

## **MEETING AGENDA**

### **Southern Nevada Water Authority Integrated Resource Planning Advisory Committee 2020**



**Wednesday, January 29, 2020**

**3:00 p.m.**

**Colorado River Conference Rooms, Southern Nevada Water Authority  
100 City Parkway, Seventh Floor, Las Vegas, Nevada**

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*All items on the agenda are for action by the Advisory Committee, unless otherwise indicated. Items may be taken out of order. The board may combine two or more agenda items for consideration, and the board may remove an item from the agenda or delay discussions relating to an agenda item at any time.*

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#### **CALL TO ORDER**

#### **COMMENTS BY THE GENERAL PUBLIC**

NO ACTION MAY BE TAKEN: This is a period devoted to comments by the general public pertaining to items on this agenda. If you wish to speak to the Advisory Committee about items within its jurisdiction, but not appearing on this agenda, you must wait until the “Comments by the General Public” period listed at the end of this agenda. Please limit your comments to three minutes or less. No action may be taken upon a matter not listed on the posted agenda.

1. *For Possible Action:* Approve agenda and minutes from the January 8, 2020 meeting
2. *For Information Only:* Receive a presentation on the Authority’s financial structure
3. *For Possible Action:* Discuss capital funding scenarios, and, if appropriate, make recommendations to the rate model

#### **COMMENTS BY THE GENERAL PUBLIC**

NO ACTION MAY BE TAKEN: At this time, the Advisory Committee will hear general comments from the public on matters under the jurisdiction of the Committee. Please limit your comments to three minutes or less. No action may be taken upon a matter not listed on the posted agenda.

**THIS MEETING HAS BEEN PROPERLY NOTICED AND POSTED IN THE FOLLOWING LOCATIONS:**

City of Boulder City, City Hall  
401 California Avenue  
Boulder City, NV

City of North Las Vegas, City Hall  
2250 Las Vegas Boulevard North  
North Las Vegas, NV

City of Henderson, City Hall  
240 Water Street  
Henderson, NV

Clark County Government Center  
500 S. Grand Central Parkway  
Las Vegas, NV

Las Vegas Valley Water District  
1001 S. Valley View Boulevard  
Las Vegas, NV

Southern Nevada Water Authority  
100 City Parkway  
Las Vegas, NV

Clark County Water Reclamation District  
5857 East Flamingo Road  
Las Vegas, NV

City of Las Vegas, City Hall  
495 South Main Street  
Las Vegas, NV

The Southern Nevada Water Authority makes reasonable efforts to assist and accommodate persons with physical disabilities who desire to attend the meeting. For assistance, call Jordan Bunker at (702) 258-7296 at least 24 hours prior to the meeting.

Agendas for this meeting and others are available online. Visit [snwa.com](http://snwa.com).



## INTEGRATED RESOURCE PLANNING ADVISORY COMMITTEE 2020 MEETING SUMMARY

*January 8, 2020, 3:00 p.m.*

*Colorado River Conference Rooms, Southern Nevada Water Authority  
100 City Parkway, 7th Floor, Las Vegas, Nevada*

IRPAC members present:	Ken Evans	Peter Guzman
	Carol Jefferies	Andy Maggi
	Bob Murnane	Jonas Peterson
	John Restrepo	Virginia Valentine

IRPAC members absent:	Paul Moradkhan	Tom Morley
	Phil Ralston	

Staff present:	John Entsminger	Dave Johnson
	Julie Wilcox	Kevin Bethel
	Ken Albright	Andy Belanger
	Tabitha Fiddymment	Peter Jauch
	Greg Kodweis	Alisa Mann
	Doa Meade	Frank Milligan
	Colby Pellegrino	Katie Horn
	Jordan Bunker	

Others present:	Terry Murphy, Facilitator
	Guy Hobbs, Financial Consultant

### **PUBLIC COMMENT**

Ed Uehling cited a letter that he wrote to the committee members. He discussed the previous IRPAC meeting and stated that there are other water resource alternatives than those presented by SNWA staff. Mr. Uehling criticized SNWA's California water banking efforts. He suggested that water stay in Southern Nevada. The letter is attached to this meeting summary.

### **SUMMARY OF ACTIVITIES**

The Southern Nevada Water Authority's (SNWA) Integrated Resource Planning Advisory Committee 2020 (IRPAC 2020) met on Wednesday, January 8, 2020. The meeting began at 3:06 p.m.

#### *#1 Approve agenda and minutes from the December 18, 2019 meeting.*

Virginia Valentine motioned to approve the agenda and minutes from the December 18<sup>th</sup> meeting. The agenda and minutes were approved.

#### *#2 Receive an overview of the Southern Nevada's water conservation efforts.*

Colby Pellegrino, Director of Water Resources, gave an overview of the SNWA's water conservation efforts since its formation in 1991, which included adoption of its first Drought Plan in 2003. Colby noted that throughout the presentation, there are conservation-related recommendations from staff, that if implemented or evaluated, could reduce water use and achieve the SNWA Conservation Goal.

She discussed the Out-of-Valley Reuse Policy, which was approved by the SNWA Board in 2017 and is intended to maximize water supplies in new areas of the water system. Virginia Valentine asked what changes would be made to the policy. John Entsminger, General Manager, stated that the policy has been adopted by the SNWA Board of Directors, but has not been adopted by SNWA member agencies or embedded into local ordinances or codes, and therefore lacks any regulatory authorities. He stated that as development and expansion occur, putting these principles and policies into a regulatory framework and having more uniform ordinances across member agencies is needed.

Ms. Pellegrino went on to discuss the SNWA's Conservation Plan, which describes current water management measures. She also reviewed several new efforts and strategies that have been implemented since the plan's last update and stated that implementing the conservation plan is estimated to reduce Southern Nevada's gallons per capita per day (GPCD) estimate by 3.42 by 2035.

Despite relative success of SNWA's conservation efforts, she warned that climate change and system age will make it more difficult to achieve the SNWA's 105 GPCD conservation goal. Recognizing this issue, SNWA formed an internal workgroup to consider new approaches to conservation and reducing water use. She reviewed the workgroup's goals which include improving enforcement and water efficiency, leveraging technology and analytics, improving conservation outreach and improving overall system efficiency, among others.

In response to a slide that showed Southern Nevada's GPCD history, Bob Murnane asked why there was such a decrease in GPCD between 2003 and 2004 (down 39 GPCD). Mr. Entsminger replied that it the first time the Southern Nevada community was receiving such a strong drought message and the response was overwhelming. Since then, message saturation, among other things, has led to more conservation stagnation compared to previous years.

Ms. Pellegrino moved on to the issue of non-functional turf in the community, recognizing that turfgrass consumes a lot of water, and non-functional turf is a wasteful use of water resources. She reviewed the Water Smart Landscape (WSL) program and noted its significant achievements as it has helped remove 193 million square feet of turf, resulting in a savings of 130 billion gallons of water. She discussed removing remaining non-functional turf, and clarified that non-functional turf does not include functional grass in parks, ball fields, schools, etc. Under the current WSL program, SNWA is removing approximately 1 percent of available non-functional turf per year. John Restrepo asked what the SNWA attributes to the stagnation of the program. Mr. Entsminger stated that the SNWA has already gotten the low hanging fruit, those willing to participate in the program. Ms. Valentine stated that some HOAs make it extremely difficult to remove existing turf and require a certain amount of foliage at residences. Mr. Entsminger added that commercial conversions are also difficult because it is difficult to track down a person authorized to approve the conversion. Jonas Peterson asked if new non-functional turf coming into the market is monitored and tracked. Ms. Pellegrino stated that new non-functional turf is not specifically tracked, but that building codes, introduced in 2004, are intended to limit new non-functional turf coming in as communities are bound by these regulations, unless they are under old development agreements that pre-date changes to the codes. Ms. Pellegrino stated that there are still conservation opportunities available and that increasing WSL conversions by 56 acres per year through 2035 could yield a 4.46 GPCD savings.

The committee had a brief discussion about WSL opportunities at schools, and asked questions if there was resistance from schools to participate. Ms. Pellegrino reported that the school district is interested in converting non-functional turf to water efficient landscaping and playing fields to synthetic turf, but

the largest obstacle is the capital outlay as the SNWA's program does not fully fund the conversion to synthetic turf.

Mr. Evans asked if the SNWA has surveyed the community as to why they are not participating in the program. Ms. Pellegrino responded that much of the targeted outreach has been done with the HOAs and that much of the feedback from HOAs is that people in the communities like the grass. Mr. Peterson suggested the community might be at a point where we need to start looking at doing more than increasing incentives, and instead evaluate changing service rules, codes, and ordinances. Andy Maggi agreed with Mr. Peterson's comments.

Ms. Pellegrino discussed the Non-Functional Turf Resolution, which was adopted by the SNWA Board in 2019, which aims to further curb installations of new, ornamental turf. She recommended that updates are needed to service rules, codes and ordinances to consistently implement new turf restrictions across the SNWA member agency service area. Mr. Evans asked about the committee's advocacy role, to which Ms. Pellegrino responded the recommendation could be that it is put into all the member agencies codes and service rules so that it can be enforced with uniform application.

Ms. Pellegrino discussed a relatively new SNWA incentive program that offers a reduced rebate to schools and parks that convert functional cool-season turf to more water-efficient varieties, noting that increased program participation could yield a 0.30 GPCD savings. Mr. Evans suggested educating and managing aesthetic expectations when converting to warm-season turf.

Ms. Pellegrino then turned the conversation from non-functional turf to SNWA's watering restrictions. She noted that landscape watering compliance has been part of conservation efforts for many years, and that improving compliance with seasonal watering restrictions remains a high priority. To support this, the SNWA has increased education, advertising and outreach efforts, and is conducting a series of pilot studies to better understand customer response, including one using ITRON meters. She stated that achieving higher levels of compliance could yield a 5.05 GPCD water savings.

The committee discussed advanced meter reading technologies. Committee members asked if advanced metering infrastructure (AMI) technology is a full meter change-out, and Ms. Pellegrino stated that all LVVWD meters have been changed and that the cities of North Las Vegas and Henderson are in the process of implementation. Mr. Entsminger noted that full implementation of this technology is lengthy, as the investment is significant, and the process requires permitting and putting physical assets on the ground.

Ms. Pellegrino also discussed increasing compliance with full-scale deployment of smart controllers (automated time-of-day & day-of-week compliance) and expanded advertising and outreach. Mr. Evans asked how the committee could advocate to which Ms. Pellegrino responded that the conservation opportunity is to implement smart controller technology to automate landscape watering compliance and increase outreach and enforcement efforts to facilitate participation from current and future customers.

Ms. Pellegrino moved on to customer leaks. She shared that LVVWD is using meter data to identify leaks and alert customers and is implementing new metering and billing technology to provide real-time water use information and analytics. She stated that providing near real-time leak notification using AMI technology could yield a 4.97 GPCD water savings.

Committee members asked clarifying questions about how existing leak assistance programs work, how they're budgeted and if any proactive leak programs exist. Ms. Pellegrino reiterated that adding AMI will help detect small leaks on property and ultimately, save water.

Ms. Pellegrino moved to the topic of evaporative cooling – the second largest consumptive use of water in Southern Nevada. To reduce consumptive use from cooling towers, the SNWA is exploring pilot programs to help shape a more efficient cooling program that could complement the existing Water Efficient Technologies (WET) program – an incentive program that currently rebates cooling tower replacements/upgrades for consumptive use reductions. Reducing consumptive water loss from evaporative cooling by 20 percent could yield a 2.23 GPCD water savings. Following committee questions about requiring aging publicly-owned buildings to upgrade or replace their equipment and what the impact of new technologies would be on energy, Ms. Pellegrino responded that the pilot tests will help provide more information to these questions.

Ms. Pellegrino then turned to high water users – large water users who use in excess of 1 million gallons per month. While this customer group is relatively small, there is an opportunity to reduce water use in this sector by establishing an efficiency review policy and process to encourage efficient development and disincentivize consumptive use. Staff estimates implementing an efficiency review policy and process for new large water users could yield a 1.09 GPCD water savings.

Ms. Pellegrino outlined system losses or water lost in the water system from leaks. While Southern Nevada's water system is highly efficient, Ms. Pellegrino warned that investments in ongoing and proactive asset management efforts are needed to maintain current levels of system loss, which is estimated to yield a 1.7 GPCD savings over time.

Ms. Pellegrino noted that public outreach is essential to SNWA's conservation programs, especially to encourage water users to comply with the mandatory watering schedule. She noted a recent outreach proposal from the Las Vegas Raiders and noted that the SNWA is also exploring other opportunities with a similar investment to yield water savings. Ms. Pellegrino noted that SNWA launched a new major compliance campaign in 2019 and is exploring other opportunities to reduce water use and reach the target audience. She reviewed the following chart:

Description	Annual Average Estimated Water Savings	Annual Average Estimated Cost
Raiders Sponsorship	900 million gallons	\$2.5 million/year (10 year commitment)
Outreach Augmentation	900 million gallons	\$2.08 million/year
Enhanced Compliance	1.2 billion gallons	\$2.39 million/year
Expanded Non-SFR Engagement	1.7 billion gallons	\$2.5 million/year
Water Loss Mitigation	700 million gallons	\$2.5 million/year

The committee asked a number of questions regarding the Raiders proposal, the current Vegas Golden Knights outreach partnership, and how other potential outreach efforts compare. Mr. Entsminger and Ms. Pellegrino answered committee questions, affirming that advertising dollars are spent with local firms and that the existing partnership with the Vegas Golden Knights is a three-year agreement. Mr.

Restrepo asked how annual average estimated water savings were calculated. Ms. Pellegrino noted that they are best estimates based on the way existing programs and water use react to advertising campaigns. Ms. Valentine expressed concern with entering into a 10-year agreement with the Raiders to which other members of the committee agreed. Mr. Restrepo suggested that other methods and ways to spend that amount of money could have a similar if not greater impact. Ms. Valentine referenced the proposal's conversion of two CCSD football fields per year and suggested the SNWA do that without a partner or sponsorship. Mr. Maggi noted his concern with the length of the Raiders agreement and asked if the primary target audience would be locals or in-game visitors. Mr. Guzman agreed that a 10-year commitment is concerning but added that advertising and outreach is important. Mr. Entsminger recognized the committee's concerns and reiterated the importance of this committee in shaping what the SNWA's outreach efforts look like.

Ms. Pellegrino summarized the conservation presentation, noting that meeting the conservation goal requires a comprehensive approach to reduce water use across all customers and sectors.

Following Ms. Pellegrino's presentation, Kevin Bethel, Chief Financial Officer, presented financial model assumptions and reviewed the proposed capital costs as presented at previous meetings, which totaled \$3.5 billion. He presented this information to the committee for feedback, as he indicated his plan to present initial financial model runs at the next meeting. He reviewed initial model assumptions, including capital costs (\$3.5 billion), CPI index, population growth, the reserve policy and other variables. He then reviewed current SNWA funding sources but narrowed the scope of the initial model run to the Connection Charge, the Infrastructure Charge and the Commodity Charge.

Mr. Bethel also committed to model rate impacts to a set of sample customers and asked the committee to review a proposed list. Mr. Restrepo requested the sample customer list include a Nevada System of Higher Education campus and Ms. Valentine requested more information on the customers themselves such as size and location. Mr. Bethel committed to providing that information at the next meeting.

Following no more comments or questions from committee members, Ms. Murphy closed the meeting and stated that the next meeting will be held January 29<sup>th</sup>.

#### **PUBLIC COMMENT**

Ed Uehling asked how many consumptive gallons were saved last year with the expenditure of \$2 million outreach dollars. He mentioned that the larger issue is the California water bank. He asked if the GPCD conservation goal includes the tourists that visit Southern Nevada. He also reiterated his suggestion of expanding the tiered water system.

#### **ADJOURNMENT**

The meeting was adjourned at 5:21 p.m.

8January2020

Dear IRPAC Committee Members

As has been the case for the last decade (and perhaps longer) I have been disappointed by how the traditional lack of transparency of SNWA is used in its Citizen Meetings (IRPAC) to discourage public input and, incredibly, input by the members of the IRPAC committee itself.

This is done primarily by withholding meeting information from the Committee until just before each meeting. If back-up information is withheld from you—that is, not posted together with the agenda—NRS regulations permit it to be withheld from the public, also. The second manner used by SNWA to prevent outside input is for its contracted moderator to ask if there are any members who might object to proceeding on the suggestions of the SNWA staff.

This scenario played out at last month's meeting of IRPAC:

1. The backup information was not released until just before the meeting;
2. After presenting challenges to providing sufficient water for SNWA's customers in future years and decades, SNWA staff presented several unusually creative alternative solutions;
3. The moderator then asked committee members for additional suggestions (none were presented) and eventually asked if any committee member objected to the use of the material presented by SNWA as the basis for moving forward and the meeting was closed.

I have contended for years that there are a number of other alternatives. These have included funding of desalinization plants in California, so I'm happy to see that that has been placed on the table. However, because I believe there are other alternatives that don't cost billions of dollars and, in fact, will CREATE money for SNWA, I asked the moderator what procedure I could follow so these other alternatives could be considered. She reluctantly invited me to request permission of the committee at your meeting today to present these alternatives at a future meeting.

Hopeful that I may be able to make such a presentation, I thank you all very much.

Ed Uehling  
702-808-6000  
[Ed.uehling@yahoo.com](mailto:Ed.uehling@yahoo.com)

PS—I serve on the Citizens' Committee of the Clark County Regional Flood Control District. CCRFCD provides each of us one week in advance complete backup data of everything that will be discussed at each of our meetings. All that material is available at the same time to the public. That agency could use the tactics of SNWA and hide information from us Committee Members and from the public, but it doesn't. In fact, that agency bends over backwards to get input from both the public and the members invited to serve on its citizen committee.



# CAPITAL PROJECT FUNDING

JAN. 29, 2020



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## TOTAL CAPITAL COST ASSUMPTIONS

Horizon Lateral	\$1,596.7 million
Garnet Valley Water System	129.8
Garnet Valley Wastewater System	120.0
Boulder City Wastewater System	26.0
Solar PV Project	20.8
Asset Management	<u>229.7</u>
<b>Total M CCP Facility Projects</b>	<b>\$2,123.0</b>
Future Water Supplies	587.7
Virgin & Muddy River Water	98.4
Minute 323	36.4
Arizona Water Banking	<u>5.5</u>
<b>Total M CCP Water Supplies</b>	<b>\$728.0</b>
Water Smart Landscaping	152.3
Resources/Conservation Contingency	<u>162.3</u>
<b>TOTAL M CCP EXPENDITURES AS PROPOSED</b>	<b>\$3,165.6</b>
Operating Capital	176.7
Capital Equipment	50.0
Lower Las Vegas Wash	<u>122.5</u>
<b>TOTAL CAPITAL</b>	<b>\$3,514.8 million*</b>

*\*in today's dollars*

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## SNWA SUB-FUNDS

Operating		Capital		
WHOLESALE DELIVERY OPERATIONS	GROUNDWATER MANAGEMENT PROGRAM	NEW EXPANSION DEBT SERVICE	MAJOR CAPITAL & CONSTRUCTION PLAN	LAS VEGAS WASH

**SNWA uses sub-funds for internal tracking purposes:**

- 2 Operating sub-funds
- 3 Capital sub-funds

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## SNWA SUB-FUNDS

Operating		Capital		
<b>WHOLESALE DELIVERY OPERATIONS</b>	<b>GROUNDWATER MANAGEMENT PROGRAM</b>	<b>NEW EXPANSION DEBT SERVICE</b>	<b>MAJOR CAPITAL &amp; CONSTRUCTION PLAN</b>	<b>LAS VEGAS WASH</b>

<u>ABOUT:</u>	<u>FUNDED BY:</u>	<u>USED FOR:</u>
Funds SNWA primary operations (labor, materials, treatment, chemicals, etc.)	Wholesale Delivery Charges	Day-to-day operations

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## SNWA SUB-FUNDS

Operating		Capital		
<b>WHOLESALE DELIVERY OPERATIONS</b>	<b>GROUNDWATER MANAGEMENT PROGRAM</b>	<b>NEW EXPANSION DEBT SERVICE</b>	<b>MAJOR CAPITAL &amp; CONSTRUCTION PLAN</b>	<b>LAS VEGAS WASH</b>

<u>ABOUT:</u>	<u>FUNDED BY:</u>	<u>USED FOR:</u>
Collects revenue from Las Vegas Valley well users to fund Groundwater Management Program activities.	Groundwater Management Fees	Groundwater Management Program projects

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## SNWA SUB-FUNDS

### Operating

**WHOLESALE  
DELIVERY  
OPERATIONS**

**GROUNDWATER  
MANAGEMENT  
PROGRAM**

**NEW EXPANSION  
DEBT SERVICE**

### Capital

**MAJOR CAPITAL &  
CONSTRUCTION  
PLAN**

**LAS VEGAS WASH**

#### ABOUT:

Accounts for the majority of SNWA's debt service and funds received to support debt service payments

#### FUNDED BY:

- Reliability Charges
- Connection Charges
- Commodity Charges
- Southern Nevada Public Land Management Act
- Sales Tax
- Infrastructure Charges

#### USED FOR:

- Debt service
- Conservation costs
- Operating capital
- Water resources
- Pay-go portion of capital

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## SNWA SUB-FUNDS

### Operating

**WHOLESALE  
DELIVERY  
OPERATIONS**

**GROUNDWATER  
MANAGEMENT  
PROGRAM**

**NEW EXPANSION  
DEBT SERVICE**

**MAJOR CAPITAL &  
CONSTRUCTION  
PLAN**

**LAS VEGAS WASH**

#### ABOUT:

Funds projects outlined in the SNWA's MCCP

#### FUNDED BY:

Debt issuance proceeds

#### USED FOR:

- Building SNWA infrastructure
- Securing water resources
- Securing power resources

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## SNWA SUB-FUNDS

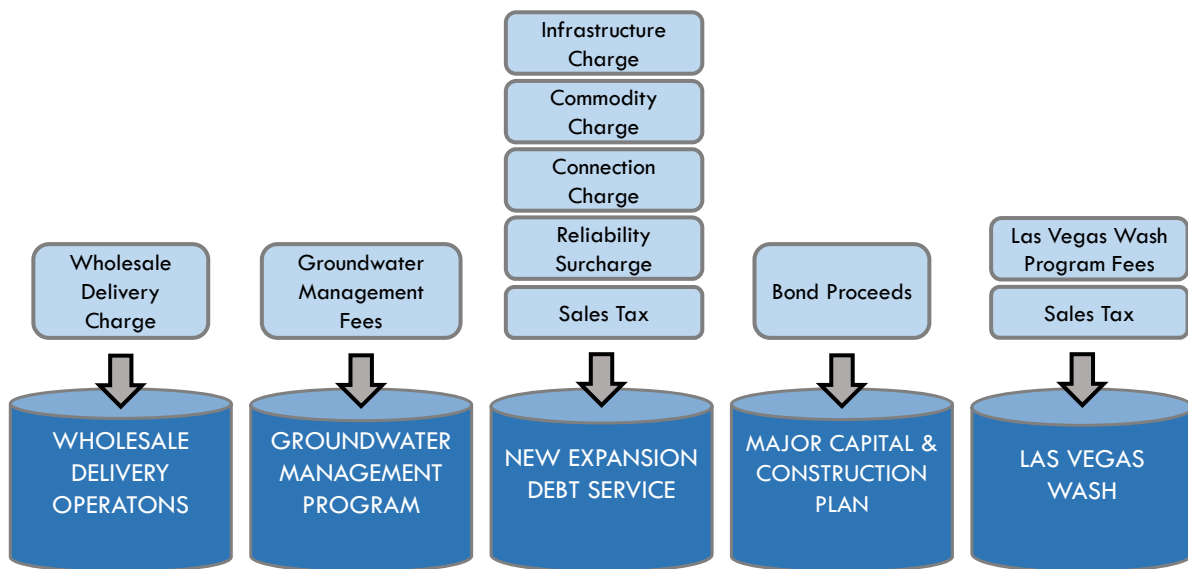


ABOUT:	FUNDED BY:	USED FOR:
Collects revenue and funds projects exclusively for the Las Vegas Wash	<ul style="list-style-type: none"> <li>– Sales Tax</li> <li>– Las Vegas Wash Program fees</li> <li>– Grants</li> </ul>	Las Vegas Wash projects

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## SNWA SUB-FUNDS



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## RATE MODEL SOURCES

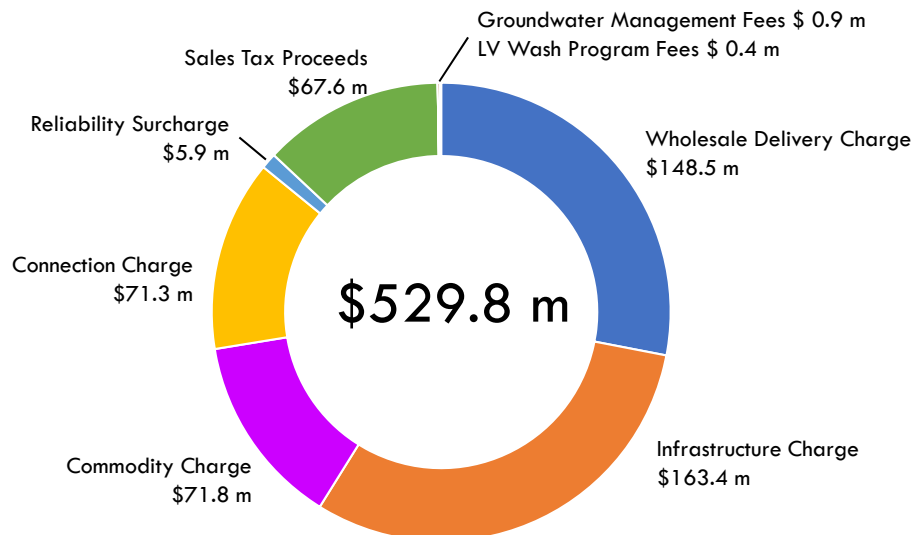
Source Description	Used For	Collected By	Last Changed
Wholesale Delivery Charge	Daily operations and maintenance, administrative costs, maintenance of reserve funds	SNWA Paid by purveyor members	Jul. 2019
Infrastructure Charge	Capital and Debt Service	SNWA Purveyor Members via customer bills	Jan. 2018
Commodity Charge	Capital and Debt Service	SNWA Purveyor Members via customer bills	Jan. 2017
Connection Charges	Capital and Debt Service	SNWA Purveyor Members via new connection fees	Nov. 2008
Groundwater Management Fees	Groundwater Management Program	SNWA via well users	Fall 1999
Las Vegas Wash Program Fees	LV Wash / Program Fees	SNWA	Annually
Reliability Surcharge	Capital & Debt Service	SNWA Purveyor Members via customer bills (statutory limit of .25% for residential and 5% for commercial)	April 1998
Bond Proceeds	Major Construction & Capital Plan		N/A
Sales Tax Proceeds	LV Wash / Capital & Debt Service	State of Nevada, transmitted to SNWA	N/A

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## RATE MODEL SOURCES

Fiscal Year 2019-20 Budget

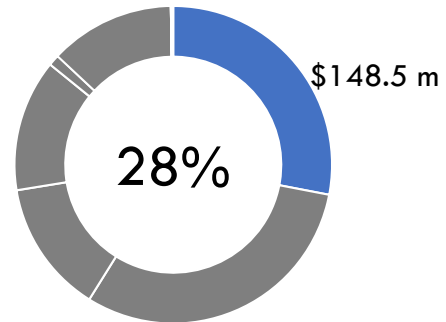


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## WHOLESALE DELIVERY CHARGE

- Collected from SNWA purveyor members for water sold
- Currently \$323 per acre foot for treated water;  
\$244 per acre-foot for raw water
- Indexed annually with CPI
- Revenue generated funds:
  - Operations and maintenance costs
  - Replacement costs of facilities that are part of the SNWS or used to support the SNWS
  - Administrative costs
  - Maintenance of reserve funds



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## WHOLESALE DELIVERY CHARGE

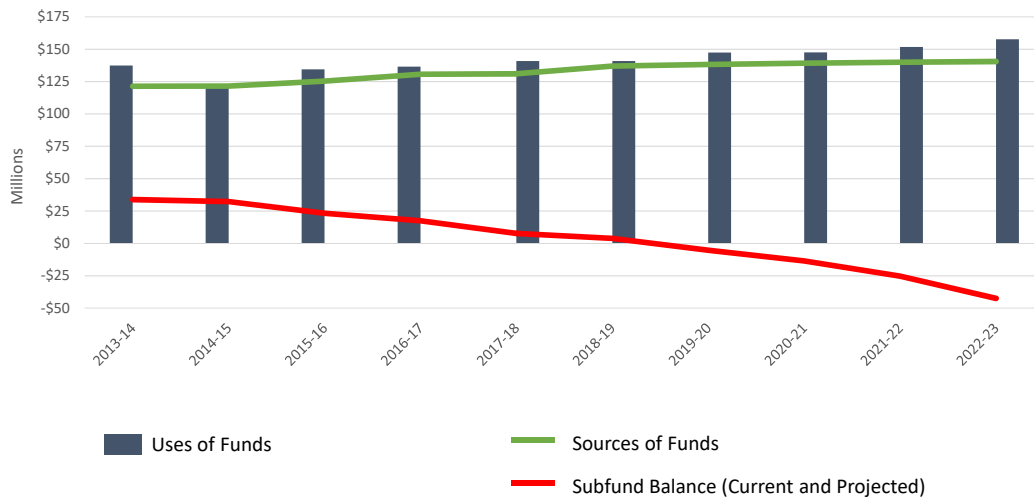
- In 2018, existing Wholesale Delivery Charge rates were not keeping pace with inflation
- Other operating costs were increasing at approximately 3 percent annually
- Projections indicated that the sub-fund would continue to fall if no action was taken

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## WHOLESALE DELIVERY CHARGE

2018 Projections Without Rate Adjustments



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## SNWA FINANCIAL WORKGROUP

SNWA met with members of the SNWA Financial Workgroup to make recommendations on the best way to close the gap.

Recommendations included:

- Increase the Wholesale Delivery Charge for treated water by \$10 per acre-foot annually (\$6 for raw water) for the next two years
- After two years, increase the charge by CPI (limited to a range of 1.5 – 4.5% increases)
- If the Subfund's projected balance exceeds \$20 million by June 30 of any year, do not apply the CPI adjustment

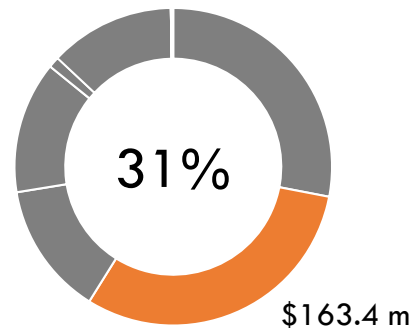
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## INFRASTRUCTURE CHARGE

- Collected from SNWA purveyor members through customer bills
- Currently \$0.4306 per day (\$12.92 for 30-day month) for 5/8" & 3/4" residential customers
- Adjustments recommended by IRPAC in 2013 and 2014 were implemented
- Last increased in January 2018
- Revenue generated helps to fund:
  - Capital costs
  - Debt service costs

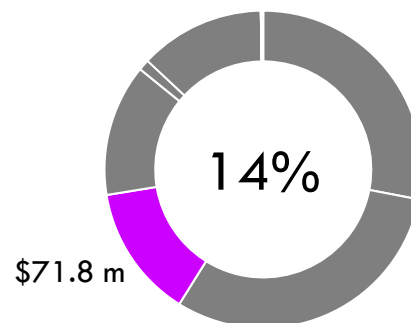


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## COMMODITY CHARGE

- Collected from SNWA purveyor members through retail customer bills
- Currently \$0.48 per 1,000 gallons sold
- Last changed by the SNWA Board in January 2017, consistent with IRPAC recommendation
- Revenue generated helps to fund:
  - Capital costs
  - Debt service costs

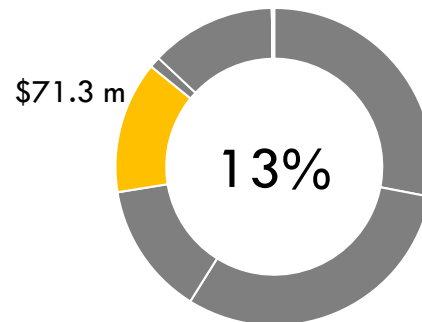


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## CONNECTION CHARGE

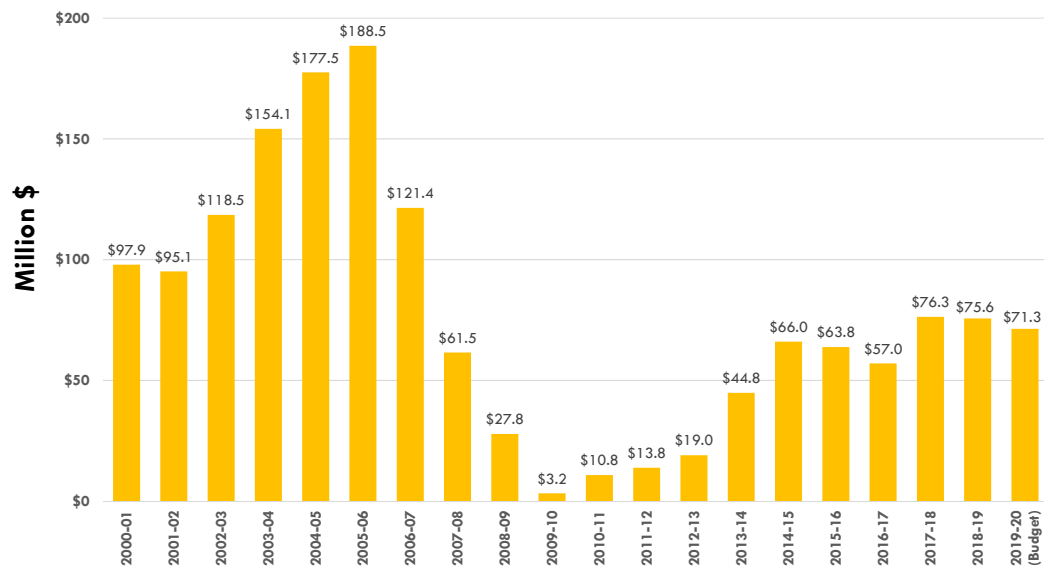
- Collected from SNWA purveyor members through a one-time charge assessed for new connections to the water system
- Currently \$4,870 for a 5/8" single family residential customer
- Last changed in November 2008
- Revenue generated helps to fund:
  - Capital costs
  - Debt service costs



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## CONNECTION CHARGE REVENUES



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## CONNECTION CHARGE

### IRPAC RECOMMENDATION (2013)

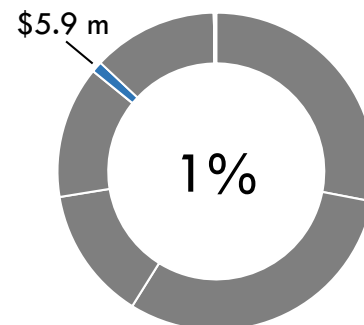
- Allocate Connection Charge Revenues in excess of the 2014 base year (\$16.1 million) exclusively to pay the following, in order of priority:
  - Early payment or pre-refunding of existing debt or one-time capital expenditures, whichever is more financially efficient, and
  - Water rate reductions

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## RELIABILITY SURCHARGE

- Collected by purveyor members through customer bills
- Based on total water bill, excluding Infrastructure Charge. Currently:
  - 0.25% for residential customers
  - 2.5% for non-residential customers
- Statutory limit of .25% for residential and 5% for non-residential
- Revenue generated helps to fund:
  - Capital costs
  - Debt service costs

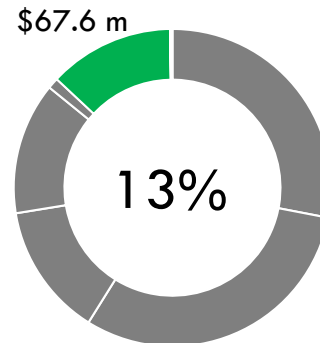


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## SALES TAX PROCEEDS

- Proceeds have helped local governments fund more than \$1.6 billion in critical water and wastewater infrastructure in Southern Nevada
- Per NRS, can only be used to construct water and wastewater projects
- Sunset clause removed in 2019
- Revenue generated helps to fund:
  - Las Vegas Wash projects
  - Capital Costs
  - Debt Service



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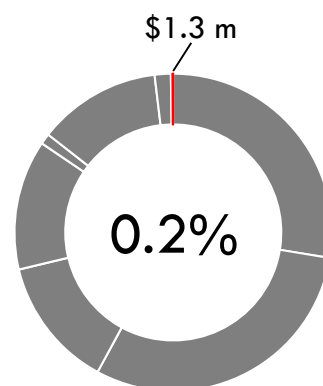
## LAS VEGAS WASH PROGRAM & GROUNDWATER MANAGEMENT FEES

### Groundwater Management Program

- Annual fee of \$13 per acre-foot per domestic well
- Funds Groundwater Management Program expenses

### Las Vegas Wash Program Fees

- Participating agencies pay budgeted costs for annual Wash operations



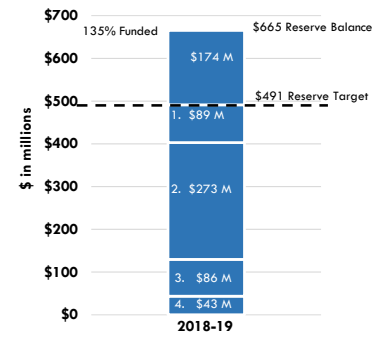
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## UNRESTRICTED RESERVES

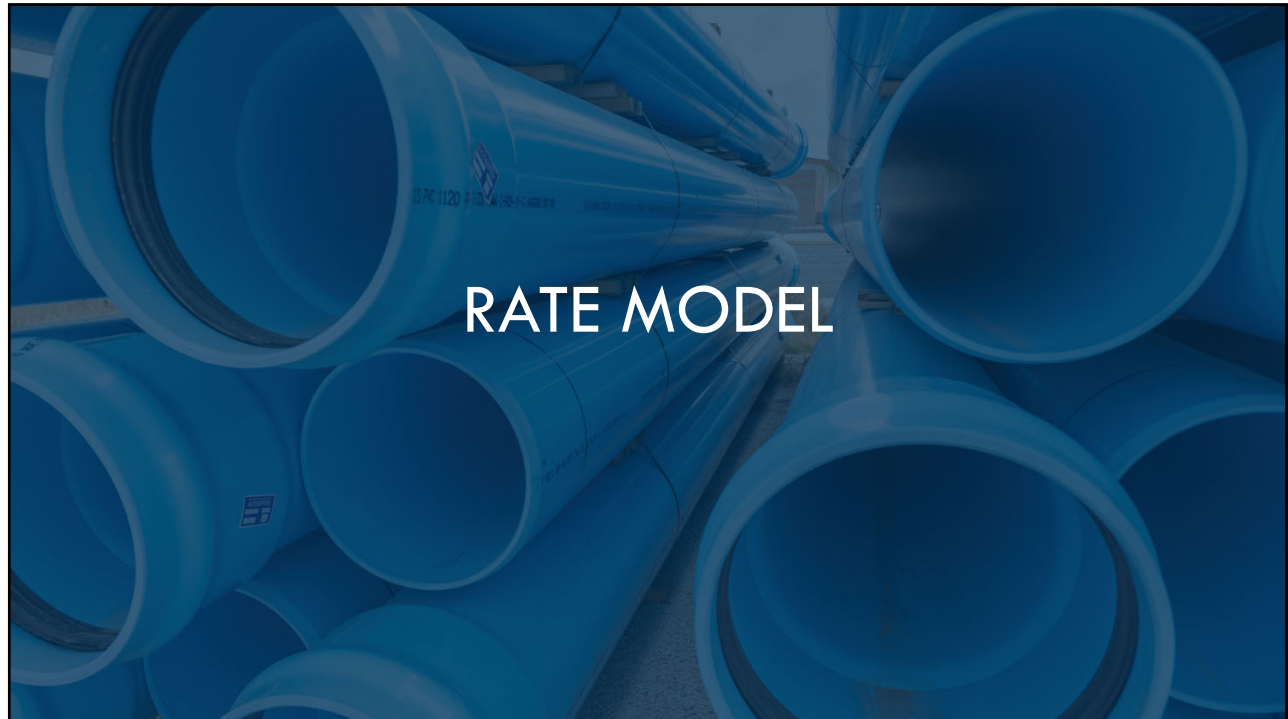
### Policy Components

Component		Description
1.	Base Operating Reserve	180 Days O&M Expenses
2.	Debt Service Reserve	One Year of Maximum Annual Debt Service
3.	Capital Related Reserve	Average of One Year Future Capital Spending
4.	Unforeseen Events Reserve	1% of Depreciable Assets



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## RATE MODEL ASSUMPTIONS

Variable	Starting Point
Capital Costs	\$3.5 billion as presented (in today's dollars)
CPI Index	25-year annualized average of CPI's Western Cities Class A 2.5%
ENR (Engineering News Record)	25-year annualized average of the ENR's Construction Cost Index 3.0%
Population (Growth)	CBER's population growth rate
Interest on New Debt	Commonly-used index rate adjusted for SNWA
Reserve Policy	SNWA Board adopted policy

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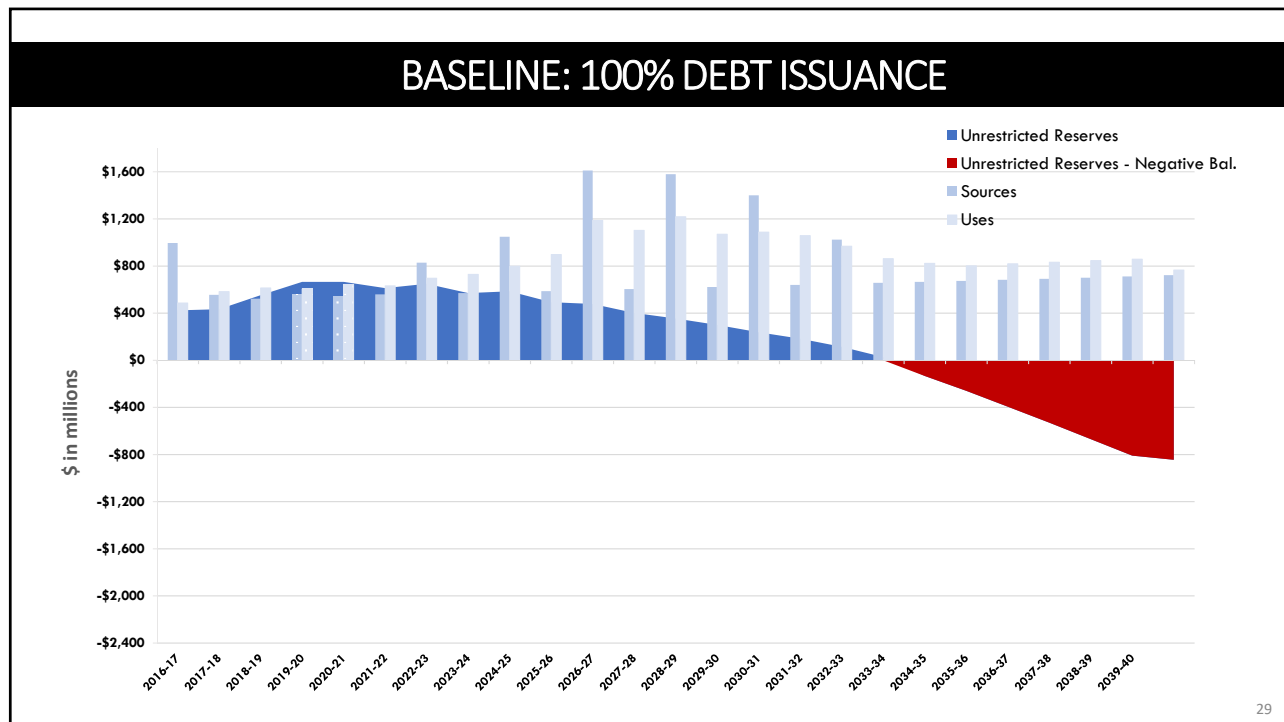
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## BASELINE ASSUMPTIONS

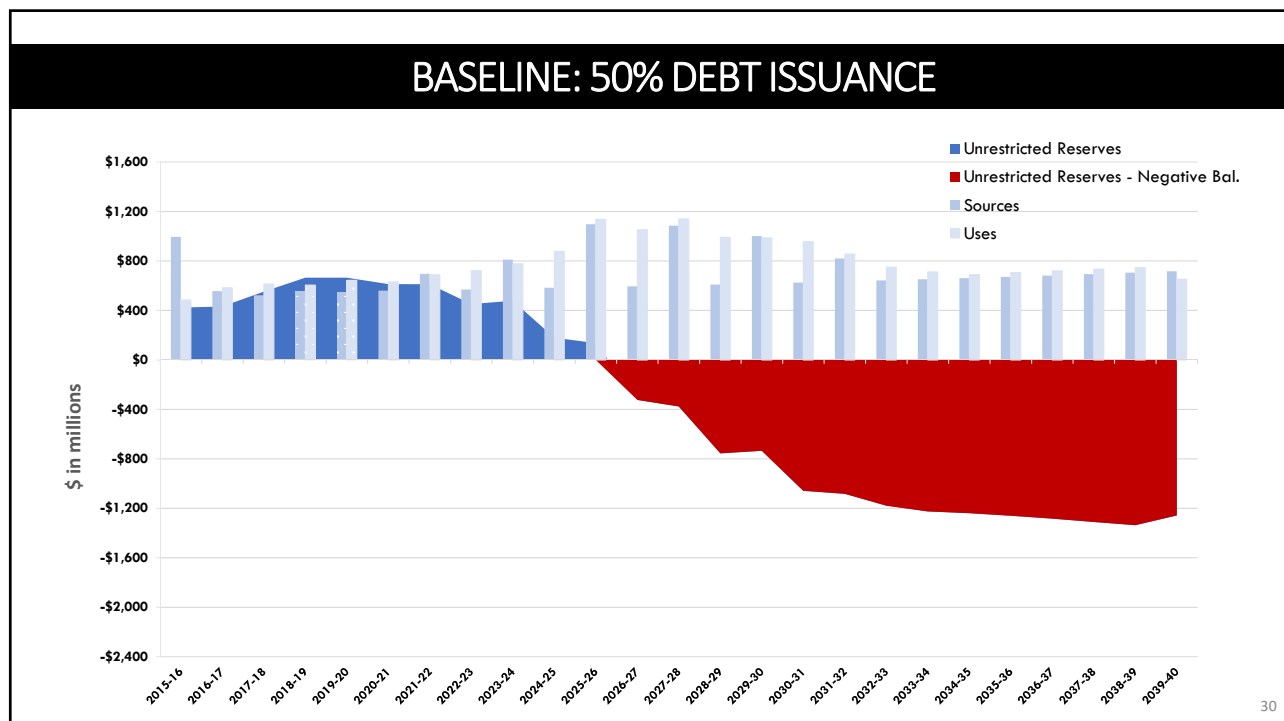
- \$3.5 billion in capital costs (in today's dollars)
- No increases to funding sources
- Debt issuances:
  - 100%
  - 50%
  - No debt issuance

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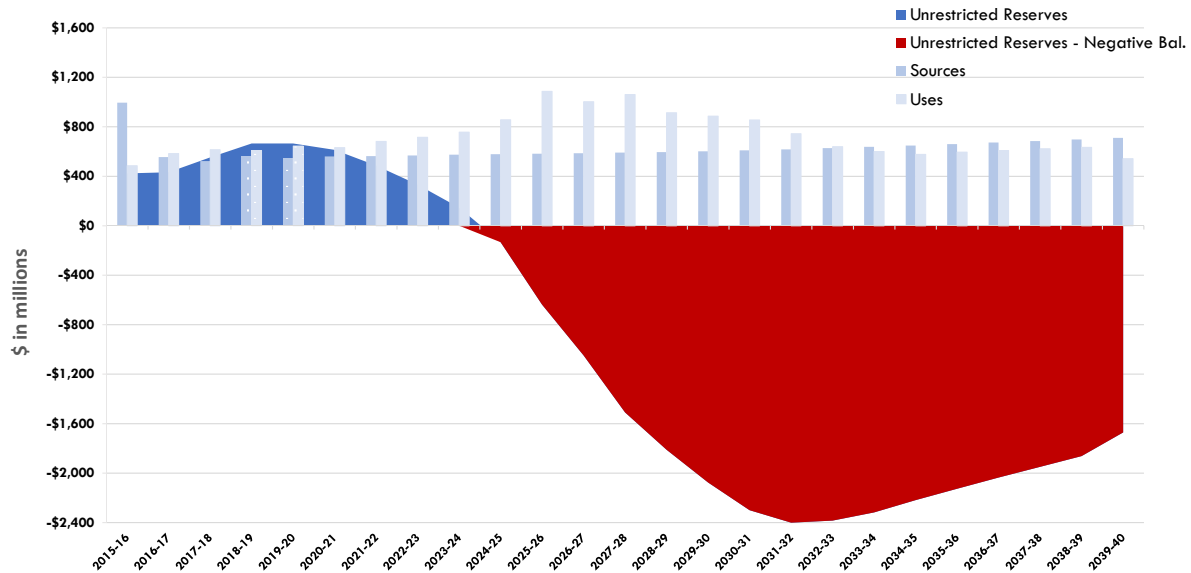


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## BASELINE: NO DEBT ISSUANCE



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## RATE MODEL SOURCES

Source Description	Used For	Collected By	Last Changed
Wholesale Delivery Charge	Daily operations and maintenance, administrative costs, maintenance of reserve funds	SNWA Paid by purveyor members	Jul. 2019
Infrastructure Charge	Capital and Debt Service	SNWA Purveyor Members via customer bills	Jan. 2018
Commodity Charge	Capital and Debt Service	SNWA Purveyor Members via customer bills	Jan. 2017
Connection Charges	Capital and Debt Service	SNWA Purveyor Members via new connection fees	Nov. 2008
Groundwater Management Fees	Groundwater Management Program	SNWA via well users	Fall 1999
Las Vegas Wash Program Fees	LV Wash / Program Fees	SNWA	Annually
Reliability Surcharge	Capital & Debt Service	SNWA Purveyor Members via customer bills (statutory limit of .25% for residential and 5% for commercial)	April 1998
Bond Proceeds	Major Construction & Capital Plan		N/A
Sales Tax Proceeds	LV Wash / Capital & Debt Service	State of Nevada, transmitted to SNWA	N/A

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## RATE MODEL SOURCES

Without ongoing rate adjustments to keep pace with inflation, reserves diminish over time.

Source	Date of last increase	Increase to Catch Up w/ January 2021
Infrastructure Charge	January 2018	7.8%
Commodity Charge	January 2017	11.7%
Connection Charge	November 2008	36.3%

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## 6-YEAR PHASE-IN

**SNWA IRPAC Recommendation (2013):** Temporarily reduce the maximum rate to provide the community time to adjust to the new rates.

*“The committee recognizes that many Southern Nevada ratepayers will find incremental increases easier to absorb and account for than a large increase.”*

### Catch-Up Inflation

	2021	2022	2023	2024	2025	2026
Connection Charge (ENR)	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
Commodity Charge (CPI)	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Infrastructure Charge (ENR)	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%

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## 6-YEAR PHASE-IN

### Catch-Up Inflation + Current Year Inflation

		2021	2022	2023	2024	2025	2026	2027 ➡
Connection Charge (ENR)	Catch-Up Inflation	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	0.0%
	Current Year Inflation	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
	Total	9.0%	9.0%	9.0%	9.0%	9.0%	9.0%	3.0%
Commodity Charge (CPI)	Catch-Up Inflation	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	0.0%
	Current Year Inflation	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
	Total	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	2.5%
Infrastructure Charge (ENR)	Catch-Up Inflation	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	0.0%
	Current Year Inflation	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
	Total	4.3%	4.3%	4.3%	4.3%	4.3%	4.3%	3.0%

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## SNWA FINANCIAL FORECAST: SCENARIO SUMMARY

Scenario Variables		Scenario Results							
		% of Reserve Target				Projected Reserves (in millions)			
		Floor		Year 5 2024-25	Year 10 2029-30	Year 5: 2024-25		Year 10: 2029-30	
		%	Year			Amount	Target	Amount	Target
With Contingency (\$3.51 B)									
1A	100% debt funded	89%	2022-23	93%	131%	\$694	745	1,007	769
1B	75% debt funded	58%	2028-29	73%	74%	\$538	735	529	718
1C	50% debt funded	-22%	2030-31	53%	5%	\$381	724	34	668
Without Contingency (\$3.35 B)									
2A	100% debt funded	91%	2022-23	95%	138%	\$695	732	1,036	752
2B	75% debt funded	62%	2026-27	75%	83%	\$539	722	584	705
2C	50% debt funded	-7%	2028-29	54%	18%	\$384	712	119	657

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## SAMPLE CUSTOMER IMPACT

CUSTOMER TYPE	CURRENT BILL 2021	6 YEAR PHASE-IN						INDEXING
		NEW 2021	NEW 2022	NEW 2023	NEW 2024	NEW 2025	NEW 2026	NEW 2027
Single Family Residential – Typical	\$42.49	\$43.20	\$44.57	\$45.97	\$47.45	\$49.03	\$50.70	\$52.11
Single Family Residential – High	94.90	95.88	98.65	101.48	104.38	107.62	110.98	113.93
1" Single Family Residential – Typical	106.72	108.63	112.12	115.67	119.42	123.47	127.72	131.26
1" Single Family Residential - High	365.82	368.83	379.18	389.81	400.62	412.64	425.06	436.22
Mobile Home <i>Boulder Cascade</i>	4,874.16	4,954.32	5,102.56	5,253.06	5,421.02	5,609.51	5,800.60	5,959.52
High Rise (Residential) <i>Queensridge Place</i>	15,261.20	15,435.37	15,851.38	16,272.58	16,708.59	17,199.80	17,704.19	18,139.69
Office Park <i>Desert Canyon</i>	1,838.74	1,847.56	1,874.84	1,902.36	1,930.33	1,962.47	1,995.09	2,024.06

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## SAMPLE CUSTOMER IMPACT

CUSTOMER TYPE	CURRENT BILL 2021	6 YEAR PHASE-IN						INDEXING
		NEW 2021	NEW 2022	NEW 2023	NEW 2024	NEW 2025	NEW 2026	NEW 2027
Resort and Hotel <i>Bellagio</i>	\$130,055.16	\$130,883.13	\$134,463.28	\$138,053.05	\$141,664.55	\$145,892.72	\$150,139.63	\$154,006.28
Restaurant <i>Lawry's</i>	2,123.17	2,137.15	2,179.96	2,223.09	2,266.99	2,317.39	2,368.57	2,413.95
Retail Complex (Enclosed) <i>Fashion Show Mall</i>	29,205.80	29,474.38	30,309.09	31,150.14	32,005.37	32,988.84	33,987.07	34,872.99
School <i>Palo Verde High School</i>	12,719.18	12,818.98	13,154.06	13,491.20	13,833.11	14,228.05	14,627.92	14,985.19
Municipal Park <i>All American</i>	9,269.85	9,364.34	9,621.71	9,881.70	10,147.46	10,450.43	10,759.06	11,029.48
Hospital <i>Sunrise Hospital</i>	29,071.76	29,286.73	30,077.78	30,877.13	31,683.90	32,612.60	33,552.73	34,399.99
Locals Hotel <i>Palace Station</i>	31,746.85	32,120.27	33,055.87	34,002.84	34,972.64	36,073.31	37,193.20	38,165.98

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## SAMPLE CUSTOMER IMPACT

CUSTOMER TYPE	CURRENT BILL 2021	6 YEAR PHASE-IN						INDEXING
		NEW 2021	NEW 2022	NEW 2023	NEW 2024	NEW 2025	NEW 2026	NEW 2027
Industrial <i>Brady Linen</i>	\$44,809.18	\$45,134.80	\$46,357.94	\$47,586.84	\$48,826.24	\$50,267.27	\$51,719.34	\$53,028.81
Apartment Complex <i>Foothill Village</i>	15,176.20	15,253.93	15,653.56	16,069.11	16,486.45	16,947.07	17,424.55	17,866.33
Warehouse <i>Baldwin Motor Sports</i>	567.86	570.51	574.65	578.88	583.37	588.20	593.24	597.34
Strip Mall (Large) <i>Rhodes Ranch Town Center</i>	10,834.21	10,946.43	11,217.66	11,493.49	11,776.52	12,094.30	12,419.77	12,701.74
Strip Mall (Small) <i>Southwest Marketplace</i>	6,402.97	6,446.70	6,600.88	6,760.03	6,921.45	7,100.22	7,285.30	7,452.05
Higher Education <i>UNLV</i>	115,325.84	116,337.21	119,581.17	122,848.25	126,165.36	129,990.58	133,858.26	137,301.41

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## CONNECTION CHARGE IMPACT

CUSTOMER TYPE*	CURRENT CHARGE	6 YEAR PHASE-IN						INDEXING
		NEW 2021	NEW 2022	NEW 2023	NEW 2024	NEW 2025	NEW 2026	NEW 2027
<b>Residential &amp; Non-Residential</b> <b>5/8" &amp; 3/4" meter sizes</b> <i>Excluding Hotels, Motels, Golf Courses &amp; Laundries</i>	\$ 4,870	\$ 5,308	\$ 5,786	\$ 6,307	\$ 6,875	\$ 7,494	\$ 8,168	\$ 8,413
<b>Residential &amp; Non-Residential</b> <b>1" meter size</b> <i>Excluding Hotels, Motels, Golf Courses &amp; Laundries</i>	9,610	10,475	11,418	12,446	13,566	14,787	16,118	16,602
<b>Residential &amp; Non-Residential</b> <b>1.5" meter size</b> <i>Excluding Hotels, Motels, Golf Courses &amp; Laundries</i>	19,170	20,895	22,776	24,826	27,060	29,495	32,150	33,115
<b>Hotels &amp; Motels</b> <i>Per Room</i>	2,780	3,030	3,303	3,600	3,924	4,277	4,662	4,802

\* The meter sizes above represent approximately 96% of the active meters within the LVVWD Service Area

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## OTHER CONSIDERATIONS?

- Remove 50% debt funded / 50% pay-go scenario from considerations?
- Remove “Without Contingency” option?
- Others for discussion?

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## SAMPLE CUSTOMERS

Customer Type	Meter Information	Additional Property Information	Average Consumption (kGal)	Corresponding Water Bill
Single Family Residential – Typical	One 5/8"		8	\$ 41.88
Single Family Residential – High	One 5/8"		21	93.14
Single Family Residential – Typical	One 1"		22	105.23
Single Family Residential - High	One 1"		77	358.56
Mobile Home <i>Boulder Cascade</i>	One 8" domestic meter	300-site mobile home park with 2 pools	1,651	4,808.29
High Rise (Residential) <i>Queensridge Place</i>	Three 2" domestic meters Two 8" domestic meters Two 10" firelines	219-unit high-rise condo building with fountains and a pool	3,288	15,024.51
Office Park <i>Desert Canyon</i>	One 1.5" domestic meter Two 8" firelines	8-building office park	216	1,820.48
Resort and Hotel <i>Bellagio</i>	Two 10" domestic meters	3,000 room resort/hotel with 14 restaurants and 5 pools	30,532	127,312.22
Restaurant <i>Lawry's</i>	One 2" domestic meter One 10" fireline	550-customer capacity stand-alone restaurant	339	2,094.69

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## SAMPLE CUSTOMERS

Customer Type	Meter Information	Additional Information	Average Consumption (kGal)	Corresponding Water Bill
Retail Complex (Enclosed) <i>Fashion Show Mall</i>	Three 6" domestic meters	1.9 million sq. ft. mall with 250+ stores and 25 restaurants	6,672	\$ 28,645.60
School <i>Palo Verde High School</i>	Two 4" domestic meters Two 8" firelines	CCSD high school with 1 football field, 1 soccer field and 2 baseball diamonds	2,726	12,485.93
Municipal Park <i>All American</i>	One 3/4" domestic meter One 1" domestic meter One 2" domestic meter One 6" domestic meter One 8" fireline	45-acre City-owned park with 5 football fields, an additional grass field and a splash pad	1,959	9,109.44
Hospital <i>Sunrise Hospital</i>	Two 4" domestic meters One 6" domestic meter Two 8" firelines	700-bed hospital	6,201	28,499.70
Off-Strip Hotel <i>Palace Station</i>	One 1.5" domestic meter One 10" domestic meter Three 6" domestic meters	1,053-room hotel with 9 restaurants and 1 pool	6,645	31,195.46
Industrial <i>Brady Linen</i>	One 2" domestic meter One 8" domestic meter One 6" domestic meter One 8" fireline One 10" fireline	Single-building industrial laundry service	9,970	43,917.21

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## SAMPLE CUSTOMERS

Customer Type	Meter Information	Additional Information	Average Consumption (kGal)	Corresponding Water Bill
Apartment Complex <i>Foothill Village</i>	Two 6"x3" combo meters	Multi-building apartment complex with 2 pools	2,938	\$ 14,855.21
Warehouse <i>Baldwin Motorsports</i>	One 1" domestic meter One 8" fireline	Single-building motorsports warehouse	22	566.49
Strip Mall (Large) <i>Rhodes Ranch Town Center</i>	Nine 1.5" domestic meters Three 1" domestic meters Four 2" domestic meters Four 8" firelines	50-tenant shopping center anchored by Vons Food & Drug and Bank of America	1,854	10,678.72
Strip Mall (Small) <i>Southwest Marketplace</i>	Three 2" domestic meters Two 8" firelines	30-tenant shopping center anchored by Smith's Food & Drug	1,104	6,293.55
Higher Education <i>UNLV</i>	One ¾" domestic meter Two 1" domestic meters Two 1.5" domestic meters Four 2" domestic meters Two 8" domestic meters Three 10" domestic meters Two 4" firelines One 6" fireline Two 8" firelines	University campus including multiple classroom buildings, library, dormitories, food court and Thomas & Mack Center/Cox Pavilion	25,623	113,115.55

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### 1A: 100% Debt · \$162.3 m Contingency

% of Reserve Target		Projected Reserves (in millions)			
Year 5	Year 10	Year 5		Year 10	
		Amount	Target	Amount	Target
93%	131%	\$694	\$745	\$1,007	\$769

- Debt issued to fund 100% of future MCCP expenditures
- Includes \$162.3 M contingency
- Catch-up and current year inflation applied to Connection, Commodity and Infrastructure fees

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1A 100% Debt - \$162.3 m Contingency											
	Sources	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
	Wholesale Delivery Charge	\$ 154,988,470	\$ 160,358,876	\$ 166,230,463	\$ 172,033,155	\$ 177,549,019	\$ 182,881,181	\$ 188,058,845	\$ 194,581,133	\$ 200,999,698	\$ 207,350,154
	Infrastructure Charge	170,520,466	181,214,932	192,163,871	203,523,758	215,171,479	227,223,139	238,241,709	248,004,621	257,943,677	268,109,986
	Commodity Charge	74,386,380	78,537,480	83,647,413	87,519,093	92,832,884	98,080,382	101,679,562	105,751,149	109,774,868	113,766,626
	Connection Charge	76,433,701	72,753,706	70,132,851	70,603,243	67,913,317	67,738,394	66,486,079	63,185,772	59,795,684	57,473,813
	Reliability Surcharge	5,945,321	6,093,954	6,246,303	6,402,460	6,562,522	6,726,585	6,894,750	7,067,118	7,243,796	7,424,891
	Sales Tax	70,745,456	73,851,408	76,932,314	80,043,468	83,135,195	86,250,132	89,402,154	92,589,561	95,810,503	99,080,829
	Investment Income	7,803,906	8,266,071	8,392,321	9,416,919	9,719,699	11,264,645	11,858,325	12,236,554	13,059,576	13,724,909
	Groundwater Management Fees	894,208	894,208	894,208	894,208	894,208	894,208	894,208	894,208	894,208	894,208
1A 100% Debt - \$162.3 m Contingency	LV Wash Program Fees	443,863	443,863	443,863	443,863	443,863	443,863	443,863	443,863	443,863	443,863
	Grant Proceeds	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000
	Other Sources	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247
	<b>Subtotal</b>	567,943,017	588,195,746	610,864,854	636,661,414	660,003,433	687,283,777	709,740,741	730,535,226	751,747,120	774,050,526
	Debt Issuance Proceeds	-	263,476,966	-	467,315,690	-	1,014,210,955	-	966,657,506	-	768,821,585
	<b>SNWA Sources</b>	567,943,017	851,672,712	610,864,854	1,103,977,104	660,003,433	1,701,494,732	709,740,741	1,697,192,732	751,747,120	1,542,872,111
	<b>Uses</b>										
	Water Resource Investments	14,251,600	14,607,890	14,973,087	15,347,414	15,731,100	16,124,377	16,527,487	16,940,674	17,364,191	17,798,296
	Energy	35,101,113	36,222,650	35,943,784	37,704,192	38,503,382	40,072,013	41,371,904	42,693,706	43,761,049	44,855,075
	Operating Payroll & Related	86,088,533	87,888,453	90,405,926	92,886,486	91,330,327	83,098,601	90,292,333	91,022,144	102,505,100	109,344,076
1A 100% Debt - \$162.3 m Contingency	Operating Expenses	77,569,782	79,509,026	81,496,752	83,534,171	85,622,525	87,763,088	89,957,166	92,206,095	94,511,247	96,874,028
	Capital Expenditures	128,409,160	175,164,520	204,929,414	240,661,420	348,747,058	583,520,310	496,631,372	564,880,681	438,048,013	400,329,844
	Debt Service	289,681,711	302,215,793	301,532,690	327,276,950	317,161,450	375,990,573	368,063,499	409,370,510	373,512,050	418,319,548
	<b>SNWA Uses</b>	631,101,899	695,608,331	729,281,653	797,410,633	897,095,842	1,186,568,962	1,102,843,761	1,217,113,809	1,069,701,649	1,087,520,867
	<b>Annual Surplus/(Deficit)</b>	\$ (51,532,578)	\$ 59,485,863	\$ (38,496,674)	\$ 70,495,282	\$ (20,157,838)	\$ 72,970,479	\$ 25,729,301	\$ 66,065,544	\$ 70,762,720	\$ 73,134,594
	Reserve Balance	\$ 621,026,217	\$ 680,974,246	\$ 642,603,822	\$ 714,123,702	\$ 694,268,644	\$ 768,784,069	\$ 795,107,050	\$ 861,550,823	\$ 933,136,565	\$ 1,006,936,492
	Reserve Target	689,539,356	711,888,799	718,829,240	752,013,554	745,174,607	797,103,714	772,446,854	796,958,813	740,559,239	768,789,618
	Excess/(Deficit) of Reserve Target	(68,513,139)	(30,914,553)	(76,225,418)	(37,889,853)	(50,905,963)	(28,319,645)	22,660,196	64,592,010	192,577,326	238,146,874
	% of Reserve Target	90%	96%	89%	95%	93%	96%	103%	108%	126%	131%
	Debt Coverage Ratio	3.52	3.28	3.55	3.21	3.60	3.07	3.37	3.13	3.63	3.44

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## 1B: 75% Debt/25% Pay-Go · \$162.3 m Contingency

% of Reserve Target		Projected Reserves (in millions)			
Year 5	Year 10	Year 5		Year 10	
		Amount	Target	Amount	Target
73%	74%	\$538	\$735	\$529	\$718

- Debt issued to fund 75% of future MCCC expenditures
- Includes \$162.3 M contingency
- Catch-up and current year inflation applied to Connection, Commodity and Infrastructure charges

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1B 75% Debt/25% Pay-Go · \$162.3 m Contingency											
	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	
<b>Sources</b>											
Wholesale Delivery Charge	\$ 154,988,470	\$ 160,358,876	\$ 166,230,463	\$ 172,033,155	\$ 177,549,019	\$ 182,881,181	\$ 188,058,845	\$ 194,581,133	\$ 200,999,698	\$ 207,350,154	
Infrastructure Charge	170,520,466	181,214,932	192,163,871	203,523,758	215,171,479	227,223,139	238,241,709	248,004,621	257,943,677	268,109,986	
Commodity Charge	74,386,380	78,537,480	83,647,413	87,519,093	92,832,884	98,080,382	101,679,562	105,751,149	109,774,868	113,766,626	
Connection Charge	76,433,701	72,753,706	70,132,851	70,603,243	67,913,317	67,738,394	66,486,079	63,185,772	59,795,684	57,473,813	
Reliability Surcharge	5,945,321	6,093,954	6,246,303	6,402,460	6,562,522	6,726,585	6,894,750	7,067,118	7,243,796	7,424,891	
Sales Tax	70,745,456	73,851,408	76,932,314	80,043,468	83,135,195	86,250,132	89,402,154	92,589,561	95,810,503	99,080,829	
Investment Income	7,803,906	7,891,893	7,665,989	8,072,221	7,796,944	8,029,720	7,399,507	6,710,080	6,550,171	6,597,700	
Groundwater Management Fees	894,208	894,208	894,208	894,208	894,208	894,208	894,208	894,208	894,208	894,208	
LV Wash Program Fees	443,863	443,863	443,863	443,863	443,863	443,863	443,863	443,863	443,863	443,863	
Grant Proceeds	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	
Other Sources	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	
<b>Subtotal</b>	567,943,017	587,821,567	610,138,522	635,316,716	658,080,678	684,048,851	705,281,923	725,008,752	745,237,715	766,923,317	
Debt Issuance Proceeds	-	197,607,724	-	350,486,767	-	760,658,217	-	724,993,129	-	576,616,189	
<b>SNWA Sources</b>	567,943,017	785,429,292	610,138,522	985,803,483	658,080,678	1,444,707,068	705,281,923	1,450,001,881	745,237,715	1,343,539,506	
<b>Uses</b>											
Water Resource Investments	14,251,600	14,607,890	14,973,087	15,347,414	15,731,100	16,124,377	16,527,487	16,940,674	17,364,191	17,798,296	
Energy	35,101,113	36,222,650	35,943,784	37,704,192	38,503,382	40,072,013	41,371,904	42,693,706	43,761,049	44,855,075	
Operating Payroll & Related	86,088,533	87,888,453	90,405,926	92,886,486	91,330,327	83,098,601	90,292,333	91,022,144	102,505,100	109,344,076	
Operating Expenses	77,569,782	79,509,026	81,496,752	83,534,171	85,622,525	87,763,088	89,957,166	92,206,095	94,511,247	96,874,028	
Capital Expenditures	128,409,160	175,164,520	204,929,414	240,661,420	348,747,058	583,520,310	496,631,372	564,880,681	438,048,013	400,329,844	
Debt Service	289,681,711	298,554,121	297,871,018	316,913,727	306,798,227	350,950,838	343,023,764	370,244,970	334,386,509	367,950,111	
<b>SNWA Uses</b>	631,101,899	691,946,659	725,619,981	787,047,411	886,732,620	1,161,529,227	1,077,804,026	1,177,988,269	1,030,576,108	1,037,151,430	
<b>Annual Surplus/(Deficit)</b>	\$ (51,532,578)	\$ 63,147,535	\$ (100,704,244)	\$ 80,858,504	\$ (126,623,538)	\$ 98,010,214	\$ (202,783,703)	\$ 105,191,084	\$ (131,776,116)	\$ 123,504,032	
Reserve Balance	\$ 621,026,217	\$ 684,261,739	\$ 583,331,592	\$ 664,596,328	\$ 537,697,513	\$ 635,940,503	\$ 432,526,588	\$ 537,028,244	\$ 405,092,219	\$ 528,643,780	
Reserve Target	689,539,356	708,227,127	715,167,568	741,650,332	734,811,385	772,063,979	747,407,119	757,833,273	701,433,699	718,420,180	
Excess/(Deficit) of Reserve Target	(68,513,139)	(23,965,388)	(131,835,976)	(77,054,005)	(197,113,872)	(136,123,477)	(314,880,531)	(220,805,028)	(296,341,480)	(189,776,400)	
% of Reserve Target	90%	97%	82%	90%	73%	82%	58%	71%	58%	74%	
Debt Coverage Ratio	3.52	3.32	3.60	3.12	3.56	2.83	3.22	2.47	3.06	2.45	

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## 1C: 50% Debt/50% Pay-Go · \$162.3 m Contingency

% of Reserve Target		Projected Reserves (in millions)			
Year 5	Year 10	Year 5		Year 10	
		Amount	Target	Amount	Target
53%	5%	\$381	\$724	\$34	\$668

- Debt issued to fund 50% of future MCCP expenditures
- Includes \$162.3 M contingency
- Catch-up and current year inflation applied to Connection, Commodity and Infrastructure charges

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1C 50% Debt/50% Pay-Go · \$162.3 m Contingency		2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
	Sources										
	Wholesale Delivery Charge	\$ 154,988,470	\$ 160,358,876	\$ 166,230,463	\$ 172,033,155	\$ 177,549,019	\$ 182,881,181	\$ 188,058,845	\$ 194,581,133	\$ 200,999,698	\$ 207,350,154
	Infrastructure Charge	170,520,466	181,214,932	192,163,871	203,523,758	215,171,479	227,223,139	238,241,709	248,004,621	257,943,677	268,109,986
	Commodity Charge	74,386,380	78,537,480	83,647,413	87,519,093	92,832,884	98,080,382	101,679,562	105,751,149	109,774,868	113,766,626
	Connection Charge	76,433,701	72,753,706	70,132,851	70,603,243	67,913,317	67,738,394	66,486,079	63,185,772	59,795,684	57,473,813
	Reliability Surcharge	5,945,321	6,093,954	6,246,303	6,402,460	6,562,522	6,726,585	6,894,750	7,067,118	7,243,796	7,424,891
	Sales Tax	70,745,456	73,851,408	76,932,314	80,043,468	83,135,195	86,250,132	89,402,154	92,589,561	95,810,503	99,080,829
	Investment Income	7,803,906	7,517,714	6,939,657	6,727,522	5,874,189	4,794,794	2,940,690	1,183,605	40,765	(529,509)
	Groundwater Management Fees	894,208	894,208	894,208	894,208	894,208	894,208	894,208	894,208	894,208	894,208
	LV Wash Program Fees	443,863	443,863	443,863	443,863	443,863	443,863	443,863	443,863	443,863	443,863
	Grant Proceeds	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000
	Other Sources	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247
	Subtotal	567,943,017	587,447,389	609,412,190	633,972,018	656,157,923	680,813,926	700,823,106	719,482,277	738,728,309	759,796,109
	Debt Issuance Proceeds	-	131,738,483	-	233,657,845	-	507,105,478	-	483,328,753	-	384,410,793
	SNWA Sources	567,943,017	719,185,872	609,412,190	867,629,862	656,157,923	1,187,919,403	700,823,106	1,202,811,030	738,728,309	1,144,206,901
	Uses										
	Water Resource Investments	14,251,600	14,607,890	14,973,087	15,347,414	15,731,100	16,124,377	16,527,487	16,940,674	17,364,191	17,798,296
	Energy	35,101,113	36,222,650	35,943,784	37,704,192	38,503,382	40,072,013	41,371,904	42,693,706	43,761,049	44,855,075
	Operating Payroll & Related	86,088,533	87,888,453	90,405,926	92,886,486	91,330,327	83,098,601	90,292,333	91,022,144	102,505,100	109,344,076
	Operating Expenses	77,569,782	79,509,026	81,496,752	83,534,171	85,622,525	87,763,088	89,957,166	92,206,095	94,511,247	96,874,028
	Capital Expenditures	128,409,160	175,164,520	204,929,414	240,661,420	348,747,058	583,520,310	496,631,372	564,880,681	438,048,013	400,329,844
	Debt Service	289,681,711	294,892,449	294,209,346	306,550,505	296,435,005	325,911,103	317,984,029	331,119,429	295,260,969	317,580,674
	SNWA Uses	631,101,899	688,284,987	721,958,309	776,684,189	876,369,398	1,136,489,492	1,052,764,291	1,138,862,729	991,450,568	986,781,993
	Annual Surplus/(Deficit)	\$ (51,532,578)	\$ 23,383,170	\$ (119,485,776)	\$ 84,218,152	\$ (226,085,663)	\$ 46,635,117	\$ (354,881,875)	\$ 62,764,697	\$ (252,763,024)	\$ 157,954,417
	Reserve Balance	\$ 621,026,217	\$ 644,123,196	\$ 524,059,362	\$ 608,065,379	\$ 381,126,383	\$ 426,682,105	\$ 69,946,126	\$ 130,953,737	\$ (122,952,126)	\$ 34,432,017
	Reserve Target	689,539,356	704,565,455	711,505,896	731,287,110	724,448,163	747,024,244	722,367,384	718,707,732	662,308,159	668,050,743
	Excess/(Deficit) of Reserve Target	(68,513,139)	(60,442,259)	(187,446,533)	(123,221,731)	(343,321,780)	(320,342,140)	(652,421,258)	(587,753,995)	(785,260,285)	(633,618,726)
	% of Reserve Target	90%	91%	74%	83%	53%	57%	10%	18%	-19%	5%
	Debt Coverage Ratio	3.52	3.36	3.50	3.03	3.48	2.56	2.80	1.65	2.07	1.16

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## 2A: 100% Debt · No Contingency

% of Reserve Target		Projected Reserves (in millions)			
Year 5	Year 10	Year 5		Year 10	
		Amount	Target	Amount	Target
95%	138%	\$695	\$732	\$1,036	\$752

- Debt issued to fund 100% of future MCCP expenditures
- Excludes \$162.3 M contingency
- Catch-up and current year inflation applied to Connection, Commodity and Infrastructure charges

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2A 100% Debt - No Contingency											
	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	
<b>Sources</b>											
Wholesale Delivery Charge	\$ 154,988,470	\$ 160,358,876	\$ 166,230,463	\$ 172,033,155	\$ 177,549,019	\$ 182,881,181	\$ 188,058,845	\$ 194,581,133	\$ 200,999,698	\$ 207,350,154	
Infrastructure Charge	170,520,466	181,214,932	192,163,871	203,523,758	215,171,479	227,223,139	238,241,709	248,004,621	257,943,677	268,109,986	
Commodity Charge	74,386,380	78,537,480	83,647,413	87,519,093	92,832,884	98,080,382	101,679,562	105,751,149	109,774,868	113,766,626	
Connection Charge	76,433,701	72,753,706	70,132,851	70,603,243	67,913,317	67,738,394	66,486,079	63,185,772	59,795,684	57,473,813	
Reliability Surcharge	5,945,321	6,093,954	6,246,303	6,402,460	6,562,522	6,726,585	6,894,750	7,067,118	7,243,796	7,424,891	
Sales Tax	70,745,456	73,851,408	76,932,314	80,043,468	83,135,195	86,250,132	89,402,154	92,589,561	95,810,503	99,080,829	
Investment Income	7,803,906	8,258,224	8,385,471	9,412,077	9,717,737	11,079,741	11,703,125	12,134,982	13,035,689	13,833,959	
Groundwater Management Fee	894,208	894,208	894,208	894,208	894,208	894,208	894,208	894,208	894,208	894,208	
LV Wash Program Fees	443,863	443,863	443,863	443,863	443,863	443,863	443,863	443,863	443,863	443,863	
Grant Proceeds	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	
Other Sources	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	
<b>Subtotal</b>	567,943,017	588,187,898	610,858,004	636,656,572	660,001,472	687,098,872	709,585,541	730,433,655	751,723,233	774,159,576	
Debt Issuance Proceeds	-	260,711,825	-	464,571,442	-	945,178,234	-	897,609,591	-	705,291,348	
<b>SNWA Sources</b>	567,943,017	848,899,724	610,858,004	1,101,228,014	660,001,472	1,632,277,106	709,585,541	1,628,043,245	751,723,233	1,479,450,924	
<b>Uses</b>											
Water Resource Investments	14,251,600	14,607,890	14,973,087	15,347,414	15,731,100	16,124,377	16,527,487	16,940,674	17,364,191	17,798,296	
Energy	35,101,113	36,222,650	35,943,784	37,704,192	38,503,382	40,072,013	41,371,904	42,693,706	43,761,049	44,855,075	
Operating Payroll & Related	86,088,533	87,958,646	90,477,374	92,957,561	91,402,566	84,927,879	92,138,453	92,887,306	104,387,875	111,244,932	
Operating Expenses	77,569,782	79,509,026	81,496,752	83,534,171	85,622,525	87,763,088	89,957,166	92,206,095	94,511,247	96,874,028	
Capital Expenditures	128,409,160	173,787,516	203,541,277	239,293,803	347,370,427	548,995,375	462,123,584	530,352,176	403,528,603	365,814,038	
Debt Service	289,681,711	302,062,078	301,378,976	326,965,820	316,850,320	371,683,589	363,756,516	401,038,955	365,180,495	406,271,514	
<b>SNWA Uses</b>	631,101,899	694,147,807	727,811,250	795,802,961	895,480,319	1,149,566,322	1,065,875,110	1,176,118,912	1,028,733,459	1,042,857,883	
<b>Annual Surplus/(Deficit)</b>	\$ (51,532,578)	\$ 59,569,383	\$ (38,414,408)	\$ 70,735,337	\$ (19,918,946)	\$ 75,448,185	\$ 28,190,165	\$ 72,531,936	\$ 77,211,500	\$ 83,281,773	
Reserve Balance	\$ 621,026,217	\$ 681,049,919	\$ 642,762,758	\$ 714,524,701	\$ 694,911,415	\$ 771,721,604	\$ 800,535,153	\$ 873,498,946	\$ 951,611,153	\$ 1,035,691,196	
Reserve Target	679,183,343	700,869,115	707,281,068	739,717,073	732,212,877	780,270,644	757,128,220	779,361,520	724,998,268	751,916,535	
Excess/(Deficit) of Reserve Target	(58,157,126)	(19,819,196)	(64,518,310)	(25,192,372)	(37,301,462)	(8,549,041)	43,406,933	94,137,426	226,612,885	283,774,661	
% of Reserve Target	91%	97%	91%	97%	95%	99%	106%	112%	131%	138%	
Debt Coverage Ratio	3.52	3.28	3.55	3.21	3.61	3.10	3.41	3.21	3.74	3.58	

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## 2B: 75% Debt/25% Pay-Go · No Contingency

% of Reserve Target		Projected Reserves (in millions)			
Year 5	Year 10	Year 5		Year 10	
		Amount	Target	Amount	Target
75%	83%	\$539	\$722	\$584	\$705

- Debt issued to fund 75% of future MCCC expenditures
- Excludes \$162.3 M contingency
- Catch-up and current year inflation applied to Connection, Commodity and Infrastructure charges

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2B 75% Debt/25% Pay-Go - No Contingency											
	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	
<b>Sources</b>											
Wholesale Delivery Charge	\$ 154,988,470	\$ 160,358,876	\$ 166,230,463	\$ 172,033,155	\$ 177,549,019	\$ 182,881,181	\$ 188,058,845	\$ 194,581,133	\$ 200,999,698	\$ 207,350,154	
Infrastructure Charge	170,520,466	181,214,932	192,163,871	203,523,758	215,171,479	227,223,139	238,241,709	248,004,621	257,943,677	268,109,986	
Commodity Charge	74,386,380	78,537,480	83,647,413	87,519,093	92,832,884	98,080,382	101,679,562	105,751,149	109,774,868	113,766,626	
Connection Charge	76,433,701	72,753,706	70,132,851	70,603,243	67,913,317	67,738,394	66,486,079	63,185,772	59,795,684	57,473,813	
Reliability Surcharge	5,945,321	6,093,954	6,246,303	6,402,460	6,562,522	6,726,585	6,894,750	7,067,118	7,243,796	7,424,891	
Sales Tax	70,745,456	73,851,408	76,932,314	80,043,468	83,135,195	86,250,132	89,402,154	92,589,561	95,810,503	99,080,829	
Investment Income	7,803,906	7,887,972	7,666,762	8,078,429	7,809,224	7,955,920	7,446,267	6,895,293	6,891,842	7,137,197	
Groundwater Management Fee	894,208	894,208	894,208	894,208	894,208	894,208	894,208	894,208	894,208	894,208	
LV Wash Program Fees	443,863	443,863	443,863	443,863	443,863	443,863	443,863	443,863	443,863	443,863	
Grant Proceeds	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	
Other Sources	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	
<b>Subtotal</b>	567,943,017	587,817,647	610,139,295	635,322,924	658,092,958	683,975,051	705,328,684	725,193,965	745,579,386	767,462,814	
Debt Issuance Proceeds	-	195,533,869	-	348,428,581	-	708,883,675	-	673,207,193	-	528,968,511	
<b>SNWA Sources</b>	567,943,017	783,351,516	610,139,295	983,751,505	658,092,958	1,392,858,726	705,328,684	1,398,401,158	745,579,386	1,296,431,325	
<b>Uses</b>											
Water Resource Investments	14,251,600	14,607,890	14,973,087	15,347,414	15,731,100	16,124,377	16,527,487	16,940,674	17,364,191	17,798,296	
Energy	35,101,113	36,222,650	35,943,784	37,704,192	38,503,382	40,072,013	41,371,904	42,693,706	43,761,049	44,855,075	
Operating Payroll & Related	86,088,533	87,958,646	90,477,374	92,957,561	91,402,566	84,927,879	92,138,453	92,887,306	104,387,875	111,244,932	
Operating Expenses	77,569,782	79,509,026	81,496,752	83,534,171	85,622,525	87,763,088	89,957,166	92,206,095	94,511,247	96,874,028	
Capital Expenditures	128,409,160	173,787,516	203,541,277	239,293,803	347,370,427	548,995,375	462,123,584	530,352,176	403,528,603	365,814,038	
Debt Service	289,681,711	298,438,835	297,755,732	316,680,380	306,564,880	347,720,600	339,793,527	363,996,304	328,137,843	358,914,085	
<b>SNWA Uses</b>	631,101,899	690,524,564	724,188,007	785,517,521	885,194,880	1,125,603,332	1,041,912,121	1,139,076,260	991,690,808	995,500,454	
<b>Annual Surplus/(Deficit)</b>	\$ (51,532,578)	\$ 63,192,627	\$ (99,969,121)	\$ 81,020,777	\$ (125,776,367)	\$ 99,411,174	\$ (184,141,404)	\$ 109,574,588	\$ (110,148,246)	\$ 130,639,202	
Reserve Balance	\$ 621,026,217	\$ 684,302,911	\$ 584,112,579	\$ 665,545,023	\$ 539,499,451	\$ 639,057,321	\$ 454,406,264	\$ 563,429,878	\$ 453,278,181	\$ 584,162,737	
Reserve Target	679,183,343	697,245,872	703,657,825	729,431,633	721,927,437	756,307,655	733,165,231	742,318,868	687,955,616	704,559,106	
Excess/(Deficit) of Reserve Target	(58,157,126)	(12,942,961)	(119,545,246)	(63,886,610)	(182,427,986)	(117,250,334)	(278,758,967)	(178,888,991)	(234,677,435)	(120,396,369)	
% of Reserve Target	91%	98%	83%	91%	75%	84%	62%	76%	66%	83%	
Debt Coverage Ratio	3.52	3.32	3.60	3.13	3.56	2.86	3.25	2.57	3.20	2.65	

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## 2C: 50% Debt/50% Pay-Go · No Contingency

% of Reserve Target		Projected Reserves (in millions)			
Year 5	Year 10	Year 5		Year 10	
		Amount	Target	Amount	Target
54%	18%	\$384	\$712	\$119	\$657

- Debt issued to fund 50% of future MCCC expenditures
- Excludes \$162.3 M contingency
- Catch-up and current year inflation applied to Connection, Commodity and Infrastructure charges

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2C

50% Debt/50% Pay-Go - No Contingency

	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Sources										
Wholesale Delivery Charge	\$ 154,988,470	\$ 160,358,876	\$ 166,230,463	\$ 172,033,155	\$ 177,549,019	\$ 182,881,181	\$ 188,058,845	\$ 194,581,133	\$ 200,999,698	\$ 207,350,154
Infrastructure Charge	170,520,466	181,214,932	192,163,871	203,523,758	215,171,479	227,223,139	238,241,709	248,004,621	257,943,677	268,109,986
Commodity Charge	74,386,380	78,537,480	83,647,413	87,519,093	92,832,884	98,080,382	101,679,562	105,751,149	109,774,868	113,766,626
Connection Charge	76,433,701	72,753,706	70,132,851	70,603,243	67,913,317	67,738,394	66,486,079	63,185,772	59,795,684	57,473,813
Reliability Surcharge	5,945,321	6,093,954	6,246,303	6,402,460	6,562,522	6,726,585	6,894,750	7,067,118	7,243,796	7,424,891
Sales Tax	70,745,456	73,851,408	76,932,314	80,043,468	83,135,195	86,250,132	89,402,154	92,589,561	95,810,503	99,080,829
Investment Income	7,803,906	7,517,721	6,948,052	6,744,781	5,900,711	4,832,099	3,189,410	1,655,603	747,996	440,434
Groundwater Management Fees	894,208	894,208	894,208	894,208	894,208	894,208	894,208	894,208	894,208	894,208
LV Wash Program Fees	443,863	443,863	443,863	443,863	443,863	443,863	443,863	443,863	443,863	443,863
Grant Proceeds	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000
Other Sources	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247	5,481,247
Subtotal	567,943,017	587,447,395	609,420,585	633,989,276	656,184,445	680,851,230	701,071,826	719,954,276	739,435,540	760,766,052
Debt Issuance Proceeds	-	130,355,913	-	232,285,721	-	472,589,117	-	448,804,795	-	352,645,674
SNWA Sources	567,943,017	717,803,308	609,420,585	866,274,997	656,184,445	1,153,440,347	701,071,826	1,168,759,071	739,435,540	1,113,411,726
Uses										
Water Resource Investments	14,251,600	14,607,890	14,973,087	15,347,414	15,731,100	16,124,377	16,527,487	16,940,674	17,364,191	17,798,296
Energy	35,101,113	36,222,650	35,943,784	37,704,192	38,503,382	40,072,013	41,371,904	42,693,706	43,761,049	44,855,075
Operating Payroll & Related	86,088,533	87,958,646	90,477,374	92,957,561	91,402,566	84,927,879	92,138,453	92,887,306	104,387,875	111,244,932
Operating Expenses	77,569,782	79,509,026	81,496,752	83,534,171	85,622,525	87,763,088	89,957,166	92,206,095	94,511,247	96,874,028
Capital Expenditures	128,409,160	173,787,516	203,541,277	239,293,803	347,370,427	548,995,375	462,123,584	530,352,176	403,528,603	365,814,038
Debt Service	289,681,711	294,815,592	294,132,489	306,394,940	296,279,440	323,757,611	315,830,538	326,953,652	291,095,191	311,556,657
SNWA Uses	631,101,899	686,901,320	720,564,763	775,232,082	874,909,440	1,101,640,343	1,017,949,131	1,102,033,609	954,648,156	948,143,026
Annual Surplus/(Deficit)										
	\$ (51,532,578)	\$ 23,384,267	\$ (118,092,230)	\$ 84,298,134	\$ (224,625,706)	\$ 46,967,905	\$ (320,066,715)	\$ 65,069,859	\$ (215,960,612)	\$ 164,828,266
Reserve Balance										
Reserve Target	679,183,343	693,622,628	700,034,582	719,146,193	711,641,998	732,344,666	709,202,242	705,276,217	650,912,965	657,201,678
Excess/(Deficit) of Reserve Target	(58,157,126)	(49,498,329)	(174,572,181)	(109,588,930)	(327,554,511)	(302,357,886)	(600,924,866)	(533,462,788)	(695,967,755)	(537,735,764)
% of Reserve Target	91%	93%	75%	85%	54%	59%	15%	24%	-7%	18%
Debt Coverage Ratio										
	3.52	3.36	3.50	3.03	3.49	2.58	2.82	1.78	2.24	1.43