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 overall 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 GWD Project would develop and convey groundwater resources that the NSE has permitted to SNWA in Spring, Delamar, Dry Lake, and Cave valleys and may permit in Snake Valley for use in Clark County.

The GWD Project is one component of the SNWA's long-term plan (**Appendix A**) to meet future demand 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.

The BLM's role as a Federal Lands Manager considering SNWA's ROW applications is separate 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 also is being prepared in conformance with the policy guidance provided in the Department of the Interior (DOI) Regulations at 43 CFR 46, DOI Environmental Statement Memoranda and the BLM's NEPA Handbook (BLM Handbook H-1790-1).

The **GWD Project** Conveyance System 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.

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 BLM, Southern Nevada, and 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.

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 also includes a programmatic analysis of environmental effects associated with the SNWA's prospective future groundwater development actions. Such future development, much of which likely would also 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 1.3.6, 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 NEPA analysis suited to broader scale temporal and spatial effects or activities that affect large areas. A programmatic analysis typically is associated with activities which occur in two or more phases, where subsequent phases are subject to additional, site-specific assessment.

1.2 Purpose and Need

Pursuant to 40 CFR 1502.13 and Section 6.2 of the BLM's NEPA Handbook, the purpose and need statement should state why the BLM is taking action (i.e., deciding whether or how to grant a ROW). This BLM purpose and need for action dictates the range of alternatives and provides the rationale for selection of an alternative in the decision. The proponent's information regarding its purpose and need is helpful background that the BLM may use in its development of the alternatives.

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. The applicant has requested the proposed ROWs to develop the main conveyance system and convey groundwater rights permitted by the NSE in Spring, Cave, Dry Lake, and Delamar valleys and applied for in Snake Valley to the Las Vegas Valley. Future groundwater development is contingent upon approval of associated future ROW grants by 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 **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.

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) and the Lincoln County Conservation, Recreation and Development Act of 2004 (LCCRDA). The applicant's proposal to construct, operate, and maintain a groundwater development and conveyance system on public lands is consistent with this objective. The BLM is required by the FLPMA and other legislation to consider and respond to the applicant's ROW requests.

Applicant's Rationale

SNWA's basis for the GWD Project is multi-faceted; to diversify its water resource portfolio to protect the community from drought and shortages from the Colorado River system, to fulfill its contractual obligation to provide conveyance capacity in Lincoln County to the Lincoln County Water District, and to help supply future projected water demands. SNWA has identified groundwater in these five basins as a resource that would be used in the short term to offset drought impacts and in the long-term to meet projected water demands.

1.3 Regulatory Framework

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

The FLPMA authorizes the Secretary of the Interior to grant ROWs across public lands administered by the BLM. FLPMA requires that: Each ROW shall contain such terms and conditions deemed necessary to: protect federal property and economic interests; protect lives and property; protect the interest of individuals who rely on the fish, wildlife, and other biotic resources; and protect the public interest in the lands (Sec. 505 [43 USC 1765]). The BLM is also generally obligated to avoid unnecessary or undue degradation of the public land (43 USC 1732). 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.

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

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

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** 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 2008a) 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 ROW grant will contain appropriate conditions to ensure compliance with FLPMA and to avoid unnecessary or undue degradation of the public lands. 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.

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.

1.3.2 Determination of Technical and Financial Capability

As part of its review of ROW applications, it is the BLM's policy that an applicant demonstrate it has the technical and financial capability to construct, operate, maintain, and terminate its project. SNWA's status as an existing unit of local/regional government, current service provider in a major metropolitan market with an ongoing enterprise operation, a multi-million dollar budget, and established presence in the capital markets, is evidence of such capacity.

BLM is not required by NEPA, FLPMA or other regulations, to independently validate SNWA's projected project construction costs, make determinations regarding the marketability of the proposed financing in the capital markets, or overall project economic feasibility. Neither is a benefit-cost analysis required for the project.

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

As part of this environmental review, a Programmatic Agreement (PA) (**Appendix F3.16**) under the provisions of Section 106 of the National Historic Preservation Act of 1966 (NHPA) was completed. The agreement parties include the BLM, the Advisory Council on Historic Preservation (ACHP), the Nevada State Historic Preservation Officer (SHPO), and the SNWA. The United States Army Corps of Engineers (USACE) designated the BLM as the lead federal agency to act on the behalf of the USACE for purposes of compliance with Section 106. Indian Tribes and other consulting parties were 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 addressed.

1.3.4 Endangered Species Act

The Endangered Species Act (ESA), Section 7(a)(2), requires all federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) on any actions they authorize, fund, or carry out to ensure that the action is not likely to jeopardize the continued existence of listed species, or result in the destruction or adverse modification of habitat of listed species. For this project, both the BLM and USACE must complete Section 7 consultation. The USACE has designated the BLM as the lead federal agency to act on their behalf for purposes of this consultation.

The BLM has prepared a Biological Assessment that contains an analysis of the potential effects on federally listed species and critical habitat. The USFWS will use the information provided in the Biological Assessment to complete their own analysis and a Biological Opinion (BO) in a programmatic consultation. Terms and conditions of the BO will be included into the ROD and will become requirements of the BLM ROW grant. Similar to the EIS, the Biological Assessment provides a tiered analysis (see Section 1.3.6 for description of tiering) on the main water conveyance pipeline and associated facilities, as well as a programmatic analysis for future groundwater development. Each subsequent tier of the project will be subject to additional Section 7 consultations, which will be tiered to the overall programmatic consultation.

1.3.5 Clean Water Act

The USACE has jurisdiction related to this project under the authority of Section 404 of the Clean Water Act for the discharge of dredged or fill material into waters of the U.S. Waters of the U.S. include, but are not limited to, rivers, perennial or intermittent streams, lakes, ponds, wetlands, vernal pools, marshes, wet meadows, and seeps. Project features that result in the discharge of dredged or fill material into waters of the U.S. will require an USACE authorization prior to starting work.

In May 2009, SNWA prepared the "Waters of the United States Preliminary Jurisdictional Determination Report for the Southern Nevada Water Authority Clark, Lincoln, and White Pine Counties Groundwater Development Project", which was verified by the USACE in August 2009 for a period of 5 years. The report found that 4.5 acres of ephemeral drainages (0.02 permanent acres) would be impacted by the project. The report also stated that no impacts to wetlands

would occur. This report was based on the proposed action and included Tier 1 of the project (construction of the main pipeline and related infrastructure facilities) only.

Nationwide Permit #12 applies to activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the U.S., provided the activity does not result in the loss of greater than 112 acres of water of the U.S. However, the USACE may exert discretionary authority and require an alternate permitting mechanism in cases where activities will result in more than minimal individual and cumulative impacts. The USACE will require a pre-construction notification for this project because of the adverse cumulative impacts to waters of the U.S., especially those impacts associated with the long-term effects of drawdown on wetland habitat. The USACE is required to analyze alternatives for the "least environmentally damaging alternative". This is in accordance with the Clean Water Act Section 404(b)(1) guidelines. Therefore, the USACE may not adopt the agency preferred alternative (Section 2.8).

1.3.6 National Environmental Policy Act Tiering

Tiering is a staged approach to NEPA described in CEQ's Regulations (40 CFR 1500-1508). Tiering allows the agency to broadly address known actions to determine specific impacts while addressing related actions programmatically in initial (Tier 1) analyses. Programmatic analysis is any type of analysis and documentation from which subsequent NEPA documents are tiered (CEQ 2003).

Tier 1 Analysis

The major conveyance system 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, a 40-million gallon buried storage reservoir, approximately 323 miles of electrical power lines, 7 electrical substations, and access roads.

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 2008b). 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. Due to the size of the area of potential effects and inability to perform analyses at the appropriate level to determine specific impacts, a programmatic analysis followed by subsequent tiered NEPA is appropriate for this project stage.

Programmatic Analysis

The programmatic portion of this EIS generally assesses the effects of the future production wells, collector pipelines, additional pumping stations, distribution power lines, additional secondary substations, pressure reduction valves, and maintenance roads.

Tier 1 – This Environmental Impact Statement

This Tier 1 EIS is the vehicle for fact-based analyses that support informed decision-making on ROW-related (surface disturbance) impacts and programmatic analysis of groundwater-related pumping. This tier includes a Draft EIS, a Final EIS, and a ROD. The ROD will present the BLM's decision for, and will include specific direction on future decisions related to this project. The tiered process provides decision-making on issues that are ripe for decision and provides a means to communicate the intent of the decision maker for the Tier 1 document, preserve those decisions, and provide future goals and direction to future decision makers.

For this project, some project and site-specific details of the Proposed Action, primarily the proposed alignment of the main water conveyance 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.

Information used for Tier 1 analysis (e.g., groundwater modeling) will be performed at a more site-specific and detailed level for subsequent tiers to focus the specificity of the analysis. Future NEPA will provide analysis for decisions on specific, related future actions that could include the construction of the following facilities:

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

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

- Groundwater Production wells;
- Collector Pipelines;
- Access roads;
- Pumping Stations; and
- Power Facilities including overhead power lines, electrical substations, and hydro-turbine energy recovery facilities.

The environmental effects of the 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 and the number of production wells to be developed (**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 BLM made programmatic assumptions about future facilities for the impact analysis, including assumptions on the 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.

1.3.7 Bureau of Land Management Decisions

1.3.7.1 Tier 1

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

1) Approve, modify, or deny (only in White Pine County) the ROWs as applied for by the SNWA;
2) Apply all appropriate mitigation measures; and
3) Require the development and implementation of an integrated and comprehensive Construction, Operation, and Monitoring (COM Plan) that will direct decision-makers on appropriate action for ROW actions associated with the SNWA GWD Project. The objectives of the COM Plan are to protect federal resources and federal water rights that may be impacted by construction, operation, maintenance, and abandonment of the project. The COM Plan is designed to provide early warning of potentially adverse impacts, provide time and flexibility to implement management measures to mitigate impacts, gage their effectiveness, and recommend appropriate action.

The BLM ROD and the subsequent ROW grant would require the applicant to prepare and submit for BLM approval a detailed revised POD for the main water conveyance pipeline and related facilities. The final Plan of Development (POD) should incorporate all of the mitigation for the main conveyance pipeline and associated facilities specified by the BLM in the ROD. SNWA has revised its applicant-committed environmental protection measures (ACMs) (see

Appendix E) and has committed to the preparation of site-specific construction and operation plans for each project phase or facility component. The POD must contain sufficient information for the BLM and other agencies to evaluate specific construction activities and planned application of monitoring and mitigation.

Prior to development of the revised POD, SNWA must collect and develop detailed information such as engineering designs, soil and terrain profiles, and maps showing the exact siting of all facilities associated with the project as well as any construction sites. Much of this information cannot be developed until further field research is completed. For example, the soil and terrain profiles and the specific construction maps cannot be developed until geo-technical studies are completed and the precise location of the pipeline and other facilities would be established based on on-the-ground cultural surveys and perhaps additional biological surveys. Therefore, before SNWA develops a detailed POD, it may request a Notice to Proceed specifically to conduct these necessary studies and/or inventories. No Notice to Proceed for construction associated with this project would be issued until the detailed POD is submitted by SNWA and approved by BLM.

The ROD will document the BLM's decision on which alternative (or a subset or compilation of alternatives/options) the applicant may implement plus associated mitigation and COM Plan that will be required in the implementation of the BLM decision. Once the ROD is completed, the SNWA will prepare and submit for BLM approval a detailed revised POD for the main water conveyance pipeline and related facilities and is expected to include all of the stipulations, conditions and other requirements contained in the ROD/ROW grant by BLM. The BLM, working in conjunction with other federal, state, local, and tribal agencies/governments, will develop a COM Plan. 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 may issue construction 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 and/or ROW. In the ROW, the BLM will require that progress on implementation of the project must begin within a reasonable period of time.

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 process and associated processes such as Section 7 and Section 106 consultation if there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.

The COM plan (see Section 3.20, Monitoring and Mitigation Summary) includes a comprehensive monitoring and mitigation program for the entire project to integrate the various required monitoring and mitigation actions, which are provided through the following policies and other commitments:

- **BLM Land and Resource Management Plans and BMPs** – All actions approved or authorized by the BLM must conform to the existing land use plans (43 CFR 1610.5-3, 43 CFR 2920.2-5).
- **Biological Opinion** – The USFWS will issue a BO that will include conservation recommendations and/or terms and conditions to maintain and protect threatened and endangered species as required under Section 7 of the ESA.
- **Applicant Committed Measures** – The proponent, SNWA, has committed to environmental protection measures that will be implemented as part of the construction and operation of the GWD Project.
- **Section 106 Programmatic Agreement** – A PA was completed under the provisions of Section 106 of the NHPA. The agreement was executed by the BLM, the ACHP, the Nevada SHPO, and the SNWA.
- **Stipulated Agreements** – SNWA has entered into several stipulated agreements with Department of Interior Bureaus (i.e., Bureau of Indian Affairs [BIA], BLM, USFWS, and National Park Service [NPS]). The agreements apply to the SNWA's water rights in Spring, Delamar, Dry Lake, and Cave valleys (see Section 2.3.2, Stipulation Agreements).
- **Clean Water Act (CWA) Section 404 Mitigation** – The USACE has jurisdiction related to the project under the authority of Section 404 of the CWA for the discharge of dredged or fill material into waters of the U.S.

1.3.7.2 Subsequent NEPA Tiers

Decisions related to the ROWs associated with future groundwater development areas will focus on the following types of actions:

1. Determining the placement of water production wells, collector pipelines, roads, power lines, substations, etc., associated with that development;
2. Appropriate monitoring and mitigation measures; and
3. Development and implementation of comprehensive COM Plans specific to the ROW application and associated groundwater development area.

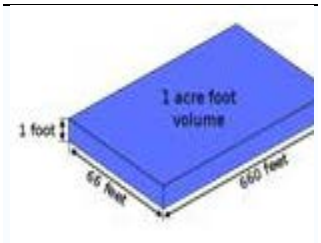
As SNWA submits future ROW applications and BLM completes related NEPA analysis, they will submit initial PODs and COM Plans specific to the area and facilities specified in the application. The COM Plan will identify monitoring, management, and mitigation requirements relating to the construction, operation, and maintenance of the planned development. Future groundwater development may require a new COM Plan or amendments of the existing COM Plan. At the conclusion of the NEPA process, the decision document [ROD or Finding of No Significant Impact (FONSI)] will contain requirements for the submission of a final POD to the BLM. The BLM must approve the final POD and the ROW grant prior to issuing a Notice to Proceed. The BLM-approved POD will be tiered to the POD for the main pipeline; a summary of which is presented in Section 3.20, Monitoring and Mitigation Summary, of this Final EIS.

In addition, the BLM will be involved in SNWA's conversion of pressure-reducing stations to hydroelectric power generation sites. This action likely will be lead by a Federal agency other than the BLM such as the FERC.

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 § 533.370). 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.



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.

Southern Nevada Water Authority Groundwater Applications

In 1989, the Las Vegas Valley Water District (LVVWD) filed applications for groundwater rights in Spring, Snake, Delamar, Dry Lake, and Cave valleys (the five groundwater production basins included in the GWD Project). The BLM and other DOI agencies 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 agency protests relating to the Spring Valley applications were resolved by a joint stipulation between the SNWA and the DOI agencies.

In 2007 and 2008, the NSE reviewed the SNWA's groundwater applications in Delamar, Dry Lake, and Cave 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 and other DOI agencies protests relating to Delamar, Dry Lake, 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.

The NSE reissued public notice on the SNWA applications in Spring, Delamar, Dry Lake, and Cave valleys in January and February, 2011. The protest period ended in March, 2011. An initial evidence exchange occurred July 1, 2011, with a second rebuttal evidence exchange on August 26, 2011. The NSE held a hearing on the Spring, Delamar, Dry Lake, and Cave valleys applications between September 26, 2011, and November 18, 2011. Oral public comment occurred on October 7, 2011, and written public comments were accepted through December 2, 2011.

On March 22, 2012, the NSE issued Rulings #6164, #6165, #6166, and #6167 permitting water rights to SNWA in Spring, Delamar, Dry Lake, and Cave valleys (NSE 2012a, 2012b, 2012c, and 2012d). In Spring Valley, SNWA was permitted up to 61,127 afy, in three stages of development. In Delamar, Dry Lake, and Cave valleys, SNWA was permitted 5,235 afy, 11,584 afy, and 6,042 afy, respectively. All of the rulings required compliance with hydrologic and biological monitoring and mitigation plans, preparation of annual reports, completion of baseline studies, and periodic updating of a groundwater flow model. A more detailed description of the procedural history associated with the SNWA applications, NSE findings of fact, and conclusions of law can be found in the Rulings. The Rulings can be accessed at http://water.nv.gov. The rulings were recently appealed to the County District court. These appeals are pending.

The NSE has not identified a schedule for the Snake Valley water rights proceedings.

The water rights granted by the NSE does not grant the water rights owner additional license to construct on or cross federal land.

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, Delamar, Dry Lake, and Cave 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, USACE
- Department of Defense, Nellis Air Force Base (AFB)
- DOI, BIA
- DOI, Bureau of Reclamation
- DOI, USFWS
- DOI, 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). 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

In 2007, the BLM initiated government-to-government consultation under Section 106 of the NHPA with 28 Indian tribes and bands that may have religious or cultural ties to the project area. The executed PA has been included as part of this EIS (**Appendix F3.16**). The tribes have declined to concur with the PA and their reasons are noted in the letter contained in **Appendix F3.16**.

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, with Tribal input has developed an Ethnographic Assessment report and is addressing potential properties of religious and cultural significance (PRCS) identified through the Ethnographic Assessment. Several of these Tribes assert federally reserved water rights claims to water potentially affected by the GWD Project. Some of these claims were addressed by the NSE in his recent rulings on Spring, Dry Lake, Delamar, and Cave

Valleys. The Rulings can be accessed at http://water.nv.gov. The particular water rights claims and related resources are covered in more detail in Chapter 3.

1.5.4 Nevada Office of the State Engineer

The Nevada Department of Water Resources (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. In March 2012, the State Engineer issued a series of rulings on Spring, Dry Lake, Delamar, and Cave Valleys as discussed in Section 1.4.

The NSE served 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. See Section 1.3.4 for a description of the role of the USACE.

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.
	NHPA	Section 106 Consultation.
USFWS	Section 7 Consultation under the ESA Fish and Wildlife Act Coordination Migratory Bird Treaty Act (MBTA) Consultation Bald and Golden Eagle Protection Act Consultation	Review/evaluate lead agency Biological Assessment and prepare a BO with conditions. USFWS responsibilities in the BO include: determine if the agency-preferred alternative will jeopardize a listed species or adversely modify its critical habitat; provide reasonable and prudent measures in the event of a non-jeopardy determination; and provide reasonable and prudent alternatives (if any exist) in the event of a jeopardy determination.

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
Federal Highway Administration	Permit for pipeline and transmission line crossings of federal highways	Consider approval of permits to cross federal highways.
USACE	Section 404 CWA Permit	Consider issuance of Section 404 nationwide or individual permits for wetland and waters of the 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).
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. Issue the transmission line special use permit across National Forest System Lands. Consider issuance of 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	Nevada Revised Statute 503.597	Authorization to handle any fish and wildlife resources.
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 Nevada Administrative Code (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 and a Development Agreement.
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 LVVWD. 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 public utilities (Chapter 704, NRS 704.661), 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 current 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. CBER's 2008 forecast called for 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 **Appendix A**, SNWA Water Resource Plan.

Water demand generally is a function of both population and individual water use. A commonly used measure of individual water use is average 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.

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.

Another component of determining projected water demand is factoring in current and future water conservation efforts that can slow the rate of increase or conceivably even 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 that achieving that conservation goal will save the community approximately 276,000 afy by the year 2035 (**Appendix A**).

As shown on the SNWA Water Plan (**Appendix A**), 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 2008 and 2035, to approximately 739,000 afy. 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.

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.

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.

Due to extended drought in the Colorado River Basin, the combined storage of Lake Mead and Lake Powell (the primary SNWA storage reservoirs) stood at about 64 percent of capacity as of February 2012.

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 contributed to 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. As of February 2012, the combined storage of Lake Mead and Lake Powell was about 64 percent of capacity. Lake Mead storage was at approximately 57 percent of capacity with a water level of about 80 feet lower than experienced in the late 1990s.

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 2016 or later (2002 SNWA Water Plan). 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.

For the SNWA, the prospect of continued declines in Lake Mead water levels raised concerns of reductions 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. Had drought conditions continued and Lake Mead water levels continue to drop, the first intake (shallowest depth) might have become unusable as early as 2012 (**Appendix A**). To preserve supply capacity and provide access to better water quality as lake levels decline, the SNWA currently is 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.

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

The SNWA Water Resource Plan states current and possible future conditions in the Colorado River necessitate development of in-state groundwater resources to protect the community from drought and shortage impacts to preserve essential municipal water supplies and meet future demands.

1.7 Consultation and Coordination

1.7.1 Scoping

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 and issued press releases. 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.

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

A second NOI was published on July 19, 2006, to reopen scoping for the proposed GWD Project. Concurrent with publication of the second NOI, the BLM sent a scoping package to an updated mailing list. The BLM also issued press releases to local and regional radio stations and newspapers.

A final scoping summary report was issued in February 2007. A summary 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. 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 1.7.2, 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 in processing SNWA's ROW application and SNWA's projected water supply requirements that drive 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; project abandonment.
- Project Alternatives – Alternative water conveyance proposals.
- Cumulative Impacts – Impacts to the human environment in conjunction with existing and reasonably foreseeable projects.
- Air Quality and Climate Change – 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.
- Native American Traditional Values – Effects of project construction and operation on tribal lifestyles.
- Socioeconomics (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.

1.7.2 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.
- Project financing and financial feasibility.
- 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.

1.7.3 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 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 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 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 resource sections.

- Differences in the region of study across/between resources. A definition of the region of study used for each resource is presented in the introduction material for each resource section.
- Potential climate change effects. See Section 3.1, Air and Atmospheric Values.

- 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.
- Uncertainty of the current science as to whether some geologic 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 Section 3.3, Water Resources.
- Water need and availability and the equity of water allocation between Nevada and Utah. See Section 3.18, Socioeconomics and Environmental Justice.

1.7.4 Draft EIS

A Notice of Availability (NOA) was published in the Federal Register on June 10, 2011 announcing the availability of the Draft EIS. The NOA specified a 90-day comment period with an end date of September 9, 2011. The 90-day time period specified by the BLM was twice that required by the NEPA - mainly due to the volume and complexity of the information presented in the Draft EIS. In response to requests from the public, an additional 30 days was added to the comment period, resulting in a total comment period of 120 days.

The Draft EIS was made available to the public on the BLM website; those entities on the mailing list for the project received a hard copy of the Executive Summary accompanied by a CD containing the entire Draft EIS and Appendices, and a CD containing background information related to the groundwater model. The Draft EIS also was produced as a two-volume hard copy set that included the previously mentioned CDs. The BLM supplied the hard copy set to those who submitted a request.

During the public comment period, the BLM held meetings for the public and for area tribes in numerous locations in Nevada and Utah. Please see Tables 5.3.1 and 5.3.2 in Chapter 5 for a summary of public and tribal meetings, respectively. Additional information on the public involvement process is presented in Chapter 5.

1.7.5 Major Document Changes between the Draft and Final EIS

In response to the agency and public comments on the Draft EIS, the BLM has made numerous changes to the Final EIS. The most substantive changes are summarized below. Non-editorial changes are marked with a text bar in the margin throughout the Final EIS.

Chapters 1 and 2

- Revisions to clarify the purpose and need for the project.
- The introduction of Alternative F (an alternative that includes only Spring, Delamar, Dry Lake, and Cave valleys) and information related to the alternative definition. This additional alternative reflects the same ROWs but higher pumping volumes when compared to Alternative E.
- Identification of the Agency Preferred Alternative.
- A summary of the Rulings by the Nevada State Engineer on SNWA water right applications in Spring, Delamar, Dry Lake, and Cave valleys.
- The addition of a discussion of project capital costs.

Chapter 3

- All resource areas incorporated and analyzed the new Alternative F. In addition, the Air and Atmospheric Values analysis was strengthened by including a regional-scale model to more clearly assess potential project-related pumping and groundwater drawdown impacts to air quality.
- The Climate Change discussion was expanded and resource-specific Climate Change analyses were moved into the cumulative analysis sections of each resource.
- Updated species lists were obtained and changes were addressed for plants, wildlife, and aquatic species. The greater sage-grouse analysis now reflects the newly implemented Instruction Memorandum (IM) No. 2012-044 which specifies increased buffer zones around leks and transmission lines.
- Additional analysis regarding changes in the landscape as viewed from the Great Basin National Park was added for all alternatives. The revised analysis evaluated impacts related to surface facilities in the ROWs and groundwater development. As, effects to vegetation from groundwater drawdown, and potential increases in sky glow in the night-time sky.
- The Cultural Resources impact discussion was expanded to include totals of cultural sites and historic properties potentially impacted for each alternative. Additional information on past and present actions and reasonably foreseeable future actions (RFFAs) was incorporated into the cumulative effects section to strengthen the analysis.
- The Section 3.17, Native American Traditional Values, was expanded to include a comparison of alternatives table which provides a more useful tool to highlight the impacts to sites and places of tribal concern for each alternative. Additional information on past and present actions and RFFAs was incorporated into the cumulative effects section based on public comment.
- The Socioeconomics, Section 3.18, Socioeconomics and Environmental Justice, was updated to reflect more current data where those data were relevant to the analysis.
- The list of cumulative actions has been reviewed and revised, and the revisions factored into the cumulative effects analysis for the various resources.
- The monitoring and mitigation, Section 3.20, Monitoring and Mitigation Summary, was revised to include a new COM Plan for the project area and new mitigation measures that have been identified based on agency and public comment have been added.

Chapter 4

- Updated Irreversible and Irretrievable information was added as appropriate. Updates were based on changes to analyses in response to comments or new information.

Chapter 5

- A synopsis of the Public Meetings on the Draft EIS was added along with a summary of overarching comments received on the Draft EIS during the public comment period. The Public Outreach section has been updated, as has the section titled “Agencies, Organizations, and Individuals to Whom Copies of the Statement are Sent.”

Chapter 6

- Updates to the preparers and reviewers list have occurred to reflect staff/project role changes between the Draft and Final EIS.

Appendices

Substantive changes to appendices include:

- The addition of revised applicant-committed measures to the SNWA POD in **Appendix E**.
- Additions to the consultation record presented in **Appendix G**.
- Revisions to **Appendix F** sub-appendices related to individual resources have occurred as appropriate to support changes in the main document. These changes include the addition of information related to Alternative F.
- **Appendix H** was added to present the comments and comment responses on the Draft EIS.

1.7.6 Final EIS and Future Involvement

BLM received approximately 4,500 written comments on the Draft EIS. These comments are included, with agency responses, as **Appendix H** of this Final EIS. Availability of the Final EIS will be published in the *Federal Register* by the BLM and USEPA. After a 30-day availability period, the BLM will complete a ROD concerning 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 Notice of Availability for the ROD will be published in the Federal Register and will be made available to parties on the mailing list and others who commented on this EIS during the NEPA process.