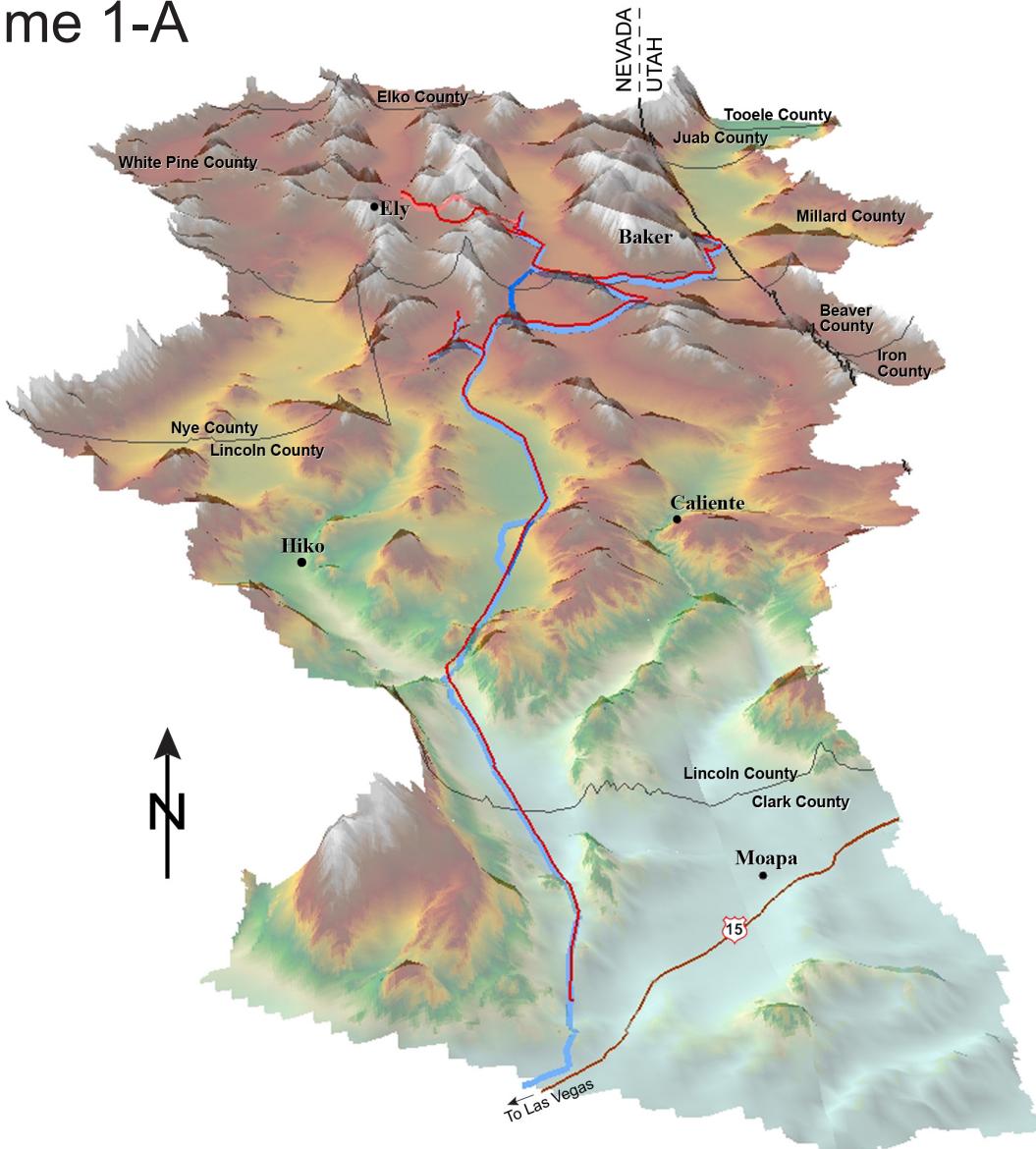


# Clark, Lincoln, and White Pine Counties Groundwater Development Project Draft Environmental Impact Statement

## Volume 1-A



Nevada Groundwater Projects Office

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### Cooperating Agencies:

Army Corps of Engineers  
Bureau of Indian Affairs  
Bureau of Reclamation  
Central Nevada Regional Water Authority  
Clark County, NV

Juab County, UT  
Lincoln County, NV  
Millard County, UT  
National Park Service  
Nellis Air Force Base

Nevada Department of Wildlife  
State of Utah  
Tooele County, UT  
U.S. Fish and Wildlife Service  
U.S. Forest Service  
White Pine County



The final calibrated model was used to simulate groundwater withdrawal under the seven different pumping scenarios (i.e., six project pumping alternatives and the No Action pumping scenario) for a period extending to full build out plus 200 years. The model also was used to evaluate the combined effects associated with continuation of existing and historic pumping, project pumping, and reasonably foreseeable future pumping in the region over the same time period.

The following section provides a brief description of other important groundwater flow models for the region and a description of the construction, calibration, and uncertainty and limitations associated with the CCRP model.

#### *Other Important Groundwater Flow Models for the Region*

There currently are three other regional groundwater flow models that encompass two or more of the proposed groundwater development basins:

1. Great Basin Regional Aquifer Systems Analysis (RASA) Model previously developed by the U.S. Geological Survey to evaluate the conceptual flow system in the carbonate-rock province (Prudic et al. 1995);
2. GBNP Model recently developed by the USGS for the NPS to evaluate the potential effects of pumping in Snake Valley on springs, streams and water levels in and adjacent to GBNP (Halford and Plume 2011);
3. Eastern Nevada-Western Utah (ENWU) Regional Model in development (Durbin and Loy 2010; Loy and Durbin 2010) for the BLM (Utah State Office), NPS, USFWS, and BIA to evaluate potential impacts of groundwater pumping resulting from several water rights applications filed in Iron and Beaver Counties, Utah. This model evaluated impacts to groundwater resources in White Pine and Lincoln Counties, Nevada, and Iron and Beaver Counties, Utah.

**RASA Model.** The RASA model was constructed as a steady-state, three-dimensional, finite-difference groundwater flow model using MODFLOW (McDonald and Harbaugh 1988). The model encompassed a very large region (approximately 92,000 square miles) with coarse discretization (individual cells of 5 miles by 7.5 miles in dimension). The model was constructed with two layers and was intended to be conceptual in nature for the purpose of evaluating the possible interconnection between the deep flow through the carbonate rocks and the shallow flow system (Prudic et al 1995). The model was later modified to develop “first approximations” of the possible effects of groundwater withdrawal of 180,800 afy by the Las Vegas Valley Water District in 17 basins in Nevada (Schaefer and Harrill 1995). The RASA model was not used to predict effects associated with the proposed groundwater withdrawal for this EIS because of:

- The broad regional nature of the model and its coarse discretization;
- The highly generalized assumptions and simplifications used to construct the model;
- The fact that the model was not calibrated to transient conditions; and
- The lack of model set up to simulate the effects associated with existing pumping in the region.

In summary, the CCRP model used for this EIS was constructed to provide a more detailed representation of a portion of the regional carbonate-rock groundwater flow system that was conceptually evaluated by the earlier RASA model.

**GBNP Model.** The GBNP model was constructed by refinement of the RASA model in Spring and Snake valleys, which encompass the GBNP study area. Groundwater flow in the GBNP study area was simulated with a 4-layer, finite-difference MODFLOW model that extends from the water table to 2,000 feet below the water table. The model incorporates a refined grid cell network that encompasses the park with cells measuring 1,620 feet by 1,620 feet. The refined model-simulated local flow in mountain blocks that was not simulated in the original RASA model.

The model was calibrated to existing water level data, simulated water levels from the original RASA model, depth-to water beneath ET areas, spring discharges, and changes in discharge on selected stream reaches in the vicinity of GBNP. The final calibrated model was used to simulate the potential effects of groundwater withdrawals associated with pumping in Snake Valley at nine points of diversion identified on the SNWA’s water rights applications. Model simulations were conducted for groundwater withdrawal rates of 10,000 afy, 25,000 afy, and 50,000 afy over a

200-year period. Separate simulations were conducted with and without the addition of existing irrigation pumping. The irrigation pumping was based on the estimated distribution and rate of pumping that occurred in 2002, and assumed that this rate of pumping would continue in the future over the 200 year simulation period. Results from the GBNP model scenarios are presented as maps of groundwater capture and drawdown, time series of drawdowns and discharges from selected wells, and time series of discharge reductions from selected springs and streams.

Since the model design is currently focused on the Spring Valley and Snake Valley area, and pumping only in Snake Valley, the model results cannot be used to evaluate the potential effects to water resources associated with pumping in Spring, Cave, Dry Lake, or Delamar valleys. Additionally, the GBNP model results for Snake Valley assume pumping occurs at SNWA's original points of diversion and therefore, it cannot be used to evaluate potential effects associated with the distributed pumping in Snake Valley included in the Proposed Action and Alternatives A and C. However, given the points of diversion used in the GBNP model were the same ones used to simulate Alternative B, a preliminary comparison of simulated reductions of spring and stream flow results in Snake Valley will be discussed for the 50,000 afy GBNP model simulation and the CCRP model simulation for Alternative B (50,000 afy). While the amounts of water pumped at each point of diversion differ between the two model simulations, the comparison is still informative in bracketing the potential range of impacts.

**ENWU Model.** The ENWU model was developed using FEMFLOW3D version 3.01. This is a modified version of an earlier USGS code originally developed in 1998 that employs a different computational method than MODFLOW. The ENWU model domain extends further east into Utah, but not as far west and southwest in Nevada as the CCRP model used for this EIS; it only includes two of the five pumping basins included in the SNWA's proposed groundwater development project. Specifically, the ENWU model was not designed to evaluate the SNWA's proposed pumping in Cave, Dry Lake, and Delamar valleys. As a result, many of the areas where drawdown related impacts are indicated by the SNWA simulations are not included in the ENWU model.

A preliminary review of the documentation for the ENWU model indicated that the model has not been peer reviewed and the documentation does not currently provide sufficient information to make a rigorous evaluation (Poeter 2010; Halford 2010). Halford (2010) also raised concerns regarding the assumed hydraulic properties used to represent non-carbonate rocks within mountain blocks and the distribution of recharge.

The ENWU model assumes that the average annual rate of discharge from the combined Snake and Hamlin valleys is 78,000 afy instead of the 132,000 afy estimated from the recent BARCAS study (Welch et al. 2007) used in the CCRP model. Compared to the CCRP model, the pumping scenarios used for the ENWU model simulations included additional future pumping in Snake Valley and pumping in Pine and Wah Wah valleys by the Central Iron County Water District, but does not include the proposed pumping in Cave, Delamar, and Dry Lake valleys. Since the two models used different assumptions for ET discharge in Snake Valley and different pumping scenarios, it is not possible to make a direct comparison of their respective simulation results. In consideration of the preliminary review of the model and simulation results, the BLM has determined that the CCRP model designed and developed specifically for this EIS analysis currently is the best available tool for evaluating the probable long term effects of groundwater withdrawal from the project on a regional scale.

#### *CCRP Model Construction, Calibration, Uncertainty, and Limitations*

##### Technical Review Team

The BLM established a technical review team of hydrology specialists from the BLM Nevada and Utah State Offices and National Operations Center in Denver, the USGS; and AECOM (BLM EIS Contractor) to review the CCRP model. The review team included two groundwater flow modeling experts: Dr. Keith Halford (USGS); and Dr. Eileen Poeter (Poeter Engineering). A technical specialist from the Nevada State Engineer's Office observed the review process. The technical review team was formed to assist the BLM by reviewing the model documentation reports and providing recommendations to the BLM for improvements to the model. The review team held periodic conference calls and meetings with the SNWA modeling team and the BLM EIS project management team at various stages of the model development. The review team reviewed early work products, modeling files, data compilations and draft reports, and the most recent updated reports used for this impact analysis. The technical team requested specific improvements to the model. Key issues identified by the review team and their resolution, or improvements made to the model to address these issues, are discussed in Section 3.0 of SNWA (2009a), and in SNWA (2010a).

the reliability of the model.” The term “validation” has been used to describe the successful simulation of a post-calibration stress to the groundwater system. However, one such success does not assure that the model will reliably predict a different future stress. Konikow and Bredehoeft note that realistic expectations of models “will help to shift emphasis towards understanding complex hydrogeological systems and away from building false confidence into model predictions.” Although false confidence cannot be placed in numerical models, it is more realistic that hydrologists build a reasonable model that uses field information to estimate future conditions than to ignore such capability in lieu of less rigorous estimates. The goal is for the numerical model to reasonably represent the system.

Additional uncertainties are associated with the observation data sets (such as hydraulic head measurements, ET discharge estimates, and historic groundwater pumping estimates) used for calibration. These and other model uncertainties are discussed in detail in the transient model report and model simulation reports (SNWA 2009b,c; 2010a,b).

Climate Change. Section 3.1.3.2, Climate Change Effects to All Other Resources, discusses the current research into climate change and predicted future trends for the Great Basin and provides a discussion of the range of potential effects on water resources. Current climate change models suggest that within the study area, mean temperatures are expected to rise and annual precipitation is likely to remain similar to present conditions as the century progresses (Redmond 2009). However, there is insufficient information available to predict how changes in climate would affect the rate of groundwater recharge in the region. Because of the uncertainties regarding potential effects of climate change on the groundwater flow system, it was not possible to provide a reasonable or meaningful simulation of the combined effects of pumping and climate change on water resources.

#### Model Limitations

All models have limitations and the CCRP model is no exception. A detailed discussion of the model limitations and accuracy of the model to reproduce measured groundwater levels and estimated groundwater budget components is provided in the numerical model report (SNWA 2009b). Although the model results provide valuable insight as to the general, long-term drawdown patterns and relative trends likely to occur from the various pumping scenarios, the model does not have the level of accuracy required to predict absolute values at specific points in time (especially decades or centuries into the future). Two major limitations of the model for predictive studies include: 1) a lack of reliable information regarding the hydraulic properties of faults included in the model; and 2) representation of future climate as discussed below.

Regional information suggests that the presence of faults throughout the region strongly influences the movement of groundwater. However, reliable estimates of hydraulic properties of faults included in the model are not available. Considering the size of the study area, number of faults, and the fact that these properties would likely vary both horizontally and vertically along these structures, it is not practical (and likely would be impossible) to collect reliable estimates of hydraulic parameters for all of the major faults in the region of study. It also is probable that other faults exist in the model area that affect groundwater flow have not been identified or incorporated into the model. This pervasive lack of information regarding fault hydraulic parameters is considered a major limitation of the model. As described previously, 50 faults (or fault zones) have been represented in the numerical model (Figure 4-11, p. 4-20, SNWA 2009b). The hydraulic conductivities for these faults were treated as model parameters and were estimated during the model calibration process. Most of the major regional faults included in the calibrated model are represented as low permeability structures that inhibit flow across the fault zones. The presence of these structures in the model tends to influence the pattern and magnitude of drawdown simulated by the model.

Another limitation is that the recharge estimates used as model input assumes that the same average precipitation rate and pattern observed over approximately the past 30 year period is representative of the average conditions that will occur over the 245 year future simulation period (i.e., assumption that the annual recharge rates do not vary over the 245 year future simulation period [2005 – 2250]). For this reason, the calibrated model should not be considered an accurate or precise predictor of future conditions because it does not account for variations in future climate conditions that cannot be accurately forecasted at this time.

Conclusion. Although there are inherent uncertainties and limitations associated with results of a regional groundwater flow model over a broad region with complex hydrogeologic conditions, the calibrated CCRP model is a reasonable tool for estimating probable regional-scale drawdown patterns and trends over time, resulting from the various

pumping alternatives that were evaluated. When combined with the baseline information on water resources in the study area, the simulated drawdowns, flow estimates, and water budget estimates provide reasonable and relevant results for analyzing the probable regional-scale effects and comparing alternatives for this programmatic level analysis.

#### *Defining the Drawdown Area*

For this impact analysis, the model-simulated area that would experience a change (decrease) in groundwater elevation of 10 feet or more is defined as the “drawdown area.” The 10-foot drawdown contour is used as a frame of reference to identify water dependent water resources within the drawdown area that may be at risk of impact, and for comparison of the potential effects between the various pumping scenario alternatives. Drawdowns of less than 10 feet could reduce flows in perennial springs or streams that are controlled by discharge from the regional groundwater flow system, which in turn could potentially cause declines in the diversity and abundance of associated riparian flora and fauna that may only be able to tolerate water declines on the order of a few feet. However, considering the regional scale of the model and unavoidable uncertainty associated with the model predictions (summarized below), the BLM does not believe that it is reasonable or appropriate to use the regional model to quantify changes in groundwater elevation of less than 10 feet. In addition, in many areas within the study area, changes in groundwater levels of less than 10 feet can be difficult to distinguish from natural seasonal and annual fluctuations in groundwater levels. The BLM has used the 10-foot drawdown contour to define the drawdown area for quantification of impacts associated with groundwater pumping in many other EISs in Nevada over the past 10-15 years<sup>1</sup>. The BLM recognizes that refinements, such as the collection of additional site-specific hydrologic information and model refinement (such as the development of embedded models in specific areas of interest) would be necessary to improve the ability to predict drawdown impacts at a more localized scale.

The drawdowns used in the impact evaluation were calculated as follows:

- For the No Action pumping scenario the drawdowns results are calculated as the difference between the initial hydraulic heads (those simulated at the end of 2004 by the calibrated numerical model) and the simulated hydraulic head for the specific time frame.
- The drawdowns presented for the Proposed Action and Alternatives A through E pumping scenarios represent the estimated incremental drawdown attributable to each specific pumping scenario without the effects of the No Action pumping. These were calculated as the difference between the total drawdown simulated by the combined No Action pumping scenario plus the specific groundwater development pumping scenario (included in the Proposed Action or Alternatives A through E) subtracted from the No Action drawdown results for the specific time frame.
- The results for the cumulative pumping scenarios represent the combined effects of: 1) continuation of the No Action pumping scenario in the future; 2) addition of identified reasonably foreseeable future pumping actions; and 3) pumping associated with groundwater development project (Proposed Action or Alternatives A through E pumping scenarios). All of the drawdown results for the cumulative analysis were calculated as the difference between the initial hydraulic heads (those simulated at the end of 2004 by the calibrated numerical model) and the simulated hydraulic head for the specific time frame.

#### *Spring and Stream Impacts Evaluation*

Potential impacts to springs and streams were evaluated by identifying and evaluating the potential risk to all known or suspected perennial water sources in the defined drawdown area using the methodology described below. Because of the regional nature of the groundwater flow model and model limitations discussed previously, it is not possible to accurately predict site specific changes in flow for springs or streams. However, the model is viewed as a useful and relevant tool for predicting flow trends resulting from the various pumping scenarios at selected springs and streams, primarily those with large flows that likely represent discharge from the regional groundwater flow system. These flow

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<sup>1</sup> A few Nevada BLM EIS examples include: Final EIS Cortez Hills Expansion Project, September 2008; Final EIS Phoenix Project, January 2002; Draft SEIS Barrick Goldstrike Mines Inc. Betze Project, September 2000; Draft EIS Leeville Project, March 2002; Final EIS Newmont Mining Corporation South Operation Area Project Amendment, April 2002.

predictions were used to evaluate: 1) if and when impacts to flow were likely to occur; and 2) the relative magnitude of change that could occur. The methodology used for each of these evaluations is summarized below.

#### Identification of Springs and Streams Susceptible to Drawdown Impacts

The springs and streams in the region can be characterized as either ephemeral, intermittent, or perennial. Ephemeral and intermittent springs and stream reaches flow only during or after wet periods in response to seasonal runoff. By definition, these surface waters are not controlled by discharge from the regional groundwater flow systems. During the low-flow period of the year, ephemeral and intermittent springs and stream reaches typically are dry. In contrast, perennial springs and stream reaches generally flow throughout the year. Flows observed during the high-flow periods in perennial springs and streams include a combination of surface runoff and groundwater baseflow discharge, whereas during the low-flow period, flows are sustained entirely by baseflow discharge from the groundwater system. If the flow from the perennial spring or stream is controlled by discharge from the aquifer used for the GWD Project, a reduction of groundwater levels from well field production could reduce the groundwater discharge to perennial springs or streams with a corresponding reduction in spring flows, lengths of perennial stream reaches, and their associated riparian/wetland areas.

The actual impacts to individual seeps, springs, or stream reaches are dependent on the source of groundwater that sustains the perennial flow (i.e., regional versus local or perched groundwater flow systems) and the actual extent of drawdown that occurs in the area. The interconnection (or lack of interconnection) between the perennial surface waters and deeper groundwater sources is controlled by the specific hydrogeologic conditions that occur at each site. Considering the complexity of the hydrogeologic conditions over this broad region, inherent uncertainty in numerical modeling predictions (discussed above) related to the exact areal extent and magnitude of drawdown, and uncertainty in the site-specific hydrogeologic conditions controlling flow at most of the springs within the model domain, it is not possible to conclusively identify specific springs and seeps that would show effects from future drawdown from the various pumping scenarios considered in this analysis. However, the regional model results, coupled with a generalized understanding of the groundwater flow system, provide the most reasonable means available at this time to identify areas where impacts associated with the proposed action (or alternative) pumping are likely to occur. This drawdown impact evaluation for springs and streams is limited to a prediction of areas of risk with the recognition that actual impacts to individual springs and streams distributed over this broad region cannot be determined precisely prior to pumping.

Potential impacts to all perennial streams and springs located within the defined drawdown area were evaluated by:

1. Identifying perennial streams and springs within the model-simulated drawdown area (defined by the 10-foot drawdown contour at various future points in time); and
2. Evaluating the likely source of the water to identify water resources that are potentially susceptible to groundwater development drawdown impacts.

Baseline information for perennial springs and streams in the study area is summarized in Section 3.3.2. The spring databases compiled for this project include two types of data: 1) inventoried springs, and 2) other springs. For the purposes of this study, “inventoried springs” are springs that have been field verified and include one or more flow measurements. “Other springs” are mapped spring locations that have not been field verified and therefore do not include flow measurements. The other springs were identified based on locations shown on topographic maps or included in the National Hydrography Database.

As described in Section 3.3.1.3, Hydrologic Cycle and Conceptual Groundwater Flow, the conceptual model indicates that springs are controlled by local, intermediate, or regional flow systems. For this impact analysis, it is assumed that the intermediate and regional groundwater flow systems are hydraulically connected within the drawdown areas. For the purposes of discussion, unless otherwise specified, the use of the term “regional groundwater flow system” in the remainder of this document refers to the combined intermediate and regional groundwater flow systems described in Section 3.3.1.3.

The water resource impact analysis uses the geomorphic setting (i.e., valley floor, valley margin, and upland areas) defined in **Table 3.3.2-3**, combined with water level data, to identify the general risk level for each perennial water source within the simulated drawdown areas. For this analysis, springs in upland areas (i.e., high elevation regions or

#### Snake Valley Hydrographic Basin:

- Weaver Creek (full reach along the north boundary of the park)
- Strawberry Creek (lower reaches) and adjacent springs (along the north boundary of the park)
- Lehman and Baker Creek (middle to lower reaches), and Rowland and Cave Springs (along the northeast boundary of the park)
- Snake Creek and its tributary Spring Creek Tributary (lower reach along the eastern boundary of the park)
- Big Wash (lower reach east of the park boundary)
- Big Springs Creek/Lake Creek and associated springs (full reach from Nevada into Utah, southeast of the park boundary)

The areas identified in and adjacent to the park as “potentially susceptible” to groundwater withdrawal (Elliott et al. 2006) also are shown on **Figure 3.3.2-1** and include:

- Snake Creek and its tributaries (middle reach located upgradient of the likely susceptible lower reach)
- Big Wash (middle reach below confluence of North and South Forks of Big Wash, east of the park boundary)

The risk analysis used for this regional water resource impact evaluation has incorporated the results of the Elliot et al. study by assuming that there is a moderate risk of impacts to perennial water resources located within the susceptibility zones as defined on **Figure 3.3.2-1** within the boundaries of GBNP. For this analysis, the susceptibility zones delineated in **Figure 3.3.2-1** that occur outside park boundaries are defined as moderate or high risk depending on whether the perennial resources in these areas occur in the valley margin or valley floor setting, respectively.

#### Evaluation of Model-simulated Stream Flow Results

The numerical groundwater flow model was used to simulate changes in baseflow in a few selected springs and streams resulting from the Proposed Action and alternatives. The specific methods used to simulate spring and stream flow in the numerical model is provided in the model documentation (SNWA 2009b). Baseflow is the groundwater component of surface water flow and is distinct from the contributions to streamflow associated with runoff from precipitation or snowmelt. There is a high level of uncertainty associated with long-term simulations of changes in baseflow (or groundwater discharge) in streams and springs distributed over large regions. The numerical model encompasses over 20,000 square miles. As discussed previously, the groundwater flow model is based on a conceptual model that represents a simplified and generalized understanding of the hydrogeologic and hydrologic conditions over a very large region. A major source of uncertainty is the hydraulic interconnection between the regional groundwater flow system and the springs and streams represented in the model. Due to the simplified assumptions in the model and unknown or poorly-understood conditions that control flow in most of the springs and streams, the baseflow may not change as predicted by the model.

Considering the limitations of the regional model and inherent uncertainty associated with the flow predictions, the model-simulated spring flows are used in this analysis to identify major spring discharge areas outside of the identified drawdown area (including White River Valley, Pahranagat Valley, Muddy River, Big Springs, and Gandy Warm Springs in Snake Valley) where potential flow reductions could occur; they also are used to provide an indication of potential trends in flow that are likely to occur to springs located both within and outside the defined drawdown area. However, as explained previously, considerable uncertainty exists regarding the accuracy of these predictions. Therefore, it is not reasonable to use the results to predict the absolute change in flow over the long-term simulation period.

For the springs or streams with flow predictions, a simulated incremental change in flow of less than 5 percent was inferred to indicate that measureable impacts were unlikely to occur. A less than 5 percent reduction of flow would be difficult to accurately measure or distinguish from natural fluctuations and is presumed to be within the model uncertainty. The impact analysis further assumes that springs with model-simulated flow reductions of 5 percent or greater could be affected.

Big Springs Flow Predictions. An earlier version of the numerical model was set up such that a low permeability hydraulic flow barrier (HFB) was used to control the discharge at Big Springs (SNWA 2009b). The HFB was situated immediately east of Big Springs at the location of a local Quaternary fault. This model construction was able to closely approximate the discharge at Big Springs. However, the placement of the north-south fault barrier immediately east of the spring, and the assumed distribution of pumping wells on the east side of the fault restrict the drawdown impacts to Big Springs. The geologic map and cross-section provided in the baseline report indicate that the simulated fault is subparallel to a major range-bounding fault located approximately 0.75 mile to the west of Big Springs (SNWA 2008) that was not simulated in this version of the model. After review of the model construction, the BLM technical review team requested that the model be modified in southern Snake Valley that consisted of shifting the position of the HFB to essentially match the major range-bounding fault. In the final calibrated model used for the EIS, the HFB in the area of Big Springs was moved to the west to closely match the location of the range-bounding fault, as requested by the BLM (SNWA 2010a). As a result of this move, the local fault situated east of Big Springs on the valley floor was no longer represented in the regional model.

With this revised configuration, the model was only able to simulate discharge of about one-half of the observed discharge at Big Springs. It was not possible to simulate a larger spring discharge without drastic changes to the numerical model (SNWA 2010a). However, this fit to the observed discharge is similar to the quality of fit at other locations in the model. Because of this different representation of the spring in the earlier and final version of the models, the decrease in springflow caused by pumping is different. The spring discharge simulated by the original model decreases following a gentle slope. By the end of the simulation period, spring discharge has been reduced by less than a third of the rate in 2005. The spring discharge simulated by the modified numerical model decreases following approximately the same rate of decrease as the one simulated by the original model until about the year 2050 (when pumping is initiated in Snake Valley). After that time, the rate of decrease increases drastically causing the discharge at the spring to cease (SNWA 2010b). These alternative model configurations illustrate that there is considerable uncertainty regarding the hydrogeologic conditions that control the groundwater discharge at Big Springs. Therefore, the simulated reduction in flows should not be viewed as reliable predictions of future flows at specific points in time in the future. Rather, these flow predictions from the regional model should be viewed as indicators of the potential risk to the spring associated with pumping in southern Snake Valley and Spring Valley.

#### *Water Rights Impact Evaluation*

This impact evaluation is not intended to determine reasonable (or unreasonable) effects to water rights allowable under state law such as the Nevada Statute (NRS 534.110{4}) that allows for a reasonable lowering of the static water level at the points of diversion for existing water rights provided that the existing water rights can be satisfied. The water rights impacts evaluation is intended to provide a disclosure of potential effects to existing surface and groundwater rights resulting from the various proposed pumping alternatives.

Active water rights including their points of diversion and manner of use were identified within the hydrologic study area as described in Section 3.3.1.5, Groundwater Resources. The impact assessment was conducted by overlaying the predicted drawdown on the water right points of diversions to identify water rights that may be affected. For surface water rights, it was assumed that water rights located within the model-simulated drawdown area (defined by the 10-foot drawdown contour) and located within the identified high and moderate risk areas previously described for perennial water could be affected. It also was assumed that groundwater rights located within the same defined drawdown area could be affected. Groundwater rights were further evaluated by determining the magnitude and timing of the drawdown at the points of diversions. Potential impacts to surface water rights and groundwater rights were summarized by determining the number of water rights potentially affected in each hydrographic basin for each alternative. Additional information regarding uncertainty associated with the water rights impact assessment is presented under the Proposed Action drawdown effects analysis.

#### *Presentation of Results*

The results of the groundwater pumping analysis are summarized by alternative in the following section. Additional details and the supporting information used to develop the summaries and quantification of potential impacts to water resources are provided in the substantial material in **Appendices F3.3.7 through F3.3.16**. This includes the following information provided for each pumping scenario and comparison time frame (i.e., full build out, full build out plus 75 years, and full build out plus 200 years).

within the projected drawdown area. **Table F3.3.13-1A** lists the number of active surface water rights within the drawdown area that occur within the high-, moderate-, and low-risk areas at the three representative time frames.

These results indicate that the number of surface water rights that potentially could be affected increases over the model simulation period.

At full build out plus 75 years, there are a total of 145 surface water rights located in areas where there is a moderate to high risk of impacts to surface flows. By the full build out plus 200 years time frame, there are 212 surface water rights located in areas where there is a moderate to high risk of impacts to surface flows.

The predominant beneficial use for the surface-water rights within the high- and moderate-risk areas are irrigation, stockwatering, and municipal uses. Other beneficial uses associated with the water rights identified in these risk areas include commercial, industrial, mining and milling, domestic, recreational, wildlife, and other (not specified). It is important to note that some surface water rights only divert surface water runoff or groundwater discharge from local or perched groundwater systems that are not dependent on discharge from the regional or intermediate groundwater flow system. In these cases, impacts to surface water flows are not anticipated regardless of the predicted drawdown. For surface water rights that are dependent on groundwater discharge, a potential reduction in the water table at the point of diversion could reduce or eliminate the flow available at the point of diversion for the surface water right.

#### *Impacts to Groundwater Rights*

For the purposes of this evaluation, it is assumed that wells located within the areas affected by drawdown of 10 feet or greater could experience impacts. Specific impacts to individual wells would depend on the: 1) well completion, including pump setting, depth, yield, predevelopment static and pumping groundwater levels; 2) interconnection between the aquifer in which the well is completed in and the aquifer targeted by the GWD Project; and 3) the magnitude and timing of the drawdown that occurs at the specific location.

**Figures F3.3.14A-1, F3.3.14A-2, and F3.3.14A-3** in **Appendix F3.3.14** illustrate the location and manner of use of existing groundwater rights in relation to the magnitude of the model-simulated drawdown at full build out, full build out plus 75 years, and full build out plus 200 years; **Table F3.3.15-1A** lists the groundwater rights by hydrographic basin within the drawdown areas that are predicted to occur.

As summarized in the **Table 3.3.2-6**, the number of groundwater rights potentially impacted from drawdown is projected to increase over the model simulation period. At full build out plus 75 years, there are 199 groundwater rights located within areas that are predicted to experience a reduction in groundwater levels of at least 10 feet. One hundred and twenty nine of these occur in areas with predicted drawdowns of 10 to 50 feet, 68 occur in areas with predicted drawdowns of 51 to 100 feet, and 2 occur in areas with predicted drawdowns of greater than 100 feet.

At full build out plus 200 years, there are 264 groundwater rights located within areas that are predicted to experience a reduction in groundwater levels of at least 10 feet. Ninety six of these occur in areas with predicted drawdowns of 10 to 50 feet, 134 occur in areas with predicted drawdowns of 51 to 100 feet, and 34 occur in areas with predicted drawdowns of greater than 100 feet. However, considering the model uncertainty, the actual drawdown could be larger or smaller than predicted.

The predominant beneficial uses for the active groundwater rights within the drawdown area at full build out plus 200 years are irrigation and stockwatering. Additional beneficial uses associated with water rights that could be affected include commercial, mining and milling, municipal, domestic, and wildlife. Impacts to wells could include a reduction in yield, increased pumping cost, or if the water level were lowered below the pump setting or the bottom of the well, the well could be rendered unusable.

The Shoshone Ponds area is located in the drawdown area in the southern portion of the Spring Valley (described in Section 3.3.1.4). The source of water for three ponds (known as the Shoshone Ponds) used as refugia for Nevada native fish (BLM 2010) is artesian flow from a well. Actual impacts to the artesian flow would depend on the interconnection between the aquifer that sustains flow in the artesian well and the aquifers developed for production from proposed well field development. Considering the simulated drawdown and the hydrogeologic setting, there is a high risk that

status species may be located within exploratory areas that have not yet been surveyed. The same avoidance and salvage methods that were discussed for the ROW construction are recommended for groundwater development areas.

**GW-VEG-2: Special Status Plants.** Pre-construction surveys for special status plants would be completed along all proposed groundwater development facility ROWs. Effectiveness: This measure would be moderately to highly effective, depending on the extent to which special status plant populations can be avoided during road alignment design. Effects on other resources: There would be no effect on environmental resources from implementing this measure.

### Groundwater Pumping

**Figure 3.5-6** illustrates the overlap of the 10-foot drawdown contour in relation to the wetland and phreatophytic cover types, potentially affected springs, and potentially affected perennial stream segments. The following is a summary of the incremental expansion of the groundwater drawdown area over time across the primary pumping hydrologic basins describing areas where surface and groundwater supply may be reduced. This includes the majority of the ET area (which encompasses basin shrubland and wetland/meadow cover types), as well as springs and perennial stream reaches.

**Full Build Out.** Potential drawdown effects are predicted in central, southern, and northeastern Spring Valley.

**Full Build Out Plus 75 Years.** The potential drawdown effects in ET areas would expand across Spring Valley and would appear in southern Snake Valley near Baker, in the Big Springs Creek drainage, and northeastern Hamlin Valley.

**Full Build Out Plus 200 Years.** The potential drawdown effects in ET areas would incrementally expand in the Snake Valley in the south of Eskdale and across the majority of the phreatophytic vegetation areas in northern Lake Valley.

The following vegetation community changes could occur in response to groundwater pumping, as outlined under the assumptions. The specific vegetation community responses cannot be predicted on a site-specific basis. The rate of change in plant community composition also would be highly variable, depending on groundwater drawdown rates and local water elevation recovery, as well as the influence of precipitation and overland and runoff in channels.

#### *Wetland/Meadow*

Plant species in vegetation communities that are directly dependent on perennial spring and stream flows would experience the greatest potential change in plant species composition. Based on the general successional model outlined in the assumptions, it is likely that wetland communities consisting of sedges, rushes, and cattails would progressively change toward a community dominated by deep-rooted grasses. The overall surface area occupied by wetland species would decrease, with persistence only in areas that continue to receive sufficient surface and groundwater for long-term survival. Species composition could change toward dominance by phreatophytes and other species better adapted to low near-surface soil moisture. Over the long term, it is expected that areas occupied by this cover type could be invaded by basin shrubland vegetation units, or other upland vegetation types, depending on sources of surface moisture and soil chemistry (texture, salinity, and alkalinity). This successional progression is unlikely to be reversed, since it is expected that hydric soils would lose many of their wetland characteristic and would likely to become more similar to upland soils with better root zone aeration than hydric soils.

#### *Basin Shrubland*

Based on groundwater studies in other hydrologic basins, such as the Owens Valley of California, it is likely that the dominant phreatophytic shrubs (greasewood, rabbitbrush) would persist over the long term, but potentially at lower densities and vigor as the result of reduced availability of soil moisture at greater depths and lower suitability for shrub seedling re-establishment and growth. These areas could be invaded by shrubs, herbs, and grasses that are adapted to seasonal shallow soil moisture and are capable of withstanding extended droughts, either through complete or partial dormancy, or long-lived seeds. It is likely that invasive annual grass species would become increasingly dominant and that the risk of wildfires also would likely increase.

**Table 3.5-14 Summary of Vegetation Resource Impacts, Applicant-committed Protection Measures, and Monitoring and Mitigation Recommendations for Proposed Action (Continued)**

<b>Impact Indicators By Model Time Frame</b>	<b>Full Build Out</b>	<b>Full Build Out Plus 75 Years</b>	<b>Full Build Out Plus 200 years</b>
Wetland/meadow ET area affected by 10 feet or greater drawdown (acres).	117	5,460	8,048
Basin shrubland ET area affected by 10 feet or greater drawdown (acres).	17,702	136,990	191,506
Total number of springs with moderate to high risk of being affected by 10 feet or more of drawdown (number).	8	212	305
Total miles of perennial streams with moderate to high risk of being affected by 10 feet or more of drawdown.	6	80	112
<b>Potential Vegetation Effects in GBNP and adjacent Utah.</b>			
The streams and springs within GBNP and adjacent Utah that may be affected by 10 foot drawdown or greater are described in Water Resources, Section 3.3.29. Riparian and herbaceous wetland vegetation communities that depend on streamflows may be stressed by future flow reductions and these riparian plant communities may progressively change toward more of an upland species composition.			
<b>Stipulation Agreements</b>			
The stipulation agreements for Spring and DDC valleys specify the development of monitoring programs to identify ecosystem component changes and an adaptive management framework to respond to changes identified. The mitigation efforts would be focused primarily on the protection and maintenance of springs, streams, ponds, wetlands, meadows, swamp cedars, and phreatophytic shrublands, since these communities are dependent on reliable sources of shallow groundwater in the root zone.			
<b>ACMs</b>			
<ul style="list-style-type: none"> <li>• ACM C.2.4 – Prepare an ecological study of the Spring Valley swamp cedars to determine groundwater elevation requirements necessary to maintain a viable community.</li> <li>• ACM C.2.5 – Conduct large-scale seeding to assist with vegetation transition from phreatophytic communities in Spring and Snake valleys, to benefit wildlife and reduce potential air resources impacts.</li> <li>• ACM C.2.15 – Modify use of SNWA's agricultural water rights in Spring Valley to offset changes in spring discharges needed to maintain wet meadow areas in the northwest and southeast portions of Spring Valley. This could be accomplished by changing crop production to a less water-intensive type or changing water cycles and then diverting the saved water to the wet meadow areas.</li> </ul>			
<b>Monitoring Recommendations</b>			
Based on anticipated drawdown effects, the following areas should be considered for vegetation community monitoring:			
<ul style="list-style-type: none"> <li>• Minerva Spring Complex, Swallow Spring, Shoshone Ponds, and the springbrook from Shoshone Ponds Well #2 in southern and central Spring Valley. Of this group, Minerva Spring Complex, Swallow Spring, and Shoshone Ponds, as well as the wetlands and meadows surrounding Minerva Springs and Shoshone Ponds (including in the Shoshone Ponds ACEC), are being monitored under the Biological Monitoring Plan for the Spring Valley Stipulation (Biological Work Group 2009).</li> <li>• Springs and associated wetlands and meadows along the west side of Spring Valley north of Cleve Creek. West Spring Valley Spring Complex and Keegan Spring Complex, including associated wetlands and meadows, are being monitored under the Biological Monitoring Plan for the Spring Valley Stipulation (Biological Work Group 2009).</li> <li>• The Big Spring drainage in Snake Valley in Nevada and Utah. Big Springs, Big Spring Creek, Lake Creek, Stateline Springs and Clay Spring (North) are being monitored under the Biological Monitoring Plan for the Spring Valley Stipulation (Biological Work Group 2009). Lehman and Snake Creek in GBNP and adjacent Utah.</li> <li>• Swamp Cedar and Baking Powder Flat Blue ACECs. The swamp cedar population in the vicinity of the Swamp Cedar ACEC is being monitored under the Biological Monitoring Plan for the Spring Valley Stipulation (Biological Work Group 2009).</li> </ul>			
<b>Mitigation Recommendations</b>			
GW-VEG-3, and 3M Plan for Snake Valley			
<b>Residual Impacts</b>			
While it is likely that some selected high value wetland areas may be maintained artificially, or pumping effects may be reduced by changes in the pumping regimes, the long-term trend is expected to be an overall plant composition change in the wetland/meadow and basin shrubland ETs toward more drought-adapted and shallow-rooted species that do not rely on near-surface groundwater across the primary pumping basins (Spring and Snake Valleys).			

### 3.14.2.9 Proposed Action

#### Groundwater Development Area

The impact of constructing wells, roads, collector pipelines, and power distribution lines in Delamar, Dry Lake, Cave, Spring, and Snake valleys would be similar to those that are discussed for the construction of pipelines, power lines, and related facilities (Section 3.14.2.1). **Table 3.14-9** lists the acreage of the three special designations that could be affected by facilities proposed in the groundwater development areas. All of the BLM Baking Powder Flat and Swamp Cedar ACECs and just under half of the Baker Archeological Site ACEC fall within the groundwater development area boundaries. All three ACECS are managed as ROW avoidance areas, but ROWs might be granted if minimal conflict existed with the identified resource values and if impacts could be mitigated (BLM 2008). Although placing groundwater development areas within avoidance areas is not prohibited in these areas, the construction and operation of wells and associated facilities might affect the resources and important values within them.

If future facilities are constructed within the ACEC boundaries, the associated surface disturbance and resulting facilities could diminish and possibly impair the values for which the ACEC was designated. Areas of vegetation and habitat in the Baking Powder Flat and Swamp Cedar ACECs could be removed and altered by the project, depending on the extent of the project approved in these ACECs. The resulting aboveground facilities could impair the cultural resources setting in the Baker Archeological Site and Swamp Cedar ACECs. Long-term maintenance of facilities requiring increased use of heavy equipment and traffic in the area could conflict with values of ACEC special designations. Increased visitation also could result from improved public access and affect how the ACECs are managed and the condition of resources within them.

**Table 3.14-9 Special Designations within the Groundwater Development Areas for the Proposed Action**

Special Designation	Hydrologic Basin	Resource Value	Area within Groundwater Development Areas (Acres)	Percent of Total Area
Baker Archaeological Site ACEC	Snake Valley	Cultural resources	38	48
Baking Powder Flat ACEC	Spring Valley	Sensitive butterfly habitat	13,638	99.9
Swamp Cedar ACEC	Spring Valley	Rocky Mountain juniper in alkali valley soils, cultural resources	3,200	100

Wilderness characteristics in wilderness areas adjacent to the groundwater development areas may be temporarily diminished during construction due to noise associated with heavy machinery and increased traffic depending on the proximity of these activities to the wilderness area boundary. Visitors in adjacent wilderness areas might notice a temporary disruption to solitude during construction. However, since all project construction would occur outside the wilderness area boundaries, no direct (permanent or physical) impacts to wilderness areas are anticipated. The following wilderness areas could be temporarily and indirectly affected, depending on the proximity of activities to the wilderness boundary: High Schells, Mount Moriah, Highland Ridge, Fortification Range, Far South Egans, Big Rocks, and Delamar Mountains.

Conclusion. All of the BLM Baking Powder Flat and Swamp Cedar ACECs and just under half of the Baker Archeological Site ACEC fall within the groundwater development area boundaries. All three ACECS are managed as ROW avoidance areas, but ROWs might be granted if minimal conflict existed with the identified resource values and if impacts could be mitigated (BLM 2008). If future facilities are constructed within the ACEC boundaries, the associated surface disturbance and resulting facilities could diminish and possibly impair the values for which the ACEC was designated. Wilderness characteristics in wilderness areas adjacent to the groundwater development areas may be temporarily diminished during construction due to noise associated with heavy machinery and increased traffic, depending on the proximity of these activities to the wilderness area boundary.

Proposed mitigation measures:

**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. Effectiveness: This measure would be highly effective in protecting the values for which the ACEC was designated. Effects on other resources: There could be minimal effects of implementing this measure on transportation and associated air emissions if longer travel distances are required.

Mitigation measure ROW-SD-1 also applies to groundwater development.

Residual impacts include:

- If future facilities are constructed within the ACEC boundaries, the associated surface disturbance and resulting facilities could diminish and possibly impair the values for which the ACEC was designated. This impact could occur in three ACECs—Baking Powder Flat, Swamp Cedar, and Baker Archeological Site ACECs. Temporary, indirect effects to wilderness characteristics could occur in the following wilderness areas depending on the proximity of these activities to the wilderness area boundary: High Schells, Mount Moriah, Highland Ridge, Fortification Range, Far South Egans, Big Rocks, and Delamar Mountains.

### Groundwater Pumping

Special designations that contain water-dependent values, including phreatophytic vegetation, wet meadows, springs, and streams, could be affected by the drawdown from groundwater pumping. Drawdown effects may reduce flow to ponds, springs, and perennial streams and alter vegetation, which could affect the values of the special designation areas. More details on the anticipated changes in overall plant communities and wildlife habitat are provided in Vegetation, Section 3.5; Terrestrial Wildlife, Section 3.6; and Aquatic Biological Resources, Section 3.7.

Gradual changes in wetland meadow and phreatophyte (i.e., basin shrubland) vegetation communities from groundwater drawdown could adversely affect water- and wildlife-related values in special management areas. The analysis was conducted on areas where the 10-foot drawdown overlapped with areas of groundwater shallower than 50 feet (detailed in Section 3.5.2.8, Vegetation Resources). In total, pumping could adversely affect wetland meadow and phreatophytic vegetation in five special designations (**Table 3.14-10**), with the most area affected in the Baking Powder Flat, Shoshone Ponds, and Swamp Cedar ACECs. Vegetation changes in these areas could affect the resources being protected by the ACEC designation, compromising the objective of the designation. While changes in wetland meadow and phreatophyte vegetation could affect migratory bird habitat within the Pahranagat NWR, drawdown effects would not be anticipated to compromise the objectives of the designation.

**Table 3.14-10 Acres of Wetland Meadow and Phreatophytic Vegetation Areas within Special Designations Affected under the Proposed Action**

Special Designation	Full Build Out	Full Build Out Plus 75 Years	Full Build Out Plus 200 Years
Baking Powder Flat ACEC	1,475	9,546	9,546
Lower Meadow Valley Wash ACEC	0	0	78
Pahranagat NWR	0	0	225
Shoshone Ponds ACEC	0	1,021	1,021
Swamp Cedar ACEC	93	3,163	3,163
<b>Total</b>	<b>1,568</b>	<b>13,730</b>	<b>14,033</b>

Reductions of perennial streams and spring flows in special designations have the potential to adversely affect resources dependent upon those water resources including riparian and wetland vegetation. Special designations projected to have perennial streams and springs with moderate to high risk for reduced flows from groundwater drawdown are provided in **Table 3.14-11** and **Table 3.14-12**. Water level changes in the springs and streams of the

*Resolution of Right-of-way Construction and Facility Maintenance Impacts*

A PA among the BLM Ely and Southern Nevada district offices, Nevada SHPO, ACHP, USACE, and SNWA currently is being developed for an area that encompasses the proposed Project (see **Appendix F3-16** for a copy of the draft PA). The draft PA outlines the steps to be taken to: 1) identify cultural resources; 2) evaluate them to determine if they are eligible for listing on the NRHP; 3) identify potential adverse effects; 4) develop measures to avoid, reduce, or eliminate adverse effects; and 5) address inadvertent discoveries. NRHP-eligible resources to be considered under the PA also include properties of cultural and religious importance to Indian tribes. In developing the draft PA, the BLM has consulted with all federally recognized Indian tribes with traditional ties to the analysis area, and because of those ties, may attach religious and cultural significance to historic properties that may be affected by the proposed Project. The reader is referred to the draft PA in **Appendix F3-16** for the list of consulted tribes. Those same tribes were provided a copy of the draft PA and invited to comment on and suggest changes to any part of the agreement. Additionally, the BLM invited each of the tribes to be a concurring party to the PA. Finalization of the draft PA is pending additional input from interested Indian tribes, consulting parties, and the public.

In consultation with the Nevada SHPO, ACHP, and interested Indian tribes, the BLM would determine whether construction and facility maintenance of the proposed Project would have an adverse effect on any properties of cultural and religious importance, including TCPs. If the BLM determines that a property would be adversely affected, measures to avoid, minimize, or mitigate such effects would be proposed in accordance with the PA. Measures to avoid, minimize, or mitigate effects may include, but would not be limited to, one or more of the following: 1) avoidance through changes in the construction or operational design; 2) data recovery, which might include the systematic professional excavation of a property; 3) the use of landscaping or other techniques that would minimize or eliminate visual effects on a site's setting; 4) a safety buffer or protective fencing between project disturbance and sites; 5) monitoring; or 6) other mitigation determined by the BLM through consultation with the SHPO, ACHP, interested Indian tribes, and other interested parties. Mitigation measures would be based on the types of impacts relevant to the site type.

Any discovered human remains, funerary objects, or items of cultural patrimony would be handled in accordance with the NHPA, NAGPRA, and PA. Specifically, if construction or other project personnel discover what might be human remains, funerary objects, or items of cultural patrimony on federal land, then construction would cease within 325 feet of the discovery, and the BLM would be notified of the find. Any discovered Native American human remains, funerary objects, or items of cultural patrimony found on federal land would be handled in accordance with the NAGPRA and procedures detailed in the PA. Non-Native American human remains on federal land would be handled in accordance with Nevada law. Construction would not resume in the area of the discovery until the BLM has issued a notice to proceed.

If human remains and associated funerary objects are discovered on private land during construction activities, construction would cease within 325 feet of the discovery and the county coroner or sheriff would be notified of the find. Treatment of any discovered Native American human remains and associated funerary objects found on private land would be handled in accordance with the provisions of NRS 383; non-Native American human remains would be handled in accordance with Nevada state law.

**Conclusion:** Approximately 12,300 acres would be disturbed as a result of construction activities. Direct impacts to properties of cultural and religious importance, including TCPs, would be proportional to the amount of ground disturbance associated with project construction. A total of 48 locations of tribal importance are known to be located in the analysis area. Of these, one would be crossed by the proposed pipeline ROW and two could be visually affected by the proposed transmission lines. Class III inventories of proposed disturbance areas may identify additional places of tribal importance. Consultation between the BLM and interested tribes would continue in an effort to identify sites of tribal importance, as well as address concerns the tribes may have regarding these resources. No surface disturbance would occur within or immediately adjacent to the boundary of a property of cultural and religious importance prior to completion of all consultation required by law, and, as appropriate, implementation of at least the field phase of any data recovery or mitigation plan to address impacts to that resource. Any data recovery or mitigation plan would be reviewed and approved by the BLM and Nevada SHPO prior to implementation. Interested tribes would be invited to participate as a concurring party in the development of any data recovery or mitigation plan in accordance with federal mandates and the PA.

## 3.20 Monitoring and Mitigation Summary

Based on the resource-specific impact analyses provided in Chapter 3, this section provides the GWD Project monitoring and mitigation measures. **Table 3.20-1** provides a list of all monitoring and mitigation measures proposed for the ROWs and project facilities. These measures are related to the NEPA Tier 1 impact analyses and are tied to decisions that will be made by the BLM in the ROD. Impacts involving future groundwater development and pumping were analyzed at a programmatic level (Tier 2). Monitoring and mitigation related to these future actions were presented as recommendations that can be considered in this or subsequent NEPA analyses. These recommendations are listed in **Table 3.20-2**. In addition, the table identifies those mitigation measures that are being recommended for consideration of implementation by other agencies but are not within the power of the BLM to enforce. It should be clarified that several resources such as water, vegetation, and wildlife have presented measures (e.g., 3M Plan in the Snake Valley [**Appendix B**]) that included both mitigation and monitoring actions.

**Table 3.20-1 Right-of-Way (Tier 1) Monitoring and Mitigation Measures**

Mitigation/Monitoring	ROW Surface Disturbance, Construction Maintenance Effects	Mitigation outside BLM Jurisdiction
<b>Section 3.1 Air and Atmospheric Values</b>		
<b>ROW-AQ-1: Project Road Inspections to Reduce Wind and Water Erosion.</b> The SNWA and the BLM's Environmental Compliance Monitor shall inspect project roads in areas prone to air and water erosion bi-weekly during construction, or more frequently during periods of adverse weather conditions. Repairs shall be completed within 5 working days of notification to the SNWA or sooner depending on public safety and the nature of the issue detected. SNWA shall make a photographic documentation of the road condition prior to and immediately after road repairs.	X	
<b>ROW-AQ-2: Alternative Dust Control Measures.</b> Areas where soil tackifiers are prohibited (e.g., threatened and endangered species habitat, perennial stream drainages) shall be determined in cooperation with the BLM and the USFWS prior to construction, and identified in both the Construction and Mitigation Plans. Other mitigation (e.g., gravel application) may be required to reduce impacts and to ensure protection of public safety. This measure would supplement SNWA ACM A.10.3.	X	
<b>Section 3.3 Water Resources</b>		
<b>ROW-WR-1: Stream Crossing Construction Plan.</b> A site-specific plan would 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 would 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 would be reviewed and approved by the BLM and NDOW prior to initiation of any construction activities within the stream corridor.	X	
<b>ROW-WR-2: Avoid Power Line Structures in Streams.</b> Power line structures would be designed to span all perennial streams and other ephemeral/intermittent streams or washes. No power line structures or ancillary facilities would be located within the active channels of these streams. Access roads constructed for the power line would be located to avoid or minimize disturbance to perennial and intermittent streams.	X	
<b>ROW-WR-3: Construction Water Supply Plan.</b> A Construction Water Supply Plan would be provided to the BLM for approval prior to construction. The plan would identify the specific locations of water supply wells that would be used to supply water for construction of the water pipeline and ancillary facilities; identify specific groundwater aquifers that will be used; estimate effects to surface water and groundwater resources resulting from the groundwater withdrawal; define the methods of transport and delivery of the water to the construction areas; and, identify reasonable measures to reuse or conserve water. The BLM would review and approve the plan and, if necessary, include any monitoring or mitigation requirements required to minimize impacts prior to construction approval.	X	

**Table 3.20-1 Right-of-Way (Tier 1) Monitoring and Mitigation Measures (Continued)**

Mitigation/Monitoring	ROW Surface Disturbance, Construction Maintenance Effects	Mitigation outside BLM Jurisdiction
<b>Section 3.5 Vegetation</b>		
<b>ROW-VEG-1: Green Stripping.</b> SNWA, in consultation with the BLM, would develop a green stripping revegetation prescription where BLM and SNWA preventive and control measures may be inadequate to mitigate risks of weed invasion and wildfire. Green stripping is defined as ROW revegetation with fast-growing herbaceous species that can out-compete annual and perennial weeds and can provide a green firebreak. Locations where this measure may be applied shall be identified in the Restoration Plan, Integrated Weed Management Plan, and Fire Prevention Plan (see ROW-VEG-2), and approved by the BLM Visual Resource Management Coordinator. For example, it would be applied primarily to Great Basin Desert low elevation bottomlands, with limited applications to open evergreen woodlands (due to low risk for weed invasion) and Mojave Desert lowlands (due to low risk as a fire disturbance ecosystem).	X	
<b>ROW-VEG-2: Fire Prevention Plan.</b> SNWA would prepare a Wildfire Response Plan that would be approved by the BLM. This plan would include: notification procedures for local firefighting agencies, including the BLM; provisions for temporary water sources in the construction area to provide additional fire suppression capability; and training programs for all employees in methods to prevent accidental fires. Construction water sources would be made available for other fire-fighting efforts as needed.	X	
<b>Section 3.6 Wildlife</b>		
<b>ROW-WL-1: Big game key habitat priority restoration and habitat improvement.</b> If surface disturbing activities impact key big game habitats (crucial summer and winter ranges for antelope, Rocky Mountain elk, or mule deer, or occupied desert bighorn sheep habitat), the SNWA shall improve 2 acres of comparable habitat for every 1 acre of disturbed habitat. The SNWA shall coordinate with the BLM and NDOW to determine the specific areas for big game key habitat improvements.	X	
<b>ROW-WL-2: USFWS Concurrence on Plans.</b> The SNWA shall obtain concurrence from USFWS on any plans developed as part of the POD (ACM A.1.1) that address species protected under the MBTA or the Bald and Golden Eagle Protection Act	X	
<b>ROW-WL-3:</b> Raptor nest survey and avoidance. If surface disturbance activities may be initiated during raptor breeding and nesting seasons (as determined by the NDOW and the BLM), surveys for active raptor nests would be conducted by SNWA within suitable habitat, within 2 weeks prior to the anticipated start of surface disturbing construction activities. Raptor nests found during surveys would be addressed under the Ely RMP SS-4 management action as well as protected under provisions of the MBTA and BGEPA as relevant. (SS-4: Where appropriate, restrict permitted activities from May 1 through July 15 within 0.5 mile of raptor nest sites unless the nest site has been determined to be inactive for at least the previous 5 years.)	X	
<b>ROW-WL-4: Specific lek avoidance – Burying power lines.</b> For the power line in Cave Valley, SNWA shall bury the portion of the 25 kV line within the 2 mile buffer of the active leks in Cave Valley. For the power line in Snake Valley, the portion of the 25 kV line within the 2 mile buffer of the active lek shall be buried	X	
<b>ROW-WL-5: Specific lek avoidance – Siting of power lines.</b> SNWA shall site 230kV power lines west of three active leks in southern Spring Valley at sufficient distances to avoid line-of-sight with leks..	X	
<b>ROW-WL-6:</b> Habitat restoration to benefit greater sage-grouse. Restore greater sage-grouse habitat on public lands where habitat is disturbed. The SNWA shall coordinate with the BLM and the NDOW to determine the specific areas and timing for restoration activities.	X	

**Table 3.20-1 Right-of-Way (Tier 1) Monitoring and Mitigation Measures (Continued)**

Mitigation/Monitoring	ROW Surface Disturbance, Construction Maintenance Effects	Mitigation outside BLM Jurisdiction
<b>Section 3.7 Aquatic Biology</b>		
<b>ROW-AB-1: Habitat Restoration.</b> The SNWA shall restore substrate composition to preconstruction conditions at the Snake Creek pipeline crossing using procedures approved by the BLM and the NDOW. The results shall be included in the detailed Restoration Plan to be prepared for the project.	X	
<b>ROW-AB-2: Avoidance of Instream Disturbance.</b> Construction of the power line at the Steptoe Creek crossing shall avoid instream disturbance from equipment and vehicles.	X	
<b>ROW-AB-3: Spawning Restrictions.</b> Timing restrictions between October 1 and December 1 shall be required during pipeline construction at the Snake Creek crossing. If construction during this period is necessary, SNWA shall prepare a site-specific plan that adopts mitigation measures recommended by the NDOW to minimize impacts to brown trout..	X	
<b>Section 3.9 Recreation</b>		
<b>ROW-REC-1: Enforce Recreational OHV Travel Restrictions.</b> (see Mitigation Measure ROW-T-1 under Transportation) Identify construction zone and construction vehicle access areas where restrictions to unauthorized OHV travel should be enforced.	X	
<b>ROW-REC-2: Avoid Recreational Use Conflicts with Construction Activities.</b> Schedule construction activities (pipeline and aboveground ancillary facilities) to minimize conflicts with recreation activities such as race events, hunting, and elk viewing.	X	
<b>ROW-REC-3: Avoid Recreational Trail Location Conflicts.</b> Coordinate with the BLM regarding future trail use where SRMAs and SRP areas are crossed.	X	
<b>Section 3.10 Transportation</b>		
<b>ROW-T-1: Traffic Management Plan.</b> SNWA will prepare a detailed Traffic Management Plan that addresses operating procedures and coordination approaches with the BLM and other appropriate agencies to minimize traffic congestion, roads needing improvement and repair, and safety measures during construction.	X	
<b>Section 3.12 Rangelands and Grazing</b>		
<b>ROW-GRA-1: Temporary fencing in livestock high use areas.</b> In the final POD to be prepared as an attachment to the BLM ROD, the SNWA would conduct pre-construction surveys to determine livestock high use locations in and adjacent to the construction ROW where application of temporary fencing would benefit revegetation species establishment. The results of these surveys would be provided to the BLM for review and concurrence. Reseeded areas that are temporarily fenced would be monitored by the SNWA on a yearly basis until the BLM determines that reseeded areas are self-sustaining, and fencing removed. It is anticipated that this measure would be applied in discrete areas of 5 acres or less, unless the BLM identifies a need to temporarily fence larger areas.	X	
<b>Section 3.13 Wild Horses and Burros</b>		
<b>ROW-WH-1: Shrub/tree Removal.</b> In the Eagle and Silver King HMAs, where feasible, shrubs and trees within the power line ROW would be avoided during selection of power pole position and spur access road routes.	X	
<b>ROW-WH-2: Preconstruction Consultation.</b> Preconstruction consultation with the BLM shall occur to identify construction avoidance areas in HMAs between April and July.	X	

**Table 3.20-1 Right-of-Way (Tier 1) Monitoring and Mitigation Measures (Continued)**

Mitigation/Monitoring	ROW Surface Disturbance, Construction Maintenance Effects	Mitigation outside BLM Jurisdiction
<b>ROW-WH-3: Existing Water Supplies.</b> Preconstruction consultation with the BLM will occur to ensure that wild horses have access to existing water sources or that supplemental water is provided.	X	
<b>Section 3.14 Special Designations</b>		
<b>ROW-SD-1: Construction area siting.</b> To the degree possible, avoid siting temporary construction areas within the boundaries of special designations and within designated ROW corridors.	X	
<b>Section 3.15 Visual Resources</b>		
<b>ROW-VR-1: ROW Width Reduction.</b> SNWA, in consultation with the BLM, will reduce the width of permanent ROW and temporary construction ROW to the smallest width feasible in Pahranagat Canyon, VRM Class II areas, and within 1,000 feet adjacent to scenic byways (U.S. 50/6/93) to minimize visual contrasts where feasible. The permanent and temporary ROW width can be reduced through narrower roads within the ROW, steeper trench walls, vertical trenching and/or trench boxes, and reducing the ROW width in relation to the size of the pipeline (e.g., a 16 inch pipeline would require less ROW than an 84 inch pipeline).	X	
<b>ROW-VR-2: Power Line Structure Design.</b> Where locating new power lines adjacent to existing lines, the existing pole type, color, and span length would be matched to the extent feasible. In areas where there are no existing power lines, SNWA would consult with the BLM during project design to select the most appropriate structure design from the following: wood H-frame structures or single steel poles for 230-kV power lines and single wood poles or single steel poles for 69-kV and 25-kV. All steel poles would be surfaced with Shadow Grey paint in sage/creosote plant communities and self-weathering Corten in pinyon pine plant communities.	X	
<b>ROW-VR-3: Power Line Conductor and Insulator Design.</b> Conductors are recommended to be non-specular and non-reflective. Insulators shall be porcelain or polymer material to reduce reflection and refraction.	X	X
<b>ROW-VR-4: Surface Treatment of Project Structures and Buildings.</b> SNWA would consult with BLM on surface treatments. All aboveground, non-electric project structures and buildings will utilize architectural details and be painted or constructed of colored block to blend with the colors of the surrounding landscape, per BLM Manual 8400 – Visual Resources Management. Shadow Grey for sagebrush shrub and shrubland cover types and Beetle for pinyon-juniper woodland should be selected from the BLM Standard Environmental Colors Chart CC-001 ( <b>Appendix F3.15, Figure F3.15-1</b> ). Ground surfaces of permanent storage yards that will not be revegetated should have a top-dressing of two inches of dark colored aggregate to minimize color contrast. Non-reflective and non-glare paints will be utilized with proper treatment maintenance for the life of the project.	X	
<b>ROW-VR-5: Facility Siting.</b> During project design and preparation of the detailed POD (ACM A.1.1), SNWA would review facility site locations with the BLM to determine if design features or adjustments could be made to limit the visibility of non-linear facilities. The collocation of facilities has been incorporated into the POD; however, further adjustments for the collocation of non-linear facilities with related project facilities or existing facilities would be reviewed with the BLM. Distance, terrain, and vegetation screening would be utilized to limit the visibility of non-linear facilities. Facility siting to minimize visibility would be subject to engineering and safety requirements that may constrain siting.	X	
<b>GW-VR-4: Site Groundwater Development Structures and Facilities in BLM VRM Class III or IV Areas.</b> No well pads or roads would be constructed in Class I and II areas.	X	

**Table 3.20-1 Right-of-Way (Tier 1) Monitoring and Mitigation Measures (Continued)**

Mitigation/Monitoring	ROW Surface Disturbance, Construction Maintenance Effects	Mitigation outside BLM Jurisdiction
<b>Section 3.16 Cultural Resources</b> <b>No additional mitigation</b>		
<b>Section 3.17 Native American Traditional Values</b>		
<b>ROW-NAM-1: Tribal Monitors.</b> Qualified tribal monitors would monitor pipeline construction in the area of a site in which an Indian tribe attaches religious and cultural significance. The BLM would identify these sites in consultation with interested Indian tribes.	X	
<b>Section 3.18 Socioeconomics</b>		
<b>SE-1: To Address Local Law Enforcement Staffing and Equipment Needs.</b> The SNWA would work with the boards of county commissioners of Lincoln, White Pine and Millard counties to develop an Emergency Management Plan (see V-2 in Vegetation) – including provision of multi-year grants for staff recruiting, training, payroll and purchases of patrol vehicles, and communications equipment.	X	X
<b>SE-2: To Address Local Emergency Response Needs.</b> The SNWA would work with the boards of county commissioners of Lincoln, White Pine and Millard counties to develop an Emergency Management Plan (see V-2 in Vegetation) – including providing grants for training, purchases of ambulances and other equipment. Some needs could also be addressed via requirements for contractor-provided on-site first response capabilities	X	X
<b>SE-3: To Address Local Government Fiscal Needs.</b> The SNWA would negotiate and provide “payments in lieu of taxes” to Lincoln and White Pine counties for the local sales, use and property taxes foregone because of SNWA’s tax-exempt status. The negotiated payments should be estimated in advance for the upcoming construction year, with adjustments made the following year for variances in actual outlays.	X	X
<b>SE-4: To Address Temporary Housing Needs In The Rural Areas.</b> In the event that one or more temporary construction worker facilities are not developed in Lincoln County during the construction of the main pipeline and transmission line, the SNWA and its major contractors should work cooperatively with the Board of County Commissioners to develop temporary housing resources, e.g., providing direct funding or occupancy commitment for one or more RV parks.	X	X
<b>SE-5: To Assist Local Counties and Communities Planning Efforts.</b> The SNWA and its contractors would prepare and distribute an annual socioeconomic monitoring report summarizing its construction activities during the past year, planned activity over the next two years, and key characteristics of its work force, e.g., level of employment (low, peak, average), residency patterns, turnover rates, and impacts on local communities.	X	
<b>Public Safety and Health</b>		
<b>ROW-PS-1: Hazardous Material Surveys.</b> Conduct BLM-approved hazardous materials-contaminant surveys before establishing final pipeline ROW locations.	X	

**Table 3.20-2 Groundwater Development (Subsequent Tiers) Monitoring and Mitigation Measures**

Mitigation/Monitoring	ROW Surface Disturbance, Construction Maintenance Effects	Groundwater Pumping Effects	Mitigation outside BLM Jurisdiction
<b>Section 3.1 Air and Atmospheric Values</b>			
<b>GW-AQ-1: Road Inspection and Repair.</b> The SNWA and the BLM's Environmental Compliance Monitor shall inspect and repair project roads in areas prone to air and water erosion bi-weekly during construction.	X		
<b>GW-AQ-2: Use of Soil Tackifiers.</b> Soil tackifiers and other mitigation (e.g., gravel) may be selected in consultation with the BLM to reduce impacts and to ensure protection of public safety. This measure would replace the SNWA ACM A.10.3.	X		
<b>GW-AQ-3: Monitoring, Mitigation, and Management Plan for Air Quality.</b> SNWA will develop an air monitoring plan approved by the BLM, which will detail the siting and operation of at least three collocated PM <sub>10</sub> and PM <sub>2.5</sub> 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 Bar 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 <sup>1</sup> when selecting the site locations, and instruments, developing the data management plan, and establishing quality assurance criteria. See <b>Appendix B</b> .		X	
<b>Section 3.2 Geologic Resources</b>			
<b>GW-G-1: Cave Protection.</b> 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: <ul style="list-style-type: none"> <li>• Reasonable and appropriate setbacks and buffers around caves.</li> <li>• Limitations on blasting.</li> <li>• Requirements for the storage and handling of hazardous materials such as fuels.</li> </ul> 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.	X		

<sup>1</sup> USEPA 2006. Quality Assurance Handbook for Air Pollution Measurement Systems. EPA-454/D-06-001. October 2006.

**Table 3.20-2 Groundwater Development (Subsequent Tiers) Monitoring and Mitigation Measures (Continued)**

Mitigation/Monitoring	ROW Surface Disturbance, Construction Maintenance Effects	Groundwater Pumping Effects	Mitigation outside BLM Jurisdiction
<b>GW-G-2: Underground voids.</b> If underground voids are unexpectedly encountered during facility construction or drilling, the following measures would apply: <ul style="list-style-type: none"> <li>• Work will be halted and the BLM will be notified immediately.</li> <li>• The BLM, in consultation with the permittee, shall assess the risk of further drilling or siting of surface facilities in the area where the voids are encountered.</li> <li>• Risk assessment may require the use of appropriate geotechnical methods to gather relevant data on the extent of karst features.</li> </ul>	X		
<b>GW-G-3:</b> 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 would be needed to assess the magnitude and extent of subsidence in order to take actions that would mitigate subsidence where necessary. Subsidence Monitoring to include: <ul style="list-style-type: none"> <li>• Baseline Subsidence Monitoring.</li> <li>• Initial Subsidence Modeling,</li> <li>• Exploratory Phase .Monitoring During Pumping.</li> <li>• Establish a periodic and systematic inspection of water development areas to observe the development and documentation of ground fissures that may develop.</li> </ul>		X	
<b>Section 3.3 Water Resources</b>			
<b>GW-WR-1: Spring Inventories.</b> A spring inventory would 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 would avoid ground disturbance in the vicinity (i.e., 0.5 mile) of all verified spring locations.	X		
<b>GW-WR-2: Stream Crossing Plans.</b> A site specific plan would 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 would incorporate information from BLM Technical Reference 423, for hydraulic considerations in designing pipeline stream crossings (DOI 2007). The plan would 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 would be reviewed and approved by the BLM and NDOW prior to initiation of any construction activities within the stream corridor.	X		

**Table 3.20-2 Groundwater Development (Subsequent Tiers) Monitoring and Mitigation Measures (Continued)**

Mitigation/Monitoring	ROW Surface Disturbance, Construction Maintenance Effects	Groundwater Pumping Effects	Mitigation outside BLM Jurisdiction
<b>GW-WR-3: Monitoring and Modeling.</b> This mitigation measure would require that the SNWA provide the BLM with an annual report that provides monitoring results; drawdown maps; a description of any deviation of the modeling results from the current groundwater flow model predictions; and proposed modifications to the monitoring plans based on the results of the monitoring (i.e., changes to the monitoring well network, or network of springs, seeps, streams). The SNWA would also be required to update the model at least every 5 years (after pumping is initiated) or sooner if BLM identifies major differences between the model simulations and monitoring results and determines that model recalibration is necessary. The SNWA would also develop more detailed (local scale) groundwater flow models designed to simulate the effects of pumping within each specific basin. These basin specific models would be developed and approved by BLM prior to BLM's NEPA review of specific groundwater development activities proposed by SNWA.		X	
<b>GW-WR-4: Monitoring, Mitigation and Management Plan for Snake Valley.</b> Mitigation measure GW-WR-4 includes the water resource components of the Monitoring, Mitigation, and Management (3M Plan) documents provided in Appendix B. The SNWA, working in conjunction with the BLM and other DOI agencies, and with input from the States of Nevada and Utah, will develop and implement a long-term monitoring, management, and mitigation plan for Snake Valley (3M Plan). The purpose of the 3M Plan is to insure that: 1) implementation of the ROD protects water dependent resources and water-related resources on public lands, 2) protects federal water rights managed by federal agencies, and 3) provides a process for mitigating impacts. The 3M Plan will establish a network of groundwater and surface water monitoring sites to collect baseline data and monitor the effects of groundwater development on water resources. The intent of the 3M Plan is to provide early warning of potential adverse impacts to water rights and water-dependent sensitive resources, and provide time and flexibility to implement management measures and gauge their effectiveness. (Additional details are provided in Section 3.3 and Appendix B.)		X	
<b>GW-WR-5: Shoshone Ponds.</b> 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). Impacts to Shoshone Ponds that are attributable to the SNWA's groundwater pumping would 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 well should be designed to pump groundwater from the same aquifer currently used as the source of water for the ponds.		X	

**Table 3.20-2 Groundwater Development (Subsequent Tiers) Monitoring and Mitigation Measures (Continued)**

Mitigation/Monitoring	ROW Surface Disturbance, Construction Maintenance Effects	Groundwater Pumping Effects	Mitigation outside BLM Jurisdiction
<b>GW-WR-6: Well and Water Rights.</b> Impacts to water wells and water rights would be mitigated, as required by the State of Nevada or Utah (most likely acting under authority of an interstate agreement between Utah and Nevada that would be developed in the future prior to development). Mitigation for impacts to water rights would depend on the site-specific conditions and impacts and could include a variety of measures. Methods for addressing impacts to water rights may include but would not be limited to the following: <ul style="list-style-type: none"> <li>For wells, mitigation could include lowering the pump, deepening an existing well, drilling a new well, or providing a replacement water supply of equivalent yield and general water quality.</li> <li>For surface water rights, mitigation could require providing a replacement water supply of equivalent yield and general water quality.</li> </ul>		X	X
<b>Section 3.5 Vegetation</b>			
<b>GW-VEG-1: Joshua Tree Avoidance.</b> Mature Joshua trees ( <i>Yucca brevifolia</i> ) would be avoided to the extent possible when laying out access roads in Delamar Valley.	X		
<b>GW-VEG-2: Special Status Plants.</b> Pre-construction surveys for special status plants would be completed along all proposed groundwater development facility ROWs.	X		
<b>GW-VEG-3: Monitoring, Mitigation and Management Plan for Snake Valley.</b> Mitigation measure GW-VEG-3 includes the vegetation resource components of Monitoring, Mitigation, and Management (3M Plan) documents provided in Appendix B.  The SNWA, working in conjunction with the BLM and other DOI agencies, and with input from the States of Nevada and Utah, will develop and implement a long-term monitoring, management, and mitigation plan for Snake Valley. The purpose of the 3M Plan is to insure that: 1) implementation of the ROD protects water dependent resources and water-related resources on public lands, 2) protects federal water rights managed by federal agencies, and 3) provides a process for mitigating impacts. The 3M Plan includes provision for biological monitoring and analysis to further the understanding of groundwater-influenced ecosystem dynamics and track biotic community responses to SNWA's groundwater withdrawal from the Snake Valley Hydrographic Basin. This monitoring will provide an early-warning indication as to whether, in combination with the hydrologic monitoring component, SNWA groundwater development in Snake Valley is, or causing or may cause adverse effects to groundwater-influenced ecosystems. It will also track ecosystem response as management response actions are implemented. (See Section 3.5 and Appendix B for additional details)		X	
<b>Section 3.6 Wildlife</b>			
<b>GW-WL-1: Avoid siting facilities in key big game habitats.</b> 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 shall improve 2 acres of comparable habitat for every 1 acre disturbed.	X		

**Table 3.20-2 Groundwater Development (Subsequent Tiers) Monitoring and Mitigation Measures (Continued)**

Mitigation/Monitoring	ROW Surface Disturbance, Construction Maintenance Effects	Groundwater Pumping Effects	Mitigation outside BLM Jurisdiction
<b>GW-WL-2: Avoid Siting Facilities Within 2 Miles of Active Sage-grouse Leks.</b> Where possible, the SNWA shall avoid siting wells and power lines within 2 miles of active sage-grouse leks. Where not possible, all power lines 33-kV or smaller within 2 miles of active greater sage-grouse leks must be buried.	X		
<b>GW-WL-3: Pre-construction Surveys and Avoidance of Active Burrowing Owl Burrows.</b> Prior to siting future facilities, SNWA shall 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 shall avoid active burrows during breeding and nesting season to the extent practicable.	X		
<b>GW-WL-4: Pre-construction Survey and Avoidance of Pygmy Rabbit Occupied Habitat.</b> Prior to siting future facilities, the SNWA shall 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 shall avoid occupied habitat to the extent practicable.	X		
<b>GW-WL-5: Pre-construction Survey and Avoidance of Desert Valley Kangaroo Mouse Occurrences.</b> Prior to siting future facilities, the SNWA shall conduct pre-construction surveys for desert valley kangaroo mouse based on habitat, known range, and previous occurrences within areas being considered for facilities. Well and other facility siting shall avoid occurrences to the extent practicable. Where impacts cannot be avoided, measures similar to those proposed by the applicant for ROW construction would be followed.	X		
<b>GW-WL-7: Artificial Water Sources for Big Game.</b> 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 artificial water sources to maintain current distribution of big game.		X	
<b>GW-WL-8: Monitoring, Mitigation and Management Plan for Snake Valley.</b> (related to GW-WR-3 and others). In addition to the monitoring and mitigation described in Section 3.3, Water Resources and Section 3.4, Vegetation Resources, the Snake Valley 3M Plan will include management and mitigation measures that could be used to address impacts identified during monitoring relevant to terrestrial wildlife species including: 1) geographic redistribution of groundwater withdrawals, 2) reduction or cessation of groundwater withdrawals, 3) if water supplies used for consumptive purposes, such as irrigation, domestic, and livestock watering use were limited by the project, then SNWA will provide alternate supplies of water, 4) acquisition of real property and/or water rights dedicated to management of special status species, and 4) augmentation of water supply and/or acquisition of existing water rights. The Draft Plan and accompanying guidance is provided in Appendix B.		X	
<b>Section 3.7 Aquatic Biology</b>			
<b>GW-AB-1: Avoid Disturbance to Springs.</b> Avoid direct disturbance to springs in Spring and Snake valleys with known special status aquatic species by establishing a 0.5-mile buffer around these areas.	X		
<b>GW-AB-2: Avoid Disturbance to Streams.</b> Avoid locating wells, new roads or other linear facilities within 0.5 mile of or parallel to perennial streams and riparian areas.	X		

**Table 3.20-2 Groundwater Development (Subsequent Tiers) Monitoring and Mitigation Measures (Continued)**

Mitigation/Monitoring	ROW Surface Disturbance, Construction Maintenance Effects	Groundwater Pumping Effects	Mitigation outside BLM Jurisdiction
<b>GW-AB-3: Flow Change Mitigation.</b> Specific mitigation measures will be identified 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 ACMs under adaptive management (Appendix E).		X	
<b>GW-AB-4: Mitigation Actions Resulting from the 3M Plan for Snake Valley.</b> Mitigation planning will be developed as part of the 3M Plan for Snake Valley (Appendix B). Management actions to be considered will include geographic redistribution of groundwater withdrawals; reduction or cessation of groundwater withdrawals; provision of consumptive water supply requirements using surface and/or groundwater sources; acquisition of property or water rights dedicated to management of special status species; and augmentation of water supply and/or acquisition of existing water rights.		X	
<b>Section 3.13 Wild Horses and Burros</b>			
<b>GW-WH-1: Water Source Maintenance.</b> In cooperation with the BLM, SNWA shall 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 would consult with the BLM to identify locations where artificial water sources could be maintained to supply herds with adequate water supplies.		X	
<b>Section 3.14 Special Designations</b>			
<b>GW-SD-1: Avoid New Disturbance in ACECs.</b> To the degree possible, avoid new surface disturbance in ACECs outside of utility corridors when planning well locations and roads.	X		
<b>Section 3.15 Visual Resources</b>			
<b>GW-VR-1: Avoid Siting Facilities on Slopes.</b> Where determined necessary by BLM for visual resource protection, groundwater development facilities would not be located on slopes greater than 5 percent.	X		
<b>GW-VR-2: Install Distribution Power Lines Underground.</b> Where determined necessary by BLM for visual resource protection reasons, distribution power lines (voltages less than 33 kV) would 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 should be located within the disturbed area of the permanent ROW to minimize soil disturbance and visual contrasts to the extent feasible.	X		

**Table 3.20-2 Groundwater Development (Subsequent Tiers) Monitoring and Mitigation Measures (Continued)**

Mitigation/Monitoring	ROW Surface Disturbance, Construction Maintenance Effects	Groundwater Pumping Effects	Mitigation outside BLM Jurisdiction
<b>GW-VR-3: Site Wellfield Facilities away from Designated Viewing Locations.</b> 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 collocated 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.	X		
<b>GW-VR-4: Site Groundwater Development Structures and Facilities in BLM VRM Class III or IV Areas.</b> No well pads or roads would be constructed in Class I and II areas.	X		
<b>Section 3.18 Socioeconomics</b>			
<b>SE-6: To Provide a Source Of Emergency Financial Assistance and Equitable Treatment of Potentially Affected Ranchers and Public Water Systems that Rely on Groundwater.</b> SNWA should create and fund a mitigation/protection program for holders of water rights in Nevada comparable to that for water rights holders in Utah outlined in the draft Nevada/Utah agreement.		X	X
<b>SE-7: To Provide a Source Of Emergency Financial Assistance to Individual Businesses Adversely Affected By Factors Linked to Groundwater Drawdown.</b> SNWA should expand the impact assistance and compensation program to compensate/provide economic relief to individual businesses for losses due to business interruption or other factors that are reasonably linked to groundwater drawdown.		X	X
<b>SE-8: To Promote Income Stability and Long-Term Sustainability of Local Agricultural Industry.</b> SNWA should work cooperatively with DRI, University of Nevada - Reno, University of Utah, USDA, and others to assist farmers and ranchers to implement water conservation practices and to transition to higher value, less water consumptive crops.		X	X
<b>SE-9: To Facilitate Local Planning and Ensure Timely Response in the Event of Problems.</b> A cooperative effort should be undertaken by the respective state engineers of Nevada and Utah, SNWA, and White Pine, Lincoln and Millard counties, to develop and implement a comprehensive socioeconomic monitoring program as an adjunct to the stipulated agreements for Spring and Snake valleys. This effort could include creation of an “Ombudsmen” position, perhaps within the NSE, to ensure public access and timely response regarding groundwater issues.		X	X
<b>SE-10: To Help Maintain Local Government Fiscal Strength.</b> If SNWA purchases additional private property or pays another party to establish a permanent conservation easement on productive agricultural or timber lands that results in a reduction in taxable value, SNWA should provide annual “payments in lieu of taxes” to the affected county to offset any resulting reductions in ad valorem taxes.		X	X
<b>Public Safety and Health</b>			
<b>GW-PS-1: Five-year Review of Leak Detection Methodologies.</b> Review and implement best industry practices for leak detection.	X		

**Appendix F3.16**  
**Cultural Resources**

**PROGRAMMATIC AGREEMENT  
AMONG  
THE DEPARTMENT OF THE INTERIOR,  
BUREAU OF LAND MANAGEMENT, NEVADA,  
THE NEVADA STATE HISTORIC PRESERVATION OFFICER,  
THE U.S. ARMY CORPS OF ENGINEERS,  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION, AND  
THE SOUTHERN NEVADA WATER AUTHORITY**

**REGARDING SECTION 106 REVIEW of the  
GROUNDWATER DEVELOPMENT PROJECT  
for CLARK, LINCOLN, and WHITE PINE COUNTIES in NEVADA**

WHEREAS, the Southern Nevada Water Authority (“SNWA” or “proponent”), a Nevada cooperative regional public agency, proposes to construct and operate a system of regional water supply and distribution facilities in central and eastern Nevada, through a project known as the Clark, Lincoln, and White Pine Counties Groundwater Development Project (“GWD Project” or “Project” or “Undertaking”); and

WHEREAS, the effects from the Project are regional in scope, some effects from the Project cannot be fully determined prior to approval of the Undertaking, the SNWA is a non-federal party to which major decision-making responsibilities regarding the Project and this Agreement are being delegated, and the alternatives to the Project under consideration consist of corridors and large land areas, the signatories hereto have determined that the review of this Project under section 106 of the National Historic Preservation Act of 1966 (“NHPA”) (16 U.S.C. § 470f) (“section 106”) and the regulations implementing section 106 at 36 C.F.R. Part 800, may properly and appropriately be governed by this programmatic agreement (“Agreement”), negotiated and executed as authorized by 36 C.F.R. § 800.14(b); and

WHEREAS, a substantial portion of the GWD Project will be located on public lands managed by the Ely Field Office (BLM Ely) and the Southern Nevada Field Office (BLM Southern Nevada) of the Nevada Bureau of Land Management of the U.S. Department of the Interior (“BLM Nevada”) (together, “BLM”); and

WHEREAS, SNWA has applied to BLM Nevada for issuance of rights-of-way (“ROWS”) over said BLM-managed lands in order to construct and operate the various facilities of the GWD Project; and

WHEREAS, the BLM has determined that, because the GWD Project will require BLM-issued ROWs, this Project is a federally permitted undertaking subject to the requirements of section 106; and

WHEREAS, the BLM is the lead federal agency for compliance with the requirements of section 106 for the GWD Project and BLM has identified the BLM Nevada State Director as the agency official for the Project, having jurisdiction over the undertaking, and having taken legal and

financial responsibility for section 106 compliance in accordance with the ACHP's regulations, and further, who may delegate to one or more appropriate BLM officials any responsibility or action required or allowed of an agency official under those regulations; and

WHEREAS, BLM has assigned to BLM Ely primary responsibility both for project management (including being the "point of contact" for BLM for purposes of this Agreement as provided in Section M, herein) and for ensuring BLM's compliance with terms of this Agreement, and

WHEREAS, the GWD Project involves only the supply and distribution of water through facilities in Nevada, BLM's ROW grant will not give SNWA rights to exploit oil, natural gas or mineral resources; and

WHEREAS, BLM has determined that construction, installation, operation or maintenance of the GWD Project may cause effects to historic properties and accordingly, prior to issuing to the proponent any ROW over BLM-managed lands, BLM will take into account such effects and comply with section 106, through the procedures described in this Agreement, as authorized by and consistent with the BLM's nationwide programmatic agreement titled *Programmatic Agreement Among The Bureau of Land Management, The Advisory Council On Historic Preservation, And the National Conference of State Historic Preservation Officers Regarding the Manner In Which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act*, dated March 26, 1997 ("BLM NPA") and the State Protocol Agreement dated October 26, 2009, between the BLM Nevada and the Nevada State Historic Preservation Officer ("SHPO"), (the "Nevada State Protocol"), both of which documents, or any valid successor to either agreement, are incorporated herein by reference; and

WHEREAS, although no part of the GWD Project will be located on tribal lands, in developing this Agreement in compliance with 36 C.F.R. § 800.14(b)(2)(i) and (f), BLM has made a reasonable and good faith effort to identify, and seek consultation with, every federally recognized Indian tribe that that has religious or cultural ties to, or whose direct ancestors had historic or pre-historic religious or cultural ties to, GWD Project lands, and that, because of such ties, may attach religious and cultural significance to historic properties that may be affected by the GWD Project, and BLM has identified under those criteria the fifteen tribes listed in Appendix C (the "Identified Indian Tribes"); and

WHEREAS, on February 23, 2007, BLM sent to each of the Identified Indian Tribes a letter explaining the nature of the proposed GWD Project, asking each of those tribes to provide any information they have about any historic properties which might be affected by the construction and operation of the GWD Project, and providing with that letter Project maps and contact information for the appropriate BLM contacts; and

WHEREAS, the BLM has initiated formal government-to-government section 106 consultation with each Identified Indian Tribe through the appropriate BLM manager(s) contacting that tribal government, or a person authorized by such government to speak for the tribe on section 106 matters, offering meetings between a BLM manager and that tribe's governing body to discuss any concerns the tribe may have regarding: (1) the GWD Project; (2) any historic properties of religious and cultural significance to that tribe that may be affected by the Project; and (3) the

tribe's desires to protect any such property(ies) from imprudent or unnecessary public identification or disclosure; and

WHEREAS, the BLM reaffirms its offer to consult regarding the GWD Project with each Identified Indian Tribe that desires to do so, in a manner respectful of both tribal sovereignty and the unique government-to-government relationship between Indian tribes and the United States government; and

WHEREAS, in order to supplement the results of BLM's tribal consultation and preparation of the environmental impact statement (EIS) for the Project, SNWA engaged the services of consulting firms ENSR/AECOM, EDAW, Summit Applied Anthropology and Bengston Consulting to conduct ethnographic studies of the GWD Project lands, including interviews and targeted site visits with the assistance and cooperation of the Identified Indian Tribes, in order to identify cultural resources and TCPs located in the Project APEs to which the Identified Indian Tribes attach religious and cultural significance, the consultants having conducted such studies, interviews and site visits in 2008 and 2009, and prepared reports on their work, which reports have been circulated among the Identified Indian Tribes; and

WHEREAS, BLM has provided to each Identified Indian Tribe a draft copy of this Agreement and has invited each such tribe to comment on and suggest changes to any part of the draft, prior to its being finalized or executed, representatives of several tribes having met with BLM managers to discuss this Agreement at duly noticed meetings on January 12, 2011 in Ely, Nevada, and February 15, 2011 in Las Vegas, Nevada, and the Identified Indian Tribes have each been afforded a reasonable opportunity to participate in the development and finalization of this Agreement as it may apply to historic properties of religious and cultural significance to each of those tribes; and

WHEREAS, BLM has invited and encouraged each Identified Indian Tribe to be a concurring party for this Agreement; and

WHEREAS, BLM, in consultation with the Nevada SHPO, has identified organizations and agencies with a demonstrated interest in the GWD Project and its potential effects to historic properties, and has invited these organizations and agencies to participate in this section 106 review, the organizations and agencies listed in Appendix E having responded and expressed their desire to participate, and BLM therefore having designated those organizations and agencies as consulting parties in this review, consulted with them in the development of this Agreement, and invited them to sign this Agreement as concurring parties; and

WHEREAS, pursuant to the Nevada State Protocol BLM has consulted with the SHPO in the development of this Agreement; and

WHEREAS, BLM has invited the Advisory Council on Historic Preservation (AHP) to consult in the development of this Agreement and the AHP has agreed to participate, has consulted on and been involved in the development hereof, and will be a signatory; and

WHEREAS, this Agreement assigns substantial section 106 compliance duties to Project proponent SNWA, and the BLM has invited SNWA both to consult in the development of this Agreement and to be an invited signatory; and

WHEREAS, SNWA will ask the U.S. Army Corps of Engineers (“Corps”) to issue permits under the Clean Water Act for the GWD Project, the Corps is a cooperating agency and has designated BLM as the lead agency for Section 106 review of the GWD Project, and the Corps desires that its responsibilities for complying with Section 106 for the GWD Project be discharged by the reviews accomplished under this Agreement, and accordingly the Corps has consulted in the development of this Agreement and will be a signatory; and

WHEREAS, certain terms used in this Agreement are defined in the Glossary of Terms in Appendix A attached hereto, or in the ACHP’s rules, the BLM NPA, the Nevada State Protocol or the BLM Manual 8100 Series; and

WHEREAS, SNWA has identified known historic and prehistoric cultural resources within the areas of the Project’s areas of potential effects (APEs) for visual and direct effects by completing and providing to the BLM a Class I inventory of such areas, the report for which is titled “*The Class I Cultural Resources Inventory for the Southern Nevada Water Authority, Clark, Lincoln, and White Pine Counties Groundwater Development Project, Nevada*” (ICF Jones and Stokes, August 2008) (“Class I Inventory”); and

WHEREAS, this Agreement covers all aspects of the construction, installation, operation and maintenance of the facilities of the GWD Project, as such facilities are referenced herein in Stipulation B and more fully described in Appendix B attached hereto, including facilities identified but not yet designed, or whose location has yet to be determined, and those that may be added in the future, all of which facilities will be treated as described herein;

NOW THEREFORE, the signatories agree that the GWD Project shall be implemented in accordance with the following stipulations in order to take into account the effect of the GWD Project on historic properties.

## **STIPULATIONS**

BLM shall ensure that the following measures are carried out:

### **A. Roles and Responsibilities**

1. BLM will be responsible for reviewing reports, including but not limited to, inventory reports, recommendations of eligibility for the National Register of Historic Places (“National Register” or “NRHP”), treatment options, and assessments of effects, and for completing Section 106 review for the GWD Project, regardless of the ownership of the lands on which segments or facilities of the project may be located.

2. BLM will make recommendations of eligibility and findings of effect. BLM will also oversee all cultural resource work; assemble and make all submissions to the SHPO, including reports, recommendations of eligibility and effect, and treatment or data recovery plans; submit copies thereof to consulting Indian tribes and other consulting parties as appropriate, and seek SHPO concurrence with all compliance decisions.

- a. BLM Ely and BLM Southern Nevada will make decisions regarding National Register eligibility, Project effects and treatment for their respective areas.
- b. BLM Southern Nevada will convey its decisions to BLM Ely.
- c. BLM Ely will ensure that all data are compiled and submitted to the appropriate parties and otherwise assure proper conduct of actions described in Stipulations A.1-4.

3. BLM will be responsible for consultation with Indian tribes in connection with the GWD Project, including: (1) identifying each federally recognized Indian tribe that attaches religious and cultural significance to historic properties potentially affected by the GWD Project; (2) consulting with all Identified Indian Tribes willing to do so concerning historic properties, including eligible traditional cultural properties (“TCPs”) potentially affected by the GWD Project, to which such tribe attaches religious and cultural significance, and with any other tribes that the BLM identifies in the future; and (3) through consultation, providing all relevant tribes a full opportunity to express any concerns about the Project, their views on identification and National Register eligibility of any properties to which each such tribe attaches religious and cultural significance, and allowing that tribe to express its views on the assessment of effects and resolution of adverse effects to such properties that are National Register eligible, consistent with the procedures contained in the BLM Manual Section 8120 and the BLM Manual Handbook, H-8120-1: Guidelines for Conducting Tribal Consultation (together, the “BLM Section 8120 Manual and Handbook”).

4. BLM will be responsible for identifying individuals and organizations with a demonstrated or known interest and expertise in historic properties and preservation issues in the Project area, and notifying them about the section 106 review of the Project. BLM shall invite such persons or organizations it identifies to comment on the Project and participate in the section 106 review. BLM may grant consulting party status to any such person or organization that requests such in writing, according to BLM’s evaluation of the nature of their legal or economic relation to the Project or affected properties, or their concern for the Project’s effects on historic properties. BLM shall involve such consulting parties in findings and determinations made during the section 106 review, including providing notice of the same, providing or making available documentation of the finding or determination as provided in 36 C.F.R. § 800.11, receiving and considering comments from consulting parties and responding to such comments as appropriate, and coordinating with, such consulting parties as BLM determines reasonable under the section 106 regulations.

5. SNWA will be responsible for funding, supporting, assisting and conducting, either directly or through qualified consultants or contractors, the procedures for section 106

compliance of the GWD Project as those procedures are provided herein and as directed by BLM, including identification and evaluation of historic properties, records research, inventory, archaeological and above-ground surveys, assessments of effects, mitigation, pre- and post-construction data recovery, report preparation, required monitoring of construction, curation of artifacts, and ensuring that all such activities are conducted in a professional manner, consistent with this Agreement and the Nevada State Protocol.

- a. SNWA will ensure that persons supervising cultural resources work on SNWA's or BLM's behalf for the Project hold a Nevada BLM cultural resources use permit as appropriate for archaeological inventory and other archaeological investigations, and meet the Secretary of the Interior's Standards for Archaeology and Historic Preservation.
- b. As appropriate, personnel must meet the Secretary of the Interior's Professional Qualifications Standards for the relevant area(s) of expertise, such as for architectural history or cultural anthropology.

6. SNWA may apply for ROWs, notices to proceed ("NTPs") or other land-use or Project approvals, for individual GWD Project facilities, or groups or portions of facilities, on a phased or segmented basis, and the BLM may initiate and complete Section 106 review for any such phase or segment, and thereafter issue NTPs therefore, separately from, and regardless of the initiation or completion of the Section 106 review of, any other phase or segment of the project, so long as all such activities are conducted in accordance with this Agreement.

7. Signatories and Concurring Parties. As provided in the ACHP's regulations and herein, the four listed signatories shall have sole authority to execute, effectuate and amend this Agreement. Those signatories, along with the invited signatory, each have sole authority to terminate this Agreement as provided herein. Concurring parties will concur in the terms of this Agreement and may participate in and benefit herefrom. The failure or refusal of any party invited to become a concurring party will not invalidate or otherwise affect this Agreement. Upon and after effectuation of this Agreement, each signatory, invited signatory, invited concurring Indian tribe and invited concurring party, that signed or signs this operative Agreement is a signing party hereto, collectively referred to as the "signing parties."

8. The terms used in this Agreement shall carry the meaning provided in Appendix A attached hereto, or if not defined therein then in the ACHP's section 106 rules, or if not defined in either of those sources, the BLM NPA and Nevada State Protocol Agreement, or if not defined in any of these sources, the BLM Manual 8100 Series.

## B. The GWD Project

1. The section 106 review process for the GWD Project shall be managed according to provisions of this Agreement.

2. The GWD Project consists of various facilities, including approximately 306 miles of buried water pipelines, temporary and permanent access roads, five pumping stations, six regulating tanks, one buried storage reservoir, one water treatment facility, approximately 323 miles of overhead power lines, two primary and five secondary electrical substations, and three pressure-reducing facilities, as more particularly described in Appendix B attached hereto. The majority of these facilities will be located on public lands managed by the BLM, while some will be located on state-owned or privately owned lands.

3. The undertaking for the GWD Project is defined as the construction, installation, operation and maintenance of those facilities described in the Appendix B, and other facilities that SNWA may add to the GWD Project, as may be authorized, limited, conditioned or made possible by the issuance of, BLM ROWs for the GWD Project on public lands in Nevada, and located on those lands and other adjacent or nearby lands in Nevada.

4. Facilities added to the GWD Project in the future that will be located completely within areas previously inventoried by a Class III intensive survey as provided in Section E, of this Agreement and otherwise managed under the terms of this Agreement (including development and implementation of evaluation and treatment options, as appropriate) will not require additional survey or identification work, except for any assessment of effects, mitigation and treatment that may be required or in discovery situations, and using the existing survey and identification information such facilities will undergo complete Section 106 review under the terms of this Agreement.

5. Facilities or segments added to the GWD Project in the future that will be located partially or totally outside of areas previously covered by a Class III survey for the Project must complete a full Class III survey and section 106 review under the terms of this Agreement prior to initiation of construction of the relevant facilities or segments.

### **C. Areas of Potential Effects (“APEs”)**

1. The BLM, in consultation with the SHPO, shall determine and document the APEs for the Project. The BLM will also, as it deems appropriate, seek information from consulting parties and other individuals and organizations likely to have knowledge of, or concerns with, historic properties in the Project area, as provided in Stipulation A.4., above.

2. The BLM will seek to gather information from Identified Indian Tribes to assist in identifying historic properties to which each such tribe attaches religious and cultural significance, recognizing that such Indian tribes may be reluctant to divulge specific information regarding the location, nature or activities associated with such sites or properties.

3. This Agreement addresses the following four types of effects that may be deemed to be adverse to historic properties: (1) direct effects; (2) visual effects; (3) indirect effects, and (4) cumulative effects. Examples of adverse effects in 36 C.F.R. § 800.5 could be considered as either direct or indirect as defined in this Agreement. The APEs for the GWD Project cover all areas where the GWD Project may directly, visually, indirectly, or cumulatively cause an adverse effect as defined in this Agreement to one or more historic properties.

4. The APE for Direct Effects. The APE for direct effects will include the areas within the temporary and permanent ROWs granted by the BLM over public lands, or any area of easement, lease, purchase or ROW granted to SNWA on state, private or other Federal lands, where any element of the GWD Project is to be located, or where ground-disturbing activities or construction are planned for the GWD Project, which may include but are not limited to: (1) newly constructed or graded access roads; (2) areas identified for the staging of materials or storage of heavy equipment; and (3) areas identified for the excavation or deposition of borrow material (all together “GWD Project lands”).

5. The GWD Project lands have been identified on Project plans as described in Appendix B. For purposes of any required section 106 review, previously unsurveyed areas added to the GWD Project lands in the future, whether or not subject to additional or supplemental NEPA review, will be identified in Project plans and surveyed, reviewed and treated under the terms of this Agreement. GWD Project facilities added in the future and located on previously surveyed GWD Project lands will be reviewed under the terms of this Agreement but will not require re-survey.

6. The APE for Visual Effects. The APE for visual effects to above-ground historic properties will be the area from which above-ground project facilities less than 100-feet in height may be visible,<sup>1</sup> measured as follows: (1) for linear facilities or roads, an area extending outward one mile on either side of the centerline of the ROW, easement or other right of possession granted for such facility or road; and (2) for non-linear facilities, a circular area with a radius of one mile from the center point of such facility.

7. The APEs for Indirect and Cumulative Effects. The APEs for any indirect or cumulative effects shall be determined by the BLM, in consultation with the SHPO, taking into account the nature, scope and intensity of the potential indirect or cumulative effects to historic properties.

8. In consultation with SHPO, the BLM may enlarge or diminish the APE for a given GWD Project facility or segment as BLM determines is reasonable and appropriate under the terms of this Agreement, consistent with the standards of the BLM NPA, the Nevada State Protocol and the BLM Manual 8100 Series. BLM will provide reasonable prior notification of such action to consulting parties and consulting Indian tribes that attach religious and cultural significance to historic properties in the area of the alteration of the APE.

#### **D. Indian Tribes, Consulting Parties and Public Participation**

1. Indian Tribes. The BLM has made a reasonable and good faith effort to identify each Indian tribe that has cultural ties to, or whose direct ancestors had historic or pre-historic ties to, GWD Project areas, such that the tribe may attach religious and cultural significance to

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<sup>1</sup> No structures in excess of 100-feet in height are currently in the plans for the GWD project, and none are expected in the future.

historic properties in Project APEs as determined by BLM in accordance with the BLM Section 8120 Manual and Handbook, and the BLM has listed the tribes identified as such to date as Identified Indian Tribes in Appendix C attached hereto.

- a. With regard to any historic property(ies) that may be affected by the Project, to which property(ies) an Indian tribe attaches religious and cultural significance, BLM shall consult with any such Indian tribe with regard to such property(ies).
- b. BLM will designate those agency managers who are authorized to speak for and commit the BLM and consult with Indian tribes in section 106 matters for the Project. Designated BLM managers will contact the Identified Indian Tribe and request that each such tribe identify to the BLM in writing one or more tribal members whom the tribal government authorizes to speak for and commit the tribe and consult with BLM for section 106 matters involving the Project.
- c. The BLM will seek to determine, with the assistance of each Identified Indian Tribe, whether such Identified Indian Tribe attaches religious and cultural significance to one or more historic properties, including TCPs that may be affected by the GWD Project, and will further seek in consultation with such tribe to identify and assess the eligibility of each such property.
- d. The BLM in its discretion may designate as a consulting party any Indian tribe, even if such tribe does not attach religious and cultural significance to a historic property that may be affected by the Project. Any Indian Tribe that is not a consulting party may nevertheless participate in the section 106 review by submitting comments to the BLM regarding the Project, by discussing the project with BLM representatives, by responding to inquiries from BLM managers or staff, or by providing information and the views of that tribe concerning cultural resources or historic properties that will or may be affected by the Project. Any Indian tribal government, or its authorized representative, that expresses to BLM in writing that the tribe does not wish to participate as a consulting party in the section 106 review for the GWD Project shall thereafter not be a consulting party for the Project, except that the tribe may rejoin the section 106 review as a consulting party at any time by written notice to the BLM.
- e. BLM recognizes that Indian tribes may be reluctant to divulge specific information regarding the location, nature or activities associated with historic, pre-historic or spiritual sites and properties. BLM shall address concerns raised by any tribe about confidentiality pursuant to section 304 of the NHPA (16 U.S.C. § 470w-3) and section 9 of the Archaeological Resources Protection Act of 1979 (16 U.S.C. § 470hh; 43 C.F.R. § 7.3) (ARPA).
- f. Subject to prior BLM authorization, and as allowed by the relevant Indian tribe(s), SNWA, or cultural resource consulting firms working for SNWA, may make contacts with tribes in order to collect information from such tribes for purposes such as identification of historic properties, including TCPs, for section 106 compliance, but neither SNWA nor any of its consulting firms shall negotiate or make commitments for the BLM, or otherwise exercise, or give the appearance of

exercising, BLM's tribal consultation authority, without express written consent from the relevant tribal government.

- g. BLM will continue throughout this section 106 review to consult meaningfully with Identified Indian tribes interested in pursuing such consultation, to continue to afford such tribes opportunities to identify to BLM cultural resources that may be eligible for the National Register, and to urge such tribes to identify to BLM historic properties (including eligible TCPs) to which that tribe attaches religious and cultural significance that may be affected by the GWD Project. Such consultations may include site visits that BLM determines are reasonably necessary in the scope of this section 106 review.
- h. BLM has invited all Identified Indian Tribes to execute this Agreement as concurring parties. By signing as a concurring party, an Indian tribe obtains the right to participate in the section 106 review of this Project as provided in this Agreement, and concurs that this Agreement is proper under the NHPA and the ACHP's regulations. Execution of this Agreement as a concurring party does not imply endorsement or approval of the GWD Project itself, or limit or restrict in any way the concurring party's right to object to, petition against, litigate against or in any other way express or advance critical or negative comments toward, the GWD Project or its proponent.

2. Other Consulting Parties. BLM will identify and notify persons and organizations interested in the Project's effects to historic properties as provided in Stipulation A.4. In addition, pursuant to the Nevada State Protocol (Section IV.F.), and the regulations at 36 C.F.R. § 800.3(f), and in coordination with the processes of Project review under the National Environmental Policy Act ("NEPA"), the BLM shall: (1) consider all written requests from such individuals and organizations to participate as consulting parties; and (2) determine which should become consulting parties and the scope of consultation, considering the scale of the undertaking, the intensity and scope if the Project's effects to identified historic properties of expressed interest to the individual or organization, and the scope of federal involvement in the relevant segment or facility of the Project .

3. Public Participation. The public will be afforded an opportunity to participate in the Section 106 review of the GWD Project, and the BLM shall seek and consider the views of the public when considering effects to historic properties in this review, through the following notice and comment procedures. The BLM shall direct SNWA to publish at least once per week for two successive weeks a public notice for the GWD Project in the Southern Nevada Review Journal and the Ely Times, newspapers of general circulation in the State of Nevada, describing the general nature and scope of the project, identifying a contact person from whom copies of this Agreement and detailed descriptions of the GWD project may be obtained, and seeking comment from the public on: (1) this Agreement; (2) the identification and assessment of any historic properties that may be affected by the construction or operation of the GWD Project; and (3) potential effects to any historic properties therefrom. This public participation process and any release of information shall be conducted in strict conformance with the confidentiality requirements of sec. 304 of NHPA (16 U.S.C. § 470w-3), Section 9 of ARPA (16 U.S.C. §

470hh; 43 C.F.R. § 7.3), as well as 36 C.F.R. §§ 800.2(d)(1-2) and 800.11(c)(1 and 3). The BLM may also include a copy of this Agreement in any EIS (or other NEPA-related document) for the GWD Project.

4. Sharing Sensitive Information. At the discretion of the BLM, proprietary or sensitive location or other information about historic properties discovered in connection with the GWD Project may be shared with appropriate consulting parties. The BLM shall ensure appropriate protection of sensitive information deemed confidential in accordance with Section 304 of the NHPA (16 U.S.C. § 470w-3) and Section 7 of the Archeological Resources Protection Act (“ARPA”) (16 U.S.C. § 470hh) and its implementing rules (43 C.F.R. § 7.18(a)(i)), and may enter into data-sharing agreements with any person, group, Indian tribe or entity prior to the release to that party of sensitive information determined to be entitled to such confidential treatment.

#### E. Identification of Cultural Resources and Historic Properties

1. BLM, in consultation with the SHPO, shall ensure that consulting archaeologists and other qualified professionals perform all necessary Section 106 identification activities for the GWD Project, and SNWA or its consultant(s) shall prepare a research design consistent with the guidelines of the Secretary of the Interior’s Standards and Guidelines for each separate facility or segment of the GWD Project.

2. The BLM will gather information from each consulting Indian tribe to assist in identifying historic properties to which that Indian tribe attaches religious and cultural significance, including eligible TCPs, which may be affected by the GWD Project, or a segment thereof

3. The BLM will solicit information from consulting parties or other individuals and organizations likely to have knowledge of, or concerns about, historic properties in the APE which may be affected by the GWD Project, or a segment thereof.

4. Class I Inventory. SNWA has identified known historic and prehistoric resources within the Project APEs for direct and visual effects by completing and the Class I Inventory for the Project. For those above-ground resources identified in the Class I inventory from which the project will be visible, and which have not previously been evaluated for eligibility in the National Register, except for resources that are or may be eligible for the National Register only under eligibility Criterion D, SNWA will document, assess, and make recommendation to the BLM regarding the eligibility of such inventoried resources for the National Register under Criteria A, B and C. For those historic properties that the BLM determines are potentially eligible for the National Register under one or more of those three criteria, and are either previously undocumented or insufficiently documented, SNWA will record each such property with full descriptions and photo documentation to current SHPO standards. If the BLM determines, in consultation with the SHPO and any Indian tribe that attaches religious and cultural significance thereto, and considering any comments from the consulting parties, that such historic property will be visually adversely affected, SNWA will provide treatment by

producing full descriptions and photo documentation per standards in Appendices D and/or G of the Nevada State Protocol, as may be applicable.

5. SNWA will also inventory and record all ranch complexes located in the project APEs for visual and direct effects that are more than 40-years old. For each such ranch complex that the BLM determines will be adversely affected by the project and meets the criteria for National Register-eligibility for state or local significance (Class I surveys have not identified any ranch complex in the GWD Project APE that is of national significance), SNWA will provide treatment by producing full descriptions and photo documentation per standards in Appendices D and/or G of the Nevada State Protocol, as may be applicable. Information obtained as a result of the inventory of ranch complexes will be compiled in a stand-alone report.

6. Research and documentation of historic ranches will be conducted by individuals who meet the Secretary of the Interior's professional qualifications. Documentation and reports will meet standards set forth in the BLM Manual Handbook Section 8110.

7. Class III Survey. To build on the identification efforts from the Class I inventory performed by SNWA, BLM, in consultation with the SHPO, shall ensure that SNWA will complete a Class III survey of the Project APE for direct effects prior to initiation of construction (including work staging activities) of a given project facility, segment or phase.

8. During the Class III survey, in areas within the Project APE for direct effects, a qualified archaeologist with professional experience in geomorphological analysis will assess the potential for buried cultural materials in areas that will be impacted by construction of the GWD Project pipeline, or any other planned excavation deeper than two feet. The assessment will attempt to identify areas that contain thick sequences of post-14,000 B.P. deposits that are of a suitable geologic character to bury and preserve cultural zones and thick enough to hide any surface evidence, considering geomorphological evidence and other surface indicators. If the qualified archaeologist determines that a given area showed indication of a high likelihood of buried significant cultural deposits, the archaeologist will make recommendations to the BLM for additional geomorphological evaluation, or archaeological testing, as may be reasonably indicated. The BLM, in consultation with the SHPO, will determine if additional geomorphological evaluation or archaeological testing is warranted.

9. Section 106 review and reasonable identification efforts shall be performed regardless of the ownership (public or private) of the lands involved and SNWA shall be responsible for attempting to gain access to non-BLM lands. Where SNWA cannot gain access to such lands for purposes of identification of historic properties in any of the Project's APEs, such identification efforts shall be deferred until access is gained. Failure to gain access to accomplish necessary or appropriate identification, treatment or mitigation may require BLM to consider alternative treatment or mitigation, or to allow deferral of such until access is gained., as provided in 36 C.F.R. § 800.4(b)(2).

10. In any area in the APE for direct effects where the ground has been heavily disturbed, or in areas where access is prevented or may be dangerous to survey personnel, the BLM may exempt those portions of the APE from Class III survey requirements.

11. Non-Linear Sites. Non-linear sites extending out of the APE for direct effects shall be recorded in their entirety with the exception of very large sites such as town sites, mining complexes, continuous stream/lake terrace sites, or extensive prehistoric quarries or habitation sites. These exceptions shall be approved in advance by BLM Ely and BLM Southern Nevada districts, which will consult with other BLM districts as appropriate.

12. Linear Resources. Linear resources (e.g., railroads, roads, trails, ditches, utility lines, etc.) crossing and extending beyond the APE for direct effects shall be inventoried 100 meters beyond the project boundaries in each direction, and shall be either recorded or not according to the following criteria:

- a. Roads or linear features with: (i) no mention in the BLM Field Office records or not shown on General Land Office (GLO) plats or other historic maps; (ii) no associated features or dateable artifacts; or (iii) which have lost all integrity through extensive blading, will not be recorded;
- b. Roads, linear features, or other resources included on GLO plats but which are not associated with features or dateable artifacts, and do not appear to be significant on the basis of archival data shall be treated as “isolated linear segments.” These resources shall be recorded in tabular form and collected data shall include a minimum of two (2) separate GPS points at each end of the linear feature within the APE. Should additional data regarding specific “isolated linear segments” be encountered during report preparation these will be recorded on IMACS site forms;
- c. Roads or other linear features included on GLO plats (especially named roads) or features known from other archival data to be potentially significant, or which have associated features or dateable artifacts, shall be recorded on IMACS site forms.

13. Archeological crew-chiefs and higher level supervisors will be familiar with the inventory research design and locations of expected historic resources identified in the Class I overview. The SNWA will document in the Class III reports efforts made to locate expected but not-encountered sites.

14. Phased Identification and Evaluation. Because alternatives under consideration for the Project consist of corridors and large land areas, and because access to some properties is restricted, the BLM may use a phased process to conduct identification and evaluation efforts for the review of this Project. All identification and evaluation efforts determined and required by BLM as provided in Stipulation K for a given project segment or area shall be completed prior to issuance of a notice to proceed (“NTP”) for construction on that segment or in that area.

15. Deferral of Final Identification and Evaluation. BLM may defer final identification and evaluation of historic properties for alternatives or inaccessible areas as provided herein. SNWA shall first establish the likely presence of historic properties within the APE for each such alternative or inaccessible area through background research, appropriate consultation and an appropriate level of field investigation as determined by BLM, taking into

account the number of alternatives under consideration, the magnitude of the undertaking and its likely effects, and the views of the SHPO/THPO and any other consulting parties. As specific aspects or locations of an alternative are refined, or as access is gained to an inaccessible area, BLM shall proceed with the identification and evaluation of historic properties in accordance with this Agreement. All identification and evaluation efforts for a given project segment or area that are deferred under this stipulation, shall be completed prior to issuance of a notice to proceed (“NTP”) for construction for that segment or area as provided in Stipulation K.

#### **F. Evaluation of National Register Eligibility**

1. BLM, in consultation with the SHPO, shall ensure that all cultural resources identified within GWD Project lands are evaluated for eligibility to the National Register prior to the initiation of ground-disturbing activities that may affect those historic properties. Eligibility will be determined in a manner compatible with the Nevada State Protocol.

2. To the extent practicable, eligibility determinations shall be based on inventory information. If the information gathered in the inventory for archaeology is inadequate to determine eligibility, BLM or GWD Project contractors may conduct limited subsurface probing, or other evaluative techniques, to determine eligibility. Subject to approval by BLM, evaluative testing of archaeological sites is intended to provide the minimum data necessary to define the nature, density, and distribution of materials in potential historic properties, to make final evaluations of eligibility, and to devise treatment options responsive to the information potential of the property.

3. Should the BLM disapprove the applications for the GWD Project, or should SNWA abandon the project and withdraw the application prior to BLM approval, then any further evaluative testing shall cease, except for completing all post-fieldwork activities that are ongoing as of the date of the withdrawal or disapproval, as determined by BLM.

4. BLM shall seek to consult with each consulting Indian tribe in accordance with the BLM Section 8120 Manual and Handbook, concerning the National Register eligibility of any potentially eligible cultural resource that would be affected by the Project, to which that Indian tribe attaches religious and cultural significance.

5. If BLM concludes that a property not already listed in, or determined eligible for, the National Register meets the criteria for National Register eligibility, and the SHPO agrees, that property shall be considered eligible for purposes of this section 106 review. If BLM concludes that the eligibility criteria are not met for a given property, and the SHPO agrees, that property shall be considered not eligible for the National Register.

6. If BLM and the SHPO disagree regarding National Register eligibility of a property, or if either the ACHP or the Secretary so requests, BLM shall seek a formal determination of eligibility from the Keeper of the National Register. If an Indian tribe disagrees with a conclusion or recommendation relating to National Register eligibility for a property to which that tribe attaches religious and cultural significance, the tribe may either ask BLM to obtain a determination of eligibility from the Keeper for that property, or ask the ACHP to do so.

Consulting parties and members of the public may at any time submit to BLM comments regarding conclusions, recommendations or consensus determinations made pursuant to this Stipulation F regarding National Register eligibility for properties potentially affected by the GWD Project.

## **G. Assessment of Effects**

1. BLM, in consultation with the SHPO and any Identified Indian Tribe that attaches religious and cultural significance to the identified historic property(ies), shall apply the criteria of adverse effect to historic properties within the Project APEs in accordance with the terms of 36 C.F.R. § 800.5. BLM shall consider any views concerning such effects that have been provided by consulting parties and the public.

2. Because alternatives under consideration in this review consist of corridors and large land areas, and because access to some potentially affected properties may be restricted, BLM may use a phased process in applying the criteria of adverse effect, consistent with phased identification and evaluation efforts provided in Stipulations E.14 and 15, above.

## **H. Treatment of Adversely Affected Historic Properties**

1. In avoiding, minimizing or mitigating adverse effects to historic properties from the GWD Project, or any facility or segment thereof, BLM, in consultation with SHPO, and in coordination with any Indian tribe that attaches religious and cultural significance to the adversely affected historic property and other consulting parties, shall determine the nature of effects to such properties. All treatment for adversely affected historic properties shall be done in a manner consistent with the Nevada State Protocol.

2. BLM, in consultation with the SHPO, shall ensure that, to the extent reasonably practicable, SNWA will avoid effects to historic properties through project design, redesign, relocation of facilities, or by other means.

3. Historic Properties Treatment Plan (“HPTP”). When avoidance is not feasible or reasonably practicable, BLM, in consultation with the SHPO and in coordination with SNWA, affected consulting Indian tribes and other consulting parties, shall ensure that an appropriate historic properties treatment plan (“HPTP”) is developed to minimize, mitigate or otherwise resolve Project-related effects to historic properties.

4. In terms not inconsistent with this Agreement, the HPTP will establish an overall approach to mitigation and treatment, identifying key aspects and issues, including programmatic National Register eligibility issues, post-construction data recovery, tribal consultation and participation, and reporting measures, that will prove crucial in its implementation. The HPTP will review site significance issues and research domains for both prehistoric and historic-era resources, and will identify data recovery treatment options based on site type for prehistoric resources, and theme-specific property type for historic-era resources. The HPTP will present both pre- and post-construction data recovery plans, the latter recognizing that post-construction

data recovery is appropriate for historic properties or segments of historic properties that will not be directly impacted by the Project. The HPTP will propose field and laboratory methods, and will also address cultural resources monitoring procedures and unanticipated discovery situations. The discovery plan in the HPTP will be consistent with, but may expand on, the procedures provided herein and describe the identification, protection, recording, treatment, notification, and reporting procedures associated with unanticipated archaeological finds. The discovery plan will provide a separate discussion for discovery situations involving human remains.

5. For properties eligible under Criteria A through C (36 C.F.R. § 60.4), mitigation and treatment activities other than archaeological data recovery will be considered in the treatment plan including, but not limited to, Historic American Building Survey / Historic American Engineering Record / Historic American Landscapes Survey (HABS/HAER/HALS) or other appropriate recordation or preparation of an oral history, historic markers, exhibits, interpretive brochures or publications, or similar historic or educational materials. Where appropriate, the HPTP shall include provisions describing the content and number of copies for a publication of treatment materials for the general public.

6. When data recovery is required as a condition of approval, BLM, in consultation with SHPO, shall develop, or ensure that SNWA develops treatment plans that are consistent with the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716-37) and *Section 106 Archaeology Guidance* (ACHP, 2009).

7. BLM shall ensure that all records and materials resulting from identification and treatment efforts are curated in accordance with 36 C.F.R. § 79, in BLM-approved facilities. All materials slated for curation will be maintained in accordance with 36 C.F.R. § 79 until the relevant final treatment report is complete and collections are curated or returned to their owners. The BLM and SNWA shall encourage private owners to donate collections obtained from their lands to an appropriate BLM-approved curation facility. For ease of future research, BLM will encourage all artifacts collected from this Project to be curated at the same facility.

8. BLM shall consult with each consulting Indian tribe in accordance with the BLM Section 8120 Manual and Handbook, and with the SHPO, to develop treatment options for adversely affected historic properties, including TCPs, to which that tribe attaches religious and cultural significance

9. BLM shall ensure that all final reports resulting from treatment will be provided to the SHPO, and made available to consulting Indian tribes that attach religious and cultural significance to the treated property, and to other consulting parties. All such reports shall be consistent with contemporary professional standards and the Department of Interior's Formal Standards for Final Reports of Data Recovery Programs (42 FR 5377-79).

## I. Unanticipated Discoveries

1. If previously unidentified cultural resources, except isolates as identified by a qualified archaeologist, are discovered during construction of the GWD Project, all project

ground-disturbing activity within 100 meters (325 feet) of the discovery shall cease immediately and SNWA or its authorized representative shall secure the location of the discovery to prevent vandalism or other damage. Ground-disturbing activity in that area shall be suspended until BLM has evaluated the discovery and, for sites eligible for the National Register, assured the completion of any necessary mitigation or treatment measures, and issued a written Notice to Proceed. Discovered isolates will be reported to BLM in the final monitoring report.

2. SNWA shall notify BLM of the discovery promptly either by written or electronic communication (email or fax), or orally followed by written or electronic confirmation. Upon notification of a discovery, BLM shall make an assessment of the discovery's significance and integrity as soon as feasible, and if possible within 24 hours of notification. BLM shall also notify SHPO of the discovery by email, FAX or telephone. The BLM may make such assessment, and a determination of appropriate course of action, based upon a concise preliminary description and recommendation for the discovery from a qualified archeologist. BLM may request or gather additional information as it deems necessary, and may approve the restarting of some or all suspended activities based upon the information and recommendation received, BLM may condition the restarting of suspended activities as it deems appropriate. The reporting archeologist will prepare and transmit to BLM within 30 days a written report of the discovery and recommendations.

3. If the BLM determines that the discovery exhibits potential for National Register eligibility, the BLM shall notify the SHPO and any Indian tribe that the BLM determines may attach religious and cultural significance to the affected property within 48 hours of the discovery. The notification shall describe the BLM's assessment of National Register eligibility of the property, and proposed actions to resolve any adverse effect if the property is recommended eligible. The SHPO and Indian tribe(s) shall respond to BLM within 48 hours of notification. The BLM shall take into account their recommendations regarding eligibility and proposed actions, and then carry out appropriate actions. The BLM shall provide to the SHPO, Indian tribe(s) and the ACHP a report of the actions when completed.

4. BLM shall consult with the SHPO, affected consulting Indian tribes and consulting parties if BLM determines that mitigation is appropriate. BLM shall solicit comments from the SHPO, consulting Indian tribes and parties, as appropriate, to develop mitigation measures. Within two (2) business days of their notification, the SHPO, consulting Indian tribes and parties will provide BLM with comments or suggestions on mitigation. Within seven (7) business days of its notification of the need for mitigation, BLM will determine the mitigation required. BLM will notify the SHPO and affected consulting Indian tribes and consulting parties of its decision and ensure that such mitigation is implemented.

5. BLM shall require that reports of mitigation efforts are completed in a timely manner and that they conform to the standards of the Department of Interior's Formal Standards for Final Reports of Data Recovery Program (42 FR 5377-79). Drafts of such reports shall be submitted to the SHPO and affected consulting Indian tribes and consulting parties for a 35-day review and comment period as stipulated in Section J and as provided in the Nevada State Protocol. Final reports shall be submitted to the SHPO, consulting tribes and parties and the ACHP for informational purposes.

6. Suspended activities in the area of the discovery may resume when BLM notifies SNWA in writing that objectives of the fieldwork phase of mitigation are achieved and activities can resume.

7. Prior to initiating construction of the GWD Project or segment, SNWA will provide to BLM, and to other consulting parties that so request, a list of its employees and contractors authorized to halt ground-disturbing activities in specified areas in discovery situations. At least one such authorized person will be present in the area during all ground-disturbing activities for the GWD Project, and that person will be responsible for notifying BLM of any qualifying discoveries.

## **J. Procedures and Time Frames**

1. SNWA Submissions to BLM. BLM shall review and comment on any report submitted by SNWA within 35 calendar days of receipt, unless BLM agrees to comment in a shorter time, or requests additional time. BLM may issue a notice to proceed (NTP) for a given GWD Project element or segment immediately after BLM finds that the conditions in Stipulation K are met.

2. Unless otherwise agreed, final reports will be due to BLM by the following deadlines:

a. A draft final report of all identification/inventory and evaluation efforts within nine (9) months of the completion of the fieldwork associated with the activity.

b. A draft final report of all supplementary evaluation activities within twelve (12) months of the completion of the fieldwork associated with the activity.

c. A draft final report of all treatment or other treatment activities within twenty-four (24) months of the completion of the fieldwork associated with the activity.

d. BLM will distribute to SNWA, all consulting parties and all participating Indian tribes a copy of each draft final report described in this Stipulation within 10 days after BLM receives such report. Comments on each such draft final report are due to BLM and SNWA 35 days after the draft final report was first submitted to BLM. A final version of each report is due to BLM 60 days after expiration of the comment deadline, whether or not any comments on that report are received.

3. SHPO Consultation. Except for discovery situations, BLM shall submit the results of all identification or evaluation reports and treatment plans to the SHPO for a 35-calendar day review and comment period, measured from the date of SHPO receipt.

4. Consulting Tribes and Parties. Concurrent with any SHPO submission (except in discovery situations), BLM shall provide to consulting Indian tribes and parties within the 35-calendar-day SHPO comment period an opportunity to comment on the substance of the submission by providing the person or tribe with copies of the submission and any other information that BLM identifies as appropriate for these parties to consider.

5. If the SHPO or any consulting Indian tribe or party fails to respond to BLM within the 35-calendar-day SHPO comment period, the BLM may presume concurrence with the BLM's findings or recommendations as detailed in the submission and proceed accordingly. BLM shall inform each consulting Indian tribe and consulting party of the practical and legal effect of their failing to respond or provide comment within the 35-calendar-day comment period.

6. Curation. Materials and artifacts to be curated (defined in Stipulation H.7) will be sent to a facility approved by the BLM that reasonably meets the procedural, security and quality standards in 36 C.F.R. Part 79, or to the owner, within 15 days of when the final report associated with that activity is accepted by the BLM. SNWA will provide to BLM copies of records confirming curation or transfer of possession within five business days of acceptance by the curatorial facility or owner.

## **K. Notices to Proceed (“NTPs”)**

When the BLM issues a ROW for the GWD Project, the ROW issued for such application shall provide for the issuance of a Notice to Proceed (“NTP”). The NTP may be issued for the entire project or portions thereof, after fulfillment of one of the following conditions:

- a. BLM, in consultation with the SHPO, determines that no historic properties will be affected by construction of the facility or project segment described in the application; or
- b. BLM, in consultation with the SHPO, determines that construction of the GWD Project facility or project segment described in the application will have no adverse effect to historic properties; or
- c. BLM, in consultation with the SHPO, consulting Indian tribes and parties, determines that an appropriate treatment plan for the facility or segment described in the application has been implemented, and the following have all occurred:
  - i. The fieldwork phase of the treatment plan has been completed;
  - ii. BLM has accepted a summary description of the fieldwork performed and a reporting schedule for that work.

## **L. Monitoring**

1. BLM and the SHPO may monitor actions carried out pursuant to this Agreement.
2. BLM, in consultation with the SHPO, may identify areas of construction for segments or facilities that will require monitoring by a BLM-approved archaeologist. Areas requiring archeological monitoring shall be identified in the Class III survey and the geomorphological study. Work in areas so identified cannot proceed without a monitor in place, and the monitor shall be empowered to stop work as necessary to protect historic properties.
3. An Indian tribe that attaches religious and cultural significance to a historic property, including an eligible TCP, that may be adversely affected by construction of the GWD Project will be invited to monitor that construction.

## **M. Contact Persons**

1. The appropriate persons authorized to speak for the signatories and invited signatory, respectively, and for making notifications, requests, reports or other contacts for or to the signatories and invited signatory, respectively, are listed in Appendix D. The appropriate persons for the same purposes authorized by the Identified Indian Tribes are listed in Appendix C, and for the other consulting parties are listed in Appendix E.
2. Any signatory, invited signatory, Identified Indian Tribe or other consulting party may add to or change its authorized contact person(s) by providing written notice of the addition or change to any BLM contact person listed in Appendix D. The written notice must come from either: (a) an authorized contact person for the relevant party listed in Appendices C, D or E; (b) the chief executive or governing body of the respective signatory, invited signatory, Identified Indian Tribe or consulting party; or (c) a person authorized in writing by such governing body to speak on its behalf.
3. BLM will notify all signing parties (or, prior to effectuation of this Agreement, all signatories, invited signatories, Identified Indian Tribes and invited concurring parties) whenever a contact person is added or changed as provided herein.

## **N. Other Considerations**

1. Qualified Persons to Perform or Supervise Work. BLM shall ensure that historic, architectural, ethnographic, and archaeological work conducted pursuant to this Agreement is carried out by, or under the direct supervision of, persons meeting qualifications set forth in the Secretary of the Interior's Professional Qualification Standards (36 C.F.R. § 61) or who have been permitted for such archaeological work on public lands, by the BLM.
2. SNWA Personnel Shall Not Engage in Illegal Collection or Damage to Historic Resources. SNWA, in cooperation with BLM and the SHPO, shall ensure that all its personnel,

and all the personnel of its contractors and their subcontractors, that will perform work on the GWD Project, are directed not to engage in the illegal collection, damage or vandalism of historic and prehistoric resources. SNWA shall cooperate with the BLM to ensure compliance with ARPA for facilities and segments located on public lands, and with Nevada Revised Statutes Chapter 381 (Nevada Antiquities Law) for facilities and segments located on state lands.

3. Mitigation Costs and Possible Enforcement Action for Unauthorized Damage to Historic Properties. Should damage to historic properties occur during the period of construction, installation, operation or maintenance of the Project due to any unauthorized intentional, inadvertent or negligent actions on the part of the SNWA, their employees, contractors or any other Project personnel, SNWA shall be responsible for costs of required rehabilitation or mitigation. In addition, BLM may refer or pursue any investigative or enforcement action allowed or required under federal law, including under ARPA.

4. SNWA Responsibility for Costs of Identification, Treatment and Mitigation. SNWA shall bear the expense of identification, evaluation, assessment, and treatment or mitigation activities for all historic properties directly, visually or indirectly affected by the GWD Project. Such costs shall include, but not be limited to, pre-field planning, field work, post-fieldwork analysis, research and report preparation, interim and summary report preparation, publications for the general public, and the cost of curating project documentation and artifact collections. It is understood that the BLM may decide not to approve the ROWs and land disposal applications for the GWD Project. Prior to any BLM decision to approve or disapprove the applications, SNWA has agreed to bear the expense of the identification and evaluation of cultural properties required as part of the cultural resources surveys necessary to obtain information for any compliance required of BLM under the National Environmental Policy Act (“NEPA”) and any documentation therefore, including a draft or final Environmental Impact Statement, or Record of Decision.

5. Applicant’s Responsibilities in Case of Application Withdrawal Prior to Decision. If the BLM disapproves the application(s), or if SNWA abandons or withdraws any pending application for ROW prior to a BLM decision, then SNWA shall incur no further expense for evaluation or treatment for any cultural properties, except SNWA must complete, and submit a report for, any inventory, treatment or post-fieldwork activities already initiated and ongoing at the time of the withdrawal, termination or disapproval, as identified by the BLM. In the case of inventory, a complete report with completed site forms would be required. For evaluation, mitigation or treatment, a report on the completed work with full analysis and curation of materials would be required.

6. Applicant’s Responsibilities in Case of Project Termination after Issuance of NTP(s). In the event SNWA terminates the GWD Project after BLM has issued one or more NTPs, SNWA shall complete and submit reports for any inventory or treatment activity already initiated and ongoing for a given Project segment at the time of termination where such completion is expressly required under the terms of the applicable NTP.

7. Activities Outside the ROW. Identification, evaluation, assessment, mitigation and treatment efforts may extend beyond the geographic limits of the ROW as described herein

when the historic property being considered extends beyond the ROW, and that area is reasonably, legally and safely accessible to SNWA and its consultants for any such activity. In most cases, no identification, evaluation, assessment, mitigation or treatment efforts will be required in areas outside of the ROW, beyond that necessary to review records and gather historic data for the completion of the Section 106 process as provided herein. In cases involving historic properties eligible for the NRHP under Criteria A, B, or C, mitigation may extend beyond the ROW or easement boundary, but only as provided herein, and such treatment or mitigation may be conducted after commencement or conclusion of construction, as BLM in its discretion may approve.

8. Confidentiality. Information on the location and nature of all cultural resources, and all information considered to be proprietary by Indian tribes, will be held confidential to the extent provided for by section 304 of the NHPA (16 U.S.C. § 470w-3; 36 C.F.R. § 800.11(c)), section 9 of ARPA (16 U.S.C. § 470hh; 43 C.F.R. § 7.3), and other applicable federal laws.

9. Discovered Human Remains or NAGPRA Cultural Items. The BLM shall ensure that any human remains, funerary objects, items of cultural patrimony, or sacred objects, encountered during the GWD Project are treated with the respect due such materials. Native American human remains and associated grave offerings found on federal land will be handled according to the provisions of Native American Graves Protection and Repatriation Act (25 U.S.C. § 3001 *et seq.*) (NAGPRA) and its implementing regulations (43 C.F.R. § 10). Native American human remains and associated grave offerings found on state or private land will be handled according to the provisions of Nevada Revised Statutes (NRS) Chapter 383 (Historic Preservation and Archaeology). All other instances of discovered human remains not addressed by Federal or state laws will be managed as determined by BLM, in consultation with SHPO, ensuring treatment with respect due such human remains and related materials.

## O. Dispute Resolution

1. If any signing party to this Agreement objects to any activities proposed pursuant to the terms of this Agreement, BLM shall consult with the objecting party, SNWA and the other signatories to resolve the issue.

2. The BLM Nevada State Director will have the authority to make a final determination for any objection (except for disagreements on National Register eligibility, findings of effect, or treatment) that cannot be resolved by local consultation.

3. Disagreements on recommendations, conclusions or consensus determinations, of National Register eligibility which cannot be resolved through the dispute resolution process will be resolved by the Keeper of the National Register.

4. Issues relating to BLM's findings of effect, resolution of adverse effects or their treatment, which cannot be resolved with BLM to the satisfaction of the disputing party(ies), may be referred to the ACHP for review and comment.

5. Pending resolution of a dispute addressed under this stipulation, the signatories may continue with those actions under this PA that are not the subject of dispute.

**P. Two-Year Review Meetings**

1. BLM shall convene a meeting of the signing parties at least once every two years on or about the anniversary of the effective date of this Agreement, or at other times as may be determined by the BLM to be necessary or appropriate, which may include when requested by a signing party. Meetings may be deferred if there are no active cultural resources-related activities associated with the Project, as agreed by the signatories.

2. Each such meeting will assess and evaluate the performance of this Agreement in: (1) completing the Section 106 process for of the GWD Project as provided in this Agreement; (2) identifying and protecting historic properties, including historic properties or TCPs of religious and cultural significance to one or more Indian tribes, potentially affected by the Project; and (3) facilitating the participation and involvement of Indian tribes, interested parties and the public, and further, such meeting may address the possible improvement or streamlining of procedures under this Agreement, or any other issues of concern or implementation regarding this Agreement.

**Q. Amending This Agreement**

Any signing party that determines that any term of this Agreement will not be, is not being, or cannot be, carried out, or that sees the need for an amendment to improve or clarify the functioning of this Agreement or for any other reason, may consult with the four signatories to attempt to develop an amendment or agree on another way to resolve the issue. If after thirty (30) days from initiation of consultation, agreement among the four signatories on an amendment cannot be reached, consultation on the amendment may be abandoned with no effect on this Agreement, or any signatory or invited signatory may terminate the PA upon 30-day's written notification to the other signatories as provided in Stipulation R. This Agreement will remain in effect, and the section 106 review of the GWD Project will be unaffected, during the period of consideration of a proposed but unadopted amendment.

**R. Terminating This Agreement**

Any signatory or invited signatory to this Agreement may terminate the Agreement by providing thirty (30) days written notice to the other signatories and invited signatory, provided that the signatories and invited signatory shall consult during the period prior to termination to seek agreement on amendments or other actions that would avoid termination.

**S. Execution and Renewal**

1. Execution by the four signatories and implementation of this Agreement evidences that the BLM and the Corps have satisfied their Section 106 responsibilities for all actions associated with the construction, installation, operation or maintenance of the GWD Project.

2. In the event that the parties do not carry out the requirements of this Agreement, or if it is terminated, Section 106 review of any segment of the GWD Project requiring a BLM ROW or land agreement shall be governed by the provisions of the Nevada State Protocol.

3. This Agreement shall become effective on the date on which the Agreement has been executed by all four signatories, and shall remain in effect for a period of ten (10) years; or until terminated as provided in Stipulation R; or until the completion of the full buildup of the GWD Project and its associated components, whichever is later. The failure or refusal of any invited concurring party to sign this Agreement will not invalidate or otherwise affect this Agreement.

4. This Agreement may be signed in counterparts and the executed Agreement, and each signature, will be effective and binding just as if all signing parties had signed the same document. After execution by each signatory, and signing by the invited signatory, each shall transmit five counterpart copies originally signed by that party to BLM. BLM will notify the ACHP when the other signatories have executed, and the invited signatory has signed, the Agreement. The ACHP may then execute the Agreement and shall then transmit five copies originally signed by the ACHP to BLM.

5. After all signatories and the invited signatory have signed the final Agreement, BLM shall prepare and distribute to each signatory and the invited signatory one copy of the final Agreement containing the original counterpart signatures of all signatories and the invited signatory.

6. Signatures by Concurring Parties. Each invited concurring party may sign a counterpart copy of the final Agreement and transmit one copy of the Agreement originally signed by that party to BLM. BLM will notify each signatory, the signing invited signatory and each signing concurring party when any concurring party has signed this Agreement. BLM will transmit to each signing concurring party a copy of this Agreement containing photocopy(ies) of the signatures of the signing parties to that time.

7. BLM will maintain at least one master copy (or set of copies) of this executed Agreement with all of the original signatures of all signing parties, respectively. BLM shall prepare and distribute to all signing parties a copy of the full Agreement containing at the appropriate place with the other signature pages a copy of each signature page containing a different signature of any of the signing parties, as such signature appears on each respective originally signed signature page.

8. Renewal. The signatories may renew this Agreement, either with or without any amendments that may be adopted as provided in Stipulation Q, for a period not to exceed an additional ten years, by written agreement executed by the four signatories. SNWA will be

invited to be a signatory for any renewal of this Agreement. All signing Indian Tribes and concurring parties will be invited to concur in any renewal of this Agreement. Six months before the tenth anniversary of the execution of this Agreement, BLM will invite the signing parties to discuss whether this Agreement should be renewed.

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## **SIGNATORIES**

### **BUREAU OF LAND MANAGEMENT**

By: \_\_\_\_\_

Date: \_\_\_\_\_

Name: Amy Lueders

Title: Acting BLM Nevada State Director

### **U.S. ARMY CORPS OF ENGINEERS**

By: \_\_\_\_\_

Date: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

### **ADVISORY COUNCIL ON HISTORIC PRESERVATION**

By: \_\_\_\_\_

Date: \_\_\_\_\_

Name: John M. Fowler

Title: Executive Director

### **NEVADA STATE HISTORIC PRESERVATION OFFICER**

By: \_\_\_\_\_

Date: \_\_\_\_\_

Name: Rebecca Palmer

Title: Deputy Nevada State Historic Preservation Officer

## **INVITED SIGNATORY**

### **SOUTHERN NEVADA WATER AUTHORITY**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: Pat Mulroy

Title: General Manager

APPROVED AS TO FORM:

John J. Entsminger, Deputy General Counsel

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## **CONCURRING PARTIES**

[BLM has invited the following Identified Indian Tribes and consulting parties to concur in this Agreement. Those that agree to do so will sign this Agreement and be acknowledged as a concurring party]

### **ARCHAEO-NEVADA SOCIETY**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: Kevin Rafferty

Title: Chair

### **BUREAU OF INDIAN AFFAIRS, WESTERN REGIONAL OFFICE**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name:

Title:

### **CHEMEHUEVI INDIAN TRIBE OF THE CHEMEHUEVI RESERVATION**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: Charles Wood

Title: Chair

### **COLORADO RIVER INDIAN TRIBES OF THE COLORADO RIVER INDIAN RESERVATION**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: Eldred Enas

Title: Chair

### **CONFEDERATED TRIBES OF THE GOSHUTE RESERVATION**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: Amos Murphy

Title: Chair

**DEATH VALLEY TIMBI-SHA SHOSHONE BAND OF CALIFORNIA**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: Joe Kennedy

Title: Chair

**DUCKWATER SHOSHONE TRIBE OF THE DUCKWATER RESERVATION**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: Virginia Sanchez

Title: Chairwoman

**ELY SHOSHONE TRIBE OF NEVADA**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: Alvin Marques

Title: Chair

**FORT MOJAVE INDIAN TRIBE OF ARIZONA, CALIFORNIA AND NEVADA**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: Tim Williams

Title: Chair

**GREAT BASIN NATIONAL HERITAGE AREA PARTNERSHIP**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: Dan Gooch

Title: Director

**GREAT BASIN NATIONAL PARK**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: Andrew Ferguson

Title: Park Superintendent

**HUALAPAI INDIAN TRIBE OF THE HUALAPAI INDIAN RESERVATION, ARIZONA**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: Wilfred Whatoname, Sr.

Title: Chair, Hualapai Tribal Council

**KAIBAB BAND OF THE PAIUTE INDIANS OF THE KAIBAB INDIAN  
RESERVATION**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: Timothy L. Rogers

Title: Chair

**LAS VEGAS TRIBE OF PAIUTE INDIANS OF THE LAS VEGAS INDIAN COLONY**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: Benny Tso

Title: Chair

**MOAPA BAND OF PAIUTE INDIANS OF THE MOAPA RIVER INDIAN  
RESERVATION**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: William Anderson

Title: Chair

**NEVADA ROCK ART FOUNDATION**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: Angus Quinlan

Title: Executive Director

**PAIUTE INDIAN TRIBE OF UTAH**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: Jeanine Borchardt

Title: Chairwoman

**PRESERVE NEVADA**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: Senator Richard Bryan

Title: Chair

**SHOSHONE-PAIUTE TRIBES OF THE DUCK VALLEY RESERVATION**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: Robert Bear

Title: Chair

**TE-MOAK TRIBE OF WESTERN SHOSHONE INDIANS OF NEVADA**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: Bryan Cassadore

Title: Chair

**U.S. FISH AND WILDLIFE SERVICE**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name:

Title: Nevada State Supervisor

**YOMBA SHOSHONE TRIBE OF THE YOMBA RESERVATION**

By: \_\_\_\_\_ Date: \_\_\_\_\_

Name: James Birchim

Title: Chair

## Appendix A

### Glossary of Terms

1. **Adverse effect.** An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register.
2. **Archaeological site.** *See "Site."*
3. **Area of potential effects (APE).** The geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.
4. **ARPA.** The Archaeological Resources Protection Act of 1979 (16 U.S.C. §§ 470aa-470mm).
5. **Class I Inventory.** A Class I inventory comprises a review of agency and SHPO database records (including the Nevada Cultural Resources Inventory System ("NVCRIS"), GLO plat maps, the BLM's Master Title Plats/Historic Index, the National and State Registers of Historic Places, National Historic Trails and historic maps, and an intensive review of agency archives, pertinent historic records and publications).
6. **Class III survey.** A continuous, intensive survey of an entire target area, aimed at locating and recording all archaeological properties that have surface indications, by walking close-interval parallel transects until the area has been thoroughly examined. Class III methods vary geographically, conforming to the prevailing standards for the region involved.
7. **Consultation.** The process of seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement with them regarding matters arising in the section 106 process.
8. **Consulting Indian tribe.** An Indian Tribe that attaches religious and cultural significance to a historic property potentially affected by the Project and that has expressed its intention to participate in Project section 106 review.
9. **Cultural resource.** A definite location of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence. The term includes archaeological, historic, or architectural sites, structures, or places with

important public and scientific uses, and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups (Cf. "traditional cultural property"; see "definite location"). Cultural resources are concrete, material places and things that are located, classified, ranked, and managed through the system of identifying, protecting, and utilizing for public benefit described in the BLM Manual. They may be but are not necessarily eligible for the National Register. (See "historic property.")

10. **Cumulative effects.** Effects on a historic property which result from the incremental impact of an undertaking, such as the GWD Project, when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.
11. **Definite location.** Having discernible, mappable, more or less exact limits or boundaries, on a scale that can be established by a survey crew using conventional sensing and recording equipment, by an informant's direct on-the-ground indication, or by precise placement in a documentary source (*see* "cultural resource").
12. **Effect.** An alteration of the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register.
13. **Direct effects.** Effects that are caused by an undertaking such as the GWD project and which occur at the same time and place.
14. **GWD Project lands.** Areas within the temporary and permanent ROWs granted by the BLM over public lands, or any area of easement, lease, purchase or ROW granted to SNWA on state, private or other Federal lands, where any element of the GWD Project is to be located, or where ground-disturbing activities or construction are planned for the GWD Project, which may include but are not limited to: (1) newly constructed or graded access roads; (2) areas identified for the staging of materials or storage of heavy equipment; and (3) areas identified for the excavation or deposition of borrow material.
15. **Historic property.** Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of religious and cultural importance to an Indian tribe that meet the National Register criteria for eligibility.
16. **HTP.** Historic Property Treatment Plan.
17. **Identified Indian Tribe.** A federally recognized Indian tribe that has religious or cultural ties to, or whose direct ancestors had historic or pre-historic religious or cultural ties to, GWD Project areas, and based on such ties, may attach religious and cultural significance to historic properties, including TCPs, that may be affected by the GWD Project.

18. **Indian tribe.** An Indian tribe, band, nation or other organized group or community, which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.
19. **Indirect effects.** Effects that are caused by an undertaking, such as the GWD Project, and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate.
20. **Isolate artifact.** A single artifact or pieces from a single artifact, i.e., ten pieces of glass from a single bottle. An isolate artifact is considered single and unassociated when separated by 30 meters or more from any other artifact. For example, two flakes of the same or different raw material separated by 29 meters would be documented as a site. Ten pieces of glass from a single bottle spread across 31 meters would be an isolate. Isolates will not be recorded on a site form, but will be listed in a table designated by number, description, and location.
21. **Isolated or unassociated feature.** A single feature unassociated with other features or artifact scatters that are undatable; e.g. a prospect pit, a claim marker, an adit, or a shaft. An isolated or unassociated feature is considered single and unassociated when separated by 30 meters or more from any other feature or artifact. If these features are elements to a historic district, they are not isolated or unassociated. In addition, if an isolated feature is unique because of its construction (elaborate stonework claim marker) or distinctive qualities, the feature has to be evaluated for eligibility. Isolated features that have potential data (fire hearth) need to be evaluated for eligibility. Isolated or unassociated features need not be recorded on a site form, but will be listed in a table designated by number, description, and location.
22. **Keeper.** The Keeper of the National register of historic places. The Keeper is the individual who has been delegated the authority by the National Park Service to list properties and determine their eligibility for the National Register.
23. **NAGPRA.** The Native American Graves protection and Repatriation Act (25 U.S.C. § 3001 *et seq.*).
24. **National Register.** The National Register of Historic Places maintained by the Secretary of the Interior.
25. **National Register criteria.** Criteria developed by the Secretary of the Interior for use in evaluating the eligibility of properties for the National Register (36 C.F.R. Part 60).
26. **NHPA.** The National Historic Preservation Act of 1966 (16 U.S.C. § 470 *et seq.*).
27. **NTP.** Notice to proceed.
28. **Secretary.** The Secretary of the United States Department of the Interior.

29. **SHPO.** *See State Historic Preservation Officer.*
30. **Signing party.** Any signatory, invited signatory, Identified Indian Tribe and any invited concurring party that signs this Agreement, referred to collectively as the “signing parties.”
31. **Site.** A location where one can reasonably infer from physical remains or other physical evidence that a purposeful human activity took place. The minimum criterion for defining archaeological sites, requiring use of the IMACS site record, is that sites should contain remains of past human activity that are at least 50 years old.
32. **State Historic Preservation Officer (“SHPO”).** The official appointed or designated pursuant to section 101(b)(1) of the NHPA to administer the State historic preservation program or a representative designated to act for the State historic preservation officer.
33. **TCP.** A traditional cultural property.
34. **THPO.** Tribal Historic Preservation Officer.
35. **Traditional cultural property (“TCP”).** A historic property that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community. A traditional cultural property may qualify for the National Register if it meets the criteria and criteria exceptions at 36 C.F.R. § 60.4. *See National Register Bulletin 38.*
36. **Tribal Historic Preservation Officer (“THPO”).** The tribal official appointed by the tribe's chief governing authority, or designated by a tribal ordinance or preservation program, who has assumed the responsibilities of the SHPO for purposes of section 106 compliance on tribal lands in accordance with section 101(d)(2) of the NHPA.
37. **Undertaking.** A project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval.

## **Appendix B**

### **Proposed GWD Project Facilities and Anticipated Future Facilities**

The following lists summarize the currently proposed and anticipated future facilities that are part of the GWD Project and covered under this Agreement.

#### **Proposed GWD Project Facilities**

SNWA has requested ROWs from the BLM to construct the following proposed facilities:

- Pipelines – approximately 306 miles of buried water pipelines, between 30 and 96 inches in diameter
- Pumping Stations – 5 pumping station facilities
- Regulating Tanks – 6 regulating tanks, each approximately 3 to 10 million gallons in capacity
- Pressure Reducing Stations - 3 facilities
- Buried Storage Reservoir – a 40 million gallon buried storage reservoir
- Water Treatment Facility (WTF) – a 165 million gallon per day facility
- Power Facilities – approximately 323 miles of 230 kilovolt (kV), 69 kV, and 25 kV overhead power lines, 2 primary electrical substations (230 to 69 kV), 5 secondary substations (69 to 25 kV)
- Temporary and permanent access roads

#### **Anticipated Future GWD Project Facilities**

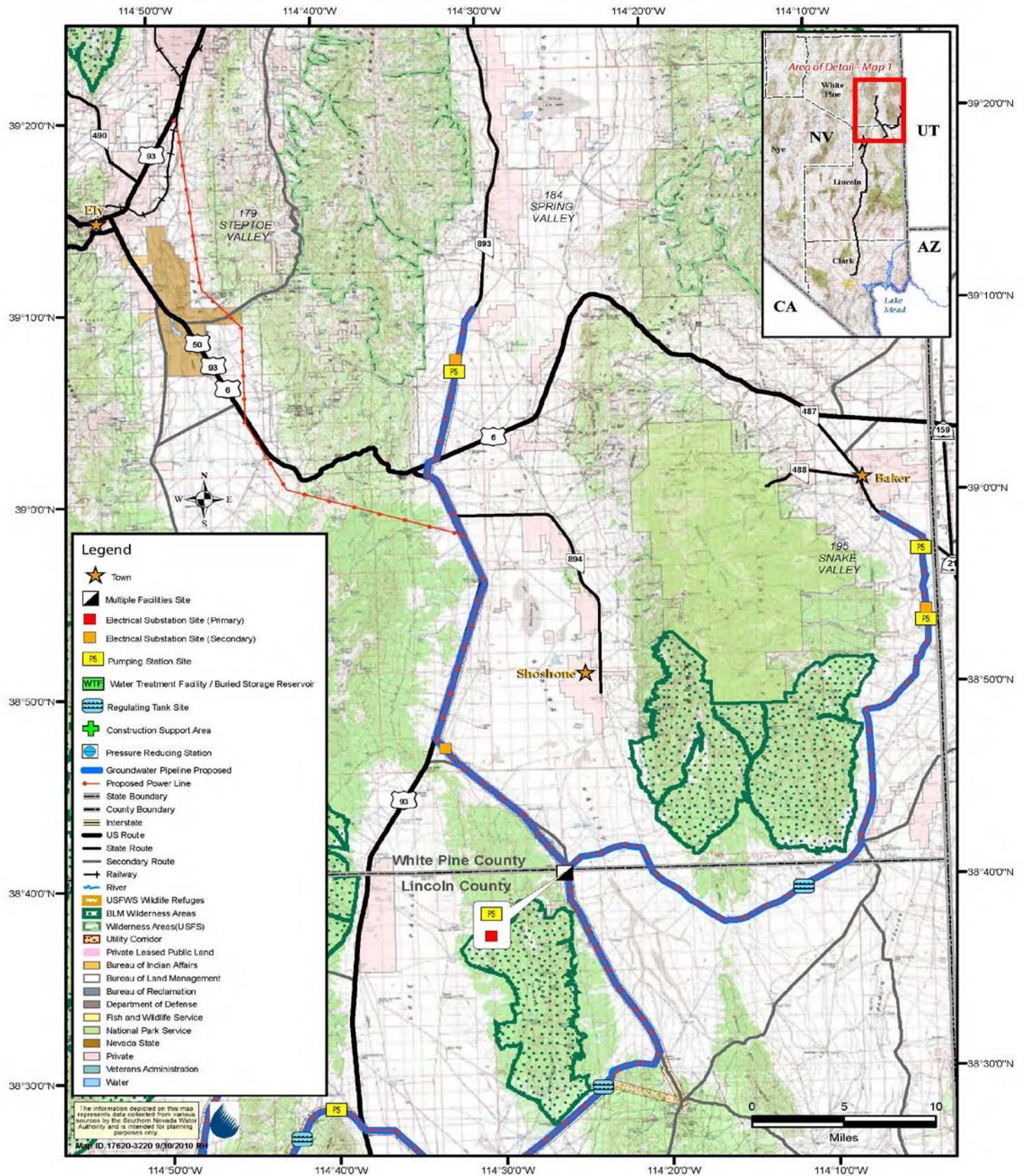
Future facilities will be required to develop permitted groundwater rights and convey them to the primary conveyance facilities. The final locations of the groundwater production wells and associated facilities to convey water into the primary system have not yet been determined. The wells will be located based on several factors, which include but are not limited to geology, hydrology, well interference studies, environmental issues, existing senior water rights, and proximity to main and lateral pipelines. Production well locations are also subject to approval by the Nevada Division of Water Resources, Office of the State Engineer (Nevada State Engineer). Since the specific location of these facilities cannot currently be identified, SNWA has not yet requested ROW for them from the BLM. However, assumptions regarding the number of wells, length of collector pipelines, and other needed facilities have been made by SNWA so that BLM can conduct a programmatic-level environmental impact analysis of construction and operation of future facilities in addition to the site-specific analysis of proposed ROWs for primary facilities.

SNWA anticipates that future facilities will include:

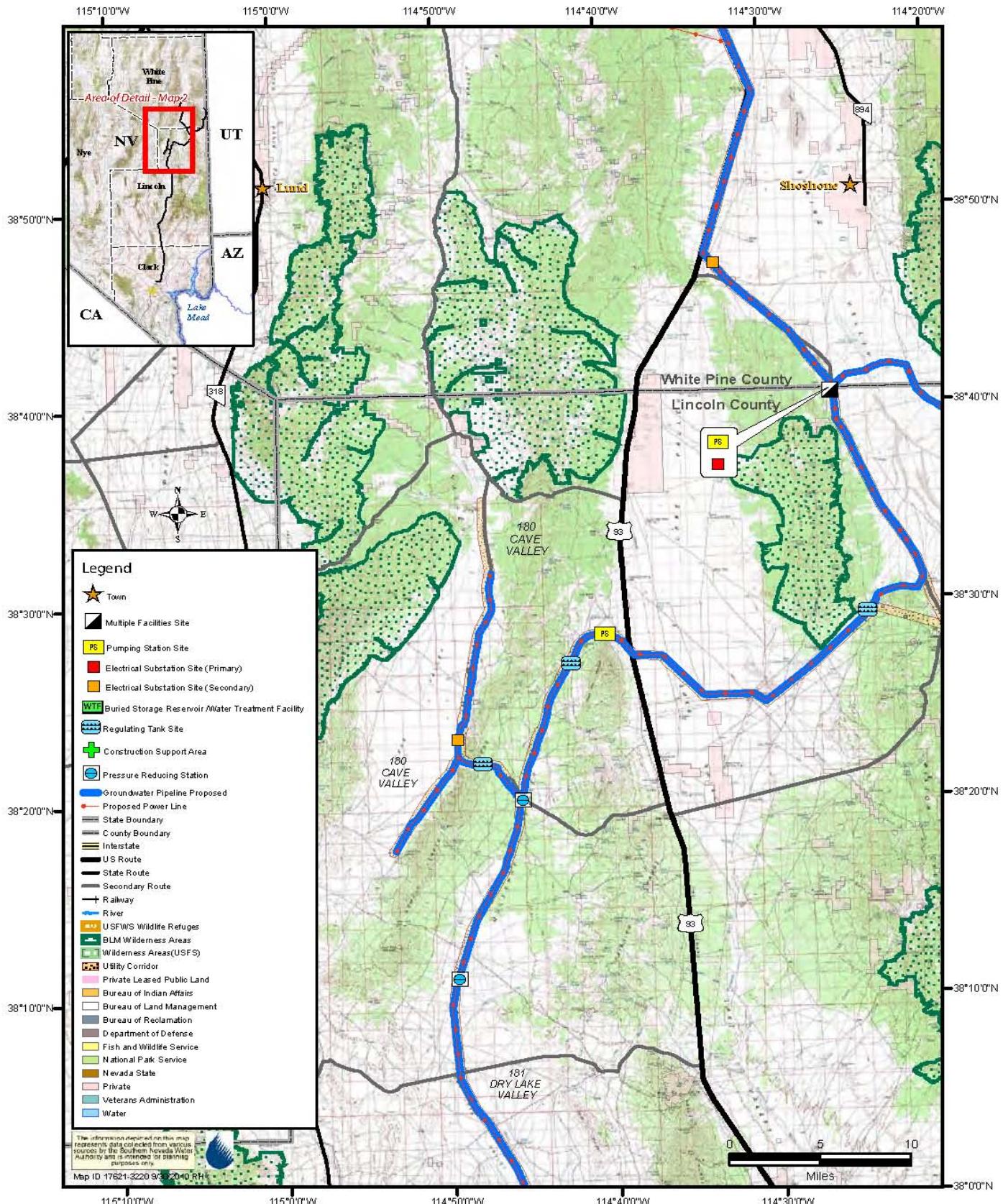
- Groundwater Production wells – estimated between 144 and 174 wells
- Collector Pipelines – estimated between 177 and 434 miles, 10 to 30 inches in diameter
- Pumping Stations - 2 facilities
- Power Facilities – estimated between 177 and 434 miles of 25kV overhead power lines, 2 secondary substations, and 3 hydroturbine energy recovery facilities.

DRAFT

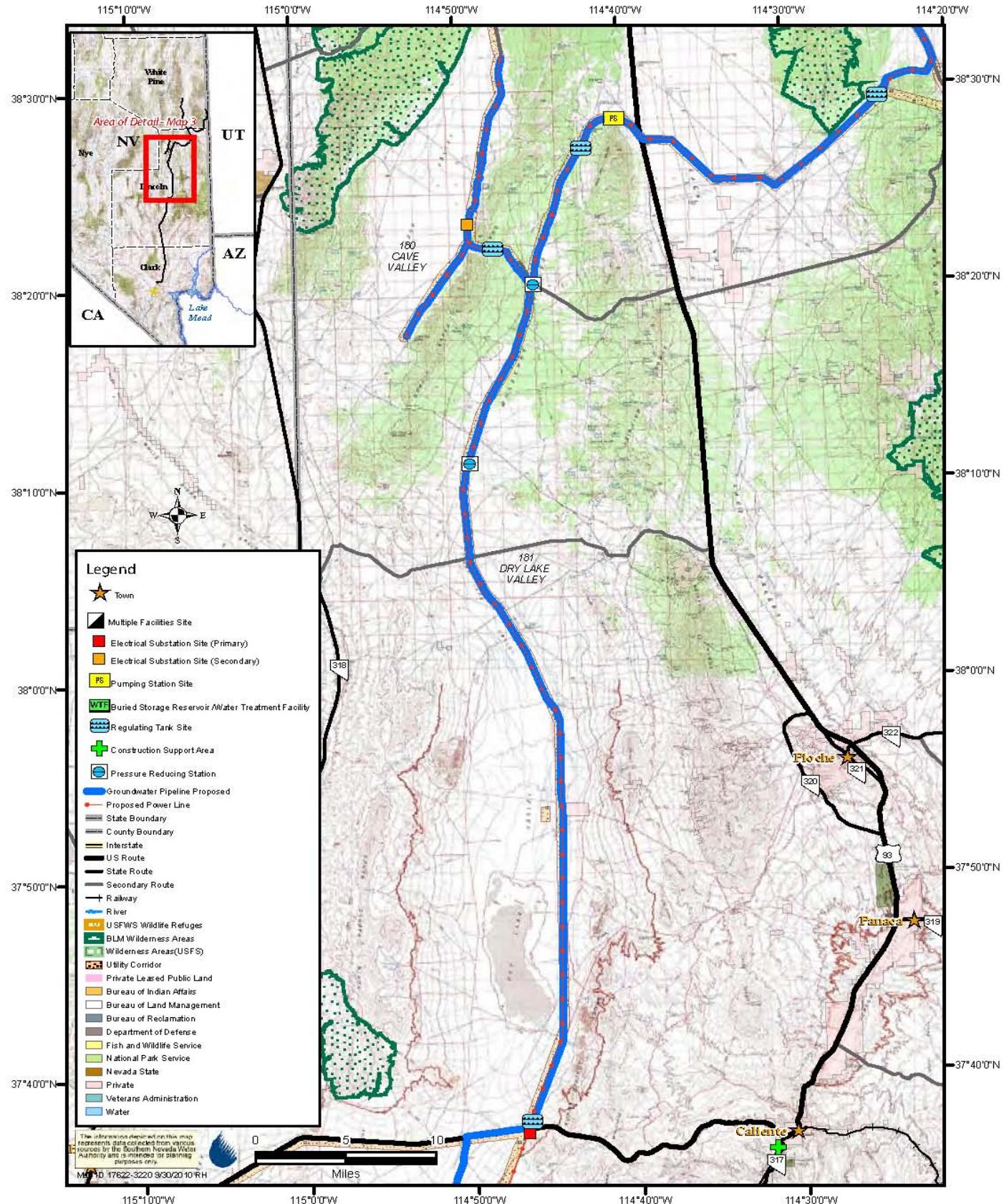
## SNWA Clark, Lincoln and White Pine Counties Groundwater Development Project - Map 1 of 5



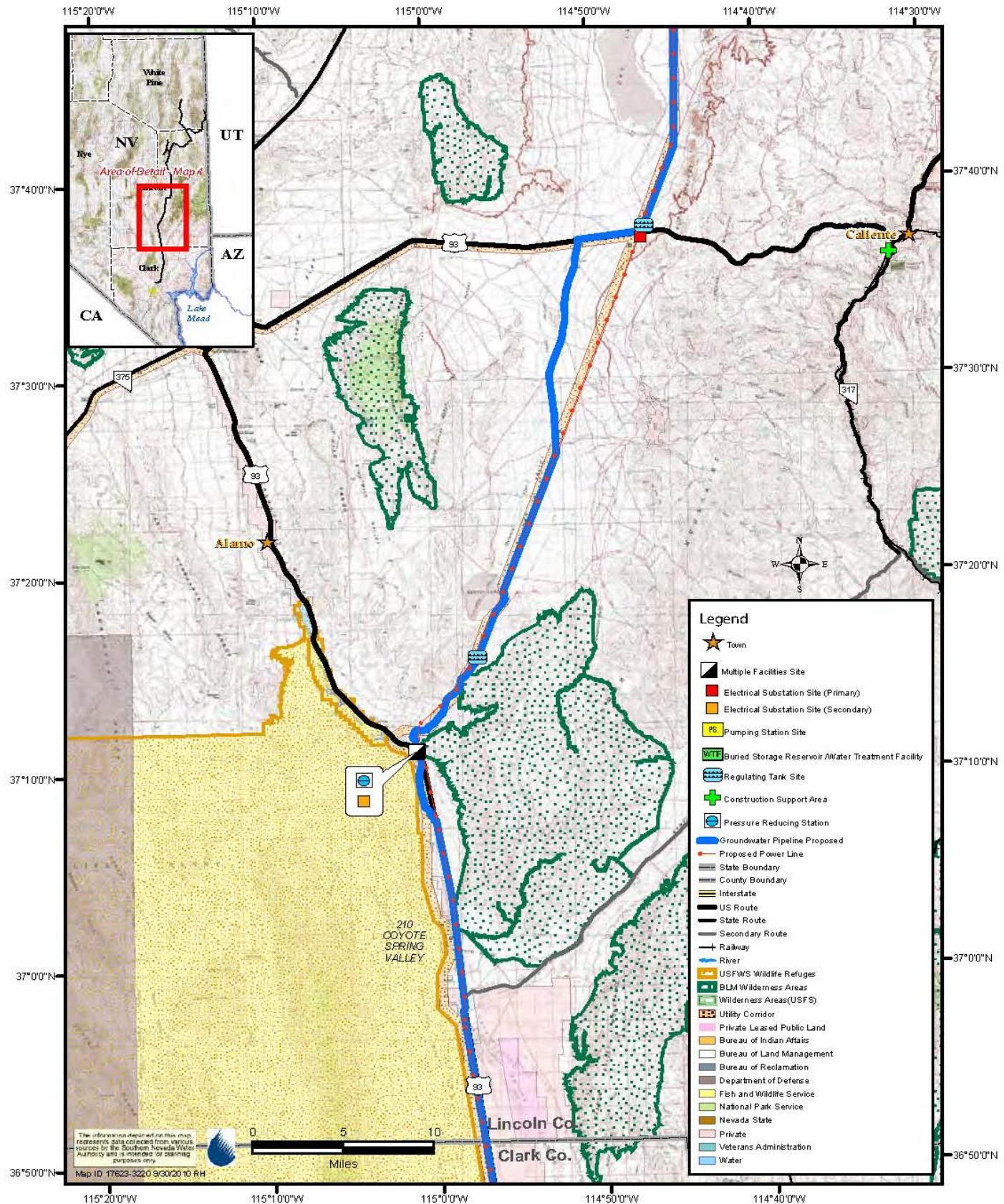
## SNWA Clark, Lincoln and White Pine Counties Groundwater Development Project - Map 2 of 5



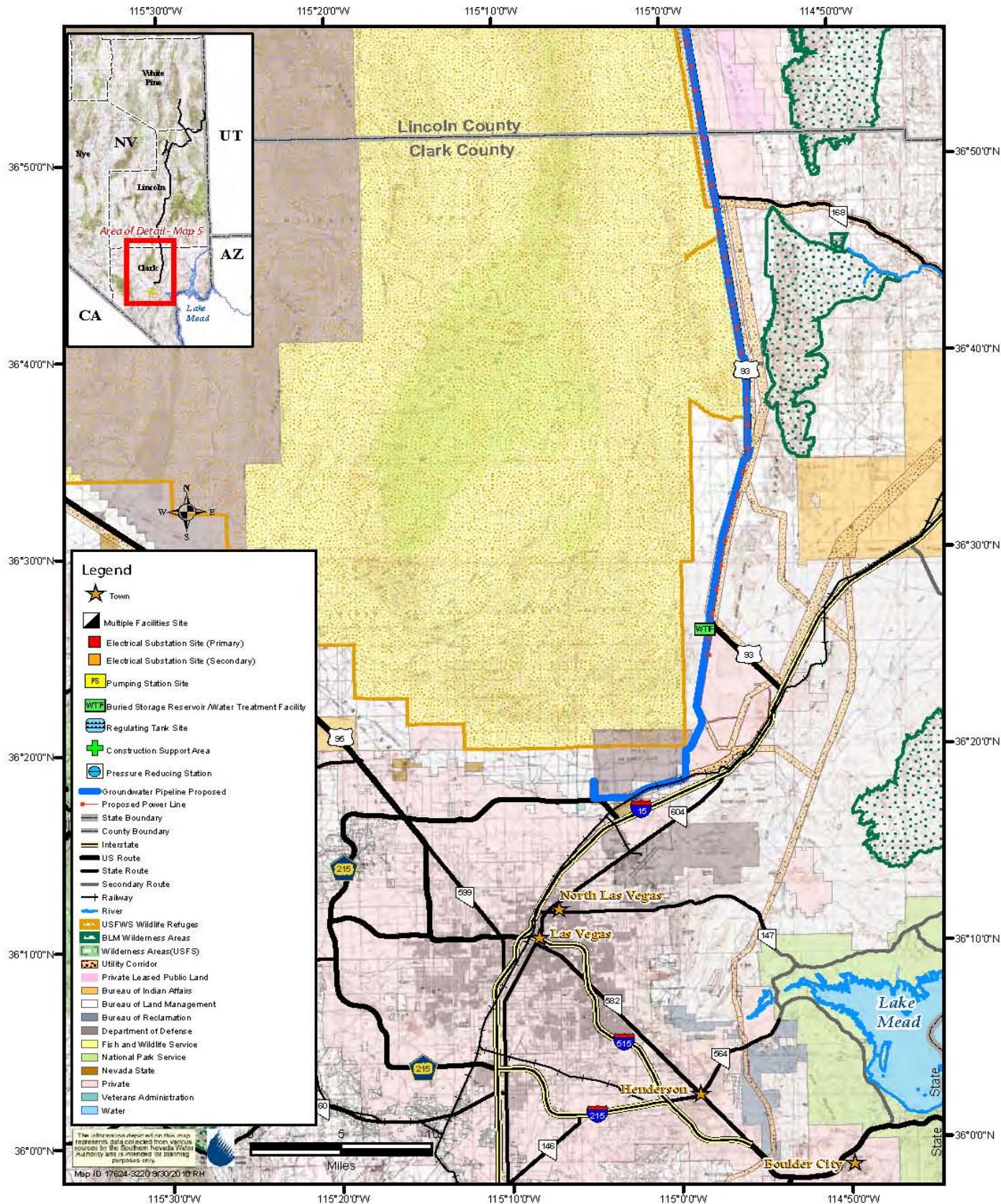
## SNWA Clark, Lincoln and White Pine Counties Groundwater Development Project - Map 3 of 5



## SNWA Clark, Lincoln and White Pine Counties Groundwater Development Project - Map 4 of 5



## SNWA Clark, Lincoln and White Pine Counties Groundwater Development Project - Map 5 of 5



## **Appendix C**

### **List of Identified Indian Tribes for Section 106 Review and Tribal Consultation**

As of January 1, 2011

#### **1. Chemehuevi Indian Tribe of the Chemehuevi Reservation, California**

Charles Wood, Chair  
Chemehuevi Indian Tribe of the Chemehuevi Reservation  
PO Box 1976  
Havasu Lake, CA 92363

#### **2. Colorado River Indian Tribes of the Colorado River Indian Reservation, Arizona and California**

Eldred Enas, Chair  
Colorado River Indian Tribes of the Colorado River Indian Reservation  
26600 Mohave Road  
Parker, AZ 85344

#### **3. Confederated Tribes of the Goshute Reservation, Nevada and Utah**

Amos Murphy, Chair  
Confederated Tribes of the Goshute Reservation  
PO Box 6104  
Ibapah, UT 84034

#### **4. Death Valley Timbi-Sha Shoshone Band of California**

Joe Kennedy, Chair  
Death Valley Timbi-Sha Shoshone Band of California  
PO Box 206  
900 Indian Village Road  
Death Valley, CA 92328

#### **5. Duckwater Shoshone Tribe of the Duckwater Reservation, Nevada**

Virginia Sanchez, Chairwoman  
Duckwater Shoshone Tribe of the Duckwater Reservation  
PO Box 140068  
Duckwater, NV 89314

**6. Ely Shoshone Tribe of Nevada**

Alvin Marques, Chair  
Ely Shoshone Tribe of Nevada  
400 B Newe View  
Ely, NV 89301

**7. Fort Mojave Indian Tribe of Arizona, California and Nevada**

Tim Williams, Chair  
Fort Mojave Indian Tribe of Arizona, California and Nevada  
500 Merriman Avenue  
Needles, CA 92363

**8. Hualapai Indian Tribe of the Hualapai Indian Reservation, Arizona**

Wilfred Whatoname, Sr., Chair  
Hualapai Tribal Council  
Hualapai Indian Tribe of the Hualapai Indian Reservation, Arizona  
P.O. Box 179  
Peach Springs, Arizona 86434

**9. Kaibab Band of the Paiute Indians of the Kaibab Indian Reservation, Arizona**

Timothy Rogers, Chairwoman  
Kaibab Band of the Paiute Indians of the Kaibab Indian Reservation  
HC 65, Box 2  
Fredonia, AZ 86022

**10. Las Vegas Tribe of Paiute Indians of the Las Vegas Indian Colony, Nevada**

Benny Tso, Chair  
Las Vegas Tribe of Paiute Indians of the Las Vegas Indian Colony  
One Paiute Drive  
Las Vegas, NV 89106

**11. Moapa Band of Paiute Indians of the Moapa River Indian Reservation, Nevada**

William Anderson, Chair  
Moapa Band of Paiute Indians of the Moapa River Indian Reservation  
PO Box 340  
Moapa, NV 89025

- 12. Paiute Indian Tribe of Utah (consisting of Cedar City Band of Paiutes, Kanosh Band of Paiutes, the Koosharem Band of Paiutes, Indian Peak Band of Paiutes, and Shivwits Band of Paiutes)**

Jeanine Borchardt, Chairwoman  
Paiute Indian Tribe of Utah  
440 N Paiute Drive  
Cedar City, UT 84720-2613

- 13. Shoshone-Paiute Tribes of the Duck Valley Reservation, Nevada**

Robert Bear, Chair  
Shoshone-Paiute Tribes of the Duck Valley Reservation  
PO Box 219  
Owyhee, NV 89832

- 14. Te-Moak Tribe of Western Shoshone Indians of Nevada (consisting of four constituent bands: (1) Battle Mountain Band; (2) Elko Band; (3) South Fork Band; and (4) Wells Band)**

Bryan Cassadore, Chair  
Te-Moak Tribe of Western Shoshone Indians of Nevada  
525 Sunset Street  
Elko, NV 89801

- 15. Yomba Shoshone Tribe of the Yomba Reservation, Nevada**

James Birchim, Chair  
Yomba Shoshone Tribe  
HC 61 Box 6275  
Austin, NV 89310

## Appendix D

### Signatory Contact List

Bureau of Land Management:

For White Pine and Lincoln Counties:

Shawn Gibson, Archeologist  
Ely District Office (Schell Field Office)  
702 North Industrial Way  
HC33, Box 33500  
Ely NV 89301  
775.289.1884  
[shawn\\_gibson@blm.gov](mailto:shawn_gibson@blm.gov)

For Clark County:

Susanne Rowe, Archeologist  
Southern Nevada District Office  
4701 Torrey Pines Drive  
Las Vegas NV 89130  
702.515.5067  
[susanne\\_rowe@blm.gov](mailto:susanne_rowe@blm.gov)

State Historic Preservation Officer:

Rebecca Lynn Palmer, Review and Compliance Officer/Archeologist  
100 N Stewart Street  
Carson City NV 89701  
775.684.3443  
[Rebecca.Palmer@nevadaculture.org](mailto:Rebecca.Palmer@nevadaculture.org)

U.S. Army Corps of Engineers:

Patricia McQueary  
St. George Regulatory Office  
321 N. Mall Dr., Suite L-101  
St. George UT 84790  
435-986-3979  
[Patricia.L.Mcqueary@usace.army.mil](mailto:Patricia.L.Mcqueary@usace.army.mil)

Advisory Council on Historic Preservation:

Nancy Brown  
1100 Pennsylvania Avenue NW, Room 803  
Washington DC 20004-2501  
202.606.8582  
[nbrown@achp.gov](mailto:nbrown@achp.gov)

Southern Nevada Water Authority:

Lisa Luptowitz, Senior Environmental Planner  
P.O. Box 99956  
Las Vegas NV 89193  
702.862.3789  
[lisa.luptowitz@snwa.com](mailto:lisa.luptowitz@snwa.com)

## APPENDIX E

### Consulting Parties Contact List

Organization and Address	Contacts	Position	Email	Phone
Preserve Nevada 1608 Houssels Avenue Las Vegas, NV 89104	Courtney Mooney Senator Richard Bryan	Board Member Chairman	<a href="mailto:cmercedes@juno.com">cmercedes@juno.com</a>	702.229.5260
Nevada Rock Art Foundation 641 Jones Street Reno, NV 89503	Gus Quinlan Pat Barker	Executive Director President of Board of Directors	<a href="mailto:arquinlan@nvrockart.org">arquinlan@nvrockart.o rg</a> <a href="mailto:barkerj@unr.edu">barkerj@unr.edu</a>	775.323.6723 775.721.0110
White Pine County Board of County Commissioners 953 Campton Street Ely, NV 89301	Gary Parea	White Pine County Commissioner	<a href="mailto:gary_parea@hotmail.com">gary_parea@hotmail.c om</a>	775.234.7300
National Park Service Great Basin Natl Park 100 Great Basin National Park Baker, NV 89311-9700	Andy Ferguson Eva Jensen	Superintendent Cultural Resources Program Mgr	<a href="mailto:AJFerguson@nps.gov">AJFerguson@nps.gov</a> <a href="mailto:ejensen@nps.gov">ejensen@nps.gov</a>	775.234.7331 x202 775.234.7331 x255
Bureau of Indian Affairs Western Regional Office 2600 N Central Ave Phoenix, AZ 85004-3008	Garry Cantley	Regional Archeologist	<a href="mailto:Garry.Cantley@bia.gov">Garry.Cantley@bia.gov</a>	602.379.6750
Great Basin National Heritage Area Partnership P.O. Box 78 Baker, NV 89311	Denys Koyle Dan Gooch	President of the Board Director	<a href="mailto:borderinn@aol.com">borderinn@aol.com</a>	775.234.7300
U.S. Fish and Wildlife Service 1340 Financial Blvd Reno, NV 89502	Louann Speulda-Drews	Archeologist	<a href="mailto:louann_speulda-drews@fws.gov">louann_speulda-drews@fws.gov</a>	775.861.6335
Archaeo-Nevada Society Department of Human Behavior, W246K College of Southern Nevada 6375 W Charleston Blvd Las Vegas, NV 89146	Kevin Rafferty	Chairman	<a href="mailto:kevin.rafferty@csn.edu">kevin.rafferty@csn.edu</a>	702.651.5715

**Appendix F3.17**

**Native American Traditional Values**

**Table F3.17-1 Tribal Consultation, Communication, and Coordination Efforts for the Proposed SNWA GWD Project**

Name of the Tribe	Letters from BLM																		Letters from BLM's Tribal Relations Consultant			
	Initial Consultation Letter 2-23-2007	1-10-2008 Invitation to Informational Meeting	4-2-2008 Request for Tribal Sensitive Species Information	6-23-2008 Notification of Ethnographic Assessment	1-15-2009 Request for Continuing Consultation on Project	Initial Consultation Letter 3-16-2009	11-2-2009 Invitation to Meeting on Post Field Work on Ethnographic Study	11-10-2009 Transmittal of Ethnographic Study and Request for Comments	1-12-2010 Distribute Notes from Ethnographic Information Meetings	2-8-2010 Informal Invitation to NEPA Tribal Training	5- 19-2010 Follow-up to NEPA Training	6-2-2010 Request for Tribal Sensitive Species Information	7-29-2010 Transmittal of draft PA and Request for Comments	January 2011 Distribution of Ethnographic Study	January 2011 Distribution of PA and Request for Comments	January 2011 Invitation to Las Vegas Post-NEPA Session	April 2011 Transmittal of Post-NEPA Session notes	May 2011 Request for Identification of Tribal Representative	1-9-2008 Invitation to Informational Meetings	5-18-2008 Transmittal of Meeting Notes, Presentation Slides, SNWA POD	8-4-2008 Request to Share Meeting Voice Recordings with BLM	May 2009 Letter Summarizing Tribal Consultation Activities to Date
Battle Mountain Band (Te-Moak Tribe of Western Shoshone)	X	X	X			X	X	X	X	X	X	X		X	X	X		X	X	X	X	X
Blackfeet Nation					X					X							X					
Cedar Band (Paiute Indian Tribe of Utah)	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Chemehuevi Indian Tribe	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Colorado River Indian Tribes	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Confederated Tribes of the Goshute Reservation (CTGR)	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Crow Tribe - Apsaalooke Nation					X				X							X						
Duck Valley Shoshone-Paiute Tribes of Idaho and Nevada	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Duckwater Shoshone Tribe	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Eastern Shoshone Tribe -- Wind River Indian Reservations		X			X				X								X					
Elko Band	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Ely Shoshone Tribe	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Fort Mojave Indian Tribe	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Hualapai Tribal Council	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Indian Peaks Band (Paiute Indian Tribe of Utah)	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Kaibab Paiute	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Kanosh Band (Paiute Indian Tribe of Utah)	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Koosharem Band (Paiute Indian Tribe of Utah)	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Las Vegas Paiute Tribe	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Moapa Band of Paiutes	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Northern Arapaho					X					X							X					
Pahrump Paiute Tribe	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Paiute Indian Tribe of Utah	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Shoshone-Bannock Tribes					X					X							X					
Shiwivits Band (Paiute Indian Tribe of Utah)	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Shundahai/Western Shoshone																	X					
Skull Valley Band of the Goshute Indians																	X					
South Fork Band (Te-Moak Tribe of Western Shoshone)	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Te-Moak Tribe of Western Shoshone	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Timbisha Shoshone Tribe	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Wells Band (Te-Moak Tribe of Western Shoshone)	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Winnemucca Indian Colony																	X					
Ute Indian Tribe					X					X							X					
Yomba Shoshone Tribe	X	X	X			X		X	X	X	X	X		X	X	X		X	X	X	X	X
Western Shoshone Defense Project	X	X	X			X		X	X	X	X	X		X	X	X						
Western Shoshone National Council	X	X	X			X		X	X	X	X	X		X	X	X						
Inter-Tribal Council of Nevada	X	X	X			X		X	X	X	X	X		X	X	X						

**Notes:**

Indicates Section 106 consultation under NHPA

**Table F3.17-1 Tribal Consultation, Communication, and Coordination Efforts for the Proposed SNWA GWD Project (Continued)**

Name of the Tribe	Pan-Tribal Meetings/Workshops with BLM Management Representative			Meetings with BLM Management Representative				Tribal Council Meetings with BLM Management Representative				
	1-23-2008 Informational Meeting Elko Project Presentation	2-20-2008 Informational Meeting Ely - Project Presentation	2-26-2008 Informational Meeting Las Vegas - Project Presentation	12-8-2009 Informational Meeting Las Vegas - Ethnographic Study	12-9-2009 Informational Meeting Ely - Ethnographic Study	3-11 and 12-2010 NEPA Training Ely	1-12-2011 NEPA Follow-up Workshop Ely	2-15-2011 NEPA Follow-up Workshop Las Vegas	Initial Consultation Meeting	Follow-up Update Meeting	Follow-up Update Meeting	Follow-up Update Meeting
Battle Mountain Band (Te-Moak Tribe of Western Shoshone)				X		X			2/11/2009			
Blackfeet Nation												
Cedar Band (Paiute Indian Tribe of Utah)				X		X						
Chemehuevi Indian Tribe					X				9/7/2006	7/20/2009		
Colorado River Indian Tribes												
Confederated Tribes of the Goshute Reservation (CTGR)				X		X	X		12/7/2007	3/14/2008	6/8/2008**	4/1/2011
Crow Tribe - Apsaalooke Nation												
Duck Valley Shoshone-Paiute Tribes of Idaho and Nevada												
Duckwater Shoshone Tribe				X		X	X		4/8/2008	7/27/2009		
Eastern Shoshone Tribe -- Wind River Indian Reservations												
Elko Band	X					X						
Ely Shoshone Tribe				X		X	X		4/11/2008	8/27/2008	3/26/2009	11/9/2009
Fort Mojave Indian Tribe												
Hualapai Tribal Council												
Indian Peaks Band (Paiute Indian Tribe of Utah)									4/30/2008			
Kaibab Paiute					X				7/16/2009			
Kanosh Band (Paiute Indian Tribe of Utah)												
Koosharem Band (Paiute Indian Tribe of Utah)					X							
Las Vegas Paiute Tribe						X			6/11/2007			
Moapa Band of Paiutes						X	X		2/12/2008	7/7/2009		
Northern Arapaho												
Pahrump Paiute Tribe						X	X					
Paiute Indian Tribe of Utah						X			11/2/2009			
Shoshone-Bannock Tribes							X					
Shivwits Band (Paiute Indian Tribe of Utah)					X		X		7/15/2009			
Shundahai/Western Shoshone												
Skull Valley Band of the Goshute Indians												
South Fork Band (Te-Moak Tribe of Western Shoshone)	X			X			X					
Te-Moak Tribe of Western Shoshone									2/3/2010*			
Timbisha Shoshone Tribe												
Wells Band (Te-Moak Tribe of Western Shoshone)	X											
Winnemucca Indian Colony												
Ute Indian Tribe												
Yomba Shoshone Tribe												
Western Shoshone Defense Project	X											
Western Shoshone National Council												
Inter-Tribal Council of Nevada												

**Notes:**

\*TeMoak Tribe disagrees that this meeting constituted tribal consultation because they were not involved in discussions early during the NSE's water rights process

\*\*This meeting was held with the State Director at the request of CTGR

Indicates Section 106 consultation under NHPA

**Table F3.17-2 Tribal Concerns in Response to Initial BLM Consultation Letter (dated February 23, 2007)**

Name of Tribe	Tribal Concerns
Battle Mountain Band of the Te-Moak Tribe of Western Shoshone	The tribe is concerned about the proposed Project drying up the springs, creeks, and other water sources.
Cedar Band of Paiute Indians	No comments received to date.
Chemehuevi Indian Tribe	The tribe is concerned about the potential effects to water and tribal water rights, cultural sites (including the Honeymoon Trail), and Corn Creek. Additionally concerned that the proposed plan might not be sufficient to support future growth in Las Vegas. The tribe opposes the proposed Project and requested some authority in the process, and funding to aid in consultation with the Bureau of Land Management (BLM).
Colorado River Indian Tribes	No comments received to date.
Confederated Tribes of the Goshute Reservation	The tribe is concerned about effects to water, plants, and animals; disruption of the hydrological and ecological systems; treatment of burials on private land; and water recharge. They requested that the Environmental Impact Statement (EIS) analyze: 1) effects to all aspects of the environment; 2) growth-related impacts due to increased supply of water to southern Nevada; and 3) impacts to cultural sites and socioeconomic effects on Great Basin tribes. Additionally requested to have cooperating agency status. The tribe opposes plans to pipe water away from Snake and Spring valleys. Additionally, the tribe stated that by supporting the proposed project, the federal government is ignoring their trust responsibilities.
Duck Valley Shoshone-Paiute Tribes of Idaho and Nevada	No comments received to date.
Duckwater Shoshone Tribe	The tribe is concerned about water drying up; effects to tribal areas of concern, water babies, and water spirits; contamination of groundwater; and, overall impact on plants and animals. They requested involvement in the proposed project; tribal monitors during project construction; and, preparation of their own ethnographic assessment.
Elko Band of the Te-Moak Tribe of Western Shoshone	The tribe has concerns about incomplete baseline studies, mitigation, and changes to the landscape.
Ely Shoshone Tribe	The tribe is concerned about removal of water from the basins and how the agencies will deal with monitoring and mitigation issues. They requested cooperating agency status.
Fort Mojave Indian Tribe	No comments received to date.
Hualapai Tribal Council	The tribe is concerned about water rights. They requested tribal consultation prior to cultural resources surveys, and tribal monitors during surveys.
Indian Peaks Band of Paiute Indians	The tribe is concerned about the loss of water and springs drying up. They requested the BLM to meet collectively with all Nevada tribal leaders about the proposed Project, and would like to prepare their own ethnographic assessment.
Kaibab Paiute Tribe	No comments received to date.
Kanosh Band of Paiutes	No comments received to date.
Koosharem Band of Paiute Indians	No comments received to date.
Las Vegas Paiute Tribe	The tribe would like to meet again after alternatives are determined. They asked about mitigation in case of earthquakes.
Moapa Band of Paiutes	The tribe is concerned about water drying up; potential effects to the Moapa dace; and, potential effects to petroglyphs in the area. They requested review of hydrology study; future pan-tribal meetings; involvement in the technical committee for the hydrological studies; tribal monitors during construction; funding to enable tribe to participate more; and, tour of proposed alignment.
Pahrump Paiute Tribe	No comments received to date.
Paiute Indian Tribe of Utah	The tribe is concerned about the loss of water and springs drying up. They requested the BLM to meet collectively with all of Nevada tribal leaders; tribal monitoring during construction, and that a percentage of the proposed Project budget be donated and used for an intertribal museum to house artifacts collected during field inventories.
Shivwits Band of Paiute Indians	No comments received to date.

**Table F3.17-2 Tribal Concerns in Response to Initial BLM Consultation Letter (dated February 23, 2007) (Continued)**

Name of Tribe	Tribal Concerns
South Fork Band of the Te-Moak Tribe of Western Shoshone	The tribe opposes the proposed project and will not participate in associated studies.
Te-Moak Tribe of the Western Shoshone	The tribe is concerned about springs and water sources drying up and water taken from the basins. They oppose the proposed project and will not participate in associated studies. The tribe requested open consultation with all tribes involved in the proposed Project; the BLM to address protection of natural resources in the EIS; preparation of their own ethnographic assessment; and the BLM to merge holistic view and scientific data in the EIS.
Timbisha Shoshone Tribe	The tribe expressed concerns about water rights; the BLM trust responsibilities regarding protection of water; increased use of water by Las Vegas; and, effects to plants and animals. They requested tribal monitors during archaeological surveys; Traditional Cultural Properties surveys during archaeological surveys; water monitoring; and, consideration of the Treaty of Ruby Valley.
Wells Band of the Te-Moak Tribe of Western Shoshone	The tribe expressed concern about lack of Bureau of Indian Affairs and State Engineers involvement with the tribes.
Yomba Shoshone Tribe	No comments received to date.