

**UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION**

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Utah Board of Natural Resources,))
Lake Powell Pipeline Project) P-12966-001
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**COMMENTS OF THE LAKE POWELL PIPELINE COALITION ON SCOPING
DOCUMENT 1 AND PRE-APPLICATION DOCUMENT,
AND ADDITIONAL STUDY REQUESTS**

The Lake Powell Pipeline Coalition (Coalition) provides these comments in response to the Commission’s “Scoping Document 1” (SD1) (*see* e-Library no. 20080505-3014 (May 5, 2008) and the Pre-Application Document (PAD) for Utah Board of Natural Resource’s (Applicant) proposed Lake Powell Pipeline Project (P-12966) (Project). The Coalition consists of: Citizens for Dixie’s Future, American Rivers, Glen Canyon Institute, Grand Canyon Wildlands Council, Living Rivers - Colorado Riverkeeper, Sierra Club, the Town of Springdale, Utah, and Western Resource Advocates.

Our comments are organized into six sections. Section I describes the interests of the individual Coalition members. Section II states our objection to the Commission’s assumption of lead agency responsibility under the National Environmental Policy Act for this proceeding. Section III states our specific comments on SD1. Section IV states our comments on the Pre-Application Document. Section V states our additional study requests. Section VI states our recommendations for further procedures.

**I.
DESCRIPTION OF COALITION MEMBERS**

The Coalition is comprised of the following groups whose interests in this proceeding are sufficiently aligned to warrant coordination. We provide a brief description of each group below.

Citizens for Dixie’s Future

The leader of the Lake Powell Pipeline Coalition, Citizens for Dixie’s Future (CDF), is a non-profit corporation based in Hurricane, Utah. As a local grassroots conservation organization, CDF is dedicated to the protection of natural resources and quality of life in southwest Utah through smart-growth planning. More than 3,000 local residents have supported CDF’s mission through donations of money, time, phone calls, letter writing and other efforts. Our headquarters are located at 134 South Main Street, Hurricane, Utah 84737.

Founded in May 2006, CDF initially focused on educating citizens about the proposed Washington County Growth and Conservation Act of 2006, which would have disposed of 25,000 acres of federal lands for growth and authorized the Pipeline corridors, including rights-of-way and

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reservoir and pump station sites without public participation. The legislation was tabled in November 2006, due, in part, to CDF's successful education campaign. In 2007, CDF turned our attention to the proposed Pipeline. CDF has substantial interests in the outcome of this permitting proceeding, which is intended to "...secure and maintain priority in the licensing process, while undertaking activities to determine the feasibility of the project and support an application." Cover letter from Utah Department of Natural Resources, Division of Water Resources (Aug. 21, 2007).

Many CDF members and supporters live near and recreate in areas across the Colorado Plateau and Great Basin that will be occupied or otherwise affected by the proposed Pipeline, if licensed. These areas are particularly attractive due to their character as undisturbed and uninhabited wildlands. They include: Little Creek Mesa and the Little Creek Area of Critical Environmental Concern (ACEC), Kanab Creek ACEC, the Arizona Strip, the Cockscomb, and the Grand Staircase-Escalante National Monument. These areas provide unique opportunities for hiking, camping, trail running, geocaching, mountain biking, appreciation of archaeological resources and natural quiet, journaling, birdwatching, ecosystem research, photography and more. As stated in the Presidential Proclamation which established the Grand Staircase Escalante National Monument, this is a "...vast and austere landscape [that] embraces a spectacular array of scientific and historic resources ... This unspoiled natural area remains a frontier, a quality that greatly enhances the Monument's value for scientific study." Presidential Proclamation 6920, "Establishment of the Grand Staircase-Escalante National Monument" (September 18, 1996), available at <http://www.wilderness.org/Library/Documents/loader.cfm?url=/commonspot/security/getfile.cfm&PageID=3132>

We are concerned that the proposed Pipeline would degrade the region's character as wildlands and may contribute to urban sprawl, resulting in traffic congestion, decreased air quality, and increased property taxes and cost of living. Further, many of our members and supporters own or are employed by businesses that depend on the continued protection of these wildlands. These businesses include: outdoor guiding, recreation hard goods, tourism hospitality, real estate, home construction, health and wellness spas, and retirement services (financial planning, and health maintenance).

Nearly all of CDF's members are customers of federal power generated by the U.S. Bureau of Reclamation at Lake Powell. They live in cities and towns served by the Western Area Power Administration with such federal power. We are concerned that pipeline diversions from the lake would reduce the generation and supply of federal power, over a period when the annual flow of the Colorado River is already expected to decline due to climate change. Further, the estimated \$1.7 billion cost of the proposed Pipeline, if licensed, would be financed through local fees, rates, or assessments. Thus our members and supporters have an economic interest in the proposed project.

CDF is further concerned that the proposed Pipeline would increase the diversion from the Colorado River at a time when existing water supply diversions, as well as ecological needs, already result in a functional deficit during droughts and other periods. We are concerned that the Pipeline would worsen water deficits for other beneficial uses of the Colorado River below Lake Powell and otherwise cause significant, unmitigable impacts on such uses.

CDF intends to participate actively in this licensing proceeding to assure the protection and enhancement of such uses of these wildlands, the Colorado River below Lake Powell, and other public resources.

American Rivers

American Rivers (AR) is a non-profit corporation whose headquarters are at 1101 14th St. NW Ste. 1400, Washington, D.C. 20005. American Rivers is the national organization that stands up for healthy rivers so our communities can thrive. We believe rivers are vital to our health, safety and quality of life. AR pioneers and delivers locally-oriented solutions to protect natural habitats and build sustainable communities. AR also leads national campaigns to raise awareness of river issues and mobilizes an extensive network that includes more than 65,000 members and activists to help safeguard our rivers for today and tomorrow.

AR represents more than 250 members and activists in the state of Utah, many of whom recreate in areas that would be impacted by the proposed project. In addition to our members in the state of Utah, AR has many members that live and recreate within the Colorado River basin, and have a strong interest in protecting that river and its resources. AR also has broad organizational interests in the Commission's equal consideration of power and non-power values in hydropower licensing pursuant to Federal Power Act sections 4(e) and 10(a). AR has intervened in a long list of hydropower proceedings before the Commission in order to assure that the Federal Power Act is administered in a manner that protects and restores natural resources impacted by hydropower projects. These organizational interests are consistent with the above-captioned proceeding.

Glen Canyon Institute

The Glen Canyon Institute is a non-profit membership corporation incorporated in Utah with offices in Salt Lake City, Utah and Durango, Colorado. We are dedicated to addressing water and natural resource management issues in the Colorado River Basin and particularly Glen Canyon. The Glen Canyon Institute and its members are concerned about impacts associated with water management and loss of ecological integrity in the Colorado River Basin. We are involved in multiple reviews of government actions in the seven-basin state watershed. We have over 2,000 paid members located throughout the United States and have a long history of involvement in environmental review of the Colorado River Basin.

In 1963, the gates at Glen Canyon Dam on the Colorado River were closed and Lake Powell reservoir began to flood one of the world's most spectacular and unexplored environments. Located in southwest Utah, Glen Canyon is the biological heart of the Colorado River. Home to 189 species of birds and 34 species of mammals, Glen Canyon also has more than 3,000 documented ruins from ancient cultures. Many more cultural ruins were not documented before the waters of the reservoir began to flood them. The Colorado River basin is a continuum ranging from the high elevation mountains of the Colorado Rockies to the terminus at the Sea of Cortez. Glen Canyon exists within the middle of the landscape continuum and represented the ecological heart of the Colorado River system.

When full, the reservoir known as Lake Powell, floods 186 miles of the Colorado River, including all of Glen Canyon and many of its tributaries. Downstream, the fragile Grand Canyon, which was historically dependent upon spring floods to deposit millions of tons of vital sediment and nutrients in Grand Canyon, has been in steady decline. Native fish, which had evolved and flourished in the dynamic, pre-dam environment, have been unable to adapt. Several have become endangered, and two are extirpated from the Grand Canyon. During the initial twenty years following construction of Glen Canyon Dam, the wetlands of the Colorado River Delta and its estuary rapidly declined due to an insufficient supply of water and supply of nutrients.

Future hydrologic predictions by the government and academic institutions forecast the virtual end to having enough water to utilize Lake Powell in the manner that it was originally authorized by Congress. Hydrologic models on the future flows of the Colorado River demonstrate that Lake Powell will remain nearly empty for most of the next century.

For the last ten years the Glen Canyon Institute has been addressing Federal, State and private issues related to the operations and management of the Colorado River and especially Lake Powell. We are concerned that the proposed Pipeline, if licensed, would have significant, unmitigable impacts on the environmental quality of the Colorado River. We are also interested in the impacts of the proposed project on wildlands and local economic welfare, as described above. Finally, the proposed project may cross Native American lands. The Glen Canyon Institute has a long history of working with Tribes culturally and socially affiliated with the Grand and Glen Canyon. Issues related to potential impacts to their cultural and spiritual properties must be addressed, and the Glen Canyon Institute stands ready to assist them in identification and resolution of those significant concerns.

Grand Canyon Wildlands Council

Grand Canyon Wildlands Council is dedicated to the protection and restoration of wild nature in the Grand Canyon region. Grand Canyon Wildlands Council formed in March 1996 to design a science-based reserve network for the southern Colorado Plateau region. Within this region, Grand Canyon National Park forms the largest potential core reserve. The Colorado River corridor is its heart.

Living Rivers – Colorado Riverkeeper

Living Rivers is a Utah corporation based in the city of Moab and recognized by the Internal Revenue Service as a non-profit 501(c)(3) organization. We represent individual members and networks with many non-profit organizations. Living Rivers was designated as the Colorado Riverkeeper in 2002 by the Waterkeeper Alliance, a 501(c)(3) organization based in Irvington, New York.

Living Rivers has substantial interests in assuring that federal and state regulatory agencies study and consider potential environmental and financial impacts, as well as engineering feasibility, in the course of any preliminary permit granted for this proceeding. Since its inception in 2000 it has been active in matters concerning the management of the Colorado River and its tributary

streams, and specifically in regards to the preservation and restoration of its ecosystem, and for the ecological services that it provides for human needs. The ecosystem of this area is sensitive to development due to its natural characteristic as a wild land, undisturbed and uninhabited.

Living River's trustees, partners and members live, work and recreate on the Colorado Plateau and the Colorado River. They further rely on the river for water supply. It is our current understanding that the demand for the resources of the Colorado River is presently over-allocated, and the supply has been declining naturally since the inception of the Colorado River Compact in 1922. We also believe that the supply of the Colorado River will continue to decline as a result of continued atmospheric warming, as already determined by the International Panel on Climate Change. Based on existing information we believe that diverting water from Lake Powell through this Pipeline is neither reasonable nor prudent under the present circumstances. Additionally, the estimated \$1.7 billion cost of the proposed Pipeline may be financed through local property taxes, impact fees and/or water rates, resulting in an unprecedented local financial burden for a single infrastructure development.

Sierra Club

The Sierra Club is a national nonprofit organization of approximately 750,000 members dedicated to exploring, enjoying, and protecting the wild places of the earth; to practicing and promoting the responsible use of the earth's ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. The Sierra Club's concerns encompass all federal lands in Utah. The Sierra Club has approximately 750,000 members across the United States. Sierra Club members use and enjoy the public lands in Utah. Many frequently travel to Utah and enjoy the landscapes of southern Utah. The Utah Chapter of the Sierra Club has approximately 4300 members in the state of Utah. The Sierra Club involves itself in multiple issues related to the quality of life for its members and the public. Such issues include uncontrolled growth of population centers that ignore local and ecological restraints on growth. We have a special interest in Glen Canyon Dam and the management of the reservoir behind it. The Sierra Club has been involved in planning the management of the dam and the flows of water through the Grand Canyon. We have members in the St. George area that are very concerned about the excessive growth in the arid lands of Washington County.

Town of Springdale, Utah

The Town of Springdale is an incorporated town in Washington County, Utah, located at the mouth of Zion National Park. The town has nearly 550 residents. Springdale is a pioneer town with a rich and colorful heritage spanning over 100 years. Access to Springdale can only be made through Toquerville, Hurricane or Kanab, Utah, all of which may be directly affected by the proposed Pipeline. The areas that must be crossed between these cities and Springdale are particularly attractive due to their character as largely undisturbed and uninhabited wildlands. Springdale is greatly interested in preserving the scenic corridors that provide access to it, including the corridor leading to Zion National Park. Many of our residents own or employed by businesses that provide services to tourists who use these corridors. Since Springdale is near the route of the

proposed Pipeline, its residents may in the future be customers of its water, and may pay taxes for its installation. Springdale is interested in the impacts of the proposed project on local economic welfare, as described above.

Western Resource Advocates

Western Resource Advocates is a nonprofit conservation organization dedicated to protecting the Interior West's land, air, and water. With more than 22 employees and offices in Colorado, Utah, Arizona, and Nevada, we promote river restoration and water conservation, advocate for a clean and sustainable energy future, and protect public lands for future generations. We meet our goals in collaboration with other environmental and community groups, and by developing solutions appropriate to the environmental, economic and cultural framework of this region.

II.

OBJECTION TO THE COMMISSION AS SOLE LEAD AGENCY UNDER NEPA

The cover memorandum for the SD1 states: “Pursuant to NEPA, [the Federal Energy Regulatory Commission] intend[s] to prepare an environmental impact statement (EIS) for the entire Pipeline Project, in cooperation with other federal agencies, that would be used by the Commission to determine whether, and under what condition, to issue an original hydropower license for the Hydro System and that would be used by other federal agencies for their decisions.”

The Coalition would object to the Commission’s serving as sole lead federal agency of the Pipeline Environmental Impact Statement (EIS). We share the concerns expressed by other stakeholders that the scope of the proposed project extends beyond the Commission’s certain expertise in hydropower. “[T]he project will also have broader regional impacts. For example, the project will cause a significant annual depletion of water from Lake Powell...” Letter from Patricia Mulroy, Southern Nevada Water Authority, to FERC, e-Library no. 20080613-0107 (June 4, 2008). The Commission

“lacks the broad expertise of other agencies to act as lead agency in a complex water supply project that will affect an entire geographic region. The narrow scope of the Commission’s focus is illustrated by a startling statement at page 11 of the Scoping document that “we have not identified any resources as potentially cumulatively affected by construction and operation of the Lake Powell Pipeline Project” and “This new use of Colorado River water increases risk of shortage for all other Colorado River water users.”

Id.

The criteria for selecting a lead agency under NEPA on a federal action when more than one agency is involved include:

- A. Magnitude of agency’s involvement
- B. Project approval/disapproval authority
- C. Expertise concerning the action’s environmental effects
- D. Duration of agency’s involvement
- E. Sequence of agency’s involvement

40 C.F.R. § 1501.5. We discuss each criterion below.

A. Magnitude of Agency’s Involvement

If the proposed project is permitted, the BLM would have a large and wide-reaching role in Pipeline issues. The Commission's jurisdiction would be limited to issuing hydropower licenses for four plants on 50 acres totaling 51 MW and a remotely possible fourth plant with 300 additional MW (with 350 additional acres of impact). BLM-specific jurisdictional issues would affect more acres (750 acres, as well as the 50 to 400 acres affected by hydropower facilities) and cover a wider range of issues than any other federal agency. These jurisdictional issues would include: Soils and Geology, Public Health and Safety, Invasive Species, Visitor Use and Experience in sensitive areas including the Grand Staircase-Escalante National Monument, Cultural Resources, Clearance of new Rights-of-Way way through undisturbed lands including the Kanab Creek Area of Critical Environmental Concern (ACEC), Plan amendments, Wildlife habitat impacts, Sensitive Species and Habitats, and Threatened and Endangered Species, Visual Resources, Growth Inducing Effects.

The footprint of the proposed hydropower project is much smaller than the footprint of the project as a whole. According to the Department of the Interior’s Office of Environmental Policy Compliance, the proposed Pipeline would affect approximately 1,300 acres, including approximately 800 acres of Federal lands (National Park Service – 50, Bureau of Land Management (BLM) Utah – 600, BLM Arizona – 150), 100 acres of State lands (Utah – 80, Arizona - 20), and 400 acres of private lands. *See* U.S. Department of Interior, “Comments Regarding Notice Of Application For Preliminary Permit Application For Preliminary Permit; Project; FERC No. 12966-000; Kane, Washington and Iron Counties, Utah and Coconino and Mohave Counties, Arizona,” e-Library no. 20071228-5027 (Dec. 28, 2007). Tribal trust lands under the administration of the Bureau of Indian Affairs would also be affected. Hydropower-related land disturbance under the Commission’s jurisdiction would affect approximately 50 acres of BLM land unless the proposed Hurricane Cliffs Pumped Storage Project is constructed. The additional project would add approximately 350 acres of BLM land disturbance. In either case, the magnitude of hydropower-related land disturbance would be much smaller than water conveyance-related disturbances of lands under BLM jurisdiction.

If the proposed Pumped Storage project is built, Commission-regulated land disturbance directly related to the proposed licensed hydropower system would only affect approximately 27% of the total project area. Non-Commission related BLM impacts would affect 58% of the project. Total BLM impacts would include 83%. If the Pumped Storage Project is not built, the numbers are 5% (Commission), 42% (BLM) and 47% (BLM total).

B. Project Approval or Disapproval Authority

The Commission does not have the authority to approve or disapprove the entire Pipeline project. Both the Commission and Utah have publicly acknowledged that hydropower is a secondary purpose of the proposed water conveyance project. The proposed project, absent the hydropower generators, could proceed without permits from the Commission. However, the project could not proceed in any form without BLM permits.

In addition, the proposed Hurricane Cliffs Pumped Storage Project could be licensed by the Commission completely independent of the proposed water conveyance system, even if the proposed Pipeline were not built. If the applicant wished to generate hydropower from the Pumped Storage Project by pumping water from nearby Sand Hollow Reservoir without constructing the proposed water conveyance system from Lake Powell, the Commission could justifiably license this project independent of the proposed water conveyance system. As a result, the proposed water conveyance system is not necessary to facilitate the proposed Pumped Storage Project.

C. Expertise Concerning The Action’s Environmental Effects

Plainly the Commission is the expert with regard to hydropower,¹ but we are concerned the Commission does not share the same level of familiarity with water supply and public lands related resource issues affecting the region.² The BLM has limited knowledge of hydropower, but extensive expertise³ regarding the proposed project’s potential environmental effects due to its mission and 70-plus year involvement in southern Utah/northern Arizona land management issues. Clearly, both agencies are needed to assess the action’s environmental effects. However, it appears BLM’s expertise addresses a significantly larger portion of the proposed action’s environmental effects than the Commission’s expertise.

D. Duration of Agency’s Involvement

The BLM has been actively involved in the proposed project since 1992. By contrast, Pipeline proponents did not actively engage the Commission until 2007. Under the current project proposal, BLM will be actively involved in post-licensing permitting and regulation for decades after any Commission license issues, including rights-of-way, public safety, threatened and endangered species and invasive plants. The BLM would continue facing numerous Pipeline-related jurisdictional issues for many decades. It is unlikely that the Commission’s post-licensing permitting will be as active.

¹ The Commission’s mission is to ensure “oversight and development of electric power and natural gas, petroleum pipeline[s] and hydroelectric projects.”

² We understand the Commission has retained the extensive services of The Louis Berger Group, Inc., as an outsourced consultant for this Project.

³ The BLM’s mission is to “sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.”

E. Sequence of Agency's Involvement

Department of Interior agencies – primarily the BLM – must first approve the entire right of way for the proposed water conveyance project before construction can begin to deliver water to the proposed hydropower turbines under the Commission's jurisdiction. Approximately 25 miles of pipeline must be constructed before water can be conveyed to the first hydropower plant. Under the Federal Power Act (FPA), the Commission's authority is limited to only those elements associated with the proposed hydropower system – not the proposed water conveyance system. The water conveyance system must be approved and constructed before the Commission's role may begin. The Commission has acknowledged this by indicating that it only has jurisdiction over the *downhill* portions of the proposed project. To our knowledge the Commission has not formally indicated which agency should have jurisdiction over the *uphill* sections of the project, but the BLM is the logical choice.

As mentioned above, the BLM became involved in the proposed project approximately 15 years before the Commission. Utah filed an Application for Transportation and Utility Systems and Facilities on Federal Lands for the proposed project with the BLM on December 8, 2006, more than 8 months prior to submitting an Application for a Preliminary Permit with the Commission on August 21, 2007.

In sum, BLM approval of the water conveyance system is a prerequisite to Commission licensing. The proposed Project cannot proceed in any form without a right-of-way from BLM, whereas a form of the project without hydropower capability could proceed without a Commission license. Each of the five factors for selecting a lead agency under 40 C.F.R. § 1501.5 indicates that Commission is not the appropriate choice as sole lead agency for this proposed project. We recommend that either the BLM or the U.S. Department of the Interior generally should be designated as the lead agency for the non-hydropower elements of this project. The Department of the Interior has a federally mandated responsibility to protect the public's resources including all Native American interests. The Secretary of the Interior is responsible for management of the Colorado River system and coordination with the Basin states. In order to comply with the Commission's *ex parte* rule while permitting party status, we support an approach whereby BLM or Interior would separate staff preparing the EIS while other staff would participate fully in this licensing proceeding.

III. SPECIFIC SCOPING COMMENTS

We comment on the issues and alternatives described in the Scoping Document 1 (SD1) and Pre-Application Document (PAD). For ease of reference, we show proposed changes to the document text by underlining proposed changes. Our comments track the title and outline number in SD1 and PAD for each section where we have a comment.

1. Purpose and Need Statement

The SD1 and PAD do not adequately define the proposed project's Purpose and Need. The Coalition requests that the Commission adopt Utah's stated purpose, as stated in its Notice of Intent, as the basis for the Commission's identification of project alternatives:

The PAD states that the Pipeline would be "a water supply project to be constructed for the purpose of conveying Upper Colorado River Basin water for which the State of Utah has a federal water right, from Lake Powell in Arizona to locations in southwest Utah." PAD Volume 1, p. 1. Thus, the proposed project's primary purpose is that of water conveyance.

This purpose statement is not accompanied by an adequate statement of the need. The PAD states the project is needed to service population growth in southwest Utah; however, we do not agree the PAD demonstrates this need. We understand that Utah's forecasted water demands are based in part on Boyle Engineering, *Water Supply Needs for Washington and Kane Counties and Lake Powell Pipeline Study* (1998). Based on our preliminary review, we are concerned that this study is outdated,⁴ flawed,⁵ and generally provides an insufficient basis to support the need for the proposed project. We request that the EIS contain adequate information to demonstrate this need. We are concerned that conveying water without a proven need risks exacerbating the delicate situation among Colorado River Compact states.

During the Project's Scoping Meetings in Kanab, St. George and Cedar City, Utah stated that the Pipeline's purpose would be to provide needed water to service population growth in southwest Utah in addition to developing Utah's Colorado River water rights. We request that Commission Staff independently investigate Utah's assumptions regarding need for increased water supply to service population growth. Based on our research and review of the record, we believe that future water demand in the three counties can be satisfied with expanded development of local

⁴ Further, when, in 2026, Reclamation revisits the *Colorado River Interim Guidelines for the Lower Shortages and Coordinated Operations for Lake Powell and Lake Mead* (2007) (*Interim Operations Guidelines*), available at <http://www.usbr.gov/lc/region/programs/strategies/RecordofDecision.pdf>, the amount of available water for the proposed Pipeline could be changed. Therefore, the Pipeline's operations under the existing guidelines would not be 50 years but closer to 20 years. This issue must be addressed in the EIS as it is a central issue in the management of Colorado River water.

⁵ Defects of this study are identified in Hydrosphere Resource Consultants, *Review of Water Supply Needs in Washington County, Utah* (2000).

water supplies and increased water conservation and improved efficiencies. We provide data which supports this finding in 4.2.2. Water Resources comments herein.

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

The Coalition requests that the EIS rigorously study alternatives to the proposed action that may achieve Utah's stated purpose. Because Utah states that conveying water under Utah's federal water right is the project's purpose, the Coalition submits alternatives to achieve the state purpose, *infra*, which we believe merit further study.

2.2 Comments and Scoping Meetings

Commission Staff will consider whether to prepare a Scoping Document 2 following scoping meetings and initial scoping comments. See SD1, p. 2. We believe that a revised document should be published to modify the description of issues and incorporate additional issues or information, as appropriate in response to scoping comments made during the scoping meetings and site visits held June 9-12, 2008, and in written form. See 40 C.F.R. § 1502.7(a)(2), (c). The SD2 should describe responsibilities for preparation of the EIS as between the Commission and any co-lead, or cooperating agencies. See *id.*, § 1501.7(a)(4).

3.0 Proposed Action and Alternatives

Commission Staff propose that the EIS include and analyze one ultimate alternative to Utah's proposals for a new license. See SD1, p.8. That proposed action will by default function as the preferred alternative of Commission Staff.

The scoping document identifies a narrow list of alternatives. This list of alternatives presumes the proposed action is the only means to increase water supply to serve anticipated growth. Based on the evidence in the record, we disagree with Utah's estimates for water demand and population to be served. We also disagree with Utah's analysis of existing water supply in the three counties, as stated in the PAD. Given the disagreement regarding Utah's forecasts for water demand and existing water supplies, we request that the EIS analyze all reasonable alternatives to the proposed action.

The EIS should include an in-depth analysis with a reasonable range of alternatives to the State of Utah's proposal, including those submitted herein by the Coalition and other parties. The National Environmental Policy Act (NEPA) requires rigorous evaluation of alternatives in the environmental document.

Alternative proposals submitted by the Coalition and other parties should be displayed as action alternatives, not just as accepted (or rejected) elements of Staff's preferred alternative. The

purpose of scoping is to allow the public to interact and provide options that should be reviewed as part of the NEPA process. This approach permits systematic comparison of the costs, benefits, and other impacts of all reasonable action alternatives. *See* 40 C.F.R. § 1502.14(a)-(b). This approach is necessary to compare alternative minimum flow schedules and other elements of regulation of proposed power operations. Thus, SD1 should be amended as follows:

"In accordance with NEPA, our environmental analysis will consider the following alternatives, at a minimum: (1) Utah's proposed action, (2) staff's and other modification of the proposed action, (3) other reasonable alternatives, and (4) no action."

SD1, p. 8.

We submit the following action alternatives for analysis in the EIS:

Water Conservation Alternative

The Commission should consider whether conservation measures can meet forecasted demand for water supply. This alternative should include increased water conservation, and improved efficiency in Kane, Washington and Iron Counties (*see* Water Resources at 4.2.2 herein). The analysis should assess the potential for augmenting local existing water sources in Kane,⁶ Washington⁷ and Iron⁸ counties. As with all proposed alternatives, the Draft EIS should estimate the costs to ratepayers and taxpayers in the affected region under this alternative.

Big Water Alternative

We recommend the EIS analyze the potential for Utah to use its Colorado River water right by delivering it to locations in eastern Kane County near Big Water, where it could be used for agricultural development, residential development, surface storage and aquifer storage. We

⁶ Primary options for more efficient use of existing water resources in Kane County include: (1) water conservation; (2) Increased utilization of groundwater stored in the Navajo aquifer below the County's; (3) Increased conversion of agricultural water for culinary purposes based on water that has already been sold by irrigators to developers; and (4) smarter land use planning.

⁷ Primary options for more efficient use of existing water resources in Washington County include: (1) water conservation; (2) increased utilization of Santa Clara River water through an aquifer recharge system based on expansion of the Sand Cove Reservoir system; (3) conversion of groundwater agricultural wells in south Washington Fields and south Hurricane Fields for municipal use including multiple analyses of viable treatment processes; (4) increased utilization of groundwater stored in the Navajo aquifer below the surface of Washington County; (5) increased utilization of Virgin River high water that cannot be diverted by the Quail Lake Diversion due to the limited size of the diversion pipe; (6) increased conversion of agricultural water for culinary purposes based on water that has already been sold by irrigators to developers; and (7) smarter land use planning.

⁸ Primary options for more efficient use of existing water resources in Iron County include: (1) water conservation; (2) increased utilization of Coal Creek's Spring flows through a new storage reservoir/aquifer recharge system; (3) increased development of water in the West Desert; (4) increased conversion of agricultural water to municipal uses; and (5) smarter land use planning.

recommend this alternative *not* extend the Pipeline west of East Clark Bench. If Utah’s highest priority in this proposed action alternative is to use their allocation of Colorado River water before the *Interim Operations Guidelines* are revisited in 2026, the EIS should analyze whether there are other areas closer to the river for delivery of imported water to avoid the added cost of pumping and create options for future use of the water. The EIS should estimate the costs to ratepayers and taxpayers in the affected region by county.

Aquifer Recharge Alternative

In its EIS, the Commission should analyze an Aquifer Recharge Alternative, in which the proposed Utah Colorado River water right is delivered to other suitable aquifer recharge locations adjacent to the Colorado and Green Rivers along their lengths in Utah. As in the above alternative, if Utah’s highest priority in this proposed action alternative is to use its allocation of Colorado River water before *the Interim Operations Guidelines* are revisited in 2026, then the EIS should consider aquifer storage in other areas with lower pumping needs and create options for the future use of this water. The EIS should estimate the costs to ratepayers and taxpayers in the affected region.

4.1 Cumulative Effects

SD1 states: “Based on information in the Pre-Application Documents, we have not identified any resources as potentially cumulatively affected by construction and operation of the Pipeline Project. By this document, we are asking for recommendations on resources that may be affected cumulatively.” SD1, p.11

SD1 further states:

“According to the Council on Environmental Quality regulations for implementing NEPA (Section 1508.7), a cumulative effect is the impact on the environment that results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions, regardless of what agency or person undertakes such actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time, to include hydropower and other land and water development activities.”

SD1, p. 11. Thus, the EIS must consider cumulative impacts that would take place over a period of time, including hydropower and other land and water development activities occurring in the geographic area that will receive water from the project.

To meet this requirement, the Commission should present clear analysis of the cumulative impacts of the no action alternative versus the cumulative impacts of the proposed project.

- Under the no action alternative, the Commission should analyze the effects of population growth-related impacts in the three counties absent the Pipeline. This would include modeling of cumulative environmental effects in all categories to the point of population

build out, or the point at which either local land or water resources are exhausted to the maximum by population growth.

- Under the proposed action alternative, the Commission should analyze the cumulative effects of population growth-related impacts in the three counties after the full 100,000 acre-feet allotment of water is conveyed to the proposed project areas. This includes modeling of cumulative environmental and socioeconomic effects in all categories. These effects should be quantified separately from, but in addition to, the impacts of the no action alternative.

With this comparison, the public will be able to discern the cumulative impacts associated specifically with the proposed project versus the cumulative impacts that would occur without the Pipeline. The EIS should include an in-depth analysis of the cumulative impacts under the No Action Alternative. This alternative establishes the baseline of growth-induced impacts that will occur even if the Pipeline is not built. This baseline is necessary for decision makers and citizens to isolate and evaluate the impacts of the Pipeline.

As currently framed, the SD1 and PAD focus almost exclusively on direct impacts of the construction of the Pipeline. The Commission suggests in SD1 that it has not identified the cumulative impacts from the proposed action alternative. Based on our review of the existing record, we believe the proposed project will have significant cumulative impacts on a number of resource areas. The EIS should analyze the cumulative impacts of Pipeline-induced changes on land use, population size and density, wildlife habitat (and associated recreational enjoyment of wildlife), open space, historical and prehistoric cultural resources, air quality, traffic, taxes (and potential increases as a result of enhanced infrastructure), traffic, urban sprawl, crime, scenic landscapes, and naturally functioning ecosystems.

For example, the Commission should analyze whether the proposed Pipeline will contribute to a cumulative increase in population and growth-related impacts and related housing development on acreage that would not be developable without the water from the Pipeline. Based on our preliminary analysis, the imported water could triple the population in three county area. The Washington County Water Conservancy District (WCWCD) states, “the currently estimated build out for Washington County is expected to be reached in 2050 with a build out population of 607,334.” *See Capital Facilities Plan*, p.7, available at www.wcwcd.state.ut.us. WCWCD further states that the population served by the Pipeline is only approximately 453,125.⁹ *See id.* The Coalition’s research indicates that there is enough water to support Washington County’s build out of 607,334 people by allotting less water per residential unit than does the WCWCD. Using data from the cities’ general plans, total population build-out was estimated to be only 328,000.¹⁰ Therefore, the environmental and socioeconomic impact of building the Pipeline could have enormous direct impacts on local communities by enabling additional population growth.

⁹ The Coalition can identify numerous instances where WCWCD officials have overestimated the need for water by using outdated water demand forecasting policies and misleading water use figures. We discuss this further in Water Resources at Section 4.2.2, *infra*.

¹⁰ Hydrosphere Resource Consultants, *Review of Water Supply Needs in Washington County, Utah*, *supra*, p. 7..

The EIS should also include a cumulative impacts analysis on socioeconomic and environmental resources that would result from the sale of public lands. In particular, these cumulative impacts should include the land sales proposed in the 2008 Washington County Growth and Conservation Act, which authorizes the sale of 9,000 acres of public land. This cumulative analysis should also include a reasonable estimate of public land converted to public uses such as schools, parks and city, county buildings that would be developed under BLM's Recreation and Public Purposes (R&PP) and normal land disposal practices over the next 50 years. We recommend that the Commission estimate potential land conversions by forecasting based on the rate of land conversions since the R&PP statutes were established, approximately 10,000 acres every ten years and increasing.

The EIS should also analyze the cumulative effects of the proposed Pipeline on water supplies throughout the Colorado River basin. Specifically, the EIS should include a detailed analysis of potential cumulative impacts due to other water development projects currently planned including (but not limited to) projects in the Upper Basin such as the Navajo-Gallup Pipeline, the Million Pipeline, and the Yampa Pumpback Project; and projects in the Lower Basin such as the Drop 2 Storage Reservoir.

4.1.1 Geographic Scope

SD1 states: “For any resources that participants recommend we analyze for cumulative effects, we are also asking them to recommend the geographic scope that they think is appropriate.” SD1, p. 11.

The geographic scope of the proposed project should be defined to include all private and State Trust land that could potentially receive Colorado River water from the proposed project in the entire Colorado River basin and those areas served by Colorado River supplies not located within the basin.

This geographic scope would include all developable private and State Trust land in the urbanizing areas of the Washington, Kane, and Iron counties based on existing development trends and reasonably foreseeable trends (e.g., density increases in downtown areas, conversion of agricultural land, etc). Developable private and state trust lands in Arizona’s Coconino and Mohave Counties should be included to anticipate the possibility that Utah and Arizona may develop an agreement to deliver Arizona water through the Pipeline. The geographic scope also should include all acres of public land that would be authorized for conversion to private development from the Washington County Growth and Conservation Act of 2008. It also should include a reasonable estimate of public land that would be developed under BLM’s Recreation and Public Purposes (RP&P) statutes. The number of acres in this category should be determined by forecasting RP&P conversions based on trends since the RP&P statute was authorized. Adjacent private, State Trust developable land, and other water source areas in Arizona should be considered as well.

4.1.2 Temporal Scope

SD1 states:

“The temporal scope of a cumulative effects analysis includes a discussion of past, present, and future actions and their effects on each resources that could be cumulatively affected. For any resource that we identify as potentially having cumulative effect, our temporal scope will look 30 to 50 years into the future, based on the potential term of the new license.”

SD1, p. 11.

Due to the highly influential nature of elements considered in the temporal scope analysis, the EIS should include the anticipated effects over a full 50 years, not 30 years. For purposes of environmental analysis, the temporal scope should extend 50 years from the commencement of project operation.

If built, the proposed project would affect and be affected by long-term climate and land use changes. Most significantly, changes in water supply reliability and climate parameters could dramatically affect the project’s functionality over 50 years. The contribution of greenhouse gases will continue beyond 50 years as long as the project functions, so 50 years should be the minimum

period of analysis. The project potentially will significantly affect land use patterns in perpetuity, which in turn will cause significant impacts on multiple resources beyond the 50 year scope, so this period should be the minimum length of analysis.

Water Supply Reliability

The EIS should include a thorough assessment of the impacts of the proposed Pipeline on existing water use throughout the Colorado River Basin. The recent history of drought in the Colorado River basin underscores the significant impacts that even modest reductions in inflows can have on system storage. With the adoption of coordinated reservoir management and shortage management guidelines, system storage decreases are certain to have water supply impacts on major urban areas throughout the Southwestern United States, including the metropolitan areas of Las Vegas, Phoenix and Tucson. Moreover, climate change and increased development in the Upper Basin will likely lead to reduced inflows into Lake Powell. This further increases the likelihood of a Compact call on the Colorado River. The impact of a Compact call on water supply reliability should be thoroughly analyzed by the EIS. Finally, while the United States and Mexico have not yet entered a formal agreement regarding Mexico's share of Colorado River shortages, it is likely that such an agreement will be negotiated within the lifetime of the proposed project.

In addition to a basin-wide assessment of shortage impacts, the EIS should carefully assess the impact of additional Colorado River development in Utah. As noted above, in the event of long-term reduced system storage, Upper Basin water users may be called upon to curtail water use in satisfaction of the Compact. The Upper Basin States do not yet have formal operating procedures to implement curtailment in the event of a Compact call, but nevertheless the EIS should develop a series of likely scenarios that project curtailment requirements in each of the states of the Upper Basin. Within Utah, the EIS should assess further the impacts of the proposed project and curtailment requirements on other in-state Colorado River water users. Because the proposed Pipeline is expected to supply municipal and industrial water uses, the EIS must not only consider the probability of shortages to the Pipeline's water users, but secondary impacts, such as how water supply agencies would replace the Pipeline supplies in the event of a shortage. Precedent for this approach is found in Reclamation's *Final EIS for Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead*, available at <http://www.usbr.gov/lc/region/programs/strategies/FEIS/index.html> (*Colorado Basin Shortage EIS*). See *id.*, §§ 4.14.2 and 4.14.3.1.

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

and shortage water replacement (including economic costs such as employment, income, and tax revenue, as well as environmental impacts) should be assessed. In addition, the scope should include the Lower Colorado River itself, in particular those areas vulnerable to reductions in flows including the limitrophe reach and habitat in the delta of the Colorado River.

Climate Change

This scope should include the anticipated effects of climate change on water supplies in the Upper Colorado River Basin that are being estimated by the Bureau of Reclamation's Riverware program in cooperation with academic, private and federal agency researchers. These effects should be estimated by applying the Riverware model (as modified as described in comments on PAD Section 5.2.4, *infra*) and by considering the data in related studies by the U.S. Department of Agriculture, U.S. Geological Survey, Intergovernmental Panel on Climate Change, National Academy of Sciences, among others. These data should be presented as a vulnerability analysis of the Colorado River as the Pipeline's water source for the next 50 years. *See* comments on PAD section 5.2.4, *infra*.

Recognizing that Reclamation is addressing a complex issue for multiple purposes, we recommend the licensing schedule be developed in a manner that will accommodate completion of climate change modeling for the Upper Colorado River Basin to the satisfaction of Reclamation and intervening parties. Reclamation's modeling must be completed in a timely fashion to be useful for this proceeding. If Reclamation's effort proves to be untimely, an alternate model should be selected upon mutual agreement of the applicant and intervening parties. *See* comments on PAD Section 5.2.4, *infra*.

Greenhouse Gases

The EIS should analyze the effects of greenhouse gas emissions over a term of 50 years resulting from Pipeline construction, operation, and maintenance (*e.g.*, use of fossil fuel-based electricity to power proposed pumps). Experts suggest that the Pipeline would require 500 – 580 MW of power; although some of this power would be recaptured in hydropower plants, the system would consume 100 – 180 MW of power – potentially increasing demand for a new power plant in the region. If powered by fossil fuels, the Pipeline would further accelerate climate change and its expected impact on water resources in the Colorado River basin.

Change in Land Use

Since the Pipeline would be a permanent project, the EIS should quantify reasonably foreseeable environmental and socioeconomic effects of population growth-related impacts in the three counties. This analysis should include all lands that would receive water from the Pipeline. It should estimate the area of land that would be developed in the three counties at maximum foreseeable buildout with this supply.¹¹ The analysis of land use changes should estimate the

¹¹ The analysis should take into account various scenarios for use per person. *See, e.g.*, Hydrosphere, *Review of Water Supply Needs in Washington County, Utah, supra*, p. 27, which estimates 150 gallons per capita per day (gcpd).

conversion of public or private open land to housing or other forms of development, including new energy facilities which receive water supply from the Pipeline. It should consider the potential indirect effects of such development, including traffic congestion and air pollution, loss of endangered species habitat, loss of urban open space, and degradation of tribal cultural resources. See 42 U.S.C. § 204(4). In addition, the EIS should include an analysis of all associated costs of complete build out such as the cost of schools, infrastructure, power and public services that are paid by ratepayers and taxpayers.

4.2.1. Geology and Soil Resources

The EIS should analyze the following:

- Effects of evaporation above and subsurface infiltration below the proposed Hurricane Cliffs Pumped Storage Project reservoirs.
- Effects of proposed storage reservoirs in Kane and Washington Counties on the potential for subsurface recovery through wells similar to Sand Hollow Reservoir.
- Effects of pumped storage reservoirs on Hurricane Cliffs active faults (e.g., fault lubrication, potential for increased seismic activity resulting from new weight distribution).
- Effects of the proposed forebay and afterbay reservoirs on triggering of landslides or slump blocks along the Hurricane Cliffs at that location, including examining the history, geometry, ages, locations of rotational landslides and slumps along the cliffs including the Hurricane Canal near Pah Tempe Hot Springs.
- Effects on Pipeline and storage or dam facilities resulting from landslides, slump blocks or other features of collapse or mass wasting.
- Effects of proposed forebay and afterbay reservoirs on geologic stability of Hurricane Cliffs, taking into account recent earthquake in 1990 and fractures, fissures, minor faults, breccias and fault gouge in the lavas, limestones, and any other rock types underlying the proposed sites.
- Effects of a clay reservoir lining as a potential lubricating substance if entrained in water.
- Effect on ecosystem function resulting from the spread of non-native plant species in all affected areas and on undisturbed wildlands from the Pipeline's construction and operation.

4.2.2 Water Resources

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

- Effect of new 25% by 2050 water conservation targets established by the Utah Division of Water Resources and the Washington County Water Conservancy District on future water demand in the three counties.
- Effects of the potential loss of surface water to evaporation above and subsurface infiltration below the proposed pumped storage reservoirs.
- The potential for subsurface recovery from pumped storage reservoirs through wells similar to Sand Hollow Reservoir.
- Increased evapotranspiration losses from Quail Lake and Sand Hollow Reservoirs that would occur if the Pipeline maintains a larger volume of water in these reservoirs than was stored under pre-Pipeline conditions.
- Effects on water quality parameters, including quagga mussel invasion and potential chemical or biological treatment, on the Virgin River resulting from increased output from the St. George wastewater treatment facility.
- Effects on water quality and aquatic ecosystems resulting from pressure, cleaning, regulating reservoirs or accidental releases of water from the Pipeline of variable scales into drainages with perennial, ephemeral or intermittent natural waters, including the effects of zebra and quagga mussels and the chemical or biological treatment of mussels, and the potential for spread of mussels to pristine or nearly pristine drainages in Grand Canyon National Park via the Pipeline route through the Paria River and Kanab Creek stream beds and elsewhere.
- Effects of project construction, operation and maintenance on water quality in Lake Powell and in the Colorado River in all downstream sections including through the Grand Canyon and on to the Colorado River Delta that result from withdrawing low TDS water from near the surface of Lake Powell; effects should include (but not be limited to) Interstate and International salinity control agreements.
- Effects of potential water right claims to increased wastewater effluent by Arizona and or Nevada water users resulting from delivery of Upper Basin water to the Lower Basin.
- Effects of the proposed Pipeline on the following:
 - 1944 Treaty with Mexico;
 - Lower Basin Colorado River Compact States and delivery of water;
 - Effects on Native American water rights, specifically the existing and anticipated future water right agreements with Navajo, Ute, Paiute, Hopi and other tribes;¹²

¹² Native American tribes are becoming increasingly successful in winning their claims to Colorado River water that pre-date the 1922 Compact. Experts estimate that tribes own between 3 and 5 million acre-feet. As these

- Wildlife habitat throughout Colorado River basin.
- Effects of increased cost of drinking water regulation standards and treatment requirements of pollutants in Lake Powell water such as arsenic, selenium, uranium and other compounds that would increase operation and maintenance costs over the life of the project.
- Effects of water quality on human health of Lake Powell water.¹³
- Effects of increased growth and the accompanying higher levels of water in the existing sewer lagoons in the three counties.
- Effect of population-induced increases of water treatment on the Navajo sandstone aquifer under Hurricane's sewer lagoons.
- Effects of the Pipeline diverting water below Lake Powell's minimum power pool elevation and the effects on the Pipelines legal priority to continue to draw water from Lake Powell.
- Effects on major water rights in the upper and lower Colorado Basin, including graphical display of water rights in the upper and lower basins by priority.¹⁴
- Effects of the Pipeline system expanding and being able to tap other aquifers elsewhere in the three counties and in Arizona and move that water via the Pipeline to other areas.

The Commission should analyze the proposed project's impact on culinary water resources and water rights within the three counties. The conversion from culinary water use to re-used water for irrigation purposes may increase the amount of potable water resources available for municipal use, without developing new water rights. However, a preliminary analysis by the Coalition found omissions and inconsistencies among various studies of total developable water supplies in Washington County. The studies include:

- Regional Water Supply Agreements (RWSA), *available at* <http://wcwcd.state.ut.us/Agreements/Regional%20Water%20Supply%20Agmt.final.w%20implementation.pdf>;
- WCWCD, *Capital Facilities Plan, available at*

claims are satisfied prior to, during, or after Pipeline construction, less water will be available for the proposed Pipeline.

¹³ In addition to reduced storage capacity, scientists have observed increasing concentrations of chemical pollutants in Lake Powell when reservoir levels drop. The EIS should perform an in-depth analysis of the potential ramifications of increased health risks and drinking water treatment costs associated with low reservoir levels.

¹⁴ The EIS should analyze how upper basin water shortages would be managed to include the additional demand from the pipeline. The study should inform the public and decision makers should be aware of the order in which water allocations will be reduced during long periods of drought.

- *Water Delivery Financing Task Force Report (September 2004)*, available at <http://www.lakepowellpipeline.org/documents/WDFTaskForceReport.pdf>.

The EIS should analyze the effect of the proposed project on existing municipal water supply. In the Regional Water Supply Agreement (RWSA) signed by WCWCD and the City of St. George, Washington City, Hurricane City, Ivins City, and LaVerkin City, the existing developed water supplies of the cities are set out as the “baseline equivalent residential units,” or “ERUs.” The conversion factor selected by the WCWCD for acre-feet (AF) to ERU’s is 0.89. The existing baseline ERUs set out in paragraph 8.2.2 (p. 24) of the respective RWSAs for the signing municipalities are as follows:

St. George City	23,977
Hurricane City	5,384
Washington City	7,655
Ivins City	2,430
<u>LaVerkin City</u>	<u>1,504</u>

Total 40,950 ERU x 0.89 AF/ERU = 36,445 AF¹⁵

An evaluation of existing municipal water supplies available from cities within Washington County is provided in the following table that sets out the respective municipalities’ water supply and the District’s portion of the water supply recognized as baseline ERUs in the RWSA.

¹⁵ However, in some instances these “baseline ERU’s include water supplied under existing contracts between a municipality and the WCWCD. A listing of the existing District contracts is found in WCWCD’s *Capital Facilities Plan*, p. 23.

City	RWSA baseline	Municipal Supply	District Supply
St. George City	23,977 ERU	12,741 ERU (11,340 AF)	11,236 ¹⁶ (10,000 AF)
Hurricane City	5,384 ERU	5,384 (4,792 AF)	0
Washington City	7,655 ERU	7,655 (6,813 AF)	0
Ivins City	2,430 ERU	745 (663 AF)	1,685 ¹⁷ (1500 AF)
LaVerkin City	1,504 ERU	380 (338 AF)	1,124 ¹⁸ (1000 AF)
Total	40,950 ERU	26,905 (23,946 AF)	14,045 (12,500 AF)

In addition, the following communities have not entered into the RWSA, but have developed water supplies for use in their respective municipalities.

Santa Clara City	2,740 AF
Leeds Town	500 AF ¹⁹
Winchester Hills Water Co.	475 AF ²⁰
Toquerville Town	380 AF ²¹
Virgin Town	175 AF ²²
Total	4,270 AF

These figures indicate that Municipalities' current water supply is approximately 28,216 AF.

These identified supplies do not appear to include water supplies used for major irrigation projects within the communities, such as city parks, schools and cemeteries. Preliminary research indicates that many of these projects could be converted to reuse or recycled water. The EIS should include an in depth analysis of total developable water supplies in Washington County from all sources regardless of current ownership. This should include the total potential available through wastewater reuse projects. For example, St. George City uses reuse water from its waste water

¹⁶ Existing St. George City contract with District is for 10,000 AF (11,236 ERU).

¹⁷ Existing Ivins City contract with District is for 2,000 AF. We assume 1,000 AF of this contract and that 500 AF under the Kayenta Users contract were utilized for this supply.

¹⁸ Existing LaVerkin contract with District is for 1,000 AF. We assume this full contract is utilized for this supply.

¹⁹ Based upon information from the Division of Water Rights database.

²⁰ *Id.*

²¹ *Id.*

²²

treatment plant to water the Sunbrook, Southgate, Sun River,²³ Bloomington County Club, and Entrada golf courses.²⁴ This also makes available more irrigation water to be treated for culinary use. If Hurricane City built a waste water treatment plant, it could service Coral Canyon, Sky Mountain and Sand Hollow Resort. The EIS should consider a scenario whereby new golf courses, power plants, major industrial facilities, parks, and medians would be required to use reuse water.

Additional Irrigation and Groundwater Supplies.

In assessing additional water supplies, the EIS should consider whether existing irrigation water could potentially be made available for culinary uses.

Santa Clara River

Ivins Irrigation Co.	1,000 AFA
New Santa Clara Field Canal Co.	2,163 AFA
St. George-Clara Field Canal Co.	3,278 AFA
Shivwitts Band	<u>1,900 AFA</u>
Total	8,341 AFA

Virgin River²⁵

LaVerkin Bench Canal Co.	2,650 AFA
Hurricane Canal Co.	<u>12,000 AFA²⁶</u>
Total	14,650 AFA

A substantial amount of groundwater has been privately developed and is used mainly for irrigation in the St. George metropolitan area (Hurricane City, Washington City, St. George City, Santa Clara City, and Ivins City). This water could be acquired as development takes place and

²³ SunRiver golf course has an independent private water supply, but is currently using reuse water for irrigation.

²⁴ City of St. George, *Water Conservation Plan Update* (January 2008), p. 3.

²⁵

The LaVerkin Bench Canal Co. and Hurricane Canal Co. diversions are made through the District’s diversion above Pah Tempe hot springs and delivered through the District’s Quail Creek pipeline under separate agreements with the District. Because these diversions are above the hot springs, these waters are not commingled with the mineralized hot springs and are therefore more appropriate for conventional treatment. These supplies are included here because of their deliverability and treatability through existing District facilities. Further, as WCWCD buys up the Washington Fields water rights, it could divert more water above the Pah Tempe Hot Springs and not commingle water with mineralized water from Pah Tempe Hot springs, subject to U.S Fish and Wildlife restrictions on flows for the Endangered Virgin River fishes.

²⁶ Paragraph 4(b) of the Water Conveyance Agreement dated March 19, 1991, between Hurricane Canal Co. and the District provides for the delivery of 12,000 AF of water when the Virgin river flow is below average and 15,000 AF/yr in years when the Virgin river flow is average or above average.

irrigated acreage is retired. All of these water rights have been developed and placed to beneficial use. The following is a cursory listing of these water rights based on data obtained from the Division of Water Rights database.

South of Hurricane and East of Sand Hollow Reservoir	
T42S, R13W	670 AF
T43S, R13W	8 AF
Sand Hollow area	
T42S, R14W	4,437 AF
T43S, R14W	1,108 AF
Washington Fields/West of Sand Hollow Reservoir	
T42S, R15W	2,803 AF
T43S, R15W	6,819 AF
West St. George/Santa Clara/Ivins area	
T42S, R16W	1,434 AF
T43S, R16W	810 AF
T42S, R17W	<u>40 AF</u>
Total	18,129 AF

The EIS should identify the water quality of these groundwater wells. We request that the EIS compare the costs of the Pipeline to the alternative of treating and delivering this water for culinary use. This analysis should be reported both in terms of cost per AF as well as total project-by-project cost.

This total of 26,469 AF is developed groundwater rights and Santa Clara River irrigation water rights that do not appear in WCWCD's potential future water supply studies. *See WCWCD Capital Facilities Plan, supra.* The EIS should include this water in estimated total water supply potential. Agricultural water rights have been rapidly converted to municipal uses in recent years. The EIS should assess the impact of the No Action and proposed alternatives on agricultural water use and conversion rates in the region.

Finally, the EIS should assess the potential for using groundwater aquifers in the region to meet new water demands. The EIS should include an objective, detailed analysis of the Navajo Aquifer's feasibility as a storage aquifer and/or back up water source during sustained drought. We recommend that the Commission examine WCWCD's estimate of 200,000 acre-feet aquifer storage potential below Sand Hollow Reservoir. The Commission should also explore additional aquifer recharge projects in Washington County, including capturing and storing storm water runoff as well as capturing more high water flow in the Santa Clara and Virgin Rivers.

Utah's Level of Service for Water

We request that the EIS investigate the suggested level of water delivery service as stated in WCWCD's *Capital Facilities Plan*. This plan establishes the level of water service at 0.89 AF per equivalent residential unit (ERU), which the plan defines as the standard demand for a single-family residential unit on a ¼ acre lot.²⁷ The plan states that the WCWCD will “not include the potential reductions in water demands through conservation in the projection of water demands until significant and stable conservation is achieved.”²⁸ It is worth noting that the Utah Division Water Resource indicates that Washington County's system wide water use dropped to 330 gcpd during its 2007 use survey.²⁹

We recommend the EIS include detailed, actual water use data for the three counties as basis for the project need statement. The Utah Division of Water Resources' current water use estimating system depends on voluntary reporting by water users; we recommend that agencies collect empirical, measured data as part of the EIS process.

Further, the EIS should include reliable estimates from the Utah Division of Drinking Water and Utah Division of Water Resources that include:

- Water use consideration (also referred to as demands) that include existing “wet” water rights—paper rights attached to water that is actually developed and currently used. Water use can be measured in terms of consumptive use, gross diversions or total deliveries. Categories of water use include municipal (domestic and commercial), industrial, and agricultural;
- The estimated population build-out based on maximum use efficiency of all developable intra-basin water sources including but not limited to the Navajo aquifer below Washington County; and
- Determination of a change to levels of service requirements that will accompany the Division's goal of 25% water use reduction by 2050.

²⁷ *Capital Facilities Plan*,, *supra*, p. 23

²⁸ *Capital Facilities Plan*, *supra*, p. 22.

²⁹ We have been unable to locate documentation to support a determination that this level of service is the actual amount of water being provided to existing residents within the municipalities. Every residential unit is considered to have the same high water use rate without consideration for other types of residences that use less water such as condos, apartments, and smaller lots. Further, the Utah Division of Drinking Water (Division) has an 800 gallons per day (gpd) requirement per residential unit for just indoor use. This high rate is allocated for peak use and drought. This does not allow for the long term benefits of water conservation to reduce water demand forecasting. Communities then have to build excess (redundant) water supply simply to facilitate cutbacks during drought. This is highly uneconomical and misleading to ratepayers. R309-510-4; R309-510-7(2). Therefore, if available water data supports a reduced water use rate for indoor use, this actual” level of service” could be reduced and the amount of water required for future growth would be reduced.

The EIS should incorporate this estimated level of service into calculated scenarios of future water needs for the three counties.

The Washington County *2035 Housing Study* (2007)³⁰ indicates that national trends will likely lead to a reduction in average lot sizes in Washington County and a drop in residents per unit to 2.5 by 2040. The EIS should reflect these trends in terms of build out populations and future estimated water demand over the 50-year term of the proposed license.

Water Conservation Savings Potential

The EIS should examine and set a standard for the volume of water that could be saved through moderate water conservation measures, such as increased indoor efficiency and water-wise outdoor landscaping. Currently the WCWCD's *Capital Facilities Plan* assumes that all residential units use 0.89AF annually. Of that 0.89 AF, 0.45 AF is dedicated to indoor use while 0.44 AF is dedicated to outdoor use.³¹ Given current occupancy levels in Washington County of 2.85 people per household, this equates to 141 gallons per person per day (gpcd) used indoors and 138 gpcd used outdoors; for total daily use of 279 gpcd in the residential sector alone.³²

Studies show that average indoor use in a typical U.S. home is 69 gpcd while in an efficient home indoor use is 45 gpcd.³³ If all homes in Washington County reduced their indoor use to these levels by 2035, between 33,116 AF and 44,195 AF could be saved annually in the residential sector alone.³⁴ The savings potential of outdoor conservation produces an additional 26,000 AF.³⁵ The Commission should further examine saving potential for both indoor and outdoor water conservation measures and use a reasonable range of alternative scenarios for per capita water use.

Currently, Washington County, Utah, has some of the highest levels of system wide use in the nation, and planning documents project those levels to remain the same through 2039 with no long term conservation savings potential factored into these projections, despite Washington County Water Conservancy District's adoption of the State of Utah's goal to reduce use 25% system-wide

³⁰ See www.visiondixie.org.

³¹ Calculation by Western Resource Advocates. Data from WCWCD, *Capital Facilities Plan*, *supra*, p. 9.

³² *Id.*

³³ Amy Vickers, *Handbook of Water use and Conservation* (WaterPlow Press 2001), pp. 15-19.

³⁴ Calculation by Western Resource Advocates. Housing data from Strategic Planning Group, Inc., *Vision Dixie 2035 Housing Study Report*, Table IV-3. Scenario A -Washington County Housing Tenure Forecast, IV-12.

³⁵

Calculation by Western Resource Advocates. Assumes 50% of the 2035 population participates at a moderate level. Methodology from *Facing our Future: A Balanced Solution for Colorado*, 2005, Irrigation requirements from Southern Utah University, *Historical Irrigation Requirements*, <http://www.conservewater.utah.gov/ET/ETSite/SouthernUtahUniversity.htm>.

from 2000 levels by 2050.³⁶ If implemented, this very moderate reduction would decrease water use in Washington County by 86 gpcd—saving nearly 39 million gallons of water each day by 2039. That is 43,651AF annually, a significant portion of the entire Pipeline project.³⁷

Based on our preliminary analysis, this level of reduction appears attainable. By comparison, Clark County, Nevada (serviced by the Southern Nevada Water Authority) is a hotter and drier community than Washington County Utah but is currently using less water per capita. On average Clark County is seven degrees warmer and receives 4.2 inches less precipitation annually than Washington County.³⁸ Yet, system wide, Clark County uses 78 gallons per person per day less water and the Southern Nevada Water Authority (SNWA) has set a goal to reduce that a further 19 gallons by 2035.³⁹ Furthermore, recent studies have shown that SNWA customers could reduce their use by more than 86,000 AF annually through increased efficiency.⁴⁰ Therefore, implementation of moderate and reasonable conservation and efficiency measures throughout Washington County now and into the future would likely save significant volumes of water and be more cost effective than traditional supply development.

SNWA has experienced significant success in reducing per capita water use through restrictions on new lawns and/or turf buy-back programs. The Coalition requests an analysis of potential water conservation through a similar program in the three counties.

Existing Conservation Efforts

Currently Washington has limited conservation measures in place. They include:

- Educational & outreach programs
- Rebate for installation of SMART Irrigation Controllers
- Free residential lawn water audits.

Two other conservation programs (a water efficient appliance rebate program and an ultra low flow toilet replacement rebate) were terminated due to lack of funds. The rebate for installation of SMART Irrigation Controllers has very low participation and is therefore not as successful in saving water as it could be with broader levels of participation from the community. For a rapidly

³⁶ *Capital Facilities Plan, supra*, p. 8. See also Lake Powell Pipeline.org; http://www.lakepowellpipeline.org/washington_water_conservation.html. June 26, 2008.

³⁷ Calculation by Western Resource Advocates. Assumes current levels of use to be 342 gpcd system wide (from Washington County Water Conservancy District, *Regional Water Capital Facilities Plan and Impact Fee Analysis, supra*, p. 8.

³⁸ <http://www.weatherbase.com/>

³⁹ Pacific Institute and Western Resource Advocates, *Hidden Oasis: Water Conservation and Efficiency in Las Vegas* (November 2007), p. 16.

⁴⁰ *Id.*, p. 36.

growing community located in an arid environment, much more should be in place to incentivize or regulate efficient use of limited water resources.

The EIS also should consider water rates set to encourage efficient use of water and reward those who conserve. The City of St. George has implemented an inclining block rates structure. However, the structure does not work effectively to convey a conservation price signal to consumers due to the high monthly base charge and the nominal increase in per unit price from one block to the next. Combined together, these elements form an average price curve which fails to send a price signal to customers.

In order for inclining block rates to be an effective conservation tool consumers must understand that the more water they use the more they will pay per unit; this is reflected in a steep positive slope on the average price curve, which does not occur with St. George's current rate structure.⁴¹ Adequate water rate structures should be examined as part of the NEPA process.

A list of conservation and efficiency measures in place in other communities that have proven to reduce water use follows. The Commission should analyze water savings available through these and other measures.

⁴¹ Western Resource Advocates, *Water Rate Structures in Utah: How Utah Cities Compare Using This Important Water Use Efficiency Tool*, 2005.

Indoor Conservation Measures⁴²

	Southern Nevada Water Authority	Metropolitan Water District of Southern California	Seattle Public Utilities	Irvine Ranch Water District	Albuquerque Bernalillo County Water Utility Authority	Tucson
Audits						
Audits	MFR	C&I	C&I	ALL	ALL	MFR, SFR
Targeted sector water audits		ALL		ALL		
Rebates						
Ultra-low-flush toilet		ALL	ALL	ALL		
High-efficiency or dual-flush toilet	MFR, C&I	ALL	ALL	ALL	ALL	
High-efficiency urinal		C&I	C&I	C&I		
Waterless urinal	MFR, C&I	C&I		C&I		
Clothes washer		ALL	ALL	ALL	ALL	
Retrofit kit giveaways ⁽¹⁾	SFR, MFR		SFR, MFR	ALL	ALL	SFR, MFR
Hot water recirculating system			SFR, MFR		ALL	
Appliances in new construction that exceed standards ⁽²⁾	MFR, C&I	SFR, MFR	MFR, C&I			
Laundry water ozonation or recycling system	C&I	C&I	C&I	C&I		
Dishwasher	C&I	C&I	C&I	C&I		
Cooling tower retrofits	C&I	C&I	C&I	C&I		
Replacement of once-through cooling systems	C&I	C&I	C&I	C&I		
Connectionless food steamers	C&I	C&I	C&I	C&I		
Medical air and vacuum systems	C&I	C&I	C&I	C&I		
Restaurant low-flow spray nozzles	C&I	C&I	C&I	C&I		
Pressurized water brooms	C&I	C&I	C&I	C&I		
Process improvements: performance-based	MFR, C&I	C&I	C&I	C&I		
Air-cooled refrigeration systems	C&I	C&I	C&I	C&I		
Steam sterilizer retrofit	C&I	C&I	C&I	C&I		
Hospital X-ray water recycling unit	C&I	C&I	C&I	C&I		
Regulatory Program						
Regional or city plumbing codes ⁽³⁾						ALL
Educational Program						
School programs	ALL	ALL	ALL	ALL		ALL
Water Smart Home ⁽⁴⁾	SFR, MFR					
Water Upon Request ⁽⁵⁾	ALL	ALL	ALL		ALL	
Advertising/community events	ALL	ALL	ALL	ALL	ALL	ALL

Notes:

- (1): low-flow nozzles, aerators, dye tablets, showerheads
- (2): rebates to home builders for installation of appliances that exceed current efficiency standards
- (3): can include showerheads, urinals, and so on
- (4): branding/labeling program for new homes
- (5): available at restaurants

All = program available to single-family, multi-family, commercial, and industrial customers
 SFR = program available to single-family residential customers
 MFR = program available to multi-family residential customers
 C&I = program available to commercial and industrial customers

⁴² *Hidden Oasis: Water Conservation and Efficiency in Las Vegas, supra*, p. 26.

Outdoor Conservation Measures⁴³

	Southern Nevada Water Authority	Metropolitan Water District of Southern California	Seattle Public Utilities	Irvine Ranch Water District	Albuquerque Bernalillo County Water Utility Authority	Tucson
Audits						
Audits	MFR	C&I	C&I	ALL	ALL	MFR, SFR
Large landscape	ALL	ALL		ALL	ALL	ALL
Rebates						
Artificial turf incentive	C&I	ALL				
Garden sprayer with shut-off valve				ALL		
Grant program ⁽¹⁾		C&I				
Irrigation timer/controller ⁽²⁾	ALL		ALL		ALL	
Irrigation ET controller ⁽³⁾	ALL	ALL	ALL	ALL	SFR, MFR	
Irrigation upgrades:						
performance-based	C&I	MFR, C&I	MFR, C&I	C&I		
Irrigation water budget		MFR, C&I		MFR, C&I		
Water-efficient landscaping	ALL				ALL	
Pool covers	ALL					
Pressure-regulating valves			MFR, C&I		MFR, C&I	
Rain sensor	ALL	MFR, C&I	ALL		ALL	
Rainwater harvesting			ALL		ALL	
Rotating sprinkler nozzle		ALL	C&I	ALL	ALL	
Soil moisture sensor			ALL			
Sprinkler to drip/micro conversion			MFR, C&I			
Regulatory Program						
Landscape efficiency codes	ALL			ALL		ALL
Seasonal watering schedule	ALL					
Time of day restrictions	ALL				ALL	
Water waste ordinance	ALL			ALL	ALL	ALL
Educational Program						
School programs	ALL	ALL	ALL	ALL		ALL
Water Smart Home ⁽⁴⁾	ALL					
Demonstration gardens	ALL	ALL			ALL	ALL
Landscape training for public	ALL	ALL	ALL	ALL	ALL	ALL
Landscape training for irrigation professionals	ALL	ALL		ALL		
Plant labeling program/plant list	ALL	ALL	ALL	ALL	ALL	
Published irrigation schedules		ALL	ALL	ALL		

Notes:

- (1): grant reward based on a request for proposal process
- (2): capable of multiple programming schedule
- (3): determines irrigation based on current or historical weather conditions
- (4): branding/labeling program for new homes

- All = program available to single-family, multi-family, commercial, and industrial customer
- SFR = program available to single-family residential customers
- MFR = program available to multi-family residential customers
- C&I = program available to commercial and industrial customers

Because Washington County’s current water conservation efforts are limited, the Commission should consider future water savings scenarios consistent with the results achieved by other southwestern cities.

4.2.3 Aquatic Resources

⁴³ *Hidden Oasis: Water Conservation and Efficiency in Las Vegas, supra*, p. 28.

The EIS should analyze the following:

- Effects of Zebra, Quagga and other invasive mollusk species infesting existing water delivery systems, including municipal and residential systems, within the three counties.
- Effects on water quality from Zebra and Quagga mussel waste products (e.g. sulfites, sulfates, nitrogen, ammonia, etc.) and decomposition within the Pipeline and their ability to spread toxic algae causing problems with drinking water supplies.
- Financial and human health effects of chemical and/or other mussel treatments on water quality parameters in Kane, Washington, and Iron Counties.
- Effect on project design, construction, operation and maintenance activities and costs related to minimizing and managing for possible zebra and quagga and other invasive mollusk species infestation.
- Effect on the construction, operation and maintenance of municipal water supply systems in the three counties after possible introduction of invasive mollusk species
- Effect on the operation and maintenance of Sand Hollow and Quail Creek Reservoirs, resulting from introduction of invasive mollusk species shells
- Effects of Zebra and Quagga mussels and mussel shells entrained in system on pumping, on-line hydropower plants and conveyance facilities
- Analysis of the effects on fish and other aquatic populations of mussel infestations resulting from the Pipeline as a vector.
- Effects on pumping costs, conveyance and pressure management facilities resulting from intentional physical and/or chemical removal of Zebra and Quagga mussels from Pipeline.
- Analysis of mussel removal effectiveness at the Hoover Dam and in the Great Lakes region, including the effectiveness of chlorine and other chemical or physical treatments at removing or controlling Zebra and Quagga mussels.
- Effects of each proposed alternative on the potential proliferation differentials of the mussels in each alternative.
- Effect of the economic impacts of the mussel on aquatic resources, i.e. loss of recreational fisheries due to population crashes.

4.2.4 **Terrestrial Resources**

The EIS should analyze the following:

- Effects of project construction, operation, and maintenance on terrestrial resources in all locations that could potentially receive water from the Pipeline. This includes all developable private land, State Trust Land and acreage managed by the Bureau of Land Management that is likely to be sold or exchanged in the foreseeable future.
- Effects of project construction, operation, and maintenance on terrestrial resources specifically located within the Kanab Creek Area of Critical Environmental Concern and elsewhere.
- Effects of perennially moist soil on Pipeline structures at the Paria River and Kanab Creek stream bed crossings.⁴⁴ The EIS should identify a management protocol for leaks at river crossings and on the land as well as identify appropriate mitigation measures if damage occurs.
- Direct and indirect effects on local wildlife populations and habitat as a result of habitat alteration and loss. Analysis of these effects should include the full geographic scope of the proposed project including all developable land proposed to directly or indirectly receive water from Lake Powell. Habitat alteration and loss directly associated with Pipeline construction would be an insufficient geographic scope due to the Pipeline's cumulative effects.
- Effects of project construction, operation, and maintenance on the migration corridors for the Kaibab deer herd and other wildlife species.
- Cumulative fragmentation effects on terrestrial resources, including wildlife, due to road building, electric infrastructure and other development facilitated by the new supply of water to undeveloped areas of the Arizona Strip and rural or remote regions of the three counties.

4.2.6 **Recreation**

The EIS should analyze the following:

- Effects of project construction, operation, maintenance and change in land use on dispersed recreation in the three counties and within the sight of visitors along the proposed routes across the Arizona Strip and elsewhere.

⁴⁴ The Quail Creek Pipeline has experienced extensive leaking problems at the Virgin River crossing. This has causing several environmentally destructive streambed excavations.

- Effects of the Pipeline being routed under the Virgin River and its floodplain at Confluence Point in Hurricane and LaVerkin, Utah on the endangered species habitat values protected by a Utah Division of Natural Resources conservation easement
- Effect on the region's wildland character resulting from the Pipeline's infrastructure including power supply lines.⁴⁵

4.2.7 **Aesthetics and Noise**

The EIS should analyze:

- Effects of Pipeline's operation and maintenance, and resulting population growth, on the night sky of the three counties.
- Effects on the scenic landscapes of the Colorado Plateau and the disruption to the visitors' visual experience of remoteness from the imprint of the Pipeline's electric infrastructure, specifically effects on the Cockscomb, Three Pigs, Grand Staircase Escalante National Monument, and along the highway corridor elsewhere.
- Effect of the Pipeline's pumping noise on wildlife and their migration corridors and the recreational experience.
- Effects of seasonal construction periods to minimize potential impacts to migrating wildlife or nesting avifauna.

4.2.8 **Socioeconomic Resources**

Cost

The EIS should analyze the following:

- Estimated total project costs prorated to each Water Conservancy District.
- Comparison of total project cost to total population in each Water Conservancy District service area.

⁴⁵ The Arizona Strip is known as the place "Where the West Stays Wild" and is managed by the BLM to retain its remote landscape character. The Pipeline would cross through spectacular landscapes and ecologically important wildlands on and near the Arizona Strip including the Glen Canyon National Recreation Area, the Grand Staircase-Escalante National Monument, pass near proposed wilderness areas and a BLM Area of Critical Environmental Concern, and the Arizona Strip wildlands to reach St. George, and Cedar City, Utah. Five proposed hydroelectric turbine stations and four pumping stations with power lines connecting to existing power grids, substations, access roads, regulating tanks and reservoirs, manholes, blow off valves, fencing, continued maintenance, repair and excavation would significantly degrade the region's wildland character.

- Estimated debt burden both per capita and per taxpayer.
- Effects on Pipeline financing resulting from annual growth rates during years that do not reach predicted rates. WCWCD's *Capital Facilities Plan* indicates that impact fee revenue was projected to reach \$13,000,000 annually, but 2007 revenues were approximately \$4,000,000. In addition to considering impact fee revenue data from the district's annual reports, the Commission should also consider actual building permit approvals (reliable data is available from Southern Utah Title Company).
- Effects of increased WCWCD impact fees and surcharges on performance and nationwide competitiveness of the residential housing and commercial real estate market in the three counties. The EIS should evaluate whether fees, surcharges, and taxes for the Pipeline could inflate the cost of housing and thereby cause declines in population growth especially among service providers (such as school teachers, police, fire fighters). The EIS should evaluate whether subscribing Counties could lose their competitive advantage to other similar southwestern communities with lower taxes and fees. The EIS should evaluate whether these negative results could be avoided by pursuing less expensive local water sources, recycling, and conservation.
- Effects of increased impact fees, surcharges and property taxes on the ability of the Counties and local governments to impose fees, surcharges, or taxes to pay for other services (e.g. roads, sewers, libraries, etc.) needed as a result of growth induced by the Pipeline.
- The effects on operation and maintenance costs resulting from reduced Colorado River flow and the incremental expense of pumping water as the elevation of Lake Powell rises and falls. For example, what would the added cost be if Lake Powell is less than 50% full more than 50% of the Pipeline's projected lifetime? What added costs would occur when the price of electricity for the pumps increases in price by 1%, 2%, 3%, 4%, and 5% by the time of construction in 2015?
- Socioeconomic effects if the Pipeline is unable to deliver the expected amount of water due to severe sustained drought, climate change, or conflicts among the Compact Basin states.
- Effects on cost of electricity to residents resulting from increased regional power grid demand for Pipeline pumps.
- Effects of Pipeline-related cost of living increases in the three counties, e.g., increased cost of locally purchased and provided goods and services due to increased community wide tax burden.
- Effects of Pipeline-related increases in felony crimes in the three counties based on established crime trends in the Southwest associated with population growth.

- Effects of the Pipeline on the State’s ability to maintain high bond ratings in consideration of Utah’s priority to also bond more than \$2 billion for reconstruction of I-15 from Draper to Payson.
- Incremental cost-effectiveness of different water supply scenarios. Utah’s preferred action alternative assumes that the full allotment of water will be delivered by the Pipeline and makes no reference to impacts resulting from a reduction of water delivery due to drought sharing. Since the cost-effectiveness of the Project (both revenues and associated costs) appears to be related to the amount of water supplied, the EIS should evaluate the incremental cost-effectiveness of different supply scenarios.
- Effects of recent increases in the costs of fuel, steel, cement and other construction materials on the estimated cost of Pipeline construction. Utah’s estimates appear to omit many cost items, including fuel, transmission lines, rights-of-way, extending the pipe from Lone Rock Bay to the Colorado River mainstem. The EIS should include all relevant cost items and should forecast to 2020, allowing time for possible project delays.

According to the WCWCD's *Capital Facilities Plan*, the cost of the proposed Pipeline project, including interest on bonds, will exceed \$1.7 billion dollars. Utah proposes to fund this project through property taxes, impact fees and water rates without significant financial assistance from federal or state agencies. The EIS should estimate the direct impact of funding the project on the residents of Washington, Kane and Iron Counties. The Commission's analysis should also estimate the impact on residents and taxpayers if the recent economic downturn continues and population growth slows. This analysis should also estimate the full socioeconomic impacts on residents and taxpayers if the project is built, the population grows but then water becomes unavailable due to climatic, biological or political reasons. The Commission should consider whether state or federal funding would be available to mitigate the burden of impact fees on Project beneficiaries, and how the net benefits of the Project may vary depending on funding source.⁴⁶

It is foreseeable that the Pipeline, like other large government projects, may exceed its budget. As such, it is critical that the Commission ensure the costing methodology is fair, objective and comprehensive.

Until recently the WCWCD stated that impact fees on new construction will cover the cost of this project. Based on public comments, the recent economic downturn has caused second thoughts about this claim among WCWCD officials. Property taxes and water rate surcharges have also been identified as additional funding sources. In the EIS the Commission should provide a thorough assessment of funding sources and a “back up plan” in the case that impact fees do not cover the costs of construction. Furthermore, if water rates and surcharges on existing residents will be used to fund the project, the Commission should, in coordination with the WCWCD, provide a

⁴⁶ In *The Proposed Lake Powell Pipeline: A report on its Effect on Socioeconomic Resources (June 20, 2008)*, David Tufle (Associate Professor, School of Business, Southern Utah University) concluded that the economic benefit of the Pipeline for current residents would be marginal if outside money is not used to fund the Pipeline.

detailed description of the ratemaking process. The Commission's role in ensuring reliable cost data for this conversation is crucial.

4.2.11 Air Quality Resources

The EIS should analyze the following:

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

5.0 Request For Information

SD1 requests information to assist in the "accurate and thorough analysis of the site-specific and cumulative impacts" of the project. SD1, p. 17. To that end, we recommend that the Commission use the following documents.

1. Boyle Engineering Corporation, *Water Supply Needs for Washington and Kane Counties and Lake Powell Pipeline Study* (1998), available at <http://wcwcd.state.ut.us/Plan.%20Studies/Purpose&Needs/Report%20Dec%201998.pdf>.
2. Citizens for Dixie's Future, press articles about Lake Powell Pipeline, available at <http://www.powellpipelinefacts.org/content/category/2/26/128/>
3. Niklas S. Christensen *et al*, "The Effects of Climate Change on the Hydrology and Water Resources of the Colorado River Basin" (2004), available at http://wwa.colorado.edu/resources/colorado_river/Christensen_2004.pdf.
4. Hydrosphere Resource Consultants, *Review of Water Supply Needs in Washington County, Utah* (July 2000) (attached);
5. Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (2007)*, available at <http://www.ipcc.ch/ipccreports/ar4-wg1.htm>;

6. IPCC, *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (2007), available at <http://www.ipcc.ch/ipccreports/ar4-wg2.htm>;
7. IPCC, *Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (2007), available at <http://www.ipcc.ch/ipccreports/ar4-wg3.htm>.
8. Robert Kunzig, "Drying of the West," *National Geographic* (Feb. 2008), available at <http://www.citizensfordixie.org/images/pdf/Pipeline/drying%20of%20the%20west%20nat%20geo%20feb.%202008.pdf>;
9. L.L. Nash and P.H. Gleick, "The Sensitivity Of Streamflow In The Colorado Basin To Climatic Changes," *Journal of Hydrology* Vol. 125 (1991), pp. 221-241;
10. P.W. Mote, A.F. Hamlet, and D.P. Lettenmaier, *Variability and Trends in Mountain Snowpack in Western North America* (2005), available at <http://www.cses.washington.edu/db/pdf/moteetalvarandtrends436.pdf>;
11. National Aeronautics and Space Administration, *Scientific Assessment Of The Effects Of Global Change On The United States: A Report Of The Committee On Environment And Natural Resources National Science And Technology Council* (2008), available at <http://www.climate-science.gov/Library/scientific-assessment/Scientific-AssessmentFINAL.pdf>
12. National Research Council, *Colorado River Basin Water Management: Evaluating and Adjusting to Hydroclimatic Variability* (2007), available at http://books.nap.edu/catalog.php?record_id=11857#toc;
13. Natural Resources Defense Council, *In Hot Water: Water Management Strategies to Weather the Effects of Global Warming* (July 2007), available at <http://www.nrdc.org/globalWarming/hotwater/hotwater.pdf>;
14. Natural Resources Defense Council, *Hotter & Drier, The West's Changed Climate* (March 2008), available at <http://www.nrdc.org/globalWarming/west/west.pdf>;
15. R.R. Revelle and P. E. Waggoner, *Effects Of A Carbon Dioxide-Induced Climatic Change On Water Supplies In The Western United States. Changing Climate* (National Academy Press 1983);
16. Rocky Mountain Climate Organization, *Less Snow, Less Water: Climate Disruption in the West* (2005), available at <http://www.rockymountainclimate.org/website%20pictures/Less%20Snow%20Less%20Water.pdf>.

17. Ron Thompson, testimony before the House Science Subcommittee on Energy and Environment (October 30, 2007), *available at* http://democrats.science.house.gov/Media/File/Commdocs/hearings/2007/energy/30oct/Thompson_testimony.pdf;
18. State of Utah, "Application for Preliminary Permit" (August 2007);
19. State of Utah, *Delivery Financing task Force Report: Financing the Lake Powell Pipeline and Bear River Projects* (September 2005), *available at* <http://www.lakepowellpipeline.org/documents/WDFTaskForceReport.pdf>;
20. Town of Springdale, Utah, Resolution 2008-11 (July 25, 2008) (attached);
21. C.W. Stockton and W.R. Boggess, *Geohydrological Implications of Climate Change on Water Development* (U.S. Army Coastal Engineering Research Center 1979), *available at* <http://stinet.dtic.mil/oai/oai?verb=getRecord&metadataPrefix=html&identifier=ADA204483>;
22. U.S. Department of Agriculture, *The Effects of Climate Change on Water Resources in the United States* (2008), *available at* http://www.usda.gov/oce/global_change/files/SAP4_3/WaterBrochure.pdf;
23. U.S. Department of Interior, Bureau of Reclamation, *Final Environmental Impact Statement for Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead*, *available at* <http://www.usbr.gov/lc/region/programs/strategies/FEIS/index.html>;
24. U.S. Geological Survey, *Warming May Create Substantial Water Supply Shortages In The Colorado River Basin* (2007), *available at* <http://citizensfordixie.org/images/pdf/Pipeline/usgs%20warming%20may%20create%20substantial%20water%20shortages.pdf>;
25. Washington County, *2035 Housing Study* (2007), *available at* <http://visiondixie.org/pdf/WASHINGTON%20COUNTY%202035%20HOUSING%20STUDY.pdf>;
26. Washington County, *Water Conservancy Audits* (various dates), *available at* http://wewcd.state.ut.us/our_mission_and_info.htm;
27. WCWCD, *Population Management Study* (1994), *available at* <http://wewcd.state.ut.us/Plan,%20Studies/PopulationManagement/ReportDocument.PDF>
28. Wikstrom Economic and Planning Consultants, *Prospective Regional Planning Implications of BLM land Sales Proposed Under the Washington County Land Use Bill* (February 2006) (attached);
29. "Vision Dixie Principles," *available at* www.visiondixie.org; and

30. Vision Dixie, *Critical Lands Report and Maps*, available at <http://www.fcaog.state.ut.us>;

7.0 EIS Outline

We request that the “EIS Outline” should be amended, and specifically Section 5 therein (“Conclusions and Recommendations”), to include recommended conditions for a new license. This approach, standard practice under the Integrated Licensing Process, will benefit all parties in these proceedings, because it would clearly state the conclusions in the form that matters most: namely, as recommended license conditions.

We further request that Commission Staff should make specific findings of fact as the basis for each such recommended condition. The Draft EIS should identify the evidence on which it relies for a given finding, explain why that evidence is probative, and also explain why Commission Staff reject competing evidence on the same issue. *See* 5 U.S.C. §§ 556, 557, 706(2); Fed. Rules Evid. 702; and 40 CFR § 1502.14(a). *See also* *Daubert v. Merrell Dow Pharmaceuticals*, 113 S.Ct. 2786 (1993); *Motor Vehicle Manufacturers Association v. State Farm Insurance*, 463 U.S. 29 (1983); *Burlington Truck Lines v. United States*, 371 U.S. 156 (1962); *Farmers Union Central Exchange v. FERC*, 734 F.2d 1486 (D.C. Cir. 1984); *Scenic Hudson Preservation Conference v. Federal Power Commission*, 354 F.2d 608, 620-1 (2nd Cir. 1965).

8.0 List of Comprehensive Plans

We request that EIS consider all comprehensive plans related to the management of Lake Powell, the allocation of Colorado River water, the management of aquifers and surface supplies by the potential customers of the Pipeline. Such plans include:

- Reclamation, *Colorado River Interim Guidelines for the Lower Shortages and Coordinated Operations for Lake Powell and Lake Mead* (2007), available at <http://www.usbr.gov/lc/region/programs/strategies/RecordofDecision.pdf>; and
- Other plans listed in the PAD related to management and allocation of Colorado River waters.

The EIS should analyze and display the consistency of each action alternative with the specific management objectives or requirements in each of the sixteen comprehensive plans listed in SD1. We respectfully request that the Commission not follow its standard practice of summarily concluding that a preferred alternative is consistent with such management objectives or requirements.

IV.
COMMENTS ON PRE APPLICATION DOCUMENT

The Coalition comments on the PAD to the limited extent necessary given our prior comments on SD1.

5.2.4 Climate Change

One of the most profound impacts of climate change in the Western United States will likely be on water resources, including impacts on the timing and annual amount of precipitation as well as related impacts on river flows and reservoir storage levels. In its initial scoping document, Utah asserts that the impacts of climate change are not well known in the Upper Colorado River basin. On the contrary, the Colorado River basin is one of the most intensely studied basins. In a 2007 report on hydrologic variability in the Colorado River Basin, the National Research Council concluded “based on analysis of many recent climate model simulations, the preponderance of scientific evidence suggests that warmer future temperatures will reduce future Colorado River streamflow and water supplies. Reduced streamflow would also contribute to increasing severity, frequency, and duration of future droughts.”⁴⁷ In order for its EIS to be sufficient, the Commission should examine the impact of climate change on the availability of water supplies throughout the Colorado River basin and in Lake Powell.

The EIS should address at least the following primary impacts of climate change on the proposed Pipeline and water supplies:

- Determine how much water from the Colorado River Basin System will be available to meet Utah's future water need for the Pipeline.
 - Hydrology – varies in time, location and amount. Agreement on how to consider these factors in a water availability study will be important to gain greater understanding and acceptance of the study conclusion. As described below, the hydrology study should focus on issues in a period of known hydrology (post 1890) and a period of estimated hydrology (pre-1890).
 - Water Availability - will include both legal and physical supply considerations. Initially legal availability will consider current demands.
- Water Use – water use consideration (also referred to as demands) should include existing absolute water rights. Water use can be measured in terms of consumptive use, gross diversions or total deliveries. Categories of water use include municipal (domestic and commercial), industrial, agricultural, water rights for instream environmental flows and water rights for recreational in-channel diversions. The Study should examine: 1) how non-consumptive uses within the priority system may affect Utah's ability to fully develop its

⁴⁷ National Research Council, *Colorado River Basin Water Management: Evaluating and Adjusting to Hydroclimatic Variability* (2007), p. 16.

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

- The two possible modes of Pipeline “failure”: physical shortage (Lake Powell is too low) or legal shortage (Compact call). A compact call would also prolong a physical shortage, as water that might have been used to recover the reservoir will have to be bypassed to downstream users.
- The reliability of water supplies, given projected climate change scenarios. This reliability analysis should consider both hydrologic changes and the Bureau of Reclamation’s guidelines for operation of Glen Canyon and Hoover Dams. In addition, the EIS should address the impact of the proposed project, given projected climate change scenarios, on water-dependent habitat for endangered species in the Colorado River basin.
- The impact of declining reservoir water levels on additional electricity needs for pumping water from Lake Powell into the proposed Pipeline. This analysis should include additional costs and greenhouse gas emissions.
- The impact of increasing levels of salinity (resulting from decreased flows in the Colorado River basin) on additional energy used, cost incurred, and greenhouse gases emitted for water treatment.

Reliability of Supplies

The EIS should examine both the availability of water to supply the proposed Pipeline as well as the impact of the proposed project on the reliability of water supplies throughout the Colorado River basin, including Mexico. The Bureau of Reclamation leads federal efforts to manage the Colorado River and has developed decision support tools to assess the impacts of projects and policies throughout the Basin. Reclamation has made recent efforts to improve these tools based on newly available information including both climate change projections and paleoclimate history.

We recommend that Reclamation's Riverware (CRSS) model be used to assess the impacts of the proposed project on streamflow and water supply throughout the basin. Any such use should include several modifications of the modeling assumptions. The model is only a re-sequencing of historic years. It should be modified to reflect any change in mean flows caused by climate change. In addition the model does not represent the Colorado River Compact and thus cannot quantify the effect of a compact call on Utah. Any analysis that includes legal availability will have to modify CRSS to include the Compact.

Modeling of system impacts should incorporate analyses based on the paleoecological record of streamflow, as was prepared for Reclamation’s *Colorado Basin Shortage EIS*. See Appendix N,

“Analysis of Hydrologic Variability Sensitivity.” Since any license for this project will have a term of 30 - 50 years, the EIS should go beyond historical reconstructions and include an analysis of the impact of climate change on mean flows.

This EIS should take into account Reclamation’s latest efforts to improve its capacity to model the impact of climate change in the Colorado River Basin. Reclamation’s climate technical work group for the Colorado River published a preliminary set of recommendations in the *Colorado Basin Shortage EIS* (Appendix U). The EIS should consider recommendations of the climate technical work group, including those that post-date the *Colorado Basin Shortage EIS*. Stakeholders throughout the Colorado River basin have learned from the historic drought of the last decade that water supply planning cannot simply consider “most probable” projections of future water supply based on a reiteration of the historic record.

Given the magnitude of the Pipeline (both in terms of water withdrawals and fiscal investment), we recommend that the hydrologic analysis include at minimum the “direct paleo” and “nonparametric paleo conditioning” inflow scenarios developed by Reclamation for the *Colorado Basin Shortage EIS*, where dry spells last as long as 21 years, as well as the extreme drought single trace analysis based on the dry period from observed in the paleoclimate record from 1130 to 1154, where the mean flow for the 25-year period is 84 percent of the mean observed inflow from 1906 to 2005.

Finally, given the projections in recent publications considering climate change in the basin (e.g. Milly et al. [2005] projecting that runoff in the Colorado River basin will be reduced by 10 – 30% by the period 2041 to 2060), we recommend that the hydrologic analysis include an additional sensitivity analysis that projects 30% reduced inflows to Lake Powell for the entire period of analysis.

5.12.3. Water Supporting Population and Economic Growth

The PAD states: “Execution of water conservation programming has been calculated into anticipated water demands for the Water Conservation Districts, however future Demands are anticipated to significantly increase because of increased population.” PAD, p. 5-110. Based on research by Coalition members, we believe this statement is inaccurate, because WCWCD did not sufficiently include potential conservation savings.

The *Capital Facilities Plan, supra*, stated: “the WCWCD will not include the potential reductions in water demands through conservation in the projection of water demands until significant and stable conservation is achieved.” In other southwestern areas, water savings through conservation and efficiency measures have been proven to be stable and significant. We recommend that the Commission consider updated Water Conservation and Efficiency Plans as an action alternative or element thereto.

The PAD states: “it is the intent of Washington County Planners that urban growth should occur with the incorporate boundaries of existing cities. This has resulted in policies to encourage development/infill within existing city boundaries, and to annex areas of pending development in

existing cities.” PAD, p. 5-110. The Washington County Commission sponsored visioning process, Vision Dixie, recommended 10 planning principals including infill development, which are appropriate for consideration in the EIS.⁴⁸ The commission and all cities in Washington County have since officially adopted the Vision Dixie Principles. Infill developments and “smart growth” policies may reduce residential water demands. The EIS should address the proposed project’s consistency with these principles and the impact of this type of growth on water demand estimates.

5.12.3.1 Water Resources in WCWCD Service Area

The PAD states: “Water Resources in WCWCD projected water demand increased to five times 47,000 ac ft x 5 need 235,000 acre ft by 2050.” PAD, p. 5-110. However, demand would not increase to that extent if water conservation and efficiencies measures are implemented.

WCWCD’s *Capital Facilities Plan* (p. 7) states that “the currently estimated build out for Washington County is expected to be reached in 2050 with a build out population of 607,334.” The Coalition suggests there is enough water for the community to grow to build out of 607,334 people. We are concerned that WCWCD may overestimate the need to water by using outdated water demand forecasting policies. See comments at Section 4.2.2, *supra*.

6.12 Energy Issues

In its EIS, the Commission should provide thorough analyses of electricity needs, greenhouse gas emissions, electricity costs, and the risk of climate change over a fifty year time period. In these analyses, the Commission should provide independent estimates for energy *use* and energy *generation*; the analyses should not only estimate *net* energy demands. For example, we estimate the project will only have a net demand of 150 - 200 MW, but it will require a total of 500 – 550 MW of power and generate 351 MW of power. The Commission should analyze these elements independently, and report its findings in terms of MW hours, gigawatt (GW) hours, and the size of the of power pump (in GW, GW hours, MW and MW hours) that would be needed to operate the Pipeline’s pumps..

We recommend that the Commission perform these analyses for the proposed action, no action alternative, and other proposed alternatives. In the following paragraphs, we outline important elements for each of these analyses.

Energy Use

The EIS should assess at least four elements of energy use:

- Total (annual) electricity use;
- Projected temporal patterns of electricity use and generation, including time of day and year;

⁴⁸ *Vision Dixie Principles*, available at www.visiondixie.org.

- The anticipated source of the power for pumping stations; and
- The electricity use of water supply projects that will be developed throughout the Colorado River basin to mitigate the shortages caused by the proposed project.

The EIS should provide an estimate of annual electricity demands throughout the 50-year period of analysis. The Commission's analysis should estimate when the Pipeline will operate at full capacity, and projected water deliveries and power demands in preceding years.

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

Greenhouse Gas Emissions and 6.14

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

Operations Costs

The annual operations cost estimates provided in the EIS should specify the cost of electricity for operation. The analysis should distinguish between the cost of power consumed by the Pipeline and revenues from power generated by hydropower facilities in the Pipeline. It should not be limited to *only* the net electricity costs. The hydroelectric power produced by the Pipeline will not meet the project's entire pumping needs, and will likely be sold to electric utilities at peak price rates. Both the price of electricity sold and purchased by the Pipeline could fluctuate; in order to provide a thorough analysis, data on both price rates should be provided. The EIS also should identify a range of projected costs of electricity (in c/kWh) for the analysis. Specifically, in 2006, the industrial price of electricity was 4.21 c/kWh in Utah, 5.69 c/kWh in Arizona, and 8.03 c/kWh in

Nevada.⁴⁹ The initial cost of electricity for the project should fall within this range, and should reflect the likely source of the power (e.g. a gas plant in Nevada or a coal plant in Utah). Many factors influence the price of electricity; the EIS also should assess costs using a range of electricity price escalation rates. We recommend performing the analysis using annual escalation rates of 1%, 2%, and 4%.

In addition, the EIS should include operating costs associated with greenhouse gas regulation. The Boxer-Warner-Lieberman bill, recently debated in the Senate, represents a likely trajectory of climate change regulation. The EPA has estimated the cost of emissions (in \$/ton) under this legislation; the EIS should incorporate these cost estimates into its analysis of annual operating costs.

In all cost analyses, the Commission should provide an estimate of the impact on ratepayers, given both the projected population in 2050 (approximately 600,000 residents for Washington County) and alternate projections and scenarios.

Appendix A. Socioeconomics/water Resource Economic Impacts **Draft Work Plan**

Lake Powell Pipeline stakeholders cannot currently discern the difference between pre-pipeline and post-pipeline resource impacts. We are concerned that current studies and proposed study plans do not specifically provide a comparison between a pre-pipeline future and a post-pipeline future regarding socioeconomic impacts such as increased taxes/fees/surcharges and environmental impacts such as loss of open space or increased traffic. The socioeconomic study should provide this comprehensive differential analysis.

PAD states at Section 5.1.1 that baseline condition “is defined as projected 2015 population, employment and regional income, water Demand and supply.” The 2015 date seems early since water delivery from the proposed project would not begin until 2018 at the earliest. However, we note that the WCWCD began imposing a monthly surcharge, and has imposed higher impact fees.

Based on our initial analysis of the Draft Work Plan, we believe the proposed baseline conditions insufficiently address the social elements of socioeconomic impacts. The study should analyze the proposed project’s impacts on the conversion of public or private recreational urban open space to housing development; increased traffic congestion and air pollution; increased water-related cost of living; increased infrastructure costs including roads, police and fire protection, sewers and schools; increased water-related taxes, fees and/or surcharges; pipeline-related power costs; increased crime; decreased watchable wildlife and/or endangered species habitat; degraded tribal cultural resources. The study should estimate the area of land that would be developed in the

⁴⁹ Energy Information Administration, *State Electricity Profiles*, Table 8: Retail Sales, Revenue, and Average Retail Price by Sector, 1990 Through 2006.

three counties at the maximum predictable extent that would occur with local water supplies and efficient use (below a system wide 170 gallons per day per person)⁵⁰.

The EIS should analyze how the cost-effectiveness of the Pipeline may vary as a function of available water supply as well as source of financing. *See* comments, *supra*, regarding SD1 section 4.2.8.

The PAD proposes to define the impact area primarily as the “St. George to Cedar City corridor.” PAD , p. A-2. The impact area should also include the Big Water to Hildale corridor including Kanab in Utah because these rural areas could be significantly impacted by increased water availability. This analysis should include all lands that would receive water from the Pipeline.

Based on our preliminary analysis, the PAD Significance Criteria for Each Impact Topic (p. 7) proposes an incomplete focus on impact topics. In addition to employment and population impacts, the Socioeconomic study should also include the range of sociological impacts that the pipeline would facilitate *See* 42 U.S.C. § 204(4). We propose the following Significance Criteria for additional Impact Topics:

- A significant impact would be a 10 percent near-term increase and/or a 20 percent long-term increase to local communities in land use changes including the conversion of public, State Trust or private open land to housing development.
- A significant impact would be a 10 percent near-term increase and/or a 20 percent long-term increase to local communities in traffic congestion.
- A significant impact would be a 10 percent near-term decrease and/or a 20 percent long-term decrease to local communities in availability of recreational urban open space.
- A significant impact would be a 5 percent near-term increase and/or a 10 percent long-term increase to local communities in water-related cost of living.
- A significant impact would be a 5 percent near-term increase and/or a 10 percent long-term increase to local communities in the cost of infrastructure including roads, police and fire protection, sewers and schools due to pipeline-facilitated population growth.
- A significant impact would be a 5 percent near-term increase and/or a 10 percent long-term increase to local communities in water-related taxes, fees and/or surcharges.
- A significant impact would be a 5 percent near-term increase and/or a 10 percent long-term increase to local communities in pipeline-related power costs.

⁵⁰ Hydrosphere Resource Consultants, *Review of Water Supply Needs in Washington County, Utah, supra*, p. 27.

- A significant impact would be a 5 percent near-term increase and/or a 10 percent long-term increase in air pollution.
- A significant impact would be a 5 percent near-term increase and/or a 10 percent long-term increase to local communities in crime.
- A significant impact would be a 5 percent near-term decrease and/or a 10 percent long-term decrease to local communities in watchable wildlife and/or endangered species habitat.
- A significant impact would be a 2 percent near-term increase and/or a 4 percent long-term increase to local communities in disturbance of tribal cultural resources.

V.
ADDITIONAL STUDY REQUESTS

Pursuant to 18 CFR § 5.9 (b), the Coalition requests the following studies, additional to those proposed in the PAD:

- A. Alternative Intra-basin Water Sources for Future Use in Kane, Washington and Iron Counties, Utah;
- B. Navajo Sandstone Aquifer Storage Parameters near Big Water, Utah; and
- C. Impacts of Climate Change on Project Operations.

The Coalition looks forward to working with the Commission, Utah, WCWCD, other public agencies, and other stakeholders in further development of the study plan for this licensing proceeding.

A. Alternative Intra-basin Culinary Water Sources for Future Use in Kane, Washington and Iron Counties, Utah

1. Study Goal

The study goal is to identify water sources as alternatives to the Pipeline for culinary uses in Kane, Washington, and Iron Counties, Utah over the planning horizon of 50 years.

2. Applicable Resource Goals and Objectives

Utah law requires management of all water for maximum beneficial use. *See, e.g.*, Utah Code Annotated §§ 73-1-3, 73-1-5. This study will examine the comparative feasibility and merits of using existing sources to meet the future demands for culinary uses in the three Counties.

3. Public Interest Considerations

The Commission's licensing decision for the Pipeline turns on whether the Pipeline is superior to alternatives to meet the Project purpose of culinary water supply. That also applies to the decision by BLM whether to grant rights-of-way for use of federal lands, or the decision by Reclamation whether to permit the diversion from Lake Powell. The study will provide information necessary for the comparative evaluation of the Pipeline and existing water sources for the purpose of culinary water supply.

4. Existing Information

Existing information includes:

- Boyle Engineering Corporation, *Water Supply Needs for Washington and Kane Counties and Lake Powell Pipeline Study* (1998), *supra*;
- Pacific Institute and Western Resource Advocates, *Hidden Oasis: Water Conservation and Efficiency in Las Vegas* (November 2007), *supra*;
- Hydrosphere Resource Consultants, *Review of Water Supply Needs in Washington County, Utah* (July 2000), *supra*;
- Utah Department of Natural Resources, Division of Water Resources, *Municipal and Industrial Water Conservation Plan* (2003), available at <http://www.conservewater.utah.gov/Final71403AACC.pdf>;
- WCWCD, *Capital Facilities Plan* (2006), *supra*; and
- Washington County, *2035 Housing Study* (2007), *supra*.

None of these documents specifically analyze the comparative merits of the Pipeline and alternative water sources.

5. Nexus with Project

Water supply is one of the purposes of the Pipeline. The study will evaluate the comparative feasibility and merits of alternative water sources to meet this purpose.

6. Consistency with Generally Applicable Practice

The method involves a Blue Ribbon task force of experts who will evaluate existing information to evaluate the comparative merits and feasibility of the Pipeline and alternative water sources. Government agencies often use this approach to address complex factual issues where objective science alone cannot resolve data gaps or differences in interpretation of results, and more specifically, where expert collaboration has a reasonable prospect of producing consensus in their interpretation of such results. *See, e.g.,* National Research Council, *Hydrology, Ecology, and Fishes of the Klamath River Basin* (2008), available at http://books.nap.edu/catalog.php?record_id=12072#toc.

7. Method, Level of Effort and Cost, and Related Considerations

Method

- Assemble a Blue Ribbon panel of experts representing all interested parties in the proceeding.
- Convene a preliminary field workshop to identify every possible future water source through an independently facilitated charette process.
- Develop a mutually agreeable target list of specific parameters that are likely to limit the viability of each water source, likely including: (a) average annual yield, (b) average drought yield, (c) dollar cost per delivered AF, (d) environmental consequences, (e) legal barriers, (f) engineering barriers, (g) regulatory barriers.
- Engage the Blue Ribbon team to produce a mutually agreeable list of viable water projects to pursue.
- Engage each expert to produce a draft analysis of the specific parameters for each viable project and a prioritized alternatives list.
- Re-assemble the Blue Ribbon team to resolve differences of opinion and produce a consensus-based prioritized alternatives list.
- Create basemaps of the three county region using existing GIS databases to identify the geographical location of water sources.
- Conduct appropriate field studies (e.g. drill test wells, determine geological suitability for dam structures, assess water quality, estimate aquifer recharge rates, etc.) over the appropriate field seasons (e.g. two runoff cycles for analysis of surface water impoundments) to objectively determine prioritization of alternatives.
- Digitize, compute, and compile field data once fieldwork is completed.
- Construct project suitability ratings for each viable project studied.
- Produce a report detailing the justification for a prioritized project recommendation.
- Convene a symposium in St. George, Utah for experts, managers, elected officials and the public, where the Panel presents its findings. This symposium should occur prior to the submittal of the license application.

Study Area and Study Sites

This geographic scope would include all developable private and State Trust land in the urbanizing areas of the Washington, Kane, and Iron counties based on existing development trends and reasonably foreseeable trends (e.g., density increases in downtown areas, conversion of agricultural land, etc). Developable private and state trust lands in Arizona’s Coconino and Mohave Counties should be included to anticipate the possibility that Utah and Arizona may develop an agreement to deliver Arizona water through the pipeline. The geographic scope also should include all acres of public land that would be authorized for conversion to private development from the Washington County Growth and Conservation Act of 2008.

The study would address at least the following alternative sources:

- Expansion of the existing Sand Cove Reservoir system into a series of up to five significantly-sized aquifer recharge reservoirs with well fields to capture water stored underground. This system would augment the storage capacity of Baker and Gunlock reservoirs and increase the ability to capture more Santa Clara River spring runoff. It would also produce pristine culinary water for delivery to the Pipeline system from the Gunlock wells to the St. George regional water delivery system.
- Conversion of privately owned groundwater agricultural wells producing water under beneficial use around Washington County for municipal use including multiple analyses of viable treatment processes including wells located at:

T42S, R13W	670 AF
T43S, R13W	8 AF
T42S, R14W	4,437 AF
T43S, R14W	1,108 AF
T42S, R15W	2,803 AF
T43S, R15W	6,819 AF
T42S, R16W	1,434 AF
T43S, R16W	810 AF
T42S, R17W	40 AF

- Increased delivery of subsurface water from the Navajo Aquifer at the most advantageous (i.e. shallowest, highest water quality) locations throughout the three County area.
- Increased utilization of Virgin River high water that cannot be diverted by the Quail Lake Diversion due to the limited size of the diversion pipe.
- Water conservation that produces maximum results in the three County area.

- Increased utilization of stormwater catchment basins in urbanizing areas combined with aquifer storage and withdrawal systems.
- Increased utilization of residential and commercial stormwater catchment systems to provide secondary water for outdoor use.
- Increased conversion of agricultural water in the three county area for culinary purposes based on:
 - water that has already been sold by irrigators to developers; and
 - all agricultural water currently being put to beneficial use.
- In Iron County, increased utilization of Coal Creek's spring flows through a new storage reservoir/aquifer recharge system.
- In Iron County, increased development and delivery of groundwater from Utah's portion of the West Desert.
- Increased water recycling.

Schedule

We propose the following schedule.

- Assemble Blue Ribbon panel by September 15, 2008.
- Hold preliminary field workshop by November 1, 2008.
- Release targeted parameters list by December 15, 2008.
- Release viable water projects list by February 15, 2009.
- Release draft parameters analysis by May 15, 2009.
- Begin field work by June 1, 2009.
- Release prioritized alternatives list and basemaps by August 15, 2010.

- Release field data analysis by November 1, 2010.
- Release project suitability ratings by February 15, 2010.
- Release prioritized project recommendation by April 15, 2010.
- Hold findings symposium by May 15, 2010.

Level of Effort and Cost

Blue Ribbon Panel Assembly & Parameters Research	\$ 25,000
Blue Ribbon Panel Workshops	\$ 30,000
Fieldwork	\$200,000
Analysis	\$ 30,000
Reports	\$ 30,000
Findings Symposium	\$ 10,000
Total	\$ 325,000

Relationship to Other Studies

The PAD does not specifically propose to study the comparative merits and feasibility of any alternative water sources. The "Draft Surface Water Resources Work Plan" (March 2008) does not mention alternatives and instead focuses on how the Pipeline would affect existing surface waters. The "Socioeconomics/Water Resources Economics Impacts Draft Work Plan" (March 2008) mentions as an Impact Topic "alternatives for meeting new water resource supplies, with and without the LPP Project; but it does not propose any specific method of study to identify and evaluate the alternatives.

B. Storage Capacity of Navajo Sandstone Aquifer near Big Water, Utah

1. Study Goal

The goal of this study request is to analyze the storage capacity of the Navajo Sandstone Aquifer near Big Water, Utah. The aquifer underlies 55,000 acres of Utah State Trust Lands and is a potential alternative location for storage, given proximity to Lake Powell and the proposed Pipeline corridor.

2. Applicable Resource Goals

Same as for Study Request A.

3. Public Interest Considerations

Same as for Study Request A.

4. Existing Information

The aquifer characteristics of Navajo Sandstone are known generally. Geological studies of the Navajo Sandstone are numerous and the physical characteristics of the stratum are generally well known. Nevertheless, no academic aquifer studies of the Big Water area have been completed. Numerous private wells have been drilled in the area, however. Data from these wells may be available to be collected and analyzed.

5. Nexus with Project

Water supply is one of the purposes of the Pipeline. The study will evaluate the comparative feasibility and merits of alternative methods of delivering and storing water to achieve that purpose.

6. Consistency with Generally Accepted Practice

The method involves a Settlement Team whose members will collaboratively design and implement studies to evaluate the storage capacity of the Navajo Sandstone Aquifer. FERC Staff has often used this approach to evaluate project alternatives and effects.

7. Method, Schedule, Level of Effort and Cost, and Related Considerations

Method

The overall objectives of this study are to: 1) provide a review of existing information and identify information gaps; 2) construct an initial model of groundwater storage and flow for a portion of Utah's Colorado River allotment in the Navajo Sandstone near Big Water, Utah; 3) conduct field studies to fill information gaps; and 4) refine the model with those additional data. This will be achieved through the following tasks:

- Convene Settlement Team to discuss a scope of work for the study elements listed below, receive training in consensus-based decision making processes and determine mutually agreeable course of action.
- Solicit proposals from agencies and contractors to fulfill the scope of work, giving preference to experts with direct research experience with the Sand Hollow Reservoir aquifer recharge project.
- Select contractors on a consensus basis.

- Determine the sufficient buffer size to understand subsurface geological strata and aquifer characteristics.
- Determine the most reliable methods for identifying fracture characteristics, directional trends and transmissivity of subsurface water in the study area.
- Determine the geologic origins of springs at Wahweap Creek Fish Hatchery and any other springs in the area.
- Identify, collect and analyze well distribution, well pump test data, and water quality testing in the study area.
- Estimate energy requirements for water augmentation and withdrawal (to the surface).
- Identify the economic cost/benefit and carbon footprint of aquifer augmentation in the study area.
- Develop a long-term vulnerability study for this aquifer in the context of predicted climate changes.
- Conduct appropriate field studies over a two-year period. Winter and summer seasonal data are necessary for determining transmissivity and annual variation.
- Digitize, compute, and compile field data once fieldwork is completed and create base maps of the study area with layers of existing and new data.
- Produce a report detailing the findings regarding the parameters identified in the long-term vulnerability study described above.

Study Area and Study Sites

The proposed study site is the 55,000 acre parcel administered by the Utah State Institutional Trust Lands Administration surrounding Big Water, Utah and a sufficient buffer to understand subsurface geological strata and aquifer characteristics.

Schedule

Sufficient time for observation and analysis of transmissivity and annual variability in this aquifer will be necessary. We recommend the following:

- Convene Settlement Team on or before September 1, 2008
- Solicit proposals by November 1, 2008.
- Select contractors by December 1, 2008.
- Determine the sufficient buffer size February 1, 2009.
- Determine the geologic origins of springs by March 1, 2009.
- Determine the most reliable study methods by April 1, 2009.
- Analyze existing well data by May 1, 2009.
- Conduct appropriate field studies between April 1, 2009 and April 1, 2011.
- Compile field data by August 1, 2011.
- Estimate energy requirements by September 1, 2011.
- Identify the economic cost/benefit and carbon footprint by September 1, 2011.
- Develop a long-term vulnerability study by March 1, 2011.
- Produce a draft report by May 1, 2011.
- Comment by Settlement Team on draft report by June 1, 2011.
- Produce final report by July 1, 2011.

Level of Effort and Cost

FERC and Settlement Team meetings & communication	\$ 20,000
Fieldwork	\$ 350,000
Analysis	\$ 60,000
Reports	<u>\$ 30,000</u>
Total	\$ 460,000

Relationship to Other Study Plans

The PAD does not propose any study of the storage potential of the Navajo Sandstone Aquifer.

C. Impact of Climate Change on Project Operations

1. Study Goal

The goal of this study is to analyze the impact of climate change on the availability of water for diversion by the Pipeline.

2. Applicable Resource Management Goals

Reclamation's *Interim Operations Guidelines* establish goals to manage the storage and other operations of Lake Powell and other facilities to adapt to the impacts of climate change on the hydrology of the Colorado River.

3. Public Interest Considerations

Both the operation and the effects – direct, indirect, and cumulative – of the project have a clear nexus to management of the Colorado River. The recent history of drought in the Colorado River basin has underscored the significant impacts that even modest reductions in inflows can have on system storage. With the adoption of coordinated reservoir management and shortage management guidelines, system storage decreases are certain to have water supply impacts on major urban areas throughout the Southwestern United States including the metropolitan areas of Las Vegas, Phoenix and Tucson. Moreover, as circumstances including climate change, periodic climate cycles such as El Nino and the Pacific Decadal Oscillation, and increased development in the Upper Basin result in reduced storage in Lake Powell, Upper Basin water users will at some point be required to curtail use in the event of a call on water deliveries by the Lower Basin under the Colorado River Compact. Finally, while the United States and Mexico have not yet entered a formal agreement regarding Mexico's share of Colorado River shortages, it is likely that such an agreement will be negotiated well within the lifetime of the proposed project.

4. **Existing Information**

Existing information relevant to this study request includes:

- Niklas S. Christensen *et al*, “The Effects of Climate Change on the Hydrology and Water Resources of the Colorado River Basin” (2004), available at http://wwa.colorado.edu/resources/colorado_river/Christensen_2004.pdf;
- Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (2007), available at <http://www.ipcc.ch/ipccreports/ar4-wg1.htm>;
- IPCC, *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (2007), available at <http://www.ipcc.ch/ipccreports/ar4-wg2.htm>;
- IPCC, *Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (2007), available at <http://www.ipcc.ch/ipccreports/ar4-wg3.htm>;
- Robert Kunzig, “Drying of the West,” *National Geographic* (Feb. 2008), available at <http://www.citizensfordixie.org/images/pdf/Pipeline/drying%20of%20the%20west%20natl%20geo%20feb.%202008.pdf>;
- L.L. Nash and P.H. Gleick, "The Sensitivity Of Streamflow In The Colorado Basin To Climatic Changes," *Journal of Hydrology* Vol. 125 (1991), pp. 221-241;
- P.W. Mote, A.F. Hamlet, and D.P. Lettenmaier, *Variability and Trends in Mountain Snowpack in Western North America* (2005), available at <http://www.cses.washington.edu/db/pdf/moteetalvarandtrends436.pdf>;
- National Aeronautics and Space Administration, *Scientific Assessment Of The Effects Of Global Change On The United States: A Report Of The Committee On Environment And Natural Resources National Science And Technology Council* (2008), available at <http://www.climate-science.gov/Library/scientific-assessment/Scientific-AssessmentFINAL.pdf>
- National Research Council, *Colorado River Basin Water Management: Evaluating and Adjusting to Hydroclimatic Variability* (2007), available at http://books.nap.edu/catalog.php?record_id=11857#toc;
- Natural Resources Defense Council, *In Hot Water: Water Management Strategies to Weather the Effects of Global Warming* (July 2007), available at <http://www.nrdc.org/globalWarming/hotwater/hotwater.pdf>;

- Natural Resources Defense Council, *Hotter & Drier, The West's Changed Climate* (March 2008), available at <http://www.nrdc.org/globalWarming/west/west.pdf>.
- R.R. Revelle and P. E. Waggoner, *Effects Of A Carbon Dioxide-Induced Climatic Change On Water Supplies In The Western United States. Changing Climate* (National Academy Press 1983).
- Rocky Mountain Climate Organization, *Less Snow, Less Water: Climate Disruption in the West* (2005), available at <http://www.rockymountainclimate.org/website%20pictures/Less%20Snow%20Less%20Water.pdf>;
- Ron Thompson, testimony before the House Science Subcommittee on Energy and Environment (October 30, 2007), available at http://democrats.science.house.gov/Media/File/Commdocs/hearings/2007/energy/30oct/Thompson_testimony.pdf;
- C.W. Stockton and W.R. Boggess, *Geohydrological Implications of Climate Change on Water Development* (U.S. Army Coastal Engineering Research Center 1979), available at <http://stinet.dtic.mil/oai/oai?verb=getRecord&metadataPrefix=html&identifier=ADA204483>;
- U.S. Department of Agriculture, *The Effects of Climate Change on Water Resources in the United States* (2008), available at http://www.usda.gov/oce/global_change/files/SAP4_3/WaterBrochure.pdf;
- U.S. Department of Interior, Bureau of Reclamation, *Final Environmental Impact Statement for Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead*, available at <http://www.usbr.gov/lc/region/programs/strategies/FEIS/index.html>;
- U.S. Geological Survey, *Warming May Create Substantial Water Supply Shortages In The Colorado River Basin* (2007), available at <http://citizensfordixie.org/images/pdf/Pipeline/usgs%20warming%20may%20create%20substantial%20water%20shortages.pdf>;

5. Nexus with Project

The study will evaluate how climate change may affect the availability of water for diversion by the Pipeline. Water supply is a Project purpose.

6. Consistency with Generally Applicable Practice

The study will use Reclamation's Riverware model. This is a hydrologic model of the type generally used for the purpose of evaluating alternative operations at a facility. This specific model is generally accepted for that purpose on the Colorado River.

7. Level of Effort, Cost, and Other Considerations

Method

- Use Reclamation's Riverware model.
- Incorporate analyses based on the paleoecological record of streamflow, as was prepared for the *Colorado Basin Shortage EIS*, Appendix N, "Analysis of Hydrologic Variability Sensitivity."
- Reflect Reclamation's latest efforts to improve its capacity to model the impact of climate change in the Colorado River Basin. Reclamation's climate technical work group for the Colorado River published a preliminary set of recommendations in Appendix U of the *Colorado Basin Shortage EIS*. The analysis should incorporate the subsequent work of this climate technical work group.

Level of Effort and Cost

The total cost is expected to be \$430,000. There is also data that has already been collected from the Division of Natural Resources. To make an informed decision about flows that will be available for the Pipeline we need this evaluative information.

Develop paleo-hydrology	\$50,000
Develop climate change hydrology	\$200,000
Modify CRSS to represent Compact	\$30,000
Runs and analyses	\$50,000
Reporting, meetings, outreach	\$100,000
Total	\$430,000

Another option is to partner with the State of Colorado and use Colorado's Big River analysis and take the tools and data that would be adaptable.

Relationship to other Studies

The PAD does not propose any study how climate change may affect the availability of water for conveyance by the Pipeline. Instead, the "Draft Surface Water Resources Work Plan" (March 2008), p. A-2, expressly states that MWH, as Utah's consultant, will use MODSSIM model to evaluate operations of existing facilities and the Pipeline; and that "No new analyses will be performed....for the Colorado River system." Section 6.1 (p. A-3) further states that MWH will use historical hydrologic data. This suggests that Utah does not intend to study how climate change may affect the availability of water for conveyance by the Pipeline.

VI.
RECOMMENDATIONS FOR FURTHER PROCEDURES

A. SD2

We request that the Commission publish Scoping Document 2, including its responses to public comments on SD1. This is appropriate in light of the significance of the resources affected by the Pipeline, the complexity of the issues of fact and law that will arise in this proceeding, and public controversy.

B. Cooperation of Other Agencies in the EIS Preparation

SD2 should describe the results of the Commission's efforts to involve other public agencies in the preparation of the EIS. We request the opportunity to comment on the specific arrangements for such participate, before finalized.

C. Schedule

The schedule proposed by the SD1 and the PAD largely adheres to the timelines specified in Commission regulations. We agree that it is vitally important to complete the environmental review of the proposed project in as timely a manner as possible, but we strongly believe that the quality of the environmental review should be the driving factor in these proceedings, and we believe the schedule must be flexible enough to ensure that such quality is achieved. Given the significance of the affected resources, the complexity of the issues, and the breadth of the project's expected impact, we believe that the Commission should seriously consider the sufficiency of the proposed schedule. For example, evaluating the effect of climate change on the project, on Lake Powell, and on the competing rights of other parties to water from the Colorado River will be a fundamental step in the review process. It will also be complicated, and, we expect, relatively slow, given that such a study will lack established precedent for the Commission and other agencies to follow. It will be vitally to this proceeding, and to future proceedings, for the climate change study to be conducted in a rigorous, scientific, and wholly complete manner. The Commission must be careful not to sacrifice the quality of this and other studies in adherence to an overly ambitious schedule.

D. Formation of Topical Committees

The schedule proposed by the PAD also states that Utah will hold the meetings required by the Commission's regulations as well as other meetings as needed. We recommend modification of the Process Plan to provide that Utah structure these meetings by convening topical committees that will address the numerous overarching subject areas. These committees would consist of experts in the respective fields that would perform the necessary "heavy lifting," freeing up resources that can be more efficiently focused elsewhere. A topical committee should be formed for each study plan area, to review and implement the study called for.

E. Service List

We request that the Secretary of the Commission add the following representatives to the service list for this proceeding:

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CONCLUSION

We respectfully request that the Commission consider these scoping comments and additional study requests.

Dated July 7, 2008

Respectfully submitted,



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DECLARATION OF SERVICE

**Utah Board of Natural Resources,
Lake Powell Pipeline Project (P-12966-001)**

I, John Tighe, declare that I today served the attached "**Comments Of The Lake Powell Pipeline Coalition On Scoping Document 1 And Pre-Application Document, And Additional Study Requests,**" by electronic or first-class mail to each person on the official service list compiled by the Secretary in this proceeding.

Dated: July 10, 2008

By:



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