

**SOUTHERN NEVADA WATER AUTHORITY
BOARD OF DIRECTORS
REGULAR MEETING
JANUARY 19, 2023
MINUTES**

CALL TO ORDER 9:02 a.m.

BOARD MEMBERS PRESENT Marilyn Kirkpatrick, Chair
Dan Stewart, Vice Chair
Scott Black
Olivia Diaz
Jim Gibson
Justin Jones
Steve Walton

BOARD MEMBERS ABSENT None

STAFF PRESENT John Entsminger, Colby Pellegrino, Dave Johnson, Doa Ross, Kevin Bethel,
and Greg Walch

OTHERS PRESENT None

Unless otherwise indicated, all members present voted in the affirmative.

COMMENTS BY THE GENERAL PUBLIC

For full public comment, visit snwa.com/apps/snwa-agendas/index.cfm

Chair Kirkpatrick introduced new board members Olivia Diaz, City of Las Vegas, and Steve Walton, City of Boulder City.

Chris Hristov spoke about using effluent water from Boulder City. He also provided written comments prior to the meeting. A copy of his comments are attached to these minutes.

ITEM NO.

1. ***For Possible Action:*** Approve agenda with the inclusion of tabled and/or reconsidered items, emergency items and/or deletion of items, and approve the minutes from the regular meeting of November 17, 2022.

FINAL ACTION: Director Gibson made a motion to approve the agenda for this meeting, and to approve the minutes from the regular meeting of November 17, 2022. The motion was approved.

CONSENT AGENDA Items 2 – 12 are routine and can be taken in one motion unless a Director requests that an item be taken separately.

2. ***For Possible Action:*** Approve and authorize the President to sign an interlocal agreement between the Virgin Valley Water District and the Authority for Safe Drinking Water Act bacteriological laboratory analysis of monthly water samples.
3. ***For Possible Action:*** Approve and authorize the General Manager to sign a memorandum of agreement between the Board of Regents of the Nevada System of Higher Education on behalf of the Desert Research Institute and the Authority for data analysis by a Desert Research Institute PhD Student in exchange for \$52,247, and authorize an amendment to the associated Bureau of Reclamation's WaterSMART Applied Science Grants for Fiscal Year 2021, increasing previously approved in-kind contributions by \$3,352.
4. ***For Possible Action:*** Approve and authorize the General Manager to sign an amendment to the existing agreement between Stantec Consulting Services, Inc., and the Authority to provide professional design engineering services for two projects for an increase of \$66,408, resulting in a total amount not to exceed \$166,408.
5. ***For Possible Action:*** Approve and authorize the General Manager to sign an amendment to the existing agreement between Leading Edge Design Group Inc and the Authority to provide professional design, engineering, and construction support services for the SNWA Communications Room Project, increasing the existing authorization by \$196,075, resulting in a total amount not to exceed \$569,583.

6. ***For Possible Action:*** Ratify the approval of a Grant Agreement between Clark County and the Authority to receive funding for the Authority's Water Efficient Technologies Program to offer financial incentives to replace evaporative cooling mechanisms, and authorize the General Manager to approve future modifications only if the future modifications do not fiscally impact the Authority.
7. ***For Possible Action:*** Ratify the approval of a Grant and Cooperative Agreement between the Bureau of Land Management and the Authority to receive funding for the Warm Springs Natural Area Trail Improvements in the amount of \$800,000 and authorize the General Manager to approve future modifications only if the future modifications do not fiscally impact the Authority.
8. ***For Possible Action:*** Approve and authorize the General Manager to sign a cooperative agreement between the Nevada Division of Forestry and the Authority to conduct inmate conservation work detail services for the period of February 1, 2023, through June 30, 2024, for an amount not to exceed \$100,000.
9. ***For Possible Action:*** Approve and authorize the General Manager to sign, in substantially the same form as attached hereto, lease and easement agreements between the City of Boulder City and the Authority for a minimum term of fifty years for the construction of a switchyard and power transmission line interconnecting the Boulder Flats Solar, LLC, generation facility with the Authority's existing transmission system.
10. ***For Possible Action:*** Approve and authorize the General Manager to sign, in substantially the same form as attached hereto, amendments to agreements between the Authority and the Las Vegas Valley Water District, Clark County Water Reclamation District, City of Henderson, City of Las Vegas, and City of North Las Vegas to increase the price of all delivered renewable energy sold by the Authority under agreement with Boulder Flats Solar, LLC.
11. ***For Possible Action:*** Approve and authorize the General Manager to sign, in substantially the same form as attached hereto, Amendment No. 2 to the existing Solar Energy Power Purchase Agreement between Boulder Flats Solar, LLC, and the Authority for the purchase of solar power in an increased annual amount of approximately \$1,900,000.
12. ***For Possible Action:*** Award a bid for the purchase of sodium chloride to Charlie Pepper AZ Inc. dba Salt Works in an amount not to exceed \$822,600, authorize contract renewals for up to four additional one-year terms with annual increases of up to 25 percent, and authorize the General Manager to sign the purchase agreement.

FINAL ACTION: Vice Chair Stewart made a motion to approve staff's recommendations. The motion was approved.

BUSINESS AGENDA

John Entsminger, General Manager, gave a presentation on the Authority's Major Capital and Construction Plan to provide background information on Business Agenda items. A copy of his presentation is attached to these minutes.

13. ***For Possible Action:*** Approve and authorize the General Manager to sign an agreement between Ames Construction, Inc., and the Authority to provide Construction Manager at Risk pre-construction services on the Garnet Valley Water Transmission System for an amount not to exceed \$2,000,000.

FINAL ACTION: Director Black made a motion to approve staff's recommendation. The motion was approved.

14. ***For Possible Action:*** Approve and authorize the General Manager to sign an agreement between Barnard of Nevada, Inc., and the Authority to provide Construction Manager at Risk pre-construction services in support of the Stage II Reliability Upgrades for an amount not to exceed \$8,000,000.

FINAL ACTION: Director Gibson made a motion to approve staff's recommendation. The motion was approved.

15. ***For Possible Action:*** Approve and authorize the General Manager to sign an agreement between Barnard of Nevada, Inc., and the Authority to provide Construction Manager at Risk pre-construction services in support of the Stage II Sloan 2160 and Lamb 2350 Pumping Station Expansion for an amount not to exceed \$20,000,000.

FINAL ACTION: Vice Chair Stewart made a motion to approve staff's recommendation. The motion was approved.

16. ***For Possible Action:*** Approve and authorize the General Manager to sign an agreement between GCW, Inc., and the Authority to provide engineering services on the Garnet Valley Wastewater System for an amount not to exceed \$17,000,000.

FINAL ACTION: Director Gibson made a motion to approve staff's recommendation. The motion was approved.

17. ***For Possible Action:*** Approve and authorize the General Manager to sign an agreement between Granite Construction Company and the Authority to provide Construction Manager at Risk pre-construction services in support of the Garnet Valley Wastewater System, Phase 2, for an amount not to exceed \$2,000,000.

FINAL ACTION: Director Black made a motion to approve staff's recommendation. The motion was approved.

18. ***For Possible Action:*** Approve and authorize the General Manager to sign an agreement between HDR Engineering, Inc., and the Authority to provide preliminary engineering design services on the Garnet Valley Water Transmission System for an amount not to exceed \$16,200,000.

FINAL ACTION: Vice Chair Stewart made a motion to approve staff's recommendation. The motion was approved.

19. ***For Possible Action:*** Approve and authorize the General Manager to sign an amendment increasing the existing agreement between Las Vegas Paving Corporation and the Authority to provide Construction Manager at Risk pre-construction services in support of the Lower Las Vegas Wash Stabilization Plan by \$7,000,000, resulting in a total amount not to exceed \$9,000,000.

FINAL ACTION: Director Jones made a motion to approve staff's recommendation. The motion was approved.

20. ***For Possible Action:*** Approve and authorize the General Manager to sign an agreement between Cavanaugh & Associates, P.A., and the Authority to provide professional services related to non-revenue water management program services in an amount not to exceed \$493,280.

FINAL ACTION: Director Jones made a motion to approve staff's recommendation. The motion was approved.

21. ***For Possible Action:*** Adopt the 2023 Water Resource Plan.

Colby Pellegrino, Deputy General Manager, Resources, gave an overview presentation on the water resource plan. A copy of her presentation is attached to these minutes.

FINAL ACTION: Director Black made a motion to approve staff's recommendation. The motion was approved.

22. ***For Possible Action:*** Adopt the 2023 Water Budget.

FINAL ACTION: Director Gibson made a motion to approve staff's recommendation. The motion was approved.

23. ***For Information Only:*** Receive an update from staff on water resources including, but not limited to, drought conditions in the Colorado River Basin, conservation programs and initiatives, activities on the Colorado River, and water resource acquisition and development.

Ms. Pellegrino gave a water resources update. A copy of her presentation is attached to these minutes.

Chair Kirkpatrick asked if there was a penalty if states did not work together to reduce Colorado River demands and comply with the federal government's mandate. Mr. Entsminger said that Nevada continues to work with the other six Colorado River Basin states and the federal government to come to a negotiated solution. To date, Nevada has been the only state to submit a comprehensive proposal to operate the river and will ask the federal government to analyze that proposal if the states are not able to come to a collaborative agreement.

Vice Chair Stewart asked if there was a correlation between lake levels and the amount of power able to be produced by Glen Canyon and Hoover Dams. Ms. Pellegrino said that power production declines as reservoir head goes down.

Director Jones asked if the federal government had indicated which river management scenario was most likely. Mr. Entsminger said that the government had not indicated which action was most probable, but that it could start managing the river by priority or take no action to allow the states to continue to work toward consensus.

NO ACTION REQUIRED

Public Comment

There were no speakers.

Adjournment

There being no further business to come before the Board, the meeting adjourned at 10:10 a.m.

**Copies of agenda items and minutes, including all attachments, are on file at the
Las Vegas Valley Water District, 1001 South Valley View Boulevard, Las Vegas, Nevada.**



IRPAC Approved Capital Program

Horizon Lateral	\$1,596.7 million
Garnet Valley Water System	129.8
Garnet Valley Wastewater System	120.0
Solar PV Project	20.8
Asset Management	229.7
Total MSCP Facility Projects	\$2,123.0
Future Water Supplies	587.7
Virgin & Muddy River Water	98.4
Minute 323	36.4
Arizona Water Banking	5.5
Total MSCP Water Supplies	\$728.0
Water Smart Landscaping	152.3
Resources/Conservation Contingency	188.3
TOTAL MSCP EXPENDITURES	\$3,165.6
Operating Capital	176.7
Capital Equipment	50.0
Lower Las Vegas Wash	122.5
TOTAL CAPITAL	\$3,514.8 million

3

IRPAC Approved Capital Program

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3

ITEMS 9-11: Solar Photovoltaic Project (Consent)

Item 9: Boulder City Lease Agreement:

- Allows the SNWA to develop a switchyard and construct a transmission line

Item 10: Renewable energy pricing adjustment

- Adjusts the price of energy sold by SNWA to its member agencies to reflect current market prices

Item 11: Solar Energy Power Purchase Agreement with Boulder Flats Solar

- Extends completion dates for the project and adds flexibility to the agreement for SNWA

ITEM 13: Garnet Valley Water System

Garnet Valley - Construction Manager at Risk for pre-construction services

CMAR will complete pre-construction services and establish a design that:

- Optimizes construction costs
- Addresses risk
- Assures timely completion of construction
- Prepare cost estimates and construction schedules that are achievable before construction begins

Agreement allows for the pre-purchase of long-lead materials

ITEM 14-15: Stage II Reliability Upgrades

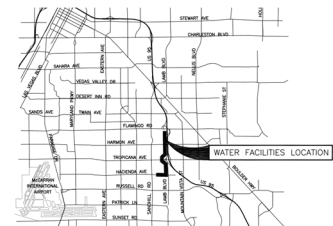
Stage II - Construction Manager at Risk for pre-construction services

STAGE II:

- New 90 million gallon per day pumping station
- 1.75 miles of 66-inch diameter pipeline
- Electrical Substation

CMAR:

- Establishes a project design
- Prepare cost estimates and construction schedules
- Includes terms to prepurchase long-lead materials



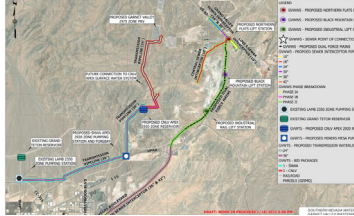
ITEM 16: Garnet Valley Wastewater System

Garnet Valley Wastewater System – Engineering Services

Garnet Valley Wastewater System:

- 8 miles gravity flow sewer line
- 3 wastewater lift stations
- 5.7 miles dual force main
- 6.3 miles sewer trunk line

Under this agreement, contractor will complete final engineering design and construction phase engineering services for the project.



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ITEM 17: Garnet Valley Wastewater System

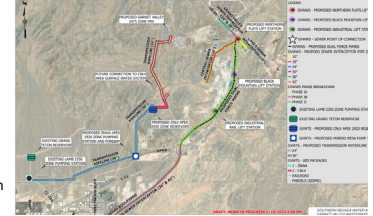
Garnet Valley Wastewater System Phase 2 – CMAR

Garnet Valley Wastewater System:

- 8 miles gravity flow sewer line
- 3 wastewater lift stations (Phase 2)
- 5.7 miles dual force main (Phase 2)
- 6.3 miles sewer trunk line (Phase 2)

CMAR:

- Establishes a project design
- Prepare cost estimates and construction schedules
- Includes terms to prepurchase long-lead materials



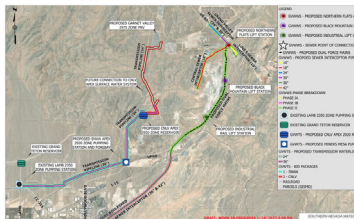
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ITEM 18: Garnet Valley Water Transmission System

Garnet Valley Water System – Engineering Design Services

Garnet Valley Water System:

- 15 miles transmission system pipeline
- 20 million gallon per day pumping station
- Power substation
- 5 million gallon above-ground reservoir



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ITEM 19: Lower Las Vegas Wash

Lower Las Vegas Wash
Pre-construction Services

Procure items with long lead times:

- Sheet piles
- Reinforced concrete box culverts
- Supersacks
- Geotechnical fabric
- Reinforcing steel



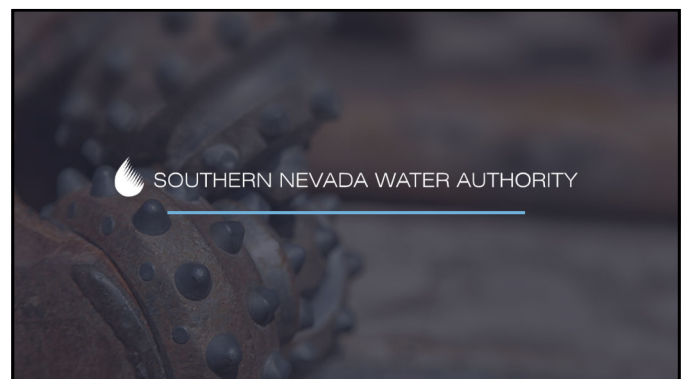
ITEM 19: Lower Las Vegas Wash

Lower Las Vegas Wash: January 17

\$6 million received
Federal Community Project
Funding (FY 23)



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2023 WATER RESOURCE PLAN

The SNWA reviews its water resource plan annually.

Key Inputs:

- Population forecast from the University of Nevada, Las Vegas Center for Business and Economic Research (CBER)
- Probabilistic water supply modeling using the U.S. Bureau of Reclamation's model
- Conservation progress (actual and projected)

2023 WATER RESOURCE PLAN


The SNWA's Water Resource Portfolio includes diverse resource options that will be used along with demand reduction tools to reliably meet the community's current and future water resource needs.

Permanent Resources	Temporary Resources	Future Resources
Colorado River (SNWA)	Southern Nevada Groundwater Bank	Transfers and Exchanges Permanent Future Supply Desalination & Colorado River Partnerships
Nevada Unused Colorado River (Non-SNWA)	Interstate Bank (Arizona)	Transfers and Exchanges Virgin River/Colorado River Augmentation
Tributary Conservation ICS	Interstate Bank (California)	Garnet & Hidden Valleys Groundwater
Las Vegas Valley Groundwater Rights	Intentionally Created Surplus (Lake Mead Storage)	Tikaboo & Three Lakes Valleys Groundwater

2023 WATER RESOURCE PLAN

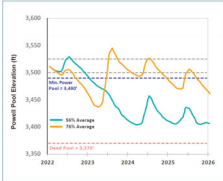
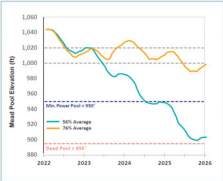
2023 Plan Changes:

- Updated water demand projections based on the new population forecast.
- Detailed conservation achievements and ongoing priorities.
- Incorporated the latest Colorado River supply outlook.
- Developed planning scenarios that reflect supply impacts under variable hydrology.
 - 13.7 MAFY
 - 11.0 MAFY



2023 WATER RESOURCE PLAN

Colorado River water users face increased risk and growing uncertainty due to changing hydrology.





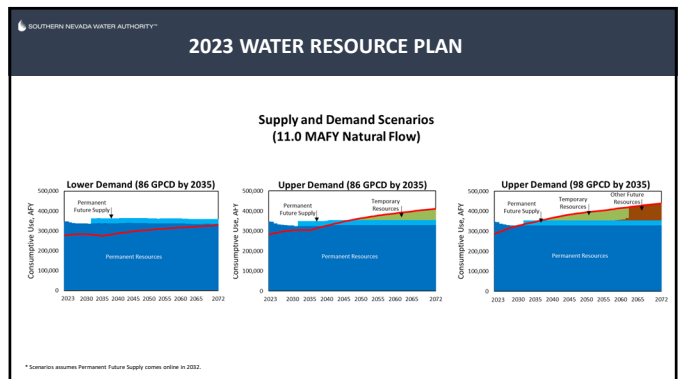
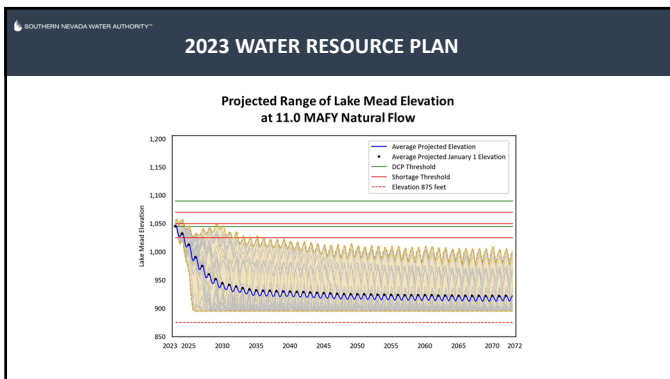
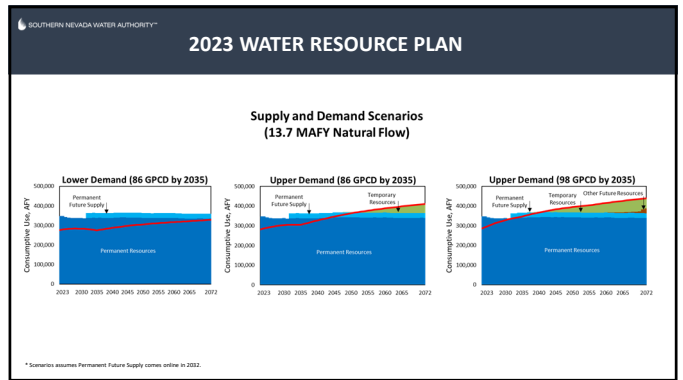
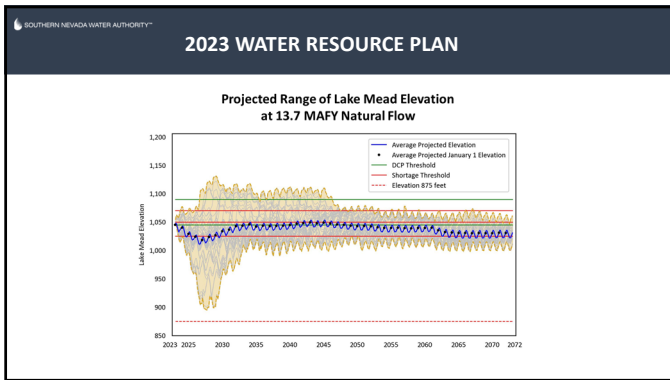
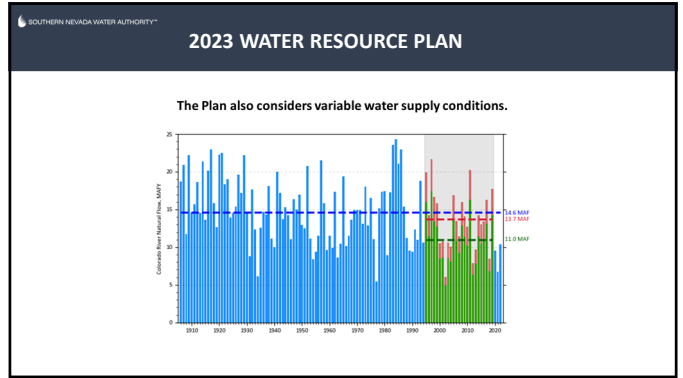
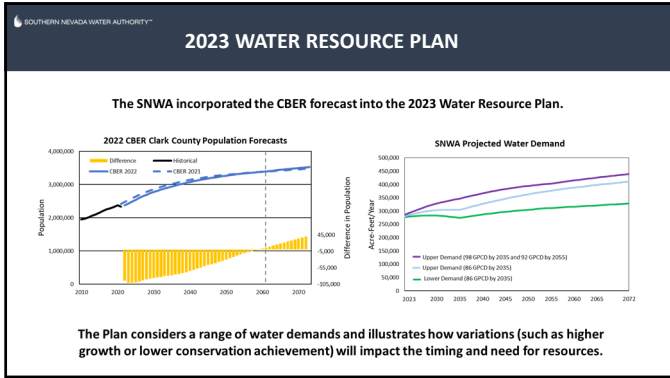
The states continue to work on a plan to achieve the target protection volume of 2 to 4 MAFY. This is in addition to existing shortages/DCP contributions.

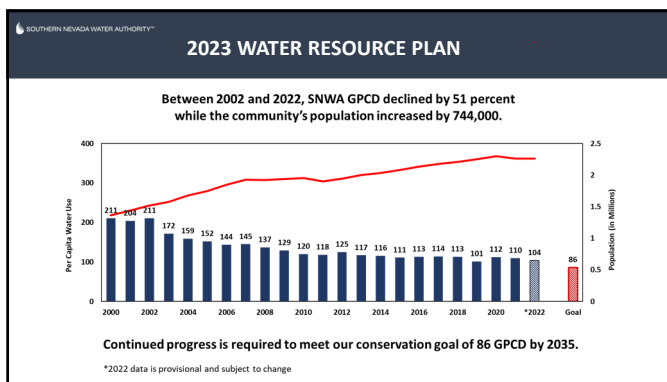
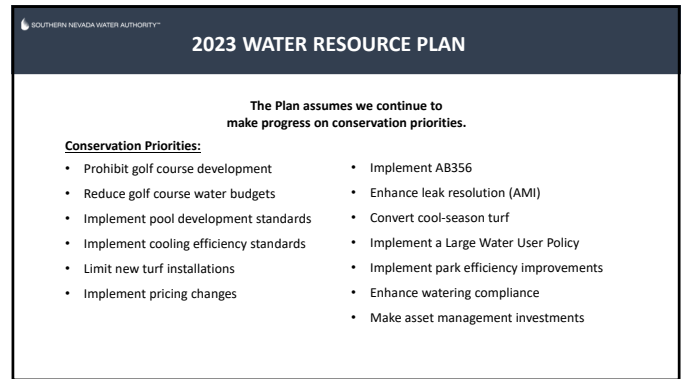
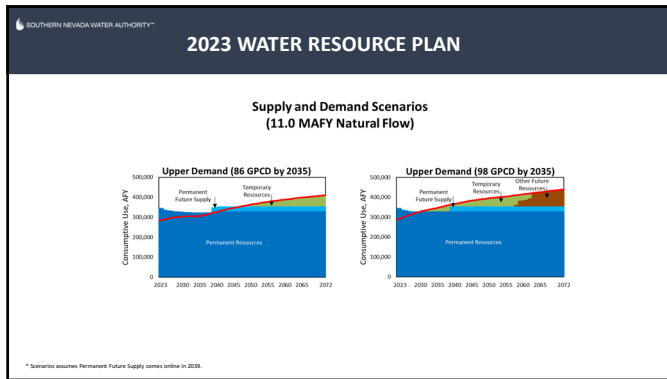
2023 WATER RESOURCE PLAN

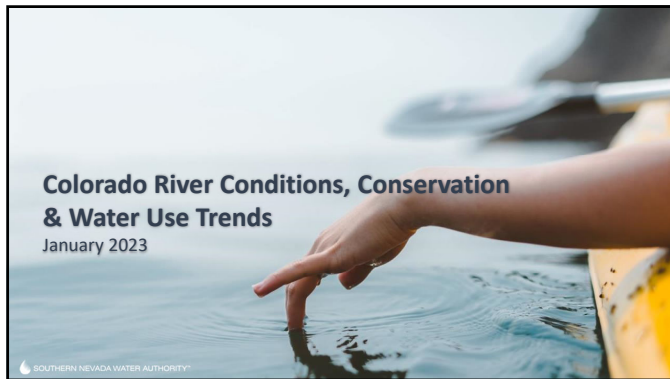
2023 Plan Changes:

- Nevada's maximum total obligation under the Interim Guidelines and DCP is 30,000 AFY through 2026.
- This amount will likely change when an agreement for achieving the protection volume has been reached.
- The 2023 Water Resource Plan considers reductions up to 40,000 AFY.
- Nevada is currently using about 223,000 AFY of its 300,000 AFY allocation.

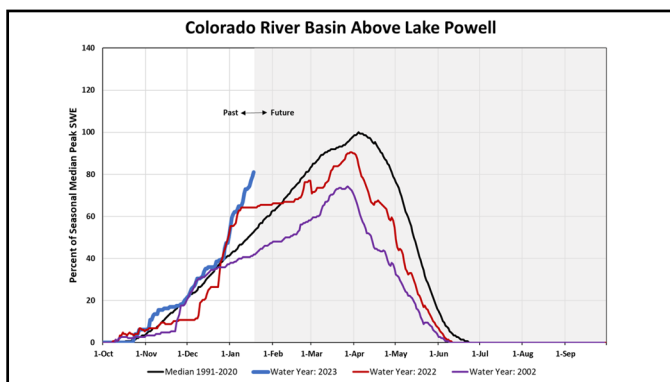








COLORADO RIVER CONDITIONS



PURPOSE OF THE FEDERAL REGISTER NOTICE

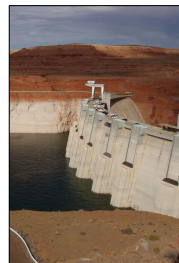
- Due to critically-low current reservoir conditions, and the potential for worsening drought which threatens critical infrastructure and public health and safety, the Department of the Interior recognizes that operational strategies must be revisited
- Potential impacts of low runoff conditions in the coming winter (2022-23) pose unacceptable risks to operations of Glen Canyon and Hoover Dams
- Accordingly, modified operating guidelines need to be expeditiously developed through a Supplemental Environmental Impact Statement (SEIS)
- Development of modified operating guidelines will inform operations in 2023-24; and may also inform potential operations in 2025-26

PURPOSE OF THE FEDERAL REGISTER NOTICE

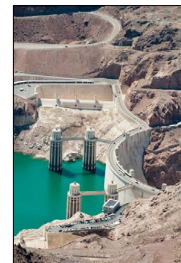
- The Notice formally announces the request for input on the scope of the analysis, potential alternatives, and identification of relevant information and studies by December 20, 2022
- It does not interfere with, supplant, or supersede the separate post-2026 guidelines development process announced in a Federal Register Notice published on June 24, 2022 (87 FR 37884)

COLORADO RIVER CONDITIONS

(as of November 28, 2022)

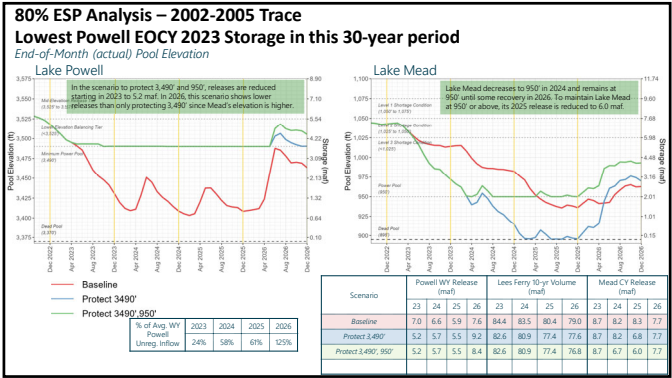
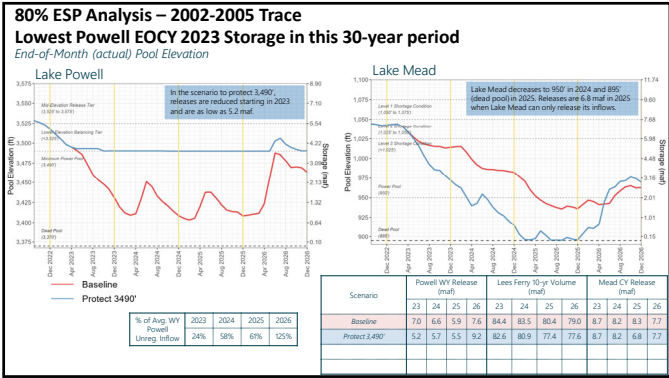
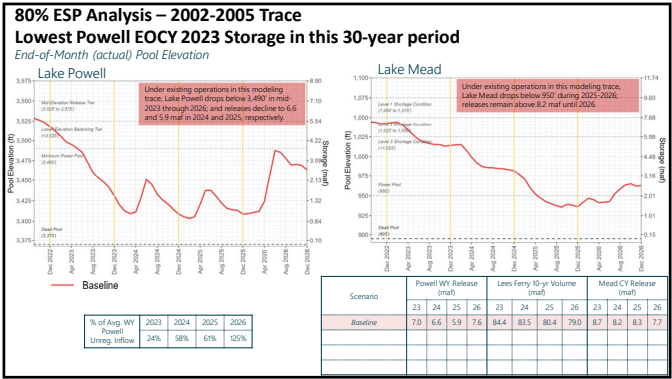
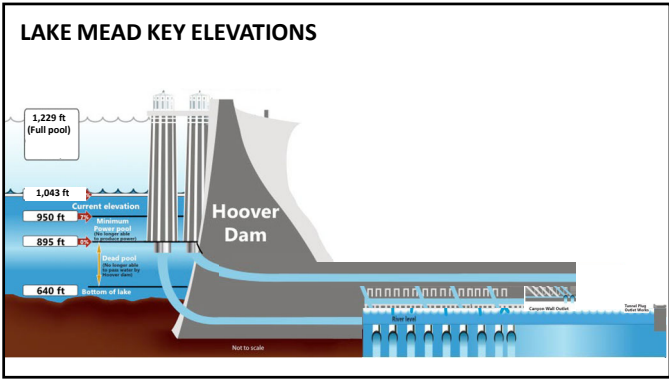
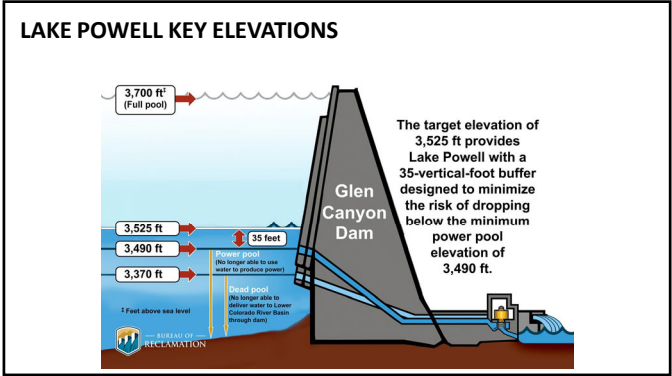
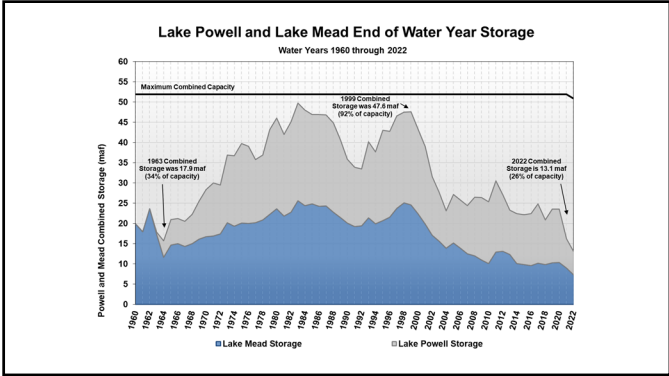


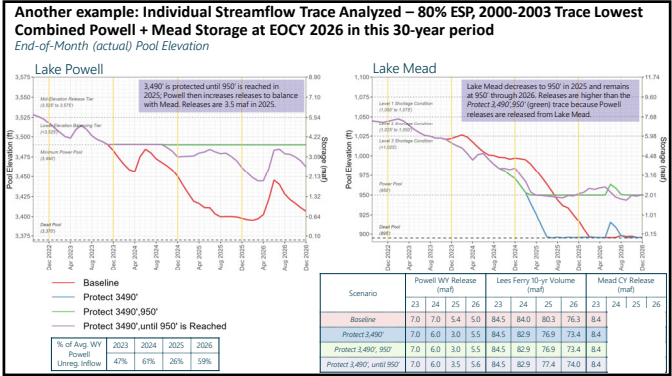
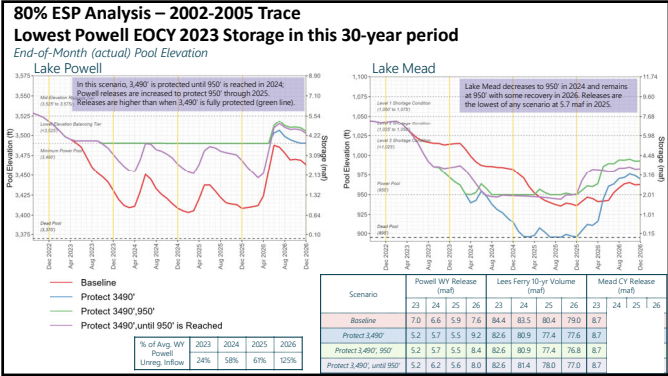
Lake Powell near Glen Canyon Dam



Lake Mead near Hoover Dam

- Driest 23-year period on record (2000-2022)
- Low inflows 4 of the past 5 years (37 to 63% of average)
- Lake Powell and Lake Mead at historically low water levels
 - Lake Powell current elevation is 3,528 feet at 25% of capacity
 - Lake Mead current elevation is 1,043 feet at 28% of capacity





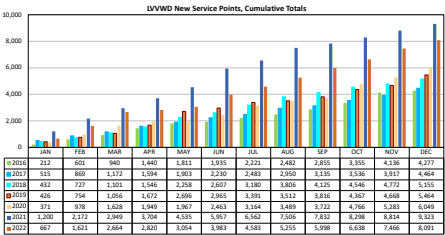
ANTICIPATED IMPACTS OF NO ACTION

- Critically low elevations at Lakes Powell and Mead
- Water delivery and operations limitations
- Loss of hydropower production
- Flow limitations in the Grand Canyon
- Limited flows for ecological programs
- Reduced water availability to water users basin-wide
- U.S.-Mexico Water Treaty obligation

WATER USE UPDATE

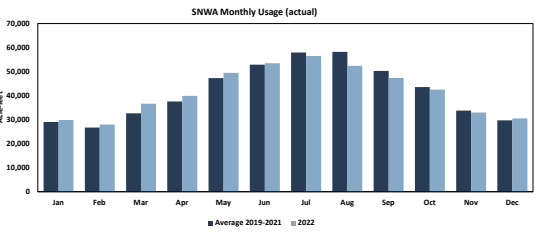
NEW SERVICE POINTS (LVVWD)

New service points (LVVWD) in 2022 were below 2021 levels but higher than totals for 2016-2020.



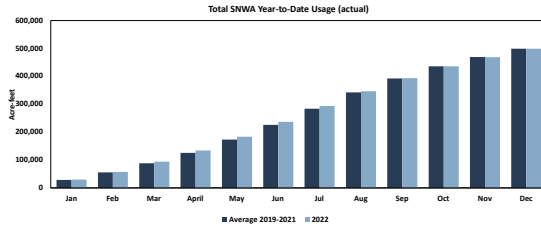
SNWA WATER USE

2022 SNWA water use was lower than the 3-year average in November and higher than the 3-year average in December.



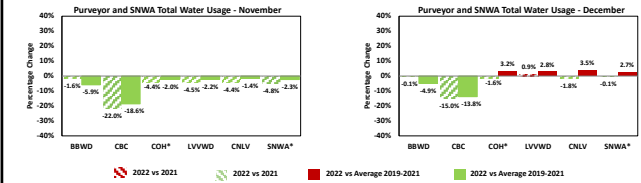
SNWA WATER USE

Total SNWA water use for January – November and January – December was lower than the 3-year average.



SNWA WATER USE

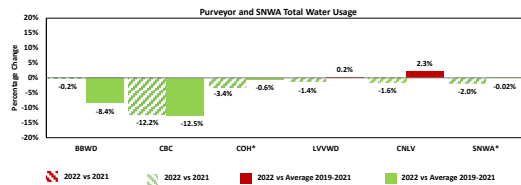
November 2022 SNWA water use was lower than 2021 and the 3-year average. December 2022 SNWA water use was lower than 2021 and higher than the 3-year average.



* The change in Henderson and SNWA water usage would have been lower without the addition of service to Black Mountain Industrial Complex, which was previously served by Basic Water Company.

SNWA WATER USE

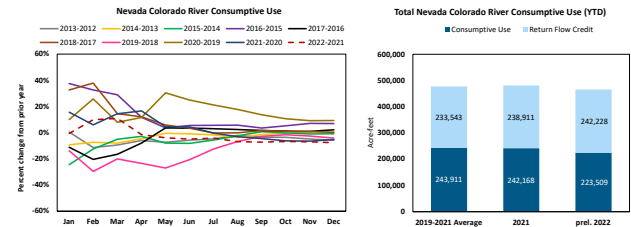
2022 SNWA water use was lower than 2021, and slightly lower than the 3-year average.



* The change in Henderson and SNWA water usage would have been lower without the addition of service to Black Mountain Industrial Complex, which was previously served by Basic Water Company.

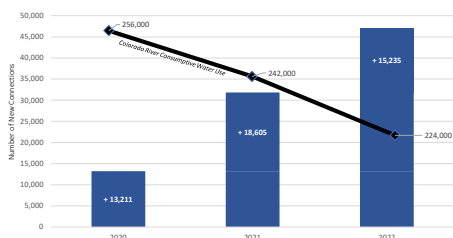
NEVADA COLORADO RIVER USE

2022 Colorado River consumptive use was well below 2021 and the 3-year average.



RESOURCE PLANNING: Conservation Matters

Despite the addition of more than 47,000 new connections since 2020, water use has declined by 12% in the same time period.



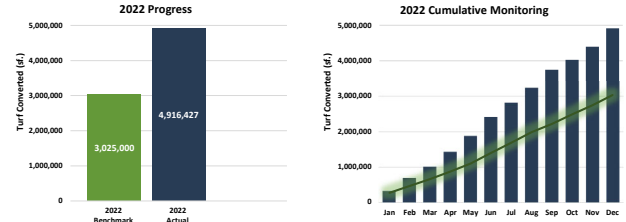
WATER CONSERVATION UPDATE

WATER SMART LANDSCAPES



WATER SMART LANDSCAPES

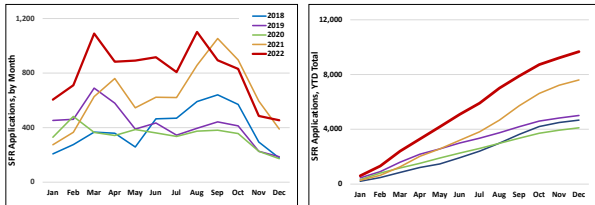
Homeowners converted more than 4.9 million sf. of turf in 2022, saving an estimated 274 million gallons of water annually.



WATER SMART LANDSCAPES

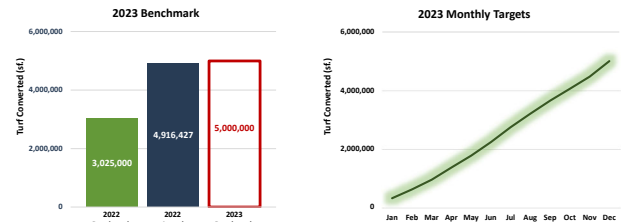
Single Family Residential WSL applications continue to outpace progress in recent years.

SFR WSL Applications by Month and in Total



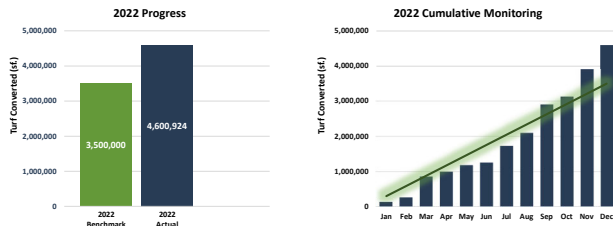
WATER SMART LANDSCAPES

The 2023 benchmark for SFR WSL turf conversions is 5.0 million square feet.



WATER SMART LANDSCAPES

Non-SFR customers converted more than 4.6 million sf. of turf in 2022, saving an estimated 256.7 million gallons of water annually.



WATER SMART LANDSCAPES

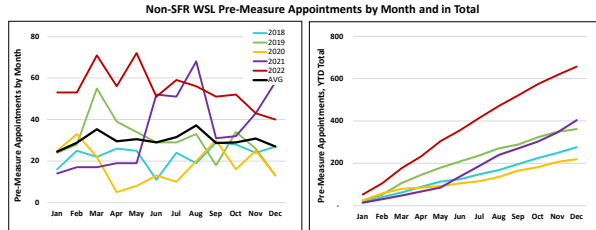
Water Smart Landscapes Conversion Highlights

- Western High School, ~50,000 sf.
- Peccole Ranch Community Association, ~43,000 sf.
- Mountain Gate Drive HOA, ~30,000 sf.



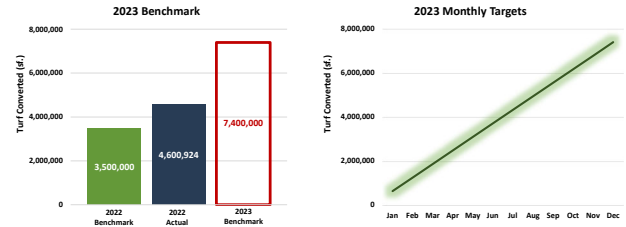
WATER SMART LANDSCAPES

Program interest among the Non-SFR water users continues to outpace recent years.



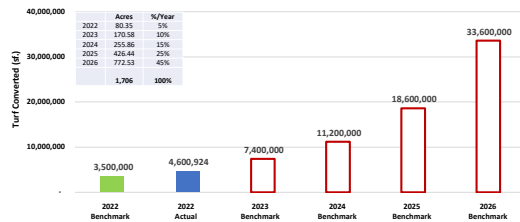
WATER SMART LANDSCAPES

The 2023 benchmark for non-SFR WSL turf conversions is 7.4 million square feet.



WATER SMART LANDSCAPES

AB356 turf conversions are expected to ramp up significantly in future years.

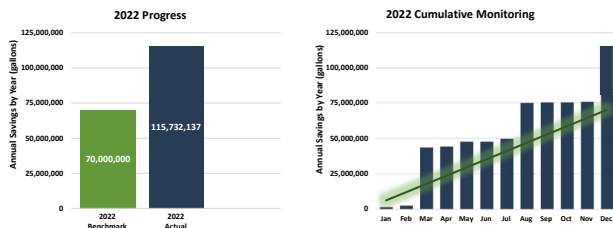


WATER EFFICIENT TECHNOLOGIES



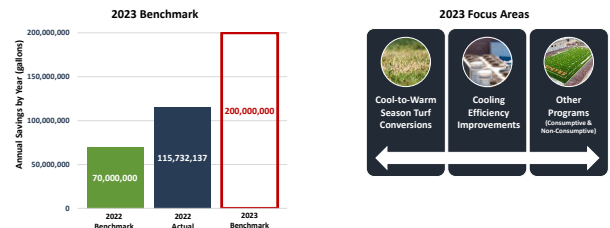
WATER EFFICIENT TECHNOLOGIES

WET program participants completed 45 projects in 2022, saving an estimated 115.7 million gallons of water.



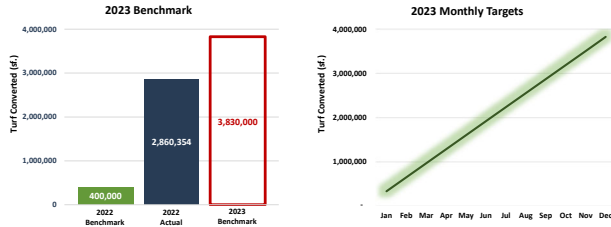
WATER EFFICIENT TECHNOLOGIES

The 2023 WET program water savings benchmark is 200 million gallons.



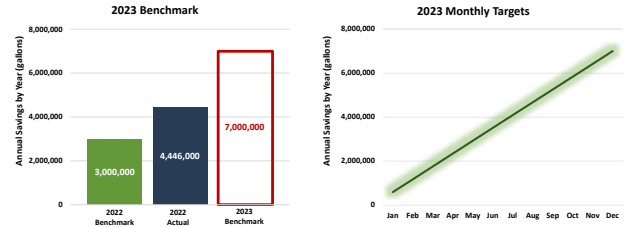
COOL-TO-WARM SEASON TURF CONVERSIONS (WET)

The 2023 benchmark for WET cool-to-warm-season turf conversions is 3.83 million square feet (80.4 million gallons).



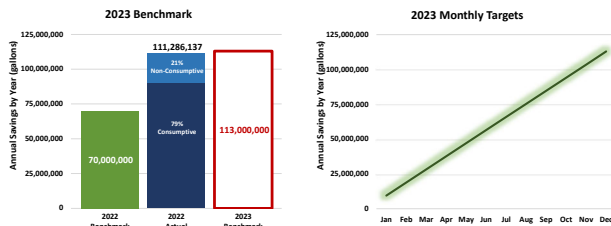
EVAPORATIVE COOLING REDUCTIONS (WET)

The 2023 water savings benchmark for WET evaporative cooling reductions is 7.0 million gallons.

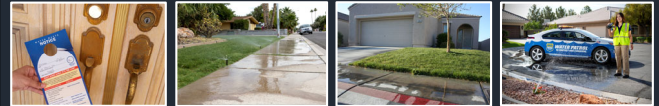


OTHER PROJECTS (WET)

The 2023 water savings benchmark for other WET projects is 113.0 million gallons.

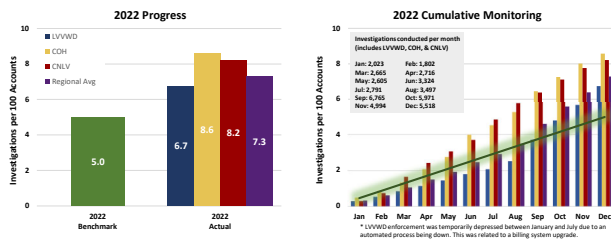


WATER USE COMPLIANCE



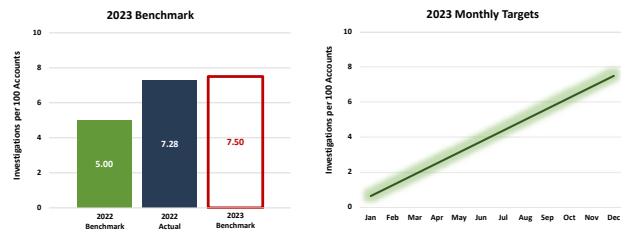
WATER USE COMPLIANCE

LVVWD, Henderson and North Las Vegas conducted more than 44,600 investigations in 2022, averaging 7.3 investigations per 100 accounts.



WATER USE COMPLIANCE

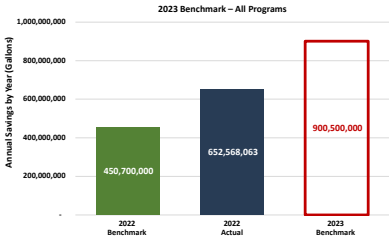
The 2023 benchmark for water use compliance investigations is 7.50 per 100 accounts.



SUMMARY

TOTAL SAVINGS FOR TRACKED INCENTIVES

The 2023 benchmarks reflect the trajectory needed to achieve our water conservation goal.



 SOUTHERN NEVADA WATER AUTHORITY™



HHC Desalination Plant LLC

Business Plan

Conserve water. Live sustainably

Prepared by:

Chris Hristov

President

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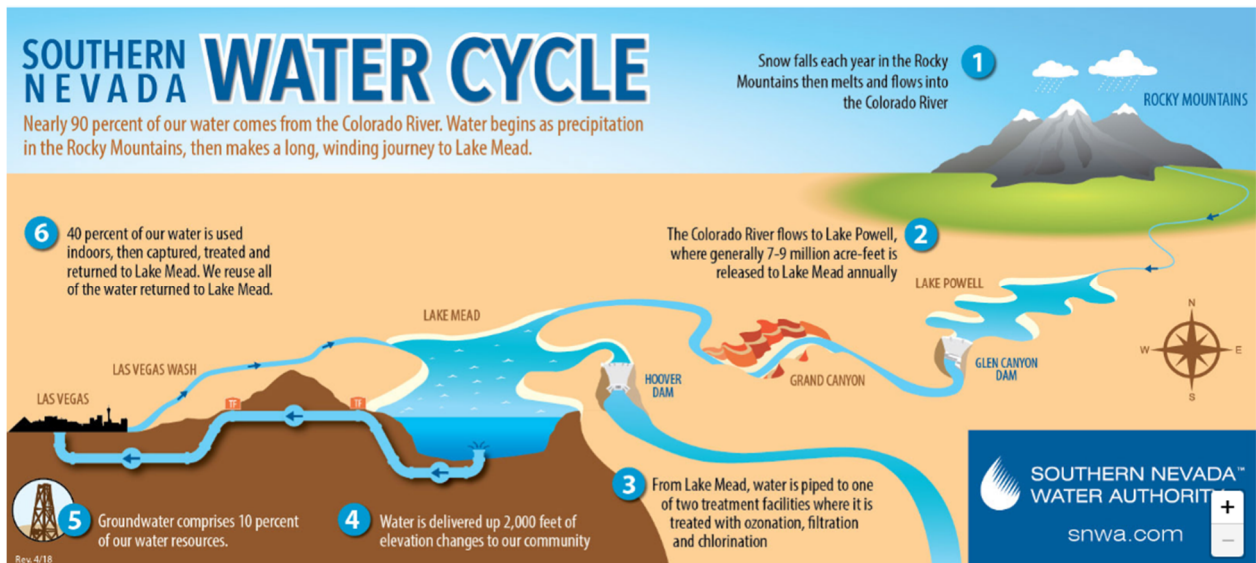
1. Problem

The Las Vegas Valley gets about 90 percent of its water from the Colorado River. The Colorado River is facing the worst drought in the river basins recorded history. The Federal Government announced a tier two water reduction in August 2022, limiting the amount of water Southern Nevada will be allowed to withdraw beginning in January 2023. In 2022, Southern Nevada used more water than ever before.

Clark County limit the size of new swimming pools to 600 square feet of surface area (residential pools only). New laws that will come into effect in 2027 would ban the ornamental greenery at office parks, in street medians and entrances to housing developments. This rule will exclude single-family homes, parks and golf courses.

Seven States are directly affected by the drought, Arizona, California, Colorado, New Mexico, Nevada, Utah, and Wyoming. "One month after states missed a federal deadline to propose ways to drastically cut their use of water supplied by the Colorado River, water managers who met for a seminar in Grand Junction said they still didn't have comprehensive solutions ready to help bolster the imperiled river system."

2022 is the 21st driest year to date over the past 128 years (January-November 2022)



2. Promotion

2.7 million people are affected by the Southern Nevada drought. New construction for custom homes has slowed down, partially due to water restrictions and limitations, such as limiting swimming pools to 600 square feet of surface area and banning water features.

The Clark County jurisdictions are now counting into the square footage of the swimming pools/spas, the area of the negative edges and collection basins. These restrictions are not concrete, and they can change at any time depending on the water drought. It seems that the swimming pool/spa construction is going to be limited even more with the predictions for any solution to the water drought.

3. Solution

In 2016, UNLV graduate Omar Alvarez wrote a research paper on different alternatives on how to reuse effluent water from Boulder City that is being wasted into the desert ("In 2021, 250 million gallons were lost after one use". After years of looking into alternatives, "The SNWA would build and pay for a \$26 million pipeline from Boulder City's treatment facility to Henderson's treatment plant...". Small portion of the wasted water from Boulder City is sold and used for construction dust control and other nonhuman use and the majority is "pumped into nearby evaporation ponds".

The business plan proposes to use 400,000-500,000 gallons per month of the wastewater, treat it in a plant next to the wastewater treatment plan in Boulder City and use it for swimming pools over 600 square feet. The wastewater will be purchased, treated and then sold to homeowners who would like to build larger swimming pools/spas and water features. The pools will be built in a closed-system, and they will not be connected to the city water. These pools will be serviced monthly, and water will be brought to compensate for any loss and/or evaporation. To ensure that homeowners will not connect to the city water later, the pool maintenance and supply company will keep records of the water delivered to the site and keep monthly log. Furthermore, existing pool homeowners will be offered incentive to switch to this "close-system" pool by retrofitting them and use reused water. There are even more alternative uses beyond this proposal that can help reuse and conserve water that is being wasted. The daily wasted water from Boulder City's treatment plan discharged into the desert is approximately 1mgp (million gallons per day).

4. Competitive advantage

Currently this idea has not been explored. After meeting with Southern Nevada Water Authority and City Council in Boulder City, we have received positive feedback. This proposal will require organization which will ensure that the plan will properly function and there will be no advantage taken from the situation by all parties. Below are anticipated steps of getting started

- 4.1 Submit business plan to Boulder City Council and Southern Nevada Water Authority and receive acknowledgement that the plan is acceptable
 - 4.1.1 Timeframe – 2 weeks
- 4.2 Submit the first swimming pool over 600 square feet along with the contracts (between homeowner and desalination company and homeowner and pool water servicing company)
 - 4.2.1 Timeframe – 2 weeks
- 4.3 Receive approvals/permits
 - 4.3.1 Timeframe – January 20th
- 4.4 Start construction of plant
 - 4.4.1 Timeframe – February 1st
- 4.5 Start operations and water distribution
 - 4.5.1 Timeframe – March 20th

5. Business Model

5.1. Contracts

5.1.1. Agreement to draw 400,000-500,000 gallons of water per month with guaranteed increase in usage

5.1.2. Lease for land next to Boulder City Water Treatment Plant

5.1.3. Letter of acceptance from SNWA for this type of project

5.1.4. Agreement from homeowner

5.1.4.1. Acknowledgement that swimming pool, spa, water features are on closed loop system, and they will be filled by a monthly service company

5.1.4.2. Acknowledgement that water service company will keep a log of water usage (estimated evaporation vs water refill)

5.1.4.3 Acknowledgement that if any of the rules and regulations are not followed, the water for the entire property will be shut off and fees will apply from the City

5.2. Building department documents

5.2.1. Pool plan

5.2.2. Structural details and calculations

5.2.3. Closed loop system

5.2.4. Homeowner acknowledgements

5.3. Sustainable design

Bond will be provided ensuring that the water supply company will operate and supply water to the closed-loop pools for at least 10 years. If by then, Lake Mead water levels return to normal, homeowners will have the option to connect back to City water.

However, with time, different implementations will be done to reduce the cost of treated water. One of the ideas is to use solar panels to power the desalination plant. Since there are already solar panels nearby, this idea might be not far.

5.4. Treatment and supply of water

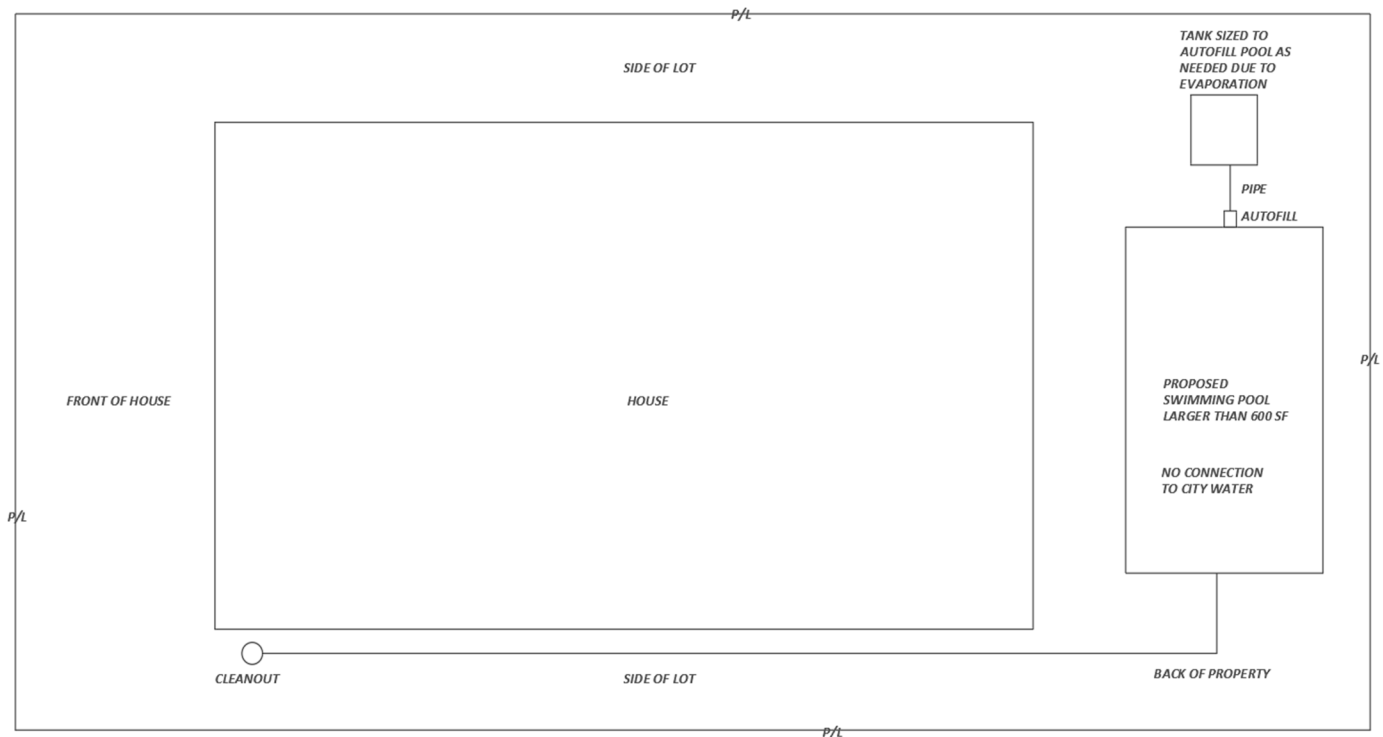
5.4.1. Water will be treated at the site with RO (reverse osmosis) and distributed by trucks. Other treatment methods will be discussed as well

5.4.2. Water testing will be conducted on regular basis to ensure water quality

5.5. Facility

5.5.1. Facility will be constructed to house the equipment and holding tanks

5.3. Closed-Loop pool system



A TYPICAL SWIMMING POOL PLAN

6. Target customers

New clients who want to build swimming pools over 600 square feet and are ok with the cost of water. Also, existing owners who want to switch to reusable, sustainable, conservational, green living such as solar panels, desert landscaping. Receive credit or incentive from the City.

6.1. Numbers to compare to

6.1.1. Drinking bottled water. Case of 24 bottles for \$2.50 = \$1.6/gallon

6.1.2. Water Rates per LVVWD in Tier 3 = \$3.88/1,000 gallons = \$0.00388/gallon

6.1.3. Proposed sale of treated water for swimming pool/spa/water feature = \$2/gallon

7. Cited

- 7.1. <https://www.lvwd.com/conservation/measures/index.html>
- 7.2. <https://www.cpr.org/2022/09/17/colorado-river-drought-basin-states-water-restrictions/>
- 7.3. <https://www.drought.gov/states/Nevada/county/Clark>
- 7.4. <https://www.snwa.com/water-resources/current-water-supply/index.html>
- 7.5. Alvarez, Omar. "Potential Water Reuse Alternatives for Boulder City, Nevada", 2016
- 7.6. <https://bouldercityreview.com/news/city-may-be-ready-to-boost-water-recycling-72561/>

8. Site of project desalination plant

