as provided for in the study plan. The study report did not include sufficient or the correct data to come a reasoned conclusion.

UDWR Response:

Your comment has been noted. The draft study report addresses these items in Chapter 2, Sections 2.1.1, 2.1.2, and 2.1.3; and Chapter 3, Sections 3.2 and 3.3.

LPPC Comment 122:

Population Data

We are concerned the environmental studies are based on faulty population and water demand estimates that are basis for the need for the Lake Powell Pipeline project by 2020. Estimates not based in reason should not be the basis for the purpose and need section of the proposed action. The information on population projections should be of high quality, done with professional integrity and be objective.

UDWR Response:

Your comment has been noted. The UDWR will use the GOPB population projections for planning the LPP Project, as stated in Section 22.6.2 of the approved study plan.

LPPC Comment 123:

To create an accurate picture of need, the Applicant should wait for new growth estimates from GOPB. As an illustration of the inflated past by projections, in 2008 the GOPB predicted Utah population to increase by 71,932 between 2011 and 2012. However, the recent 2011 Economic Outlook Report available at (<http://www.nber.org/cycles/dec2008.html>) released by the same entity reports total Utah growth in the same period to be only 47,000. Total growth projections in Utah have been slashed to 65% of their previous estimates. The same entity also states in their 2009 population estimates report (<http://governor.utah.gov/deal/UPEC/2009%20Utah%20Population%20Estimates%20by%20County.pdf>) that Washington County grew at a mere 0.5%. This is a vast divergence from the predicted rate of 5% predicted by Washington County Water Conservancy District until 2030.

UDWR Response:

Your comment has been noted. The UDWR will use the current GOPB population projections for planning the LPP Project, as stated in Section 22.6.2 of the approved study plan.

LPPC Comment 124:***Water Conservation***

We recommend the objectives of increased water conservation, and an accurate accounting of all future potential sources of water and recycling are considered in the Conceptual No Lake Powell Water Alternative section of the study report before the Commission approves this study plan as complete.

UDWR Response:

Your comment has been noted. The draft study report addresses these items in Section 3.2.

LPPC Comment 125:

The Commission's Scoping Document 2 (SD2) comments mentioned that increased water conservation was a concern in scoping. It reads:

"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:

Increased water conservation can delay the need for the pipeline or other water supply projects."

The Washington County Water District has not increased its water conservation goal of 25% by 2060 or in the proposed No Lake Powell water Alternative. The Coalition wrote extensive comments in SD2 describing how more water could be saved by 2060 with real water conservation and how others water districts in the state are meeting the 25% goal much sooner. The Conceptual No Lake Powell Water Alternative should consider increased water conservation measures and identify those that will target reducing peak water demand. The proposed study report does not address increased water conservation or recycling. Potential water savings from more aggressive conservation measures should be considered in the Conceptual No Lake Powell Water Alternative.

UDWR Response:

Your comment has been noted. The draft study report was prepared according to the FERC approved study plan.

LPPC Comment 126:

The Applicant is also not willing to consider more than 25% savings of water conservation to the year 2060. Many states have set and met more aggressive conservation goals. We outlined in SD2 that Utah water agencies are meeting the target of 25% much faster than the Washington County Water Conservancy District's forecast of only 25% saving by 2060. Before proceeding, the study report should look at a more aggressive conservation approach and consider the possible water savings. Rather than portraying a reasonable picture of conservation the study report in Conceptual No Lake Powell Water Alternative attempts so scare the public by describing an extreme interpretation of what real water conservation would mean to the county WCWCD has outlined potential conservation measures and savings in this report

<http://www.powellpipelinefacts.org/images/pdf/Conwervation%20Cost%20And%20Savings.pdf>

However, many of these measures are not implemented until 2020-2037. Implementing these measures sooner would provide an additional 14,000 AF of water.

UDWR Response:

Your comment has been noted. The draft study report was prepared according to the FERC approved study plan.

LPPC Comment 127:**Alternatives**

The Conceptual No Lake Powell Water Alternative is not an objective alternative that meets the NEPA requirements of a reasonable alternative for purpose and need for the project. The Commission must objectively evaluate all reasonable alternatives in enough detail so a reader can compare and contrast the environmental effects of the various alternatives. The report should just include how the applicant could replace the water needed from Lake Powell Pipeline by 2020. The Conceptual No Lake Water Alternative should be grounded in a "Rule of Reason" and take a hard look as well as make a good faith effort that study results are valid so better decisions are made to meet the need of proposed action.

UDWR Response:

Your comment has been noted.

LPPC Comment 128:**Chapter 1 - Planned and Potential Future Water Supply Projects****2.1.1 WCWCD****Agricultural Water**

We disagree that only additional 12,400 acre feet of agricultural water will be available by 2037. This report must account for all the agricultural water in the county. The coalition gave extensive comments in SD1 and SD2 on identifying agricultural well water of 18,000 acre feet that could be available for future use that has not been counted by the district. The Water District now controls the largest local irrigation canal company. This company owns most irrigation water shares on the Virgin River. The Water District will also be taking over as the Virgin River Commissioner as well. The Water District is not forth coming on how much water their Quail Creek project diverts off the river every year and then returns to river through its hydropower plants. Given their unique position of power and informational control, a thorough, neutral, assessment of water supplies must be completed in this study report. The report should assess how much water is diverted off the Virgin River to the reservoirs every year. The report should also include all the 147 water certificates with the amount of water the district own.

The Commission stated in SD2 : "Because the number of agricultural users that would give up their water rights and convert them to residential use is highly speculative, we cannot predict

which agricultural wells might be available to convert to residential use in the future.” SD2, p.11.

UDWR Response:

The draft study report was prepared according to the FERC approved study plan. The above quote remains the UDWR response to the comment.

LPPC Comment 129:

However, private agricultural well and surface water could credibly yield substantial volumes of culinary water. The Commission’s analysis of water supplies for the No Action and The Conceptual No Lake Powell Water Alternative would be deficient if it ignored agricultural land and water use conversions. Rather than disregard the potential for agricultural water use conversions based on their speculative nature, the Commission must develop reasonable assumptions. We recommend that the Commission rely on urban planning documents and patterns of growth to assess potential agricultural lands that will be converted to urban use, and quantify the water rights associated with these lands. The Coalition pointed out in SD1 and SD2 that there are still other water resources available that are not being considered by the Applicant as possible future culinary water supplies. We disagree that the Applicant provided an acceptable, thorough estimate of potential water supply. The Applicant only considered agricultural conversion of 4,000 AF to culinary use and 12,400 AF of agricultural water to secondary use by 2060 – an unacceptably low estimate. Given the rapid rate of development of agricultural lands in Washington County, the Commission’s EIS must assess the potential for agricultural water conversions to meet future needs. We recommend that the Commission establish several scenarios, with varying conversion rates.

UDWR Response:

Your comment has been noted. The draft study report was prepared according to the FERC approved study plan.

LPPC Comment 130:

We recommend the study report include a detailed accounting of where the 86,670 acre feet of agricultural surface water went that was estimated by the state in 1990. If it is found that significant amounts of water still remain in the system that the Water District is not willing to count, the Conceptual No Lake Powell Water Alternative of a future community built of rocks and cement is unfounded and misleading and not based on any facts or reason.

UDWR Response:

Your comment has been noted. The draft study report was prepared according to the FERC approved study plan.

LPPC Comment 131:

The Applicant cannot describe such dire conditions in the Conceptual No Lake Powell Water Alternative when they don’t account of all the agricultural water and secondary water not currently being included in the Conceptual No Lake Powell Water Alternative. The Applicant has to consider all the water supplies in county including the Water Districts current water rights. In addition total amounts of water in storage must be reported to give a complete picture of water that will be available for projected population by 2020.

	<i>Annual Acre feet yield</i>	<i>Acre feet storage capacity 2008</i>	<i>Retail sales acre feet 2007</i>
<i>Quail lake Reservoir</i>	22,000	40,000	16,345
<i>Sand Hollow Reservoir</i>	7500	50,000	2,149
<i>Sand Hollow wells</i>	8000		?
<i>Sand Hollow aquifer storage</i>		70,000	
<i>Total</i>	37,000	160,000	18,494

UDWR Response:

Your comment has been noted. The draft study report was prepared according to the FERC approved study plan.

LPPC Comment 132:

Private Water Rights

A discussion of the existing private rights should also be in this study report to be considered complete. A thorough study of all water supplies must include all private water rights as part of the analysis of the need for water and the Lake Powell Pipeline by 2020. The District and State predict no private underground or surface water rights will convert to culinary use by 2060. The Coalition believes at least some of these rights would be available for future water supply and should be not ignored. In addition, the Water District only estimates it could develop about 110,000 acre feet annually for culinary use by the 2060. However, in our research there are water rights that could be converted to culinary use in the future that the District is unwilling to count as possible future water supply.

UDWR Response:

Your comment has been noted. The draft study report was prepared according to the FERC approved study plan.

LPPC Comment 133:

Under Ground Water Rights

The Division of Water Rights stated "there are 332,760 acre feet of approved water rights in the Navajo/Kayenta and upper Ash Creek aquifers."⁴¹ "The community water supply systems coming from Navajo Sandstone wells and springs were only 41,470⁴² acre-feet (AF) which represent a small percentage of total supply. In addition, in Washington County, there are 969,488⁴³ AF of surface water rights, with only 40,198 AF of surface water supplies in public community systems. Some of these rights will convert to culinary use by 2020-2037 and should be part of this report.

UDWR Response:

Your comment has been noted. The draft study report was prepared according to the FERC approved study plan.

LPPC Comment 134:

Surface Water Rights

A diversion pipe 66" in size can convey 150 cfs continuously for one full year, it would translate to 108,595.04 ac-feet/year. The pipe at the Quail Lake is 66" and does divert 150 cfs which is 108,595 acre feet a year and some returns to the river through hydropower plants. A full accounting of where the water goes and how much is counted in the water supply should in the report.

UDWR Response:

Your comment has been noted.

LPPC Comment 135:

Chapter 3 Conceptual Project Alternatives

3.1.1. Equivalent Population Water Needs

The equivalent population of each district is the population level at which no additional water supplies are available to meet water needs. This assumes all conservation goals are met, all water rights have been fully developed; all secondary water conversions have been made.

Comment

The Applicant used the wrong data and did not gather all the water supply information needed for the study. The basis for the alternatives conclusion is flawed because all the information stated above and also in the **Study Plan 22.2.1 Study Description above** is not in the study report and all water is not accounted for. Including:

- 1 The Water District's 147 water rights certificates with amounts of water are not in study report.
- 2 The Water District holds a lot of water in storage and that is not in the study report.
- 3 Private water rights which we have identified are not in study report.
- 4 Agriculture rights of 86,000 acre feet are not all accounted for.
- 5 No secondary water is accounted for in the report.
- 6 Sand Hollow aquifer holds 70,000 acre feet and more of that could be counted
- 7 Increased water conservation over the 25% by 2060 is not accounted for
- 8 Recycling is not accounted for
- 9 More reuse could be counted, District counts a small amount

UDWR Response:

Your comment has been noted. The draft study report was prepared according to the FERC approved study plan.

LPPC Comment 136:

3.1.1.1. WCWCD Equivalent Population Water Needs

The Applicant needs to verify that the population rate is valid and that the population will be 279,864 in 2020 just 9 years away, and 20 years later in 2035 almost double that to 516,422 before this study report is considered complete by the Commission. These numbers are speculative and should not be considered in the study report.

UDWR Response:

Your comment has been noted. The draft study report was prepared according to the FERC approved study plan.

LPPC Comment 137:

3.2.5.1 WCWCD

Secondary Water

Table 3-17 shows 2009 Secondary water per capita use of 52.3. This water will still be used for outside use and is not considered in the No Lake Powell Pipeline Alternative. The prediction of dire conditions of only 10 gals for outside use is not valid.

UDWR Response:

The UDWR disagrees with the comment conclusion. The description in Section 3.3.3.1 specifically addresses culinary water that is being used for residential outdoor watering. This water does not need any

further treatment for use as culinary water. Any secondary water used in the St. George metropolitan area would have to be treated using a reverse osmosis process before it could be used as culinary water.

LPPC Comment 138:

3.3.1.3. Restricting Water Use for Outdoor Residential

We recommend the study report needs to be changed to reflect more water is available for outside use. The No Lake Powell Water Alternative this scenario is described in more detail. Culinary outdoor water use was estimated by UDWR in 2005 at 97.4 gpcd. This water use rate is reduced by 30.5 gpcd to account for water conservation attained from 2005 through 2020. Yielding 66.9 gpcd residential outdoor water available for conversion to other M & I uses. The equivalent water use rate to generate 32,721 acre-feet per year of conservation is 56.6 gpcd for the 2037 population within the service area. Therefore, beginning in 2020 the existing rate of residential outdoor water use would be gradually reduced and restricted to 10.3 gpcd. The Applicant is not adding the residential outdoor secondary water detailed in the WNA on page 3-14, table 3-10 that shows there is 15.8 gpcd more gallons to add to the 10.3, to equal about 26 gpcd. We recommend that this alternative cannot be considered an alternative in the study report because it has no basis in fact or reason.

UDWR Response:

Please refer to the response to LPPC comment 137.

LPPC Comment 139:

4.1.2.1. WCWCD Environmental Consideration

The rationale given in the study plan should be deleted because it is not reasonable, objective or based on facts. As mentioned previously, the study report does not account for all the secondary water used for outside watering.

UDWR Response:

Your comment has been noted. Please refer to the response to LPPC comment 137.

LPPC Comment 140:

4.1.2.1 WCWC Total Relative Cost

This section does not give the public the information it needs to make a decision on the different costs and as a result make better decisions. It needs to explain the cost ratio and show how it was determined and what was considered in the cost. This section does not include the benefits of water conservation, and water recycling. It also does not consider the risk and uncertainty that the LPP will not be full of water until 2035 and is subject to shortages.

UDWR Response:

The final study report will include the total cost of the potential project alternatives.

LPPC Comment 141:

6.1 Recommended No Lake Powell Water Alternative for WCWCD for NEPA Analysis.

As mentioned in our above comments this proposed alternative and the Conceptual No Lake Water Alternative does not meet the NEPA regulations and should not be in the study report. Western Resource Advocates, experts in water conservation, state 69,000 acre feet of water could be saved in the county. We recommend the Commission consider this as the recommended No Lake Powell Water Alternative for NEPA Analysis instead of the alternative currently being considered for approval in the report.

UDWR Response:

The UDWR disagrees with the comment conclusion. The draft study report was prepared according to the FERC approved study plan.

LPPC Comment 142:

We recommend the Applicant implement the Commission's approved 2008 study plan and consider alternative that includes increased water conservation, water recycling, consider all water supplies, private water rights, agricultural rights, all the Water District's water rights to get the complete inventory of water in county to develop a reasonable alternative to the LPP in the EIS.

UDWR Response:

Your comment has been noted. The draft study report was prepared according to the FERC approved study plan.

LPPC Comment 143:

We submitted to the Commission in SD2, page 6, alternatives to the LPP. In these comments we suggest similar measures for more water by 2020 for and alternative for the LPP for NEPA Analysis:

- 1 *The population growth rate needs to be changed from 5% for the next 20 years to be a more accurate rate of 2.50% to 2020 to measure water demand.*
- 2 *Increased water conservation;*
- 3 *More efficient use of existing supplies*
- 4 *Water recycling*
- 5 *Increase water reuse than what is projected now*
- 6 *Counting all of Water District's water rights not in the WNA*
- 7 *Diverting the Water District's Virgin River high water flow 45,000 acre feet above the Pah Tempe Hot Springs so it does not need to be treated. Build a pipeline to proposed Sand Mountain Reservoir in Leeds. We recommend a study of redesign and new piping at the Quail Creek Diversion to capture more high flows above the salty springs should be studied. This would avoid the need for reverse Osmosis.*
- 8 *Better accounting for water use to get more accurate water demand amounts.*
- 9 *Reevaluate the amount of secondary water available*
- 10 *Evaluate how much water the Water District holds in storage*
- 11 *a full accounting of Water District's water diverted from the Virgin River annually which may yield water than is being accounted for.*
- 12 *Account for the 18,000 acre feet of water Identified in SD1 comments*
- 13 *Examine the water wells near Sand Hollow and Washington City underground wate. Our research shows water more water yield could be accounted for 10,000 ac ft.*
- 14 *The Coalition questions the logic that you need 5 acre feet of storage for 1 acre foot of yield in Sand Hollow Reservoir because the Virgin River variable. The water district has successfully diverted at its 100 foot diversion with no trouble due to variability. Reevaluate the possible future yield of water from Sand Hollow Reservoir mentioned in Coalition's SD1 comments add 10,000 acre feet additional water.*
- 15 *Inventory all private water rights to understand how much more water is available so the community does not become a place with restrictions of 10 gpcd for outside use is unfounded.*
- 16 *Include the 16,000 acre feet more aquifer water rights identified in the Boyle, Water Supply Needs for Washington and Kane Counties & Lake Powell Pipeline Study, 1998,*
- 17 *Reevaluate agricultural water rights that are not being counted by the Water District*
- 18 *WCWCD has outlined potential conservation measures and savings in this report*
[http://www.powellpipelinefacts.org/images/pdf/Conwervation%20Cost%20And%20Savi ngs.pdf](http://www.powellpipelinefacts.org/images/pdf/Conwervation%20Cost%20And%20Savi%20ngs.pdf)

However, many of these measures are not implemented until 2020-2037. Implementing these measure sooner would provide an additional 14,000 AF of water.

19 *Count more of the 70,000 ac ft of water in aquifer storage under Sand Hollow reservoir.*

UDWR Response:

Your comment has been noted. The draft study report was prepared according to the FERC approved study plan.

WRA Comment 37:

V. Draft Study Report 22 – Alternatives Development

After review of the Alternatives Draft Report, we recommend that this report:

1) *Amend the “Recommended No Lake Powell Water Alternatives” to balance proposed water conservation measures between indoor and outdoor use.*

UDWR Response:

Your comment has been noted. The draft study report was prepared according to the FERC approved study plan.

WRA Comment 38:

2) *Present a detailed explanation of the costs and relative costs of the alternatives as compared with the proposed pipeline.*

Under NEPA, an EIS must include a rigorous analysis of alternatives to the proposed action that “sharply defin[es] the issues and provid[es] a clear basis for choice among options by the decisionmaker and the public.” 40 C.F.R. 1502.14. This alternatives analysis “is at the heart of the environmental impact statement.” Id.

UDWR Response:

Your comment has been noted. The draft study report was prepared according to the FERC approved study plan. UDWR believes all reasonable alternatives have been analyzed for providing water to Washington County to meet future population estimates. The final study report will include the total cost of the potential project alternatives.

WRA Comment 39:

The Draft Report fails to explain why it does not include a reasonable and well-balanced conservation alternative. Compare Study Plan at 244 (Study objectives include: “Document deficiencies of the alternatives considered inappropriate for inclusion in the environmental document prepared for the FERC license application.”). The conclusion that, under a No Lake Powell Alternative, Washington County would have to virtually eliminate residential outdoor watering is not justified because it assumes that no additional indoor water conservation measures are possible. The Water Needs Assessment (WNA) and the Alternatives Draft Report state that water demand is projected to be about 298 gpcd in 2037 and 276 gpcd in 2060, for both indoor and outdoor uses in the M&I sector. However, these numbers are significantly higher than other arid, western regions, many of which have water use rates between 100-200 gpcd reductions must come exclusively from outdoor uses. The Recommended No Lake Powell Alternative is needlessly alarmist and its inclusion in an EIS would unfairly prejudice consideration of far more reasonable and balanced conservation alternatives.

UDWR Response:

Please refer to the response to WRA comment 38. The draft study report incorporates indoor water conservation measures for WCWCD in Section 3.2.1, Figure 3-1 throughout the planning period.

WRA Comment 40:

The Alternatives assessment should include a range of pathways for reducing an additional 119 gpcd from a combination of indoor or outdoor uses in 2037, because this quantity is equivalent to 69,000 AF/yr – the quantity of water that would otherwise be supplied by the Lake Powell Pipeline. This would bring demand down to about 179 gpcd, which is an achievable goal as evidenced by other cities. A combination of reductions in both indoor and outdoor water use is likely to have better public acceptance than a nearly complete cessation of outdoor water use. Moreover, the proposed method of reducing outdoor water use through regulation and enforcement is not the only, nor is it necessarily the most effective method, of reducing water use. Other methods, like conservation rate structures, have proven to be more effective at reducing water use, and are less burdensome and costly to implement.

UDWR Response:

Your comment has been noted. The draft study report was prepared according to the FERC approved study plan.

WRA Comment 41:

This Draft Report also does not articulate that recycled water, of non-potable standards, can be used in place of potable water for outdoor uses. The volume of water available from RO treatment of Virgin River water in 2020 (Section 3.3.1.1), would be equivalent to about 38 gpcd in 2060. Thus, if this water was provided for outdoor use and not treated to potable standards, it would be less costly to produce and would allow for a gpcd value of 217.

UDWR Response:

Your comment has been noted. The draft study report was prepared according to the FERC approved study plan.

WRA Comment 42:

The Alternatives Draft Report presents scenarios in which only the maximum value of water from each alternative is produced, as opposed to smaller volumes of water from multiple alternatives. For example, the first alternative solution presented uses the maximum volume of water from the Virgin River and from RO of effluent, and only a 1.6 gpcd restriction on outdoor watering. The second alternative presented uses the maximum volume of water from the Virgin River and a maximized restriction on outdoor watering. There is a middle ground among these alternatives that is likely more favorable to residents; one example could be a 25 gpcd restriction on indoor/outdoor watering, and some combination of RO water from each the Virgin River and wastewater effluent to meet remaining demands. Table 5-1 in Section 5.2.1 presents three combinations of alternatives, but the volume of water from each source is not defined, nor is a rationale provided for including those options and not any other “middle ground” options.

UDWR Response:

Your comment has been noted. The draft study report was prepared according to the FERC approved study plan.

WRA Comment 43:

The data in Section 3.3 that pertains to Washington County should be made clearer and more consistent; the volumes of water available from each alternative are listed for different years, which make it difficult to make a full and proper comparison of the alternatives. That is, the volume of water from the Virgin

River water that would be treated by RO is only provided for the year 2020, the volume of effluent water treated by RO is provided for 2020, 2037 and 2060, and the water available from reduced outdoor watering is estimated for 2020 and 2037.

UDWR Response:

Your comment has been noted. The draft study report was prepared according to the FERC approved study plan.

WRA Comment 44:

To underscore the importance of this cost analysis, it is mentioned a second time in the Study Plan in Section 22.4.3, which aimed to address “What would the total cost (capital and operation and maintenance) be for the potential project alternatives?” Despite this importance, the Draft Report does not present costs of each alternative in a dollar value, nor are the relative costs sufficiently explained.

UDWR Response:

The final study report will include the total cost of the potential project alternatives.

WRA Comment 45:

This explanation does not provide the reader with a clear understanding of how these numbers are derived. Furthermore, the relative cost of the Lake Powell Pipeline is stated to be “5,” but there is no explanation of the meaning or significance of ascribing this value. The costs for each alternative should be stated in dollar figures with substantiation, along with explanations for the assumptions that go into those estimates. This would provide some explanation as to why all the alternatives are supposedly more costly than the proposed pipeline, and by how much. As is, the Draft Report’s contention that the LPP is somehow the least costly alternative appears arbitrary, and therefore should be disregarded.

UDWR Response:

The final study report will include the total cost of the potential project alternatives.

KBPI Comment 164:

Section 2.1.2 CICWD - Draft Report 22 presents descriptions of existing plans for water supply projects and possible future water development projects in the Central Iron County Water Conservancy District (“CICWD”). Draft Report 22 at 2-2 to 2-3. In this discussion, Draft Report 22 dismisses some projects from consideration without adequate treatment. See Study Plan 22 § 22.2.2. The dismissal without explanation of potential projects directly contravenes Study Plan 22 and renders Draft Report 22 noncompliant with Study Plan 22.

UDWR Response:

The UDWR disagrees with the comment conclusion. The draft study report was prepared according to the FERC approved study plan.

KBPI Comment 165:

Section 5.1.1.6 Social Acceptance - Study Plan 22 lists numerous criteria for the screening process that must be included “at a minimum.” Study Plan 22 § 22.6.3. While Draft Report 22 applies all of the enumerated screening criteria for the development of the No Lake Powell Pipeline Water Alternative, see Draft Report 22 at 5-1 to 5-3, it also applies the criterion of “social acceptance.” Not only is social acceptance not one of the listed criteria, but it is also the only criteria used in Draft Report 22 that is not enumerated in Study Plan 22. Compare Draft Report 22 at 5-1, with Study Plan 22 § 22.6.3. Moreover, Draft Report 22 contains no discussion of why social acceptance was included as part of the screening criteria and contains no discussion of the methodology used to evaluate social acceptance. Although the inclusion of this screening criteria did not appear to alter the results of Draft Report 22, as the analyzed

alternatives all received the same social acceptance score, the inclusion of this screening criterion is not adequately supported. In the absence of any support for its inclusion, the use of social acceptance as part of the screening criteria directly contravenes Study Plan 22 § 22.6.3, and renders Draft Report 22 noncompliant with Study Plan 22.

UDWR Response:

The final study report will be revised to remove the reference to social acceptance as a screening criterion.

BIA Comment 108:

Report 22 – Alternatives - If either of the Existing Highway or Southeast corner alternatives is selected, the Kaibab Tribe should be appropriately compensated monetarily or with access to a dependable LPP-related water supply. The Study Plan should mention this as a possibility if Kaibab Indian lands are impacted.

UDWR Response:

The UDWR disagrees with the comment conclusion. The draft study report was prepared according to the FERC approved study plan.

BLM Comment 77:

Report 22. Need to define “water needs” here – the alternatives must address a moving target, ... - Page 5.

UDWR Response:

Your comment has been noted. Please refer to the draft Water Needs Assessment Report prepared as part of Study Report 19.

BLM Comment 78:

Report 22. Are these accurate since the economic downturn? – Page 5.

UDWR Response:

Please refer to the response to LPPC comment 11 in the draft study report 6 section of this document.

BLM Comment 155:

22 Draft Alternatives Development Study Report V.3

The development of viable alternatives is lacking, a major concern for the legal sufficiency of the EIS, as outlined in the CEQ Regulations (43 CFR 1500). This Study Report seems to focus only on potential action alternatives that would deliver and supply water at the same level as would the Proposed Action. In fact, there is but a single “conceptual” alternative, the No Lake Powell Water alternative with variations between the three affected water conservancy districts. This narrowly focused alternative would result in a similarly limited impact analysis with an unintended effect. That potential effect of a single No Lake Powell Water alternative, with its described significant adverse impacts in comparison to impacts described for the Proposed Action, may be perceived as a justification for the Proposed Action, appearing as not really a reasonable alternative.

UDWR Response:

Your comment has been noted.

BLM Comment 156:

The relationship between the No Lake Powell Water alternative and the No Action alternative is unclear. The traditional effects of the No Action alternative would be that impacts associated with the Proposed Action would not occur. The “conceptual” No Lake Powell Water alternative, and its variations,

describe actions that may be considered or occur if the Proposed Action alternative is not selected. These actions are likely results from selection of the No Action alternative. It is unclear why these conceptual actions are really a separate “reasonable” alternative.

UDWR Response:

The draft study report was prepared according to the FERC approved study plan. The final study report will clarify the differences between the No Lake Powell Water Alternative and the No Action Alternative.

BLM Comment 157:

The No Action alternative should not be included under the heading of “Conceptual Project Alternatives.” The No Action alternative is a requirement under NEPA, and is not a concept. It appears to lack any realistic analysis. It unfortunately reads more like a justification for constructing the pipeline, rather than being a viable alternative to the pipeline. This alternative should take a second look at growth projections for Washington County, using the latest socio-economic data. Then it should analyze how the No Lake Powell Water alternative could affect that growth. Analysis needs to include what would actually happen if and when we get close to the water limit; would issuance of new building permits be curtailed; would water prices go up for customers; and what would be the long-term economic impacts, and cumulative effects.

UDWR Response:

The final study report will include a separate chapter to describe the No Action Alternative; no reference to the No Action Alternative will be made in Chapter 3 of the study report (Conceptual Project Alternatives). The potential effects of the No Action Alternative will be addressed in more detail in the Socioeconomics/Water Resource Economics final study report.

BLM Comment 158:

A review of potential alternatives to the Proposed Action that would serve to meet the purpose and need of the proposed action but address and/or serve to reduce or mitigate impacts to lands and resources, must be addressed in this Study Report. One of these alternatives, an alternative pipeline alignment through the Kaibab Reservation, is readily apparent - but not clearly identified as a reasonable alternative, and most definitely needs to be analyzed. Other potential alternatives of alignment and/or relocation of proposed facilities - pipeline alignments, pump stations, hydro generation components, transmission lines, roads, etc., need to be captured and analyzed as Alternatives which mitigated impacts or avoid resource issues. These key alternatives are notably lacking for the decision-maker.

UDWR Response:

The draft study report was prepared in accordance with the FERC approved study plan, which is intended to identify and develop alternatives to the LPP Project that doesn't involve diverting any water from Lake Powell. UDWR has coordinated with the BLM throughout the LPP Project planning and identified alternative facility locations and pipeline alignments that avoid or minimize impacts on environmental resources. UDWR disagrees with the comment and believes reasonable alternatives have been identified and analyzed.

BLM Comment 159:

Page 1-1 under 1.1 Introduction, second paragraph, third sentence - This sentence, after identifying the total delivery of 86,249 acre-feet per year, should identify the share that would be delivered to each of the three participating water conservancy districts. What is unclear is, if the KCWCD has no apparent need for additional water, why would additional Lake Powell water be delivered to it, and if that district does not need additional water from the project, and the rationale for why is KCWCD a participant.

UDWR Response:

The final study report will identify the share of water that would be delivered to each participating water district. Although KCWCD does not have an immediate need for additional water, the district is proximate to the LPP and one of the four Kane County basins could develop a need for water within the planning period.

BLM Comment 160:

Page 3-1, under 3.2 Baseline Project – If baseline projects are identified as either underway, planned and/or expected to occur, why are they included under the overall heading of “conceptual” project alternatives? The Study Report describes these baseline projects as activities and programs that would occur whether or not the No Lake Powell Water alternative is pursued or not.

UDWR Response:

The final study report will clarify differences between the baseline projects, which are part of the No Action Alternative, and conceptual project alternatives.

BLM Comment 161:

Page 6-1, second paragraph under 6.1 – Recommended No Lake Powell Water Alternative for WCWCD – in the first sentence, is the RO facility location “near the Washington Fields Diversion” the only possible location? It seems there may be ACEC and other resource issues and impacts associated with the location described, so it is important to verify whether the described location is in fact the only possible one, or whether there are others with perhaps reduced levels of resource impact.

UDWR Response:

An RO facility location near the Washington Fields Diversion will require additional NEPA compliance and is not part of the LPP Project FERC license application.

BLM Comment 162:

A natural gas “option” is absent from all study plans, although this topic was mentioned during the public study plan meetings. The natural gas “option” should in fact be an alternative to the proposed action of using electrical power generation to power the large in-line pumping stations. And, this alternative could change the nature of the proposed action enough to potentially require additional public scoping meetings to share the new project information with the public, and cooperating agencies.

UDWR Response:

The natural gas supply line alternative will be included in updated draft study reports.

BLM Comment 163:

Several of the resources assessed in the draft study plans would also require further analysis under this natural gas alternative.

UDWR Response:

Your comment has been noted.

USFWS Comment 12:

For example, on page 1-1 the report contains statement framing the analysis such as: “The alternatives must meet water needs for the same projected population as the Proposed Action,” and, “This analysis must develop alternatives that will meet water demands for the LPP participants.” The basis of these statements is not provided, and we do consider them accurate. To our knowledge, neither of these parameters have actually been adopted, or necessarily will be adopted by the permitting agencies through the NEPA process.

UDWR Response:

The Department of the Interior regulations for NEPA compliance at 43 CFR 45.415 (b) state: “Alternatives. The environmental impact statement shall document the examination of the range of alternatives (paragraph 46.420(c)). The range of alternatives includes those reasonable alternatives (paragraph 46.420(b)) that meet the purpose and need of the proposed action, and address one or more significant issues (40 CFR 1501.7 (a)(2-3)) related to the proposed action.” The UDWR disagrees with the comment.

USFWS Comment 13:

Likewise, statements that, “...[this] report documents the development of a reasonable range of alternatives to the proposed Lake Powell Pipeline,” “[T]hese alternatives [report 22] 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)” are over-reaching and presumptuous.

UDWR Response:

Your comment has been noted. The final study report will clarify the alternatives developed. The draft study report was prepared according to the FERC approved study plan.

USFWS Comment 14:

First, no Purpose and Need Statement (40 CFR 1502.13) for the environmental impact statement has yet been developed by FERC and other cooperating agencies for the environmental impacts statement. After a purpose and need has been defined, FERC and the NEPA cooperating agencies will need to rigorously explore and objectively evaluate the proposed action, as well as those other alternatives, which are eliminated from detailed study with a brief discussion of the reasons for eliminating them. They will need to consider and assess all reasonable alternatives to the proposed project, and alternative locations, features, or other changes to the proposal.

UDWR Response:

The Purpose and Need statement will be prepared by FERC and the cooperating agencies and included in the EIS that will be prepared by FERC.

USFWS Comment 15:

Secondly, any number of other viable and reasonable alternatives might be envisioned that would be outside the self-defined parameters and framing described in report 22. There is no basis to conclude that the range of alternatives in report 22 meet CEQ’s standard of “all reasonable alternatives.” There is also no reason to conclude that the alternatives presented in report will necessarily be analyzed or constitute the “full range” that will be examined by the NEPA analysis of the Federal agencies. We are concerned that this presupposes Federal agencies decisions and their deliberative process. These comments also apply to the FERC and permitting agencies determination of a “No Action” alternative.

UDWR Response:

The final study report will clarify the alternatives developed for analysis in the EIS that will be prepared by FERC. The draft study report was prepared according to the FERC approved study plan. Please refer to the response to BLM comment 157 regarding the No Action Alternative.

USFWS Comment 16:

The report should be revised to provide useful technical information, but should avoid interpretations of policies that are incumbent on the permitting agencies. We recommend that content and tone of report 22 be revised to: 1) acknowledge the deliberative procedures that the Federal agencies must undertake in

formulating NEPA alternatives; 2) clarify, that the purpose and need statement for the NEPA document has yet not been defined; and 3), and explain that a full range of alternatives would be based on, and derive from, the purpose and need statement. We think that subjective statements regarding the social unacceptability of certain alternatives should be removed from the report. These are unsupported. The report should instead explain that in determining the scope of alternatives to be considered, the emphasis is on what is "reasonable" rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative.

UDWR Response:

Your comment has been noted. The draft study report was prepared according to the FERC approved study plan. The final study report will clarify the alternatives developed for analysis in the EIS that will be prepared by FERC. Please refer to the response to KBPI comment 165 regarding social acceptance.

USFWS Comment 92:

Draft Study Report 22: Alternatives Development

New growth estimates should be included before the Project study plans are finalized. Please define the term "largely the same".

UDWR Response:

The final study report will include the current GOPB population projections.

USFWS Comment 93:

Chapter 2: Please note that the water supply projects described in Chapter 2 must be considered as Cumulative Effects for ESA section 7 consultation unless they have a Federal Nexus and will undergo section 7 consultation independently.

UDWR Response:

Your comment has been noted.

USFWS Comment 94:

Chapter 4: The relative cost ratios and comparison of the various alternatives is not clear and needs to be more comprehensively explained with methods and assumptions. In section 4.1 (Introduction), the LPP was assigned a relative cost ratio of 5.0 and the report explained that ratio numbers less than 5 were more expensive, and those greater than 5 were less expensive. This is counter-intuitive at first glance and needs more explanation. Are projects with a ratio value of 1.0 five times more expensive than the LPP and are projects with a value of 25.0 five times less expensive? Or are projects with ratios of 1.0 and 9.0 (both 4.0 from 5) more equivalent?

UDWR Response:

The final study report will include the total cost of the potential project alternatives.

USFWS Comment 95:

Even more importantly, calculations of the ratio values for the alternatives need to be clearly and comprehensively explained on how each value was calculated. For example, in section 4.1.2, a clear explanation of how each relative cost number for each alternative needs to be added. The reverse osmosis treatment of Virgin River water was estimated to have a relative cost ratio of 0.73, yet no numbers of how this was calculated were presented. This prevents any outside analysis/critique of the process.

UDWR Response:

The final study report will include the total cost of the potential project alternatives.

USFWS Comment 96:

A comparison of the energy demands of reverse osmosis versus the energy consumed for the LPP should be added. One major critique of reverse osmosis is the energy demand for such a plant (section 4.1.3.1, page 4-3). However, the LPP will be a net user of electricity because the pumps must carry water over elevational gradients. Please add this comparison.

UDWR Response:

Your comment has been noted. The draft study report was prepared in accordance with the FERC-approved study plan.

USFWS Comment 97:

Considering the potential environmental costs of this proposed Project, and the social acceptance issues related to converting traditional residential landscaping to hardened landscaping with a desert xeriscape, we question if the No Lake Powell Water Alternative is a feasible alternative. Please provide a more detailed analysis of the feasibility of this alternative.

UDWR Response:

The UDWR identified, developed and defined the No Lake Powell Water Alternative in response to the request of FERC, as described in the Revised Alternatives Development Study Plan. The components of the alternative are feasible to implement and would require significant social change between 2011 and 2020, when the projected water need in the WCWCD would require initial and gradual implementation of the No Lake Powell Water Alternative, to provide the same amount of water that would be provided under the LPP Project. Please refer to the response to KBPI comment 165 regarding social acceptability of alternatives. Xeriscaping is a feasible alternative to reduce water demand and would help meet project purposes; water conservation programs across the desert southwest including the SNWA in the Las Vegas area involve removing turf and replacing it with xeriscape landscaping. The final study report will include more detailed analysis of feasibility of the No Lake Powell Water Alternative with respect to converting residential landscaping to desert xeriscape.

USFWS Comment 98:

References cited: Throughout the document, a MWH 2008 citation is included, yet does not appear in the references cited section. Please add this citation.

UDWR Response:

The final study report will include an updated citation to the updated MWH report and will be added to the references cited section.

The National Park Service (NPS) filed their comments on the Draft Study Report – FERC Project No. P-12966 on July 5, 2011. Therefore, these comments are responded to separate from the other comments which were received as specified by May 8, 2011. The NPS comments (shown in *italics*) are responded to directly rather than by study report in this section of the UDWR comment and response document submitted to FERC. The UDWR responses to each comment are shown in blue highlighted text.

NPS Comment 1:

Surface Water Quality and Surface Water Resources, draft study reports 17 and 18. In general the reports should more completely quantify impacts to lakes Powell and Mead, and the Colorado and Virgin rivers. It is insufficient to conclude significance without such quantitative estimates.

UDWR Response:

Please refer to the responses to LPPC comments 66, 68 and 69, and USFWS comment 77 regarding the impact analysis results in the draft Surface Water Quality study report. Please refer to the responses to LPPC comment 76, GCI comment 5, and USFWS comments 81 and 85 regarding the impact analysis results in the draft Surface Water Resources study report.

NPS Comment 2:

Further, the reports must extend the analyses to include possible severe future hydrologic conditions within the Colorado River watershed (extremely low inflow and lake level conditions as would be seen when withdrawing water from the lowest intake level of the withdrawal structure).

UDWR Response:

Please refer to the response to GCI comment 1 and the responses to LPPC comments 57, 63, 68, 69 and 72.

NPS Comment 3:

Specify more clearly the levels of water re-use anticipated.

UDWR Response:

Please refer to draft study report 19, Water Needs Assessment, Sections 6.2 and 6.3 which provide a detailed presentation of the existing and anticipated quantities and use of reuse water.

NPS Comment 4:

Describe the supporting infrastructure necessary to meet the stated target of no net additional discharges to the Virgin River.

UDWR Response:

Please refer to Section 22.6.2 of draft study plan 22, Alternatives Development, which is based on the WCWCD having infrastructure in place to manage water with a No Lake Powell Water Alternative as well as with the Lake Powell Pipeline. There is no authorization in the LPP Project legislation for funding WCWCD infrastructure for the purpose of managing LPP water. LPP Project water use for municipal and industrial water supply would return to the St. George Wastewater Treatment Plant and the St. George Water Reclamation Facility, with no net additional discharge to the Virgin River. Section 4.3.2 of the draft Surface Water Resources study report references 2,500 acre-feet of re-regulating storage, which would re-regulate reuse water from the St. George Water Reclamation Facility. The 2,500 acre-foot re-regulation storage would consist of the Graveyard Wash and Dry Wash reservoirs, approved by the BLM and Bureau of Indian Affairs (BIA) in 2004 as part of the St. George Water Reuse Project. The City of St. George would construct the Graveyard Wash and Dry Wash reservoirs as part of the St. George Water Reuse Project serving the Shivwits Band of the Paiute Indian Tribe of Utah. This information will be clarified in the final study report.

NPS Comment 5:

Monitoring, mitigation, adaptive management necessary if the assumptions concerning future water re-use targets are not met.

UDWR Response:

There are no requirements in the approved study plan for analysis of not meeting future water reuse targets. The future water reuse would occur as described in Section 6.2 of the draft Water Needs Assessment study report with the facilities identified in Section 4.3.2 of the draft Surface Water Resources study report. Please refer to the responses to NPS comments 3 and 4.

NPS Comment 6:

Clarify whether the infrastructure requirements needed to achieve no net additional discharge into the Virgin River are part of each of the action alternatives.

UDWR Response:

Please refer to the response to NPS comment 4. The final study report will clarify that the St. George Water Reuse Project facilities, which would comprise the infrastructure needed to achieve no net additional discharge into the Virgin River, are incorporated into each of the action alternatives.

NPS Comment 7:

Is the additional infrastructure alluded to in the reports intended to be a commitment by UDWR (mitigation measure)? If so, the environmental effects should be described.

UDWR Response:

The St. George Water Reuse Project facilities, which would be used to re-regulate return flows from LPP Project water, were analyzed for environmental impacts in the 2004 [Final Environmental Assessment for the St. George Water Reuse Project, Washington County, Utah](#). This project will be included as an inter-related project for the LPP Project cumulative effects analysis. The LPP Project would involve no “additional infrastructure” features to be constructed beyond the hydropower plant that would discharge LPP water into Sand Hollow Reservoir and transmission lines to connect the hydropower facilities into the existing electrical grid system.

NPS Comment 8:

Describe the assumptions built into the water quality modeling and analyses made in the report for Lake Powell and the Colorado River. It appears as though average inflow and lake level projections are used to project no measurable or “significant” effects. The analysis should specify water quality effects to Lake Powell and the Colorado River during extreme drought/climate change, reservoir drawdown, including cumulative effects.

UDWR Response:

The assumptions and model inputs regarding water quality modeling and analyses are described in Appendix A of the draft Surface Water Quality study report, Sections C.2.3 and D.2, respectively. The modeled period corresponds to historic natural flows from 1989 through 2006, which includes a drought period, a short wet period and a longer drought period. The lowest reservoir elevation simulated in the water quality analysis is approximately 3,550 feet MSL, which complies with the approved Surface Water Quality study plan. Please refer to the responses to GCI comment 1 and the responses to LPPC comments 57, 58, 63, 64, 68 and 72.

NPS Comment 9:

Specify the annual return flow volumes into the Virgin River due to water reuse.

UDWR Response:

The Virgin River Daily Simulation Model (VRDSM) results demonstrate no measurable difference in annual return flow volumes in the Virgin River from water reuse between the alternatives, as shown in Section 4.3.2 of the draft Surface Water Resources study report.

NPS Comment 10:

Estimate the effect of these return flow volumes on the Virgin River and Lake Mead water quality during times of excessive drought and low water conditions, including cumulative effects.

UDWR Response:

Please refer to the response to NPS comment 9. Return flow volumes in the Virgin River during low water conditions such as those occurring from May through August would be exactly the same between the alternatives, as simulated by the VRDSM. Therefore, there would be no effects on Virgin River and Lake Mead water quality and there would be no cumulative effects.

NPS Comment 11:

Specify the proposed quagga mussel monitoring program for Lake Powell (to determine whether to implement control procedures).

UDWR Response:

Please refer to the response to USFWS comment 17 and the response to LPPC comment 60.

NPS comment 12:

Quantify the "significant" impacts to the Virgin River due to the No Lake Powell Water Alternative.

UDWR Response:

Please refer to the response to USFWS comment 18. The No Lake Powell Water Alternative impact analyses included in the draft Aquatic Resources study report, draft Groundwater Resources study report, draft Special Status Aquatic Resources study report, draft Surface Water Quality study report, and draft Wetland and Riparian Resources study report are based on the best available information and data. The final study reports for these resources will quantify significant impacts on the Virgin River under the No Lake Powell Water Alternative where such information and data are available. The final Surface Water Resources study report will be clarified to include impact analyses of the No Lake Powell Water Alternative on the Virgin River.

NPS Comment 13:

Specify how water will be withdrawn and the water quality expected from the lowest withdrawal level of the intake structure.

UDWR Response:

The LPP Project diversion would occur at the intake upstream from Glen Canyon Dam with a constant rate during 350 days annually. The water would be drawn into the intake tunnels from within the top 150 feet of Lake Powell. Please refer to the responses to LPPC comments 63, 68 and 69 regarding expected water quality at the lowest elevation intake tunnel.

NPS Comment 14:

Certify/discuss agreements regarding water withdrawal at the lowest level of the Lake Powell water intake structure.

UDWR Response:

There is no requirement in the approved study plan for an agreement between UDWR and the Bureau of Reclamation specifying water diversion at specific elevations from the intake structure in Lake Powell.

NPS Comment 15:

Archaeological and Historic-Era Resources Study Report 3. Given the preliminary information recently received through the ethnographic study, this study report should be reevaluated, generally, for completeness as exemplified below: On page 3 of the document "Initial Study Report Meeting," disciplinary reports are summarized. For the report on "Archeological and Historical Resources" it identifies that agencies/tribes are still commenting on the preliminary

Class III, as well as the addendum. Please note that we completed our review of these documents and submitted them in January 2011.

UDWR Response:

Your comment has been noted.

NPS Comment 16:

Given that both Zuni and Hopi have identified the Colorado River as a Traditional Cultural Property (TCP), this information should be included in either the archeological or ethnographic report. The Section 106 regulations articulate that the federal agency has a responsibility to identify effects on historic properties that include TCPs. The National Park Service (NPS) will follow up as appropriate on these tribal recommendations in the areas that they affect NPS-managed properties. We suggest that the TCP be included in one of the reports and that the effects of the pipeline on that particular type of historic property be identified/discussed.

UDWR Response:

All TCP's identified by the Tribes and provided to UDWR will be included in the draft Ethnographic Resources study report. The draft Ethnographic Resources study report will include an analysis of LPP Project effects on identified TCP's.