EXECUTIVE SUMMARY

Project Background

The Southern Nevada Water Authority (SNWA) applied to the Bureau of Land Management (BLM) for issuance of rights-of-way (ROWs) to construct and operate a system of regional water supply facilities known as the Clark, Lincoln, and White Pine Counties Groundwater Development (GWD) Project in southeastern Nevada. The GWD Project includes construction and operation of groundwater production wells, water conveyance facilities, and power facilities. The majority of the proposed production wells and facilities would be located on public lands managed by BLM.

BLM's action on the ROW applications is subject to the provisions of the National Environmental Policy Act (NEPA). The BLM has determined that the proposed project requires the preparation of an Environmental Impact Statement (EIS). The EIS will consider the potential environmental effects of issuing a ROW for construction and operation of the proposed facilities, including the withdrawal of groundwater resources. SNWA anticipates that the total volume of water to be developed and conveyed through the GWD Project would be up to 180,000 acre-feet per year from Coyote Spring, Delamar, Dry Lake, Tikaboo North, Cave, Spring, and Snake Valleys.

Public Scoping Process and Comment Summarization

The scoping process for the proposed GWD Project involved the distribution of a scoping information package to the public, nine public scoping meetings, a 4-month scoping comment period, and documentation of comments and issues in a report. The focus of this scoping effort, which was conducted from April 8 through August 1 of 2005, was the proposed GWD Project, as described above in the Project Background.

After publication of a Notice of Intent to prepare an EIS, the BLM notified the public of nine scoping meetings that were held in various communities in Clark, Lincoln, and White Pine Counties (Nevada) and Toole and Juab Counties (Utah) between April 26 and May 11, 2005. The public was offered the opportunity to provide oral and written comments at scoping meetings. A total of 648 individuals attended the scoping meetings, of which 210 individuals provided oral comments. The scoping period extended from April 8 to August 1, 2005. A total of 954 letters were received from agencies, organizations, businesses, and individuals. Of this total, 462 were received from Nevada, 395 from Utah, and 97 from other states or countries. A total of 4,958 form letters (mainly e-mail) were received from non-governmental organizations.

Oral and written comments were reviewed and entered into an electronic database by EIS topic. Comments were then compiled, and summarized into EIS issues for presentation in this scoping report.

Preliminary EIS Issues and Next Steps

The following sections provide a summary of the primary issues and concerns that were raised by the public and agencies during the scoping period. The identified preliminary issues and the proposed level of treatment in the EIS represent the first steps in developing the EIS content. The BLM and the cooperating agencies will further review these issues and refine them for EIS analysis. The Draft EIS will include a rationale for the level of analysis of the various issues.

NEPA Process

Primary Issues: *1) coordination between BLM and other federal, state, and local agencies with jurisdiction over various aspects of the proposed project; 2) EIS process integrity, including public disclosure of data and analysis used to prepare the EIS, and qualifications of EIS preparers; 3) consistency of the public scoping process with NEPA requirements; and 4) EIS schedule, including concerns about the relative schedules of the EIS and the USGS Basin and Range Carbonate Aquifer System Study (BARCASS), and the potential need for additional data collection.*

Purpose and Need

Primary Issues: *1) the relationship between future population growth in Las Vegas and future water demands; 2) the potential for additional water supplies to induce future growth.*

Project Description

Primary Issues: *1) project capital and operational costs; 2) project water volume withdrawal estimates, including pumping rates from the aquifers; 3) site-specific well and gathering pipeline locations; 4) pipeline system design, including pump stations, powerlines, and water treatment facilities; 5) project construction methods, including reclamation; 6) project operations monitoring, and monitoring responsibilities; 7) project bonding and compliance enforcement; 8) project abandonment plans.*

Alternatives

Primary Issues: *A variety of alternatives to the SNWA groundwater project were suggested by the public. Alternative concepts included: 1) construction and operation of a desalination plant on the Pacific Ocean that would supply water to California, or to Mexico- water stored in Lake Mead would then be diverted by Las Vegas; 2) improved water conservation in Las Vegas that would offset the need for adding water supplies; 3) improved water conservation on irrigated lands, resulting in more water in Lake Mead that could be diverted by Las Vegas; 4) modification of the Colorado River Compact to provide Nevada with a greater share; 5) water banking using underground storage; 6) surface water diversions from large regional rivers (e.g., Columbia River system, major rivers draining the west slope of the Sierra Nevada in California), with delivery to Las Vegas via existing canal systems and new pipelines; 7) groundwater pumping alternatives (lower volumes and rates, different pumping schedules, different well locations). Alternative powerline locations were recommended to avoid sensitive wildlife resources and reduce visual resource impacts.*

Connected Actions, Related Projects, Cumulative Impacts

Primary Issues: *1) determination of whether the SNWA project and other proposed water development projects in Lincoln and Clark Counties should be included in a single EIS; 2) evaluation of the cumulative effects of other existing and proposed water development projects, energy development projects, and other surface disturbing projects within the same geographic region.*

Natural and Human Resources

Climate and Air Quality

Primary Issues: *1) Potential reductions in air quality in Las Vegas resulting from induced growth; 2) potential increases in particulate levels from construction dust.*

Geology

Primary Issues: 1) *maintenance of the integrity (structure, water supply) of caves located in mountain ranges located adjacent to basins where groundwater withdrawal is proposed (Cave Valley, Snake Valley, Spring Valley); 2) ground subsidence caused by long term groundwater withdrawals; 3) location of project facilities in relation to existing and proposed mining areas; 4) protection of paleontological resources.*

Soils

Primary Issues: 1) *potential for wind-transported dust during construction and the need for dust control; 2) success of disturbed soil stabilization and rehabilitation in low rainfall areas.*

Water Resources and Water Rights

Primary Issues*: 1) study area definition and time frame for estimating groundwater drawdown effects; 2) the quantity and quality of hydrologic and geologic data to be used to define aquifer characteristics and recharge; 3) a realistic assessment of water available for exportation from individual groundwater basins; 4) protection of existing water rights from injury; 5) allocation of groundwater resources in the Snake Valley hydrographic basin between Utah and Nevada; 6) the validity and accuracy of the simulation models to be used to predict effects on sensitive water dependent resources and uses (springs, streams, irrigation and residential water supply wells); 7) potential groundwater drawdown effects on water quantity and quality from pumping in both the long- and short-term, and how drawdown effects will be quantified; 8) how irreversible changes to groundwater dependent uses and resources would be prevented (monitoring programs and changes in pumping regimes); and 9) if irreversible reductions in groundwater quantity and quality occur, how these reductions would be compensated.*

Biological Resources

Primary Issues: *1) characterization of aquatic and wetland communities, terrestrial vegetation, and wildlife populations potentially affected by project construction and operation; 2) project construction effects (habitat reductions, habitat fragmentation, increased human presence and traffic, breeding disruption); 3) project aboveground facility effects (noise, lighting, powerline-associated raptor collision and electrocution hazards); 4) potential groundwater drawdown effects on the viability and extent of groundwater and surface water dependent terrestrial, aquatic, and cave-dwelling species populations and associated habitats; 5) biological resource monitoring and restoration during project construction and operation.*

Wild Horses and Burros

Primary Issues: 1) *potential reduction in water sources and forage for wild horse and burro populations from groundwater drawdown; potential disturbance to wild horses and their habitat from pipeline construction*.

Land Use

Primary Issues: *1) project compatibility with existing uses and management plans; 2) collocation of project facilities within existing or designated utility corridors; 3) potential groundwater drawdown effects on surface water sources (springs), and wells used for crop irrigation, domestic drinking water, livestock water sources, and on rangeland productivity; 4) potential groundwater drawdown effects on ecosystems within designated protected areas (e.g., Great Basin National Park, wildlife refuges and management areas); 5) highway and secondary road traffic flow maintenance during construction; 6) potential changes in public land access as a result of project construction.*

Aesthetics

Primary Issues: 1) *modifications to natural landscapes caused by construction of aboveground facilities (primarily powerlines) that can be viewed by highway travelers and visitors to protected areas; 2) noise generated by pumping stations.*

Cultural Resources

Primary Issues: *1) identification and protection of archaeological sites potentially disturbed by project construction; 2) identification and protection of traditional cultural properties.*

Socioeconomics

Primary Issues: *1) potential effects on the economic viability of farms and ranches and associated rural lifestyles; 2) compensation for any irreversible impacts to groundwater quantity and quality; 3) potential foreclosure of future economic development in counties and communities where groundwater development would occur; 4) fiscal costs and benefits to federal, state and local governments from project construction and operation; 5) environmental justice (disproportionate project effects on poor and minority populations); 6) loss of local control over the future because of the perception that Las Vegas is the dominant political and economic power within Nevada; 7) mitigation and compensation for project-caused environmental, economic, and social effects.*

Public Health and Safety

Primary Issues: *1) potential exposure to wind-borne dust containing radioactive particles from previous aboveground nuclear testing; 2) security for water pumping and conveyance facilities.*

CONTENTS

LIST OF TABLES

LIST OF FIGURES

1.0 INTRODUCTION

A primary principle of the NEPA is full public disclosure and open public participation in the decision-making process. The BLM, the lead federal agency for the Clark, Lincoln, and White Pine Counties Groundwater Development EIS, is required to provide sufficient notification and opportunity for public involvement during EIS preparation. Throughout the process, the lead agency must inform the public of all public meetings, hearings, and the availability of project documentation and information.

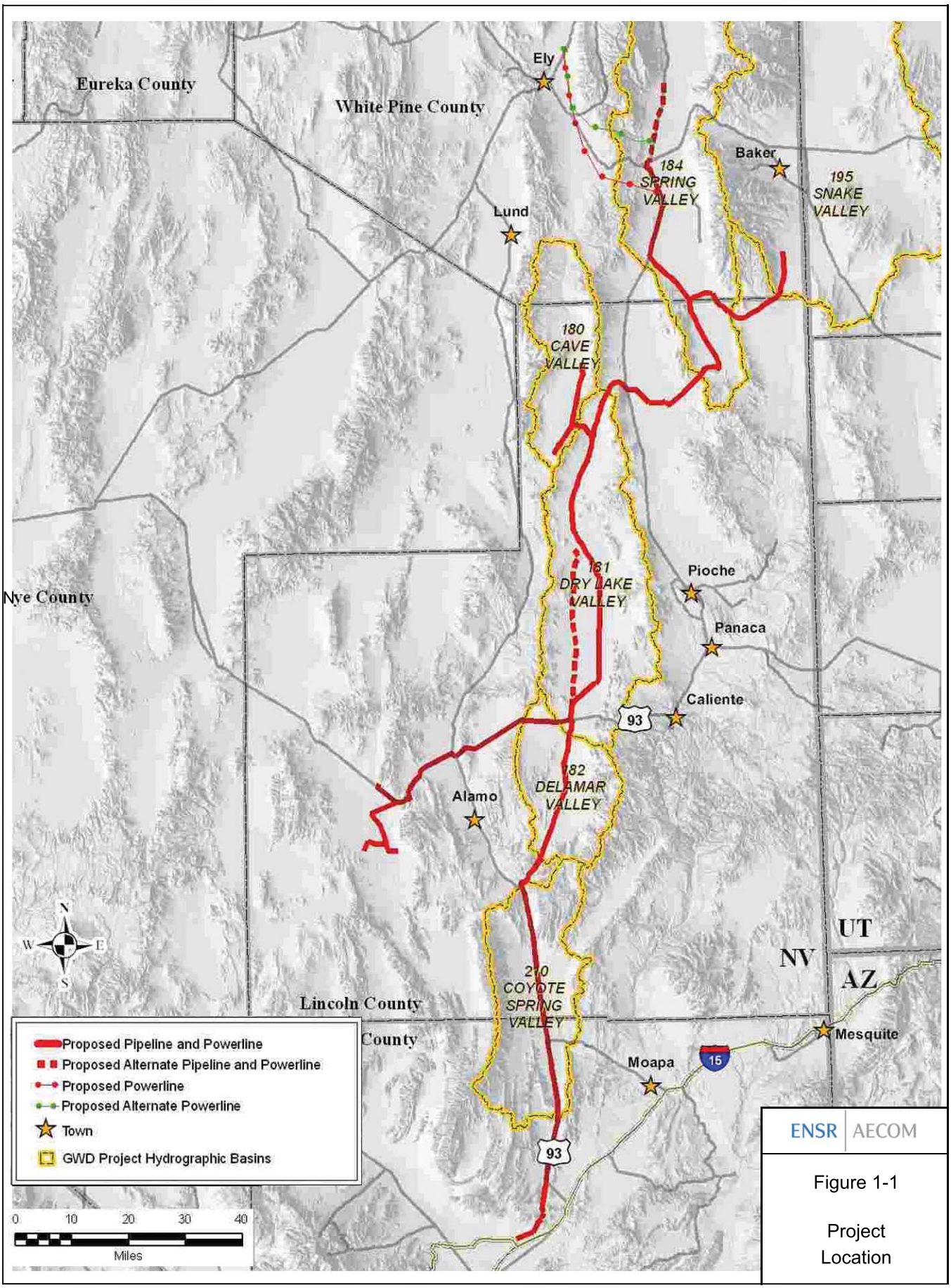
The scoping process for the proposed GWD Project involved the distribution of a scoping information package to the public, nine public scoping meetings, a 4-month scoping comment period, and documentation of comments and issues in a report. The focus of this scoping effort, which was conducted from April 8 through August 1 of 2005, was the proposed GWD Project, as described in Section 1.1 of this report.

1.1 Project Description

SNWA has applied to the BLM for issuance of ROWs to construct and operate a system of regional water supply facilities known as the Clark, Lincoln, and White Pine Counties Groundwater Development (GWD) Project. The GWD Project includes construction and operation of groundwater production wells, water conveyance facilities, and power facilities in Nevada. The majority of the proposed production wells and facilities would be located on public lands managed by BLM.

BLM's action on the ROW application is subject to the provisions of the NEPA. The BLM has determined that the proposed project requires the preparation of an EIS. The EIS will consider the potential environmental effects of ROW issuance for construction and operation of the proposed facilities, including the withdrawal of groundwater resources. SNWA anticipates that the total volume of water to be developed and conveyed through the GWD Project would be up to 180,000 acre-feet per year from Coyote Spring, Delamar, Dry Lake, Tikaboo North, Cave, Spring, and Snake Valleys.

As shown on the GWD Project overview map (**Figure 1-1**), the primary transmission pipeline would extend north from the Las Vegas Valley, through Coyote Spring, Delamar, Dry Lake, and Spring Valleys. Secondary lateral pipelines would extend into Snake, Cave, and Tikaboo North Valleys. Smaller conveyance pipelines connecting individual wellfields to either the laterals or primary transmission pipeline also are planned. All pipelines would be buried. Final locations for individual wellfields, as well as the number of wells in each valley have not yet been determined, but preliminary exploratory areas in those valleys have been identified. Pumping stations would be



ENSR | AECOM

Figure 1-1

Project Location

required to transport water over higher elevations and may be required to pump water from some wellfields, depending on the final wellfield locations.

An aboveground electrical powerline (230 kilovolts [kV]) would be constructed along the transmission pipeline route, with at least two primary electrical substations. The 230-kV powerline would connect, on the north end, into the existing Gondor Substation located near Ely and into the existing Silverhawk Substation located in the Apex area on the south end of the project. Additional electrical distribution lines (69 kV or smaller) would be built to smaller substations located adjacent to the pumping stations and well sites.

Two hydropower generation turbines would be placed within the pipeline and would generate some electrical power. Disinfection and corrosion control treatment near the terminus of the pipeline also would be required, as well as possible treatment at wellheads or conveyance pipelines.

1.1.1 Water Facilities

- 115 to 195 wells to produce up to 180,000 acre-feet per year
- 235 miles of 54- to 78-inch-diameter buried mainline pipeline
- 110 miles of 24- to 36-inch-diameter buried lateral pipeline
- 6 pumping stations (Coyote Spring, Tikaboo [2], Spring, Snake Valleys)
- 40-acre water treatment site in Apex
- 20-million-gallon reservoir in northeast Las Vegas Valley

1.1.2 Power Facilities

- 250 miles of 230-kV overhead powerline
- 95 miles of 69-kV overhead powerline
- 2 primary substations
- 2 hydro turbine energy recovery facilities (Dry Lake and Coyote Spring Valleys)

2.0 EIS PUBLIC INVOLVEMENT OVERVIEW

2.1 EIS Process

The process for preparing the EIS for the SNWA GWD is shown in **Figure 2-1**. Comments provided during the completed scoping period will be considered in the upcoming months as BLM staff and the cooperating agencies begin to formulate alternatives, conduct impact analyses, and select an "Agency Preferred Alternative". This work will be summarized in a Draft EIS. Once the Draft EIS is released, there will be a 90-day Public Comment Period, allowing the public to respond to the draft document. During the Public Comment Period, public meetings will be held in Nevada and Utah. These comments will be considered and incorporated as appropriate into the Final EIS. The BLM will issue a Notice of Availability (NOA) when the Final EIS is released for public review. A minimum of 30 days must pass before the BLM can notice and release a Record of Decision, which explains the alternative selected.

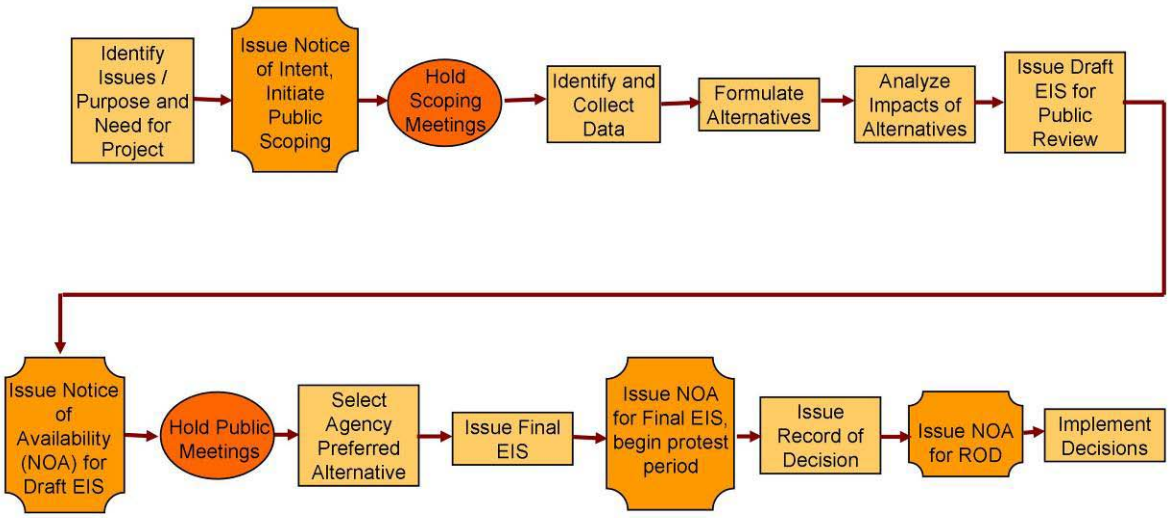


Figure 2-1. EIS Process

2.2 Notice of Intent

The initial step in this EIS process was to notify the public and other government agencies of the lead agency's intent to prepare an EIS by publishing a Notice of Intent (NOI) in the Federal Register on April 8, 2005. The NOI included a summary of the proposed project; notice of the public scoping meetings; and BLM contact information.

2.3 Public Scoping

The purpose of public scoping is to actively acquire input from the public and other interested federal, state, tribal, and local agencies about the proposed project. Information received during scoping assists the BLM in identifying potential environmental issues/impacts, alternatives, and mitigation measures associated with development of the project. The process provides a mechanism for focusing and clarifying the issues, so that the EIS will address the primary areas of concern.

BLM sent out a public scoping package dated April 8, 2005, to its mailing list, consisting of approximately 2,000 individuals and organizations. This package included a cover letter, schedule of scoping meetings, a description of the SNWA Proposed Action, preliminary issues and alternatives, and a public scoping comment form. The BLM also issued press releases to local and regional radio stations and newspapers.

Public scoping meetings provide an opportunity for information exchange about the proposed project and public input. Public comments (both verbal and written) were received during nine official public scoping meetings for the Clark, Lincoln, and White Pine Counties Groundwater Development Project. The scoping meetings were conducted in an open house format. Attendees were provided project information and the opportunity to ask resource specialists questions and express their concerns about the project. Display boards showing project location, resource information, and the NEPA process aided in the information exchange with meeting attendees. A facilitator was employed to manage the submittal of verbal comments at each scoping meeting. The facilitator ensured that all attendees who wanted to speak were given the opportunity to be heard. The BLM received verbal comments from the public during the scoping meetings and notes were taken. Meeting dates and places, and the number of attendees and speakers for the nine scoping meetings are provided in **Table 2-1**.

Table 2-1
Summary of Public Scoping Meetings

Meeting Location	Dates	Number of Signed-in Participants	Number of Speakers
Bristlecone Convention Center, Ely, Nevada	Tuesday, April 26, 2005	131	30
Baker School Gymnasium, Baker Nevada	Wednesday, April 27, 2005	138	49
Caliente Youth Center, Caliente, Nevada	Thursday, April 28, 2005	30	8
Ambulance Barn, Alamo, Nevada	Tuesday, May 3, 2004	14	5
Alexis Park, Las Vegas, Nevada	Wednesday, May 4, 2005	112	29
Airport Plaza, Reno, Nevada	Thursday, May 5, 2005	70	24
Plaza Hotel, Salt Lake City, Utah	Monday, May 9, 2005	60	20
Crystal Inn Hotel, Cedar City, Utah	Tuesday, May 10, 2005	39	9
Fair Building, Delta, Utah	Wednesday, May 11, 2005	63	36

The public scoping period for the Clark, Lincoln, and White Pine Counties Groundwater Development Project originally was to end on June 15, 2005; however, the BLM extended the scoping comment period to August 1, 2005, due to the proposed project's complexity and considerable public interest. The extension accommodated the public's request and desire to provide meaningful public input and to prepare their comments for submittal to the BLM.

Comments were then compiled into the scoping issues report (this document), which is available to the public, and as part of the official Administrative Record (AR). The issues included in this report will be further evaluated and refined by the BLM and the cooperating agencies before preparation of the Draft EIS begins.

Once the environmental analysis is complete, a Draft EIS will be prepared for public review and comment. During the public review period, formal hearings will be conducted to allow the public to participate by providing public comment on the Draft EIS. Public comments will be compiled and evaluated; then responses to the comments will be prepared and incorporated into the Final EIS.

A Record of Decision (ROD) will be prepared by BLM that documents the lead agency's decisions to approve all, part, or none of the proposed project.

3.0 RESULTS OF SCOPING

A total of 954 letters were received from agencies, businesses, and individuals. Of this total, 462 were received from Nevada, 395 from Utah, and 97 from other states or countries. A total of 4,958 form letters were received from non-governmental organizations. A list of governmental and non-governmental organizations is presented in **Table 3-1**.

Table 3-1
Agencies and Organizations Submitting Comments

Federal Agencies
Department of Interior, Bureau of Land Management – Ely Field Office, Ely, Nevada; Las Vegas Field Office, Las Vegas, Nevada; Fillmore Field Office, Fillmore, Utah; Arizona Strip Field Office, St. George, Utah;
Department of Interior, Bureau of Indian Affairs - Western Nevada Agency
Department of Interior, National Park Service - Fish Springs National Wildlife Refuge
Department of Interior, U.S. Fish and Wildlife Service
State and Regional Agencies
Colorado Department of State Parks
Nevada Department of Wildlife
Nevada Public Lands Committee
Nevada State Assembly, State Legislature
Nevada State Parks
State of Nevada, Department of Conservation and Natural Resources, Division of State Lands, State Land Use Planning Agency
State of Utah, Public Lands Policy Coordination
State of Utah, Department of Natural Resources, Division of Wildlife Resources
State of Utah, State Engineers Office
Utah State Assembly, State Legislature
Utah State Senate
Counties
White Pine County, Nevada – Board of Commissioners; Game Board; Water Advisory Council
Elko County, Nevada – Elko County Board of Commissioners
Lincoln County, Nevada – Board of Commissioners; Planning Commission; Parks and Recreation Department
Juab County, Utah – Juab County Board of Commissioners
Carbon County, Utah – Lands and Access Department
Millard County, Utah – Board of Commissioners; Water Conservancy District
Iron County, Utah – Iron County Board of Commissioners
White Pine County Tourism and Recreation Board
Municipalities
North Las Vegas, Las Vegas, Nevada, Chamber of Commerce
Tribal Organizations
Confederated Tribe of the Goshute Reservation
Organizations
Alamo Sewer and Water GID
Amargosa Land Trust
Californians for Western Wilderness
Citizen Alert
Defenders of Wildlife – New Mexico Field Office

Table 3-1 (Continued)

Organizations (Continued)
Desert Law and Water Science Forum
Farmers and Hunters Feeding the Hungry (FHFH)
Friends of Arizona River
Friends of Nevada Wilderness
Great Basin Business and Tourism Council
Great Basin National Heritage Area
Great Salt Lake Audubon Society
Lahontan Audubon Society
National Audubon Society
The Nature Conservancy – Nevada and Utah
Nevada Cattlemen's Association
Nevada Commission on Tourism, Indian Territory
Nevada Conservation League
Nevada Land Conservancy Bird and Wildlife Sanctuary
Nevada Restoration Association
Nevada Taxpayers Association
Nevada Water Network
Nevada Wildlife Federation
Northeastern Great Basin Resource Advisory Council
Progressive Leadership Alliance of Nevada (PLAN)
Raising Nevada
Red Cliff's Audubon Society
Red Rock Audubon Society
Sandy Valley Public Water Preservation Association
Southern Nevada Grotto
Southern Utah Wilderness Alliance
Sierra Club – Southern Nevada Chapter; Southwest Waters Committee; Toiyabe Chapter; Utah Chapter
Stetson Engineers for The Long Now Foundation
Trout Unlimited, Sagebrush Chapter
Trout Unlimited Utah Council
Trout Unlimited Water Project
Utah Cattlemen's Association
Wasatch Mountain Club
Western Watershed Project

4.0 SCOPING COMMENT COMPILATION AND NEXT STEPS

BLM developed a comment indexing and storage system designed to ensure that each comment, either verbal or written, was reviewed and evaluated so that a comprehensive environmental analysis covering the public and agencies' concerns could be prepared. Comments received during the public scoping period were compiled in an electronic database, categorized by topic, speaker/author's name, and whether the comment was submitted verbally during a scoping meeting or written and submitted by facsimile, email, or United States (U.S.) mail. The following discussion describes the process for handling the high volume of scoping comments generated during this project's scoping period.

4.1 Electronic Database

An electronic database, which will be maintained throughout the project life, allows the BLM and EIS Team to compile comment information systematically. Comment summary reports, generated from the database, are compiled and organized in a variety of ways. For example, reports may be organized by the comment topic (e.g., alternatives, project description, water resources issues, cave biology), or by speaker/author name, or meeting location.

For complex projects that receive a large volume of comments, the electronic database offers flexibility and can accommodate revisions and updates, such as adding new topic categories that address specific concerns. When commenter names and addresses are entered for each comment, the information also feeds into a mailing list to ensure that all interested parties receive information throughout the duration of the project. Additionally, when a scoping document is entered, it electronically becomes part of the official record with an assigned Administrative Record (AR) number. An example comment, including the types of data collected is indicated in **Figure 4-1**. The following discussion describes how the public's comments were handled and the comment analysis process.

4.2 Verbal Comments

During the public scoping meetings, attendees were provided the opportunity to verbally present their scoping comments. The BLM and members of the EIS Team took notes as speakers presented their comments.

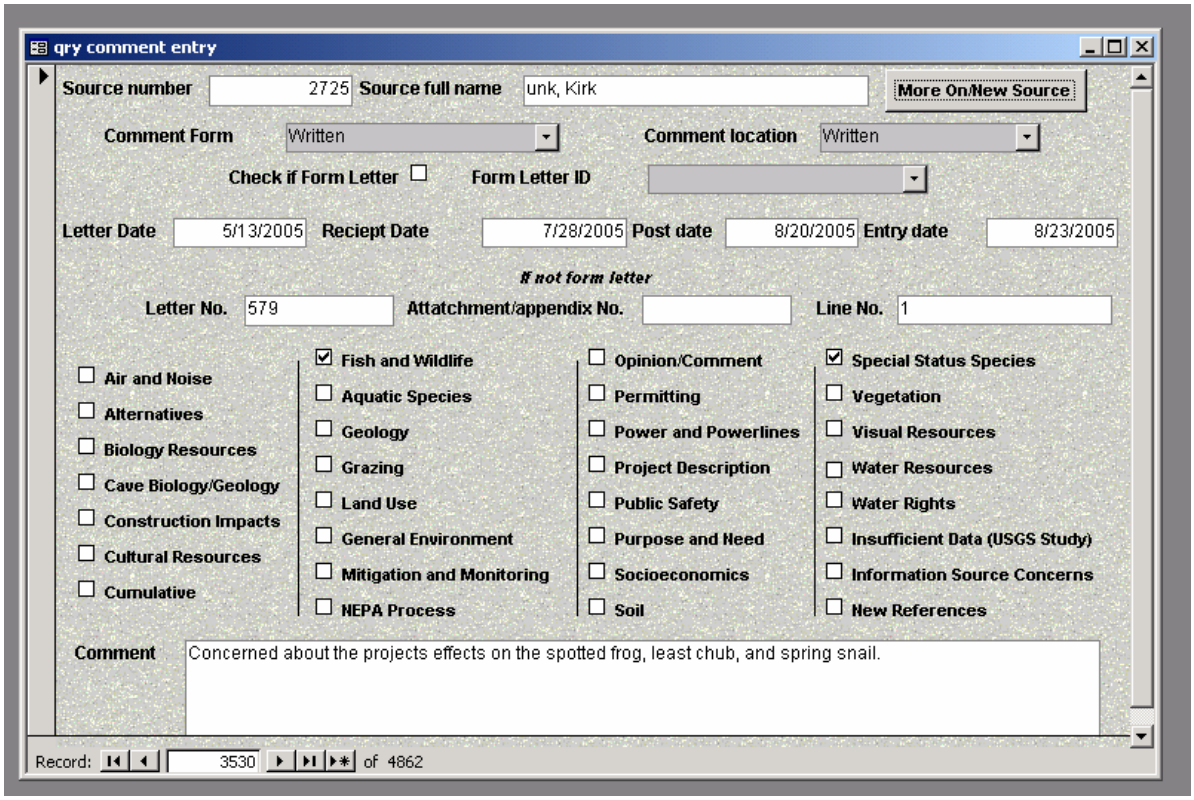


Figure 4-1. Example Comment

Verbal comments received from each meeting were entered into the electronic database, by date, meeting location, speaker name, and then categorized by topic. In some cases, the comment would be applicable to several topic categories and therefore, was placed under multiple topic categories. This multiple topic application ensures that the entire comment was captured and addressed under the appropriate categories.

The BLM conducted an Interdisciplinary Team meeting in Ely, Nevada, on June 14, 2005, to discuss the project. BLM staff members from the Ely and Las Vegas Field Offices (FOs) in Nevada, the Fillmore FO in Utah, and the Utah State Office participated. The pipeline system and exploratory areas were reviewed by individual hydrographic basin, and lists of resource issues were identified and recorded. The issues identified by BLM staff are included under the various resources in the preliminary EIS issues summary (Chapter 5.0).

4.3 Written Comments

Written comment documents submitted to the Ely BLM FO were date-stamped and compiled for data entry into the database. Each comment document received a number to track the document throughout the comment analysis process. Each written comment document was read and evaluated by NEPA compliance and resource specialists. Typically, letters, e-mails, and faxes included multiple comments; therefore, each comment was recorded into the database under the same document number. To identify each comment within the comment document, the body of the text received a line number to mark where the comment was extracted from the document. Comments were then entered in the database and categorized by topic. As previously discussed, comments would often be applicable to several topic categories and therefore, were placed under multiple topic categories to ensure that the entire comment was summarized and addressed under the appropriate categories.

4.4 Comment Compilation and Analysis

Once all the written and verbal comments were entered in the electronic database, reports were generated by topic category listing each individual comment. The reports were reviewed to eliminate duplications and to identify any data entry errors. Once quality control was completed, the comments were distilled into a broader summary in order to build a framework of issue topics to be addressed in the EIS. The primary issue topics were tabulated by EIS process components (e.g., alternatives) or by natural or human resource topic (e.g., water resources). The comments that defined and clarified the scope of the issue topic were synthesized and included as further explanation after each issue topic (see Chapter 5.0, **Table 5-1**).

Individual comments were categorized by topic and geographical area (i.e., county, state, or region), with results shown in **Tables 4-1** and **4-2**, below. Percentage splits of comment topics and geographical area are shown in **Figures 4-2 and 4-3**.

4.5 Next Steps

After BLM staff and the cooperating agencies have thoroughly reviewed all public comments received, they will begin to formulate alternatives for the Draft EIS. The list of alternatives to be evaluated will be identified based on the results of public scoping, feedback from the BLM and other cooperating agencies, and investigations by the EIS project team. The evaluation process will involve several tasks that will determine whether an alternative is “reasonable” within the context of the NEPA.

Once preliminary alternatives are formulated, the EIS project team will conduct an impact analysis of the various alternatives. This will help the BLM refine the alternatives and select the “agency preferred alternative”. This alternative will be included, along with the other alternatives analyzed, in the Draft EIS, which will be released to the public for a 90-day review period. During the review period, BLM will host public meetings and accept additional written comments from the public. See **Figure 2-1** in this report for a schematic of future planning steps and an anticipated timeline for the EIS.

Table 4-1
Comment Summary by Topic

Topic	Number of Comments Associated with this Topic[a]	Proportion of Comments as a Percent[b]
Air and Noise	148	1.8
Alternatives	515	6.1
Biology Resources	130	1.5
Cave Biology/Geology	59	0.7
Construction Impacts	57	0.7
Cultural Resources	86	1.0
Cumulative	233	2.8
Fish and Wildlife	452	5.4
Aquatic Species	109	1.3
Geology	159	1.9
Grazing	174	2.1
Land Use	420	5.0
General Environment	556	6.6
Mitigation and Monitoring	221	2.6
NEPA Process	558	6.6
Permitting	14	0.2
Power and Powerlines	46	0.5
Project Description	521	6.2
Public Safety	115	1.4
Purpose and Need	52	0.6
Socioeconomics	919	10.9
Soil	98	1.2
Special Status Species	280	3.3
Vegetation	307	3.6
Visual Resources	69	0.8
Water Resources	1267	15.1
Water Rights	156	1.9
Insufficient Data (USGS Study)	455	5.4
Information Source Concerns	124	1.5
New References	113	1.3

[a]Number is based on the number of comments associated with the indicated topic. Many comments were associated with more than one topic, therefore the total number presented in this column is greater than the total number of comments received (5,191).
[b]Proportion of comments for the indicated topic based on total number of associations for comments (8,413).

Note: All comments received from form letters during the scoping period were considered as if they had been provided by one source, although all individuals providing the form letter were tracked.

Table 4-2
Comment Summary by County, State, or Geographical Region

State	County	Number of Individual Addresses	Number of Letters Received
Nevada	Elko	90	103
	Eureka	3	4
	Carson City	21	19
	Churchill	5	5
	Clark	349	362
	Douglas	9	10
	Humboldt	1	1
	Lander	4	4
	Lincoln	43	52
	Lyon	2	2
	Mineral	1	1
	Nye	6	7
	Pershing	1	1
	Washoe	96	97
	White Pine	62	169
	Total for Nevada	**695**	**835**
	Unknown UT address	3	4
Utah	Beaver	1	1
	Box Elder	1	1
	Cache	5	5
	Carbon	2	3
	Davis	18	19
	Garfield	1	1
	Grand	6	6
	Iron	7	7
	Juab	28	59
	Kane	1	1
	Millard	35	39
	Salt Lake	91	107
	San Juan	1	1
	Sanpete	1	1
	Sevier	1	1
	Summit	13	13
	Tooele	18	213
	Uintah	1	1
	Utah	20	20
	Weber	9	9
	Washington	16	16
	Total for Utah	**279**	**528**
		8	8

Table 4-2
Comment Summary by County, State, or Geographical Region

State	County	Number of Individual Addresses	Number of Letters Received
Alaska		17	17
Alabama		109	111
Arizona		12	12
Arkansas		1297	1337
California		192	194
Colorado		69	71
Connecticut		16	16
Delaware		132	136
Florida		23	23
Georgia		16	16
Hawaii		24	21
Idaho		234	248
Illinois		36	36
Indiana		26	26
Iowa		31	31
Kansas		31	32
Kentucky		23	23
Louisiana		22	22
Maine		106	109
Maryland		97	98
Massachusetts		119	123
Michigan		42	44
Minnesota		10	10
Mississippi		43	44
Missouri		32	32
Montana		12	12
Nebraska		30	30
New Hampshire		56	59
New Jersey		38	38
New Mexico		309	316
New York		68	69
North Carolina		2	2
North Dakota		185	188
Ohio		25	25
Oklahoma		41	42
Oregon		180	185
Pennsylvania		15	15
Rhode Island		28	29
South Carolina		6	6
South Dakota		17	17
Tennessee		201	205

Table 4-2
Comment Summary by County, State, or Geographical Region

State	County	Number of Individual Addresses	Number of Letters Received
Texas		16	16
Vermont		115	115
Virginia		141	146
Washington		9	9
Washington, DC		23	25
West Virginia		80	80
Wisconsin		3	3
Wyoming	Unknown state	4	4
Incomplete USA Address	Austria, Belgium, Canada, Columbia, Italy, Istanbul, Netherlands, Scandinavia, Scotland, Slovenia, South Korea, Spain, Sweden, Tokyo, UK	31	34
Outside USA	36	36	
Unidentified address		**5,409**	**5,912**

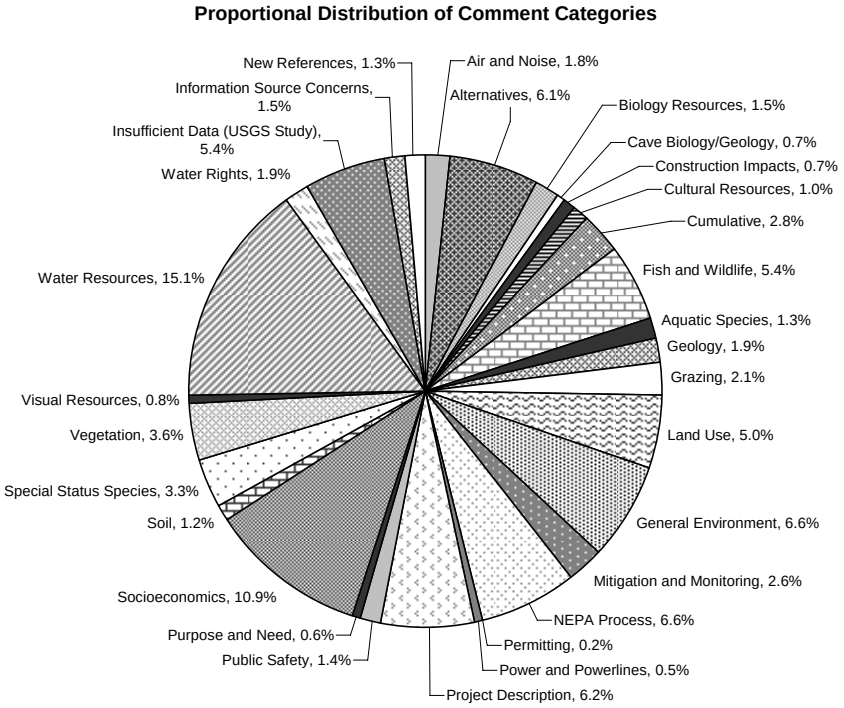


Figure 4-2. Proportional Distribution of Comment Topics

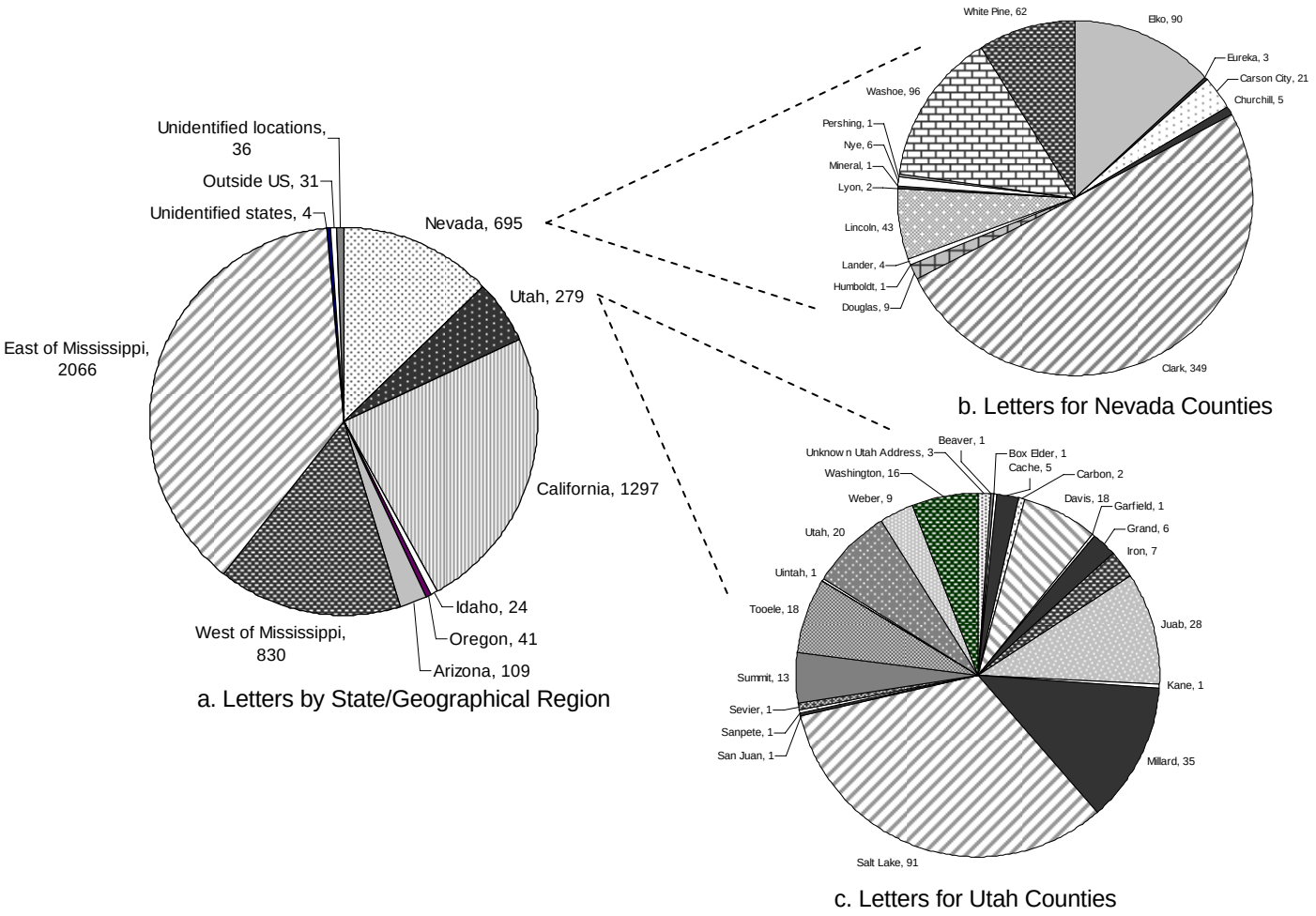


Figure 4-3. Geographical Distribution of Comment Letters

5.0 EIS PRELIMINARY ISSUES SUMMARY

Table 5-1 provides a list of preliminary list of EIS issues that have been synthesized from comments received from the public and agencies.

Table 5-1

EIS issues for the Clark, Lincoln, and White Pine Counties Groundwater Development Project EIS

Issues
NEPA Process – This section addresses relationships and coordination between the lead federal agency (BLM), and other federal, state, and local agencies with jurisdiction over various aspects of the proposed project.
1. Interagency relationships. Discuss the interactions of the Clark, Lincoln, and White Pine counties EIS process with other federal and state laws, policies and programs including: • Lincoln County Conservation, Recreation, and Development Act of 2004, especially the tasks for the Basin and Range Carbonate Aquifer System Study (BARCASS) being conducted by the USGS. • BLM's authority to issue rights-of-way (ROWs) across Department of Defense lands. • Endangered Species Act in relation to the consultation between BLM and the U.S. Fish and Wildlife Service concerning data to be used and impact analysis. • Department of Interior Indian Trust responsibilities in relation to tribal water rights and claims. • The Nevada and Utah State Engineers' responsibilities for reviewing and approving groundwater rights applications, and how these decisions may affect the EIS scope and schedule. • Other permitting and compliance requirements and status of these permits (e.g., Clean Water Act, Clean Air Act).
2. Cooperating agency status. Provide the rationale for why some Nevada and Utah counties were allowed by the BLM to be cooperating agencies, and others not.
3. EIS process integrity. Demonstrate the independence and transparency of the EIS process in terms of data collection, review, and analysis. Identify the names and qualifications of government staff and contractors preparing the EIS so the public can evaluate the independence of the process. Explain how the BLM will validate data supplied by SNWA.

Table 5-1

EIS issues for the Clark, Lincoln, and White Pine Counties Groundwater Development Project EIS

Issues
4. EIS schedule. Explain the EIS preparation and review schedule that addresses the following concerns: – Need for a detailed project description and potential project changes after public scoping. – Need to collect additional public comments as the result of project changes. – Need to disseminate information once the BLM website is available. – Need to collect additional data because of data gaps. – Need to include results of ongoing studies, such as the USGS BARCASS study. – Need to include other water projects that have not yet been fully defined. – Need to allow adequate time for scientific review and discussion. – Need to avoid rushing to decisions without adequate time for public consideration of such a complex project. – Need to ensure a good quality EIS.
Purpose and Need – SNWA's purpose and need statement for the project provides the reasons for why the proposed project is needed, and how the project meets that need. The project purpose and need provides the basis for the consideration of other alternatives for meeting the project need.
1. Basis for project purpose and need. Describe the project's purpose and identify the project's need that requires federal action. Evaluate the water requirements for Las Vegas, current and future, and compare with existing water supplies. Address the reliability of future estimated water demands for the year 2030 based on predicted population growth.
2. Growth inducing effects. Assess whether this additional water supply will induce further growth that cannot be reasonably sustained.
Project Description – The project description provides the details of how the project will be constructed and operated, including the environmental and public safety protection measures proposed by SNWA.
1. Project ownership. Describe the structure and organization of SNWA (e.g., board of directors, elected or appointed, who owns SNWA). Identify the owner and operator of the pipeline, wellfields, powerlines, and other project facilities.
2. Project costs – capital and operational cost estimates. Provide detailed and verified costs associated with the Proposed Action, including infrastructure and future operational, monitoring, and mitigation costs. Identify the minimum amount of groundwater necessary to make the project economically feasible.
3. Project costs – project financing. Discuss how the project would be financed or indemnified. Address taxes, wheeling charges, and project bonding. Describe SNWA financial resources and determine whether they are sufficient to address costs of mitigation and monitoring.

Table 5-1

EIS issues for the Clark, Lincoln, and White Pine Counties Groundwater Development Project EIS

	Issues
4.	Well field pumped water volume estimates. Describe SNWA's projections of water volumes that would be pumped from each wellfield to meet the short- and long-term water needs of Las Vegas. Describe the proposed rates of pumping, explaining if there are provisions to account for seasonal and yearly variations as well as extended drought. Explain which aquifers the water would be withdrawn from (i.e., carbonate or basin fill aquifer).
5.	Well and gathering pipeline locations. Accurately identify each proposed groundwater well location; its volume; purpose (monitoring, withdrawal); and legal point of diversion by basin segment. Disclose the location of the 18- to 20-inch well gathering pipelines that connect wells to the main water pipeline.
6.	Pipeline and ancillary facilties design. Explain if other entities will be allowed to transport water through the pipeline (common carrier status). If the pipeline capacity exceeds the proposed water volumes to be transported, provide an explanation of how the excess transportation capacity would be used. Review and justify SNWA's proposed power requirements. A continuous power supply from south to north may not be necessary since requirements may be met north to south. Discuss why the Gonder Substation is required since transmission lines already exist at that location. Evaluate the need for additional electrical substations.
7.	Pipelines and ancillary facilities location. Identify where proposed facilities would be located in relation to existing and proposed utility corridors, including corridors designated by Congress.
8.	Pipelines and ancillary facilities description. Provide a complete description of pipeline facilities, including cathodic protection, shut off valves, and air relief valves. Address induced electrical ground currents from the transport of water through steel pipes. Describe any open reservoirs, storage areas, or other open water sources required for the project. Provide detailed descriptions of all powerlines, power plants (existing and proposed), and other facilities needed for this project.
9.	Pipelines and ancillary pipeline facilities construction and reclamation. Provide surface disturbance estimates for all areas affected by construction (well sites, pipelines, pumping stations, powerlines, other support facilities). Describe temporary and permanent ROW access requirements. Estimate the water volumes to be used during construction (work camps, dust suppression) and identify water sources intended for this use. Provide reclamation plans for disturbed areas.
10.	Project operations communications. Provide information on how the pipeline would be monitored, what communications equipment would be needed, and their costs.
11.	Water treatment facilities. Evaluate whether exported groundwater would require treatment to meet municipal and industrial water quality standards prior to use (e.g., desalinization, ion exchange, or other treatments) and, if so, identify and evaluate the need for new or upgraded water treatment/processing plants.

Table 5-1

EIS issues for the Clark, Lincoln, and White Pine Counties Groundwater Development Project EIS

Issues
12. Project operations security. A security plan should be developed to address facility security (e.g., from vandalism, safety, terrorism, natural disaster), including costs.
13. Project operations monitoring. Identify who would be responsible for monitoring, enforcement of mitigation, and decisions related to adverse impacts during operation. Describe how federal, state, and local agencies would coordinate monitoring and mitigation enforcement.
14. Project bonding/enforcement. There should be a substantial financial surety bond to address environmental damages, permit obligations, and to ensure SNWA's compliance with monitoring and mitigation, and foreseeable losses. Describe legal recourses that are available to individuals if the project is approved, including provisions to file claims or lawsuits. Describe the process for negatively impacted individuals to prove impact, litigate, seek reimbursement for losses as well as for compliance for SNWA to reduce or stop pumping.
15. Project abandonment. Describe SNWA's commitments and obligations in the event the pipeline or powerlines were abandoned, and whether structures would be removed and the landscape restored.
Alternatives – The following alternative concepts were raised during the scoping process. The BLM has not yet made any decisions about project alternatives. These alternatives concepts will be further evaluated by the BLM and the cooperating agencies to determine those that should be carried forward in the EIS analysis, or eliminated from further consideration. The Proposed Action (SNWA's proposal) and the No Action alternative must be evaluated as a NEPA legal requirement.
1. Modification of the Colorado River Compact to provide Nevada with a greater share of Colorado River water. Modification of the compact could allow purchase of river water from upstream states and/or Indian reservations.
2. Water banking in underground storage. Options for more extensive water banking in the Lower Basin states (Arizona, and potentially California) for excess water in wet years, or exchanges based on improved water use efficiencies in Arizona and California.
3. Construction and operation of a desalination plant on the Pacific Ocean that would supply water to California, or to Mexico. Water stored in Lake Mead would then be diverted by Las Vegas in exchange for the use of desalinated water in California or Mexico.
4. Improved water conservation and water management in Las Vegas that would offset the need for adding water supplies. Conservation methods could include metering all water customers, raising water rates, increasing fees on water and sewer connections, establishing fees for storm drains, increasing costs of building permits, requiring low water use landscaping, recapturing shallow water supplies, disallowing any private wells where city water is available, eliminating swimming pools, having SNWA control casino wells, increasing the use of reclaimed water, and public education. Consider prioritizing water use; exportation of water would be lowest priority and would be the first to be discontinued in times of drought.

Table 5-1

EIS issues for the Clark, Lincoln, and White Pine Counties Groundwater Development Project EIS

Issues
5. Improved water conservation on irrigated lands, resulting in more water in Lake Mead that could be diverted by Las Vegas. Opportunities for additional water conservation may exist on lands within large irrigation districts in California and Arizona.
6. Surface water diversions from large regional rivers, with delivery to Las Vegas via existing canal systems and new pipelines. Example sources include the Columbia River system, major rivers draining the west slope of the Sierra Nevada in California, Lake Tahoe, and the Truckee River system.
7. Reduced/alternative pumping scenarios from one or more of the Nevada groundwater basins proposed for development. Consider withdrawing a smaller amount of water from the aquifer. Evaluate wellfield alternatives, such as different well locations, size of well pads, and stipulations; evaluate whether the number of wells can be reduced. Evaluate pumping from certain basins alternating with periods of rest to improve the potential for natural recharge to replace water volumes withdrawn.
8. Other alternatives. Remove phreatophytic vegetation (e.g., tamarisk) to increase surface water flows in the Colorado River; implement cloud seeding; tow icebergs to California in exchange for Colorado River water.
9. Powerline Route Alternatives. Analyze power alternatives, such as using power from the existing grid, or not constructing a powerline from Delamar Valley to Tikaboo Valley. Assess the option of buried transmission lines, at least in some locations (such as within wellfields), to reduce impacts to visual and wildlife resources. Consider collocation alignment options to reduce impacts, particularly to visual, cultural, and biological resources.
10. Pipeline Route Alternatives. Explore routing alternatives that would avoid important springs, such as Crystal Springs and Trough Springs in the White River Valley. Consider a re-route to more closely parallel Highway 93, particularly from pipeline milepost (MP) 169 to MP 188. Consider a pipeline re-route from Atlanta Mine to Snake Valley lateral alignment to avoid sensitive wildlife resources.
11. Alternative electrical power sources. Consider alternative energy sources (wind and solar) to supply power for the project.
Connected Actions, Related Projects, Cumulative Impacts – These issues are related to the scope of the overall EIS analysis. The BLM will decide (with input from cooperating agencies) how the related projects will be addressed, and will decide on the cumulative impact analysis scope for each resource topic before Draft EIS preparation begins.
1. Connected Actions, Related Projects. Include a discussion on connected actions that would be triggered by implementation of the project or are parts of large dependent actions that need the larger action for justification. Determine whether this project and other water development projects in the area should be included within a single EIS. Evaluate future expansion possibilities (foreseeable projects).

Table 5-1

EIS issues for the Clark, Lincoln, and White Pine Counties Groundwater Development Project EIS

Issues
2. Cumulative Impacts. Analyze the cumulative impacts on natural and human resources associated with the construction of this project and other surface disturbing and water demanding projects in the area, including: – SNWA Virgin and Muddy Rivers Surface Water Development Project – SNWA Three Lakes/Tikaboo project (water projects) – Coyote Springs Investment water projects (water sources: Kane Springs, Lake, and Patterson Valleys) – Lincoln County Land Sale Development Area North of Mesquite (water source: Tule Desert Valley) – Railroad Valley water project – White River water project – Southwest Intertie Project (electrical transmission) – Proposed power plant in Steptoe Valley (White Pine Power Plant) – Various wind energy projects – Existing and proposed Public Land Sales – Oil and gas extraction projects – Expansion of the Ely airport – BLM's pinyon-juniper and sagebrush management within watersheds where the project will occur.
Natural and Human Resource EIS Topics – Baseline information and impact issues have been grouped by major resource topic. Many resource topics are linked or dependent on other topics for analysis. These dependencies are described where appropriate.
5.1 Climate and Air Quality
1. Air quality regulatory framework. Review and describe current regulatory issues related to construction dust emissions, including county permitting regulations; Nevada Division of Environmental Protection regulations also will apply.
2. Construction dust impacts. Quantify the amount of airborne dust that will be caused by the construction of the project, and whether particulate matter regulatory thresholds would be exceeded.
3. Groundwater drawdown induced dust impacts. Determine if the amount of dust will increase because of a loss or reduction of groundwater-dependent vegetation (phraetophytes) from groundwater drawdown.
4. Operational air quality impacts. Evaluate air pollutant increases associated with the operation of the project (e.g., pump stations, power generation facilities).
5. Local climate impacts. Evaluate the effects of groundwater drawdown on evapotranspiration rates, humidity, and soil temperatures.

Table 5-1

EIS issues for the Clark, Lincoln, and White Pine Counties Groundwater Development Project EIS

Issues	
6.	Regional climate impacts. Evaluate groundwater drawdown effects on regional climate, and influences on global warming.
7.	Indirect air quality impacts. Estimate the impacts to air quality attributable to the anticipated population increase in Las Vegas. Evaluate how the project will affect air quality, particularly since the Las Vegas Valley is classified as "Nonattainment."
8.	Air quality mitigation. Describe monitoring and mitigation measures to address project-related dust impacts, and how these measures will be used to reduce effects on vegetation, public safety (reduced visibility), and possible human health effects.
5.2	**Geology (Minerals, Geologic Hazards, Caves, Paleontology)**
1.	Mineral extraction impacts. Assess the preclusion effects of constructing surface facilities over areas with existing and potential rights for mining/mineral sites, including mineral materials sources (gravel, sand). Analyze potential impacts to mining due to reduced water availability. Describe any potential effects on drilling for, and production of, oil and gas.
2.	Cave formation and water supply impacts. Determine effects of groundwater drawdown on cave formation processes and water supply and quality, particularly in areas of active cave formation within the Baker Creek, Lehman Creek, and Snake Creek watersheds. Identify mitigation measures to protect caves from groundwater drawdown impacts.
3.	Seismic impacts to surface facilities. Describe regional earthquakes and their magnitude that have been recorded in the recent past. Identify potentially active faults (active within the last 10,000 years). Evaluate the potential for damage to project facilities (wells, pipelines, pump stations, and transmission lines) from earthquake events and fault displacement at the ground surface. Describe criteria for routing, and quantify a pipeline distance offset from grabens (natural subsidence features).
4.	Subsidence induced by groundwater drawdown. Evaluate the short- and long-term potential for drawdown to cause subsidence, fissuring, degradation of hydrological properties, structural damage to basin aquifers, and seismic instability leading to earthquakes, potential subsidence damage to surface structures (buildings, irrigation systems).
5.	Karst impacts. Evaluate areas underlain by carbonate rock for potential landform changes (e.g., sinkholes and subsidence), including Baker Creek watershed; Snake Creek watershed; Big Wash watershed.
6.	Stream channel scouring and incision impacts. Assess stream incision (downcutting) and scouring resulting from the loss of riparian vegetation stemming from reduced flows and shortened perennial stream reaches due groundwater drawdown.
7.	Paleontological impacts. Identify important paleontological resources that could be disturbed or destroyed by project surface disturbance. Implement monitoring and mitigation to identify and recover important fossils discovered during project construction.

Table 5-1

EIS issues for the Clark, Lincoln, and White Pine Counties Groundwater Development Project EIS

Issues	
5.3	**Soils**
1.	Soil contamination impacts. Examine impacts associated with facility construction on contaminated soils; describe how the project could contribute to soil contamination.
2.	Soil erosion impacts. Estimate wind and water erosion, especially from fine, silty soils that are prevalent on valley floors. Assess whether the project will cause or contribute to the formation of sand dunes.
3.	Soil compaction impacts. Analyze changes in soil structure that can alter moisture retention and productivity due to construction vehicle traffic and excavation.
4.	Shallow groundwater flow impacts. Evaluate the potential for trenching to interrupt or alter subsurface water flow by disrupting impervious soil layers or, alternatively, through water conductive soils.
5.	Soil water availability impacts. Evaluate short- and long-term soil moisture availability due to groundwater drawdown.
6.	Biotic crust impacts. Analyze potential impacts to biotic crusts, since biotic crusts and gypsum soils are indicators of rare plant habitat.
7.	Soil mitigation and monitoring. Describe monitoring and mitigation measures for: wash crossings, soil compaction, and areas with poor reclamation potential.
5.4	**Water Resources (Groundwater, Surface Water)**
1.	Water resources study area. Given the potential for interconnections among aquifers, the geographical scope of the project area described by SNWA may be too small. Consequently, provide scientific justification to substantiate that the hydrologic study area is sufficient to address impacts to all interconnected aquifers.
2.	Time frame for water resources analysis. Given the scale of the project, impacts of aquifer depletions may appear subtly and over a long period of time, particularly in areas distant to the extraction area. Consequently, impact analysis must be of an appropriate length.
3.	Data availability/additional data needed. The USGS BARCASS study will not provide all necessary baseline data for the project nor will it be available for inclusion of its findings into the Draft EIS. Test wells should be drilled and pumped prior to the preparation of the Draft EIS. Stringent pumping stress tests at multiple locations may show if impacts may occur. The Southern Nevada sub-regional flow water model, sponsored by the BLM and National Park Service is currently being prepared for an area south of Moapa to the Pahranagat shear zone. This study should be incorporated into the analysis, particularly for the cumulative analysis.

Table 5-1

EIS issues for the Clark, Lincoln, and White Pine Counties Groundwater Development Project EIS

	Issues
4.	Independence of the water resources analysis. Analysis for the EIS should be conducted independently by the BLM using publicly available and peer-reviewed data and models, and should not rely on the proponent's data and models. Utilize existing, publicly available data that have been peer-reviewed. Neutral, third-party experts should be used to evaluate data and aquifer characteristics. Data and models used for the analysis should be available for public review.
5.	Hydrogeologic characterization – Geologic structure. Identify geological surveys and investigations used in the EIS analysis. Provide detailed geologic map compilation, construction of additional cross sections, detailed gravity profiles of alluvial basins, and adjacent mountain blocks. Describe both the hypothesized conduits for groundwater flow and barriers to flow between groundwater basins.
6.	Hydrogeologic characterization – Aquifer systems. Define aquifer characteristics, such as existing water levels, recharge rates, aquifer flow (volume and direction), aquifer water quality, and spring flows (volume and water quality). Describe and quantify the relationships between the alluvial and deep carbonate aquifers and other groundwater aquifers (adjacent and upgradient), including flow direction (lateral and vertical flow), quantity of flow, water quality, and inter-basin transfers between aquifers. Evaluate isotope data to estimate water residence time, travel time, and aquifer transmissivities.
7.	Hydrogeologic characterization – Hydrologic basin recharge/discharge relationships. Describe and quantify the existing relationships between the affected aquifers and surface waters, including locations of these interactions, quantity of flow, and water quality. Provide estimates of aquifer recharge for individual hydrologic basins based on multiple methods because of estimation uncertainties. Provide estimates of existing groundwater discharge (springs and seeps, existing groundwater pumping, base stream flows), and natural losses from evapotranspiration.
8.	Existing and pending water rights. Describe federal, state, tribal, vested, reserved, and private water rights. Discuss how water rights in Nevada and Utah are appropriated. Map all groundwater well permits that are pending, provide dates of applications, amounts of water expected, status of SNWAs water rights in the area, and the legal point of diversion for each well by basin segment. Verify the accuracy of groundwater maps used to determine ownership and boundaries in common with water rights holders in these areas. Describe the Lincoln County Conservation, Recreation, and Development Act of 2004 which authorizes the State of Utah to participate in negotiations with the State of Nevada prior to trans-basin transfers of groundwater. Describe any agreements or processes between Nevada and Utah regarding the transfer of water and protection of existing water rights. Describe the process to convert agricultural water rights to exportation uses in both Nevada and Utah.

Table 5-1

EIS issues for the Clark, Lincoln, and White Pine Counties Groundwater Development Project EIS

Issues	
9.	Hydrogeologic modeling. Address whether there are adequate amounts of data of sufficient quality to develop a predictive groundwater budget model that is scientifically credible. This model should have the following characteristics: 1) able to predict where and how much aquifers would naturally recharge, and how aquifers would respond to different pumping rates; 2) able to determine groundwater drawdown effects over a wide range of geographic scales, from individual wellfields to boundary effects in the region (i.e., including eastern Nevada; western Utah and eastern California; and Arizona); 3) able to evaluate short-term temporal effects (seasonal) to long-term temporal effects (prolonged droughts, delayed impacts to hydrologic basin storage and yield).
10.	Uncertainties of groundwater impact prediction from models. Disclose the predictive uncertainties surrounding the data and models used for the EIS. Apply the best available information, acknowledge potential differences in interpretation of analytical results. Address the concern that there is inadequate and insufficient scientific data, and that there is not a scientific consensus regarding available groundwater volumes, aquifer recharge rates, and flow rates within aquifers.
11.	Groundwater impacts – sustainable yield. Explain the hydrological rationale for the proposed rate, duration, and volume of water withdrawal. Are these water withdrawal volumes sustainable? Evaluate the reliability and sustainability of renewable groundwater for export, particularly during long-term droughts and global climate change when impacts might be more severe. The analysis should establish a conservative level of pumping, where withdrawal does not exceed recharge.
12.	Groundwater impacts – aquifer drawdown effects on long-term groundwater availability. Describe the effects of long-term pumping on aquifer capacity for recharge and groundwater flow.
13.	Groundwater impacts – aquifer drawdown effects on surface resources. Describe the short- and long-term effects of project pumping within the alluvial and deep carbonate aquifers on the flow of springs, and surface water drainages. Determine whether estimated changes in flow will adversely affect water dependent aquatic life, vegetation, wildlife, and agricultural and domestic water uses. In particular, differentiate between impacts that could occur to aquifers associated with the mountain bedrock blocks, and alluvial aquifers within the intermountain valleys. Potential effects on sensitive water dependent resources are discussed under individual resource topics, and the types of sensitive resources and locations are presented in Appendix A.
14.	Groundwater impacts – water quality. Determine if pumping would cause reductions in groundwater quality (as measured by total dissolved solids, metals, pH, temperature) within individual aquifers sufficient to reduce groundwater value for municipal, agricultural, and wildlife/fisheries uses. Assess concerns regarding the incursion of brackish, saline, or mineralized waters from the Great Salt Lake Basin due to water pumping. Analyze potential incursion of contaminated groundwater into Utah groundwater from Dugway Proving grounds and the Kennecott Mine due to pumping. Evaluate groundwater quality for potential residual radiation from nuclear testing.

Table 5-1

EIS issues for the Clark, Lincoln, and White Pine Counties Groundwater Development Project EIS

Issues	
15.	Groundwater rights impacts – compensation. Evaluate the legality of "taking" existing water rights. Address how taking claims will be handled, if they arise, and if compensation is available. Explain if SNWA (or BLM) can condemn and take private water rights in Nevada, Utah, and California. Describe what damages will need to be demonstrated to prove impacts to existing water right holders.
16.	Lake Mead water rights impacts. Examine whether SNWA will be "credited" for groundwater sent to Lake Mead thereby allowing it to withdrawal even more water from Lake Mead pursuant to its water rights.
17.	Tribal water rights impacts. Evaluate whether the BLM can adequately meet its Indian Trust commitments to protect tribal water rights for the sole use and benefit of the Tribes when the BLM may have conflicting responsibilities with the SNWA water project.
18.	Cumulative impacts. Assess the cumulative and synergistic impacts to water resources from this project and other existing and proposed water development projects (e.g., the Lincoln County water pipeline projects, the Virgin and Muddy Rivers Surface Water Development Project); current agricultural use, existing water rights; and changing climatic conditions. Analyze potential impacts to aquifers in the Yucca Flat and Frenchman Flat groundwater basins for potential radionuclide migration from the Yucca Mountain Repository. Evaluate soil stability at Yucca Mountain Repository since its design depended upon hydrostatic pressure to contain leakage.
19.	Monitoring of the groundwater impacts. Identify the means, methods, trigger levels, and responsible entity used to monitor impacts of pumping. Define criteria which would dictate reduced or complete pumping cessation. Address the issues that delayed onset of impacts may result in impacts becoming greater than anticipated (or irreversible) before mitigation actions are taken, and that pumping impacts (once identified) may be irreversible and mitigation may be technically impossible.
5.5	**Biological Resources (Vegetation, Aquatic Biota, Terrestrial Biota, Special Status Species)**
1.	Regulatory guidelines and programs. Ensure that the proposed project would not conflict with BLM's obligations under various interagency conservation agreements and programs. These agreements include: the Clark County and Lincoln County Multiple Species Habitat Conservation Plans; BLM Policy 6840 regarding Special Status Species; wildlife conservation plans for Utah and Nevada for species habitat and impact evaluations (e.g., Nevada Comprehensive Wildlife Conservation Strategy, Nevada Partners in Flight Bird Conservation Plan, Sage Grouse Management Unit Plans); and conformance with the applicable BLM Resource Management Plans.

Table 5-1

EIS issues for the Clark, Lincoln, and White Pine Counties Groundwater Development Project EIS

	Issues
2.	Springs, streams, and associated aquatic communities characterization. Provide a definitive list of springs, seeps, streams, wetlands, and riparian vegetation that could be impacted, include locations and spatial extent of vegetation (acres). Catalog and photograph all springs, wetlands, and riparian areas in the region to establish a baseline for evaluating impacts of pumping on the region's ecosystems. Field surveys should be conducted to inventory aquatic species in each of the affected hydrological basins. Incorporate SNWA studies, including spring snail surveys. The survey protocols and results should be made publicly available to assess data adequacy. Specific springs, wetlands, and streams (and associated fish and invertebrates) identified during scoping that should be considered in the impact analysis are listed in Appendix A.
3.	Vegetation characterization. Map riparian and phreatophytes (plants dependent on shallow groundwater). Describe how plant productivity and stress can be identified with multispectral photography. Conduct a current inventory of special status plant species, their locations, and densities. Identify any further studies that are needed to assess short- and long-term impacts to vegetation. Specific plant communities and species identified during scoping that should be considered in the impact analysis are listed in Appendix A.
4.	Wildlife habitat and population characterization. Conduct field surveys to assess potential impacts to wildlife species following appropriate field survey protocols. Determine *a priori* how baseline data will be collected for future comparative analysis. Specific wildlife habitats and species identified during scoping that should be considered in the impact analysis are listed in Appendix A.
5.	Project construction impacts to biological resources. Analyze direct, indirect, and cumulative impacts associated with facilities construction to terrestrial and aquatic habitats and species (including special status species). Impact factors to consider include: 1) potential interference with big game migration patterns, with resulting reduced habitat use; 2) long-term loss of wildlife breeding, wintering, and year-long foraging habitat from surface disturbance, and habitat fragmentation, resulting in reduced habitat carrying capacity; 3) increased human presence (noise) during bird and other terrestrial wildlife breeding seasons, resulting in less habitat use and habitat avoidance; 4) spread of invasive plant species, resulting in reduced biodiversity and habitat values; 5) creation of population migration barriers (fences), resulting in reduced habitat use; 6) increased dust deposition on vegetation from construction equipment, resulting in reduced productivity; 7) increased highway and secondary traffic, resulting in increased noise and wildlife collisions; 8) riparian, wetland, and stream channel disturbance from pipeline crossings, resulting in reductions in riparian and wetland habitat values and short-term increases in suspended sediment; and 9) short-term reductions in stream flow and water volumes in ponds for water used for dust control, resulting in reduced aquatic habitats.

Table 5-1

EIS issues for the Clark, Lincoln, and White Pine Counties Groundwater Development Project EIS

Issues
6. Project operational impacts to biological resources – aboveground facilities. Analyze direct, indirect, and cumulative impacts associated with aboveground facilities operation to terrestrial and aquatic habitats and species (including special status species). Impact factors to consider include: 1) the increased risk of wildland fires due to arcing from new powerlines, resulting in habitat losses; 2) increased raptor and raven predation on desert tortoise and other prey from perches and nesting sites provided by powerlines, resulting in losses of prey population individuals; 3) increased bird collision risk with powerlines, resulting in losses of individuals; 4) increased risk of raptor electrocution on electrical distribution lines, resulting in losses of individuals; and 5) pump station operational noise, resulting in displacement of noise sensitive wildlife.
7. Project operational impacts to biological resources – groundwater pumping. Analyze direct, indirect, and cumulative impacts associated with groundwater pumping operations (drawdown) to groundwater-dependent terrestrial and aquatic habitats and species (including special status species). Impact factors to consider include potential reductions in spring and stream flows and lowering of groundwater levels, resulting in: – reductions in habitat area and quality, and populations of aquatic organisms (fish, amphibians, invertebrates); – reductions in the vigor and extent of riparian and wetland plant communities, with resulting reductions in habitats for wildlife species associated with these communities; – reductions in vigor and extent of phreatophyte communities on valley floors, with reductions in wildlife habitat and surface soil stability; – alterations in food chain relationships within these water-dependent communities, and alterations in long-term community structure and community species composition; – alterations in natural fire regimes because of changes in plant community composition; – reductions in regional habitat area and quality, and associated biodiversity and abundance; – alterations in groundwater flows within cave systems, resulting in potential microclimate modifications (temperature, humidity), and reduced habitat availability for cave-dependent organisms.
8. Biological resource mitigation and monitoring – construction. Describe: 1) the reclamation measures to be used, and estimated time frames for recovery; 2) measures for monitoring and control of invasive weeds; 3) criteria for avoiding or minimizing well and pipeline disturbance within sensitive and special status habitat areas; 4) measures to avoid construction during wildlife breeding seasons.

Table 5-1

EIS issues for the Clark, Lincoln, and White Pine Counties Groundwater Development Project EIS

Issues	
9.	Biological resource mitigation and monitoring – operation. Describe: 1) the monitoring methods to identify potential adverse effects to springs, streams, wetlands, and individual water-dependent species; 2) the procedures that would be used to stop pumping in the event that biological resource injury is determined or predicted; and 3) protection devices on powerlines to avoid raptor electrocution.
10.	Wild horses and burros – habitat impacts. Describe: 1) acres of wild horse and burrow herd management areas (HMAs) that would be disturbed by facilities construction, and estimates of changes in herd carrying capacity; 2) locations of springs and surface waters used by wild horses and burros, and the potential groundwater drawdown effects on the reliability of water sources used by these animals; 3) potential changes in horse breeding behavior because of improved road access and more traffic; and 4) measures to restore horse watering sources if existing sources are lost because of groundwater drawdown.
5.6	**Land Use and Management including Protected Lands, Utility Uses and Corridors, Agriculture (Livestock Grazing, Irrigated Cropland), Recreation, Traffic, Public and Private Land Access**
1.	Land Use and Management, Protected Lands – project compatibility. Quantify the acres of various land uses (e.g., rangeland, irrigated farmland) by landowner affected by short-term construction activities, and the acres of land converted to industrial uses for the life of the project (pump stations, powerlines, access roads). Describe current management plans and allowable uses for protected areas (e.g., National Parks, National Forests, Wilderness Areas, BLM Areas of Critical Environmental Concern [ACECs], and Nevada State Parks) that would be crossed, or are located adjacent to project facilities. Evaluate project facilities compatibility with existing land uses; designated protected areas; and pending land use changes (e.g., Desert Land Entry, federal land exchanges, Lincoln County Conservation, Recreation, and Development Act of 2004). Describe project surface disturbance restoration that would be required within ACECs, if allowed.
2.	Utility Uses and Corridors – project compatibility. Evaluate the compatibility of the proposed pipeline and powerline ROWs with existing utility corridors, including those mandated by Congress. Evaluate the suitability of alternative pipeline and powerline alignments proposed by SNWA that are outside designated corridors. Examine potential powerline location conflicts with DOD lands (Nellis Bombing range), and military use of Dry Lake Valley bed, and an existing emergency landing airstrip in Delamar Valley on BLM lands. Evaluate potential operational conflicts with the Southwest Intertie Project (SWIP) ROW in Delamar and Dry Lake Valley and pipeline crossings of the proposed DOE railway.
3.	Wilderness and Wilderness Study Areas – water resources impacts. Assess impacts to scenic qualities, aesthetics, solitude, and natural aspects if the water drawdown affects resources such as vegetation, springs, and riparian areas, particularly in proposed or existing Wilderness and Wilderness Study Areas.

Table 5-1

EIS issues for the Clark, Lincoln, and White Pine Counties Groundwater Development Project EIS

	Issues
4.	Agriculture (livestock grazing, irrigated cropland) – construction impacts. Identify the grazing allotments that would be crossed by the project, the area of surface disturbance within each allotment, and determine if the project will decrease range carrying capacity over the short and long term. Identify any restrictions on grazing during post-construction reclamation and the anticipated timeframe for those restrictions. Explain how calves and lambs would be prevented from falling into open pipeline trenches, or from being killed by collisions with construction vehicles and equipment.
5.	Agriculture (livestock grazing, irrigated cropland) – operational impacts. Evaluate potential reductions in water quantity and quality from project pumping drawdown on wells and surface water used for livestock watering and cropland irrigation. Specifically, evaluate: 1) potential reductions in productivity of native vegetation (such as white sage) in alluvial valleys, and crops (primarily hay and alfalfa) on irrigated lands based on reduced water supplies; and 2) changes in grazing patterns resulting from predicted changes in year-round and seasonal surface water sources. Evaluate how potential reductions in crops and livestock forage could affect secondary agricultural businesses, such as sheep shearing (from sheep grazing) and dairy farmers (alfalfa grown in irrigated fields).
6.	Recreation – operational impacts. Analyze changes in recreational opportunities for tourists, birders, campers, fishermen, hunters due to project-related reductions of wildlife and fishery resources caused by surface disturbance or groundwater drawdown. Describe any changes to BLM off-road vehicle or recreational vehicle management after project completion. Evaluate impacts to recreation sites such as swimming in springs, Delamar Dry Lake model rocket launches, use of the Silver State OHV Trail.
7.	Traffic – construction impacts. Describe how existing traffic flow would be safely maintained where the pipeline would be constructed adjacent to existing highways (e.g., U.S. Highway 93) and secondary roads. Analyze the potential for road damage from construction vehicles, and how roads would be repaired. Explain how BLM would prevent unauthorized use of pipeline and powerline ROWs by off road vehicles during construction and operation.
8.	Public access to public lands. Describe any changes in public access to public lands because of project construction and operation; and explain how access would be restored.

Table 5-1

EIS issues for the Clark, Lincoln, and White Pine Counties Groundwater Development Project EIS

	Issues
5.7	**Aesthetics (Visual Resources, Noise, Artificial Lighting)**
1.	Visual resources – landscape impacts. Determine compliance of project facilities (well fields, pipelines, powerlines) with BLM Visual Resource Management (VRM) classes. Consider limiting development of infrastructure to existing corridors within VRM Classes 1 and II. Evaluate visual resource changes resulting from aboveground facilities, project surface disturbance, and construction-generated dust from public viewpoints visited by tourists and recreational users (e.g., Great Basin National Park, Humboldt National Forest, National Wildlife Refuges, Scenic Byways, and other formal and informal recreational areas). Determine if consolidation with existing facilities and utility corridors could be used to reduce visual resource impacts. Describe mitigation measures to reduce the intensity of landscape modifications, such as avoiding straight line vegetation cuts along ROWs in pinyon-juniper woodlands and sagebrush shrublands. Address light potential light sources associated with aboveground facilities, and describe mitigation to eliminate or reduce the visibility of industrial night light sources, particularly to viewers in Great Basin National Park and other public view points.
2.	Noise impacts. Describe and evaluate the effects of short-term noise generated by construction equipment on residential areas and recreational sites; describe and evaluate the effects of long-term noise generated by pump stations, and powerlines on residential areas and recreational sites.
5.8	**Cultural Resources (Tribal Consultation, Archaeology, and Traditional Uses)**
1.	Tribal Consultation. Demonstrate that tribal consultations have been initiated, and describe responses received.
2.	Cultural Resource Surveys and Impacts. Identify areas of archaeological importance, based on prior cultural surveys. Describe cultural resource surveys that have been conducted by SNWA or, if surveys are not complete, identify the process to ensure these surveys are completed. Evaluate the project's short- and long-term impacts on the pre-historic and historic cultural heritage and regional history from construction surface disturbance, and installation of project facilities. Evaluate the potential project construction and operational effects on specific historic sites such as the Pony Express Trail stops (Callao, Boyds Station, Fish Springs), the Lincoln Highway, and Cleveland Ranch.
3.	Tribal land uses and lifestyles. Address the effects of project construction and operation to Native American Tribes (e.g., Goshute, Paiute), their lands, lifestyles, religious beliefs, and economics (ranching). Evaluate the project's impacts on public access to cultural sites (such as rock art) and Native Americans restrictions on viewing. Evaluate visual and aesthetic impacts of powerlines on recreationalists and Native Americans, such as the intrusiveness of powerlines near rock art. Describe how potential changes in native vegetation from groundwater drawdown would affect the ability to grow crops, engage in traditional crafts (e.g., basketmaking), and conduct traditional hunting.

Table 5-1

EIS issues for the Clark, Lincoln, and White Pine Counties Groundwater Development Project EIS

Issues	
5.9	**Socioeconomics (Project Costs, Economic and Social Impacts, Environmental Justice)**
1.	Community Attitudes. Concerns that the project would adversely impact rural quality of life and livelihoods, resulting in loss of income, property, and multi-generational land occupancy. Concerns that rural people and the environment are considered to have less political and economic value compared to large metropolitan areas, such as Las Vegas and Reno. Concerns about societal, public health, and environmental impacts and that these impacts may be irreversible and immitigable. Concerns that the lack of technical knowledge and rush to judgment will lead to poor decisions. Distrust in municipal utilities (SNWA) and federal government (BLM) goals, and commitments to protect public interests, and to communicate honestly with the public.
2.	Rural communities – social impacts. Evaluate societal impacts to rural lifestyles, such as school closures due to declining rural populations, loss of local heritage, and loss of a family legacy. Evaluate the societal impacts associated with the conversion of agricultural lands when properties are purchased for water rights alone.
3.	Rural communities – economic impacts. Evaluate economic impacts to rural lifestyles (e.g., loss of livelihood), including foreclosure of opportunities for future generations and future development. Quantify economic costs to the agricultural community and existing water rights holders associated with a lower water table, such as the need to drill new wells, re-drill existing wells, reduction in spring flows, and the need to haul water for livestock and wildlife. Discuss the groundwater drawdown effects on property values, because arid land has little value without water. Analyze water supply availability and cost effects to small municipal water users (e.g., Baker and Garrison communities). Evaluate potential changes in domestic and municipal well water quality (potential intrusion of saltwater, metals and metalloids, and hydrocarbons), and mitigation measures for any reduction in quality.
4.	Tax Revenues. Discuss whether SNWA would pay taxes to the respective counties for the assessed value of the project and the water resources withdrawn from within the counties. Evaluate the impacts to the counties' tax base if rural communities and agricultural businesses are negatively affected by the lack of water and property values decline.
5.	Environmental Justice. Concerned that smaller communities growth and interests will be compromised by growth and needs of Las Vegas. Evaluate economic effects (employment), on rural communities, minorities, Tribes (in Nevada and Utah), and lower income populations. Evaluate whether the project operations would contribute to the number of people living in poverty.
6.	Quantification of Mitigation Costs. Assign costs to mitigate these potential impacts: 1) air quality (dust, air pollution from construction and operation of facilities); 2) water used during construction (work camps, dust suppression); 3) road damage and traffic delays; 4) soil contamination; 5) soil erosion (water, wind); 6) indirect and direct losses of wildlife and fishery resources ; and 7) visual resources (dust, aesthetics).

Table 5-1

EIS issues for the Clark, Lincoln, and White Pine Counties Groundwater Development Project EIS

	Issues
7.	Mitigation and Compensation. Discuss whether SNWA would provide compensation or would be financially responsible for re-drilling existing wells necessitated by a lower water table. Describe how mitigation would be applied to small, rural communities that experience economic losses, population declines, and reduction in the quality of life. Discuss if financial compensation would be provided to individuals, communities, and counties that are negatively impacted. Provide information on financial bonding that would be required of SNWA to ensure mitigation compliance.
5.10	**Public Health and Safety**
1.	Health effects caused by dust – nuclear tests and respiratory effects. Estimate the volumes of dust transported away from construction excavation areas and reclaimed areas. Determine if the amount of dust generated (both short- and long-term) would exceed USEPA particulate matter thresholds. Document the types of radionuclides in the project area's soils, their characteristics (radioactive half-life, type of radiation), soil concentrations, and depth of contamination. Determine if the dust generated (both short- and long-term) would contain radioactivity that will exceed Center for Disease Control guidelines for individual exposure for each element. Evaluate the potential for dust volumes to increase from basins where existing vegetation viability would be affected by groundwater drawdown from pumping. Evaluate the project-related and cumulative potential for respiratory health problems from elevated dust concentrations, and for exposure to particulates with elevated radioactive component concentrations. Explain what types of mitigation would be implemented to reduce the amount of airborne dust.
2.	Health effect compensation. Describe future compensation or financial bonding for potential health effects, such as respiratory problems and cancer.
3.	Dust – Public safety. Evaluate whether increased dust will create dust clouds affecting traffic visibility and public safety. Describe appropriate mitigation measures that would be taken to decreased dust storms that could affect traffic and public safety.
4.	Project facility security. Address security issues (e.g., vandalism, terrorism) associated with the wellfields, pipeline, powerlines, and other project facilities. Describe security measures that would be implemented to protect and monitor the pipeline. Quantify these costs and identify who would pay these costs. Address the increased need for emergency services and law enforcement during construction. Quantify costs and identify who would pay for them.

APPENDIX A

WATER AND BIOLOGICAL RESOURCES OF CONCERN PRESENTED DURING PUBLIC SCOPING

Water Resources

Special Management Areas: Great Basin National Park, National Wildlife Refuges, National Forests, National Recreation Areas, Wilderness areas, State Wildlife Management Areas and Parks.

Aquifers: Snake Valley, Spring Valley, Steptoe Valley, Railroad, Deep Creek, and Hamlin Valleys, Goshute Reservation.

Wells: Mount Wilson.

Springs: Furnace Creek Wash springs within Death Valley National Park (e.g., Texas, Travertine, Navares Springs), Crystal, Devils Hole, Big, Indian, Bishop, Rowland, and Gandy.

Rivers and Other Surface Waters: White, Muddy, Virgin, Amargosa, Meadow Valley Wash, Colorado River, Clear Lake, Shoshone Ponds, Pruess Lake.

Mountain Watersheds: Schell, North and South Snake, and Deep Creek.

Caves: Lehman Caves in Great Basin National Park.

Biological Resources

Special Status Species: USFWS listed species, BLM sensitive species, Endemic species associated with springs in Great Basin National Park, Migratory birds; Nevada Natural Heritage Program Scorecard Sites, Nevada Natural Heritage Program sensitive species, State of Utah Conservation Agreement Species.

Wildlife and Other Special Management Areas: Cave Lake and Cummins wildlife project, National Wildlife Refuges, including Fish Springs and Moapa; National Parks, including Great Basin and Death Valley; National Recreation Areas (e.g., Lake Mead), State Wildlife Management Areas, Spring Creek Rearing Station, Mormon Mesa Critical Habitat Unit, Pakoon Springs Ranch.

Plants: Ash Meadow milkvetch, Big galetta, blue grama, Black grama, Bristlecone pine, Joshua trees. Las Vegas bearpoppy, Las Vegas buckwheat, Parish's phacelia, Side oats grama, Threecorner milkvetch, Ute ladies-tresses, Welsh's cryptantha.

Invasive Plant Species: Russian thistle, Knapweed, Cheat grass, Musk thistle, Halogeton, Tall whitetop, Spotted knapweed, Tamarisk, Russian olive.

Plant Communities: Greasewood (phreatophyte communities), Spring Valley Swamp Cedars, White sage.

Insects: Butterflies, Devil's Hole riffle beetle, Monarch butterfly, Navares Spring naucorid bug, springtail species in Model Cave.

Aquifer-dwelling organisms: stygobites.

Cave-dwelling Organisms: Lehman Caves, Crystal Ball Cave (Gandy, Utah), Baker Creek cave system, including Model Cave, Rose Guano Cave, Snake Creek Cave, Whipple Cave, caves associated with Cave Valley.

Mollusks: California floater, Spring snails (multiple species).

Fish: Amaragosa pupfish, Ash Meadows speckled dace, Big Springs spinedace, Bonneville cutthroat trout, Bonneville mountain sucker, Bonneville redside shiner, Devil's Hole pupfish, Lahontan cutthroat trout, Least chub, Moapa dace, Mohave cutthroat trout, Mottled sculpin, Pahrump poolfish, Railroad Valley springfish, Redsided shiner, Relict dace, Speckled dace, Utah chub, Utah sucker, Warm Springs pupfish.

Amphibians: Columbia spotted frog, Great basin toad, Red-spotted toad, Southwestern toad.

Reptiles: Coral snake, Desert tortoise, Gila monster.

Birds: Ash-throated flycatcher, Bald eagle, Black rosy-finch, Black-throated gray warbler, Calliope hummingbird , Cooper's hawk, Eagles, Ferruginous hawk, Flammulated owl, Gambel's quail, Least Bell's vireo, Loggerhead shrike, MacGillivray's warbler, Northern goshawk, Olive-sided flycatcher, Orange-crowned warbler, Peregrine falcon, Pinyon jay, Prairie falcon, Red-naped sapsucker, Red-winged blackbird, Sage grouse, Sage sparrow, Sage thrasher, Scaled quail, Shore birds, Southwestern willow flycatcher, Swainson's hawk, Three-toed woodpecker, Vesper sparrow, Virginia's warbler, Waterfowl, Western Yellow-billed cuckoo, Wilson's warbler, Yellow-breasted chat.

Mammals: Bats, Desert bighorn sheep, Rocky Mountain bighorn sheep, Elk, Mule deer, Pronghorn, Pygmy rabbit.