

# APPENDIX 1

## CLARK COUNTY POPULATION FORECAST AND ASSUMPTIONS USED IN 2024 WATER RESOURCE PLAN DEMAND PROJECTIONS

Year	Lower Demand Population <sup>1</sup>	Upper Demand Population <sup>2</sup>
2024	2,407,000	2,448,000
2025	2,438,000	2,500,000
2030	2,645,000	2,817,000
2035	2,750,000	3,027,000
2040	2,848,000	3,226,000
2045	2,935,000	3,407,000
2050	3,014,000	3,573,000
2055	3,095,000	3,733,000
2060	3,176,000	3,885,000
2065	3,250,000	4,019,000
2070	3,315,000	4,131,000
2073	3,351,000	4,189,000

Endnotes:

- 1 "Population Forecasts: Long-Term Projections for Clark County, Nevada 2023–2080," May 2023, Center for Business and Economic Research at the University of Nevada, Las Vegas.
- 2 Adjusted "Population Forecasts: Long-Term Projections for Clark County, Nevada 2023–2080," May 2023, Center for Business and Economic Research at the University of Nevada, Las Vegas (with a 15 percent increase by 2043 and a 25 percent increase by 2073).

# APPENDIX 2

## SNWA DEMAND PROJECTIONS USED IN 2024 WATER RESOURCE PLAN (in AFY)

<b>Year</b>	<b>Lower Demand (86 GPCD Conservation goal)</b>	<b>Upper Demand (86 GPCD Conservation goal)</b>	<b>Upper Demand (98 GPCD Lower Conservation Scenario)</b>
2024	267,000	272,000	277,000
2025	267,000	274,000	281,000
2030	269,000	286,000	309,000
2035	257,000	283,000	323,000
2040	266,000	302,000	339,000
2045	275,000	319,000	352,000
2050	282,000	334,000	363,000
2055	290,000	349,000	374,000
2060	297,000	363,000	389,000
2065	304,000	376,000	402,000
2070	310,000	386,000	413,000
2073	314,000	392,000	419,000

# APPENDIX 3

## IRPAC 2020 RECOMMENDATIONS

The SNWA Board of Directors established the 11-member Integrated Resource Planning Advisory Committee (IRPAC 2020) in 2019 to evaluate and develop recommendations on various issues critical to the SNWA’s mission. As detailed below, the committee’s deliberations resulted in 22 recommendations that were accepted by the SNWA Board of Directors in September 2020. Major topics include water resources, water conservation, facilities and rates.

### GENERAL RECOMMENDATIONS

1. Work with community stakeholders to implement IRPAC recommendations.

### MCCP AND FACILITIES

2. Maintain current asset management funding levels and practices to ensure reliable water treatment and transmission in Southern Nevada.
3. Pursue projects to meet Nevada’s Renewable Portfolio Standard.
4. Include the candidate projects presented to IRPAC 2020, totaling \$3.166 billion, in the SNWA’s Major Construction and Capital Plan (MCCP).

### WATER RESOURCES

5. Pursue emerging water resource opportunities with Colorado River partners to increase Nevada’s water supplies, as presented to IRPAC on December 18, 2019.
6. Require out-of-valley development to return wastewater to Lake Mead and embed the principles of the SNWA’s Out-of-Valley Water Use Policy within municipal codes and Las Vegas Valley Water District (LVVWD) Service Rules.

### CONSERVATION

7. Pursue changes necessary to achieve the SNWA’s current water conservation goal of a minimum of 105 GPCD by 2035 and further efforts to achieve additional conservation thereafter.
8. Reduce existing non-functional turf acreage by 50 percent by 2035.
9. Embed the principles of the SNWA’s Non-Functional Turf Resolution in municipal codes and LVVWD Service Rules.
10. Limit future installations of cool-season turf in public spaces and expedite the conversion of cool-season turf to warm-season turf at existing public facilities.
11. Implement smart controller technology to automate landscape watering compliance and increase outreach and enforcement efforts.
12. Pursue implementation of advanced metering infrastructure and develop partnerships and programs to improve the speed of customer leak repairs.

13. Evaluate changes necessary to reduce current and future consumptive water losses associated with evaporative cooling technology.
14. Establish an efficiency review policy and process for new large water users to encourage efficient development and disincentivize consumptive use.
15. Continue to make investments that will maintain or improve the existing water loss rates among wholesale and retail water purveyors.
16. Continue outreach efforts to engage the public and effectuate the changes needed to meet the community's regional conservation goal.

## **FUNDING**

17. Fund the M CCP with a combination of debt capital and pay-go to manage unrestricted reserve balances at adequate levels consistent with the Reserve Policy.
18. Implement a six-year annual increase to SNWA charges effective January 2022 to: 1) Phase-in an inflationary catch up, and 2) Adjust for subsequent annual inflation within the six-year period:
  - Increase the Connection Charge by 9.5% annually for six years effective Mar. 2022
  - Increase the Infrastructure Charge by 4.6% annually for six years effective Jan. 2022
  - Increase the Commodity Charge by 4.8% annually for six years effective Jan. 2022.
19. Implement an indexed rate component to the SNWA Infrastructure and Commodity charges annually, effective January 2028, and limit future increases to a floor of 1.5% and a ceiling of 4.5% each year.
  - Infrastructure Charge in accordance with Engineering News Record (ENR) index
  - Commodity Charge in accordance with the Consumer Price Index (CPI). Do not implement inflationary increases in a year in which the five-year forecast unrestricted reserve balance is projected to be greater than 150% of targeted reserve balances.
20. Implement an indexed rate component to the SNWA Connection Charge annually in accordance with the ENR index, effective March 2028.
21. Eliminate the \$16.1 million Connection Charge threshold, require SNWA Connection Charge revenues to fund the pay-go portion of capital expenditures and related debt service, and exclude from funding recurring operating expenses.
22. Provide IRPAC 2020 with an annual update of the funding model and convene the committee as necessary.

# APPENDIX 4

## VOLUME BY STATE AND COUNTRY

The following table summarizes shortages, delivery reductions, DCP contributions and other water savings by volume under the 2007 Interim Guidelines, Minute 323, Lower Basin DCP and the Binational Water Scarcity Contingency Plan. Participants include Arizona (AZ), Nevada (NV), California (CA) and Mexico (MX). Volumes are represented in thousands of acre-feet (kaf).

Lake Mead Elevation (ft. above mean sea level)	2007 Interim Guidelines Shortages		Minute 323 Delivery Reductions	Total Combined Reductions	DCP Water Savings Contributions			Binational Water Scarcity Contingency Plan Savings	Combined Volumes by States and Country					
	AZ	NV	MX	Lower Basin & Mexico Total	AZ	NV	CA	MX	AZ Total	NV Total	CA Total	Lower Basin Total	MX Total	Lower Basin & Mexico Total
1,090>1,075	0	0	0	<b>0</b>	192	8	0	41	192	8	0	200	41	<b>241</b>
1,075>1,050	320	13	50	<b>383</b>	192	8	0	30	512	21	0	533	80	<b>613</b>
1,050>1,045	400	17	70	<b>487</b>	192	8	0	34	592	25	0	617	104	<b>721</b>
1,045>1,040	400	17	70	<b>487</b>	240	10	200	76	640	27	200	867	146	<b>1,013</b>
1,040>1,035	400	17	70	<b>487</b>	240	10	250	84	640	27	250	917	154	<b>1,071</b>
1,035>1,030	400	17	70	<b>487</b>	240	10	300	92	640	27	300	967	162	<b>1,129</b>
1,030-1,025	400	17	70	<b>487</b>	240	10	350	101	640	27	350	1,017	171	<b>1,188</b>
<1,025	480	20	125	<b>625</b>	240	10	350	150	720	30	350	1,100	275	<b>1,375</b>

# APPENDIX 5

## TURF DEFINITIONS

### NON-FUNCTIONAL TURF

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An irrigated grass area not providing functional use. Areas of nonfunctional turf include, but are not limited to:

#### **Streetscape turf**

Grass located along public or private streets, streetscape sidewalks, driveways and parking lots, including turf within a community, park and business streetscape frontage areas, medians, and roundabouts.

#### **Frontage, courtyard, interior and building-adjacent turf**

Grass in front of, between, behind or otherwise adjacent to a building or buildings located on a property not zoned exclusively for single-family residence, including maintenance and common areas.

#### **Certain HOA-managed landscape areas**

Turf managed by a homeowner association that does not provide a recreational benefit to the community or that otherwise does not qualify as functional turf, regardless of property zoning.

### FUNCTIONAL TURF

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An irrigated grass area that provides a recreational benefit to the community and is:

- Located at least 10 feet from a street, installed on slopes less than 25 percent and not installed within street medians, along streetscapes or at the front of entryways to parks, commercial sites, neighborhoods, or subdivisions.
- Active/programmed recreation turf, athletic fields, designated-use-area turf, golf course play areas, some pet relief turf, playground turf or resident area turf.

#### **Active/programmed recreation turfs**

Grass used for recreation that is 1,500 contiguous square feet or greater; co-located with facilities; and located at least 10 feet from a street or interior-facing parking lot unless the turf area is at least 30 feet in all dimensions or immediately adjacent to an athletic field.

#### **Athletic field turf**

Grass used for sports or physical education that is 1,500 contiguous square feet or greater; not less than 30 feet in any dimension; and located at a school, daycare, religious institution, recreation center, senior center, park or water park. Athletic field turf may be located less than 10 feet from a street or interior-facing parking lot if the contiguous turf area is at least 30 feet in all dimensions.

#### **Designated use area**

Grass designated for special use at cemeteries and mortuaries.

#### **Golf course play area**

Grass in driving ranges, chipping and putting greens, tee boxes, greens, fairways and rough.

#### **Pet relief area**

Grass at a property providing commercial and retail services for pets, such as veterinarian and boarding facilities. The area must not exceed 200 square feet.

#### **Playground turf**

Grass in designated play areas with playground amenities, including but not limited to slides, swings and climbing structures on homeowner association owned/managed property or at a public park, water park, school, daycare, recreation center, senior center or religious institution. Playground turf may be located less than 10 feet from a street if fenced.

#### **Resident area turf**

Grass up to 150 square feet per dwelling unit at multi-family residential properties, multi-family mixed use properties, or assisted living and rehabilitation centers used by tenants for recreation or leisure. May not be located in parking lots, streetscapes or other non-accessible areas.