



Ely Dist  
United States Department of the Interior



BUREAU OF LAND MANAGEMENT

Ely Field Office  
HC 33 Box 33500 (702 No. Industrial Way)  
Ely, Nevada 89301-9408  
<http://www.nv.blm.gov/ely>

In Reply Refer To:  
5003 (NV-040)  
N-78803

APR 08 2005

WILD HORSES  
pg 3

Dear Interested Party:

The Bureau of Land Management (BLM) is soliciting comments from the public for the Environmental Impact Statement (EIS) being prepared on Southern Nevada Water Authority's proposal to develop groundwater resources on public lands in rural Clark, Lincoln, and White Pine Counties. The EIS will form the basis for BLM's decision on issuance of rights-of-way to the Water Authority to build and operate groundwater production wells, pipelines, pumping stations, and facilities for water treatment and power supply. Scoping is the public's first opportunity to meaningfully participate in the process that is underway for development of the EIS. The purpose of scoping is to identify the issues and reasonable alternatives to the Water Authority's proposed action that should be analyzed in depth in the EIS.

Federal environmental laws require agencies to take a hard look at how their decisions on actions such as the construction and operation of pipelines could have on the environment. However, BLM can't do that unless we hear from local residents and anyone else who may be impacted from the Water Authority's proposed project. Experience shows that better decisions – those that meet the needs of affected communities and minimize adverse impacts to the environment – are made when the public is offered genuine opportunities to participate and actually does participate.

I encourage you to get involved in scoping by commenting on the Water Authority's proposal and proposed alternatives, attending one or more of the scoping meetings (see enclosed schedule), or both.

In addition to the Schedule of Scoping Meetings, I am enclosing several documents to assist you in the development of your comments. They include:

1. Water Authority's proposed action, including locations of well fields and pipelines and other facilities.
2. Proposed issues to be addressed in the EIS.
3. Proposed alternatives to the Water Authority's proposal.
4. Scoping comment form.

Comments must be submitted in writing either at one of the public meetings listed above or by mail to: BLM-Ely Field Office, HC 33 Box 33500, Ely, Nevada 89301-9408. The deadline for submitting comments is June 15, 2005. If you would like your name removed from the mailing list, please fill out and return the enclosed form.

Every comment received will be seriously considered and will form part of the record of this project.

Additional information on the project may be obtained through the project's website: ([www.nv.blm.gov/ely](http://www.nv.blm.gov/ely)) Thank you for your participation in the scoping process.

Sincerely,

A handwritten signature in black ink, appearing to read "Gene A. Kolkman". The signature is written in a cursive style with a large initial "G".

Gene A. Kolkman  
Field Manager

BFLINN:mac

Enclosures:

### SCHEDULE OF SCOPING MEETINGS

DATE	COMMUNITY	LOCATION	TIME
Tuesday, April 26, 2005	Ely, Nevada	Bristlecone Convention Center (150 6th Street)	5:00 - 9:00 PM
Wednesday, April 27, 2005	Baker, Nevada	Baker School Gym (120 Main Street)	5:00 - 9:00 PM
Thursday, April 28, 2005	Caliente, Nevada	Youth Center (Hwy. 93 North)	5:00 - 9:00 PM
Tuesday, May 3, 2005	Alamo, Nevada	Ambulance Barn (#10 Airport Road)	5:00 - 9:00 PM
Wednesday, May 4, 2005	Las Vegas, Nevada	Alexis Park Hotel (375 E. Harmon)	5:00 - 9:00 PM
Thursday, May 5, 2005	Reno, Nevada	Airport Plaza Hotel (1281 Terminal Way)	5:00 - 9:00 PM
Monday, May 9, 2005	Salt Lake City, Utah	Plaza Hotel (122 W. South Temple)	5:00 - 9:00 PM
Tuesday, May 10, 2005	Cedar City, Utah	Crystal Inn Hotel (Exit 59 off I-15; 1575 W. 1200 N)	5:00 - 9:00 PM
Wednesday, May 11, 2005	Delta, Utah	Fair Building (187 S. Manzanita)	5:00 - 9:00 PM

# Clark, Lincoln, and White Pine Counties Groundwater Development Project

## Proposed Alternatives to Southern Nevada Water Authority's Proposed Action

The Environmental Impact Statement (EIS) for the Clark, Lincoln, and White Pine Counties Groundwater Development Project will include a detailed discussion of alternatives to the Southern Nevada Water Authority's proposed action. The Bureau of Land Management (BLM) seeks public input on reasonable alternatives to be thoroughly analyzed and considered in the EIS for the Water Authority's project. BLM anticipates that reasonable alternatives to the proposed action may include the following.

**Alternative Facilities/Alignments.** This alternative would include specific discussions related to alternative alignments for the pipelines, power lines, well fields, and/or appurtenant facilities. Alternative alignments and facilities may be identified with the goal of minimizing: (1) interference with sensitive resources; (2) the extent of surface disturbance; (3) conflicts with current land management/uses; and (4) disturbances to existing infrastructure.

**Decreased Groundwater Development.** This alternative would include consideration of impacts associated with development of a decreased quantity of groundwater and a corresponding reduction in the necessary production and conveyance facilities. The specific rationale and criteria for this decreased development alternative will be worked out by the EIS team and from public input.

**Enhanced Management.** This alternative would include incorporation of special management programs with a goal of conserving resources and reducing the project's overall impact on resources. This may include:

- **Adaptive monitoring and management.** This would provide for adjustments in the timing, amount, and/or location of groundwater development to respond to monitoring and modeling of system conditions as they relate to sensitive resources and existing water rights and users.
- **Enhanced integration in the Water Authority's overall water management program.** This would provide for adjustments to timing and/or quantity of groundwater development based on the availability of water from other Water Authority water resource projects (e.g., use of surface water from the Muddy and Virgin Rivers) and/or reductions in water demands due to conservation and/or other factors.
- **Watershed Improvement Program.** This would provide for a variety of land management measures designed to improve watershed conditions in affected groundwater basins. Enhanced management may improve the water yield in the affected basin, which in turn would result in reduced impacts to the landscapes in that basin.

**No-Action Alternative.** Under this alternative, no permanent or temporary rights-of-way on BLM managed lands would be granted to the Water Authority for the groundwater development project.

# CLARK, LINCOLN, AND WHITE PINE COUNTIES GROUNDWATER DEVELOPMENT PROJECT EIS

## PROPOSED ISSUES TO BE ADDRESSED

The EIS will address issues related to the following resources: water quality and quantity, water rights, geology and minerals, air quality, soils, vegetation, wildlife and wildlife habitat, special status species, range resources, land use authorizations and access, recreation/wilderness, visual resources, social and economic values, cultural, historic, and paleontological resources, hazardous wastes, reclamation, noxious weeds, and environmental justice. Bureau of Land Management (BLM) resource specialists have identified the following issues of special concern that may be significantly impacted and should receive special emphasis in the EIS:

### Water Resources

Approval of the rights-of-way (ROW) application and development of the water pipeline and related facilities implicate various water issues that are a major concern with development of the proposed project. The development of a water pipeline to transport groundwater from rural Nevada to urban Las Vegas, Nevada will be quite controversial and will require an extensive analysis. The groundwater rights to be withdrawn and transported to the Las Vegas Valley through the water pipeline and related facilities will be adjudicated by the Nevada State Water Engineer. However, BLM's analysis of the proposed project will discuss the potential impacts from the development of the water on federal and other water rights in the project area. BLM's decision is to approve or not to approve the ROW application for a system to pump and convey the water approved by the State of Nevada based on resource impacts. Based on the consideration of potential impacts from the pumping and conveyance of water, if BLM approves the project, mitigation and monitoring plans will be developed to reduce impacts or determine if the impacts are as described in the analysis.

There are several hydrologic basins that have been identified by Southern Nevada Water Authority as sources for the groundwater. The potential hydrologic effects of pumping in these basins on water resources both in these basins and in down gradient areas will be analyzed to determine the potential impacts of pumping and conveyance of water to the Las Vegas Valley. The regional groundwater flow systems identified by the U.S. Geological Survey will be considered in the analysis.

Key issues include: 1) Effects of water development on aquifers present in and down gradient of proposed pumping. 2) Effects of water development on the quantity and distribution of surface water in and down gradient of the proposed pumping areas and the potential to adversely affect current uses of ground and surface waters. 3) Effects on the quality of surface water in and down gradient of the proposed pumping areas. 4) Effects on water rights present in the project area.

### Wildlife/ Wildlife Habitat

Construction of proposed facilities has the potential to affect wildlife species, such as migratory birds, pronghorn, elk, and mule deer as well as fishery resources and their habitat and will be analyzed. The potential effects of groundwater pumping on water sources, including riparian areas, for wildlife will also be analyzed.

Key issues include: 1) Effects of groundwater development and construction of proposed facilities on species of wildlife and their habitats (particularly key species and habitats). 2) Effects of groundwater development on fisheries and aquatic habitats.

### Special Status Species

The groundwater development project could affect federally listed, proposed and candidate species and BLM state sensitive species and their habitat. Potential species of concern include: the desert tortoise (*Gopherus agassizii*), greater sage grouse (*Centrocercus urophasianu*), pygmy rabbit (*Brachylagus idahoensi*), White River spinedace (*Lepidomeda albivallis*), White River springfish (*Crenichthys baileyi*), Pahrnagat chub (*Gila robusta jordani*), and ferruginous hawk (*Buteo regalis*). Other special status plant and invertebrate species will also be included in the analysis.

A key issue includes the effects of project development and construction on species and their habitats.

### Watershed Health

Construction of proposed facilities and development of the groundwater resources have the potential to affect the regional watershed, including vegetation, soil, air quality, and existing uses of the watershed.

Key issues include: 1) Effects of construction and water development on the project area's ecological integrity and biological diversity. 2) Effects of water development on vegetation in and down gradient of the proposed pumping areas, including wetlands and riparian areas. 3) Effects of water development on soils in and down gradient of the proposed pumping areas. 4) Effects of construction and water development on air quality and visibility. 5) Effects of construction and water development on rangeland resources and grazing operations.

### Social and Economic Values

Construction of proposed facilities and development of the groundwater resources have the potential to affect local and regional social and economic values in the affected counties.

Key issues include: 1) Effects of construction and operation of facilities on project area's aesthetics. 2) Effects of construction and operation on human health and safety. 3) Effects of construction of facilities and groundwater development on recreational opportunities and the recreational experience. 4) Effects of construction and groundwater development on rural economies and the Las Vegas Valley. 5) Analysis of environmental justice issues. 6) Potential effects of groundwater development on local and regional growth.

### Cultural Resources

Cultural resources in the project area will be analyzed to determine potential direct and indirect effects of the proposed project.


Key issues include: 1) Effects of construction on cultural resources, paleontological resources, and Native American sites and properties, 2) Effects of groundwater development on cultural resources, paleontological resources, and Native American sites and properties.

### Noxious Weeds

Construction of proposed facilities would result in surface disturbance, which could promote the invasion or spread of noxious weeds.

Key issues include: 1) Effects of construction and operation on introduced, invasive or the spread of noxious weeds. 2) The long-term impacts associated with vehicle use and maintenance of roads. Vehicles can further spread noxious weeds. 3) Indirect effects of invasive species impacting overall watershed health.

### Wild Horses

The groundwater development project could significantly affect wild horses and their habitat, especially the potential effects of the groundwater pumping on water sources that wild horses rely upon. 

### Lands

Valid Existing Rights: There are existing rights-of-way (ROW's) in the proposed project area. These will range from water pipelines for stock watering, power lines, telephone lines (buried and above ground), mineral material sites, etc. The

project description will need to identify other parties that either may be cooperators or interested parties, such as the local telephone and power company, or any local agricultural business.

Areas with special management prescription: Along the proposed corridor and when it becomes "just a ROW" in White Pine County, there are areas that currently have special management prescriptions attached. Examples include:

- 1) Swamp Cedars in North Spring Valley. This area is currently protected under the Classification and Multiple Use (C&MU) Act, but will be recommended in the Resource Management Plan (RMP) currently under development as a proposed Area of Critical Environmental Concern (ACEC):
- 2) Rose Guano Cave. This is another protected area under the C&MU that will be recommended as an ACEC in the RMP:
- 3) Sacramento Pass. This area is currently withdrawn for recreation purposes. There may be other areas that will need to be identified in the EIS process.
- 4) Echo Canyon and Eagle Valley Reservoir State Parks. The BLM has an agreement with the Nevada Division of State Parks to preserve the view-shed along the existing State Park administrative boundaries.
- 5) Public Water Reserves under Public Law 107. Several areas are considered preserved "surface water" under this federal law. More often these areas coincide with spring sources.

Access: Access across the pipeline corridor/ROW to private and public land on either side of the ROWs during construction and operations.

Construction: Specific staging areas for construction will need to be identified as well as identification of the use of existing access or new roads that will be constructed.

Visual Resources Management (VRM): Color and style of above ground facilities are very important. An assessment of VRM from key observation points will need to be completed.

Existing Utility Corridors: The Southwest Inter-tie Project (SWIP) corridor, Ely-to-Delta Portion will need to be shown correctly on maps. The corridor begins at Robinson Substation on Robinson Summit to the Gondor Substation (ending at Delta, Utah power plant).

**Note** | These issues are preliminary and are subject to change throughout the course of the EIS process.





Bruce Finn  
Bureau of Land Management  
Attn: Clark, Lincoln, and White Pine Counties  
Groundwater Development Project Scoping Comments  
HC33, Box 33500  
Ely, Nevada 89301-9408

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From:

Place  
Stamp  
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## Thank you for your comment!

**To return via mail:**  
Fold in thirds so that BLM address (above) is showing,  
add postage, tape bottom of fold, and mail.  
**Please postmark by: June 1, 2005**

Comment continued:

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**REMOVAL FROM/ CORRECTIONS TO MAILING LIST**

Please check the appropriate box(es) below. Then, fold in thirds so that BLM's address is showing, add postage, tape bottom of fold, and mail.

- Please **remove** my name from the Clark, Lincoln, and White Pine Counties Groundwater Development Project EIS mailing list.
- Please **correct my mailing address** as indicated below (please print clearly).

Name:

Organization (if applicable):

Mailing Address:

City: State: Zip:

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Bruce Flinn  
Bureau of Land Management  
Attn: Clark, Lincoln, and White Pine Counties  
Groundwater Development Project Scoping Comments  
HC33, Box 33500  
Ely, Nevada 89301-9408

## **Clark, Lincoln, and White Pine Counties Groundwater Development Project**

### **Proposed Action**

Southern Nevada Water Authority (SNWA) has applied to the Bureau of Land Management (BLM) for issuance of rights-of-way 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. The proposed production wells and facilities would be located on public lands managed by BLM in Nevada. No facilities are currently planned in Utah.

BLM's action on the right-of-way application is subject to the provisions of the National Environmental Policy Act. The BLM has determined that the Act requires the preparation of an Environmental Impact Statement (EIS). The EIS will consider the potential environmental effects of a right-of-way 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 approximately 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, the primary transmission pipeline would extend north from the Las Vegas Valley, through Coyote Spring, Delamar, Dry Lake, and Spring Valleys. Secondary lateral pipelines are also planned into Snake, Cave, and Tikaboo North Valleys. Smaller conveyance pipelines connecting individual well fields to either the laterals or primary transmission pipeline are also planned. All pipelines would be buried.

Final locations for individual well fields, 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 (see attached segment maps).

Pumping stations would be required to transport water over higher elevations and may be required to pump water from some well fields, depending on the final well field locations.

An above ground electrical power line (230 KV) would be constructed along the transmission pipeline route, with at least two primary electrical substations. The 230 KV power line 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 (69KV or smaller) would be built to smaller substations located adjacent to the pumping stations and well sites.

(continued on reverse)

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 would also be required, as well as possible treatment at well heads or conveyance pipelines.

The following are preliminary estimates of the proposed facilities (see individual segments for more specific information by hydrographic basin):

### **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 main 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 area
- 20-million gallon reservoir in northeast Las Vegas Valley

### **Power Facilities**

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

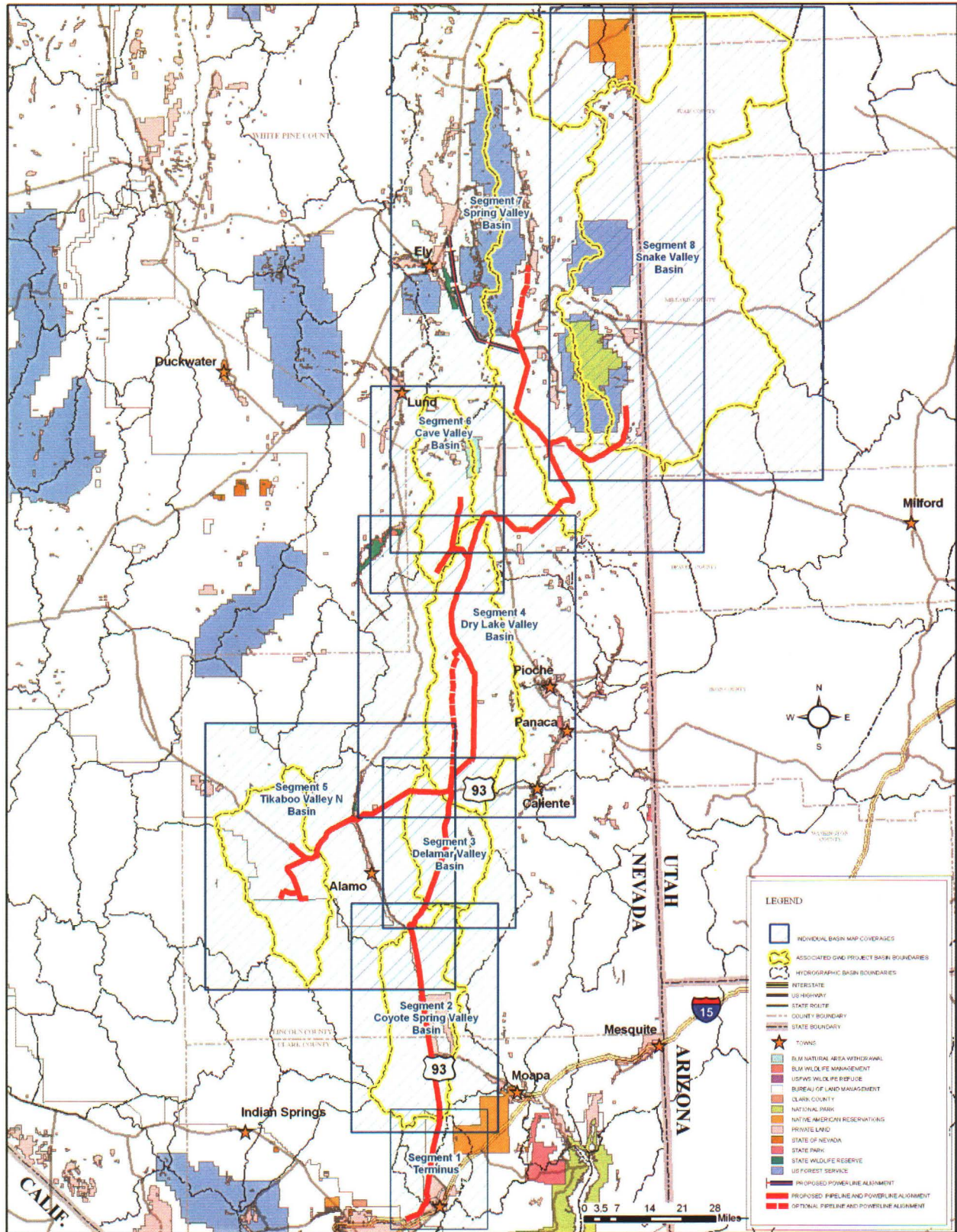
### **Anticipated Schedule**

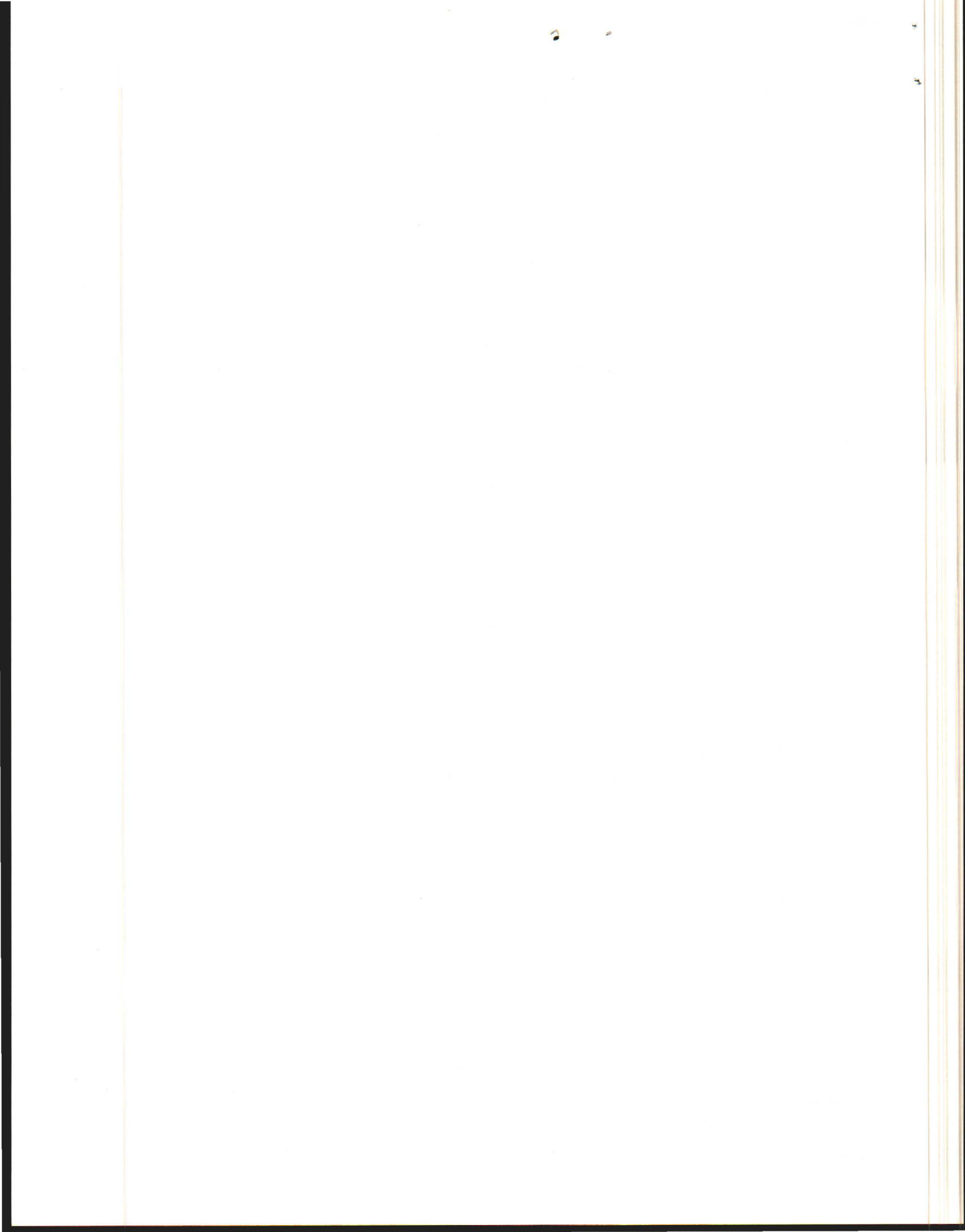
Environmental review process	2005 - 2007
Exploratory well drilling, geotechnical, survey, and design	2007 - 2009
Primary pipeline construction in all segments except Snake and Tikaboo North Valleys	2009 - 2015
Pipeline construction in Snake Valley	2015 - 2018
Pipeline construction in Tikaboo Valley North	2019 - 2021

### **Project Segments**

The project has been divided into segments to present the information in greater detail for the public. The eight individual segments that follow include a brief description of the location, segment facilities and anticipated issues. The segments contain preliminary information provided by SNWA which has not been subjected to detailed BLM or Cooperating Agency review. As the project is further refined additional site specific project information will be provided by SNWA and environmental analysis data will be developed by the EIS team, consisting of BLM officials, cooperating agencies, the EIS contractor and other technical experts as needed, and will be included in the EIS. The segments are not intended to imply that the project will be constructed in this manner – they are for presentation of information only.

# Individual Basin / Segment Coverages





## SEGMENT 1 TERMINUS

### Location

Segment 1 is located within Clark County extending from North Las Vegas to the southern boundary of Coyote Spring Valley. This area is within the Mojave Desert region.

### Water Production

No groundwater production in Segment 1

### Water Conveyance Facilities

- A primary transmission pipeline approximately 30 miles long, up to 78 inches in diameter, buried with between 5 to 10 feet of cover, generally located along existing roads, utility corridor, and US 93
- A 40-acre water treatment facility for disinfection, corrosion control, and fluoride addition, located in the Apex area
- A 25-acre reservoir site with a partially buried 20-million gallon tank and a rate of flow control station, located near the existing Grand Teton reservoir site
- New access roads in areas where the pipeline is not along existing roads

### Power Facilities

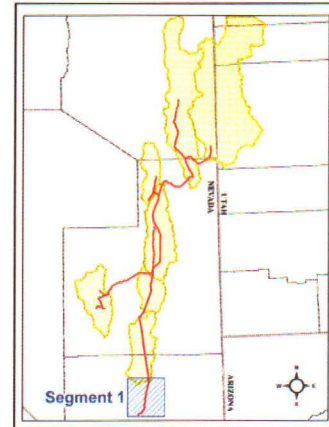
- Power transmission line, up to 230 kV, approximately 15 miles long, along the pipeline alignment, terminating at the existing Silverhawk Substation
- Power transmission poles 100 feet tall and approximately 800 feet apart

### Rights-of-Way

- Permanent pipeline right-of-way 100 feet wide; temporary pipeline right-of-way 100 feet wide
- Temporary staging areas along pipeline, approximately 3-acre sites every 2 to 3 miles
- Permanent power line right-of-way 100 feet wide
- Right-of-way for water conveyance and power facilities in Segment 1 approximately 1,000 acres

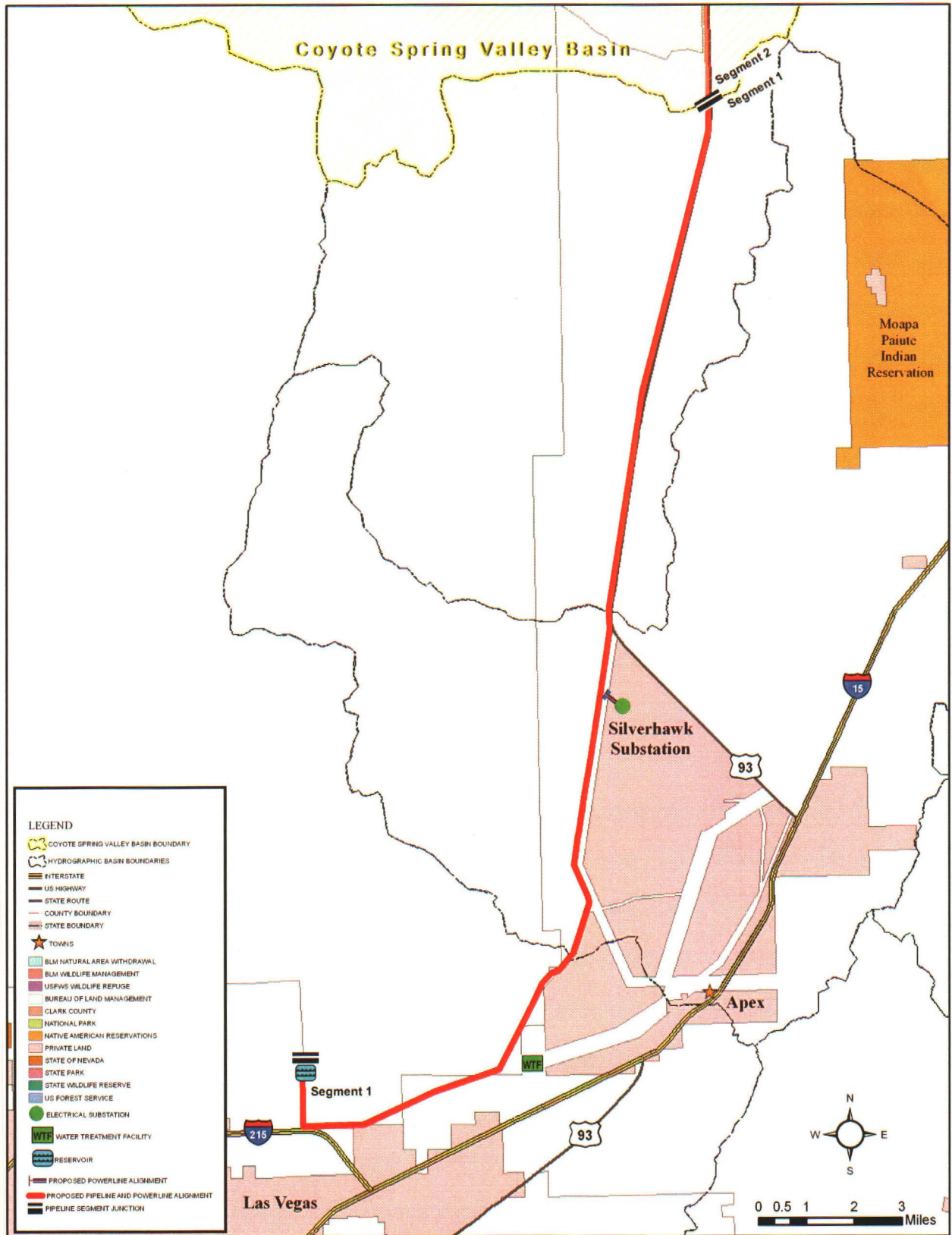
### Anticipated Environmental Issues Within Segment 1

- Construction effects on desert tortoise and sensitive plants
- Effects of a new power line on raptor mortality and increased raptor density
- Temporary construction effects on US 93 traffic
- Construction effects on air quality in the Las Vegas Valley non-attainment area
- Construction-related introduction and spread of noxious weeds





Segment 1 - Terminus



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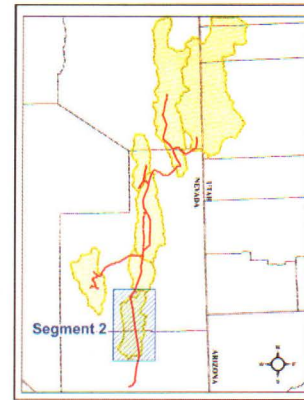
- COYOTE SPRING VALLEY BASIN BOUNDARY
- HYDROGRAPHIC BASIN BOUNDARIES
- INTERSTATE
- US HIGHWAY
- STATE ROUTE
- COUNTY BOUNDARY
- STATE BOUNDARY
- TOWNS
- BLM NATURAL AREA WITHDRAWAL
- BLM WILDLIFE MANAGEMENT
- USFWS WILDLIFE REFUGE
- BUREAU OF LAND MANAGEMENT
- CLARK COUNTY
- NATIONAL PARK
- NATIVE AMERICAN RESERVATIONS
- PRIVATE LAND
- STATE OF NEVADA
- STATE PARK
- STATE WILDLIFE RESERVE
- US FOREST SERVICE
- ELECTRICAL SUBSTATION
- WTE WATER TREATMENT FACILITY
- RESERVOIR
- PROPOSED POWERLINE ALIGNMENT
- PROPOSED PIPELINE AND POWERLINE ALIGNMENT
- PIPELINE SEGMENT JUNCTION

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## SEGMENT 2 COYOTE SPRING VALLEY BASIN

### Location

Segment 2 is located within Clark and Lincoln counties, extending from the southern to the northern boundary of Coyote Spring Valley. This area is within the Mojave Desert region.



### Water Production

- SNWA has applications for up to 27,560 acre-feet per year of water rights in Coyote Spring Valley; SNWA has an agreement to provide approximately half of any permitted water rights to Moapa Valley Water District
- Potential well exploratory area in the central part of the valley, on private lands (owned by Coyote Spring Investment)
- Preliminary estimate of 10 to 15 groundwater production wells, completed in alluvium and carbonate rocks

### Water Conveyance Facilities

- A primary transmission pipeline approximately 40 miles long, up to 78 inches in diameter, buried with between 5 to 10 feet of cover, located along US 93

### Power Facilities

- Power transmission line, up to 230 kV, approximately 40 miles long, along the pipeline alignment
- Power transmission poles 100 feet tall approximately 800 feet apart
- A 10-acre hydroturbine energy recovery facility, on the pipeline in northern Coyote Spring Valley

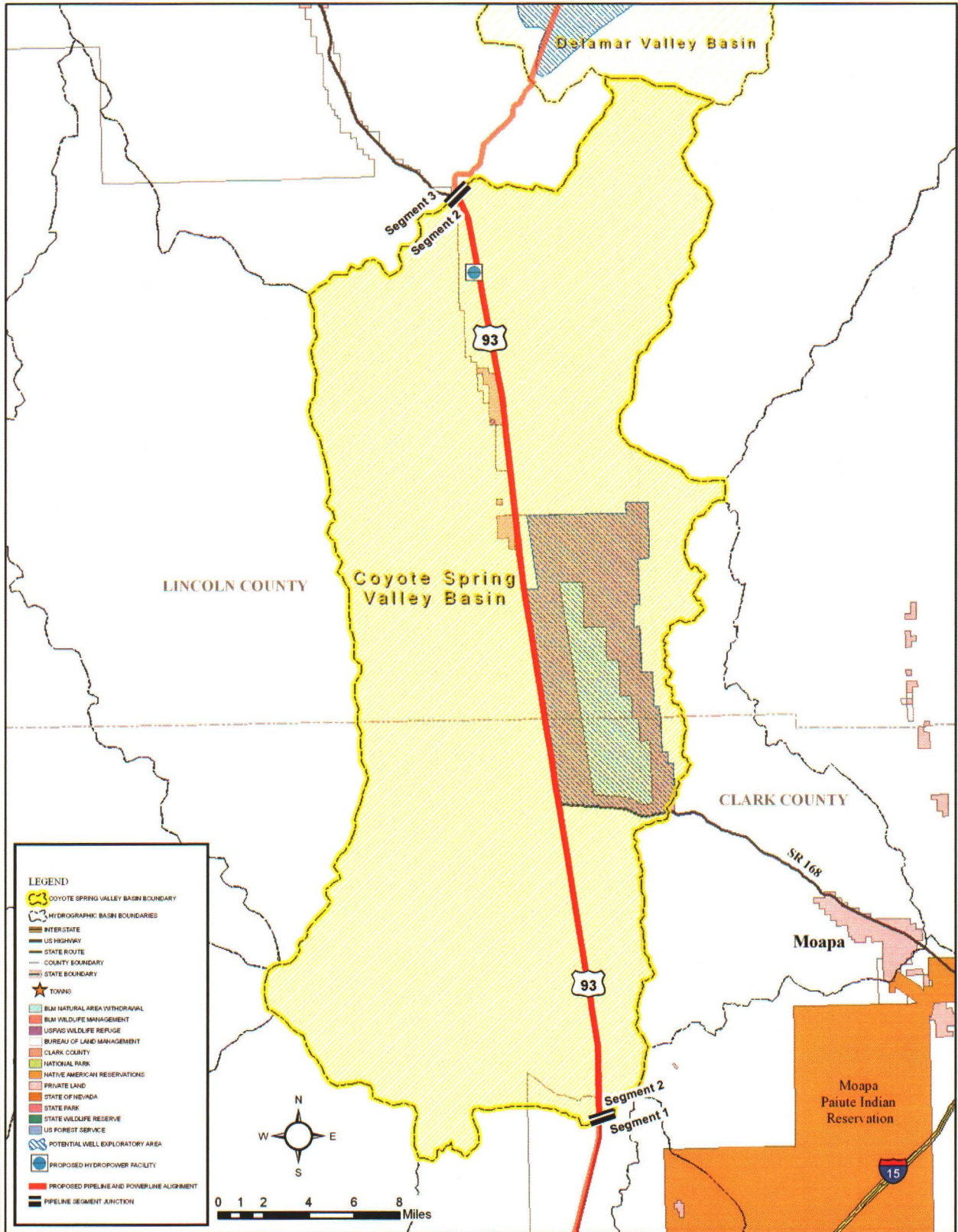
### Rights-of-Way

- Permanent pipeline right-of-way 100 feet wide; temporary pipeline right-of-way 100 feet wide
- Temporary staging areas along pipeline, approximately 3-acre sites every 2 to 3 miles
- Permanent power line right-of-way 100 feet wide
- Right-of-way for water conveyance and power facilities in Segment 2 approximately 1,500 acres

### Anticipated Environmental Issues Within Segment 2

- Construction effects on desert tortoise and sensitive plants
- Effects of a new power line on raptor mortality and increased raptor density
- Temporary construction effects on US 93 traffic
- Construction-related introduction and spread of noxious weeds
- Visual effects of construction disturbance and permanent facilities
- Effects of groundwater pumping on springs and spring dependent species, including the Muddy River Springs
- Effects of groundwater pumping on existing water rights and wells

# Segment 2 - Coyote Spring Valley Basin



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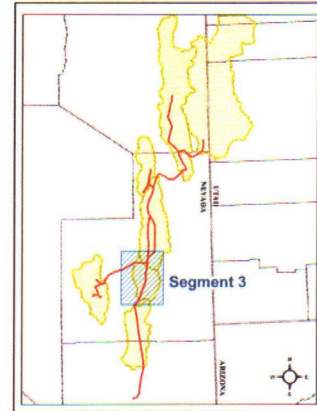
- COYOTE SPRING VALLEY BASIN BOUNDARY
- HYDROGRAPHIC BASIN BOUNDARIES
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- COUNTY BOUNDARY
- STATE BOUNDARY
- TOWNS
- BLM NATURAL AREA WITHDRAWAL
- BLM WILDLIFE MANAGEMENT
- USFWS WILDLIFE REFUGE
- BUREAU OF LAND MANAGEMENT
- CLARK COUNTY
- NATIONAL PARK
- NATIVE AMERICAN RESERVATIONS
- PRIVATE LAND
- STATE OF NEVADA
- STATE PARK
- STATE WILDLIFE RESERVE
- US FOREST SERVICE
- POTENTIAL WELL EXPLORATORY AREA
- PROPOSED HYDROPOWER FACILITY
- PROPOSED PIPELINE AND POWERLINE ALIGNMENT
- PIPELINE SEGMENT JUNCTION



## **SEGMENT 3 DELAMAR VALLEY BASIN**

### **Location**

Segment 3 is located within Lincoln County extending from the southern boundary of Pahrangat Valley to the northern boundary of Delamar Valley. This area is within a transition zone between the Mojave Desert and Great Basin region.



### **Water Production**

- SNWA has applications for up to 11,580 acre-feet per year of water rights in Delamar Valley
- Potential well exploratory area on federal lands in southern and east-central part of valley
- Preliminary estimate of 10 to 15 groundwater production wells, completed in alluvial, volcanic, and carbonate rocks

### **Water Conveyance Facilities**

- A primary transmission pipeline approximately 30 miles long, up to 72 inches in diameter, buried with between 5 to 10 feet of cover, generally located along a powerline and existing unpaved road through the central part of Delamar valley

### **Power Facilities**

- Power transmission line, up to 230 kV, approximately 30 miles long, along the pipeline alignment
- Power transmission poles 100 feet tall approximately 800 feet apart
- A 10-acre substation in the central part of Delamar Valley

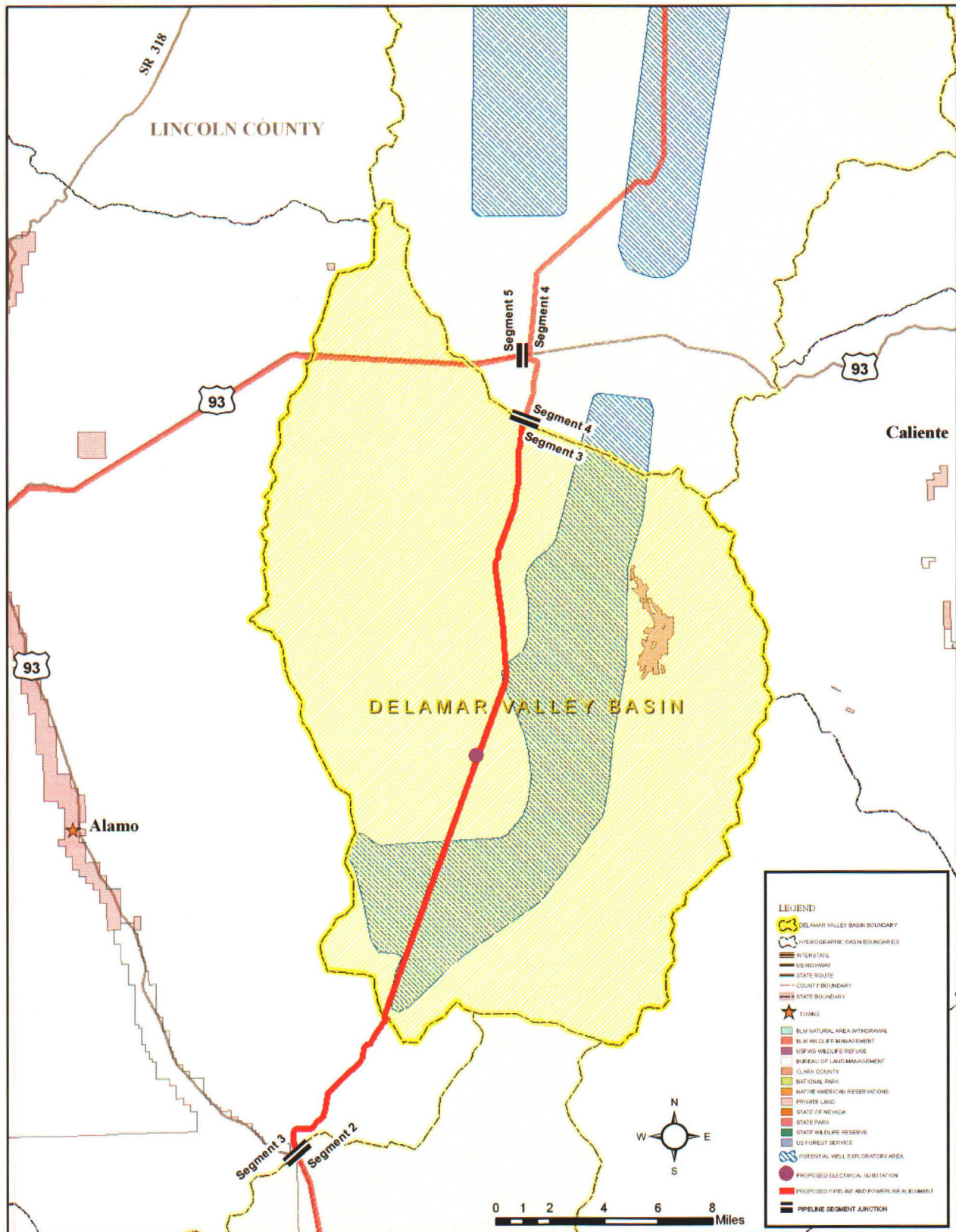
### **Rights-of-Way**

- Permanent pipeline right-of-way 100 feet wide; temporary pipeline right-of-way 100 feet wide
- Temporary staging areas along pipeline, approximately 3-acre sites every 2 to 3 miles
- Permanent power line right-of-way 100 feet wide
- Right-of-way for water conveyance and power facilities in Segment 3 approximately 1,100 acres

### **Anticipated Environmental Issues Within Segment 3**

- Construction effects on sensitive plants and small mammals, including bats
- Effects of a new power line on raptor mortality and increased raptor density
- Effects on existing grazing allotments
- Construction-related introduction and spread of noxious weeds
- Visual effects of construction disturbance and permanent facilities
- Effects of groundwater pumping on springs and spring-dependent sensitive species in Pahrangat Valley, including Pahrangat National Wildlife Refuge
- Effects of groundwater pumping on existing water rights and wells

### Segment 3 - Delamar Valley Basin



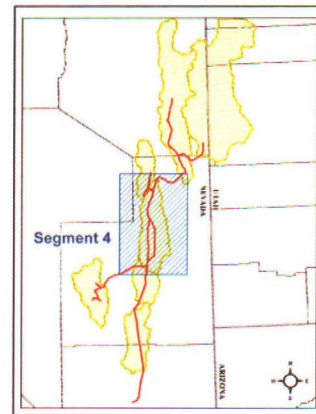
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- DELAMAR VALLEY BASIN BOUNDARY
- HYDROGRAPHIC BASIN BOUNDARIES
- INTERSTATE
- US HIGHWAY
- STATE ROUTE
- COUNTY BOUNDARY
- STATE BOUNDARY
- TOWNS
- BLM NATURAL AREA WITHDRAWAL
- BLM WILDLIFE MANAGEMENT
- USFWS WILDLIFE REFUGE
- BUREAU OF LAND MANAGEMENT
- CLARK COUNTY
- NATIONAL PARK
- NATIVE AMERICAN RESERVATIONS
- PRIVATE LAND
- STATE OF NEVADA
- STATE PARK
- STATE WILDLIFE RESERVE
- US FOREST SERVICE
- POTENTIAL WELLS EXPLORATORY AREA
- PROPOSED ELECTRICAL SUBSTATION
- PROPOSED PIPELINE AND POWERLINE ALIGNMENT
- PIPELINE SEGMENT JUNCTION

## **SEGMENT 4 DRY LAKE VALLEY BASIN**

### **Location**

Segment 4 is located within Lincoln County extending from the southern to the northern boundary of Dry Lake Valley. This area is within the Great Basin region.



### **Water Production**

- SNWA has applications for up to 11,580 acre-feet per year of water rights in Dry Lake Valley
- Up to five potential well exploratory areas on federal lands in southern, central, and northern part of the valley
- Preliminary estimate of 10 to 15 groundwater production wells, completed in alluvial, volcanic, and carbonate rocks

### **Water Conveyance Facilities**

- A primary transmission pipeline approximately 65 miles long, up to 72 inches in diameter, buried with between 5 to 10 feet of cover, located along existing unpaved road through the central part of the valley; a possible optional alignment of approximately 30 miles would go along the western side of the valley

### **Power Facilities**

- Power transmission line, up to 230 kV, approximately 65 miles long, along the pipeline alignment
- Power transmission poles 100 feet tall approximately 800 feet apart
- A 10-acre hydroturbine energy recovery facility, on the pipeline in the central part of the valley

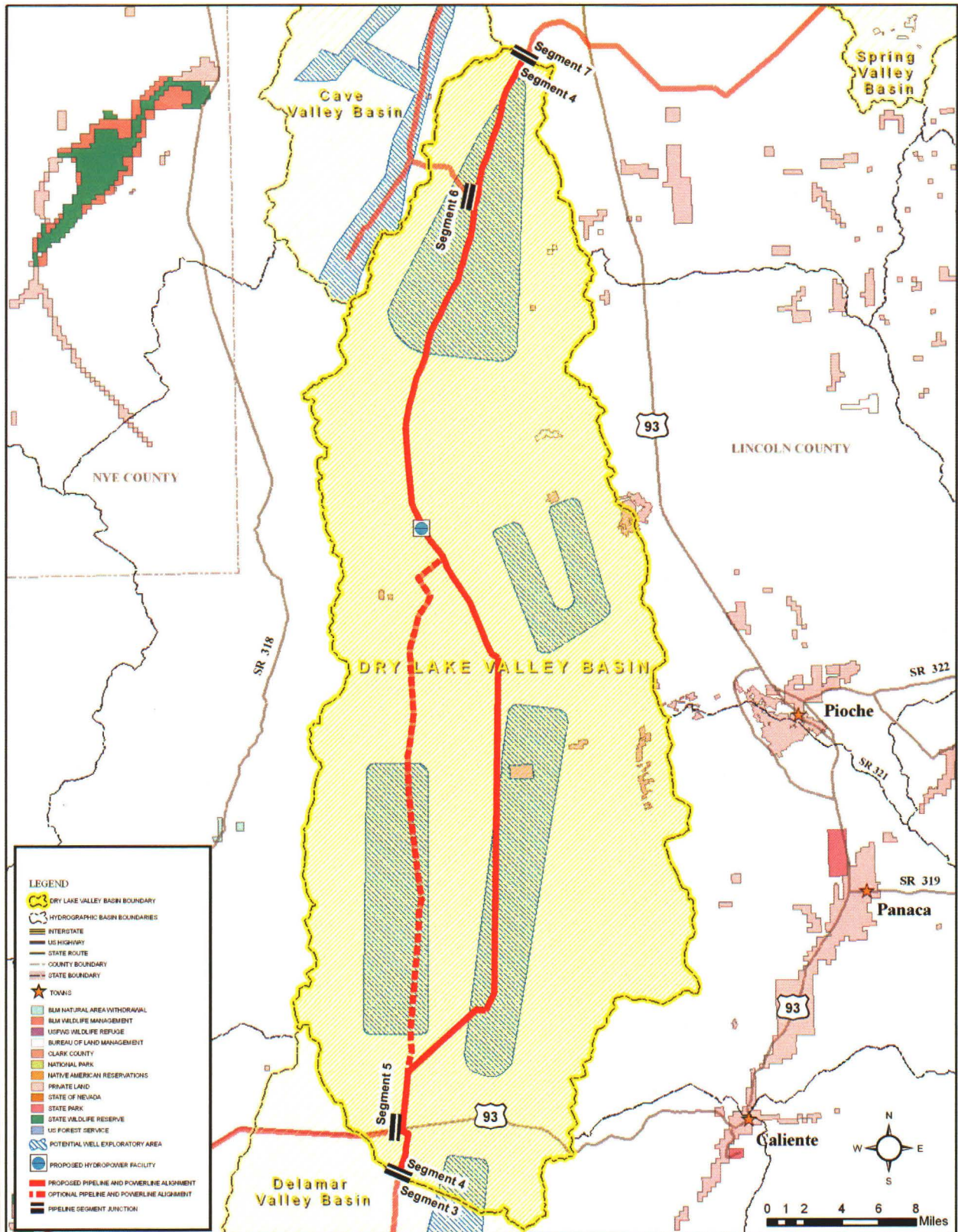
### **Rights-of-Way**

- Permanent pipeline right-of-way 100 feet wide; temporary pipeline right-of-way 100 feet wide
- Temporary staging areas along pipeline, approximately 3-acre sites every 2 to 3 miles
- Permanent power line right-of-way 100 feet wide
- Right-of-way for water conveyance and power facilities in Segment 4 approximately 2,500 acres

### **Anticipated Environmental Issues Within Segment 4**

- Construction effects on sensitive plants, sage grouse, small mammals (including pygmy rabbit and bats), and big game migration and seasonal habitat
- Effects of a new power line on raptor mortality and increased raptor density
- Effects on existing grazing allotments
- Construction-related introduction and spread of noxious weeds
- Visual effects of construction disturbance and permanent facilities
- Effects of groundwater pumping on springs and spring-dependent sensitive species in Pahranaagat, southern White River, and northern Lake valleys
- Effects of groundwater pumping on existing water rights and wells

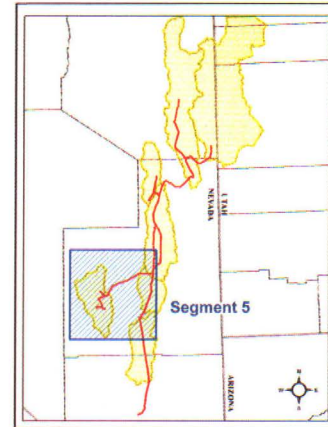
# Segment 4 - Dry Lake Valley Basin



## SEGMENT 5 TIKABOO VALLEY NORTH BASIN

### Location

Segment 5 is located within Lincoln County extending from southern Dry Lake Valley to central Tikaboo Valley. This area is within a transition zone between the Mojave Desert and Great Basin regions.



### Water Production

- SNWA has 2,590 acre-feet per year of permitted water rights and 11,580 acre-feet per year of water right applications in Tikaboo Valley North
- Potential well exploratory area on federal lands, located north of the Desert National Wildlife Range and Nellis Air Force Range, in the east-central part of Tikaboo North Valley
- Preliminary estimate of 10 to 20 groundwater production wells, completed in alluvium and carbonate rocks

### Water Conveyance Facilities

- A lateral water pipeline approximately 60 miles long, up to 24 inches in diameter, buried with between 5 to 10 feet of cover, along US 93, State Route 375 and unpaved roads in the central part of the valley
- Two 10-acre pumping stations to lift water over Mount Irish Range

### Power Facilities

- Power distribution line, 69 kV, approximately 45 miles long along the pipeline alignment
- Power distribution poles 60 to 80 feet tall approximately 600 feet apart

### Rights-of-Way

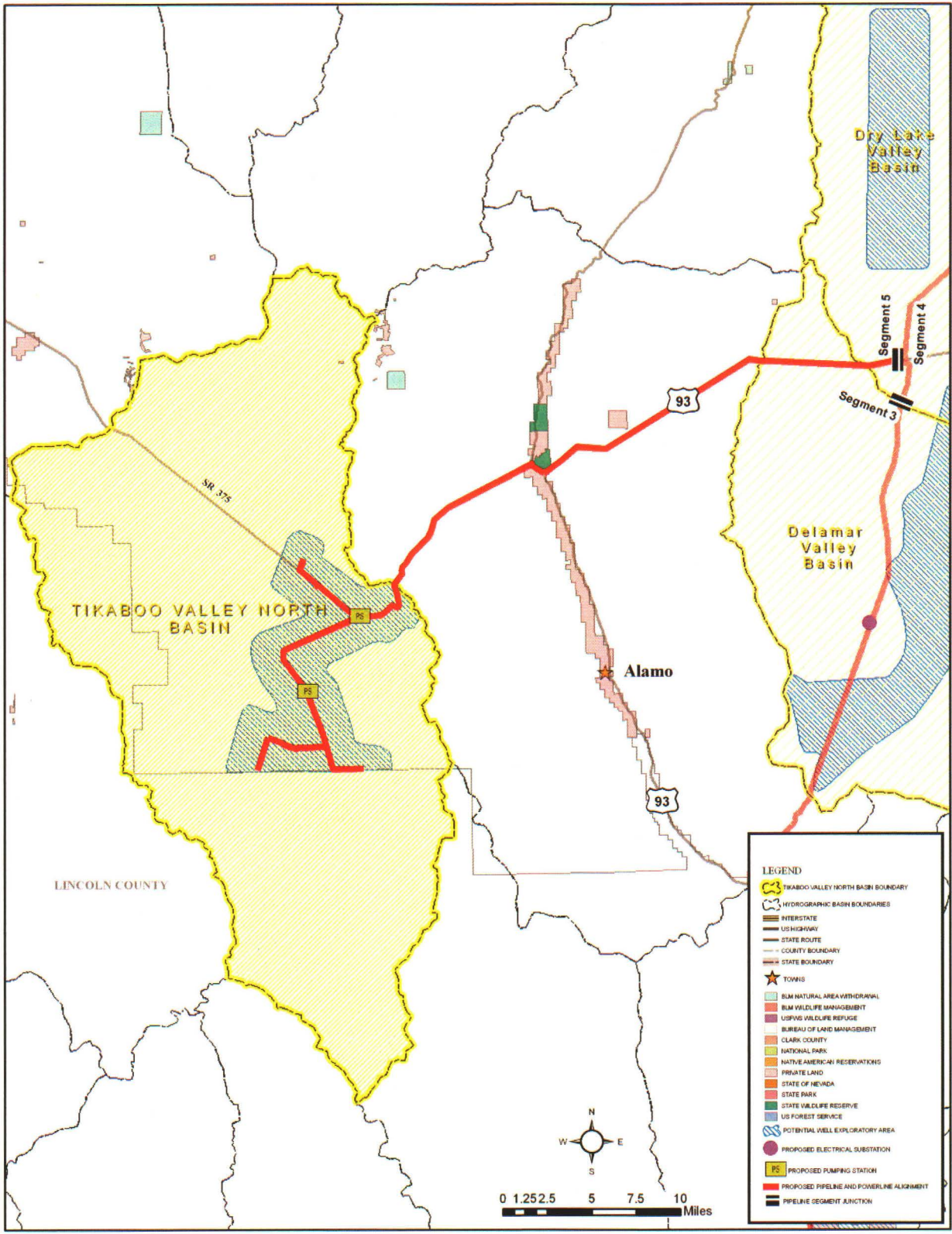
- Permanent pipeline right-of-way 50 feet wide; temporary pipeline right-of-way 100 feet wide
- Temporary staging areas along pipeline, approximately 3-acre sites every 2 to 3 miles
- Permanent power line right-of-way 100 feet wide
- Right-of-way for water conveyance and power facilities in Segment 5 approximately 1,700 acres

### Anticipated Environmental Issues Within Segment 5

- Construction effects on desert tortoise, sensitive plants, small mammals (including bats), and big game migration and seasonal habitat
- Effects of a new power line on raptor mortality and increased raptor density
- Effects on existing grazing allotments
- Construction-related introduction and spread of noxious weeds
- Temporary construction effects on US 93 and State Route 375 traffic
- Visual effects of construction disturbance and permanent facilities
- Effects of groundwater pumping on springs and spring-dependent sensitive species in Death Valley flow system, including Desert National Wildlife Refuge, Ash Meadows, and Devils Hole
- Effects of groundwater pumping on existing water rights and wells



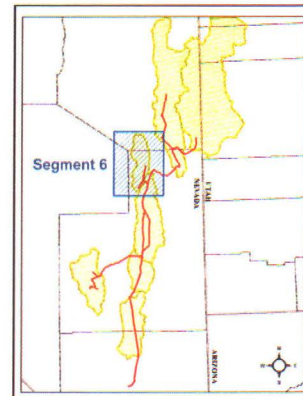
# Segment 5 - Tikaboo Valley North Basin



## SEGMENT 6 CAVE VALLEY BASIN

### Location

Segment 6 is located within Lincoln County extending from northern Dry Lake Valley to southeastern and central Cave Valley. This area is within the Great Basin region.



### Water Production

- SNWA has applications for up to 11,580 acre-feet per year of water rights in Cave Valley
- Potential well exploratory area on federal lands in southern part of valley
- Preliminary estimate of 10 to 15 groundwater production wells, completed in alluvium and carbonate rocks

### Water Conveyance Facilities

- A lateral water pipeline approximately 20 miles long, up to 24 inches in diameter, buried with between 5 to 10 feet of cover, along unpaved roads in the southern part of Cave Valley

### Power Facilities

- Power distribution line, 69 kV, approximately 20 miles long, along the pipeline alignment
- Power distribution poles 60 to 80 feet tall approximately 600 feet apart

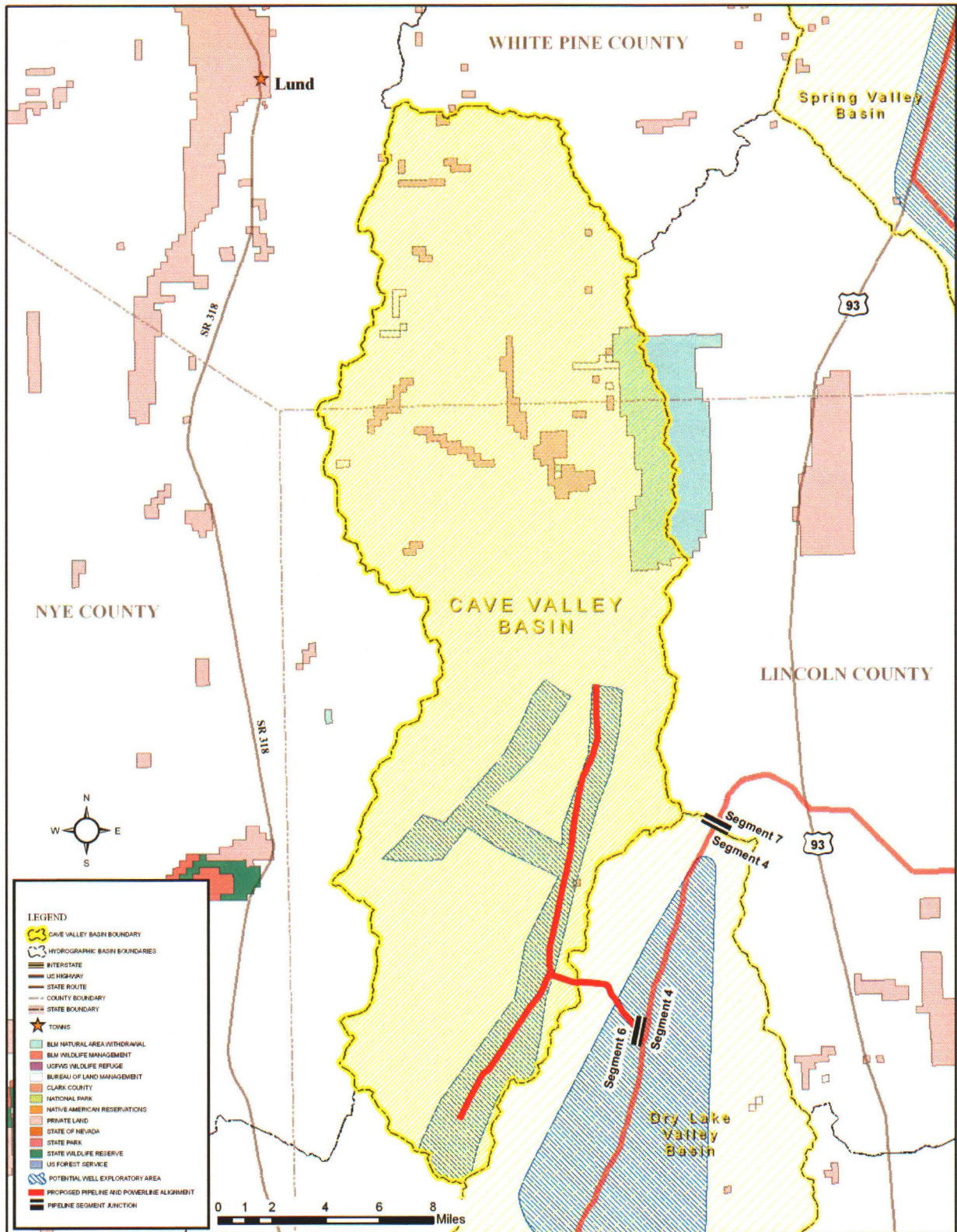
### Rights-of-Way

- Permanent pipeline right-of-way 50 feet wide; temporary pipeline right-of-way 100 feet wide
- Temporary staging areas along pipeline, approximately 3-acre sites every 2 to 3 miles
- Permanent power line right-of-way 100 feet wide
- Right-of-way for water conveyance and power facilities in Segment 6 approximately 600 acres

### Anticipated Environmental Issues Within Segment 6

- Construction effects on sensitive plants, sage grouse, small mammals (including pygmy rabbit and bats), and big game migration and seasonal habitat
- Effects of a new power line on raptor mortality and increased raptor density
- Effects on existing grazing allotments
- Construction-related introduction and spread of noxious weeds
- Visual effects of construction disturbance and permanent facilities
- Effects of groundwater pumping on springs and spring-dependent sensitive species, including Cave Spring
- Groundwater pumping effects on groundwater dependent plant communities (e.g. greasewood, big sage), aquatic riparian (i.e., wetlands and meadows) areas, and associated sensitive species, including southern White River Valley (Kirch Wildlife Management Area)
- Effects of groundwater pumping on existing water rights and wells

# Segment 6 - Cave Valley Basin



**LEGEND**

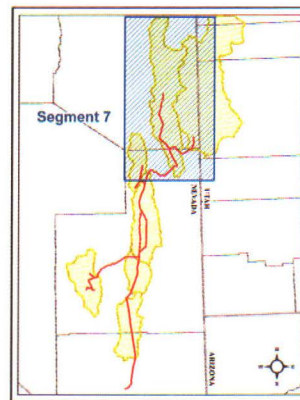
- CAVE VALLEY BASIN BOUNDARY
- HYDROGRAPHIC BASIN BOUNDARIES
- INTERSTATE
- US HIGHWAY
- STATE ROUTE
- COUNTY BOUNDARY
- STATE BOUNDARY
- TOWNS
- BLM NATURAL AREA WITHDRAWAL
- BLM WILDLIFE MANAGEMENT
- USFWS WILDLIFE REFUGE
- BUREAU OF LAND MANAGEMENT
- CLARK COUNTY
- NATIONAL PARK
- NATIVE AMERICAN RESERVATIONS
- PRIVATE LAND
- STATE OF NEVADA
- STATE PARK
- STATE WILDLIFE RESERVE
- US FOREST SERVICE
- POTENTIAL WELL EXPLORATORY AREA
- PROPOSED PIPELINE AND POWERLINE ALIGNMENT
- PIPELINE SEGMENT JUNCTION



## SEGMENT 7 SPRING VALLEY BASIN

### Location

Segment 7 is located within Lincoln County and White Pine County extending from the northern border of Dry Lake Valley to central Spring Valley. This area is within the Great Basin region.



### Water Production

- SNWA has applications for up to 91,220 acre-feet per year of water rights in Spring Valley
- Up to two potential well exploratory areas on federal lands in southern and central part of valley
- Preliminary estimate of 50 to 90 groundwater production wells, completed in alluvial, volcanic, and carbonate rocks

### Water Conveyance Facilities

- A primary transmission water pipeline approximately 70 miles long, up to 60 inches in diameter, buried with between 5 to 10 feet of cover, along unpaved roads in central Lake and southern Spring valleys, and along US 93; a possible optional alignment of approximately 15 miles along State Route 893
- A 10-acre pumping station in southern Spring Valley to lift water over Horse Corral Pass

### Power Facilities

- Power transmission line, up to 230 kV, 100 miles long, along the pipeline alignment, across the southern Schell Creek Range, along unpaved roads, and existing power line alignments; an alternative option may parallel existing power lines approximately 25 miles across the Humboldt Toiyabe National Forest
- Power transmission poles 100 feet tall approximately 800 feet apart
- A 10-acre substation in southern Spring Valley
- New access roads in areas where the power line is not along existing roads

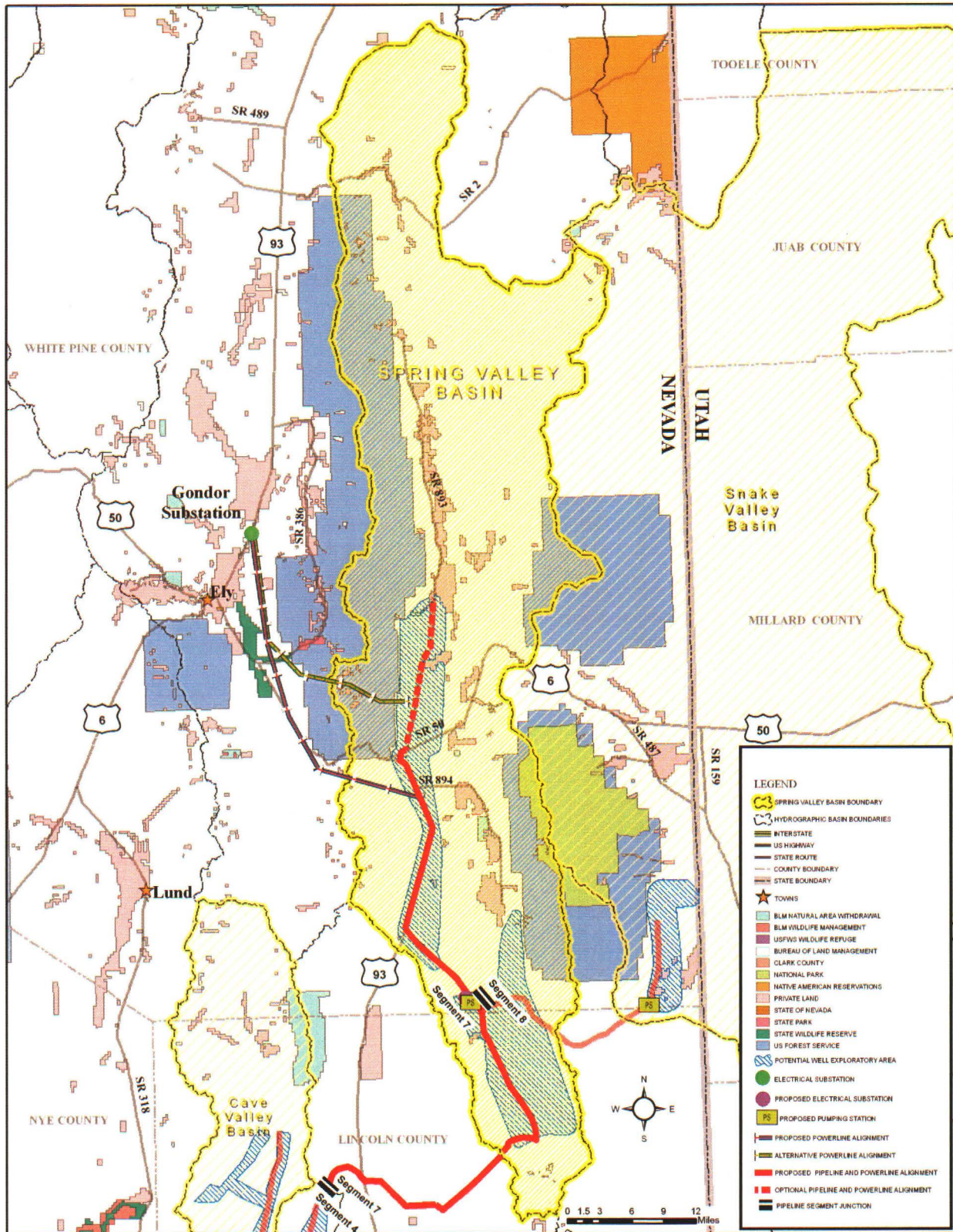
### Rights-of-Way

- Permanent pipeline right-of-way 100 feet wide; temporary pipeline right-of-way 100 feet wide
- Temporary staging areas along pipeline, approximately 3-acre sites every 2 to 3 miles
- Permanent power line right-of-way 100 feet wide
- Right-of-way for water conveyance and power facilities in Segment 7 approximately 3,000 acres

### Anticipated Environmental Issues Within Segment 7

- Construction effects on sensitive plants, sage grouse, small mammals (including pygmy rabbit and bats), and big game migration and seasonal habitat
- Effects of a new power line on raptor mortality and increased raptor density
- Effects on existing grazing allotments
- Construction-related introduction and spread of noxious weeds
- Temporary construction effects on US 93, US 6, and State Route 893 traffic
- Visual effects of construction disturbance and permanent facilities
- Effects of groundwater pumping on springs and spring-dependent sensitive species, including Shoshone, Minerva, and Millick springs
- Groundwater pumping effects on groundwater dependent plant communities (e.g. greasewood, big sage), aquatic riparian (i.e., wetlands and meadows) areas, and associated sensitive species
- Effects of groundwater pumping on existing water rights and wells

# Segment 7 - Spring Valley Basin



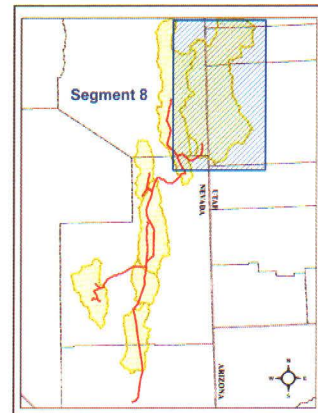
**LEGEND**

- SPRING VALLEY BASIN BOUNDARY
- HYDROGRAPHIC BASIN BOUNDARIES
- INTERSTATE
- US HIGHWAY
- STATE ROUTE
- COUNTY BOUNDARY
- STATE BOUNDARY
- TOWNS
- BLM NATURAL AREA WITHDRAWAL
- BLM WILDLIFE MANAGEMENT
- USFWS WILDLIFE REFUGE
- BUREAU OF LAND MANAGEMENT
- CLARK COUNTY
- NATIONAL PARK
- NATIVE AMERICAN RESERVATIONS
- PRIVATE LAND
- STATE OF NEVADA
- STATE PARK
- STATE WILDLIFE RESERVE
- US FOREST SERVICE
- POTENTIAL WELL EXPLORATORY AREA
- ELECTRICAL SUBSTATION
- PROPOSED ELECTRICAL SUBSTATION
- PROPOSED PUMPING STATION
- PROPOSED POWERLINE ALIGNMENT
- ALTERNATIVE POWERLINE ALIGNMENT
- PROPOSED PIPELINE AND POWERLINE ALIGNMENT
- OPTIONAL PIPELINE AND POWERLINE ALIGNMENT
- PIPELINE SEGMENT JUNCTION

## SEGMENT 8 SNAKE VALLEY BASIN

### Location

Segment 8 is located within White Pine County extending from south-central Spring Valley to southeastern Snake Valley. This area is within the Great Basin region.



### Water Production

- SNWA has applications for up to 50,680 acre-feet per year of water rights in Snake Valley; SNWA anticipates only taking half of that volume of groundwater from the basin
- Potential well exploratory area on federal lands in southern part of valley, within Nevada
- Preliminary estimate of 15 to 25 groundwater production wells, completed in alluvial, volcanic, and carbonate rocks

### Water Conveyance Facilities

- A lateral water pipeline approximately 30 miles long, up to 36 inches in diameter, buried with between 5 to 10 feet of cover, along unpaved roads in northern Hamlin and southern Snake valleys
- A 10-acre pumping station to lift water over Snake Range foothills

### Power Facilities

- Power distribution line, 69 kV, approximately 30 miles long, along pipeline alignment
- Power distribution poles 60 to 80 feet tall approximately 600 feet apart

### Rights-of-Way

- Permanent pipeline right-of-way 100 feet wide; temporary pipeline right-of-way 100 feet wide
- Temporary staging areas along pipeline, approximately 3-acre sites every 2 to 3 miles
- Permanent power line right-of-way 100 feet wide
- Right-of-way for water conveyance and power facilities in Segment 8 approximately 1,100 acres

### Anticipated Environmental Issues Within Segment 8

- Construction effects on sensitive plants, sage grouse, small mammals (including pygmy rabbit and bats), and big game migration and seasonal habitat
- Effects of a new power line on raptor mortality and increased raptor density
- Effects on existing grazing allotments
- Construction-related introduction and spread of noxious weeds
- Visual effects of construction disturbance and permanent facilities
- Effects of groundwater pumping on springs and spring-dependent sensitive species, including Big Springs, Little Springs, and Tule Valley (Utah)
- Groundwater pumping effects on groundwater dependent plant communities (e.g. greasewood, big sage), aquatic riparian (i.e., wetlands and meadows) areas, and associated sensitive species
- Effects of groundwater pumping on existing water rights and wells

Segment 8 - Snake Valley Basin

