IN THE OFFICE OF THE STATE ENGINEER OF THE STATE OF NEVADA

IN THE MATTER OF APPLICATIONS 53987	)
THROUGH 53992, INCLUSIVE, AND 54003	)
THROUGH 54021, INCLUSIVE FILED TO	)
APPROPRIATE THE UNDERGROUND	)
WATERS OF CAVE VALLEY, DELAMAR	)
VALLEY, DRY LAKE VALLEY AND SPRING	)
VALLEY HYDROGRAPHIC BASINS	)
(180, 181, 182 AND 184), LINCOLN COUNTY	)
AND WHITE PINE COUNTY, NEVADA	)

SOUTHERN NEVADA WATER AUTHORITY'S CLOSING STATEMENT

The Southern Nevada Water Authority ("SNWA") requests that the State Engineer grant its applications (the "Applications") to appropriate groundwater in the Cave Valley, Delamar Valley, Dry Lake Valley, and Spring Valley hydrographic basins (collectively, the "Basins") as part of its planned interbasin groundwater development project (the "Project"). SNWA has presented substantial evidence in the form of witness testimony, expert reports and other exhibits and has satisfied all statutory requirements in Nevada water law for the State Engineer to approve the Applications. This Closing Statement is a brief outline of the evidence presented by SNWA during the six-week hearing. A more detailed summary of SNWA and protestant evidence and applicable legal arguments, including transcript and exhibit page citations, will be filed on January 27, 2011.

I. FINANCIAL ABILITY, BENEFICIAL USE AND REASONABLE DILIGENCE.

SNWA has an intention in good faith to construct any work necessary to apply the water to the intended beneficial use with reasonable diligence, and the financial ability and reasonable expectation to construct the Project and apply the water to the intended beneficial use with reasonable diligence. NRS 533.370(1)(c). Water from the Basins is a critical component of SNWA's water resource portfolio and is needed to meet projected demand, replace temporary

supplies, and protect against drought. *SNWA_189*[1]*; Testimony: P. Mulory, R. Holmes, K. Brothers, J. Entsminger.* SNWA has already expended considerable financial resources pursuing this Project and has the ability to pay for all future necessary expenditures. The Project is technologically feasible and planned construction would take place in phases over an estimated 10-year period. *SNWA_190; SNWA_195; Testimony: R. Holmes.* SNWA could begin putting the water to beneficial use by 2028 or earlier, depending on drought conditions on the Colorado River. *SNWA_189; Testimony: R. Holmes, K. Brothers, J. Entsminger.* The cost estimate to construct the Project, including contingency and inflation, is roughly $6.45 billion. *SNWA_195; Testimony: R. Holmes.* SNWA has the financial ability to construct the Project, even if the Project is required for drought purposes only and costs cannot be spread across a larger customer base. *SNWA_383; Testimony: J. Bonow, G. Hobbs.*

II. AMOUNT OF WATER AVAILABLE FOR APPROPRIATION.

SNWA has identified the amount of water available for appropriation in the Basins. NRS 533.370(5) (2010)[2]; NRS 534.110(3). The amount of water available for appropriation in a given groundwater basin is equal to the perennial yield of the groundwater basin minus committed groundwater rights. SNWA's evidence established new perennial yields for the Basins to replace the outdated estimates of the 1971 Scott et al. report, which compiled information from the Reconnaissance Series Reports. Unlike the protestant experts who in many cases simply adopted average values from previous studies, SNWA undertook a complete and comprehensive evaluation of the hydrology of the Basins and adjacent basins. That evaluation included an analysis of groundwater recharge and discharge including evapotranspiration,

[1] SNWA and State Engineer exhibits admitted during the hearing will be referenced as follows: SNWA_xxx, SE_xxx.

[2] For ease of reference, for those statutes that were amended by the Nevada Legislature in 2011, the citation numbering used here will refer to the more familiar 2010 numbering instead of using the updated 2011 numbering. Citations without a "(2010)" designation have the same numbering in the 2010 and 2011 version of the statutes.

precipitation, and interbasin flow. The end result is a balanced groundwater budget that contains the most current and accurate estimates for perennial yield in the Basins.

A. Groundwater Evapotranspiration.

Groundwater evapotranspiration ("ET") was derived using the standard approach of determining the volume of total ET occurring in the groundwater discharge area and subtracting the volume of precipitation that fell on that area. Groundwater discharge areas and land cover classes within those areas were defined using previous mapping efforts that were updated using satellite imagery, field mapping, and remote sensing techniques. SNWA directly measured ET rates at measurement sites located in Spring, White River, and Snake Valleys using a widely-accepted method that is considered the most direct technique for estimating ET. These data were used to derive an empirical relationship between total annual ET and remotely sensed vegetation indices. *SNWA_312; Testimony: L. Fenstermaker, A. Burns.*

For Spring Valley and White River Valley, this empirical relationship was applied to estimate the total annual ET of each basin. These estimates were reduced by the annual precipitation that fell on the groundwater discharge areas to derive estimates of groundwater ET. The annual precipitation estimates were derived from 4-km PRISM precipitation grids. SNWA evaluated these grids by comparing the precipitation point values from the precipitation grid to the actual precipitation data measured at stations located in White River and Spring Valleys. SNWA evidence shows that PRISM over-estimated precipitation in groundwater discharge areas in Spring Valley, but underestimated precipitation in groundwater discharge areas in White River Valley. In both cases, SNWA accounted for these biases by either adjusting the grid values higher or lower to represent actual conditions. SNWA groundwater ET estimates for Spring and White River Valleys represent the best estimates to date, as they are based on data collected within the respective groundwater discharge areas using state of the art methods and a five-year period of data collection reflecting variable environmental conditions.

Based on this analysis, there is 94,800 afy of groundwater ET in Spring Valley. For the other Basins, groundwater ET is minimal in Cave Valley, approximately 1,300 afy, and non-

existent in Delamar and Dry Lake Valleys, where the depth to water is deeper than the rooting depth of the phreatophytes.

B. Precipitation Distribution.

SNWA selected a state of the art method to estimate spatial distribution of precipitation and long-term mean annual precipitation for the Basins. *SNWA_258; Testimony: A. Burns, W. Drici.* Precipitation plays an essential role in the hydrology of the Basins because it is the main source of surface water and groundwater. SNWA applied the 800-m PRISM precipitation grid to the Basins for the purpose of deriving the most accurate estimates of total mean precipitation and precipitation distribution. PRISM was selected over more rudimentary methods, such as the Hardman maps and precipitation altitude regression models, because it incorporates important physical processes, uses more recent data and station records than other mapping efforts, uses state of the art spatial methods, and is recognized world-wide as the best spatial data sets. For this study, PRISM grid values were compared against period-of-record mean values for select precipitation stations using a regression analysis. The findings indicated that the 800-m PRISM precipitation grid represents long-term mean conditions to within a margin of ten percent, which is a quality match. Estimated values for total annual precipitation extracted from the 800-m PRISM precipitation grid were provided for each of the Basins. SNWA's use of PRISM is just one of numerous examples where SNWA uses the most modern, advanced, and accurate techniques to estimate important components of the groundwater system in the Basins.

C. Geologic Framework and Interbasin Flow.

SNWA evaluated interbasin flow using all available data, including refined geologic mapping. To aid in this analysis SNWA experts developed the most detailed, highest resolution digital geologic mapping available for the region. SNWA used this high resolution mapping to identify key faults and other geologic features across the region that were not included in prior U.S. Geological Survey low-resolution mapping. Based on the geologic framework SNWA experts evaluated the likely impact of geologic features on groundwater occurrence and movement including areas of likely, permissible and unlikely flow across hydrographic area

boundaries. *SNWA_058; Testimony: P. Rowley.* SNWA experts have analyzed, through additional geophysical surveys, contested areas where SNWA and protestants disagree about the amount and direction of groundwater flow. Simply stated, the analysis of these experts has allowed SNWA to develop the most comprehensive picture available of the geology of the Basins and surrounding areas.

In addition to new geologic mapping, SNWA used all available data including data acquired from newly installed SNWA monitor and test wells to measure hydrologic gradients and estimate aquifer properties to replace or validate prior estimates of these important parameters. These data were used to determine the direction and probable magnitude of groundwater flow across hydrographic area boundaries. Finally, SNWA corroborated many of its geological and hydrological conclusions with new gravity, audiomagnetotellurics, and isotope studies. *SNWA_058, SNWA_077; Testimony: J. Thomas, P. Rowley.*

D. Groundwater Recharge.

SNWA optimized estimates of groundwater recharge using modern technology to solve complex numerical problems. SNWA used an Excel Solver to derive a relationship between recharge and precipitation for the purpose of estimating recharge efficiencies and mean annual recharge for the Basins. *SNWA_258; SNWA_452.* These estimates are constrained by independent estimates of annual groundwater ET and interbasin groundwater flow. The recharge efficiencies are used to derive recharge values based upon the spatial distribution of precipitation in the Basins. This numerical solution process represents a significant advancement from Reconnaissance Series estimates that used hand-drawn Hardman Precipitation Maps from the 1940's. SNWA applied the Excel Solver as the principal means to derive total recharge and the potential distribution of recharge in Spring, Cave, Dry Lake and Delamar Valleys.

E. Perennial Yield.

The perennial yields of the Basins must be revised to account for significant advances in hydrologic and aquifer property data collection and analysis. SNWA conducted the most current, comprehensive, and accurate assessment of hydrologic and geologic data in the Basins

using extensive data collection and modern analytical tools. Based upon this information, SNWA presented new groundwater budgets for the Basins, and respectfully requests that the State Engineer accept and adopt these estimates in place of outdated estimates.

For basins with significant groundwater discharge to the surface in the form of ET, the perennial yield is limited to the total annual groundwater ET. For basins without significant groundwater ET, the definition of the perennial yield has been interpreted in different ways. The maximum perennial yield has, however, always been defined as no more than the total annual recharge volume to the basin. Perennial yield is a long-term concept that does not require a basin to reach equilibrium within a specific time period. In this context, long term is an indefinite time period, but the fundamental requirement is that pumping does not exceed the amount of water naturally recharged to the aquifer, which ensures that a new equilibrium is ultimately reached and groundwater mining is avoided.

Spring Valley is a basin with considerable groundwater ET; therefore, the perennial yield is equal to groundwater ET in the basin, 94,800 afy. Conversely, subsurface interbasin flow accounts for the majority of discharge from Cave Valley, Dry Lake Valley, and Delamar Valley. For these basins, the perennial yield is equal to the total annual recharge to the basins: Cave Valley - 13,700 afy; Dry Lake Valley - 16,200 afy; Delamar Valley - 6,600 afy.

F. Committed Groundwater Rights.

SNWA quantified the total amount of committed groundwater rights in each of the Basins by identifying all senior groundwater rights and then adjusting for (i) groundwater rights that are supplemental to other groundwater rights, (ii) groundwater irrigation rights that are supplemental to surface water irrigation rights, (iii) the percentage of supplemental rights that are estimated to be actually used per year, and (iv) the amount of groundwater actually consumed by irrigation and domestic uses. *SNWA_097; Testimony: M. Stanka.* The amounts that resulted from SNWA's analysis conform closely to the amounts identified by the State Engineer in its Basin Inventories. *SNWA_460.*

The amount of senior committed groundwater rights is as follows: Spring Valley - 10,429.51 afy; Cave Valley - 17.77 afy; Dry Lake Valley - 61.12 afy; Delamar Valley - 8.95 afy. *SNWA_097; Testimony: M. Stanka.*

G. Unappropriated Water.

Subtracting the senior committed groundwater rights from the perennial yields for each of the Basins means that the following amounts of water are unappropriated and therefore available for appropriation: Spring Valley - 84,370.49 afy; Cave Valley - 13,682.23 afy; Dry Lake Valley - 16,138.88 afy; Delamar Valley - 6,591.05 afy.

III. EVALUATION OF POTENTIAL CONFLICTS WITH EXISTING RIGHTS AND IMPACTS TO ENVIRONMENTAL AREAS.

The proposed use of the water will not conflict with existing senior water rights (including protectable interests in existing domestic wells) or unreasonably impact sensitive environmental areas. NRS 533.370(5) (2010); NRS 533.370(6)(c) (2010). SNWA's conflicts analysis examined the potential effects of groundwater production on existing senior water rights and sensitive environmental areas and provided examples of mitigation measures for remedying potential adverse effects. *SNWA_337; Testimony: J. Watrus, W. Drici.* The scope of work for SNWA's conflicts analysis involved identifying locations of interest, including existing senior water rights and environmental areas of interest, conducting a qualitative analysis using known hydrologic and geographical information, and finally performing a quantitative analysis using model simulations with the original version of the numeric groundwater flow computer model developed for the Draft Environmental Impact Statement ("DEIS") for the Project.[3] SNWA experts testified regarding the model's construction and best uses (*Testimony: F. D'Agnese*), and SNWA's commitment to monitoring and managing the water resource (*Testimony: J. Entsminger; J. Prieur; Z. Marshall*).

[3] The CCRP model was developed in support of the DEIS by SNWA, with direction and guidance from the U.S. Bureau of Land Management and its Hydrology Technical Group.

A. Model Construction.

The original version of the Central Carbonate Rock Province ("CCRP") model provides a solid foundation for analysis of regional effects. The effects of SNWA's proposed groundwater production from the Application points of diversion were evaluated using the original version of the CCRP model. SNWA experts described how this model was developed through great effort and collaboration with other experts from state and federal agencies. *Testimony: F. D'Agnese.* The model development closely adheres to best practices and sound modeling principles, and was used properly based on the limitations of the model and its suitable uses. *SNWA_87.* The model contains more up-to-date representations of hydrogeologic data for the Basins and adjacent regions than any previous work, was developed and evaluated using state of the art methods, and was well-calibrated to fit observation data. In contrast, protestants' groundwater model prepared by Dr. Myers contains numerous errors and omissions.

B. Effects Analysis.

Potential effects from the Project were thoroughly analyzed using both a qualitative and quantitative approach. SNWA's approach to the effects analysis consisted of a qualitative assessment, based upon known hydrologic and geographical data, and a quantitative assessment that used model results and other considerations, such as well construction attributes. *Testimony: J. Watrus.* SNWA queried the geographical location of each existing senior water right and environmental area of interest using a geographical information system, or GIS. Experts determined impacts to many of the identified existing rights and environmental areas would not occur based on a qualitative analysis. This analysis determined these rights and areas are not in connection with the regional groundwater aquifer based upon their location in the mountain blocks where water is derived from local precipitation and perched groundwater. The remaining water rights were geographically located on either alluvial fans or valley floors. All of these water rights were evaluated for potential effects using the groundwater model except for the water rights in Delamar Valley, which were all determined to not be in connection with the regional aquifer due to the deep water table in the valley.

The remaining water rights and environmental areas of interest were evaluated using model results. The model simulated staged development of the resource up to full application volumes through continuous pumping during the simulation period. The scenario yielded results that over-estimate effects because SNWA is not expected to continuously pump the resource due to breaks in pumping for maintenance or management techniques to avoid unreasonable impacts. Assuming that SNWA will pump continuously does not take into account the fact that intervention by SNWA and state and federal regulators will modify pumping from the simulation scenarios as needed based on observed impacts. Simulations were run out to 75 years beyond full build out of the Project, or the calendar year 2117. This simulation time period was selected to represent the expected lifespan of the Project's equipment and infrastructure and is based on increased confidence in model predictions made for 75 years versus the confidence level for a 200 year simulation period. The effects were evaluated based on two criteria, a change in water level greater than 50 feet or a change in spring discharge greater than 15%. The thresholds used for this analysis were selected based upon confidence in simulated results at this model scale and inherent uncertainties associated with scarcity of available data and unavoidable generalization in geologic features.

Existing rights and sensitive environmental areas that met or exceeded the threshold inquiry for this analysis were further examined to evaluate the level of potential impact on the groundwater or surface water point of interest. Specifically, SNWA experts examined: (1) interconnectivity of surface water features to the regional groundwater table; (2) interconnectivity between aquifers; (3) well construction and characteristics such as well depth, depth to water, and pump setting; and (4) well performance details such as yield or static and pumping water levels. Based upon this analysis, only a small amount of existing water rights and environmental areas of interest potentially required mitigation measures when evaluated with these additional considerations. These model results are extraordinary given the fact that the simulated effects are exaggerated since the model analyzed continuous pumping at full volume for an extended period of time (which is unrealistic) while at the same time excluding

monitoring, management, and mitigation measures that would protect against adverse effects. Ongoing and future data collection will allow a better understanding of the specific hydrologic characteristics that will control the effects at the locations projected to be impacted by initial modeling.

C. Monitoring, Management and Mitigation.

Any unreasonable adverse effects on senior rights, existing domestic wells, and environmental areas of interest caused by the Project can, and will, reasonably be mitigated by SNWA pursuant to the monitoring and mitigation plans approved by the State Engineer. NRS 533.024(1)(b). SNWA is committed to responsible and sustainable development of the groundwater resources in the Basins through its hydrologic and biologic management programs. The Hydrologic Management Program (the "Program") is a comprehensive and adaptive program committed to monitoring and managing the groundwater resources in the Basins. The Program is designed to meet the requirements of Nevada statutes and stipulated agreements between SNWA and federal agencies. For these Applications, the State Engineer is required to examine potential conflicts with existing rights, weigh the possible benefits and detriments to the public's interest, and analyze whether the interbasin transfer is environmentally sound with regard to the Basins. NRS 533.370(5) (2010); NRS 533.370(6)(c) (2010). The Program provides the basis for the State Engineer to determine those requirements are met by (1) offering a scientifically sound framework to study the groundwater aquifers in the Basins; (2) establishing a periodic data reporting process; and (3) establishing a collaborative process to adapt and change the groundwater development scenario as needed to ensure responsible and sustainable development of the resource. *Testimony: J. Prieur; Z. Marshall.* The plans submitted at this hearing as SNWA Exhibits 148 and 149 should be included as permit terms by the State Engineer.

The Program framework includes a spatially distributed and hydrologically diverse monitoring network currently geared toward collecting baseline data in the Basins. The baseline data documents natural variations in the system in order to detect artificial variations caused by

groundwater production. Ongoing data collection in the monitoring network will allow SNWA to update the data files in the CCRP model to increase its predictive accuracy. The density of SNWA's monitoring network will permit SNWA to monitor impacts at short and long distances from production wells.

Mitigation measures are available to remedy any unreasonable effects. For example, potential effects may be mitigated through deepening the current well, drilling a substitute well, or providing a like amount of water from water rights owned by SNWA. Potential mitigation measures are also provided for under the stipulated agreements between SNWA and federal agencies, to which SNWA must adhere.

D. Tribal Reserved Water Rights

The Confederated Tribes of the Goshute Reservation, Duckwater Shoshone Tribe, and Ely Shoshone Tribe (collectively, the "Tribal Protestants") allege that the proposed pumping of the Applications would conflict with their reserved water rights. Tribal reserved water rights may be express or implied. If tribal water rights are not explicitly addressed in the treaty or executive order that created a tribe's reservation, courts may recognize an implied reserved water right. *Winters v. United States*, 207 U.S. 564, 577 (1908). The priority date for tribal reserved water rights is the date the reservation was created. *Id.* Quantification of tribal reserved water rights, like other federal reserved water rights, is limited to an amount necessary to fulfill the purpose of the reservation. *United States v. Cappaert*, 426 U.S. 128, 141 (1976); *United States v. New Mexico*, 438 U.S. 696, 700 (1978). In *Arizona v. California*, the U.S. Supreme Court applied the "practicably irrigable acreage" standard to quantify tribal reserved water rights for present and future uses. 373 U.S. 546, 600 (1963).

Here, it is unclear whether the Tribal Protestants own reserved water rights. Any land-based rights of the Tribal Protestants based on the Treaty of Ruby Valley of 1863 have been extinguished by settlement through the Indian Claims Commission. *Western Shoshone Nat'l Council v. Molini*, 951 F.2d 200, 203 (9th Cir. 1991). Additionally, the lands of the Duckwater Shoshone Tribe and the Ely Shoshone Tribe were acquired through purchase, not through

reservation. The Duckwater Shoshone reservation was created with land acquired by the federal government through purchase in 1940. Proclamation of Secretary of Interior no. 8580 (Nov. 13, 1940). The land for Ely Shoshone Indian Colony was purchased with a federal appropriation authorized in 1930. 46 Stat. 820 (June 27, 1930). These Tribes cannot claim reserved water rights because Congress did not withdraw land and reserve water rights from the public domain, but instead directed that private land be purchased for these Tribes' reservations.

Even if the Tribal Protestants had reserved water rights, these rights would be appurtenant to their reservation lands. Representatives of the Tribal Protestants conceded as much when they testified that they are not claiming reserved water rights within Spring Valley. Since their reservation lands are not located within the Project Basins, and projections from the Tribal Protestants' own model shows essentially no drawdown on the reservations, any argument that the SNWA applications will impact their alleged reserved water rights should be rejected. The land of the Confederated Tribes of the Goshute Reservation is located in Deep Creek, Tippett, Pleasant, and Snake Valleys. *SE_60* (Confederated Tribes of the Goshute Reservation Protest to Application 54003, at 3). The Duckwater Shoshone Tribe reservation is located in Duckwater Valley/Railroad Valley in Nye County, Nevada. *SE_60* (Duckwater Shoshone Tribe Protest to Application 54003, at 1–2). The Ely Shoshone Tribe's lands are in Steptoe and White River Valleys in White Pine County, Nevada. *SE_60* (Ely Shoshone Tribe Protest to Application 54003, at 3). No evidence was presented at the hearing that suggests any unreasonable impacts to the Tribal Protestants' reservation lands or reserved water rights due to SNWA's proposed pumping. On cross-examination, the Tribal Protestants' own witness, Dr. Thomas Myers, indicated that there are essentially no predicted impacts to the Tribal Protestants' reservation lands. Therefore, even assuming that the Tribal Protestants have reserved water rights, there would be no conflict with their reserved rights, so the Applications should not be denied on this basis.

As reserved water rights for the Tribal Protestants have not been quantified in a Nevada state court pursuant to a general stream adjudication, the State Engineer should take a cautious

approach to analyzing conflicts with potential tribal reserved water rights. In this case, because projected impacts on the reservation lands of the Tribal Protestants are minimal to non-existent, the State Engineer does not need to decide the issue of tribal reserved water rights. For the purposes of analyzing these Applications, the State Engineer should assume, without deciding, that the tribal reserved water rights exist and are appurtenant to the reservation lands of the Tribal Protestants. Then, based on the model projections and impacts analysis of both the SNWA and Tribal Protestant experts, the State Engineer should conclude that there will be no impact on any existing tribal reserved water rights from the Applications. The State Engineer's conclusion in this instance should not rely on whether or not tribal reserved water rights are held by the Tribal Protestants, but instead on an impacts analysis based on evidence submitted by the Tribal Protestants' own experts and by SNWA experts.

IV. PUBLIC INTEREST.

The proposed use of the water pursuant to the Applications does not threaten to prove detrimental to the public interest. NRS 533.370(5) (2010). The State Engineer's consideration of the public interest is limited to issues raised by Nevada's water statutes. *Pyramid Lake Paiute Tribe v. Washoe County*, 112 Nev. 743, 748–49, 918, 5 P.2d 697, 700 (1996). In addition, the State Engineer may weigh economic benefits of proposed uses of water in consideration of the public interest. *See* NRS 533.370(6)(a), (d), & (e) (2010). The economic interests of the State of Nevada are heavily dependent upon the continued economic success of Southern Nevada. A 10.5 percent decline in water supply in Southern Nevada will result in a decrease of the economic output of Southern Nevada by $9.6 billion, a loss of 84,000 jobs, and a decline in wages and salaries of $3.0 billion. *SNWA_022; Testimony: J. Aguero.* Even if current water supplies were adequate, any uncertainty regarding future supplies would still have a negative effect on the economy. Clark County accounts for about 75% of Nevada's tax revenue, draws nearly 40 million visitors per year, and subsidizes hospitals and schools for the rest of the state.

The water that SNWA will appropriate under these Applications is thus critical to the economic recovery and success of Southern Nevada, and in turn, the entire State of Nevada.

Tribal cultural uses of the Basins may be considered by the State Engineer as part of the public interest, but are only one aspect of the many broad categories and components that must be balanced by the State Engineer. Tribal Protestants argued that the State Engineer should consider their aboriginal hunting, fishing and gathering rights in Spring Valley. However, claims of off-reservation aboriginal rights to which the Tribes no longer hold a cognizable legal claim should not outweigh any of the other public interest factors. Tribal Protestants concede none of their reservations are coextensive with Spring Valley. The Tribes' treaties, the Treaty of Ruby Valley and the Treaty with the Shoshoni-Goship, and the subsequent documents that created their reservations, contain no express reservation of hunting, fishing and gathering rights in Spring Valley. *See* Treaty of Ruby Valley, 18 Stat. 689 (Oct. 1, 1863); Treaty with the Shoshoni-Goship, 13 Stat. 681 (October 12, 1863). Indeed, the Treaty of Ruby Valley provides for payment to the Western Shoshone (which includes the Ely Shoshone and the Duckwater Shoshone) in recognition of the infringement on and loss of tribal aboriginal rights inherent in settlement by non-Indians on aboriginal lands. Similar language exists in the Treaty with the Shoshoni-Goship (which includes the Confederated Tribes of the Goshute Reservation).

Courts have held that the off-reservation aboriginal rights for hunting and fishing attributed to the Treaty of Ruby Valley have been extinguished. *Western Shoshone Nat'l Council v. Molini*, 951 F.2d 200, 203 (9th Cir. 1991) ("The [Indian Claims] Commission's general finding that title had been extinguished therefore also operates to bar the Shoshone from asserting hunting and fishing rights based on the Treaty of Ruby Valley."). Generally, similar principles apply to the Treaty with the Shoshoni-Goship and subsequent reservations. *See Ore. Dep't of Fish & Wildlife v. Klamath Tribe*, 473 U.S. 753, 769 (1985) ("the absence of any express reservation of rights, as found in other 19th-century agreements, only serves to strengthen the conclusion that no special off-reservation rights were comprehended by the parties").

Despite the treaty language extinguishing the Tribes' off-reservation aboriginal rights, the State Engineer should not base his ruling on an interpretation of Treaty rights since that issue is not properly before the State Engineer. Instead, the State Engineer should treat the Tribes' claimed aboriginal rights in the same manner as the public interest concern expressed by other members of the public regarding the possible effects of the Project on hunting, fishing and gathering. This involves weighing the economic benefits of the Project to southern Nevada and the State as a whole against perceived detriments to various components of the public interest, such as environmental and tribal concerns.

V. INTERBASIN TRANSFER CRITERIA.

The Applications are seeking an interbasin transfer of groundwater which requires the State Engineer to consider the following additional criteria:

A. Justification of Need.

SNWA has a need to import and beneficially use this water and has justified its need to import water from another basin. NRS 533.370(6)(a) (2010); NRS 533.070(1); NRS 533.340(3); NRS 533.370(1). The need to increase and diversify water supply, as well as to replace temporary supplies, is the driving impetus behind the pursuit of the Applications and the development and timing of the Project. Modeling performed by SNWA using the U.S. Bureau of Reclamation Colorado River Simulation System shows a high probability of future shortages in delivery of Colorado River water from Lake Mead. *SNWA_189*. Uncertainty regarding the duration of drought conditions highlights the need for SNWA to secure a permanent water resource that is independent from the Colorado River. Despite aggressive and highly successful water conservation efforts, SNWA projections show that water demand levels will exceed available water supply beginning in roughly 2028 under normal conditions on the Colorado River, and even earlier if drought triggers shortage conditions. *SNWA_189; Testimony: P. Mulory, R. Holmes, K. Brothers, J. Entsminger.* It is not a matter of "if" SNWA will need this water, it is only a matter of "when" exactly it will need this water. Long-term growth and

development projections for Southern Nevada underscore the need to replace finite temporary water supplies with permanent and reliable water supplies. Southern Nevada must develop the Project in order to be self-sufficient and support long-term growth and prosperity.

SNWA has maximized local water resources, including water from the Colorado River and Las Vegas Valley groundwater. SNWA needs to import the water from the Basins because there is no other alternative source of supply that can be developed. SNWA would not be pursuing this water if there was another viable option.

B. Conservation Plan.

SNWA has demonstrated that a plan for conservation of water for the Las Vegas Valley groundwater basin has been adopted and is being effectively carried out. NRS 533.370(6)(b) (2010). SNWA and its member agencies promulgate a conservation plan every five years, aggressively updating and achieving conservation goals. The current conservation plan is being effectively carried out, has been approved by the State Engineer and the U.S. Bureau of Reclamation and is in compliance with state and federal conservation policies. *Testimony: D. Bennett.* From 2002 to 2008, Southern Nevada's annual water consumption was reduced by nearly 21 billion gallons despite a population increase of approximately 400,000 people. SNWA and its member agencies built upon that success by setting an even more robust goal of reducing consumption to 199 gallons per capita per day by 2035.

Southern Nevada's conservation success has been the result of a comprehensive conservation strategy. This strategy includes strict development codes that impose water related limitations on development, block rate structures that encourage conservation by steepening the cost of excess water consumption, incentive programs for customers to conserve water, and education programs to foster a conservation ethic in the Southern Nevada community. The incentives are among the most effective in the nation, having caused the conversion of more than 14 million square feet of turf grass for a demand reduction of more than 127,000 acre-feet over the past ten years. The conservation plan strikes an appropriate balance between ensuring that

Southern Nevada continues to thrive and benefit the state economically while reducing per capita consumptive uses.

C. Environmental Soundness.

The Project is environmentally sound as it relates to the basins from which the water is exported. NRS 533.370(6)(c) (2010). SNWA has undertaken extraordinary efforts to ensure that the Project will be carefully operated in an environmentally sound manner. SNWA has amassed comprehensive baseline data regarding the biological resources in the Basins and adjacent basins. SNWA is committed to environmental monitoring, adaptive management and mitigation to protect the Basins and the protected species located therein. *Testimony: Z. Marshall; J. Entsminger.* SNWA has entered into conservation agreements that preserve and in some cases create habitat for Great Basin species. Any change in depth to groundwater can be managed so that plant succession to more drought-tolerant species will occur to prevent barren land or blowing dust. *Testimony: T. McLendon.* SNWA has acquired ranch properties, grazing allotments, and surface and groundwater rights in the Basins so that it can improve habitat conditions for species of concern by managing natural and agricultural resources in ways that benefit vital ecosystems.

The regulatory environment also ensures that unreasonable adverse impacts will not occur. Environmental laws such as the Endangered Species Act, the National Environmental Policy Act, the Clean Water Act, and the Clean Air Act, along with State Engineer permit terms and conditions, will all require environmental protections. SNWA is a party to two stipulated agreements with four U.S. Department of the Interior agencies and one agreement with the U.S. Forest Service, all of which are designed to manage the development of groundwater in the Basins in a manner that will avoid unreasonable adverse effects to federal resources.

During the hearing, Tribal Protestants insinuated that SNWA witnesses improperly testified about SNWA's monitoring, management, and mitigation activities associated with the Spring Valley Stipulation (*SE_41*) and the Delamar, Dry Lake, and Cave Valleys Stipulation (*SE_8*). The Tribes' argument is based on paragraph 9 in the Spring Valley Stipulation stating:

"DOI Bureaus and SNWA shall jointly explain or defend this Stipulation and Exhibits A and B to the State Engineer." *SE_41* at p.9.

However, the Tribes' argument is out of context. Stipulation paragraph 9 is not a condition precedent to using the Stipulation, but instead explains the parties' roles during the September 2006 Spring Valley administrative hearing. Tribal Protestants argue the Stipulations could not be offered as evidence in this 2011 hearing unless the DOI Bureaus also appeared during the hearing to explain the agreements. This argument ignores another provision of the same Stipulation that provides: "Except as expressly provided herein, the Parties agree that the Stipulation shall not be offered as evidence or treated as an admission regarding any matter herein and may not be used in proceedings on any other application or protest whatsoever, except that the Stipulation may be used in any future proceeding to interpret and/or enforce its terms." *SE_41* at p.12; *SE_80* at p. 10. Nothing in the Stipulations prevents the parties from interpreting the Stipulations and describing activities undertaken in accordance with the Stipulations in subsequent proceedings, such as the fall 2011 hearings. In fact, the Stipulation on its face contemplates the parties' use of the Stipulation to explain, interpret and/or enforce its terms and in no way limits the forums in which those activities may occur.

In many ways, the Tribal Protestants' arguments about proper use of the Stipulations are irrelevant to the State Engineer's proceedings. Any disagreement regarding the Stipulations must be addressed by the parties to the Stipulations themselves, or in a federal court if the Tribal Protestants intend to challenge the validity of the agreements. While both SNWA and Tribal Protestants offered evidence and testimony regarding the federal Stipulations, the State Engineer is not a party to the Stipulations and does not need to rely on them in order to reach a conclusion on the environmental soundness criteria. SNWA has presented independent and separate monitoring plans on which the State Engineer should base his decision, and the State Engineer has the authority via implementation of permit terms to ensure the Project is environmentally sound.

In summary, SNWA will (1) prevent unreasonable impacts through placement and operation of its wells, (2) closely monitor unexpected outcomes to prevent unreasonable impacts, and (3) mitigate any unavoidable impacts as required by commitments to state and federal agencies that will be closely supervising SNWA operations. The Project will be, and must be, environmentally sound as it relates to the Basins and the protected species therein.

D. Basin of Origin.

The Project is an appropriate long-term use which will not unduly limit future growth and development in the Basins from which the water is exported. NRS 533.370(6)(d) (2010). SNWA presented evidence and testimony that rural economic development requiring significant water resources in the Basins is highly unlikely to occur in the foreseeable future. *SNWA_241; Testimony: R. Holmes.* Several key factors that typically support economic growth—including proximity to metropolitan centers, a skilled labor force, and a location along major transportation corridors—are absent in the Basins and will remain so into the future. Future agricultural development in the Basins is highly unlikely given the substantial costs of investment in new agricultural equipment and facilities and the low (or negative) return on investment from alfalfa and cow/calf operations. *SNWA_103; Testimony: G. Carter, D. Peseau.* In addition, renewable energy development in the Basins is highly unlikely to occur. *SNWA_113; Testimony: J. Candelaria, C. Linvill.* Given the limited likely future development in the Basins, the use of water as proposed by the Applications is an appropriate long-term use that will not unduly limit future growth and development in the Basins.

E. Other Relevant Factors.

The State Engineer may consider any other factor the State Engineer determines to be relevant. NRS 533.370(6)(e) (2010). The highest and best use of this water resource should be considered by the State Engineer. The Project is a unique and vital undertaking for the people of Southern Nevada and the State of Nevada as a whole. SNWA is seeking to appropriate water that is not being used, and is not reasonably likely to ever be needed by any other appropriator in the Basins. If these Applications are granted, 7 out of 10 people in the State of Nevada will

directly rely upon this water and the other 3 out of 10 will benefit either directly or indirectly. The Project will provide a permanent water supply that will do more for the people of Nevada than any other appropriation that the State Engineer could grant.

VI. FORMAT OF RULINGS

SNWA intends to submit proposed rulings that, should the State Engineer adopt them, will withstand judicial review. On appeal, a court's role is to examine whether substantial evidence supports the State Engineer's conclusions. The evidence must support the conclusions reached and should be a link between the facts and the rulings. Because of this, citations to the transcripts and exhibits are essential in listing the items of evidence that support each conclusion in the rulings. On appeal, a judge may not re-weigh the evidence or decide that one expert is more credible than another. *Bacher v. State Engineer*, 122 Nev. 1110, 1121, 146 P.3d 793, 800 (2006); *State Engineer v. Morris*, 107 Nev. 699, 701, 819 P.2d 203, 205 (1991); *Revert v. Ray*, 95 Nev. 782, 786, 603 P.2d 262, 264 (1979). As the State Engineer is essentially the trier of fact, on appeal, the court must defer to the State Engineer's determinations on witness credibility. Therefore, in the rulings the State Engineer should explicitly state which experts he found to be credible and which expert testimony he is not relying on. The rulings not only should weigh the competing evidence by describing the evidence in support of his conclusions as well as the evidence against his conclusions, but it should also explicitly state which evidence the State Engineer chooses to rely on. Because of the need to state clearly which experts are credible and which evidence is reliable, SNWA's proposed rulings will use strong language in expressing conclusions for the State Engineer to consider. The language used by SNWA in the proposed rulings should not be taken as an insult or affront to the many experts who testified during the hearings, but is rather an attempt to use language that will survive judicial review on appeal.

VII. CONCLUSION.

SNWA has satisfied all statutory requirements in the Nevada water law for the State Engineer to grant the full amount of water that is available for appropriation in the Basins. Southern Nevada needs a reliable water supply which requires SNWA to develop this water responsibly for the future of Southern Nevada and the State of Nevada as a whole. Nevada's continued prosperity and economic survival depends on it.

Respectfully submitted this 22nd day of December, 2011

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CERTIFICATE OF SERVICE

I hereby certify that on this ____ day of December 2011, a true and correct copy of SOUTHERN NEVADA WATER AUTHORITY'S CLOSING STATEMENT was served on the following by Fed Ex overnight delivery as follows:

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