1. Purpose and Need for this Federal Action

1.1 Introduction

On August 19, 2004, the Bureau of Land Management (BLM) received a right-of-way (ROW) application from the Southern Nevada Water Authority (SNWA) for construction and operation of a pipeline system to convey groundwater in southeastern Nevada (**Figure 1.1-1**). The proposal termed the Groundwater Development Project (GWD Project) would convey water produced from existing and new water rights for which the SNWA has applied to the Nevada Division of Water Resources (Office of the Nevada State Engineer [NSE]). The new water rights (subject to future approval by the NSE), are located in Spring, Snake, Cave, Dry Lake, and Delamar valleys, and are intended for use in Clark County.

The GWD Project is one component of the SNWA's long-term Water Resource Plan (**Appendix A**) to meet demands estimated by the SNWA pursuant to Nevada Revised Statutes (NRS) § 704.661. Additional information regarding the SNWA's water resource plan and the role of the GWD Project in meeting community needs is provided in Section 1.6, Southern Nevada Water Authority Responsibilities, Current Water Supply, and Future Needs. The BLM has no administrative or approval authority over the appropriation of water rights in Nevada or the SNWA's water resource plan.

BLM's role as a Federal Lands Manager considering SNWA's ROW applications is distinct from the NSE water rights process.

The BLM is the lead federal agency for preparing this Environmental Impact Statement (EIS) in compliance with National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508). This EIS is being prepared in conformance with the CEQ NEPA regulations, policy guidance provided in the BLM's NEPA Handbook (BLM Handbook H-1790-1) and from the Secretary of the Interior's office, and with land management plans currently in place for the affected public lands.

The BLM manages surface and mineral resources for federal lands it administers under the Federal Land Policy and Management Act of 1976 (FLPMA) and applicable regulations and in conformance with Resource Management Plans (RMPs) prepared pursuant to the FLPMA for the Southern Nevada and the Ely Districts. The BLM lands that would be dedicated for ROW for the proposed GWD Project are managed by the Schell and Caliente field offices of the Ely District and the Las Vegas Field Office of the Southern Nevada District.

The **GWD Project** includes buried pipelines, pumping stations, regulating tanks, pressure reducing stations, electrical power lines, electrical substations, electronic system operations facilities, a water treatment facility, communication facilities, access roads, and an underground water storage reservoir. The majority of these facilities would be located on public lands managed by the BLM.

This EIS evaluates the environmental impacts associated with the GWD Project's proposed conveyance system consisting of buried pipelines, pumping stations, regulating tanks, pressure-reducing stations, electrical power lines, electrical substations, electronic system operations facilities, communication facilities, access roads, a water treatment facility, an underground water storage reservoir, and ancillary facilities. The majority of these facilities would be located on public lands managed by the BLM.

Figure 1.1-1 Proposed Development

This EIS includes a programmatic analysis of environmental effects associated with the SNWA's prospective future groundwater development, which as noted above, is contingent upon future appropriation by the NSE. Such future development, much of which likely would occur on public lands and entail additional federal ROWs for specific groundwater production wells and collector pipeline locations, will require additional NEPA analysis (see Section 1.3.2, National Environmental Policy Act Tiering). Site-specific NEPA analysis, as provided in 40 CFR Part 1500 and the BLM NEPA Handbook, will be conducted for future proposed GWD Project facilities involving public lands in conjunction with water to be conveyed by the pipeline.

Programmatic Analysis. A type of NEPA analysis suited to broader scale temporal and spatial effects or activities that affect large areas. A programmatic analysis typically is associated with tiering which occurs in two or more phases.

1.2 Purpose and Need

1.2.1 Purpose

The BLM's purpose for this ROW action is to consider the applicant's request for use of federal land managed by the BLM for construction and operation of the proposed groundwater conveyance system. Once in place, the conveyance system could facilitate future groundwater development and production in Spring, Cave, Dry Lake, Delamar, and Snake valleys. Such future development is contingent upon approvals of water rights applications filed by the SNWA with the NSE and associated future ROW grants from the BLM.

1.2.2 Need

The BLM's need for federal action arises from its responsibility under the FLPMA and other legislation to respond to the applicant's ROW request. The BLM's multiple-use mission includes managing activities on federal land such as ROW authorizations, while conserving natural, historical, cultural, and other resources on the public lands. The FLPMA gives the Secretary of the Interior general authority to grant ROWs across public lands administered by the BLM, including ROWs for reservoirs, canals, ditches, flumes, laterals, pipes, pipelines, tunnels, and other facilities and systems for the impoundment, storage, transportation, or distribution of water (43 United States Code [USC] § 1761). The BLM is required by the FLPMA and other legislation to consider and respond to the applicant's ROW requests.

The **FLPMA** gives the Secretary general authority to grant ROWs across public lands administered by BLM, including ROWs for facilities and systems for the storage, transportation, and distribution of water.

1.3 National Environmental Policy Act Process Framework

1.3.1 Federal Land Policy and Management Act and Right-of-way Authorities

All ROWs requested by the SNWA for the GWD Project would be processed in accordance with the FLPMA and the BLM ROW regulations in 43 CFR Part 2800. The FLPMA authorizes the Secretary of the Interior to grant ROWs across public lands administered by the BLM.

In addition to the FLPMA, Congress specifically directed the BLM to grant ROWs to the SNWA for water resource development and conveyance projects in Lincoln and Clark counties pursuant to the Southern Nevada Public Lands Management Act (SNPLMA) of 1998 and the Lincoln County Conservation, Recreation, and Development Act of 2004 (LCCRDA). The SNPLMA requires the Secretary or the Interior, upon application and in accordance with the FLPMA and other applicable provisions of law, to issue ROW grants on federal lands in Clark County, Nevada, to a unit of local government or regional governmental entity for reservoirs, canals, channels, ditches, pipes, pipelines, tunnels, and other facilities and systems needed for the impoundment, storage, treatment, transportation, or distribution of water.

The **SNPLMA** requires the Secretary of the Interior to grant the ROWs requested by the SNWA in Clark County in accordance with FLPMA and other applicable regulations.

In 2004, Congress enacted the LCCRDA, which established "…a 2,640-foot wide corridor for utilities in Lincoln County and Clark County, Nevada, as generally depicted on the map entitled 'Lincoln County Conservation, Recreation, and Development Act' and dated October 1, 2004" (Public Law No. 108-424, 118 Stat. 2403 § 301). The LCCRDA states that the Secretary of the Interior will grant to the SNWA and the Lincoln County Water District "nonexclusive ROW to federal land in Lincoln County and Clark County, Nevada for any roads, wells, well fields, pipes, pipelines, pump stations, storage facilities, or other facilities necessary for the construction and operation of a water conveyance system, as depicted on the map." This act also states, "Before granting a ROW under paragraph (1), the Secretary of the Interior shall comply with the NEPA (42 USC 4321 et seq.) including the identification and consideration of potential impact to fish and wildlife resources and habitat." The LCCRDA also contains a provision that the State of Nevada and the State of Utah shall reach an agreement regarding the division of water resources of those interstate groundwater flow system(s) from which water will be diverted and used by the project prior to any transbasin diversion from groundwater basins located within both states. The agreement shall allow for the maximum sustainable beneficial use of the water resources and protect existing water.

The **LCCRDA** requires the Secretary of the Interior to grant the ROWs requested in Clark and Lincoln counties, subject to NEPA review.

The **LCCRDA** also requires an agreement between Nevada and Utah on the division of water resources from interstate groundwater flow systems.

The utility corridors established by the LCCRDA were incorporated into the Ely District Record of Decision (ROD) and Approved RMP (BLM 2008) and added to the previously identified corridors in the 1998 Las Vegas RMP (BLM 1998).

In summary, the SNPLMA mandates the BLM grant the ROWs requested by the SNWA in Clark County in accordance with the FLPMA and the BLM's ROW regulations. The BLM is required by the LCCRDA to grant ROWs requested in Clark and Lincoln counties. The SNWA's requested ROWs in White Pine County may be granted pursuant to the BLM's general authority under the FLPMA.

In White Pine County, the BLM may grant the ROWs under the FLPMA general authority.

1.3.2 Programmatic Agreement Review – Section 106 under National Historic Preservation Act

As part of this environmental review, a Programmatic Agreement (PA) (**Appendix F3.16**) was drafted under the provisions of Section 106 of the National Historic Preservation Act of 1966. The agreement would be executed by the BLM, the Advisory Council on Historic Preservation (ACHP), the Nevada State Historic Preservation Officer (SHPO), the U.S. Army Corps of Engineers (USACE), and the SNWA. Indian Tribes and other consulting parties would be invited to sign as concurring parties. The PA explains the proposed project and describes each agency's role in complying with Section 106. It also addresses the area of potential effects, the processes and methods the BLM would use when inventorying historic properties, the consultation process to be used during inventories, how eligibility for inclusion on the *National Register of Historic Places* would be determined, and mitigation of adversely-affected resources. In addition, procedures to be used when inadvertent discoveries of human remains or historic properties during project construction, should the ROW be granted, are also addressed.

Public review of the draft PA would provide for communication to a broad range of potentially affected parties and develop a clearer understanding of the Section 106 process, as well as identify improvements to the PA before it is executed by the aforementioned parties.

1.3.3 National Environmental Policy Act Tiering

The BLM is using a "tiered" approach to implement the NEPA for the GWD Project. Tiering allows an assessment of a combination of site-specific actions and broader programs and issues in an initial (Tier 1) analysis, evaluating the effects of additional site-specific proposals more comprehensively in subsequent or "tiered" NEPA analyses. Tiering expands upon the foundation provided in the Tier 1 analysis, focusing the subsequent analysis on actions, alternatives and issues not already addressed (BLM 2008). Tiering is appropriate when it helps the lead agency focus on those issues ready for decision; deferring detailed consideration of those issues not yet ready for analysis due to uncertainty or lack of sufficiently detailed description of the proposed development.

Tier 1 Analysis

The major project components specifically addressed in Tier 1 includes up to 306 miles of pipelines, 5 pumping stations, 6 regulating tanks, 3 pressure reducing stations, a water treatment facility with a 40-million gallon buried storage reservoir, approximately 323 miles of electrical power lines, 7 electrical substations, and access roads.

Tier 1 – This Environmental Impact Statement

For this project, some project and site-specific details of the Proposed Action, primarily the proposed alignment of the main pipeline and associated operational facilities (power transmission lines, pump stations, etc.) are known. Consequently, this Tier 1 document addresses the environmental effects of these known components.

Programmatic Analysis

The programmatic portion of this Tier 1 document includes the future production wells, collector pipelines, additional pumping stations, distribution power lines, additional secondary substations, pressure reduction valves, and maintenance roads.

Details regarding future facilities for groundwater development, including the number and locations of wells, and the specific lengths and routes of collector pipeline and distribution power lines, are presently unknown. Thus, the environmental effects of that future groundwater development, including the long-term effects of groundwater production, are the subject of programmatic analysis in this EIS. For future facilities not yet fully defined, the SNWA has identified groundwater development areas within which it anticipates accessing its permitted and applied for water rights (**Figure 1.1-1**). The analysis relies on assumptions that encompass the SNWA identified areas where water production wells, collector pipelines, and distribution power line routes might be located.

The SNWA's current ROW request covers only the main pipeline, power line, and primary lateral facilities.

This draft EIS includes both site-specific analysis for the mainline and primary lateral facilities and programmatic conceptual analyses for future facilities.

The SNWA does not propose to file ROW applications for groundwater production well locations and collector pipelines before this EIS is finalized. Therefore, the BLM has made programmatic assumptions about future facilities for the impact analysis, including assumptions on the number of wells, lengths of the collector pipelines and power lines in each groundwater basin, and groundwater withdrawal rates and volumes. This conceptual or development scenario approach is typical of NEPA analyses when specific locations of future facilities cannot be defined based on current knowledge.

Subsequent Tiers

After the SNWA identifies specific details of the groundwater development components involved in the programmatic analysis, it will submit additional ROW applications to the BLM. Based upon these applications, the BLM will address these future site-specific components in subsequent tiered NEPA documents. The hydrologic model used for this EIS (Tier 1) and baseline assessments for all resources will be updated in subsequent tiered analyses on site-specific groundwater development components. These subsequent documents will conform to NEPA with full public involvement, including public scoping and document review.

1.3.4 Bureau of Land Management Decisions - Tier 1

The analysis in this EIS will inform the decision makers whether they should:

1) Approve, modify, or deny the ROWs as proposed by the SNWA;
2) Apply appropriate mitigation measures; and
3) Develop and implement monitoring plans that ensure compliance with decisions, measure the effectiveness or success of decisions and the accuracy of analysis, and determine how to modify decisions if the purpose and need or desired outcomes are not being achieved.

If ROW grants are approved, the ROD would contain the requirement for the applicant to prepare detailed, site-specific construction and operation plans for each project phase or facility component. The plans must contain sufficient information for the BLM and other agencies to evaluate specific construction activities and planned application of mitigation. These plans would be prepared by the applicant and approved by the BLM prior to surface disturbance. The plans would include but are not limited to the following:

- Agency Coordination;
- Public Information Plan;
- Construction Plan;
- Mitigation Plan; and
- Emergency Response Plan.

If ROW grants are approved, now and in the future, the decision documents, either RODs or Findings of No Significant Impact (FONSI) would contain requirements for site-specific construction and operation plans comparable to those for the main pipeline system. Those plans would be prepared by the applicant and are subject to approval by the BLM prior to surface disturbance.

The ROD will document the BLM's decision on which alternative the applicant will be allowed to carry forward and what associated mitigation will be required in the implementation of that alternative. Once the ROD is completed, the ROW will be issued (if provided for in the ROD). When the BLM is satisfied that the SNWA has developed all required plans related to construction and operation for the ROW and ancillary facilities, the BLM will issue Notices to Proceed on a segmented basis. The Notice to Proceed will specify how the applicant must continue to move forward with the project, including defining additional requirements that were not specified in the ROD.

In accordance with 43 CFR 2807.17, the BLM will require that construction be initiated on each segment of the ROW within 5 years of the issuance of the ROW.

Before a Notice to Proceed is issued, the ROW holder would be responsible for ensuring that all NEPA requirements are up-to-date. These requirements may include completion of monitoring and other preconstruction activities.

Although the ROD and associated decisions do not carry an expiration date, the data, analyses, and other information used to reach a decision may change over time. A delay in project implementation of even a few years could result in the need to supplement the NEPA (EIS) process and associated processes such as Section 7 and Section 106 consultation.

For the purpose of the EIS, the framework for development of monitoring plans is assumed to follow the Stipulation for the Withdrawal of Projects (**Appendix C**) for Spring and Dry Lake, Delamar, and Cave (DDC) valleys (referred to as stipulated agreements in this draft EIS). The biological and hydrologic Monitoring Plans will be completed in accordance with the stipulation agreements. A preliminary mitigation, monitoring, and management plan (3M Plan) also has been developed by the BLM bureaus to address potential impacts in Snake Valley in Nevada and Utah. The

3M Plan for Snake Valley is a recommended mitigation measure. Further discussions of those plans are provided in Section 2.3.2, Stipulation Agreements for Monitoring, Management, and Mitigation.

1.4 Relationship of the Bureau of Land Management Decisions to the Nevada Water Rights Process

The NSE has jurisdiction to grant or deny the SNWA's groundwater applications in the five groundwater development basins associated with the GWD Project (NRS § 533). The process for obtaining a permit to develop unappropriated groundwater or surface water begins with an application for a water permit with the NSE. In determining whether to grant an application, the NSE must consider: 1) whether there is unappropriated water at the proposed source of supply; 2) whether the proposed use of water would conflict with existing rights; 3) whether the proposed use of the water would threaten to prove detrimental to the public interest; and 4) whether the proposed use of the water would adversely impact domestic wells. NRS § 533 stipulates additional factors for the NSE to consider prior to approving applications for interbasin transfers of water.

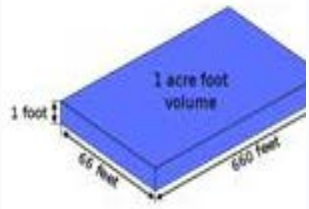
Water rights in Nevada are administered by the NSE under NRS § 533. The NSE has jurisdiction to grant or deny SNWA's groundwater applications.

The BLM's role in the NSE water rights process is that of a protestant, based on the protests that were filed by the Department of the Interior (DOI) bureaus in 1990. The BLM's role as a Federal Land Manager (FLM) considering the SNWA's ROW applications is separate from the NSE process.

BLM's role as a Federal Land Manager considering SNWA's ROW applications is separate from the NSE process.

1.4.1.1 Southern Nevada Water Authority Groundwater Applications

In 1989, the Las Vegas Valley Water District (LVVWD) filed applications for groundwater rights in Spring, Snake, Cave, Dry Lake, and Delamar valleys (the five groundwater production basins included in the GWD Project). The BLM and other DOI bureaus filed protests to the applications in all five basins. In 2002, the SNWA assumed full interest in the applications from the LVVWD. The NSE approved the SNWA's applications in Spring Valley in April 2007 for development and production of up to 40,000 acre-feet per year (afy) of groundwater, with potential future approval of up to 20,000 afy additional if, following the first 10 years of groundwater production, the NSE determined that additional water can be produced subject to the criteria outlined above (NSE Ruling 5726). DOI protests relating to the Spring Valley applications were resolved by a joint stipulation between the SNWA and the DOI agencies.



Acre-foot. A unit measuring the volume of water -- the quantity of water required to cover a 1-acre area to a depth of 1 foot, which is equal to 43,560 cubic feet or 325,851 gallons.

In 2007 and 2008, the NSE reviewed the SNWA's groundwater applications in Cave, Dry Lake, and Delamar valleys. In July 2008, the SNWA was permitted 18,755 afy in these 3 valleys (4,678 afy in Cave Valley; 11,584 afy in Dry Lake Valley; and 2,493 afy in Delamar Valley) (NSE Ruling 5875). Similar to Spring Valley, the BLM protests relating to Dry Lake, Delamar, and Cave valleys were resolved by a joint stipulation between the SNWA and the DOI agencies.

On October 19, 2009, the Seventh Judicial District Court of Nevada issued an Order vacating and remanding the NSE Ruling 5875 (July 9, 2008) on Delamar, Dry Lake, and Cave valleys in response to a request for a judicial review. This decision was appealed to the Nevada Supreme Court by both the NSE and the SNWA.

On June 17, 2010, the Nevada Supreme Court issued an opinion on the matter of Great Basin Water Network, et al. v. State Engineer and Southern Nevada Water Authority (Nevada Supreme Court 2010). That decision voided prior NSE rulings on the 1989 water appropriation applications and directed the NSE to reopen the water rights proceedings for the SNWA water appropriation applications including reopening the protest period.

In response to the Supreme Court ruling, the NSE issued a statement on July 7, 2010, indicating how that agency intends to comply with the Nevada Supreme Court decision (Nevada Department of Water Resources [NDWR] 2010):

"The water rights issued to the Southern Nevada Water Authority under the 1989 application in Spring Valley, Cave Valley, Dry Lake Valley and Delamar Valley will revert to application status."

"When the State Engineer renotices the SNWA's applications in Spring, Cave, Dry Lake and Delamar Valleys, any person wishing to protest must file new protest to those applications. However, the original Protestants to the 1989 filings do not need to refile their protests if they are content to stand on those original protests."

As a result of these actions, approvals of the SNWA's 1989 water appropriation applications for Spring, Cave, Dry Lake, and Delamar valleys are subject to the outcome of the NSE water appropriation review process and final rulings.

On October 18, 2010, the NSE issued an informational statement regarding the SNWA's water rights applications in Spring, Cave, Dry Lake, and Delamar valleys (NSE 2010). The purpose of the statement was to inform the public regarding the NSE's plans for republishing and rehearing the protested applications for the SNWA's water rights applications in these valleys. The anticipated timeline for further action on these applications included the following dates:

Republication – February 2011

Protest Period – March 2011

Pre-hearing – May 2011

Evidentiary Exchanges – July-August 2011

Administrative Hearing –September, October, and November 2011

The scheduling of Snake Valley water rights proceedings are currently unknown.

Other Water Rights and Applications

The SNWA holds other water rights and applications in the region that are not planned for development in conjunction with the GWD Project. These applications include 27,500 afy in Coyote Spring Valley. The NSE concluded in March 2002 (Order 1169) that there was insufficient information on pumping effects to existing water rights and has required the SNWA to conduct aquifer testing prior to ruling on these applications. The SNWA has completed construction of facilities to conduct the required testing, which began in November 2010. Because aquifer testing has not been completed to provide the NSE with sufficient information, water rights and applications for Coyote Spring Valley are not included in the GWD Project.

1.5 Other Governmental Agencies Involved in the National Environmental Policy Act Analysis

1.5.1 Cooperating Agencies

Under the CEQ regulations, federal agencies responsible for preparing NEPA analyses and documentation may do so in cooperation with federal, state, local, and/or tribal governments and agencies with jurisdiction by law or special expertise (40 CFR 1501.6). The BLM contacted potential cooperating agencies having a jurisdictional authority or special expertise on the project or whose jurisdictional authority or special expertise overlies the project area or one of the hydrographic basins from which water is proposed to be withdrawn (i.e., Spring, Snake, Cave, Dry Lake, and Delamar valleys). A total of 16 agencies elected to serve as cooperating agencies for this project. The BLM and each cooperating agency signed a Memorandum of Understanding (MOU) outlining the role of the cooperating agency.

The following cooperating agencies have signed an MOU with the BLM:

Federal Agencies

- Department of Agriculture, Forest Service (USFS)
- Department of Defense, Army Corps of Engineers (USACE)
- Department of Defense, Nellis Air Force Base (AFB)
- DOI, Bureau of Indian Affairs (BIA)
- DOI, Bureau of Reclamation
- DOI, Fish and Wildlife Service (USFWS)
- DOI, National Park Service (NPS)

State Agencies

- State of Utah
- Nevada Department of Wildlife (NDOW)

Local Agencies

- Central Nevada Regional Water Authority
- Nevada Counties: Clark, Lincoln, White Pine
- Utah Counties: Juab, Millard, Tooele

1.5.2 United States Geological Survey

The United States Geological Survey (USGS) "is a science organization that provides impartial information on the health of our ecosystems and environment, the natural hazards that threaten us, the natural resources we rely on, the impacts of climate and land-use change, and the core science systems that help us provide timely, relevant, and useable information" (USGS 2011). The USGS is an agency under the DOI. For water resources, the USGS collects information necessary to understand the Nation's water resources, and provides access to water data, publications, and maps, as well as to recent water projects and events. The USGS is contributing to the EIS process as a Technical Advisor to the BLM.

1.5.3 Tribal Governments

The BLM has been consulting with the potentially-affected Indian Tribes regarding the GWD Project throughout the NEPA process. Chapter 5 lists the Tribes that have been identified as having involvement or a particular interest in the GWD Project or project area. The BLM and the Tribes have worked together on the development of an Ethnographic Assessment report and are addressing potential traditional cultural properties (TCP) that were identified through the Ethnographic Assessment. Several of these Tribes assert federally reserved water rights claims to water potentially affected by the GWD Project. The particular water rights claims and related resources are covered in more detail in Chapter 3.

In 2007, the BLM initiated government-to-government consultation under Section 106 of the National Historic Preservation Act with 28 Indian tribes and bands that may have religious or cultural ties to the project area. As part of this EIS (Section 1.3.2), the BLM has prepared a draft PA and asks that it be reviewed during the comment period for the EIS.

1.5.4 Nevada Office of the State Engineer

The NDWR, headed by the State Engineer, is responsible for the administration and enforcement of Nevada's water law. The State Engineer's authority and responsibility includes overseeing the appropriation, distribution, and management of the state's surface and groundwater.

The NSE is serving as a technical observer in the hydrologic modeling process.

1.5.5 Federal and State Agency Permitting, Approvals, and Consultations

In addition to the SNWA's requests for ROWs addressed in the EIS, the GWD Project involves a number of other federal and state agency reviews, permits, and consultations. One of the important state processes for the GWD Project is the groundwater application process before the NSE, described above. Other permitting and consultation requirements are summarized in **Table 1.5-1**. Many of these review processes are concurrent with the EIS process, while others, such as state construction approvals and wildlife handling permits, will follow the BLM's decision on the ROW application.

Table 1.5-1 Agency Permits, Approvals, and Consultations for the Clark, Lincoln, and White Pine Counties Groundwater Development Project

Agency	Permit/Approval/Consultations	Agency Action
Federal		
BLM	NEPA – Lead Federal Agency	Preparation of the EIS.
	ROWs for the pipeline and all related facilities located on federal land	Consider issuance of a ROW grant for the portion of the project on federal land.
	ROWs for temporary workspace areas and access roads during construction	Consider the issuance of temporary ROWs for the portion of the project on federal land.
	Conformance Review of RMPs	Determine conformance of the Proposed Action and Alternatives with Ely RMP and Las Vegas RMP.
BLM and BIA	Native American Graves Protection & Repatriation Act (NAGPRA)	Coordination with affected Tribes; Ensure that adequate compliance plans are in place to address NAGPRA before construction is authorized.
	Indian Trust Responsibilities	Coordination with affected Tribes.
	American Indian Religious Freedom Act (AIRFA) and Religious Freedom Restoration Act (RFRA)	Coordination with affected Tribes.
	National Historic Preservation Act (NHPA)	Section 106 Consultation.
USFWS	Section 7 and Section 10 Consultation under the Endangered Species Act (ESA) Fish and Wildlife Act Coordination Migratory Bird Treaty Act (MBTA) Consultation Golden Eagle Protection Act Consultation	Review/evaluate lead agency Biological Assessment (BA) and make one of the following determinations: 1) not likely to adversely affect listed or proposed species or their designated critical habitats, 2) likely to adversely affect federally listed or proposed species, or their designated critical habitats (prepare a Biological Opinion with conditions).
Federal Highway Administration	Permit for pipeline and transmission line crossings of federal highways	Consider approval of permits to cross federal highways.
USACE	Section 404 Clean Water Act (CWA) Permit	Consider issuance of Section 404 nationwide or individual permits for wetland and waters of the United States (U.S.) crossings.
U.S. Environmental Protection Agency (USEPA)	Section 309 of the Clean Air Act (CAA), EIS review and comment	Provide comments to lead federal agency; review Section 404 permits (veto power).

Table 1.5-1 Agency Permits, Approvals, and Consultations for the Clark, Lincoln, and White Pine Counties Groundwater Development Project (Continued)

Agency	Permit/Approval/Consultations	Agency Action
USFS, Humboldt-Toiyabe National Forest	Humboldt-Toiyabe Forest Plan[1]	Verify conformance with Forest Plan utility corridors. Consider approval of use permit applications for ROWs and other uses.
	Special Use Permits[1]	Consider issuance of temporary use permits for temporary construction activities on National Forest System lands.
	Consultation and Concurrence[1]	Concur with the BLM transmission line ROW grant prior issuance for National Forest System Lands. Issue Notices to Proceed for National Forest System lands.
State - Nevada		
Nevada Division of Environmental Protection (NDEP), Bureau of Water Pollution Control	401 Water Quality Certification (CWA permit requirement for Section 404 permit) General Stormwater Permit Temporary Discharge Permit Temporary Groundwater Discharge Permit Working in Waterways Permit Underground Injection Control Permit	Consider issuance of water quality related permits in Nevada.
NDEP, Bureau of Safe Drinking Water	Letter of Approval to Construct	Ensure protection of drinking water.
Nevada Department of Transportation (NDOT)	Encroachment into State Highway ROWs ROW Occupancy Permit	Consider approval of project facilities within Nevada state highway ROWs.
Nevada Division or State Lands (National Guard Lands)	Permanent and temporary construction easements	Consider approval of easements across state lands.
NDEP, Bureau of Air Pollution Control	Dust Control Permit for Surface Area Disturbance (Lincoln and White Pine counties)	Consider issuance of air quality related permits in Nevada.
	Permit for emergency (standby) generators at pumping stations	Consider issuance of permit for stationary emission source (backup generators).
NDWR	Water rights permits Drilling permit Recharge, storage, and recovery of underground water permit Dam Safety Permit	Consider issuance of water rights and related permits.
NDOW	Special purpose permit (Nevada Administrative Code [NAC] 503.093)	Consider issuance of permit to handle desert tortoise and Gila monster.
Nevada Division of Forestry	Collection permit for state-listed plants	Consider issuance of permit to collect state-listed plants during construction.
Nevada Department of Cultural Affairs, SHPO	Section 106 Consultation, NHPA	Opportunity to comment on the undertaking. Concurrence on eligibility determination and adverse effects to historic properties.
Nevada State Fire Marshal	Permit to store hazardous materials, such as combustibles, flammables, and explosives	Consider issuance of permit under NAC 477.323.

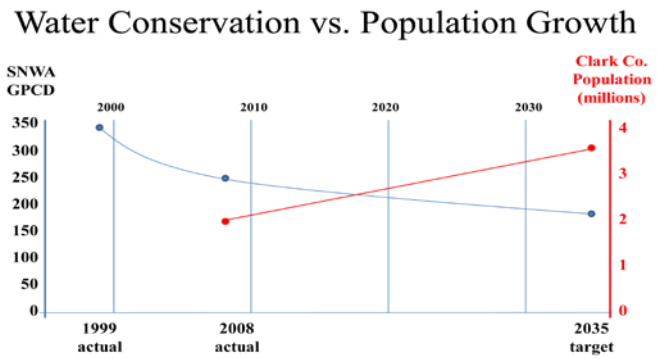
Table 1.5-1 Agency Permits, Approvals, and Consultations for the Clark, Lincoln, and White Pine Counties Groundwater Development Project (Continued)

Agency	Permit/Approval/Consultations	Agency Action
Local Agencies		
Clark County, Nevada	Special Use Permit, Encroachment Permit, Grading Permit, Building Permit, Sand and Gravel Processing Permit, Blasting Permit, and Fuel Storage Permit	Consider issuance of permits.
	Non-attainment conformance review; dust control permits	Review documentation that project particulate and criteria pollutant emissions would not exceed non-attainment thresholds. Consider issuance of permits.
Lincoln County, Nevada	Special Use Permit, Encroachment Permit, Building Permit, and Blasting Permit	Consider issuance of permits.
White Pine County, Nevada	Encroachment Permit, Building Permit, and Excavation Permit	Consider issuance of permits.
Nevada Counties (Clark, Lincoln, White Pine)	Road use and crossing permits, other permits	Consider approval of various construction and facility permit application.

[1] If the Option 1 transmission line route were selected by the BLM in the EIS ROD.

1.6 Southern Nevada Water Authority Responsibilities, Current Water Supply, and Future Needs

The SNWA is a political subdivision of the State of Nevada, established in 1991 to address the regional water needs of southern Nevada. The SNWA was formed by cooperative agreement among the Big Bend Water District, City of Boulder City, City of Henderson, City of Las Vegas, City of North Las Vegas, Clark County Water Reclamation District, and LLVWD. The SNWA's Board of Directors is comprised of elected officials representing each of those agencies. The SNWA was formed by these seven entities for the purpose of acquiring and managing water resources for southern Nevada, constructing and managing regional water facilities, and promoting responsible water use (**Appendix A**).



The SNWA allocates and delivers available water supplies to meet the demands of its member agencies. Each member agency is individually responsible for and has sole authority over the allocation and delivery of retail water to customers within its respective service areas, the latter of which collectively encompass the Las Vegas Valley, Boulder City, and Laughlin. A description of the SNWA water delivery system, water rights, and recent history of water planning and water development is contained in **Appendix A**.

1.6.1 Water Demand and Conservation

In accordance with the requirements of NRS § 704, the SNWA develops water demand forecasts for its service area across a long-term planning horizon. This forecasting is based on both population projections and expected conservation. The Water Resource Plan (**Appendix A**) forecasts water demands through 2060 based on the June 2008 Clark County Population Forecast prepared by the University of Nevada Las Vegas Center for Business and Economic Research (CBER) (2008). The BLM has no administrative or regulatory authority over the SNWA's demand projections, the timing or quantity of water required, potential alternative sources of water, or priorities established with respect to procuring additional sources. Such issues are more properly addressed in proceedings before the NSE.

Based on CBER's 2008 population forecast, population growth in the Las Vegas Valley is expected to continue over the long term. CBER's 2008 forecast shows Clark County's population growing from a population of approximately 2 million to approximately 3.65 million in 2035. The SNWA's water demand forecast is based on CBER's population forecast, with a short-term adjustment to reflect the recent economic conditions and an adjustment to reflect that the SNWA service area does not encompass the entirety of Clark County. Recent adjustments to this long-term population growth forecast in light of the recent economic downturn in the Las Vegas region are discussed in Section 3.18, Socioeconomics and Environmental Justice.

Water demand generally is a function of both population and individual water use. A commonly used measure of individual water use is gallons per capita per day (GPCD), which in this instance equals the total community water use, divided by the total resident population, divided by 365 days per year. The GPCD parameter is not particularly useful for comparison between different communities, due to inconsistent water use accounting practices, varying climate conditions, different community demographics factors and economic factors. However, it is a good tool to measure and compare an individual community's water usage and conservation progress over time.

Total annual community water use (gallons) ÷ Community population ÷ 365 days per year = GPCD.

Another component of determining projected water demand is factoring in current and future water conservation efforts that can slow the rate of increase or reduce overall water demand. Since the SNWA's inception in 1991, through implementation of water conservation efforts, the SNWA has reduced community water use from 344 to 248 GPCD in 2008 (**Appendix A**, SNWA Water Resource Plan). To promote water efficiency and extend the availability of limited resources, the SNWA adopted a more aggressive conservation goal in early 2009 to reduce water use to 199 GPCD by 2035. The SNWA anticipates this additional conservation will save the community approximately 276,000 afy by the year 2035 (**Appendix A**).

Ongoing conservation programs have reduced average community water use 28 percent, from 344 to 248 GPCD between 1991 and 2008.

Allocation is a process that allows a limited resource (e.g., water) to be shared.

As shown on **Figure 1.6-1**, even with the incorporation of the more aggressive conservation goal of 199 GPCD, the SNWA's long-term water demands are projected to increase over 30 percent between 2009 and 2035, to approximately 739,000 afy (**Figure 1.6-1**) (**Appendix A**). Under normal Colorado River conditions, the SNWA anticipates GWD Project water would not be needed until 2020. However, if severe drought in the Colorado River Basin persists and a portion of the SNWA's Colorado River resources becomes unavailable, the SNWA may need to begin using GWD Project water before 2020.

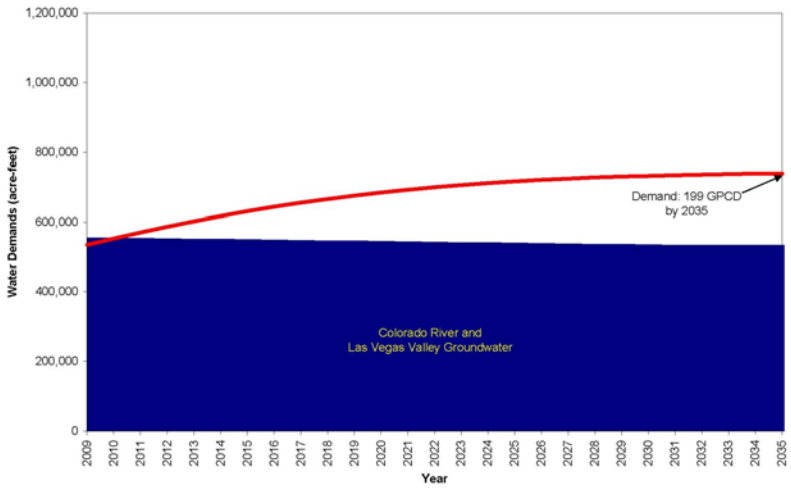


Figure 1.6-1 SNWA Water Demands and Current Resources 2009 through 2035

1.6.2 Colorado River Water Supplies

The SNWA depends on the Colorado River for 90 percent of its water resource needs. These Colorado River resources include a basic apportionment for the State of Nevada, return-flow credits, developed resources conveyed to the river for credit (including conserved tributary water, imported groundwater, and system efficiency projects, collectively known as an Intentionally Created Surplus [Bureau of Reclamation 2007]), and water banked in Arizona and California. A detailed description of the SNWA's current and future water resources is provided in its Water Resource Plan (**Appendix A**).

The SNWA depends on the Colorado River for 90 percent of its present water resource needs.

In 1999, the Colorado River Basin began to experience drought conditions that became the worst 5-year drought in the recorded history of the basin. These conditions were aggravated by several years of extremely dry soil conditions, which further reduced total runoff. As a result, water levels in the two primary storage reservoirs on the Colorado River (Lake Mead and Lake Powell) declined to levels not observed since Lake Powell began filling in the early 1960s. Except for 2005 and 2008, when the Colorado River Basin received slightly above-normal runoff, drought conditions in the basin persisted. At the end of 2010, the combined storage of Lake Mead and Lake Powell was about 50 percent of capacity and Lake Mead storage was approximately 40 percent of capacity with a water level about 128 feet lower than experienced in the late 1990s (**Appendix A**).

Due to extended drought in the Colorado River Basin, the combined storage of Lake Mead and Lake Powell (primary the SNWA storage reservoirs) stood at about 50 percent of capacity at the end of 2010.

The SNWA deems development of in-state groundwater resources critical to ensure adequate resource availability for essential southern Nevada municipal water supplies in times of drought.

Prior to this recent drought, the SNWA had projected that it could utilize surplus water on the Colorado River (domestic surplus), along with conservation and use of banked water to meet projected demands and would not need additional water resources until 2020 or later (**Appendix A**). Due to the severity of the drought, surplus Colorado River water is no longer projected to be available (Bureau of Reclamation 2007). The SNWA would utilize surplus water if it becomes available; however, the SNWA's 2009 Water Resource Plan does not assume availability or use of surplus during the 50-year planning horizon.

Construction of a third intake structure in Lake Mead is an action independent from the GWD Project analyzed in this EIS.

For the SNWA, continued declines in Lake Mead water levels could result in reduction of available Colorado River supplies and operating challenges associated with water intake facilities in Lake Mead. The SNWA currently has two intake structures in Lake Mead. If drought conditions continue and Lake Mead water levels continue to drop, the SNWA may be unable to withdraw water from its first intake as soon as 2012 (**Appendix A**). To preserve supply capacity and provide access to better water quality as lake levels decline, the SNWA is currently constructing a third intake, anticipated to be completed in 2014. The SNWA also would face a reduction in supply if water levels in Lake Mead decline to specified levels and the Secretary of the Interior declares shortage conditions (Bureau of Reclamation 2007). Under shortage conditions, the SNWA would continue to utilize those Colorado River resources that are available, along with temporary resources such as banked water supplies, and implement additional demand management measures.

The other Colorado River Basin states have expressed the view that Nevada should develop in-state resources before attempting to modify the Colorado River Compact. The SNWA states in its Water Resource Plan (**Appendix A**) that development of in-state groundwater resources is critical to ensuring that sufficient resources are available to preserve essential municipal water supplies.

1.7 Public and Agency Scoping

Project scoping began in April 2005, and a final scoping summary report was issued in February 2007. The BLM conducted extensive public outreach, and received oral and written comments from thousands of individuals, organizations and agencies.

On April 8, 2005, the BLM published a Notice of Intent (NOI) and initiated the NEPA process. Concurrent with publication of the NOI, the BLM sent a public scoping package to the mailing list maintained in the Ely Field Office. This list included approximately 2,000 individuals and organizations. The BLM also issued press releases to local and regional radio stations and newspapers. The public, governmental agencies and non-governmental organizations were invited to provide oral and written comments at scoping meetings, as well as written comments by mail.

The scoping period extended from April 8 through August 1, 2005, and included nine public scoping meetings in Nevada and Utah where interested parties were invited to submit oral and written comments. A total of 657 members of the public signed in as meeting participants; 210 participants provided oral comments. Following the end of the public scoping period, all oral and written comments were collected into an electronic database.

A second NOI was published on July 19, 2006, to reopen scoping for the proposed GWD Project. Scoping was reopened for two reasons: 1) in January 2006, the SNWA and the Lincoln County Water District (LCWD) completed an agreement under which the SNWA would convey existing LCWD groundwater rights from Spring and Lake valleys in the SNWA pipeline system; and 2) the SNWA withdrew its proposal to develop groundwater from the Tikaboo Valley North Basin, as well as its proposal to construct the associated pipeline that would interconnect with the proposed mainline pipeline system. Concurrent with publication of the second NOI, the BLM sent a scoping package to an updated mailing list that included parties on the original list, parties who had subsequently requested to be added to the mailing list, and those parties providing comments during the original scoping period. Scoping packages were sent to approximately 7,800 individuals and organizations. The BLM also issued press releases to local and regional radio stations and newspapers. No additional public scoping meetings were held during the second public scoping.

A final scoping summary report was issued in February 2007. Of the 1,210 substantive letters received from agencies, businesses, and individuals during both scoping periods, 597 were received from Nevada, 459 from Utah, and 154 from other states or countries. A total of 4,958 form letters were received from non-governmental organizations. A statistical summary of the types of comments received, and a list of governmental and non-governmental organizations that submitted comments are presented in the scoping report, which is available on the BLM Nevada website under the Nevada Groundwater Projects Office: http://www.blm.gov/nv/st/en/prog/planning/groundwater_projects/snwa_groundwater_project/public_scoping. During the scoping process, the public and agencies provided numerous comments on a variety of EIS content issues. Most of the issues identified by the public and agencies during scoping are addressed in this EIS. Some, however, were outside the scope of the EIS, as described in Section 1.6.2, Colorado River Water Supplies. The following issues related to EIS components were raised and are addressed in this EIS.

- Purpose and Need – the BLM's administrative responsibilities and the supply and demand basis for the proposed project.
- Project Description – A comprehensive description of the project construction and surface disturbance; surface disturbance reclamation; disclosure of the volumes and rates of groundwater withdrawal; disclosure of costs of construction and operation; project abandonment.
- Project Alternatives – Alternative water conveyance and water supply concepts and proposals for providing water to Southern Nevada.
- Cumulative Impacts – Evaluation of potential project-related impacts to the human environment in conjunction with existing and reasonably foreseeable projects.
- Climate and Air Quality – Potential increases in fugitive dust from project construction and operation; local and regional climate changes resulting from project operation. Impacts related to climate change.

- Geology (Minerals, Geologic Hazards, Caves, Paleontology) – Loss of access to underlying minerals; potential modification of groundwater regime that forms and maintains caves; potential seismic activity damage to project facilities; potential surface subsidence caused by groundwater drawdown; and loss or damage of paleontological resources from surface disturbance.
- Soils – Potential increases in soil erosion and compaction from surface disturbance; potential risk of soil contamination and biotic soil crust damage during construction; disturbed soil protection and mitigation after construction; and potential changes in shallow groundwater flow from pipeline installation.
- Water Resources (Groundwater, Surface Water) – Appropriate groundwater and surface water study areas; surface drainage and hydrogeologic characterization using best available information; hydrogeologic modeling that is sufficiently sensitive to estimate effects over long time frames; aquifer drawdown effects on sustainable yield, water-dependent surface resources, and water quality; potential groundwater and surface water availability impacts on various water rights (private, Tribal, Lake Mead); and groundwater drawdown monitoring to detect and prevent impacts.
- Biological Resources (Vegetation, Aquatic Biota, Terrestrial Biota, Special Status Species) – Characterization of vegetation communities, wildlife species and habitat and aquatic systems (springs, streams) within appropriate study areas; potential groundwater drawdown effects on vegetation, wildlife, and aquatic systems; and implementation of biological resource monitoring and mitigation programs.
- Land Use and Management including Protected Lands, Utility Uses and Corridors, Agriculture (Livestock Grazing, Irrigated Cropland), Recreation, Wild Horses, Traffic, Public and Private Land Access – Project compatibility with protected lands, utility uses and corridors, designated wilderness and wilderness study areas (WSAs), construction surface disturbance effects to livestock grazing and irrigated lands; potential groundwater drawdown effects on agricultural uses; and implementation of groundwater monitoring and mitigation systems.
- Aesthetics (Visual Resources, Noise, Artificial Lighting) – Landscape modification effects from construction and operation of project transmission lines and pumping stations.
- Cultural Resources (Tribal Consultation, Archaeology, and Ethnography) – Tribal consultation process for the NHPA Section 106 compliance process and ethnographic documentation; and potential project construction and operation effects on pre-historic and cultural resources.
- Socioeconomics (Project Costs, Economic and Social Impacts, Environmental Justice) – Effects of project construction and operation on rural lifestyles, attitudes, population, age distribution, and social structure; county and community fiscal costs and benefits; and environmental justice. Potential for induced growth in Clark County.
- Public Health and Safety – Health and public safety effects from construction and post-construction dust; potential exposure to radioactive dust as the result of historic aboveground nuclear tests; and potential for crossing soils contaminated by industrial wastes.

1.7.1 Issues Outside the Scope of the Environmental Impact Statement

Several issues raised during scoping are outside the scope of this EIS because they are related to in-state water rights administration by the NSE. As such, this federal EIS is not the proper venue to address the following issues.

The BLM has no administrative or regulatory authority over SNWA's demand projections, the timing or quantity of indicated need, alternative sources of water, or priorities established with respect to procuring such sources.

- Requirement for a compensation program for potential injury (reduction in quantity or quality) to existing water rights for Native American and other water claims.
- Requirement of a project bond for potential injury to water rights.
- The SNWA's projected requirement for in-state groundwater water resources, the timing of that requirement, alternative sources of water, priorities for expanding its water resource portfolio, conservation targets, water pricing by the SNWA's member water purveyors, or, the allocation of these water resources to serve growth or bolster supplies in times of drought.

1.7.2 Topics of Controversy

The BLM acknowledges that areas of controversy exist regarding the Proposed Action and the analyses in this EIS. Many of these issues are not easily resolved because they reflect differing points of view or irreducible uncertainties in predicting the future. Throughout this draft EIS, the BLM has carefully evaluated the effects of the Proposed Action and alternatives on environmental resources.

The proposed GWD Project extends over a very large geographic area characterized by complex geology and terrain. The BLM has developed this draft EIS using high quality information and professional scientific analysis, and has made reasonable assessments of impacts to natural and human resources based on this information. The BLM has developed and used data from a variety of sources. These data have been reviewed for their completeness and estimated accuracy, and to ensure that they are as current as possible. The BLM has instituted an inclusive input process for identifying appropriate data sources, developing the groundwater modeling methodologies, and sharing preliminary modeling and impact results to improve the final result. The BLM recognizes that there are differing opinions among experts on a variety of issues. The BLM has documented the range of opinions that has emerged throughout the modeling and impact assessment process. The BLM acknowledges that there is incomplete and unavailable information for this EIS. Specific areas of these types of information for this EIS are discussed in the Chapter 3, Introduction to the Affected Environment and Environmental Consequences.

The BLM and other federal and state agencies recognize that additional monitoring information must be gathered in the future to document predicted ecosystem changes; help guide future management actions; contribute to improvements in the understanding of the groundwater system; and document how surface resources are responding to groundwater pumping. These monitoring results also will be used as a baseline for future site-specific groundwater development evaluations.

There are a variety of views on the timing and significance of possible future impacts in the Snake Valley and vicinity of the Great Basin National Park (GBNP). This includes the potential effectiveness of the proposed monitoring and mitigation plans proposed in this Draft EIS.

Some specific examples of areas of controversy are listed below. A synopsis of these issue areas, which generally apply to all alternatives, is provided in Chapter 3, Introduction to the Affected Environment and Environmental Consequences. Further detail is then provided in the individual natural and human resource sections.

- Potential climate change effects. See Section 3.1, Air and Atmospheric Resources.
- Groundwater modeling methods and study areas, and modeling input and output decisions. See Section 3.3, Water Resources.
- Criteria for evaluating groundwater drawdown effects on surface natural resources. See Sections 3.3, Water Resources; 3.5, Vegetation Resources; 3.6, Terrestrial Wildlife Resources; and 3.7, Aquatic Biology Resources.
- The relationship of groundwater to economic and population growth in the Las Vegas Valley. See Section 3.18, Socioeconomics and Environmental Justice.
- The current science is uncertain as to whether some faults in the project area act as barriers to flow, and if so, to what extent. Further information is needed to more accurately characterize these fault properties. See Chapter 3.3, Water Resources.
- Water need and availability and the equity of water transfers between Nevada and Utah. See Sections 3.3, Water Resources and 3.18, Socioeconomics and Environmental Justice.