



# Appendices

## Appendix 1 SOUTHERN NEVADA WATER AUTHORITY INTEGRATED WATER PLANNING ADVISORY COMMITTEE RECOMMENDATIONS

### **CONSERVATION**

1. Pursue more aggressive promotion of water conservation and regulation of water use through methods such as the reduction of turf.
2. Decrease total water demand from 272 GPCD to 250 GPCD by 2010 and to 245 GPCD by 2035.
  - a. Permanently implement major Drought Alert demand reduction tools identified in the SNWA Drought Plan, including landscape watering restrictions, landscape development codes, golf course water budgets and increased water waste fines and enforcement
  - b. Sustain current pricing signals by ensuring water rates keep pace with inflation.
  - c. Maintain or exceed the 2004 participation levels in the SNWA Water Smart Landscapes Rebate Program.
3. Assess conservation achievement annually, investigate the potential for further GPCD reductions and revise conservation goals accordingly.

### **RESOURCE DEVELOPMENT**

4. Pursue development of all the resource options considered in the IWPAC planning scenarios.
  - Arizona Water Bank
  - Coyote Spring Valley Groundwater Rights
  - Three Lakes Valley Groundwater Rights
  - Pre-Compact Water Rights (Virgin and Muddy Rivers)
  - Virgin River Water Rights
  - Clark, Lincoln and White Pine Counties Groundwater Applications
  - Augmentation Credits
  - Additional Conservation

## Appendix 1 continued

5. Provide additional safeguards for communities and the environment in areas where in-state groundwater resources are developed.
  - a. Implement a committee with SNWA and White Pine County representatives to develop annual pumping strategies for Spring and/or Snake Valleys.
  - b. Comprehensively monitor and manage any in-state groundwater pumping to assess hydrological effects, sustain the resource and protect the surrounding environment.
  - c. Review groundwater situation in Spring and/or Snake Valleys in 75 years, including White Pine County supply needs, basin hydrology and overall pumping data, and revise SNWA permits if conditions warrant it.
6. Work with the Colorado River Basin States and the Bureau of Reclamation to implement augmentation credits for in-state, non-Colorado River resources.
7. Pursue delivery of pre-compact Muddy and Virgin River water rights through Lake Mead and the existing Southern Nevada Water System (“lake conveyance”).
8. Pursue “lake conveyance” for the development and use of post-compact Virgin River water rights.
9. Pursue an interstate agreement with Utah and Arizona concerning use of the Virgin River.
10. Pursue flexible use of Colorado River resources over the long term.
11. Utilize the Southern Nevada Water Bank and California Water Bank as “bridge resources” to help meet any supply deficits.
12. Utilize surplus and interim surplus Colorado River water, if and when they are available.
13. Continue to pursue ocean desalination as a long-term resource.
14. Pursue additional wastewater reuse to maximize supply availability if augmentation credits can not be implemented.

### **RESOURCE MANAGEMENT**

15. Restrict or eliminate the use of salt-using water softeners at residential and commercial facilities to reduce total dissolved solids (“salts”) in wastewater discharge and to improve reuse and raw water quality.
16. Utilize the Integrated Water Planning Advisory Committee’s evaluation criteria when assessing priorities for the development of in-state water resources.
17. Utilize and maintain water supplies in a sustainable manner.

**FUNDING**

18. Continue to support the use of diverse funding sources.
  - Commodity Charges (water rates)
  - Connection Charges
  - Sales Tax
  - Southern Nevada Public Land Management Act (SNPLMA) Funding
  - Other state and federal funding as available
19. Revisit the current funding formula for fairness and affordability when a specific project/funding scenario is determined.
20. Pursue an extension of the ¼ cent sales tax to help pay for future water infrastructure.
21. Support the continued allocation of 10% of the funds received from the SNPLMA to the SNWA.
22. Increase conservation education, including the financial ramifications that could occur if additional conservation is not achieved.

Appendix 2  
SOUTHERN NEVADA WATER AUTHORITY  
INTEGRATED RESOURCE PLAN ADVISORY COMMITTEE  
RECOMMENDATIONS  
(Adopted June 1995 by SNWA Board of Directors)

**1.0 RESOURCES**

- 1.1 Seek permanent, long-term water supplies. However, a water resources plan should be formulated to meet future water demands that utilizes all available water supplies, including unused apportionments, surpluses, leases, and other water supplies.
- 1.2 Place top priority on development of Colorado River water to meet future water demands over development of a Virgin River pipeline or the Cooperative Water Project.
- 1.3 Maximize the use of the Las Vegas Valley shallow aquifer when and where practical.

**2.0 FACILITIES**

- 2.1 Implement a water facilities program that is phased and expandable in order to respond to future uncertainties (e.g., demands, regulations, etc.).
- 2.2 Expand the existing Southern Nevada Water System from its existing capacity of 400 million gallons per day (MGD) to its ultimate capacity of 600 MGD as soon as possible.
- 2.3 Maximize the reuse of wastewater when and where practical.
- 2.4 Maximize artificial recharge when and where practical.
- 2.5 Build a new treatment and transmission facility (TTF) as soon as possible that is big enough to be reliable (avoid shortages) and to provide backup capability in the event of a catastrophic failure.

**3.0 CONSERVATION**

- 3.1 Achieve a 10% - 15% reduction in maximum day usage by summer 2000 through the "planned" conservation program or something similar. For facility planning purposes, assume this reduction will occur until further study.
- 3.2 Study conservation possibilities immediately to see if a higher level than "planned" is achievable, and incorporate as practical. Make adjustments to the facilities program as necessary.
- 3.3 Establish an SNWA water conservation committee to examine water conservation measures.
- 3.4 Promote economic incentives and provide economic information to encourage the efficient use of water.

**4.0 FINANCE**

- 4.1 Study the impacts of water and wastewater programs on customer costs.
- 4.2 Study demand elasticity (i.e., the impact of customer costs on water demands).
- 4.3 Study different approaches to financing and rate setting.

**5.0 PLANNING**

- 5.1 Continue the SNWA Integrated Resource Planning (IRP) process.
- 5.2 Integrate wastewater planning fully into the IRP process.
- 5.3 Maintain the SNWA Integrated Resource Plan Advisory Committee as a critical input to the IRP process.
- 5.4 Continue to update water demand projections as needed.

Appendix 3  
NEVADA COLORADO RIVER ENTITLEMENTS  
PRIOR TO 1991 / PRE-SNWA

<b>Entitlement Holder</b>	<b>Year<sup>1</sup></b>	<b>Nature of Entitlement</b>	<b>Diversion Amount*</b>
Fort Mojave Tribe	1890	Present perfected right	12,534
U.S. For Lake Mead Recreation Area	1926	Present perfected right	500
U.S. for Lake Mead Recreation Area <sup>2</sup>	1930	Perfected right	1,500
Basic Management, Inc.	1969	Contract	23,158
Lakeview Company <sup>3</sup>	1965	Contract	0
Pacific Coast Building Products	1965	Contract	928
CRC for Nellis AFB portion	1967/77	Contract	4,000
Southern Nevada Water System (SNWS)			
U.S.	1992	Secretarial Reservation	300
Nevada Division of Wildlife	1972	Contract (consumptive use)	25
Boy Scouts of America	1978	Contract	10
CRC for Southern California Edison	1966	Contract	23,000
<b>Total</b>			<b>65,955</b>
SNWA Purveyors (pre-SNWA)			
Boulder City <sup>4</sup>	1931	Perfected right	5,876
Las Vegas Valley Water District	1969	Contract	15,407
CRC for SNWS (minus 4,000			
AFY Nellis, 9,000 AFY system loss)	1967/77	Contract	295,000
Big Bend Water District	1983	Contract	10,000
City of Henderson	1990	Contract	15,878
<b>Total</b>			<b>342,161</b>
CRC for SNWS (system loss)	1967/77	Contract	9,000
<b>TOTAL NEVADA ENTITLEMENTS (prior to 1991 / pre-SNWA)</b>			<b>417,116</b>

\*All figures provided in acre-feet per year

<sup>1</sup> Year is priority date of present perfected rights and perfected rights and initial contract year for contract rights.

<sup>2</sup> Estimate; "annual quantities reasonably necessary to fulfill the purpose" of the Rec. Area. (1964 Supreme Court Decree).

<sup>3</sup> The contract entitlement is 120 AFY, which the Bureau of Reclamation currently has reduced to zero.

<sup>4</sup> Estimate; Boulder City's 1960 water delivery contract right was for 3,650 gallons-per-minute "maximum rate of delivery."

Appendix 4

CLARK COUNTY POPULATION FORECAST USED BY SNWA IN PREPARATION OF  
WATER RESOURCE DEMAND FORECAST IN SNWA 2009 WATER RESOURCE PLAN

<b>Year</b>	<b>Population</b>
2000*	1,428,690
2001*	1,498,274
2002*	1,578,332
2003*	1,641,529
2004*	1,747,025
2005*	1,815,700
2006*	1,912,654
2007*	1,996,542
2008	2,080,000
2009	2,166,000
2010	2,253,000
2011	2,336,000
2012	2,418,000
2013	2,498,000
2014	2,575,000
2015	2,649,000
2016	2,721,000
2017	2,790,000
2018	2,855,000
2019	2,917,000
2020	2,978,000
2021	3,036,000
2022	3,091,000
2023	3,144,000
2024	3,194,000
2025	3,243,000
2026	3,288,000
2027	3,332,000
2028	3,374,000
2029	3,414,000
2030	3,454,000
2031	3,492,000
2032	3,530,000
2033	3,569,000
2034	3,607,000
2035	3,646,000

\*Historical Estimates

Source: "Clark County Nevada Population Forecast 2008-2035," June 2008, Center for Business and Economic Research (CBER) at the University of Nevada, Las Vegas.