



Bureau of Land Management
Groundwater Projects Office
POB 12000
Reno, NV 89520-0006

October 4, 2011

Via E-mail: nvgwprojects@blm.gov

RE: Comments on the DEIS for the Clark, Lincoln, and White Pine Counties Groundwater Development Project

To Whom It May Concern:

On behalf of The Center for Biological Diversity (“Center”), please accept the following Comments on the DEIS for the Clark, Lincoln, and White Pine Counties Groundwater Development Project (“proposed action”).

The Center is a non-profit, public interest environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center has over 320,000 members and on-line activists throughout Nevada and the United States. We submit these comments on behalf of our members, activists, staff, and members of the general public who are interested in protecting native species and their habitats, native ecosystems and scenic values and the fundamental natural heritage of the Great Basin on BLM public lands, particularly those lands impacted by this project.

The proposed project is ill-conceived, morally and ethically wrong and unneeded.

The proposed pipeline and especially the pumping of ancient groundwater to fill it would at the most fundamental levels destroy natural ecosystems and human communities located within its zone of impacts, which is far reaching, far beyond the physical locations of the pipeline right-of-way (“ROW”) or well locations.

The fossil groundwater intended to be pumped and mined¹ largely comes from the carbonate aquifers of the White River and Great Salt Lake systems. There is much science to support the contention that these aquifers are inner-connected systems, and direct, indirect and cumulative impacts in one basin will have temporally removed impacts on the rest of the basins of the system.

¹ Throughout these comments the terms “mined” or “mining” will be used to describe the proposed pumping of groundwater to fill the pipeline. We believe these terms better describe the activity, since the pumping of 176,000 acre-feet per year of groundwater is by no means a sustainable venture. It will not only “capture” the annual recharge of the aquifer basins by precipitation, but also take the water needed by native plants that currently utilize it, resulting in the catastrophic impacts described in the DEIS and the subject of these comments.

Declines in groundwater elevations will in some areas exceed 200-feet, resulting in subsidence of an area over 3,000 square miles. This subsidence, besides threatening local water supplies and causing extensive infrastructure damage, will dry up over 192,000 acres of iconic Great Basin shrubland, over 8,000 acres of wetlands, and adversely impact over 310 springs and 125 miles of perennial streams. As a result of the loss of native vegetation and aquatic flows, hundreds of native species of plants and animals will be faced with extirpation or even in some cases extinction. At least 35 species of native springsnails, 14 species of rare desert fish, 4 species of amphibians, the greater sage grouse, southwestern willow flycatcher, pronghorn antelope, mule deer and elk, plus many other species are threatened by the core ecological changes that would be caused by the groundwater mining. Some of these species are already protected by the Endangered Species Act (“ESA”) such as the Moapa dace, White River spinedace, Pahranaagat roundtail chub, White River springfish, Hiko White River springfish and Pahrump poolfish, Big Springs spinedace, and southwestern willow flycatcher; other species have been found to be warranted for protections under the ESA, including the greater sage grouse and relict leopard frog; other species such as 35 springsnails and the northern leopard frog have been found warranted for a 12-month review under the ESA. Still others such as over 11 new or undescribed species of cave fauna or dozens of other aquatic or terrestrial species depend on the conditions of the Great Basin ecosystems and its ties to the groundwater systems, but have not received extensive inventory or scientific study.

The subsidence and loss of native vegetation and water features will give rise to unrivaled clouds of new dust and particulate matter – some carrying radioactive materials deposited downwind from historic atomic weapons tests on the former Nevada Test Site. The DEIS discloses that over 37,000 tons of new dust per year will be generated as a result of direct or cumulative impacts. This source of hazardous particulate matter will pose serious health impacts on downwind communities, such as Salt Lake City, leading to increased diseases and rates of death. The dust will also impair the scenic and visual quality of the impacted basins and surrounding areas, including the Great Basin National Park and Congressionally-designated Wilderness Areas and potential Wilderness found in Wilderness Study Areas and Inventoried Roadless Areas.

Rural communities and ranchers will be hard hit as their wells are contaminated from pollution seeping in from land surface cracks, and the need to re-drill and deepen their wells due to drops in groundwater elevation caused by the groundwater mining. Valuable local water that might have gone to foster increased local economic health and development, including water needed by proposed future solar renewable energy zones, will be “stolen” to fuel unsustainable growth in the greater Las Vegas Valley.

The true irony and shame is that the Southern Nevada Water Authority (“SNWA”) does not need the proposed project to meet its current and reasonable future needs. The population basis that the SNWA used to forecast future supply needs are vastly outdated and irrelevant. By their own accounting in water resource plans and from data contained in third-party reports on future southern Nevada water supply and demand, enough water to meet needs far into the future could be obtained through enhanced indoor and outdoor conservation. Further into the future, new sources of water could be obtained from desalinization of ocean and other brackish water and

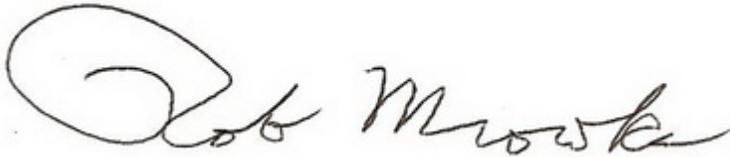
possible augmentation of the Colorado River system with imported Mississippi River flood waters, among other options.

Our comments that follow will elaborate on these issues and others, and will cite to scientific and other data to substantiate them.

The Center's bottom-line request is that the BLM recognize the many deficiencies in the DEIS and, after further study and analysis, issue a supplemental DEIS that discloses the new results of analysis and make them available for further public review and comment. Perhaps the greatest need for such a supplemental arises from the fact that the SNWA has no current rights to groundwater to support such a pipeline, and further, this DEIS used hypothetical well locations to model impacts from the groundwater mining which in fact have no real scientifically supportable basis.

The Center and its members wish to remain on any mailings or notifications of further developments in this or related NEPA processes, and thank the BLM for this opportunity to comment.

Sincerely Yours in Conservation,

A handwritten signature in black ink that reads "Rob Mrowka". The signature is written in a cursive style with a large, looping initial "R".

Rob Mrowka
Ecologist/Nevada Conservation Advocate

Specific Comments on the DEIS for the Clark, Lincoln, and White Pine Counties Groundwater Development Project

The DEIS errs in the way the Purpose and Need are developed and in the subsequent Alternatives that are analyzed.

According to the Council on Environmental Quality (“CEQ”) regulations implementing the National Environmental Policy Act (“NEPA”), the Purpose and Need of an EIS shall:

...briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.²

The DEIS narrowly defines the Purpose as considering the SNWA’s request for construction and operation of a proposed groundwater conveyance system, and the Need as arising from responsibilities under the FLPMA to respond to such requests.³

While when looked at in a narrow bureaucratic sense, this is factually correct, it does not address the CEQ requirements regarding the “underlying purpose and need”, which when reviewing the SNWA stated need under section 1.6 of the DEIS seems to be to meet the future water supply needs of the Las Vegas Valley, Boulder City and Laughlin.⁴

In defining the water needs for these areas, the DEIS errs in using out-of-date information⁵ to document the future supply demands. The reason this is important is that the information in the DEIS comes from 2008 data which only begins to reflect the current economic reality of the SNWA service area which is a declining population. Between 2009 and 2010, almost 50,000 left Clark County.⁶ The economic turmoil being experienced in Nevada and Clark County are nationally known. Nevada leads the nation in home foreclosures and Clark County leads Nevada and is commonly reported as the “foreclosure capital” of the country.⁷ In August of 2011, there were 5279 new notices of default issued, and there were over 62,500 houses in the various stages of the foreclosure process.⁸

The DEIS states that based on 2008 data, the population of Clark County would surge to an estimated 3.65 million by 2035. However, using Information from the State Demographer’s Office October 2010 report, the population is forecasted to be between 1,979,045 based on the “low job growth” scenario, or 3,066,872 based on the “high job growth” scenario.⁹

² 40 CFR § 1502.13 Purpose and Need.

³ DEIS, page 1-3.

⁴ DEIS, page 1-12.

⁵ CBER, 2008.

⁶ Nevada State Demographer’s Office. October, 2010. Nevada County Population Projections 2010 to 2030.

⁷ See: <http://www.lvrj.com/business/nevada-said-to-be-u-s-foreclosure-sales-leader-128451408.html> .

⁸ See: <http://www.foreclosureradar.com/nevada/clark-county-foreclosures> .

⁹ See Nevada State Demographer’s Office. October, 2010.

Despite rhetoric by elected officials that the economy is diversifying, facts suggest that tourism remains the primary economic driver by far.¹⁰ According to the Bureau of Labor Statistics, unemployment in the Las Vegas-Paradise census area was 14% in July, 2011.¹¹ Construction jobs had fallen from 95,000 in January 2008 to just under 40,000 in July 2011 – a 42% decline.¹²

Applying common sense, it would seem more likely that the 2030 population would be closer to the lower figure than the higher. Even applying an arithmetic mean of 2,522,958, the difference with the projected demand figure used in the DEIS is almost 550,000 people.

This calls to question the true nature of the SNWA stated need, which in turn directly relates to the alternatives analyzed in the DEIS. Moreover, SNWA's recent decision to abandon important conservation programs (such as by allowing homeowners to re-install water-wasting lawns) further calls into question SNWA's purpose and its water "needs" estimates. To further call into question the need for the pipeline, General Manager Pat Mulroy stated on the "State of Nevada" public radio program, "We are not planning to build it", in reference to the pipeline. She asserted that the SNWA merely want to have that option on the shelf in case it was needed in the future.¹³ Purpose and need aside, this is in direct violation of federal regulations that require a construction be begun within 5-years of the issuance of a right-of-way permit.¹⁴

The statement of purpose and need and the alternatives are closely linked since "the stated goal of a project necessarily dictates the range of 'reasonable' alternatives." *City of Carmel*, 123 F.3d at 1155. The Ninth Circuit recently reaffirmed this point in *National Parks Conservation Assn v. BLM*, 586 F.3d 735, 746-48 (9th Cir. 2009) (holding that "[a]s a result of [an] unreasonably narrow purpose and need statement, the BLM necessarily considered an unreasonably narrow range of alternatives" in violation of NEPA).

The reason for the requirement that the purpose and need statement not be unreasonably narrow, and NEPA in general is, in large part to "guarantee[] that the relevant information will be made available to the larger audience that may also play a role in both the decision-making process and the implementation of that decision." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

The agency should not attempt to limit its analysis or avoid robust public input but unduly narrowing the scope of the analysis, because "the very purpose of a draft and the ensuing comment period is to elicit suggestions and criticisms to enhance the proposed project." *City of Carmel-by-the-Sea*, 123 F.3d at 1156. The agency cannot circumvent relevant public input by

¹⁰ See:

http://www.clarkcountynv.gov/Depts/comprehensive_planning/demographics/Documents/DemographicsBrochure.pdf.

¹¹ See: http://www.bls.gov/eag/eag.nv_lasvegas_msa.htm#eag_nv_lasvegas_msa.f.P.

¹² See: http://data.bls.gov/timeseries/SMU32298202000000001?data_tool=XGtable.

¹³ KNPR Public Radio, State of Nevada Program, September 29, 2011. Pat Mulroy, Southern Nevada Water Authority. Available at: <http://www.knpr.org/son/archive/detail2.cfm?SegmentID=8221&ProgramID=2333>.

¹⁴ 43 CFR 2807.17.

narrowing the purpose and need so that no alternatives can be meaningfully explored or by failing to review a reasonable range of alternatives.

The NEPA requires that a range of meaningful alternatives be explored in the environmental review process. 42 U.S.C. §§ 4332(C)(iii),(E). The agency must "study, develop, and describe appropriate alternatives to recommend courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. § 4332(2)(E); *see also* CEQ Forty Questions, 46 Fed. Reg. at 18027 ("Section 1502.14 requires the EIS to examine all reasonable alternatives to the proposal. In determining the scope of alternatives to be considered, the emphasis is on what is 'reasonable' rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are *practical or feasible* from the technical and economic standpoint and using common sense, rather than simply *desirable* from the standpoint of the applicant." (emphasis in original)).

The BLM attempts to avoid questioning the SNWA's approach and options for meeting the stated need through means other than a pipeline and groundwater pumping (mining) by stating,

"The SNWA's projected requirement for in-state groundwater water resources, the timing of that requirement, alternative sources of water, priorities for expanding its water resource portfolio, conservation targets, water pricing by the SNWA's member water purveyors, or, the allocation of these water resources to serve growth or bolster supplies in times of drought", are outside the Scope of this DEIS.¹⁵

Once again, the BLM errs in applying the NEPA. The CEQ addressed the issue of the requirement to analyze alternatives outside the jurisdiction or capability of the agency, when it stated:

"An alternative that is outside the legal jurisdiction of the lead agency must still be analyzed in the EIS if it is reasonable. A potential conflict with local or federal law does not necessarily render an alternative unreasonable, although such conflicts must be considered."¹⁶

The BLM acted arbitrarily and capriciously in not analyzing viable and reasonable alternative available to the SNWA for meeting its future water demands including maintaining and expanding conservation and efficiency measures.

It is not the duty of the public to conduct analysis that should have been complete by the agency in the DEIS, but as points for consideration we offer the following.

The DEIS itself mentions the ability of conservation to generate "new" water to meet demand. The SNWA Water Resource Plan has a goal set by the Board overseeing the SNWA of reducing

¹⁵ DEIS, page 1-16.

¹⁶ Council on Environmental Quality. 1981. Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations. 46 Fed. Reg. 18026.

demand to 199 gallons per capita per day (“gpcd”), thereby saving approximately 276,000 acre feet of water per year (“afy”) – an amount 100,000 afy more than the proposed action plans to provide via the pipeline.¹⁷ The savings would be achieved through enhanced indoor and outdoor water use efficiencies. What’s more, this goal is still significantly above the gpcd of other desert cities such as Albuquerque, Phoenix and Tucson. Peter Gleick and Heather Cooley of the Pacific Institute recently prepared a study that found:

“Furthermore, combining reductions in both projected population *and* per capita demand may completely eliminate the need for the new supplies. If SNWA reduced per capita demand to about 166 gpcd – higher than Los Angeles’s *current* rate, and comparable to the *current* delivery rates of Albuquerque and Phoenix – by the year 2035, and population within Clark County grows to 3.13 million people instead of 3.65 million, total water demand in SNWA’s service area would be about the same as it is now.”¹⁸

Related to this is establishing a program to incentivize the conversion of septic systems, often old and leaking, in the Las Vegas Valley to the municipal sewer system to afford the opportunity to collect and utilize this water usage for additional return flow credits. This author, when the Environmental Planning Manager for Clark County proposed such an idea to the SNWA, and based on internal studies, we estimated that an additional 5,000 acre feet of water could be generated through the resultant return flow credits.¹⁹ To date the SNWA has not acted upon our suggestion, but Pat Mulroy on KNPR responded to a caller regarding this option praised it and said it needed to be voiced more so it would pick up the support of local elected officials.²⁰

Note that the population level stated in this report is likely higher than expected.

Another reasonable alternative routinely dismissed by the SNWA is that of ocean desalination.²¹ Desalination is operational around the globe, and most recently is being tied to renewable energy sources to reduce costs and its carbon footprint.²² Plans for a desal plant at Dana Point in Orange County, California estimate the total annualized cost of capital and operations to be approximately \$20 million, producing an acre foot of water for around \$1287, while stating that such cost is conservative and is decreasing as new and better technologies become available; it also does not have an associated renewable power source which would further decrease costs.²³ Numerous other examples exist that show desalination is a

¹⁷ See: http://www.snwa.com/ws/resource_plan.html .

¹⁸ Gleick, Peter H. and Heather Cooley. August 2011. Rebuttal Report on WaterUse Efficiency in the Las Vegas Area. Available at: http://water.nv.gov/hearings/upcoming/springetal/exhibits/Great%20Basin%20Water%20Network/GBWN_Exh_069%20Gleick%20&%20Cooley%20Report.pdf .

¹⁹ Author’s personal knowledge from previous involvement.

²⁰ KNPR Public Radio, State of Nevada Program, September 29, 2011. Pat Mulroy, Southern Nevada Water Authority. Available at: <http://www.knpr.org/son/archive/detail2.cfm?SegmentID=8221&ProgramID=2333> .

²¹ See: <http://ga.water.usgs.gov/edu/drinkseawater.html> .

²² See: <http://www.smartplanet.com/blog/smart-takes/to- conserve-water-australia-builds-first-utility-scale-solar-plant/18919?tag=nl.e660> ,

and, <http://www.sciencedaily.com/releases/2011/08/110804141752.htm> .

²³ See: <http://www.mwdoc.com/documents/ProjectOverviewDanaPointOceanDesalinationProject-ExecutiveSummary.pdf> .

technologically feasible and economically viable option. In fact, Pat Mulroy stated on the previously noted public radio program that the SNWA will one day be a partner in desalinization, most likely with Mexico.²⁴ While desalination may also have environmental impacts, the BLM should have considered it as an alternative and studied the potential impacts of the proposed project in that context. Applied to the SNWA need, for example, desalinized water could be traded with Mexico and California for Colorado River water over the short term, while solar powered pumping stations could be explored for a pipeline to carry desalinized water to Las Vegas via the most favorable gradient route for the long term – if needed.

Another alternative would consist of a collection pipe in the lower end of the Imperial Irrigation District to collect drain flows which are about 3000 PPM salt and pipe them to a solar powered desalting plant to lower the water to 900 PPM. The fresh water would be piped to the exit of the All American Canal to be delivered to the farms. The water saved from the Saltan Sea would be credited to the SNWA in Lake Meade and delivered its customers. The amount of water would likely be at least 500,000 acre feet and with return flows it may be as much as 750,000 ac feet.

Another alternative that the SNWA has publically proposed be studied is the augmentation of Colorado River water with flood flows from the Mississippi River. Mulroy stated on KNPR, “One man’s flood water is another man’s water supply.”²⁵

The BLM must prepare a supplemental DEIS that analyzes the enhanced conservation, desalinization, and other alternatives to the proposed pipeline, and make the supplemental review available for public review and comment.

The DEIS segments its analysis of the impacts from the proposed project in violation of the NEPA.

In this DEIS, the BLM explains that they are utilizing a “tiered” approach to the NEPA requirements for the project. In tier 1, represented by this DEIS, they propose to analyze the site specific impacts from the actual construction of the pipeline, which at the same time performing a programmatic analysis of the impacts from the pumping to fill that pipeline. Since specific well and lateral line locations are not presently known, the BLM proposes to conduct a second

²⁴ KNPR Public Radio, State of Nevada Program, September 29, 2011. Pat Mulroy, Southern Nevada Water Authority. Available at: <http://www.knpr.org/son/archive/detail2.cfm?SegmentID=8221&ProgramID=2333> .

²⁵ Breaun, Henry. July 20, 2011. Mighty Mississippi could help ease drought in West, Mulroy tells chamber. Las Vegas Review Journal. Available at: <http://www.lvrj.com/news/mighty-mississippi-could-help-ease-drought-in-west-mulroy-tells-chamber-125924998.html> .

KNPR Public Radio, State of Nevada Program, September 29, 2011. Pat Mulroy, Southern Nevada Water Authority. Available at: <http://www.knpr.org/son/archive/detail2.cfm?SegmentID=8221&ProgramID=2333> .

round of NEPA, a “subsequent tier” once the locations are finalized. They justify this approach by stating that the SNWA has informed them they will not file rights-of-way applications for the production wells and collector lines until after this EIS is finalized.²⁶

A likely reason for at least part of this uncertainty is the fact that at present, the SNWA has no water rights in Spring, Dry, Cave, Lake or Delamar Valleys because a decision by the Nevada State Supreme Court stripped previously granted rights, or because the initial hearing has yet to be conducted as is the case in Snake Valley.²⁷

According to CEQ regulations for implementing NEPA, tiering refers to:

“the coverage of general matters in broader environmental impact statements (such as national program or policy statements) with subsequent narrower statements or environmental analyses (such as regional or basinwide program statements or ultimately site-specific statements) incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared.”²⁸

In *South Fork Band v. DOI*, the court held that:

“Though “tiering” to a previous EIS is sometimes permissible, the previous document must actually discuss the impacts of the project at issue. *Muckleshoot Indian Tribe v. U.S. Forest Service*, 177 F.3d 800, 810 (9th Cir. 1999) (holding that reliance on the EIS accompanying an earlier planning document was improper because it did not discuss the subsequent specific project in detail). The mere existence of an entirely separate draft EIS, discussing a similar issue with regard to a different project, but without any indication that it discussed the specific environmental impacts at issue, cannot satisfy NEPA.”²⁹

NEPA’s implementing regulations explain that agencies should consider connected, cumulative, and similar actions in the same impacts statement. “Connected actions” must “be considered together in a single EIS.” *Thomas v. Peterson*, 753 F.2d 754, 758 (9th Cir. 1985); 40 C.F.R. § 1508.25(a)(1). Connected actions are those actions that:

- i. Automatically trigger other actions which may require environmental impact statements.
- ii. Cannot or will not proceed unless other actions are taken previously or simultaneously.

²⁶ DEIS, page 1-5.

²⁷ Nevada Supreme Court. 2010. Opinion Issued on the Matter of Great Basin Water Network, et al. v. State Engineer and Southern Nevada Water Authority. June 27, 2010.

²⁸ 40 CFR § 1508.28.

²⁹ *South Fork Band Council et al. v. DOI and Barrick Cortez, Inc.* No. 09-15230 D.C. No. 3:08-cv-00616-LRH-RAM. Page 158365.

iii. Are interdependent parts of a larger action and depend on the larger action for their justification.

40 C.F.R. § 1508.25(a)(1). Where two actions are "inextricably intertwined" they are connected actions that must be considered together. *Thomas*, 753 F.2d at 759; *Save the Yaak Committee v. Block*, 840 F.2d 714, 720 (9th Cir. 1988). Likewise, cumulative actions "which when viewed with other proposed actions have cumulatively significant impacts [] should [] be discussed in the same impact statement." 40 C.F.R. § 1508.25(a)(2). Similar, reasonably foreseeable actions also should be considered together in the same environmental review document when the actions "have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography," and the "best way to assess adequately [their] combined impacts [...] or reasonable alternatives" is to consider them together. 40 C.F.R. § 1508.25(a)(3).

The requirements that connected actions, cumulative, and/or similar actions be evaluated together prevents an agency from dividing a single project into segments that individually seem to have limited environmental impact, but as a whole have considerable impact. *See Thomas v. Peterson*, 753 F.2d at 758. It is important for federal agencies to consider connected actions together in a single NEPA process as opposed to segmenting review. *Daly v. Volpe*, 514 F.2d 1106, 1110 (9th Cir. 1975) (where actions are interconnected in terms of fulfilling a joint purpose it may be necessary to conduct a single NEPA review); *Sierra Club v. U.S. Dept. of Energy*, 255 F. 2d 1177, 1184 (D. Colo. 2002).

It is clear that the BLM has segmented their analysis by going along with the SNWA's request for a tiered approach. The true impacts from the water pumping to fill the pipeline approved in tier 1 will not be known until after the pipeline EIS is finalized, after the State Engineer rules on the SNWA's water rights and after the completion of a second site specific EIS for the production wells and collector pipeline system. In addition, the SNWA General Manager, Pat Mulroy has publically stated that, "We are not planning to build it", in reference to the pipeline, saying they just wanted to have it on the shelf in case it was needed in the future.³⁰

Complicating the matter is the fact that the BLM must require that construction be initiated on each section of the pipeline within five years of issuance of the right-of-way permit.³¹ For this to be realistic, it seems that the SNWA would have to have a decision from the envisioned second tier in-hand before they would be willing to begin the \$15.5 billion or more project. This is a speculative venture at best given that the development of this DEIS has been on-going since 2005.

At minimum, the BLM consider all of the impacts of the proposed project, along with impacts of the actual pumping at true production well sites as direct impacts of connected projects. Even assuming for the sake of argument alone that the impacts could be described as indirect effects or "secondary" or "induced" effects attributable to the transmission line upgrade and the projects that are dependent on and facilitated by that upgrade, the need for adequate coordinated

³⁰ KNPR Public Radio, State of Nevada Program, September 29, 2011. Pat Mulroy, Southern Nevada Water Authority. Available at: <http://www.knpr.org/son/archive/detail2.cfm?SegmentID=8221&ProgramID=2333> .

³¹ 43 CFR 2807.17.

environmental review is no less. *See City of Davis v. Coleman*, 521 F.2d 661 (9th Cir. 1975) (requiring agency to prepare an EIS on effects of proposed freeway interchange on a major interstate highway in an agricultural area and to include a full analysis of both the environmental effects of the exchange itself and of the development potential that it would create).

In a related concern, the BLM fails to consider the cumulative impacts from groundwater pumping in Lincoln County, Kane Springs and Coyote Springs, all previously approved by the agency under separate NEPA and all pumping from the same carbonate, interconnected groundwater aquifer system.

The BLM misuses tiering and wrongly segments the analysis and disclosure for the project, thus undermining full and fair public review of the impacts of the project in violation of NEPA. BLM must disclose and consider all of the connected, cumulative and similar projects' significant impacts together. To do otherwise would be unlawful. Cumulative impacts analysis in multiple EISs is not sufficient where projects are so closely connected as here and will result in significant degradation of public lands that now serve multiple uses including providing high-quality occupied habitat for a threatened species.

To correct these substantive deficiencies, the BLM must prepare a supplemental DEIS and provide it for public review and comments.

The BLM fails to meet its obligations to protect rare species under the Endangered Species Act, Federal Land Management Policy Act and internal agency directives.

Obligations under the Endangered Species Act (“ESA”)

Congress enacted the Endangered Species Act (ESA) , 16 U.S.C. § 1531-1544, *et seq.*, in 1973, acknowledging that fish and wildlife species are of great value to the people of the United States and that many species in the US were at risk of extinction.

The ESA was enacted, in part, to provide a “means whereby the ecosystems upon which endangered species and threatened species depend may be conserved...[and] a program for the conservation of such endangered species and threatened species...” 16 U.S.C. § 1531(b). The ESA “is the most comprehensive legislation for the preservation of endangered species ever enacted by any nation.” *Tennessee Valley Authority v. Hill*, 437 U.S. 153, 180 (1978). The Supreme Court’s review of the ESA’s “language, history, and structure” convinced the Court “beyond a doubt” that “Congress intended endangered species to be afforded the highest of priorities.” *Id.* at 174. As the Court found, “the plain intent of Congress in enacting this statute was to halt and reverse the trend toward species extinction, whatever the cost.” *Id.* at 184.

The ESA applies to all federal agencies in its scope, and its purpose is threefold:

1. To provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved;
2. To provide a program for the conservation of such endangered species and threatened species; and

3. To take such steps as may be appropriate to achieve the purpose of the international species conservation treaties.

The ESA assigns responsibility to the U.S. Fish and Wildlife Service (FWS) to designate areas of critical habitat for listed species and implement recovery plans for listed species. The Act also requires that all federal agencies consult with FWS regarding actions, such as development of land management plans that may affect endangered or threatened species. 16 U.S.C. §§ 1533(a)(1)-(3) & 1533(f). Specifically, the FWS must ensure that any such plan “is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of [designated critical] habitat of such species....” 16 U.S.C. § 1536(a)(2). Thus, the BLM must consult with FWS regarding the adequacy of the proposed action to avoid jeopardizing any listed species or damaging critical habitat.

Section 2(c) of the ESA establishes that it is “...the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act.” 16 U.S.C. § 1531(c)(1). The ESA defines “conservation” to mean “...the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary.” 16 U.S.C. § 1532(3). Similarly, Section 7(a)(1) of the ESA directs that federal agencies to “utilize their authorities in furtherance of the purposes” of the ESA. 16 U.S.C. § 1536(a)(1). In other words, the ESA requires both survival and recovery of a listed species.³²

In order to fulfill the substantive purposes of the ESA, Federal agencies, such as BLM in this instance, are required to engage in consultation with the Fish and Wildlife Service to “insure that any action authorized, funded, or carried out by such agency...is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the adverse modification of habitat of such species... determined...to be critical...” 16 U.S.C. § 1536(a)(2) (Section 7 consultation). Section 7 consultation is required for “any action [that] may affect listed species or critical habitat.” 50 C.F.R. § 402.14. As part of the consultation, the action agency must first prepare a biological assessment. 16 U.S.C. § 1536(c)(1). Although procedural, consultation is the backbone of the ESA. As the Ninth Circuit recognized, “[o]nly by requiring substantial compliance with the act’s procedures can we effectuate” Congressional intent to protect species. *Sierra Club v. Marsh*, 816 F.2d at 1384 (9th Cir. 1987).

Section 7 embodies an explicit congressional decision to give first priority to conserving endangered species, a priority that overrides other statutory missions of federal agencies.³³ In applying section 7, an agency must “give the benefit of the doubt” to the species.³⁴ In fact, in language that “admits of no exception,”³⁵ the ESA requires federal agencies to “insure” that their actions are not likely to jeopardize the continued existence of threatened and endangered species

³² *Sierra Club v. U.S. Fish & Wildlife Serv.*, 245 F.3d 434, 441–42 (5th Cir. 2001) (“‘Conservation’ is a much broader concept than mere survival. The ESA’s definition of ‘conservation’ speaks to the recovery of a threatened or endangered species.”); *Gifford Pinchot Task Force v. U.S. Fish & Wildlife Serv.*, 378 F.3d 1059, 1070 (9th Cir. 2004) (“[T]he ESA was enacted not merely to forestall the extinction of species (i.e., promote a species survival), but to allow a species to recover to the point where it may be delisted.”).

³³ See *Tenn. Valley Authority v. Hill (TVA v. Hill)*, 437 U.S. 153, 185 (1978).

³⁴ *Sierra Club v. Marsh*, 816 F.2d 1376, 1386 (9th Cir. 1987) (citations omitted).

³⁵ *TVA v. Hill*, 437 U.S. at 173

or adversely modify the species' designated critical habitat.³⁶ In this way, an agency complies with the ESA's policy of "institutionalized caution."³⁷ In meeting this unambiguous and "rigorous" requirement,³⁸ agencies must base their decisions on the best scientific and commercial data available.³⁹

Obligations under the Federal Land Policy and Management Act ("FLPMA")

FLPMA requires BLM to "take any action necessary to prevent unnecessary or undue degradation of the lands" and "minimize adverse impacts on the natural, environmental, scientific, cultural, and other resources and values (including fish and wildlife habitat) of the public lands involved."⁴⁰ It further requires the BLM to issue permits with terms and conditions that, "minimize damage to scenic and esthetic values and fish and wildlife habitat and (to) otherwise protect the environment", and "protect federal property".⁴¹ Federal water rights, particularly reserved rights are federal property and the BLM must ensure, under the force of law, that ground water pumping by the SNWA does not adversely impact these rights.⁴²

The BLM in this DEIS has failed to properly identify and analyze impacts to the resources including the listed and sensitive species in the project area. As will be detailed below, the BLM's failure in this regard violates the most basic requirements FLPMA and undermines the BLM's ability to ensure that the proposal does not cause unnecessary and undue degradation of public lands. *See Island Mountain Protectors*, 144 IBLA 168, 202 (1998) (holding that "[t]o the extent BLM failed to meet its obligations under NEPA, it also failed to protect public lands from unnecessary or undue degradation."); *National Wildlife Federation*, 140 IBLA 85, 101 (1997) (holding that "BLM violated FLPMA, because it failed to engage in any reasoned or informed decisionmaking process" or show that it had "balanced competing resource values").

Obligations under BLM Internal Directives

The sensitive species are those that have been identified by the BLM Nevada State Office as sensitive under BLM Manual 6840.2. These species are species of concern that occur on BLM administered lands for which the BLM has the capability to significantly affect the conservation status through management. This direction establishes that, "...the BLM shall designate Bureau sensitive species and implement measures to conserve these species and their habitats, including ESA proposed critical habitat, to promote their conservation and reduce the likelihood and need for such species to be listed pursuant to the ESA."

Section 6840.2 C. on implementation of this direction provides:

³⁶ 16 U.S.C. § 1536(a)(2).

³⁷ *TVA v. Hill*, 437 U.S. at 194.

³⁸ *Marsh*, 816 F.2d at 1385

³⁹ 16 U.S.C. § 1536(a)(2).

⁴⁰ 43 U.S.C. §§ 1732(b), 1732(d)(2)(a).

⁴¹ 43 U.S.C. § 17656(a)(ii), 1765(b)(i).

⁴² *Dubuc, Rob. 2007. Snake Valley To Las Vegas: Keep Your Pipes Out of Our Aquifer. J. of Land, Resources and Environmental Law. Page 8.*

- a. On BLM-administered lands, the BLM shall manage Bureau sensitive species and their habitats to minimize or eliminate threats affecting the status of the species or to improve the condition of the species habitat, by:
- b. Ensuring that BLM activities affecting Bureau sensitive species are carried out in a way that is consistent with its objectives for managing those species and their habitats at the appropriate spatial scale.
- c. Working with partners and stakeholders to develop species-specific or ecosystem-based conservation strategies.
- d. Considering ecosystem management and the conservation of native biodiversity to reduce the likelihood that any native species will require Bureau sensitive species status.
- e. The absence of conservation strategies, incorporate best management practices, standard operating procedures, conservation measures, and design criteria to mitigate specific threats to Bureau sensitive species during the planning of activities and projects.

DEIS Inadequacies

Deacon, et. al. estimated that 157 at-risk species are threatened by the proposed ground water mining.⁴³ While the BLM has done a partial job of cataloging the biological resources of the “region of study”, the proposed action fails miserably to meet the agency’s obligations under the ESA, FLPMA and internal directives to protect, conserve and minimize adverse impacts. In what follows, these failures will be demonstrated through examples from the DEIS.

Aquatic Biological Resources

Species that live in or around water such as amphibians, fish and invertebrates, and their habitats, are considered to be aquatic biological resources in the DEIS.⁴⁴ In Chapter 3.3, the BLM discloses that 307 springs could be adversely impacted by the ground water mining over the course of the 200 year study period. However, of these only 59 have been inventoried and documented.⁴⁵ The same table discloses that 112 miles of perennial streams could be adversely impacted.

A concern about these figures, that will also be discussed in another section of these comments, is that the DEIS only shows the impacts for ground water pumping where the model indicated greater than a 10-foot drawdown. There was no disclosure of the impacts for areas with lesser drawdown, not any convincing discussion provided on why the less than 10-foot drawdown impacts were not important to species and ecosystems that could be adversely impacted. Depending upon the hydro-geologic characteristics of the specific aquifer, a 1-10-foot drawdown

⁴³ Deacon, James E., Austin E. Williams, Cindy Deacon Williams, and Jack E. Williams. 2007. Fueling Population Growth in Las Vegas: How Large-scale Groundwater Withdrawal Could Burn Regional Biodiversity. *Bioscience* 57:8, pages 688-698.

⁴⁴ DEIS Chapter 3, page 3.7-1.

⁴⁵ DEIS, Table 3.3.2-6.

could conceivably impact hundreds of square miles and untold springs and streams, even to the point that they dry or suffer significant adverse impacts. Hence, the impacts on aquatic species and ecosystems will likely be greater than analyzed and disclosed in the DEIS.

To correct this, the BLM must issue a supplemental EIS disclosing the impacts from groundwater drawdowns below the currently provided 10-foot level.

Springsnails

Springsnails are an umbrella species for the conservation of other wildlife, meaning that by protecting the ecosystem conditions on which springsnails depend, habitat would be simultaneously protected for other species. Protecting the springsnails will protect the springflow which sustains not only the snails but also myriad other wildlife species which would be negatively affected by spring desiccation due to groundwater pumping and spring diversion.

Springsnails have narrow environmental preferences, and their presence indicates stable ecological conditions over time, which gives them high biogeographical significance. Springsnails exhibit habitat specificity and low dispersal ability, and endemism is prevalent. Because many springsnail species in the western United States are found at only one to a few isolated springs, they are at considerable risk of extinction. Endemic populations are particularly vulnerable to disturbance, and many organisms unique to the Great Basin have experienced declines in distribution and abundance, including 16 taxa which have already gone extinct.⁴⁶

On February 17, 2009, the Center for Biological Diversity (“Center”) petitioned the U.S. Fish and Wildlife Service through the Department of Interior to seek protections for 42 species of springsnails found in the Great Basin of Nevada and Utah under the Endangered Species Act.⁴⁷ Twenty-five of the petitioned species are found in the area potentially impacted by the proposed action.⁴⁸ On September 13, 2011, the FWS published a positive 90-day finding in the Federal Register for 35 of the species – all of which are found in the DEIS to some degree, Table F3.7-13C being the most comprehensive location.⁴⁹ The Camp Valley pyrg was the only springsnail species included on the table which did not receive a positive 90-day finding, and will be further discussed later in this section.

In addition, the Nevada BLM State Director has designated six of the potentially affected springsnails as sensitive species protected under BLM Manual 6840.2.⁵⁰ All these species have

⁴⁶ Sada, D.W. and G.L. Vinyard. 2002. Anthropogenic changes in biogeography of Great Basin aquatic biota. *Smithsonian Contributions to the Earth Sciences* 33:277–293.

⁴⁷ Center for Biological Diversity. 2009. PETITION TO LIST 42 SPECIES OF GREAT BASIN SPRINGSNAILS FROM NEVADA, UTAH, AND CALIFORNIA AS THREATENED OR ENDANGERED UNDER THE ENDANGERED SPECIES ACT. Available at: http://www.biologicaldiversity.org/species/invertebrates/Great_Basin_spring_snails/pdfs/Great-Basin-Springsnail-Petition.pdf .

⁴⁸ See Table F3.7-13C.

⁴⁹ Federal Register. Sept 13, 2011. 76:177, pages 56608-56630.

⁵⁰ DEIS Chapter 3, page 3.7-45.

been petitioned for protections under the ESA and are included in the 25 species mentioned above.

There are at least a dozen other species of springsnails not yet petitioned for protection under the ESA or BLM Manual 6840.2 that if adversely affected could rise to the level of concern that such protections would be initiated.

According to groundwater modeling done by the proponent, six of the petitioned species' habitats would experience changes in spring flow ranging from 17 to 100% of normal. Four others would experience reductions ranging from 1 to 3%, and for the other 15, there is not adequate data and information to form an estimate.⁵¹ These impacts are based on habitats within the 10-foot drawdown area and do not take into account impacts resulting from less drawdown, which is a speculative and unsupported assumption.

To further document the destruction, the DEIS discloses that, "Flow reductions in Big Springs Creek and Lake Creek could result in substantial loss of habitat and aquatic species", and that, "Substantial flow reductions in Butterfield, Flag and Wambolt springs could result in the loss of Butterfield, Flag and Lake Valley pyrg populations due to their limited occurrence (one spring/one basin)".⁵² By "loss" is meant extinction. Another example of the dire impacts that would be suffered by springsnails is the example of the Longitudinal gland pyrg who's habitat at Big Springs, which currently flows at 4289 gallons per minute, will be completely dry by 75-years after full build out and who's other three spring habitats would be adversely impacted, but data does not exist to ascertain to what degree.⁵³

As previously mentioned, the Camp Valley pyrg was the only springsnail petitioned in the pipeline pumping study area to not receive a positive 90-day finding.⁵⁴ The Center believes this was due to the fact that the DEIS falsely asserted that there would be no impacts from the ground water mining on this species.⁵⁵ Careful inspection of Figure 3.3.3-5 however, reveals that at the 200-year mark, when cumulative effects are considered, the spring home to this species along Camp Valley Creek in Spring Valley Basin 201 is likely to be impacted by a 10 to 50-foot drawdown.⁵⁶ The resolution and scale of the map provided does not allow for a more precise statement. The Center is also concerned that by failing to disclose drawdown impacts less than 10-feet, the BLM has been less than forthcoming regarding the potential impacts on this species.

A review of the DEIS, makes it is very clear that imperiled and seemingly protected species of springsnails will be highly vulnerable to impacts from the proposed pipeline that may well lead to their extinction. Nowhere in the DEIS has the BLM disclosed why or how approval of the proposed action would not go against their obligations under the ESA, FLPMA or the BLM Manual 6840.2.

⁵¹ DEIS Appendix F3.7, pages 43 to 46.

⁵² DEIS Chapter 3, page 3.7-50.

⁵³ Ibid.

⁵⁴ Federal Register. Sept 13, 2011. 76:177, page 56610.

⁵⁵ DEIS, Table F3.7-13C, page F3.7-45.

⁵⁶ DEIS, page 3.3-197.

Amphibians

As mentioned in the DEIS, there are four special status amphibian species located within the area potentially impacted by the ground water pumping – Northern leopard frog, Columbia spotted frog, relict leopard frog and the Arizona toad.

The Relict leopard frog is currently a federal candidate species warranted for listing under the ESA, but precluded for lack of available resources. It is protected as “critically imperiled” by the state of Nevada.⁵⁷ So dire is the status of this species that it was once feared extinct, but was rediscovered along the Colorado River in the Lake Mead National Recreation Area. Some of its key habitat is the terminal outflow areas of the White River Carbonate Flow System at Blue Point, Rogers and Gnatcatcher Springs, which is the same formation proposed for ground water mining by the SNWA as part of this proposal. The DEIS discounts this connection by simply saying in Chapter 3.7 that. “Pumping would not affect relict leopard frog habitat in the Black Mountain area.”⁵⁸

The Northern leopard frog is a species petitioned for listing under the ESA and has received a 90-day finding that a 12-month status review is warranted. It is protected by the state of Nevada and is considered to be “imperiled”.⁵⁹ Crucial areas of its habitat such as Keegan, North Millick and South Millick Springs and the Shoshone Ponds area will be completely or nearly completely dried by the proposed action, leading to destruction of habitat and extirpation of the species.⁶⁰ Other habitat could be equally impacted, but no hard data exists to quantify the threat.⁶¹ It is a species to be provided protections under a conservation agreement, and is a BLM sensitive species.

The Columbia spotted frog is a species of concern in the states of Utah and Nevada, and is considered by both to be “imperiled”.⁶² It is covered by an interagency conservation agreement which is to provide protections to preclude the need for further protections under the ESA. Insufficient data exists to assess the level of threat from the proposed action, but because they habitat is down gradient from Snake Valley basin, it can be expected to be impacted by any pumping that occurs there.

⁵⁷ Nevada Natural Heritage Program. November 2010. Animal and Plant At-Risk Tracking List. Available at: <http://heritage.nv.gov/lists/track.pdf> .

⁵⁸ DEIS, page 3.7-45

⁵⁹ Nevada Natural Heritage Program. November 2010. Animal and Plant At-Risk Tracking List. Available at: <http://heritage.nv.gov/lists/track.pdf> .

⁶⁰ DEIS, Appendix F3.7, page F3.7-42.

⁶¹ Ibid.

⁶² NatureServe, at:

http://www.natureserve.org/explorer/servlet/NatureServe?sourceTemplate=tabular_report.wmt&loadTemplate=species_RptComprehensive.wmt&selectedReport=RptComprehensive.wmt&summaryView=tabular_report.wmt&elKey=102625&paging=home&save=true&startIndex=1&nextStartIndex=1&reset=false&offPageSelectedEIKey=105087&offPageSelectedEIType=species&offPageYesNo=true&post_processes=&radiobutton=radiobutton&selectedIndexes=105087&selectedIndexes=102214&selectedIndexes=102625&selectedIndexes=104064 .

The Arizona toad is a species protected by the state of Nevada as “imperiled”. It is found in the Lower Meadow Valley Wash, as well as other areas of Clark and Lincoln Counties not yet described or known. For unexplained reasons, the DEIS does not describe the impacts and threats to the toad either in Chapter 3 or Appendix F3.7.

A review of the DEIS, makes it is very clear that imperiled and seemingly protected species of amphibians will be highly vulnerable to impacts from the proposed pipeline that may well lead to their extinction. Nowhere in the DEIS has the BLM disclosed why or how approval of the proposed action would not go against their obligations under the ESA, FLPMA or the BLM Manual 6840.2.

Fish

At least fourteen special status desert fish species are at potential risk from the proposed ground water mining. The Moapa dace, White River spinedace, Pahrnagat roundtail chub, White River springfish, Hiko White River springfish and Pahrump poolfish are protected as endangered under the ESA, and the Big Springs spinedace is protected as threatened. Several other species are “critically imperiled”, and protected by the state of Nevada, including the White River desert sucker, Virgin River chub, and the Moapa speckled dace, while the White river speckled dace and the Moapa White River springfish are state protected as “imperiled”.

The least chub is a species that has been petitioned for listing under the ESA by the Center and others, and is currently included in a settlement agreement between the Center and FWS which mandates a listing determination not later than 2014.⁶³ It is also to be protected under an interagency conservation agreement and strategy, and is a Utah special concern species considered to be “critically imperiled”.⁶⁴

The Bonneville cutthroat trout is states of Nevada and Utah protected as “critically imperiled”, a BLM and Forest Service sensitive species and to be protected under an interagency conservation agreement and strategy.

In addition to these named species in DEIS Chapter 3.7, there are other species of desert fish equally or more threatened by the ground water mining, but not mentioned in the DEIS, although some are listed in Appendix Table F3.7-13A. These species include:⁶⁵

- Meadow Valley Wash desert sucker – State of Nevada “imperiled” and a BLM sensitive species.
- Flannelmouth sucker – “critically imperiled and a BLM sensitive species (not in Appendix F3.7).

⁶³ See:

http://www.biologicaldiversity.org/programs/biodiversity/species_agreement/pdfs/proposed_settlement_agreement.pdf.

⁶⁴ http://www.biologicaldiversity.org/species/fish/least_chub/index.html

⁶⁵ Nevada Natural Heritage Program. November 2010. Animal and Plant At-Risk Tracking List. Available at: <http://heritage.nv.gov/lists/track.pdf>.

- White River sculpin – “critically imperiled”.
- Preston White River springfish – “critically imperiled” and a BLM sensitive species.
- Moorman White River springfish – “critically imperiled” and a BLM sensitive species.
- Clover Valley speckled dace – “critically imperiled” and a BLM sensitive species (not in Appendix F3.7).
- Pahrnagat speckled dace – “critically imperiled” and a BLM sensitive species.
- Relict dace – “imperiled” and a BLM sensitive species.
- Meadow Valley speckled dace – “imperiled” and a BLM sensitive species (not in Appendix F3.7).
- Utah sucker – “critically imperiled”.

By excluding the flannelmouth sucker, Clover Valley speckled dace, and Meadow Valley speckled dace from analysis and disclosure, the BLM has failed to meet its requirements under NEPA.

For those species which had impacts analyzed and disclosed, the results were stunningly horrific. As disclosed in the DEIS, fish suffered many consequences of flow reductions in their habitat, such as those that would occur at springs and streams in the areas impacted by the ground water mining. Fish diversity of species present, abundance, behavior, growth rates and other physiological traits declined, while parasites and invasive species increased.⁶⁶ Fish inhabiting springs are especially sensitive to changes in volume and flow as such parameters define the limits of their suitable habitat.

From the disclosure in Chapter 3.7, it is quite clear that local extirpations will occur if not outright extinctions. Flows to Big, Keegan, and North and South Millick Springs will essentially go dry, wiping out relict dace, speckled dace, mottled sculpin, Utah chub, northern leopard frogs, and petitioned springsnails.⁶⁷ Other springs such as Butterfield and Flag will experience habitat degrading flow reductions of nearly 20%, impacting the critical habitat for the endangered White River spinedace, White Rive sculpin, White River desert sucker, White Rive speckled dace, and several species of petitioned springsnails.⁶⁸ Perhaps even more disconcerting are the 24 springs providing habitat for special status species that are disclosed as having negative impacts from the ground water mining, but not enough is known about the geohydrology to predict the impacts on the species of concern.⁶⁹ For these species it is a game of chance on whether or not they will be afforded the opportunity for viability and survival. The promised monitoring and mitigation would be ineffectual and will be further discussed in another section of these comments.

Once again, it is clear that imperiled and seemingly protected species of fish and other aquatic life will be highly vulnerable to impacts from the proposed pipeline that may well lead to their extinction. Nowhere in the DEIS has the BLM disclosed why or how approval of the proposed

⁶⁶ DEIS, pages 3.7-37 – 40.

⁶⁷ DEIS, Table F3.7-11

⁶⁸ Ibid.

⁶⁹ Ibid.

action would not go against their obligations under the ESA, FLPMA or the BLM Manual 6840.2.

Terrestrial Animal and Rare Plant Resources

The “surplus” ground water the SNWA hopes to mine is actually largely water needed and used by native plants and ecosystems for evapotranspiration (“ET”). The DEIS discloses that the modeling used suggests that there will be an 84% reduction in ET in Spring Valley, a 33% reduction of ET in Snake Valley and a 54% reduction of ET in the Great Salt Lake Desert Flow System, with a much lesser reduction in the White River Flow System south of Spring Valley.⁷⁰

The impacts from such reductions would result in a catastrophic ecosystem change in composition, structure and function. Plants utilizing surface or shallow ground water (phreatophytes⁷¹ and meadow species) would be decimated and would be largely replaced by species not needed as much water. The DEIS discloses that, in response to a 10-foot or greater drawdown of ground water, meadows would become less vigorous and dry and be replaced by dry land species of grass, while the current basin shrublands, so valuable for wildlife habitat, would see canopy cover progressively thinned, and dominant plant composition change to dry land species, including invasive non-native species such as cheatgrass, which in turn will spark a wholesale change in the frequency and intensity of wildfires (fire regime). This in turn will fundamentally change the ecosystem values and services that the sites can provide.⁷²

Naumburg et.al. (2005), noted that, “Although changes in depth to groundwater occur naturally, anthropogenic alterations may exacerbate these fluctuations and, thus, affect vegetation reliant on groundwater. These effects include changes in physiology, structure, and community dynamics, particularly in arid areas where groundwater can be an important source of water for plants. To properly manage ecosystems subject to changes in depth to groundwater, plant responses to both rising and falling changes in depth to groundwater tables must be understood.”⁷³

The area of land that will be affected is staggering. The DEIS estimates that over the 200-year study horizon, 191,506 acres of basin shrubland will be impacted along with 8,048 acres of wetlands and meadows.⁷⁴ Keep in mind that these impacts ignore changes from drawdowns less than 10-feet in nature. Hence, the impacts on terrestrial species and ecosystems will likely be greater than analyzed and disclosed in the DEIS.

⁷⁰ DEIS, Table 3.3.2-6.

⁷¹ DEIS, Table 3.5-6.

⁷² DEIS, pages 3.5-38-43.

⁷³ Naumburg, Elke, Ricardo Mata-Gonzalez, Rachael G. Hunter, Terry McLendon, and David W. Martin, 2005. Phreatophytic vegetation and groundwater fluctuations: a review of current research and application of ecosystem response modeling with an emphasis on Great Basin vegetation. *Environmental management*, Vol. 35:6, pp. 726-740.

⁷⁴ DEIS, Table 3.5-14.

There was no disclosure of the impacts for areas with lesser drawdown, and not any convincing discussion provided on why the less than 10-foot drawdown impacts were not important to species and ecosystems that could be adversely impacted. Depending upon the hydro-geologic characteristics of the specific aquifer, a 1-10-foot drawdown could conceivably impact hundreds of square miles and untold springs and streams, as well as countless acres of terrestrial habitats, even to the point that they dry or suffer significant adverse impacts. Hence, the impacts on terrestrial species and ecosystems will likely be greater than analyzed and disclosed in the DEIS.

To correct this, the BLM must issue a supplemental EIS disclosing the impacts from groundwater drawdowns below the currently provided 10-foot level.

A further glaring omission in the DEIS is the complete absence of any analysis or disclosure of the effects of pumping on predatory mammals such as coyotes, cougar, bobcats, and badgers. Current conservation biology science recognizes the critical roles that predators play in healthy ecosystem function and the cascade of problems that occur when they are eliminated.⁷⁵ Since the impacts to prey species due to large-scale vegetation and ecosystem changes are likely to be great and significant, it stand to reason the impacts on their predators will be at least as large.

To correct this problem, the BLM must issue a supplemental EIS disclosing the impacts from groundwater mining on predators found in the study area.

Whenever such large and fundamental changes to ecosystems are made, all species and aspects of the system are impacted. The number of affected species in this case could easily number in the hundreds. However, the DEIS chooses to only analyze a subset of all the species that could be potentially impacts, apparently using a habitat surrogate approach. While taking this approach may have some validity in science, the BLM has failed to document and disclose why it feels such an approach is valid and for which specific species the very broad vegetative classifications are representing.

To remedy this deficiency, the BLM must prepare a supplemental EIS which better documents the scientific basis for using vegetation as a surrogate for species, and disclose a complete listing of the species that will be impacted and to what extent.

For sake of demonstration of the potential impacts, a few of the species that are included in the DEIS will now be explicitly covered in our comments, with the understanding that far more impacts will exist. These examples are meant to demonstrate the fundamental analysis and disclosure flaws found in the DEIS.

⁷⁵ See: http://e360.yale.edu/feature/the_crucial_role_of_predators_a_new_perspective_on_ecology/2442/ .

Sage grouse

The greater sage grouse was found to be warranted for protections under the Endangered Species Act in March 2010.⁷⁶ The sage grouse has also been identified by the BLM Nevada State Office as sensitive under BLM Manual 6840.2

Sage grouse, as the name implies, is closely allied and dependent on various stages of sage brush development for their life stages and survival. Grouse are found in different stages of sagebrush development depending upon the season and the needs of the grouse during that time.⁷⁷ Despite the well-known importance of this habitat to sage grouse and other sagebrush obligates, the quality and quantity of sagebrush habitats have declined for at least the last 50 years and the welfare of the grouse mirrors this trend.^{78 79}

Sage grouse have a strong fidelity to their display, breeding, summering and wintering areas. Male grouse typically travel up to 1.3 miles to their lek sites, while during the breeding season, females typically travel less than 3 miles, but up to 22 miles to nest. Sage grouse exhibit both migratory and non-migratory behaviors, and populations of the grouse can contain both behaviors. Non-migratory grouse usually do not travel more than 6 miles annually, although migratory birds typically travel 21 miles annually, but travels up to 100 miles have been documented.⁸⁰

In general, sage grouse nests are placed under shrubs having larger canopies and more ground and lateral cover as well as in stands with more shrub canopy cover than at random sites. Sagebrush cover near the nest site was greater around successful nests than unsuccessful nests in Montana and Oregon, and successful nests were in sagebrush stands with greater average canopy coverage than those of unsuccessful nests.⁸¹

Characteristics of sage grouse winter habitats are relatively similar throughout most of the species' range. Studies have shown that the grouse prefer sagebrush habitats with greater than 20% canopy cover. During winter, sage grouse feed almost exclusively on leaves of sagebrush.⁸²

⁷⁶ Federal Register, March 5, 2010. See: <http://www.fws.gov/mountain-prairie/species/birds/sagegrouse/FR03052010.pdf> .

⁷⁷ Doherty, Kevin E., David E. Naugle, Brett L. Walker, and Jon M. Graham. 2008. Greater sage-grouse winter habitat selection and energy development. *J. of Wildlife Management* 72(1):187-195.

⁷⁸ Connelly, John W., Michael A. Schroeder, Alan R. Sands, and Clait E. Braun. 2000. Guidelines to manage sage grouse populations and their habitats. *Wildlife Soc. Bull.* 28(4):967-985.

⁷⁹ Becker, JM, CA Duberstein, JD Tagestad, and JL Downs. 2009. Sage-grouse and wind energy: biology, habits and potential effects of development. Pacific Northwest National Laboratory, operated by Battelle, for the U.S. Department of Energy. Contract DE-AC05-76RL01830.

⁸⁰ Ibid.

⁸¹ Ibid, Connelly etal. 2000.

⁸² Ibid.

As previously noted, the DEIS discloses that these types of basin shrublands will be dramatically altered in terms of structure and expanse, much to the detriment of the sage grouse.

Faced with increasing demands on wild public lands to supply sites for renewable energy development, the Nevada Department of Wildlife (“NDOW”) developed conservation standards to help protect and conserve the species and their habitats.⁸³ This document gathered and synthesized the most currently available research and scientific knowledge regarding the topic, and represents the current state-of-the-art and science. While the proposed action is not an energy project, aspects of it such as transmission lines, well and pumping stations and the activity associated with the operations of the project are similar.

To repeat, the Nevada standards for the conservation of sage grouse reflect the most current peer-reviewed science and the measures used by other states. They significantly strengthen the protections for the grouse by expanding the no occupancy/no disturbance areas. To highlight some of the more pertinent standards:

Regarding the testing and exploration phase:

- “1. Avoid drilling and associated activities within 3 miles of an active sage-grouse lek whenever possible.
2. If drilling within 3 miles of an active sage-grouse lek is unavoidable, conduct drilling activities from 15 July to 30 November to avoid disturbing sage-grouse during the breeding, nesting, early brood rearing, and winter periods.
 - a. Temporary noise shields should be constructed around portions of the drilling rigs and used on standard construction equipment.
3. Avoid drilling activities in identified winter habitat (even if outside a 3 mile radius from an active sage-grouse lek) from 01 December through 01 March to minimize disturbance to wintering sage-grouse.
 - a. In areas where winter and nesting habitat overlap and drilling cannot be avoided during the winter avoidance period (01 December through 01 March) then noise reduction abatement techniques (equipment) should be utilized to help minimize disturbance.
4. Avoid drilling activities within 0.6 miles (1 km) of springs, meadows or riparian corridors in identified brood rearing habitat from 01 June through 01 September to avoid disturbance (access to water sources) during the brood rearing period.”⁸⁴

With regards to development site selection:

⁸³ Nevada Governor’s Sage-Grouse Conservation Team. 2010. Nevada energy and infrastructure development standards to conserve greater sage-grouse populations and their habitats. 58 pages plus appendices.

⁸⁴ Ibid, page 24.

“1. The NGSCT considers Category 1 habitats (leks and nesting habitat) irreplaceable and Category 2 habitats (quality winter and brood rearing habitats) critical to the long term persistence of sage-grouse populations. Energy or transmission development should be avoided within Category 1 and 2 sage-grouse habitats.

2. Energy development is strongly discouraged from occurring in Category 3 habitats; however, if unavoidable, projects in these habitats should be situated to minimize impact through placement in the least suitable portion of habitat.

4. Renewable energy developers are encouraged to pursue project development activities within Category 4 and 5 habitats within the range of sage-grouse in Nevada.

5. If habitat categories have not been identified for a certain area, energy facilities and transmission lines should not be sited within 3 miles of the nearest active lek location for non-migratory populations.

- To the greatest extent possible, energy developers should work closely with NDOW and pertinent federal agency biologists to determine important nesting, brood rearing and winter habitats and avoid those areas.

6. Where populations of sage-grouse are considered migratory, energy facilities and transmission lines should not be sited within 3 miles of the nearest active lek location and should not be sited within the associated nesting habitat for that particular population.

- Consideration should also be given to movement corridors between breeding, nesting, brood-rearing or winter habitat. These movement corridors may not be well defined unless significant radio marking investigations have been conducted for a particular population. It is recommended that these investigations take place where project proponents are proposing developments in likely movement corridors for sage-grouse.

7. No development should occur within a 0.6 mile (1 km) radius around seeps, springs and wet meadows within identified brood rearing habitats. “

With respect to the development and operational phases:

“1. Where sage-grouse populations are non-migratory energy facilities should not be constructed within 3 miles of the nearest active lek site (see Chapter 1, Section C).

2. Where populations of sage-grouse are considered migratory, energy facilities should not be constructed within 3 miles of the nearest active lek location and should not be sited within the associated nesting habitat for that particular population.

3. If construction within 3 miles of an active sage-grouse lek is absolutely unavoidable, conduct construction activities from 15 July to 30 November to avoid disturbing sage-grouse during the breeding, nesting, early brood rearing and winter periods.

- If pumping stations are placed within 3 miles of an active lek, consideration should be given, and attempts made to place these features in an area where noise would least impact the actual lek using topography to help mask noise.
5. Avoid practices that remove sagebrush cover in these habitat categories as they may be the most important areas to sage-grouse using these habitats.
 6. No development or infrastructure features should be placed within 0.6 miles (1 km) of identified late brood rearing habitats, especially meadow complexes and springs. These features can provide a competitive advantage for avian predators; therefore increasing sage-grouse mortality during a period when birds may be susceptible.
 7. A comprehensive monitoring plan approved by the Nevada Department of Wildlife will be required to monitor sage-grouse demographics, vital rates and movement patterns before, during and after the construction phase within Category 1 – 3 habitats. The Western Agencies Sage and Columbian Sharp-tailed Grouse Technical Committee provide sound recommendations in their Interim Guidelines for Evaluating the Impacts of Energy Development (Appendix D).
 8. Within Category 1-3 sage-grouse habitats, a company representative should be on site to oversee compliance during construction and provide environmental training to on-site personnel. This individual is responsible for overseeing compliance with all protective measures and coordination in accordance with the permitting authority and resource agencies should have the authority to issue a “stop work order” if deemed necessary.
 9. Human Activity (Daily Operations/Maintenance)
 - Vehicle trips should be limited to those times that would least impact nesting or wintering grouse:
 - i. Vehicle trips should not occur on a regular basis within 3 miles of an active lek or in identified nesting habitats from 01 March through 15 May.
 - 1) If vehicle trips are required during the lekking period, vehicles should only be operated from 10:00 a.m. to 5:00 p.m. daily.
 - ii. Public access to construction areas should be limited if construction activities are occurring from 01 March through 15 May. ⁸⁵

There are other standards found in the NDOW document pertaining to standards for associated infrastructure that should be included in any stipulations for this proposed project.

It is quite clear that the right-of-way and pumping impacts on sage grouse from the proposed action would be immense and the mitigation measures envisioned (such as 2-miles buffers from leks) less than those called for by NDOW standards and current best science.

⁸⁵ Ibid, pages 27-28.

Previously in these comments the characteristics of sage grouse nesting and brood-raising and winter habitats were briefly described based on work done by Connelly and his associates. The DEIS reveals that 280,006 acres of sage grouse nesting and early brood-raising habitat would be adversely impacted along with 351,839 acres of winter range.⁸⁶ These acreages amount to 59% and 75% respectively of the total available habitat.⁸⁷ We refer to the NDOW standards for an indication of the significance of these impacts. The standards state, “The NGSCT considers Category 1 habitats (leks and nesting habitat) irreplaceable and Category 2 habitats (quality winter and brood rearing habitats) critical to the long term persistence of sage-grouse populations. Energy or transmission development should be avoided within Category 1 and 2 sage-grouse habitats.”⁸⁸

By all accounts of the best available scientific information, it would appear that the impacts from the proposed ground water mining would set the viability of the sage grouse spiraling downward and would greatly contribute to the bird’s threats of extinction. Nowhere in the DEIS has the BLM disclosed why or how approval of the proposed action would not go against their obligations under the ESA, FLPMA or the BLM Manual 6840.2.

Southwestern willow flycatcher

The southwestern willow-flycatcher is a species protected as endangered under the ESA.⁸⁹ On August 15, 2011, a notice appeared in the Federal Register announcing a proposal by FWS to revise the designation of critical habitat for this flycatcher.⁹⁰ Among the areas to be designated in Nevada are the Key Pitman State Wildlife Management Area and the Paharagant National Wildlife Refuge.⁹¹

The DEIS discloses that both the above area of critical habitat and the Meadow Valley Wash, another area of habitat for the flycatcher would be adversely impacted by the proposed ground water mining, due to the connectivity of the ground water flow system in the area.⁹²

Once again, it is clear that imperiled and seemingly protected southwestern willow-flycatcher will be highly vulnerable to impacts from the proposed pipeline that may well lead to their extinction. Nowhere in the DEIS has the BLM disclosed why or how approval of the proposed action would not go against their obligations under the ESA, FLPMA or the BLM Manual 6840.2.

⁸⁶ DEIS, Table 3.6-15.

⁸⁷ BLM errs in their calculation of percent of groundwater development area these acres represent by including in their averages the zero acres for Dry lake Valley. If nesting and winter habitat do not exist to being with, then they should not be averaged in with basins where such habitats do exist. By including Dry Lake Valley, the BLM minimizes and fails to disclose the true magnitude of the impacts.

⁸⁸ Nevada Governor’s Sage-Grouse Conservation Team. 2010. Nevada energy and infrastructure development standards to conserve greater sage-grouse populations and their habitats. 58 pages plus appendices.

⁸⁹ See: <http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B094> .

⁹⁰ See: <http://www.gpo.gov/fdsys/pkg/FR-2011-08-15/pdf/2011-19713.pdf> .

⁹¹ Ibid, page 280.

⁹² DEIS, page 3.6-23.

Desert tortoise

The desert tortoise is a species protected as threatened under the ESA.⁹³

The proposed pipeline right-of-way would negatively impact 2350 acres of tortoise habitat, including 1759 acres of formally designated critical habitat.⁹⁴

The DEIS incorrectly assumes that the tortoise would not suffer any indirect impacts from the ground water mining aspects of the proposed action.⁹⁵ Maps of the predicted drawdowns for the 200-year mark show up to 200-foot declines in parts of Delamar Valley, Kane Springs Valley and Pahrnagant Valley, all of which provide habitat for the desert tortoise.⁹⁶ These declines threaten the species that the tortoise relies upon for its habitat, including creosote bush.

Again, it is clear that imperiled and seemingly protected desert tortoise will be highly vulnerable to impacts from the proposed pipeline that may well be adverse to their local populations and recovery. Nowhere in the DEIS has the BLM disclosed why or how approval of the proposed action would not go against their obligations under the ESA, FLPMA or the BLM Manual 6840.2.

Native ungulates

Native ungulates, including deer, elk, pronghorn and big horn sheep are important contributors to healthy and viable ecosystems.⁹⁷ They are also a fundamental part of Nevada's natural heritage and a source of recreation for thousands of hunters.

The adverse impacts to native ecosystems outlined in the *Terrestrial Animal and Rare Plant Resources* introductory section have dire consequences on native ungulate species:

- Over 649,200 acres of pronghorn habitat, including 25,000 acres of crucial winter range affected;
- Over 203,000 acres of mule deer habitat, including 17,000 acres of crucial summer and 58,000 acres of crucial winter range affected;
- Over 195,000 acres of year-round elk habitat affected; and,
- Over 15,900 acres of big horn sheep habitat affected.

⁹³ See: <http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=C04L> .

⁹⁴ DEIS, page 3.6-39.

⁹⁵ DEIS, page 3.6-73.

⁹⁶ DEIS, Figure 3.3.2-5.

⁹⁷ Hobbs , N. Thompson. 1996. Modification of Ecosystems by Ungulates. *The Journal of Wildlife Management*. Vol. 60, No. 4, pp. 695-713.

While not all these acres will be impacted to the same degree or intensity, large areas of habitat will none-the-less be destroyed or degraded.

The proposed mitigation measure of providing artificial water sources for the ungulates will not address the adverse impacts caused by the loss of over 192,000 acres of basin shrubland habitat.

Although these species are not necessarily rare or imperiled, they are co-managed by NDOW, and are of cultural significance to both Native American Tribes and sportsmen with long-standing hunting traditions. The desert subspecies of big horn sheep is a BLM sensitive species.

It should be clear from the above sections, the DEIS has failed to satisfactorily analyze and disclose the impacts to the species, ecosystems and the related human cultures, and to disclosed why or how approval of the proposed action would not go against their obligations under the ESA, FLPMA or the BLM Manual 6840.2. As such, the BLM must prepare a supplemental DEIS to rectify these substantive deficiencies, and make it available to the public for review and comment.

The Monitoring and Mitigation proposed in the DEIS violates Council on Environmental Quality (“CEQ”) direction and fails to protect the resources as intended.

The purposes for which the NEPA was enacted are:

“To declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality.”⁹⁸

An integral way through which the NEPA process accomplishes its purposes is through the identification of mitigation measures. Measures considered to be mitigation include:

- “(a) Avoiding the impact altogether by not taking a certain action or parts of an action.
- (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- (e) Compensating for the impact by replacing or providing substitute resources or environments.”⁹⁹

⁹⁸ 42 USC § 4321 Sec 2.

⁹⁹ 40 CFR §1508.20.

A long-standing concern about mitigation in the NEPA context is with follow-through – was what was promised in a NEPA document and decision actually implemented, and if it was, did the action have the intended results?

Earlier this year, the CEQ issued a memorandum for the heads of federal departments and agencies to clarify what was expected when mitigation is used in the NEPA process.¹⁰⁰ The CEQ noted that failure to implement, document and monitor mitigation fails to advance the NEPA purpose of informed and transparent environmental decisionmaking and could undermine the very integrity of the Act.¹⁰¹

We believe major portions of the proposed mitigation in the DEIS is flawed not only scientifically, but also legally, particularly with respect to CEQ regulations and memorandums.

Stipulated Agreements and Monitoring, Management and Mitigation Plans

The DEIS makes repeated incorporation by reference to several external documents created by Stipulated Agreements between Department of Interior Agencies and the SNWA – the Spring Valley and the Delamar, Dry Lake and Cave Valleys Hydrologic Monitoring and Mitigation Plans, and the draft Snake Valley Monitoring, Mitigation and Management Plan.¹⁰²

Unfortunately, these plans have fundamental flaws which may them useless for purposes of this EIS and meeting the requirements of the NEPA. We will highlight the major ones in the following.

Using the Spring Valley Agreement and Plan as a representative for the others, the general theme of these agreements and plans is that the federal agencies will drop or not file protests before the Nevada State Engineer with regards to any SNWA groundwater right applications in the covered valleys (basins). In return, monitoring, management and mitigation plans are to be mutually developed, which in theory would lead to achieving common goals such as studying and characterizing the groundwater flow systems, manage the development of groundwater by the SNWA to avoid *unreasonable* adverse effects to water-dependent ecosystems, and to avoid *unreasonable* degradation of the scenic values and visibility from Great Basin National Park due to particulate pollution and loss of surface vegetation (emphasis added).¹⁰³

The agreement also established three groups to facilitate the implementation of the Monitoring, Management, and Mitigation Plan (“MMMP”). An Executive Committee (“EC”) comprised of one manager from each of the parties to the agreement would be a decision body that receives and acts upon information and data from the other two groups. A Technical Review Panel (“TRP”) comprised of one representative from each of the parties, would meet to address the geo-hydrologic concerns such as development of a regional groundwater flow numerical model, aquifer studies, and review of results from the monitoring of production pumping. A Biological Working Group (“BWG”) would mirror the TRP but have the appropriate expertise related to

¹⁰⁰ Council on Environmental Quality. January 14, 2011. Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact.

¹⁰¹ Ibid

¹⁰² For example, DEIS, pages 3.3-113 to 122.

¹⁰³ Stipulation for Withdrawal of Protests – Spring Valley. 2006. DEIS Appendix C.

water-dependent ecosystems. Both the TRP and the BWG would make recommendations to the EC on the needs and conduct of the MMMP.¹⁰⁴

This structure is flawed for a number of reasons:

1. The structure could easily result in decision delays that could threaten ecosystems and species.

All three bodies were to fulfill their purposes using consensus decision-making. Consensus is a long, often drawn out process, which can result in excellent decisions under the right circumstances, but also allows a minority of members to hold the others hostage in making a decision.

The EC was to make decisions based on recommendations from the TRP and BWG, and if either of those groups could not reach consensus (no guidance as to the time allowed for consensus to be reached) would make the ultimate decision. Nothing in the agreement or plans describe upon what basis the EC was to reach consensus, leaving such decisions on the welfare of water-dependent ecosystems at risk to political rather than best- available science. If the EC could not reach consensus, the matter would be referred to the State Engineer or another agreed upon third-party.¹⁰⁵

Given the number of layers and the time to reach consensus, it is quite probable that reaching an ultimate decision will take months and possibly years. Such delays when poorly understood groundwater systems and imperiled species are involved could lead to disastrous results.

2. The system for collection of data, and its interpretation and handling and reporting is wide open to malfeasance.

Another fundamental flaw is that the SNWA is the primary entity charged with data collection, handling, summarizing, analyzing, interpreting and reporting. This lack of unbiased oversight and control leads to dubious scientific credibility.

A much improved structure would be to have a neutral third-party handle these tasks and then report them to the BWG and TRP.

3. The MMPS do not have pre-set biological triggers or threshold points to prompt action.

Even if good, unbiased monitoring occurs, the question what it means to ecosystems and species remains. There is a lack of a priori biological or physical indicators that would trigger an appropriate reduction or stoppage of groundwater pumping to protect water-dependent ecosystems. Without such pre-set triggers, due to the factors discussed in #1 above, there could be a considerable delay in response which could imperil species or even drive them to extinction. Any monitoring or triggers should be conservative in nature and in

¹⁰⁴ Ibid.

¹⁰⁵ Ibid.

accordance with the precautionary principle. The BWG should establish an acceptable range of variation of nested targets and ecological indicators.

4. The aquifer response time adds considerable uncertainty and risk.

Mitigation based on aquifer monitoring has an inherent problem with its efficacy – aquifer systems don't have instantaneous response times like a faucet, there are inherent delays in response to cessation of pumping. Bredehoeff and Durbin reported on this phenomenon in the journal *Ground Water*. They observed that particularly in large aquifer systems there is a delayed response between observation of an impact and its maximum effect, along with a long time lag between changing the stress and observing an impact at a distant location. The result is that the maximum impacts are larger than those observed when pumping is halted, and once halted the recovery to the pre-pumping state occurs very slowly – perhaps over a millennium for large systems.¹⁰⁶

SNWA proposes to reduce or cease groundwater withdrawals to avoid adverse unacceptable environmental impacts. Setting aside immense doubt and skepticism that once the pipeline is built that it will ever be allowed to have reduced flows, this mitigation is another case of something that sounds good, but which in fact is unreliable.

For this measure to have any hope of success, very detailed resource-specific thresholds and criteria for curtailing pumping in response to adverse impacts would need to be in place, based on soil and plant water requirements throughout the pumping impact area. In theory, for instance, if soil water needed by native plants is insufficient to sustain their health and vigor, pumping from well linked to discrete monitoring sites would then be shutdown or have pumping reduced. This theoretical mitigation measure, however, runs up against the problem of aquifer response time. Production wells can reduce spring flows and groundwater levels relatively quickly compared to the time needed for the water table to replenish and be able to supply the water needs in question.

Nothing in the DEIS or MMMPs suggest a proposed measure with enough scientific vigor or specificity to address this concern. At best such a measure is speculative and a theory that should be subjected to small scale experimentation rather than being the foundational piece of mitigation.

Given this uncertainty with timing and impacts, the use of the MMMPs as mitigation measures in the DEIS is highly inappropriate and scientifically unjustified.

5. The Stipulated Agreements and MMMPs have low standards.

As previously mentioned, the lack of a clear basis on which decisions will be made is a fundamental flaw. Likewise, goals and objectives modified with the undefined terms

¹⁰⁶ Bredehoeff, J. and T. Durbin. 2009. Ground Water Development – The Time to Full Capture Problem. *Ground Water*: 1-9.

“reasonable” or “unreasonable” provide little or no certainty or assurance of what is being gained through the MMMPs. It is easy to produce a great sounding document, but without regulatory or other assurances, the words can be hollow and meaningless.

6. The Stipulated Agreements lack regulatory and other assurances that the mitigation measures proscribed will be actually carried out.

The Stipulated Agreements governing the MMMPs include the provision: “Any commitment to funding by the DOI bureaus or the SNWA in the stipulation, including specifically any monitoring, management, and mitigation actions provided for in Exhibit A is subject to appropriations by Congress or the governing body of the SNWA as appropriate.”

In the present (and long-term) political climate, funding from public sources is under extreme pressure. Long-term survival of the MMMPs is therefore highly speculative and even unlikely. The MMMPs as described will, over the long term, make aquatic biological resources in the area of impact increasingly dependent on continuation of the program, while the program itself becomes increasingly unlikely to exist.

The EIS must acknowledge that fact and explain how it is to be overcome, and what adequate and reliable regulatory and administrative assurances will be put in place to ensure the MMMPs as included in the EIS will actually be implemented.

Reliance on the Stipulated Agreements and MMMPs violates the CEQ Memorandum on Mitigation Measures¹⁰⁷ for several reasons. First, there is no clear and secure assurance in place that the SNWA will actually have the monies available to fulfill their commitments and nothing in place to address what would occur if they didn’t. The CEQ memorandum addresses this concern in several places. First it states,

“Agencies should not commit to mitigation measures considered in an EIS or EA absent the authority or expectation of resources to ensure the mitigation is performed.”¹⁰⁸

Once the pipeline ROW is granted and water flowing in the pipe, it is not clear that the BLM would have any authority or leverage to enforce the implementation of the mitigation measures, particularly those in the MMMPs.

The Memorandum also addresses the concern that SNWA is both the proponent and the monitoring agency, casting doubt on the credibility of any monitoring results and reports. Citing the Memorandum with respect to monitoring, it states,

“Any outside parties consulted should be neutral parties without a financial interest in implementing the mitigation and monitoring plans, and should have expert knowledge, training, and experience relevant to the resources potentially affected by the actions and – if possible – the potential effects of similar actions.”¹⁰⁹

¹⁰⁷ Council on Environmental Quality. January 14, 2011. Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact.

¹⁰⁸ Ibid, page 3; also page 6.

¹⁰⁹ Ibid, page 5.

Clearly, this is not the case under the Stipulated Agreements and MMMPs, where SNWA hold disproportionate power and control over the process (see previous comments on MMMPs). The Memorandum also calls for the agency to put in place a suitable tracking system to ensure the mitigation measures are implemented. It states that,

“For mitigation commitments that warrant rigorous oversight, an Environmental management System (EMS), or other data or management system could serve as a useful way to integrate monitoring efforts effectively.”¹¹⁰

In the DEIS, the BLM is silent as to how it would achieve either implementation of effectiveness monitoring of the mitigation measures, seemingly deferring to and processes described in the Stipulated Agreements.

Finally, the CEQ Memorandum calls for full public involvement in implementation and effectiveness monitoring, stating:

“Public involvement is a key procedural requirement of the NEPA review process, and should be fully provided for in the development of mitigation and monitoring procedures. Agencies are also encouraged, as a matter of transparency and accountability, to consider public involvement components in their mitigation and monitoring programs.”¹¹¹

From what is disclosed in the DEIS, it is unclear how the BLM envisions including the public in monitoring the SNWA’s commitments for mitigation and holding them accountable.

DEIS specific measures

Apart from incorporating the stipulated agreements and MMMPs in to the project mitigation, the DEIS also envision a number of other actions, some appropriate other not, as well as important omissions. A general concern we have is that there is no comprehensive place to go in the DEIS that documents all the intended mitigation measures and applicant committed protection measures (“ACM”). Indeed, while some ACMs can be found in section 2.5.3 of the DEIS, others designated as ACM C only appear scattered among the various sections.

We document our specific concerns in the following:

- Sage Grouse Protections. Construction and ROW mitigation measures should incorporate the Nevada Governor’s Sage Grouse Conservation Team’s energy and infrastructure development standards to conserve sage grouse and their habitats.¹¹² These standards incorporate the best available science and state-of-the-art for sage grouse conservation. Among other things, they impose timing considerations not found in the DEIS. ACM-B.5.1 violates these Nevada Standards.
- ROW-WL-1: Big game restoration and habitat improvement. Despite promises that key habitat will be replaced on a 2:1 basis, given the magnitude of the habitat degradation

¹¹⁰ Ibid, page 11.

¹¹¹ Ibid, page 13.

¹¹² Nevada Governor’s Sage Grouse Conservation Team. April 2010. Nevada Energy and Infrastructure Development Standards to Conserve Greater Sage Grouse and Their Habitats.

expected over a 200-year and beyond horizon, there can be no assurances that this will even be feasible or a possibility.

- ROW-WL-6: Sage grouse habitat restoration. Given the magnitude of the habitat degradation expected over a 200-year and beyond horizon, there can be no assurances that this will even be feasible or a possibility.
- GW-G-3: Subsidence Monitoring. Monitoring along is not a sufficient mitigation measure with regards to land subsidence. Subsidence causes fundamental changes in hydrological and ecological process, as well as damaging or destroying human infrastructure. A plan with monitoring thresholds should be put in place to detect early problems associated with subsidence, and a method to effectively deal with the impacts.
- GW-WL-1: Same remarks as for ROW-WL-1.
- GW-WL-2: Violates Nevada Standards for sage grouse conservation.
- ACM C 1.16 and ACM C 1.42 – monitoring of spring discharge and stream flow should be regularly disclosed to the public, particularly those aquatic bodies that have special status species or other specific concerns, not just Big Springs and Cleve Creek.
- ACM 1.38 – see comment regarding ACM 1.16.
- ACM C 1.42 pertaining to sage grouse breeding and late brood rearing – while monitoring the impacts from the water mining is good, there is no affirmative action required to mitigate what can be expected to be devastating effects. See ROW WL-6.
- ACM 2.1 – the question begs to be asked, are there any available water rights that the SNWA can acquire for special status species recovery, and if there water rights available will the water quality and chemistry match the species habitat needs? This ACM is an empty feel good promise.
- ACM C2.15 is at least a speculative promise.
- ACM C2.4 – while the ecological needs of swamp cedar are to be studied, nothing commits the SNWA to ensure its long term viability or survival.
- ACM 2.5 – seeding over large areas without adequate rodent control and advantageous precipitation has never been proven successful. Promises by the SNWA to, “Conduct large-scale seeding to assist with vegetation transition from phreatophytic communities in Spring and Snake Valleys”, amounts to a concession that entire productive Great Basin ecosystems will be destroyed and converted to wastelands filled most likely with invasive species and noxious weeds. No scientific citation is provided to sustain the efficacy of this proposed measure.
- ACM C 2.7 – how would the SNWA conduct wetlands restoration at Big Springs and Pruess Lake when the impacts from the groundwater mining are expected to completely dry up Big Springs in 75-years? Where would the water come from to do the restoration? Another feel good empty promise.
- ACM 2.21 – what are “facilitated recharge projects”, and where would the water come from to do the recharge?
- Monitoring and mitigation recommendations GW-MN-AB-1, GW-MN-AB2, GW-MN-AB-3, GW-MN-AB-4, and GW-WR-4 mentioned in Table 3.7-6 could not be found in the DEIS or in Appendix F3.7 as stated.

In the face of and due to these serious deficiencies in assuring effective monitoring and mitigation, and because of serious questions as to how the BLM's proposals in the DEIS comply with existing agency and interagency directives on monitoring and mitigation, the BLM must conduct further analysis and issue a supplemental DEIS to address the deficiencies and provide it to the public for further review and comment.

The DEIS fails to adequately address the direct, indirect and cumulative impacts associated with the interactions of the proposed project and on-going and predicted changes in climate.

The warming of our climate system is unequivocal.¹¹³ There have been significant increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level. Eleven of the past twelve years rank among the warmest in the instrumental record of global surface temperature, and it is likely that average temperatures in the Northern Hemisphere have been the highest in at least the past 1,300 years. Satellite data since 1978 show that Arctic sea ice is shrinking at a rate of 2.1-3.3% per decade, with even larger declines in summer sea ice.¹¹⁴

Regarding the Great Basin, intermountain region and the southwest, several recent reports¹¹⁵ from high ranking U.S. science groups have made the following factual findings regarding the environmental impacts resulting from increased GHG emissions and climate change, now and into the future:

- “[A] severe drought has affected the southwestern United States from 1999

¹¹³ Climate Change 2007: Synthesis Report – Summary for Policymakers, International Panel on Climate Change, page 2.

Technical Report Document for Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act. Climate Change Division, Office of Atmospheric Programs, U.S. Environmental Protection Agency, Washington, D.C. April 17, 2009, page ES-2.

Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 2023(a) of the Clean Air Act; Proposed Rule. 78 Fed. Reg., 18896 (April 24, 2009).

¹¹⁴ Climate Change 2007, page 2.

¹¹⁵ Scientific Assessment of the Effects of Global Change on the United States, May, 2008. A Report of the Committee on Environment and Natural Resources, National Science and Technology Council. Available at: www.climate-science.gov/Library/scientific-assessment/Scientific-AssessmentFINAL.pdf.

The Effects of Climate Change on Agriculture, Land Resources, Water Resources, and Biodiversity in the United States. May, 2008. Synthesis and Assessment Product 4.3. Report by the U.S. Climate Change Science Program and the Subcommittee on Global Climate Change Research. Available at: <http://www.climate-science.gov/Library/sap/sap4-3/final-report/default.htm>.

Global Climate Change Impacts in the United States. June, 2009. Thomas R. Karl, Jerry M. Melillo, and Thomas C. Peterson, (eds.). Cambridge University Press, 2009. Available at: <http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts/download-the-report>.

through 2009”;

- “Human-induced climate change appears to be well underway in the Southwest.”

(Includes Nevada and Utah);

- “The average temperature in the Southwest has already increased roughly 1.5°F compared to a 1960-1979 baseline period. By the end of the century, average annual temperature is projected to rise approximately 4°F to 10°F above the historical baseline.”

- “The annual peak of streamflow in snowmelt-dominated western mountains is now generally occurring at least a week earlier than in the middle of the 20th century. Winter stream flow is increasing in basins with seasonal snow cover. The fraction of annual precipitation falling as rain (rather than snow) increased in the last half century”;

- “Most climate models project an increase in winter precipitation in the northern tier of states and a decrease in portions of the Southwest during the 21st century”;

- “The snow-covered area of North America increased in the November to January season from 1915 to 2004 due to increases in precipitation. However, spring snow cover in mountainous regions of the western United States generally decreased during the latter half of the 20th century. The IPCC determined that this latter trend is *very likely* due to long-term warming...”;

- “Conditions observed in recent years can serve as indicators for future change. For example, temperature increases have made the current drought in the region (Southwest) more severe than the natural droughts of the last several centuries”.

- “As the climate warms, stream temperatures are *likely* to increase, with effects on aquatic ecosystems. There is some evidence that temperatures have increased in some western U.S. streams, although a comprehensive analysis has yet to be conducted. Temperature changes will be most evident during low flow periods, when they are of greatest concern”;

- “Stream temperatures are *likely* to increase as the climate warms and are *very likely* to have effects on aquatic ecosystems and water quality. Changes in temperature will be most evident during low flow periods, when they are of greatest concern.”

- “Streamflow peaks in the snowmelt-dominated western mountains of the United States occurred one to four weeks earlier in 2002 than in 1948 (Stewart et al., 2005)”;

- Many studies predict that warmer temperatures may cause rainfall to change to snow later in the fall, and make spring snowmelt earlier. In addition to snowpack retreating to increasingly higher elevations, the long-term result could be reduced snowpacks, increased winter streamflow, lower and earlier spring run-off, and longer summer and fall low flows.

- “The area that is expected to face the most serious water constraints is the arid southwestern United States”;

A recent paper by Earman and Dettinger reported the following with respect to the potential impacts of climate change on groundwater resources¹¹⁶:

- “Changes in Earth’s climate have the potential to affect both the quality and quantity of groundwater”;

¹¹⁶ Earman, Sam and Michael Dettinger. 2011. Potential impacts of climate change on groundwater resources – a global review. *J. of Water and Climate Change* 2:4, pages 213-228.

- “...even if precipitation remains constant (or increases marginally), under warming conditions less runoff and recharge will likely result”;
- “For recharge to occur, enough water must infiltrate the unsaturated zone to overcome evapotranspirative and tensive demands between land surface and water table...changes in distributions of arrival times of storms or lengths of interstorm periods are likely to affect recharge rates.”;
- “In the semi-arid western USA, snowmelt is a much more likely source of groundwater recharge than rain...In the western USA, warming temperatures over the last ~ 50 years have already caused declines in snowpack accumulations and trends that favor rainfall over snowfall. Continued warming is expected to further decrease the amounts of snow that fall, even if precipitation volumes do not change significantly. Because snow-to-rain shifts replace a more efficient recharge agent (snowmelt) with a less efficient recharge agent (rainfall), such shifts have the potential to drive declines in the efficiency of groundwater recharge in snow-dominated areas.”;
- “Contributions of groundwater to surface-water flows may prove to be among the most vulnerable to climate change in many settings...in many systems, groundwater inflow is a major contributor (on the order of 25-75%) to streamflow even during peak flow periods like storms and snowmelt seasons...Most streams that receive groundwater inflow are shallow compared to the thickness of the aquifers that supply the inflow. As a result, streams typically receive their inflows only from the uppermost parts of the contributing aquifers. When declines in groundwater recharge or storage cause water tables to drop, those declines most immediately affect the water table or uppermost limits of the aquifers, which are the parts of the aquifer that contribute to streamflow. As a result, relatively small reductions in recharge and groundwater storage, resulting in relatively modest declines in water table altitudes, can translate into significant declines in groundwater contributions to streamflow.”;
- “...many ecosystems may be vulnerable to changes in groundwater – surface water relations that support them. Spring, wetland, riparian and estuary ecosystems are all quite responsive to natural fluctuations in flow to and through them, on time scales from hours to decades. If, in response to climate change, the partitioning of streamflow sources between faster, shorter duration surface-runoff sources and slower, longer duration groundwater-baseflow sources change, the impacts on ecosystems may be profound.”
- “If climate change alters the amount of time for, or the chemical conditions during, water-rock interaction, it could cause degradation in groundwater quality.”; and,
- Declines in groundwater storage (and the associated falling groundwater levels) resulting from reductions in recharge and/or increases in pumpage would be expected to result in smaller groundwater contributions to streamflow. A common impact of decreased baseflow in streams is increased streamwater temperature, because groundwater in many settings is cooler than water that has traveled over land to (and through) stream channels...Streamwater chemical quality may also be changed if groundwater contributions to streams change in response to climate...”

A U.S. Forest Service Report¹¹⁷ on the vulnerability of resources on the Humboldt-Toiyabe National Forest revealed the following pertinent facts:

- In the last 100 years, the region warmed by 0.5 to 1.5°C (1 to 3°F) and is projected to warm another 3.6 to 9°F (2 to 5°C) by the end of the century (Chambers and Pellant 2008).
- Winter temperatures are increasing more rapidly than summer temperatures, particularly in the northern hemisphere, and there has been an increase in the length of the frost-free period in mid- and high-latitude regions of both hemispheres (Loehman 2010).
- The onset of snow runoff in the Great Basin is currently 10–15 days earlier than 50 years ago, with significant impacts on the downstream utilization of this water (Ryan et al. 2008).
- Higher temperatures will increase evapotranspiration, the Palmer Drought is predicted to increase, and the region will likely become more arid (Chambers 2011).
- Spring events have been advancing by an average 2.8–3.2 days per decade. Species' range boundaries have shifted polewards with a mean velocity of 6 km per decade, as well as upward in elevation (Parmesan et al. 2011).
- Approximately 20% of the sagebrush ecosystem's native flora and fauna are considered imperiled, and many sagebrush-associated species are declining in numbers (Wisdom et al. 2005).
- Altered disturbance regimes and climate change have resulted in major changes in plant community composition. Since the 1860s, many bunchgrass and sagebrush–bunchgrass communities, which dominated the Intermountain West, have shifted to pinyon and juniper woodland or introduced annual dominated communities (Miller and Tausch 2000).
- Rapid expansion of invasive species can be attributed to ongoing perturbations resulting from elevated CO₂ and N deposition, past and present land uses, and the direct and indirect effects of climate change (Chambers and Pellant 2008).
- Noxious and invasive weeds are responding to increased CO₂ concentrations by increasing the rate of growth and plant biomass (Ziska 2003).
- Changes in stream environments will parallel trends in the climate system, with streams becoming warmer, more variable in flow timing and amount, and subject to more frequent extreme events that could be synchronized across broader areas through regional flooding, droughts, and wildfires. Climate change is also likely to influence channel structure and forest and riparian communities through altered patterns and severity or intensity of wildfire, inputs of sediment and large wood, and disturbances such as debris flows (Rieman and Isaak 2010).
- Due to an increase in precipitation as rain, we are likely to see higher stream flows in winter. Due to generally more arid conditions, increased evapotranspiration and warmer temperatures, summer stream flows will likely be reduced. In many low flow systems of the Great Basin, this could result in even higher water temperatures and drying of the stream systems in the summer. This will decrease connectivity for both aquatic organisms and riparian species. More variable and more extreme precipitation events could result in increased floods and exacerbate ongoing stream incision. (Chambers 2011).
- Climate change could affect rates of embryo development and the timing of emergence with the timing of available food sources. It will also likely effect aquatic species by altering

¹¹⁷ USDA Forest Service. April, 2011. Humboldt-Toiyabe National Forest Climate Change Vulnerability Report. 17 pages.

predation, competition, disease occurrence, growth rates, reproduction, migration, metabolism, forage availability and stress levels (Rieman and Isaak 2010).

- Riparian areas also serve as the foundation of much of the region's biological diversity. Declining conditions in riparian areas are likely to have cascading effects not only on aquatic species, but on the many upland species that use these ecosystems as their sole source of water (Chambers 2011).
- Big sagebrush habitats throughout the western U.S. could decrease in area by 59% before the end of the 21st century, with devastating consequences for sage grouse, mule deer, pronghorn and other species that depend on these habitats (Glick 2006).
- The loss of contiguous sagebrush habitat, due to increased fire occurrence and introduction of invasive plants, primarily cheatgrass, has diminished the ability of sage grouse to migrate between populations. The result is limited movement for mating, and lowered viability of the genetic pool needed for a sustainable population. A warmer climate will result in the loss of more sage grouse habitat.
- Arid ecosystems of the western U.S. are particularly sensitive to climate change and climate variability because organisms in the region live near their physiological limits for water and temperature stress. Slight changes in temperature or precipitation regimes, or in magnitude and frequency of extreme climatic events, can significantly alter the composition, abundance, and distribution of species (Archer and Predick 2008).
- The rarest plants of the Great Basin occur at the lowest elevations where they are typically restricted to specialized habitats that usually have only a few hundred foot elevation range. Valley floor taxa are more susceptible to stressors such as habitat modification or destruction and invasive species (Caicco et al. 2011).
- Approximately 85% of the water used by humans in the Great Basin and Rocky Mountain region flows from spring melt of mountain snow packs. Warmer wintertime temperatures and earlier melt dates will deplete this virtual reservoir, leaving much less available water for natural systems and human uses. Water resources in the region are totally allocated, with 80% of available water used for agriculture. (Loehman 2010).

Also not assessed by the DEIS is the impacts from the 34,742 tons of dust that will be generated annually from wind erosion across lands denuded of vegetation due to the pumping drawdown effects.¹¹⁸ Impacts from this dust will be exacerbated and enhanced by the impacts of climate warming and drying.¹¹⁹ Local impacts from this dust will be effected on the glaciers and snow cover of Great Basin National Park, and further afield on the snowpack of the Wasatch Range in Utah and the Southern Rocky Mountains in Colorado. Emerging research is finding that dust on snow increases the heat absorption of the snow which normally reflects back around 80% of the energy. The consequence is an earlier and faster snowmelt.¹²⁰ Locally in the DEIS study area this means that recharge to the groundwater aquifers fed by the Wheeler Peak Range will be less efficient and reduced. In the Wasatch and Rocky Mountain Ranges, it means that snowmelt will

¹¹⁸ DEIS, page 2-117.

¹¹⁹ Fahys, Judy. 2011. Climate change to create a dustier Southwest. Salt Lake City Tribune, May 15, 2011. Available at: <http://www.sltrib.com/sltrib/politics/51656888-90/climate-crusts-dust-livestock.html.csp>.

¹²⁰Painter, Thomas H., Jeffrey S. Deems, Jayne Belnap, Alan F. Hamlet, Christopher C. Landry, and Bradley Udall. Response of Colorado River runoff to dust radiative forcing in snow. *Proceedings of the National Academy of Sciences*, 2010; DOI: [10.1073/pnas.0913139107](https://doi.org/10.1073/pnas.0913139107).

occur faster, and runoff will be flashier, likely resulting in less flow captured in the Colorado River System. Painter and his colleagues estimate that Colorado River flows at Lee's Ferry are currently reduced by 5%, and that on the whole the system has lost 35 billion cubic feet of water due to the impacts of dust on snow.¹²¹ Nowhere does the DEIS mention, analyze or disclose this indirect and cumulative impact.

As shown above, the DEIS fails miserably in assessing and disclosing the combined impacts (direct, indirect and cumulative) of climate change and the groundwater mining.

While some uncertainty about the site specific impacts of global warming exist, for a regional scale analysis the BLM has more than adequate information to analyze and disclose the carbon footprint of the proposed action and the indirect and cumulative likely impacts on resources including air quality, water quality and quantity, aquatic ecosystems, and impacts to terrestrial ecosystems, including imperiled plants and animals.

Regarding the presence of a level of uncertainty about the precise degree of future change in climate conditions, uncertainty does not excuse the BLM from addressing this issue. As a report by the Climate Change Science Program states,

“It is not possible to predict the changes that will occur, but managers can get an indication of the range of changes possible. By working with a range of possible changes rather than a single projection, managers can focus on developing the most appropriate responses based on that range rather than on a ‘most likely’ outcome.”¹²²

In a Ninth Circuit case, *Center for Biological Diversity v. National Highway Traffic Safety Administration*, 508 F.3d 508, 555 (9th Cir. 2007), involving an NHTSA rule for corporate average fuel economy standards for light trucks, the court found that climate change satisfied several of the “intensity” factors in 40 C.F.R. § 5108.27(b). First, the court found that although the NHTSA rule at issue may have an “individually insignificant” effect on climate change, it may nonetheless have a “cumulatively significant” impact, thereby satisfying 40 C.F.R. § 1508.27(b)(7). In addition, the court found that climate change will affect public health and safety, satisfying 40 C.F.R. § 1508.27(b)(2).

The National Environmental Policy Act (“NEPA”) requires that each agency disclose relevant environmental information to the public and demonstrate that the agency took a “hard look” at the consequences of the proposed decision, and alternatives that might be pursued with less environmental harm, before making its decision. *See, e.g., Kern v. U.S. Bureau of Land Mgmt.*, 284 F.3d 1062, 1066 (9th Cir. 2002). To that end, agencies must first describe the environment of the area that will be affected by the proposed decision. 40 C.F.R. § 1502.15. In addition, agencies must “study, develop, and describe appropriate alternatives to recommend courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.” 42 U.S.C. § 4332(2)(E). This requirement applies whether the agency

¹²¹ Ibid.

¹²² Preliminary Review of Adaptation Options for Climate-Sensitive Ecosystems and Resources. June, 2008. U.S. Climate Change Science Program Final Report, Synthesis and Assessment Product 4.4. Available at: <http://www.climatechange.gov/Library/sap/sap4-4/final-report/default.htm> .

undertakes an environmental assessment (“EA”) or an environmental impact statement (“EIS”). 42 U.S.C. § 4332(2)(E); see 40 C.F.R. §§ 1501.2(c), 1508.9(b).

The BLM cannot ignore the gravity of the threat of climate change to life within the planning area, and not take a hard look at the impacts. Federal agencies’ mandatory duty to take a hard look at the ongoing impacts of global warming in NEPA documents has been affirmed by the courts. As the Ninth Circuit has recognized:

Global warming has already affected plants, animals, and ecosystems around the world. Some scientists predict that ‘on the basis of mid-range climate-warming scenarios for 2050, that 15-37% of species in our sample of regions and taxa will be ‘committed to extinction.’’ In addition, there will be serious consequences for human health, including the spread of infectious and respiratory diseases, if worldwide emissions continue on current trajectories. Sea level rise and increased ocean temperatures are also associated with increasing weather variability and heightened intensity of storms such as hurricanes. Past projections have underestimated sea level rise. Several studies also show that climate change may be non-linear, meaning that there are positive feedback mechanisms that may push global warming past a dangerous threshold (the ‘tipping point’).

See CBD v. NHTSA, 538 F.3d at 1190-91 (citations omitted).

Global warming’s well-established impacts on resources including air quality, water quantity and quality, and threats to aquatic and terrestrial ecosystems and imperiled plants and animals, when combined with the impacts from groundwater mining, will exacerbate the direct, indirect, and cumulative adverse impacts of the proposed project.

At a minimum, a description of the effects of climate change on existing conditions and resources, such as on important habitat for wildlife and habitat connectivity, the availability of water and the health of springs, streams, riparian areas and wetlands, air quality impacts from increased dust and hazardous materials carried into the wind, and the prevalence of exotic plant species, all provide critical baseline information necessary for the BLM to determine whether public land resources can withstand the adverse impacts from the proposed project. Without this basic foundational information about the existing impacts of climate change on the land, and future expected impacts, it is impossible to make informed decisions about the level, location, and kind of activities the land and its ecosystems can support in the future.

Given the tremendous significance and far-reaching implications of these analyses and conclusions, and the direct relevance of this information for the proposed action, the BLM must issue a supplemental DEIS to address the impacts and disclose it to the public for review and comment.

The Cumulative Impacts analysis found in the DEIS is deficient.

As defined by the CEQ regulations:

“Cumulative impact” is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. 40 C.F.R. § 1508.7.

A cumulative impact analysis must provide a "useful analysis" that includes a detailed and quantified evaluation of cumulative impacts to allow for informed decision-making and public disclosure. *Kern v. U.S. Bureau of Land Management*, 284 F.3d 1062, 1066 (9th Cir. 2002); *Ocean Advocates v. U.S. Army Corps of Engineers*, 361 F.3d 1108 1118 (9th Cir. 2004) (holding "[t]he Corps' findings about cumulative impacts [in an EA] were perfunctory and conclusory and do not provide a helpful analysis of past, present, and future projects"). The NEPA requirement to analyze cumulative impacts prevents agencies from undertaking a piecemeal review of environmental impacts. *Earth Island Institute*, 351 F.3d at 1306-7.

“The CEQ regulations also require that 'cumulative actions' be considered together in a single EIS.” *Thomas v. Peterson*, 753 F.2d at 759, quoting 40 C.F.R. § 1508.25(a)(2). “‘Cumulative actions’ are defined as actions ‘which when viewed with other proposed actions have cumulatively significant impacts.’” *Id.* A cumulative impact is defined as the impact on the environment that results from the incremental impact of the proposed actions when added to other past, present, and reasonably foreseeable future actions, and “can result from individually minor but collectively significant actions taking place over a period of time.” 40 C.F.R. § 1508.7. “Both connected actions and unrelated, but reasonably foreseeable, future actions may result in cumulative impacts.” *Save the Yaak*, 840 F.2d at 721.

At minimum, an adequate cumulative effects analysis must:

- 1) identify the past, present, and reasonably foreseeable actions of the BLM, proponent and other parties affecting each particular aspect of the affected environment;
- (2) provide quantitative information regarding past changes in habitat quality and quantity, water quality, resource values, and other aspects of the affected environment that are likely to be altered by agency permitted actions;
- (3) estimate incremental changes in these conditions that will result from agency actions in combination with actions of other parties, including synergistic effects;
- (4) identify any critical thresholds of environmental concern that may be exceeded by agency actions in combination with actions of other parties, and;
- (5) identify specific mitigation measures that will be implemented to reduce or eliminate such effects.

While the DEIS is partially successful in meeting these requirements, it fails to meet the standards established under regulations and court interpretations of these regulations.

The DEIS failed to include the Solar Energy Zones in Lincoln and Clark Counties that were analyzed in the BLM’s Draft Programmatic Environmental Impact Statement for Solar Energy

Development in Six Southwestern States (“DPEIS”)¹²³ as reasonably foreseeable future actions. The DPEIS identified four solar energy zones – Dry lake Valley North, Delamar Valley, East Mormon Mountain and Dry Lake, and for each estimated the likely amount of water required for construction, operation and maintenance. While the amount of water varied by type of solar technology, the BLM could easily have constructed a range of water needs, or made a good-faith assumption of the technology type based on what was provided in the DPEIS. Since the amount of water required by these facilities is significant, the impacts when combined with the proposed groundwater mining and other foreseeable projects would result in cumulative effects and impacts far in excess of those disclosed in the DEIS.

An area of grave concern is that of current and impending climate change. The DEIS largely ignored the connected and cumulative impacts and effects of climate change and the negative synergistic impacts changes in climate would have when combined with the proposed pumping and other foreseeable impacts.¹²⁴ Change in climate is a reasonably foreseeable future action as described by CEQ regulations.

The DEIS failed to describe the effects of climate change on existing conditions and resources, such as on important habitat for wildlife and habitat connectivity, the availability of water and the health of springs, streams, riparian areas and wetlands, air quality impacts from increased dust and hazardous materials carried into the wind, and the prevalence of exotic plant species. This information and analysis would provide critical baseline information necessary for the BLM to determine whether public land resources can withstand the adverse impacts from the proposed project. Without this basic foundational information about the existing impacts of climate change on the land, and future expected impacts, it is impossible to make informed decisions about the level, location, and kind of activities the land and its ecosystems can support in the future.

While the DEIS, in various commentary and tables in both its body and appendices, describes very basic information on the cumulative impacts, it does not provide sufficient specific information on the impacts, including the long term ramification for ecosystem and species viability and existence, particularly the synergistic and additive effects of the multiple impacts.

For example, with regards to greater sage grouse, two short paragraphs in Chapter 3 describe in the briefest of terms the cumulative pumping impacts on the grouse, and a map and a table in the appendices display grouse habitat and provide a percentage of vegetation type to be affected.¹²⁵ Nowhere in the DEIS is there an analysis done or disclosure made as to the meaning of this information with regards to the health and survival of the grouse. This superficial level of analysis sorely fails to meet the standards set by the Council on Environmental Quality in their NEPA regulations as well as direction provided in CEQ’s document, *Considering Cumulative Effects Under the National Environmental Policy Act*.¹²⁶

¹²³ See: <http://solareis.anl.gov/> .

¹²⁴ Refer to the section on climate elsewhere in these comments for more detail.

¹²⁵ DEIS, page 3.6-92 and Figure F3.6-10 and Table F3.6-17.

¹²⁶ Council on Environmental Quality. January 1997. *Considering Cumulative Effects Under the National Environmental Policy Act*. Available at: http://ceq.hss.doe.gov/publications/cumulative_effects.html .

To make matters worse, the analysis done for sage grouse is typical of that for other species of concern included in the DEIS.

Another flaw in the cumulative impacts analysis was the decision to only model impacts from a 10-foot or greater drawdown. Depending upon the hydro-geologic characteristics of the specific aquifer, a 1-10-foot drawdown could conceivably impact hundreds of square miles of terrestrial vegetation and untold springs and streams, even to the point that they dry or suffer significant adverse impacts. Hence, the impacts on aquatic and terrestrial ecosystems and species will likely be much greater than analyzed and disclosed as cumulative impacts in the DEIS.

A crucial part of cumulative impacts analysis process is to avoid, minimize or mitigate the significant cumulative effects. The DEIS fails to acknowledge this step and concentrates on mitigating proposed action-specific impacts. This is partially due to the poor overall job done in the DEIS identifying and analyzing the cumulative impacts. The CEQ guidance on cumulative impacts states, “If it is determined that significant cumulative effects would occur as a result of a proposed action, the project proponent should avoid, minimize, or mitigate adverse effects by modifying or adding alternatives.”¹²⁷ The guidance goes on to say,

“By analyzing the cause-and-effect relationships resulting in cumulative effects, strategies to mitigate effects or enhance resources can be developed. For each resource, ecosystem, and human community of concern, the key to developing constructive mitigation strategies is determining which of the cause-and-effect pathways results in the greatest effect. Mitigation and enhancement strategies that focus on those pathways will be the most effective for reducing cumulative effects.”¹²⁸

Again, we observe that from the language and expectations expressed in the CEQ guidance, it is quite clear that the BLM has failed to fulfill their regulatory and legal obligations under the NEPA.

To remedy these deficiencies, the BLM must conduct further analysis and disclose it for public review and comment in a supplemental DEIS.

The DEIS fails to adequately analyze and disclose the impact from groundwater pumping related subsidence and aquifer compaction.

Subsidence is the movement or sinking of the land’s surface, in this context, caused by the removal of water beneath the land’s surface. A primary cause is the loss of internal support within an aquifer provided by the water it contained, and the subsequent compaction of clays and silt causing the land surface to fall.¹²⁹

¹²⁷ Ibid.

¹²⁸ Ibid.

¹²⁹ DEIS, Glossary page 18.

The DEIS does disclose dramatic and disturbing predicted subsidence that is modeled to occur as a result of the proposed action. It predicts that over 2500 square miles will experience subsidence of at least 1-foot in depth, including 525 square miles where subsidence will cause drops in land surface greater than 5-feet. Additionally, another 647 square miles will experience subsidence less than one foot.¹³⁰

Such long term declines in groundwater levels and the resulting subsidence result in serious, irreversible consequences – that is the lowering of the land surface elevation is permanent and cannot be appreciably reversed. For instance, subsidence has caused large areas of human habitation to be abandoned in North Las Vegas, Nevada, Houston-Galveston, and parts of Arizona and California. Infrastructure of all sorts can be damaged or destroyed, including roads, homes, bridges, canals storm and sanitary sewers and wells.¹³¹

One feature of subsidence is the development of surface cracks. These cracks develop in the aquifer and spread up to the land's surface. Once a crack appears, it will likely continue to grow as the aquifer is further depleted. As a result, a direct connection is established between the surface and contaminants found there to move downward to the aquifer resulting in pollution of the groundwater.¹³²

As a result, drinking water would need additional treatment before use. While this is not a major problem for the SNWA since they will as a matter of fact do subsequent treatment once the waters reach their facilities in the Las Vegas Valley, it is a significant problem for rural communities and individuals who depend upon clean groundwater and who lack the means of subsequent treatment.

Another concern associated with land surface cracks is the hazards they pose for humans, livestock and native wildlife. Recreationists, particularly those on motorized equipment are at increased risk of injury and death from falling into hard to observe chasms. Livestock, a significant source of possible contaminants, are also at risk from falling into the cracks as are wildlife, particularly small creatures that may lack the ability to escape from the steep-sided fissures.

Land subsidence and surface cracks cause many other problems such as cutting off connections between springs and streams and their nourishing groundwater supply, thus destroying these important aquatic and riparian areas and the wildlife that depend upon them.

Utah Division of Water Resources. July 2005. Conjunctive Management of Surface and Ground Water in Utah. Utah State Water Plan. Pages 19-22. Available at: www.water.utah.gov/waterplan .

¹³⁰ DEIS, Table 3.2-6.

¹³¹ Ibid, Utah Division of Water Resources, page 19.

¹³² Ibid, pages 21-22.

Land subsidence and the associated aquifer level declines adversely impacts native vegetation and the species that depend upon them.¹³³

Subsidence has a further disproportionate impact on rural communities and individuals who depend on wells for their water supply. The increased electrical energy cost to pump water is directly proportional to the aquifer level decline. Additionally, as aquifer elevations drop, wells will need to be re-drilled and deepened and new more powerful pumps installed at significant cost. Eventually, there could be a complete loss of groundwater supply and aquifer storage capacity as the water's elevation declines below the point of economic feasibility.¹³⁴

The DEIS fails miserably in analyzing and disclosing the ecological, economic and social impacts associated with subsidence. In fact, only a brief 5-line description is included in Chapter 3.2, and an even briefer mention is provided in Chapter 4 on Irreversible and Irretrievable Commitment of Resources.¹³⁵

Considering that over 3000 square miles are potentially impacted by groundwater pumping related subsidence, and the scope and magnitude of the potential impacts, the BLM must prepare a supplemental DEIS that more fully and comprehensively analyzes and discloses the impacts and provide it to the public for further review and comment.

The DEIS fails to describe how the BLM will protect federal water rights, reserved and other, from the deleterious impacts of the proposed ground water mining.

Lacking is any discussion on how the BLM will ensure that federal water rights held by the National Park Service (“NPS”), U.S. Fish and Wildlife Service (“FWS”), Forest Service (“FS”) and itself will be protected from diminishment by the proposal.

Great Basin National Park is a unit of the National Park System established in 1986. It is managed by the NPS under the Park Service Organic Act, which requires it be managed to, “protect, manage, and administer the park in such manner as to conserve and protect the scenery, the natural, geologic, historic, and archaeological resources of the park, including fish and wildlife and to provide for the public use and enjoyment of the same in such manner as to perpetuate these qualities for future generations.”¹³⁶ The DEIS identifies dozens of springs, streams and cave system that will be adversely impacted by ground water withdrawals.¹³⁷ These aquatic habitats in turn provide habitat to numerous fish, invertebrates and amphibians, some of which will be discussed below.¹³⁸

¹³³ See comment section on biological resources provide in this document.

¹³⁴ Ibid, page 19.

¹³⁵ DEIS, page 3.2-30 and Table 4.0-1.

¹³⁶ 16 U.S.C. § 410mm-1(a).

¹³⁷ DEIS, pages 3.3-18 – 25.

¹³⁸ DEIS, Figures 3.7-3, 3.7-4, and 3.7-5.

There are three National Wildlife Refuges (“NWR”), managed by FWS, which are at risk due to impacts from the proposed ground water mining. NWR’s enjoy reserved federal water rights consistent with their reason for creation and necessity for management.¹³⁹

The Pahranaagat NWR was established in 1963, primarily for migratory bird species, but it is also home to imperiled species such as the Southwestern willow-flycatcher, desert tortoise, Hubbs pyrg, grated Tryonia, and Pahranaagat pebblestone springsnails, northern leopard frog, and Pahranaagat roundtail chub and Pahranaagat speckled dace. Predicted drawdowns of 10-20 feet are possible after 200-years, and even greater drawdowns are possible considering cumulative effects.¹⁴⁰

The Moapa Valley NWR was established in 1979 to secure habitat for the endangered Moapa dace, a small fish commonly found throughout the headwaters of the Muddy River system. In the last decade, dace populations have declined due to habitat destruction and modification. Other imperiled species found there include the threatened desert tortoise, the Moapa White River springfish, and the Moapa pebblesnail, grated tryonia, Moapa warm spring riffle beetle, Amargosa naucorid, and the Moapa naucorid. Predicted drawdowns at 200-years with cumulative effects included would be in the range of 10-20 feet, resulting in a 61% reduction of spring flows.¹⁴¹

Fish Springs NWR was established in 1959 specifically to protect aquatic, riparian and wetland species such as the Utah chub, least chub and speckled dace fish, invertebrates, amphibians such as the Columbia spotted frog and northern leopard frog, and migratory birds. The DEIS does not project any drawdowns in excess of 10-feet, but did not analyze drawdowns less than 10-feet, leaving impacts open to speculation.

Congressionally designated Wilderness managed by the FS is found within the impact study zone at Mt Moriah, High Schells, Bald Mountain, Red Mountain, Grant Range, Rainbow Mountain, Mt Charleston and La Madre Mountain Wildernesses. NPS managed impacted Wildernesses include Mt. Wheeler, Muddy Mountains, Jimbilnan and Pinto Valley Wildernesses. BLM managed Wilderness include Arrow Canyon, Becky Peak, Big Rocks, Bristlecone, Clover Mountains, Delamar Mountains, Far South Egans, Fortification, Goshute Canyon, Government Peak, Highland Ridge, Meadow Valley Range, Mormon Mountains, Mt Graffton, Mt. Irish, Mt. Moriah, Parsnip Peak, South Pahroc Range, South Egan Range, Weepah, and White Rock Wildernesses. Reserved federal water rights for designated Wilderness areas are inferred by the language of the Wilderness Act of 1964: areas are designated, “for the preservation and protection (of wilderness areas) in their natural condition...(in order) to secure for the American people of present and future generations the benefits of an enduring resource of wilderness.”¹⁴² In addition, there are several BLM Wilderness Study Areas which the BLM is tasked to manage so to protect their Wilderness values for the further action of Congress.

¹³⁹ Ibid Dubuc, pages 10-14.

¹⁴⁰ DEIS, Figures 3.3.2-5 and 3.3.3-5.

¹⁴¹ DEIS, Figure 3.3.3-5 and page 3.3-201.

¹⁴² 16 U.S.C. § 1131.

In addition to these federal reserved rights created for refuges, parks and wilderness, there are other federal water rights for water in springs and watering holes held by the BLM and FS. These are established under the authority of the agency's Organic Acts and the Public Water Reserve No. 107 (PWR 107) executive order. The Department of Interior's Board of Land Appeals holds that PWR 107 claims for water rights on the public domain also include water needed to grow crops and to sustain fish and wildlife, as well as water for flood, soil, fire, and erosion control.¹⁴³ Many of the springs and water features outside of Parks, Refuges and Wilderness Areas are critically important to the long term survival and viability of imperiled species associated with them – often springsnails, fish or riparian birds and amphibians. The DEIS fails to adequately inventory and describe federal water rights and also fails to describe how such rights will be defended from take by the SNWA project. With respect to federal reserved water rights, these are considered to be federal property, protected by federal law and court precedence, and cannot be given away by federal agencies, nor can an agency turn a blind eye to such a taking.¹⁴⁴ What's more, a federal agency has a legal obligation to defend and protect federal reserved water rights.¹⁴⁵

A supplemental DEIS must be prepared to correct this deficiency and to afford the public an opportunity to review and comment on its adequacy.

The DEIS fails to analyze the impacts on local communities and Great Basin National Park as a result of a degraded environment.

Public Law 99-565, which established the Great Basin National Park ("GBNP") in speaking of the park's purpose, states,

“...to preserve for the benefit and inspiration of the a representative segment of the Great Basin of the Western United States possessing outstanding resource and significant geological and scenic resources.”

The very purpose of the GBNP will be threatened by the ecological degradation caused by the proposed groundwater mining.

The ecosystems in and around the park will be altered at very fundamental levels. Among the irreversible and irretrievable impacts disclosed in the DEIS are the following:

- A 192,000 acres of iconic Great Basin shrublands will be destroyed or degraded significantly, and replaced by plant species requiring low moisture levels such as annual grasses and forbs and non-native invasive species such as cheatgrass and Sahara mustard.¹⁴⁶ With the disappearance of the shrubland, equally iconic Great Basin wildlife species such as greater sage grouse, mule deer, pronghorn antelope and Rocky Mountain elk will also be lost in the affected areas.¹⁴⁷

¹⁴³ Dubuc, pages 13-14.

¹⁴⁴ Yeutter, 911 F.2d at 1414 n.5 and 1419.

¹⁴⁵ High Country, 448 F.Supp.2d at 1250.

¹⁴⁶ DEIS, page 3.5-48.

¹⁴⁷ DEIS, pages to 3.6-75.

- Over 8,000 acres of lush meadows of native plants, currently supported by shallow ground or surface water, will disappear and with them native animal species such as the Columbia spotted frog, northern leopard frog and insect-eating bats and birds.¹⁴⁸ Up to 305 springs and over a hundred miles of perennial streams will be adversely impacted, or dried altogether, resulting in loss of native aquatic species such as the Bonneville cutthroat trout and springsnails.¹⁴⁹
- Karst and cave resources, a keystone of the GBNP's identity would be threatened.
- Land subsidence will occur on over 2500 square miles, including 525 square miles with subsidence over 5-feet in depth.¹⁵⁰ Over 34,700 tons of new dust will be generated annually.¹⁵¹

In short, the entire character and natural heritage of the Great Basin will be eliminated or severely adversely impacted in or around the GBNP. The ability of the park to fulfill its establishment objectives would be called to question.

Park visitations would undoubtedly decline as the surrounding area is laid bare – there would no longer be a Great Basin ecosystem to be experienced with native vegetation gone. The dust generated would obscure scenic views and damage pristine dark night skies that are now a unique feature of the park and for visitations.

While the impacts of the nature and fundamental attractiveness of the GBNP are an important aspect, equally important are the impacts to the gateway communities to the park, particularly in Snake Valley in Nevada and Utah.

Currently these communities are small and rural with a great dependence on farming and ranching to sustain them. And, as the GBNP's resources and appeal are degraded, the currently meager tourism-based economy is likewise threatened with the reduced visitations. As groundwater tables fall due to the pumping, the very existence of these rural communities is threatened.

Co-laterally, the GBNP needs the gateway communities to provide the infrastructure and services to cater to the park's visitors. Without visitors, the park flounders. While this tourism-based aspect to the economy is relatively small, there is a large potential to greatly increase park visits from both U.S. citizens and international visitors. Hence, the citizens of the U.S. who own the GBNP through the National Park System have a vested interest in seeing that the local gateway communities are protected from the impacts of the groundwater mining.

The DEIS fails to examine this crucial environmental-social-economic aspect. A supplemental DEIS must be prepared to address this deficiency and presented to the public for review and comment.

¹⁴⁸ DEIS, page 3.5-48.

¹⁴⁹ Ibid.

¹⁵⁰ DEIS, page 3.2-30.

¹⁵¹ DEIS, page 3.1-59.

The DEIS fails to analyze and disclose the financial aspects of the pipeline project.

Nowhere in the DEIS is there any disclosure or discussion of the economic costs and impacts from the proposed pipeline and groundwater mining. Such an analysis should be a fundamental part of the BLM's responsibility to determine the fiscal ability of the SNWA to successfully complete and implement their proposal before approving and issuing a right-of-way permit.

Part of such an analysis must be not only the ability of the SNWA to successfully construct the project, but also their ability to operate and maintain it and their ability to fulfill commitments made in the DEIS, and connected Stipulated Agreements, for monitoring and mitigation that would detect and reduce expected environmental impacts.

It is a matter of public record that the cost of construction will be close to \$15.5 billion in terms of 2007 dollars.¹⁵²

It is further a matter of the public record that this estimate does not include operation and maintenance costs, the costs of distributed pumping, or the costs of monitoring and mitigation.¹⁵³

Council on Environmental Quality directions require agencies to assess the ability of proponents to fulfill promises made regarding monitoring and mitigation, and to not rely on or include actions that are suspect.¹⁵⁴

This DEIS has not fulfilled these requirement or stewardship responsibilities to the American people. As a result, the BLM must prepare a supplemental DEIS that analyzes and discloses the true costs of this proposed action, including the promised monitoring and mitigation measures, and provide it to the public for further review and comment.

¹⁵² Hobbs, Ong and Associates. June 27, 2011. Ability to Finance Report to the Southern Nevada Water Authority. 123 pages.

¹⁵³ Testimony of Richard Holmes, SNWA, Deputy General Manager Engineering/Operations. Before the Nevada State Engineer, September 27, 2011.

¹⁵⁴ See the section on Monitoring and Mitigation in these comments.