# Attachment D – COM Plan Framework

# **D.1** Introduction

The project requirements (**Attachment C**) were developed through the NEPA process and will be attached to the ROW as terms and conditions. As stated in the ROD, after the ROW is issued, a COM Plan will be developed based on the approved POD. The process and components to be used in developing an integrated and comprehensive COM Plan are described here. This plan will encompass all proposed surface disturbance activities and facilities for the Tier 1 NEPA action analyzed in the Final EIS and will set the stage for monitoring, management, and mitigation for future development addressed by subsequent NEPA tiers. The objectives of the COM Plan are to protect federal resources and federal water rights that may be impacted by construction, operation, and maintenance of the GWD Project-related facilities.

CEQ issued a Memorandum on January 14, 2011 titled "Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact." This CEQ guidance is intended to assist agencies with the development and review of their NEPA procedures. The guidance addresses mitigation that an agency has committed to implement as part of project design and mitigation commitments informed by the NEPA review process by specifically recommending:

- How to ensure that mitigation commitments are implemented;
- How to monitor the effectiveness of mitigation commitments;
- How to remedy failed mitigation; and
- How to involve the public in mitigation planning.

The BLM COM Plan framework described in this section is consistent with the CEQ Memorandum and the DOI and BLM policy and procedures related to identifying and implementing project mitigation and monitoring.

# **D.1.1 Resource Protection Measure Sources**

The protection measure framework and sources of resource protection are discussed below and shown in Figure D.1-1.

<u>NEPA Monitoring and Mitigation Measures</u> – Based on the resource-specific impact analyses provided in Chapter 3 of the Final EIS, resource-specific monitoring and mitigation measures for the Tier 1 ROW are listed in **Attachment C** "Project Terms and Conditions". These measures also may be applied to future groundwater development facilities (e.g., impacts related to placement of future wells, collection pipelines, power lines, and access roads). **Table D.1-1** at the end of this document provides monitoring and mitigation to address impacts from future groundwater development and pumping analyzed at a programmatic level (subsequent NEPA tiers) in Chapter 3 of the Final EIS. In particular, these monitoring and mitigation measures are based on currently available information that will be applied to the future activities. These measures are necessarily general in nature, since they are based on the programmatic NEPA analysis for the groundwater development and related facilities. However, until they are replaced by more specific measures resulting from future NEPA analyses, these measures will apply to the future activities.

Chapter 3.20 of the Final EIS also identified mitigation measures recommended for consideration by other agencies, but are not within the jurisdiction of the BLM. These measures have been addressed with SNWA through the letter dated October 31, 2012 and attached to the ROD within **Attachment C**.

<u>BLM Resource Management Plans</u> – 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). The BLM Ely District RMP (BLM 2008) and the BLM Las Vegas District RMP (BLM 1998) provide management direction for all BLM-managed lands that would be occupied by the GWD Project facilities.

<u>BLM Best Management Practices</u> – The 2008 BLM Ely District RMP identified BMPs and USFWS BO terms and conditions that apply to all land use decisions including this GWD Project. The Ely BMP measures also apply to land use authorizations related to this GWD Project in the BLM Southern Nevada District. ROD **Attachment C** contains the specific terms and conditions that apply to the GWD Project.

<u>Biological Opinion</u> – The USFWS delivered to the BLM a BO for the ROW on November 19, 2012 that includes terms and conditions to maintain and protect the threatened desert tortoise as required under section 7 of the ESA. It also included a programmatic BO with conservation recommendations related to future development associated with this project. The BO is attached to the ROD (**Attachment E**). **Attachment E** also includes a letter from BLM, dated December 7, 2012, which explains to the USFWS how the conservation recommendations within the BO were incorporated into the ROD and COM Plan Framework. If section 7 consultation is reinitiated during the life of the project, new terms and conditions, and/or conservation recommendations would be incorporated into the COM Plan. New terms and conditions and/or conservation recommendations would also be incorporated into the COM Plan, based on section 7 consultations for future site-specific components of the GWD Project. Both the desert tortoise terms and conditions and the incorporated conservation recommendations will be made a condition of the ROW.

<u>Applicant-committed Protection Measures</u> – SNWA has committed to ACMs that will be implemented as part of the construction and operation of the GWD Project. ACMs include design features, monitoring, standard operating procedures, and other resource protection practices. They also include measures SNWA previously agreed to in stipulations or other agreements with federal, state, or local agencies and entities, as well as those required by the NSE water right permit conditions. As part of the ACMs, SNWA has committed to implementing an adaptive management approach. The SNWA ACMs are attached to the ROD as **Attachment B** and will be made a condition of the ROW.

<u>Section 106 Programmatic Agreement</u> – A PA was completed under the provisions of section 106 of the NHPA and was executed by the BLM, the ACHP, the SHPO, and the SNWA. The PA (ROD Attachment G) describes procedures for mitigating impacts to cultural resources. The ROW will be subject to the terms and conditions of the PA.

<u>Clean Water Act Section 404 Mitigation</u> – 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. Project features that result in the discharge of dredged or fill material into waters of the U.S. would require prior USACE authorization. Currently, Nationwide Permit #12 applies to this project. However, the USACE may exert discretionary authority and require an alternative permitting mechanism in cases where activities will result in more than minimal individual and cumulative impacts. During review of the Draft EIS, the USACE stated that they had not yet made a final determination on whether an individual permit may be required. Upon the final determination, the USACE may require additional mitigation measures to ensure section 404 compliance. Those measures will be included in the COM Plan.

<u>Stipulated Agreements (Stipulations)</u> – SNWA has entered into several stipulations with DOI Bureaus (i.e., BIA, BLM, USFWS, and NPS). The stipulations apply to the SNWA water rights in Spring, Cave, Dry Lake, and Delamar valleys. The stipulations are intended to manage the development of groundwater by the SNWA in various hydrologic basins without causing injury to federal water rights or unreasonable adverse effects to federal resources and special status species. These stipulations are provided in Appendix C of the Final EIS.

The stipulations are currently being acted upon and the following requirements are being conducted: installation of monitoring well systems in both carbonate and basin fill aquifers; constant-rate aquifer tests; groundwater chemistry sampling; spring and stream discharge measurements; and annual monitoring reports. Both the Delamar, Dry Lake, and Cave valleys and the Spring Valley stipulations require a biological resource monitoring program. The stipulations

recommend that teams be established to guide the implementation of monitoring activities; these teams have established and have approved baseline monitoring plans. Two years of baseline monitoring have been completed in Spring Valley.

The stipulation process contributes to development of the COM Plan by providing information from established monitoring, management, and mitigation processes. The BLM is a participant in the stipulations, but does not have sole authority over the processes; however, the BLM can influence the monitoring, management, and mitigation measures implemented pursuant to the stipulations. Also, as a signatory to the stipulations, the BLM has access to all of the information and decisions developed under the stipulations.

## **D.1.2 COM Plan Development**

This section describes a comprehensive monitoring, management, and mitigation program that addresses all hydrographic areas and all facilities associated with the SNWA groundwater development project with the intent of protecting federal resources and federal water rights that may be impacted by construction, operation, and maintenance of the project.

The BLM, working in conjunction with other federal, state, local, and tribal agencies/governments (hereinafter collectively referred to as agencies) and operating as defined by a future MOU between the BLM and the agencies, will develop the COM Plan. BLM also will coordinate with USFWS relative to listed and selected BLM sensitive species. The COM Plan will include a monitoring schedule and plan for BLM cost recovery, and establish reporting requirements for SNWA, including provisions for annual meetings to review construction and operation of the ROW. The BLM expects to establish key working groups to develop sections of the COM Plan related to water resources, biologic resources and air resources. The COM Plan will reflect an adaptive approach to implement monitoring, management, and mitigation activities and will include the use of statistically rigorous methods when developing monitoring sampling designs and protocols, as appropriate.

The process described in this subsection would be followed for submittal by SNWA of future ROW requests related to groundwater development. Future groundwater development may require a new COM Plan or amendment of the existing COM Plan. The COM Plan may be supplemented and amended upon approval of future groundwater development ROWs and related PODs (subject to subsequent NEPA). The COM Plan will be developed to meet the goals and objectives described below.



Figure D.1-1 Protective Measure Framework

## **COM Plan Goals and Objectives**

Goals

- Ensure that the GWD Project complies with the FLPMA, Sec. 504. [43 USC 1764] (a)(4), which states that the ROW would do no unnecessary damage to the environment;
- Ensure compliance with BLM's other resource protection requirements, as described in Section 3.20.1 (e.g., RMPs, watershed plans, resource policy and regulations);
- Identify all mitigation, monitoring, and management requirements for the GWD Project main conveyance pipeline Tier I ROW grant in one document;
- Outline a process, including schedules, sources of funding, and performance standards, for developing additional mitigation, monitoring, and management requirements for future ROW grants; and
- Provide agencies with insight concerning the integration of the resource issues and importance of regional monitoring and mitigation for subsequent tiered NEPA processes, as the GWD Project is developed.

### **Objectives**

- Protect federal resources that may be impacted by construction, operation, and maintenance of the project;
- Protect federal water rights managed by federal agencies;
- Avoid, minimize, or mitigate the effects of actions that could contribute to the need to list species as threatened or endangered under the ESA, and incorporate conservation recommendations (as appropriate) provided by the USFWS in their BO;
- Avoid adverse environmental impacts that could cause jeopardy to listed species or destruction or adverse modification of designated critical habitats;
- Avoid, minimize, or mitigate adverse environmental impacts to groundwater-dependent ecosystems and biological communities, impacts to habitat for fish and wildlife, degradation of visibility and air quality due to potential increases in airborne particulates and loss of surface vegetation; and impacts to cultural and visual resources
- Provide a process for mitigating impacts;
- Prior to completion of subsequent NEPA, identify triggers for early warning of potential adverse impacts, including an analysis of whether early-warning indicators for groundwater withdrawal thresholds have been reached or whether data trends indicate early warning thresholds would likely be reached in the near future under current conditions and whether SNWA groundwater withdrawals are the likely cause of or contributor to this, based on the best scientific information available;
- Allow flexibility to implement management and mitigation measures;
- Monitor the effectiveness of mitigation measures in achieving expected outcomes and reducing impacts to resources; and
- Implement adaptive management as needed to achieve the goals stated above.

The Tier 1 COM Plan will be written based on the goals and objectives written above, as applicable. As future COM plans are developed, the goals and objectives listed above would be utilized along with additional monitoring from the subsequent NEPA review to develop site-specific management, monitoring, and mitigation required for the GWD Project.

## COM Plan Conceptual Outline

The main water conveyance pipeline (tier I) will be developed using the following conceptual outline. It is anticipated that groundwater development-specific COM Plans (subsequent NEPA tiers) also would be developed using this conceptual outline. Modifications of the outline may occur during COM Plan preparation. In addition, some sections may be deferred and completed at an appropriate time in the future.

# BLM

The following is the conceptual outline:

- Introduction
- Relationship with Other Environmental Documents/ Protective Measure Processes, Authorization, Permits, Reviews, and Approvals, etc.
- Project Management
- Roles and Responsibilities, Communication Procedures, and Protocols
- Project Construction
- Pre-construction Activities
  - Biological and cultural resource surveys
  - Identification of existing monitoring sites needed in establishing baseline conditions
  - Identification of additional monitoring needed to build full sets of baseline data
  - Development of triggers or environmental indicators and adaptive management thresholds
- Construction Activities
  - Mitigation Activities
  - Restoration
- Variance Process

## • Project Operation and Maintenance

- Inspections and Maintenance
- Ongoing Studies Baseline and Data Gaps
  - Processes for sharing monitoring data with interested parties
  - Description of interrelated monitoring, management, and mitigation activities that would begin at later stages of project development

## **D.1.2.1** Development and Implementation Process

## Background

SNWA submitted a Conceptual POD (November 2012; ROD **Attachment B**) complete with its ACMs. BLM has conducted a NEPA review on the proposed project, including consideration of the ACMs, and has prepared the ROD based on that review. The ROD contains the appropriate monitoring and mitigation from the Final EIS; resource-specific monitoring and mitigation that apply to Tier 1 are provided in the Project Terms and Conditions (**Attachment C**), while monitoring and mitigation to address future impacts from groundwater development and pumping are provided in **Table D.1-1** below. The BLM authorized officer will issue a ROW grant based on the ROD. The integration of the COM Plan into the project is shown in **Figure D.1-2**.

The ROW grant for the main conveyance pipeline and associated facilities (Tier 1) will require that SNWA submit a final POD(s) to the BLM for approval. BLM will only approve a POD(s) that incorporates mitigation identified in **Attachment C** of the ROD. The POD also must include a construction and operation schedule and all design and reports required through the NEPA process. These include, but are not limited to the reclamation plan, transportation plans, construction plans, resource-specific monitoring plans, weed management plan, health and safety plans, and biological survey protocols. Prior to approval of the POD(s), BLM will coordinate with the USFWS regarding portions of the POD(s) relating to their regulatory role under the ESA, the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act. BLM will issue the NTP once all terms and conditions of the ROW grant are fulfilled.

# 2012

The final POD(s), while initially focused on the main conveyance pipeline, will include potential baseline/data gap monitoring for subsequent NEPA tiers as appropriate. The BLM will coordinate with the partner agencies to refine baseline and data gap information needs to better inform subsequent NEPA analysis as follows:

- Conducting surveys for northern leopard frog in pertinent springs in the GWD Project Region of Study for the purpose of identifying new locations of populations.
- Investigating important aspects of northern leopard frog ecology and demographics.
- Conducting surveys for special status springsnails in pertinent springs in the GWD Project Region of Study for the purpose of identifying new locations of populations.
- Defining ecological water requirements for the groundwater-dependent ecosystems that special status species depend upon.
- Conducting supplemental baseline water resource monitoring including collecting water quantity (i.e. flow) and quality data to characterize baseline water resource conditions at locations where special status species are known to exist.
- Conducting additional surface water and groundwater monitoring hydrogeologic characterization studies, and aquifer testing to improve the predictive abilities of the numerical groundwater flow models.
- Completing wetland inventory using Cowardin (or currently accepted method) classification of wetlands to ensure necessary information is available for the development areas and areas expected to be impacted by groundwater pumping. Based upon this assessment, SNWA could set up a mitigation bank to offset any expected loss of wetland acres.
- Investigating important aspects of White River spinedace ecology, life history, demographics, and limiting factors for the purpose of understanding how this species might respond to changes in habitat caused by decreased spring flow, developing a flow-ecological response relationship for this species at Flag Springs, and setting decision-making triggers.
- Assisting in the development of an ecological model or other appropriate tools to help understand and predict potential effects of reduced flow and water levels to White River spinedace and its habitat. If appropriate and related directly to the project, investigate long-term viability of the species based on predicted habitat changes due to decreased flow or water levels in Flag Springs.
- Investigating important aspects of Pahrump poolfish life history for the purpose of informing subsequent NEPA analyses (including developing triggers and mitigation and monitoring requirements).
- Conducting surveys for Ute ladies'-tresses in areas of potential habitat at risk from groundwater pumping, in accordance with appropriate protocol. If this species is found during the surveys, known locations will be reported to the USFWS and the appropriate State natural heritage program.

Other activities, data, or information as may be identified through the subsequent NEPA process.

## **COM Plan Implementation**

The steps for integrating the COM Plan into the project are outlined in **Figure D.1-2**. A discussion of the roles and responsibilities of the BLM and other involved parties, as well as the overall concept of adaptive management to allow management changes in response to the results of environmental monitoring programs follows.

## • BLM COM Plan Authority

Upon approval of the first and subsequent ROW grants, the BLM will implement the COM plans including regularly scheduled interaction with the MOU partners and other involved parties. The BLM will serve as the lead federal agency, and will designate a BLM Project Manager (authorized officer) who will provide oversight for the project. The BLM Project Manager will, on behalf of the BLM, be responsible for administering and enforcing ROW grant and permit provisions for the BLM, including the mitigation measures and project terms and conditions contained in this ROD and its attachments. The BLM Project Manager also will be responsible for written stop-and-resume work orders, and resolving any conflicts that arise relating to the project on land administered by the BLM. Compliance will be monitored by the BLM

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Project Manager and other BLM resource specialists, as needed, in conjunction with the Compliance Inspector Contractor (CIC). The CIC likely will be a third-party contractor selected by the BLM.

## • Project Implementation

Actual project implementation may require a series of PODs reflecting different phases of the project (e.g., water treatment plant at Apex or main pipeline to Delamar Valley) or various functional elements (e.g., worker transportation to and from work sites or class III survey for cultural resources). Accordingly, the COM Plan will be a dynamic document, designed to be revised over the duration of construction and operation of the GWD Project, as data are collected and facilities are proposed. The NTPs will reflect authorization for only those portions of the project for which an approved POD and COM Plan have been finalized. Shortly after the ROW is issued, BLM will meet with SNWA to determine an appropriate strategy to assure that project components are scheduled and coordinated appropriately.

## Adaptive Management

The adaptive management process is expected to be used to minimize future environmental impacts. This includes periodic review and revision of programmatic policies and BMPs; comprehensive site monitoring programs; including metrics for measuring impacts; and protocols for incorporating monitoring observations and new mitigation measures into standard operating procedures and project specific stipulations. As part of the adaptive management process, evaluation factors will be developed to determine and measure the effectiveness of the overall adaptive management strategy. These evaluation factors could include such items as mitigation and monitoring measures and their ability to respond to the potential impacts.

It is also important to note that adaptive management is an available tool, but it does not replace the BLM authority and duties under FLPMA to protect and manage federal resources.

## • Variance Process

Surface disturbance locations and acreages identified in the Final EIS represent reasonable estimates for the construction, operation, and maintenance of the project. However, route and other project refinements often continue past the project review phase and into the construction phase. As a result, work location and disturbed acres documented in the Final EIS may change after project approval. These changes frequently involve minor route realignments or moving approved temporary workspaces, adding new temporary workspaces, adjusting workspaces based on site-specific conditions and adding access routes to work areas. When work areas different from those evaluated in the Final EIS are needed, additional inventory and evaluation would be required to ensure that impacts on biological, cultural, and other resources are avoided or minimized to the BLM in the form of a "variance request." The request would be reviewed by the BLM, consultations would be conducted, and other approvals would be obtained before the BLM would approve the variance. At the conclusion of the project, as-built drawings would be provided to the BLM. In addition, the SNWA, when working with specific requirements of the ROW (e.g., a 0.5-mile buffer from a raptor nest), could make a "variance request" if circumstances warranted (e.g., the nest is not within line of sight of the construction). The BLM would address these requests on a case-by-case basis.

## **Interagency Input**

The agencies and key working groups comprised of resource specialists with expertise related to resources of concern will participate in development and implementation of the COM Plans. The agencies and key working groups will have an active role in the review process to ensure BLM resource management standards and goals are upheld and will assist in the identification of areas where the COM plans need to be strengthened or modified. In addition, the agencies will periodically review project monitoring reports and data made available by SNWA and BLM. All parties recognize that additional data collection for a variety of resources is necessary. Prior to initiating the subsequent NEPA tiers, the BLM will coordinate with the agencies to define data gaps and obtain input on strategies to remedy the data issues. BLM will determine how to resolve the data gaps and inform SNWA.

The BLM will consider the interagency input as it makes future decisions on implementation of the COM Plan (Figure D.1-2). Because project-related impacts may not become evident for many years after implementation of

groundwater development, the BLM intends to maintain the required COM plans and periodic interagency review for the life of the project.

## **Public Disclosure**

The public will be kept informed of the development and implementation of the COM Plans. Copies of the COM plans, compliance and monitoring reports, supporting documents, and data will be made available to the public via the BLM GWD Project website and BLM will respond to public inquiries regarding mitigation and monitoring.

## **D.1.3 Enforcement of Decisions**

The BLM, as the Federal Land Manager, enforces the ROW grant through terms and conditions. Throughout the life of the project it will be the BLM's responsibility to conduct compliance reviews of the project to ensure the terms and conditions of the ROW grant have been met. Any noncompliance issues will be brought to SNWA's attention and they will have appropriate time to resolve the notice of noncompliance. If SNWA does not bring the ROW into compliance to BLM's satisfaction, the BLM may initiate actions under its authority to suspend SNWA's ROW until SNWA can remedy the issues of non-compliance. Depending upon the non-compliance issue, SNWA would not be allowed to operate the ROW until the issues of non-compliance are remedied and the BLM issues a NTP. If non-compliance continues, SNWA would not be granted any further ROWs, permits, or other land use authorizations from BLM until all non-compliance issues are resolved.

In the case of adverse impacts to federal water rights or federal resources, the BLM enforcement authority includes the ability to require:

- Geographic redistribution of groundwater withdrawals;
- Reduction or cessation in groundwater withdrawals;
- Augmentation of water supply for federal resources and federal water rights; and
- Use of recharge projects to offset local groundwater drawdown.

## D.1.3.1 Compliance with the FLPMA

The BLM manages surface and mineral resources for federal lands it administers under the FLPMA and applicable regulations. The COM Plan is developed and implemented in compliance with the FLPMA, which is a mechanism through which project performance can be comprehensively reviewed and corrective actions implemented. When a ROW grant is issued for a project, FLPMA requires the following:

"Each right-of-way shall contain–(b) such terms and conditions as the Secretary concerned deems necessary to (i) protect Federal property and economic interests; (ii) manage efficiently the lands which are subject to the right-of-way or adjacent thereto and protect the other lawful users of the lands adjacent to or traversed by such right-of-way; (iii) protect lives and property; (iv) protect the interests of individuals living in the general area traversed by the right-of-way who rely on the fish, wildlife, and other biotic resources of the area for subsistence purposes; (v) require location of the right-of-way along a route that will cause least damage to the environment, taking into consideration feasibility and other relevant factors; and (vi) otherwise protect the public interest in the lands traversed by the right-of-way or adjacent thereto." SEC. 505. [43 USC 1765]

BLM also is generally obligated to avoid unnecessary or undue degradation of the public lands. [43 U.S.C. § 1732].

## **ROW Regulations under FLPMA**

The regulations (43 CFR 2805.12) outline the terms and conditions that are to be included in the grant and are the proponent's responsibilities. The regulation states: "By accepting a grant, you agree to comply with and be bound by the following terms and conditions. During construction, operation, maintenance, and termination of the project ..." Section 43 CFR 2805.12(i) provides that the proponent must "Comply with project-specific terms, conditions, and stipulations, including requirements to: (1) Restore, revegetate, and curtail erosion or conduct any other rehabilitation measure BLM determines necessary; (2) Ensure that activities in connection with the grant comply with air and water quality standards or related facility siting standards contained in applicable Federal or state law or regulations; (3)

Control or prevent damage to: (i) Scenic, aesthetic, cultural, and environmental values, including fish and wildlife habitat; (ii) Public and private property; and (iii) Public health and safety; ... (p) Comply with all other stipulations that BLM may require."

## D.1.3.2 Compliance Inspector Contractor

The CIC is anticipated to be a third-party contractor selected by the BLM that leads an interdisciplinary team conducting onsite compliance inspections and monitoring for the project during construction. The CIC interdisciplinary team will consist of appropriate specialists such as botanists, weed management specialists, wildlife biologists, archaeologists, and soil scientists. This service will promote environmental protection and ensure compliance with the lead federal agency's requirements based on the commitments, as established in the COM Plan. The CIC will report directly to the BLM, who will coordinate with other federal, state, local, and tribal agencies/governments, as appropriate. The duties of the CIC are to:

- Prepare a project compliance plan;
- Coordinate the NTP meeting(s);
- Prepare and maintain the project Key Contacts List;
- Schedule periodic meetings with the BLM Project Manager and resource specialists;
- Conduct daily field inspection of the project areas;
- Complete a daily compliance inspection report and submittal of a weekly summary report to the BLM and Project Proponent;
- Attend construction meetings;
- Review variance requests; and Complete the End of Construction Project Report.

After project construction is complete, the CIC will periodically monitor compliance with operational and mitigation requirements, and report back to BLM.



Figure D.1-2 Integration of the COM Plan into the Project

## **D.1.4 Summary**

It is anticipated that the COM Plan monitoring measures for the ROW grant in Tier I will incorporate resource protection measures from multiple regulatory processes and allow for robust interagency input. This Tier 1 COM Plan also is expected to address baseline data collection for subsequent NEPA analyses and establish a process to address potential impacts from future groundwater development consistent with mitigation and monitoring measures provided in **Table D.1-1**. However, since groundwater development presumes some level of vegetation change and reduction in groundwater levels, not all impacts may be avoided. In addition, triggers designed to provide early warning of potentially adverse impacts to federal water rights and federal resources and provide time and flexibility to implement management measures to mitigate those impacts will be developed prior to completion of subsequent NEPA, and will be included in future COM Plans. The COM Plan may include mitigation measures offered by SNWA to mitigate impacts that occur to lands, water rights, and water-dependent resources owned by private parties, local governments, and state governments. However, the BLM cannot enforce mitigation measures on lands owned by other parties, and cannot ensure that the funding and land access necessary to implement these measures would be made available. The Tier 1 COM Plan and COM Plans for subsequent tiers are designed to be adaptive over the course of the project.

## D.1.5 Monitoring and Mitigation Measures Applied to Future NEPA:

These monitoring and mitigation measures (**Table D.1-1**) were developed through the NEPA process and will be applied to future activities, unless they are replaced by more specific measures from future NEPA analyses.

## Table D.1-1 Monitoring and Mitigation Measures for Future NEPA

#### Air and Atmospheric Values

**GW-AQ-3:** Monitoring, Mitigation, and Management Plan for Air Quality. SNWA will develop an air monitoring plan approved by the BLM, which will detail the siting and operation of at least three collocated  $PM_{10}$  and  $PM_{2.5}$  air monitoring stations, one of which will be upwind of the project area. Recommended monitoring locations include Snake, Spring, and Lake valleys. These valleys are selected for consideration based on predicted changes to the bare soil/sparse vegetation ET unit, which has the greatest potential for windblown dust impacts. Baseline air measurements will be initiated at least a year prior to groundwater pumping construction activities, since these activities may increase measured particulate values. Once baseline air quality levels are established, monitoring will continue for the duration of groundwater pumping activities. Finally, the monitoring plan will comply with USEPA monitoring guidance when selecting the site locations and instruments, developing the data management plan, and establishing quality assurance criteria.

#### Geologic Resources

**GW-G-1:** Cave Protection. Prior to ground disturbing or drilling activities in areas close to identified cave resources, the conditions of approval will require appropriate site specific measures for the protection of caves that may be at risk such as, but not limited to, the following:

- Reasonable and appropriate setbacks and buffers around caves.
- Limitations on blasting.
- Requirements for the storage and handling of hazardous materials such as fuels.

Other measures that may be appropriate for wells including procedures when encountering subsurface voids while drilling, closed drilling fluid (mud) systems (no earthen mud pits), use of freshwater mud, directional drilling, and special casing programs.

**GW-G-2: Underground Voids**. If underground voids are unexpectedly encountered during facility construction or drilling, the following measures will apply:

- Work will be halted and the BLM will be notified immediately.
- The BLM, in consultation with the permittee, will assess the risk of further drilling or siting of surface facilities in the area where the voids are encountered.

Risk assessment may require the use of appropriate geotechnical methods to gather relevant data on the extent of karst features.

**GW-G-3:** Subsidence Monitoring. Subsidence monitoring is recommended in current and proposed water withdrawal areas in order to provide baseline data before build out begins. As groundwater extraction occurs in full production, monitoring will be needed to assess the magnitude and extent of subsidence in order to take actions that would mitigate subsidence where necessary. Water Resources

**GW-WR-1: Spring Inventories**. A spring inventory will be conducted in all groundwater development areas to verify and map the location of all springs prior to construction. Construction and development of the groundwater development areas will avoid ground disturbance in the vicinity (i.e., 0.5 mile) of all verified spring locations.

**GW-WR-2: Stream Crossing Plans**. A site-specific plan will be developed to detail the construction procedures, erosion control measures, and reclamation that would occur for pipeline construction across live (flowing) stream reaches. The plan also will incorporate information from BLM Technical Reference 423, for hydraulic considerations in designing pipeline stream crossings (DOI 2007). The plan will include site-specific designs using either open cut or jack and bore techniques and site-specific measures to minimize disturbance of the stream bed, and release of sediment from the construction area into the downstream stream reach. The plan will be reviewed and approved by the BLM and NDOW prior to initiation of any construction activities within the stream corridor.

### Water Resources continued

**GW-WR-5:** Shoshone Ponds. Drawdown is likely to impact the source of water that supports important aquatic resources for Shoshone Ponds (as discussed in Section 3.7, Aquatic Biological Resources). The SNWA will develop a surface water and groundwater monitoring plan specific to providing an early warning system for effects to flow at Shoshone Ponds. The site specific monitoring plan will likely include monitoring discharge at the Shoshone ponds; and monitoring artesian pressures in the aquifer that controls discharge to the ponds. The general requirements for development, approval, implementation, and reporting for the Shoshone ponds monitoring plan will be the same as outlined in GW-WR-3a.

Impacts to Shoshone Ponds that are attributable to the SNWA's groundwater pumping will be mitigated by improving the existing well or drilling a new well, and installing a pump such that the well, pump, and water conveyance system are designed to maintain the flow to the ponds for the foreseeable future regardless of the groundwater drawdown. Any new wells should be designed to pump groundwater from the same aquifer system to maintain the same general water quality and temperature characteristics currently used as the source of water for the ponds and sufficient to support the federally listed and special status species that inhabit the ponds, as described in Section 3.7, Aquatic Biological Resources. The SNWA will be responsible for all cost associated with the implementation, operation, and maintenance of the source of water required to offset the effects of SNWA's groundwater pumping activities.

**GW-WR-7:** Groundwater Development & Drawdown Effects to Federal Resources and Federal Water Rights. If the results of the monitoring or modeling information provided in accordance with GW-WR-3a indicate that undue and unnecessary impacts to federal resources or federal water rights from groundwater withdrawal are occurring or are likely to occur, and the groundwater development project is the likely cause of or contributor to the impacts, the following measures will be initiated:

- 1. The BLM will evaluate the available information and determine if emergency action and/or a mitigation plan is required.
- 2. If the BLM determines that emergency action is required to avoid, minimize, or offset the impact, the BLM will serve an immediate Temporary Suspension Order identifying the actions to be taken, including whether SNWA would be required to concurrently develop a mitigation plan as required in bullet 3 below.
- 3. If the BLM determines that a mitigation plan is required, the SNWA will prepare a detailed, site- specific plan that (a) identifies the magnitude and timing of the drawdown or associated impacts to federal resources or federal water rights; and (b) provides detailed site-specific measures that will be used to avoid, minimize the magnitude of, or offset the identified impacts. The mitigation plan will be submitted to BLM for approval within 30 days of BLM's determination that a site-specific mitigation plan is required (unless a longer timeframe is approved by BLM).
- 4. The BLM-approved, site-specific mitigation plan will be implemented by the SNWA. The BLM could require that specific measures be implemented per the schedule specified in the mitigation plan to avoid, minimize, or offset the impacts to federal resources or federal water rights. The specific mitigation measures may include but are not limited to the following:
  - Reduction or cessation in groundwater withdrawals;
  - Geographic redistribution of groundwater withdrawals;
  - Recharge projects to offset local groundwater drawdown;
  - Flow augmentation to maintain flow in specific water sources; or
  - Other on-site or off-site improvements.

Monitoring of the surface water resources and groundwater elevations required under Mitigation Measure GW-WR3a will be used in addition to other specified monitoring in the approved mitigation plan to document the effectiveness of the implemented measures. If the initial implementation of the mitigation plan does not provide the desired results within the time frame specified by the BLM, the BLM may require implementation of additional measures.

#### Vegetation Resources

**GW-VEG-1:** Joshua Tree Avoidance. Mature Joshua trees (*Yucca brevifolia*) will be avoided to the extent possible when laying out access roads in Delamar Valley.

**GW-VEG-2: Monitoring within Ute Ladies'-tresses Habitat.** In concert with GW-WR-3a, and on BLM lands, biological and hydrologic monitoring will be required for Ute Ladies'-tresses (*Spiranthes diluvialis*) groundwater-dependent habitats in areas that may be affected by groundwater pumping. New occurrences of this species found during monitoring efforts will be reported to the USFWS and appropriate State natural heritage program.

**GW-VEG-5: Swamp Cedar Monitoring.** In concert with GW-WR-3a, and on BLM lands including ACECs, biological and hydrologic monitoring will be required for swamp cedar (*Juniperus scopulorum*) groundwater-dependent habitats in areas that may be affected by groundwater pumping. Monitoring of these communities will include the determination of groundwater requirements necessary to maintain viable populations, and metrics to assess the health of individual swamp cedars. The goal of monitoring will be to ensure the long-term survival and continued existence of these populations.

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### Terrestrial Wildlife

**GW-WL-1:** Avoid Siting Facilities in Key Big Game Habitats. Avoid locating wells, new roads, or other linear facilities within key big game habitats including crucial summer and winter ranges, and occupied bighorn sheep habitats. Where avoidance is not practicable, the SNWA will improve 2 acres of comparable habitat for every 1 acre disturbed.

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**GW-WL-2:** Avoid Siting Facilities Within Buffers of Active Sage-grouse Leks. The SNWA will avoid siting facilities within 4 miles of active sage-grouse leks. Where avoidance is not possible, all power lines 33 kV or smaller within 4 miles of active greater sage-grouse leks must be buried. If technology at the time of construction allows, lines greater than 33 kV will also be buried.

#### **Terrestrial Wildlife continued**

**GW-WL-3: Pre-construction Surveys and Avoidance of Active Burrowing Owl Burrows.** Prior to siting future facilities, SNWA will conduct pre-construction surveys for burrowing owl based on habitat, known range, and previous occurrences within areas being considered for facilities. Well and other facility siting will avoid active burrows during breeding and nesting season to the extent practicable.

**GW-WL-4: Pre-construction Survey and Avoidance of Pygmy Rabbit Occupied Habitat.** Prior to siting future facilities, the SNWA will conduct pre-construction surveys for pygmy rabbits based on habitat, known range, and previous occurrences within areas being considered for facilities. Well and other facility siting will avoid occupied habitat to the extent practicable.

**GW-WL-5: Pre-construction Survey and Avoidance of Dark Kangaroo Mouse Occurrences.** Prior to siting future facilities, the SNWA will conduct pre-construction surveys for dark kangaroo mouse based on habitat, known range, and previous occurrences within areas being considered for facilities. Well and other facility siting will avoid occurrences to the extent practicable. Where impacts cannot be avoided, measures similar to those proposed by the applicant for ROW construction will be followed.

**GW-WL-6: Avoid Siting Facilities within the Baking Powder Flat ACEC.** The SNWA will avoid siting groundwater development facilities within the Baking Powder Flat ACEC.

**GW-WL-7: Pre-construction Surveys and Avoidance of Baking Powder Flat Blue Butterfly Occurrences and Habitat.** Prior to siting future facilities, SNWA will conduct pre-construction surveys for Baking Powder Flat blue butterfly based on habitat, known range, and previous occurrences within areas being considered for facilities. Well and other facility siting will avoid occurrences and habitat.

**GW-WL-8:** Artificial Water Sources for Big Game. If groundwater pumping by the SNWA results in the loss of existing water sources used by big game, the SNWA, in coordination with the BLM or NPS and NDOW, will develop and maintain artificial water sources to maintain current distribution of big game. Water would come from SNWA allocations.

**GW-WL-9: Greater sage-grouse monitoring in Hamlin Valley.** SNWA and BLM will coordinate with USFWS, UDWR, and NDOW to develop monitoring of the greater sage-grouse using leks in Hamlin Valley. Goals of the monitoring program will include, but not be limited to, determining if birds using Hamlin Valley leks are migratory and what, if any, groundwater dependent habitats the birds may be using.

**GW-WL-10:** Monitoring on BLM Lands within Greater Sage-grouse Habitat. In concert with GW-WR-3, on BLM lands, require biological and hydrologic monitoring of greater sage-grouse groundwater-dependent habitats in areas that may be affected by groundwater pumping. Hydrologic monitoring will be continuous (e.g., piezometers and soil tensiometer/piezometers) at all sites where sage-grouse habitat is being monitored.

### **Aquatic Biological Resources**

**GW-AB-1:** Avoid Disturbance to Springs. Avoid direct disturbance to springs and wetlands in Spring valley with known special status aquatic species by establishing a 0.5-mile buffer around these areas.

**GW-AB-2:** Avoid Disturbance to Streams. Avoid locating wells, new roads or other linear facilities within 0.5 mile of or parallel to perennial streams and riparian areas with game fish and special status species.

**GW-AB-3: Flow Change Mitigation**. The BLM would identify specific mitigation measures during subsequent NEPA for those springs or streams with game fish or special status aquatic species where flow or water level changes are identified during modeling or monitoring. Mitigation ideas are identified as part of SNWA ACMs under adaptive management (provided in the SNWA POD, **Attachment B**). Mitigation options are identified in the COM Plan Framework (above), ACMs under adaptive management, and water resource measure GW-WR-7.

**GW-MN-AB-1: Stream Flow and Aquatic Biology Monitoring**. Monitor flows in game fish streams with moderate and high risks where potential pumping effects could occur. The selected perennial streams will include but is not limited to: 1) Geyser Creek in Lake Valley; 2) Big Wash, Big Springs Creek, and Snake Creek in Snake Valley; 3) Bassett Creek, Bastian Creek, Eightmile Creek, Indian creek, McCoy Creek, Meadow Creek, Muncy Creek, Negro Creek, Odgers Creek, Piemont Creek, Pine Creek, Ridge Creek, Shingle Creek, Siegel Creek, South Taft Creek, Spring Valley Creek, Taft Creek, Vipont Creek, Willard Creek, and Williams Canyon Creek in Spring Valley (184), and 4) Pahranagat Creek in Pahranagat Valley. Monitoring measurements will include discharge and cross-sectional profiles. Cross-section data will be used to estimate flow changes on the wetted area of streams. Fish and macroinvertebrate surveys also will be conducted following methods approved by the DOI agencies and the NDOW.

## Table D.1-1 Monitoring and Mitigation Measures for Future NEPA

**GW-MN-AB-2: Spring and Aquatic Biology Monitoring**. Monitor flows in moderate and high risk springs with game fish or special status species where potential pumping effects could occur. The selected springs, ponds, and lakes will include but is not limited to: 1) Butterfield Spring and Flag Springs in White River Valley; 2) Blind Spring, Cleveland Ranch Springs, Keegan Spring, Minerva Spring Complex, North Millick Spring, O'Neal/Frog Pond, Osborne Spring, Shoshone Ponds, South Millick Spring, Stonehouse Spring Complex, Swallow Spring, Unnamed Spring #5, Unnamed spring near Cleve Creek, and Willow Spring in Spring Valley (184); 3) Big Springs in Snake Valley; and 4) Wamboldt Springs in Lake Valley. Cross-sectional profile measurements will be taken in the springs. Biology surveys (fish, macroinvertebrates, springsnails, and amphibians) will follow methods described in the Spring Valley Stipulated Agreement. If monitoring indicates pumping effects, alternative diversion points would be considered.

### Aquatic Biological Resources continued

**GW-MN-AB-3: Flow/habitat Determination**. Flow- or water level-habitat relationships will be studied in selected streams and springs to determine minimum flow or water levels needed to support critical life stage of aquatic species in these habitats. The streams or springs will be selected from the list being monitored as part of the Stipulated Agreements or additional waterbodies recommended for Measures GWD-MN-AB-1 and GWD-MN-AB-2. Methods for determining minimum flows in stream habitats will be based on existing procedures involving flow-habitat measurements and flow preferences for fish species. It is anticipated that methods will need to be developed for spring habitats due to a general lack of studies. The selected streams and springs will include but is not limited to: 1) Butterfield and Flag springs in White River Valley; 2) Shoshone Ponds , O'Neal/Frog Pond, and Blind, Cleveland Ranch, Keegan, Minerva, North Millick, South Millick, and unnamed # 5 springs in Spring Valley; 3) Big Springs in Snake Valley; and 4) Wambolt Spring in Lake Valley.

## Wild Horse and Burro Herd Management Areas

**GW–WH-1:** Water Source Maintenance. In cooperation with the BLM, SNWA will identify key natural water sources and monitor those sources on a regular basis (frequency determined by the BLM). If impacts to those sources are observed, SNWA will consult with the BLM to identify locations where artificial water sources could be maintained to supply herds with adequate water supplies. This mitigation measure is not limited to impacts that are a result of the SNWA groundwater development activities.

### Special Designations and Lands with Wilderness Characteristics

**GW-SD-1:** Avoid New Disturbance in ACECs. To the degree possible, avoid new surface disturbance in ACECs outside of utility corridors when planning well locations and roads.

#### Visual Resources

**GW-VR-1:** Avoid Siting Facilities on Slopes. Where determined necessary by BLM for visual resource protection, groundwater development facilities will not be located on slopes greater than 5 percent.

**GW–VR-2: Install Distribution Power Lines Underground**. Where determined necessary by BLM for visual resource protection reasons, distribution power lines (voltages less than 33 kV) will be placed underground, when not located within high voltage transmission corridors. Underground power lines can be located within the 100-foot ROW with a minimum separation in accordance with the National Electric Safety Code Standard 353. Underground power lines shall be located within the disturbed area of the permanent ROW to minimize soil disturbance and visual contrasts to the extent feasible.

**GW-VR-3: Site Wellfield Facilities Away from Designated Viewing Locations**. Where determined necessary by BLM for visual resource protection reasons, site groundwater development production wells, staging areas, and pumping stations more than 0.5 mile from designated viewing locations with high viewer sensitivity (e.g., scenic byways, KOPs, wilderness areas and national parks) except where they are within the temporary and permanent ROW for the main or lateral pipelines or colocated with ROW facilities. Utilize terrain to screen groundwater development facilities and avoid placing buildings on high land features and along "skylines" to conceal or reduce changes (see **Appendix F3.15** of the Final EIS for site-specific mitigation).

**GW-VR-4: Site Groundwater Development Structures and Facilities in BLM VRM Class III or IV Areas**. No well pads or roads will be constructed in Class I and II areas.