

C l a r k C o u n t y N e v a d a



BIG BEND
Water District

Citizens Advisory Committee

10-Year Capital Needs

July 25, 2017

MEETING AGENDA



Approval of Minutes

10 Year Capital Program

Funding Overview

Potential Future Funding Sources

CAPITAL PROGRAM

10-YEAR CAPITAL PROGRAM: 2018-2027

Pipeline Improvements	\$3.6 million
Emergency Well	1.1 million
Unforeseen Projects or Emergencies	1.0 million
Clearwell Deck Corrosion (Treatment Plant)	820,000
SCADA software conversion	366,000
Rialta Tank Refurbishment	350,000
Large Meter Program	280,000
Treatment Plant Programmer Computer	250,000
Foothills Tank Refurbishment	250,000
Intake VFD	200,000
Advanced Metering Infrastructure	200,000
Rialta Tank – Motor Control Center Replacement	150,000
Ozone Generator Room HVAC	150,000
Reservoir THM Mitigation System	140,000
Intake Structure CP System Replacement	110,000
Casino Drive Pumping Station MMC Replacement	100,000
Treatment Plant Process Controls Upgrade	50,000
Filter Inlet Valves	50,000
Pressure Zone Bypass	18,000
TOTAL	\$9,184,000

MAINTAINING ASSETS

Big Bend's 10-Year capital improvement projects are necessary to maintain existing assets and extend their lifespan.

Proactively maintaining assets reduces life-cycle costs while meeting water quality standards and reliability goals by:

- Assessing condition of critical assets
- Developing maintenance and repair strategies that extend infrastructure life and prevent failures
- Prioritizing short-term renewal requirements
- Planning for long-term expenditures
- Keeping costs to a minimum by maximizing asset life

CAPITAL NEEDS: PIPELINE IMPROVEMENTS



As pipelines age, they become susceptible to leaks.

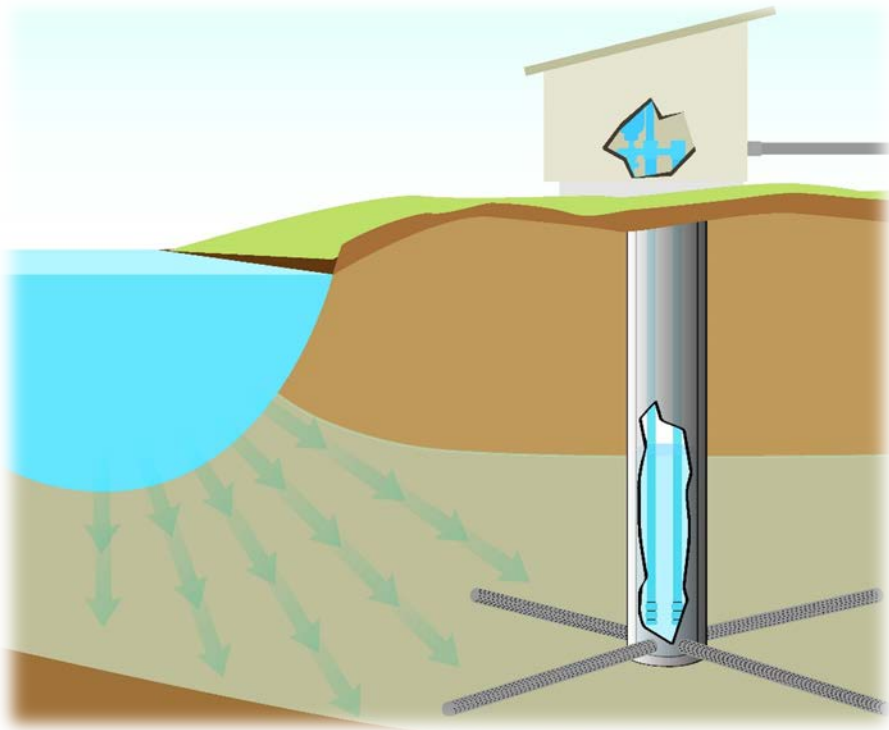
To reduce disruptions to streets and customers, it is advantageous to replace pipelines before they leak or fail.

The 10-year capital program anticipates the strategic replacement of portions of the distribution system that has reached its economic life expectancy.

Depending on the size of the material, this ranges between 1,000 feet per year (large diameter pipe) and 2,000 feet per year (smaller diameter pipe)

10 YEAR COST: \$3.6 million

CAPITAL NEEDS: EMERGENCY WELL



The proposed project will require the construction of a well adjacent to the Colorado River.

Riverbank filtration is being added as a pre-treatment step before water enters the treatment facility.

This is a proven treatment method to help address constituents of concern (turbidity, pathogens, organic matter).

10 YEAR COST: \$1.1 million

CAPITAL NEEDS: UNFORESEEN NEEDS & PROJECTS



Emergencies happen.

Having sufficient funding to address these unanticipated projects help expedite repairs and restoration of water service.

10 YEAR COST: \$1.0 million

CAPITAL NEEDS: CLEARWELL DECK CORROSION



The Clearwell Deck of the Treatment Plan is showing signs of corrosion and maintains insufficient concrete coverage.

Continuing to defer the project could result in structural deficiencies.

The project will repair and coat the deteriorated deck structure, extending the asset's life.

10 YEAR COST: \$820,000

CAPITAL NEEDS: TANK REFURBISHMENTS



The water system includes four tanks – two require refurbishment.

Refurbishment activities include evaluating the structure of the tank, making appropriate repairs and recoating the surfaces with a durable epoxy.

10 YEAR COST: \$600,000

CAPITAL NEEDS: SCADA SOFTWARE CONVERSION



The existing supervisory control and data acquisition (SCADA) system software is outdated and requires significant upgrades.

Upgrades will also improve cybersecurity protections.

New software will offer improved technical support and will be supported by the vendor.

10 YEAR COST: \$366,000

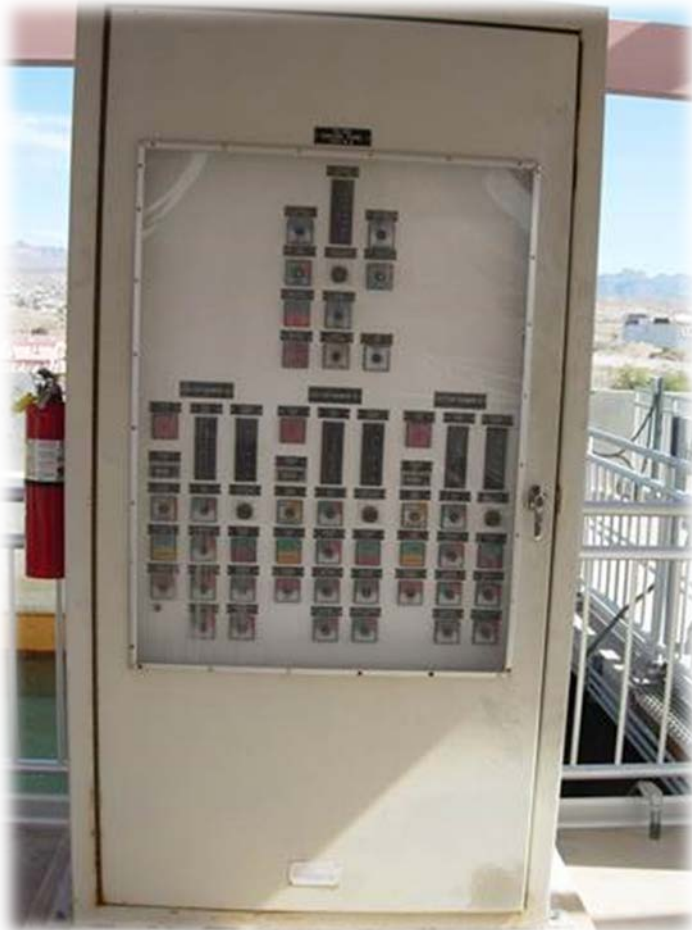
CAPITAL NEEDS: LARGE METER PROGRAM



Large meters in the water system have reached the end of their useful life, which may result in inaccurate reads.

10 YEAR COST: \$280,000

CAPITAL NEEDS: TREATMENT PLANT UPGRADES



The processors that operate the water system are outdated and no longer supported by the manufacturer.

Upgrading the processors and control equipment will greatly improve system reliability and reduce maintenance issues.

Upgrades will also improve cybersecurity protections.

10 YEAR COSTS:

Treatment Plant Programmer Computer: \$250,000

Treatment Plant Process Control Upgrades: \$50,000

CAPITAL NEEDS: INTAKE VARIABLE FREQUENCY DRIVE



A Variable Frequency Drive is used to reduce/increase inlet flows to the water system.

A failed system at the intake will be replaced to ensure proper operations for a longer period than a refurbished unit that may not have spare parts available in the future.

10 YEAR COST: \$200,000

CAPITAL NEEDS: AMI SYSTEM INSTALLATION



Advanced metering infrastructure (AMI) will replace traditional meters with data-centric meters.

These advanced meters will increase consistency in meter reads.

Helps reduce water system leaks and increase water conservation.

10 YEAR COST: \$200,000

CAPITAL NEEDS: OZONE GENERATOR HVAC



The temperature inside the ozone generator room at the treatment plant is not regulated effectively.

A new HVAC unit will significantly improve cooling and ventilation.

Electrical equipment will be properly insulated from dirt and high temperatures.

10 YEAR COST: \$150,000

CAPITAL NEEDS: 1000 ZONE TANK – TTHM MITIGATION



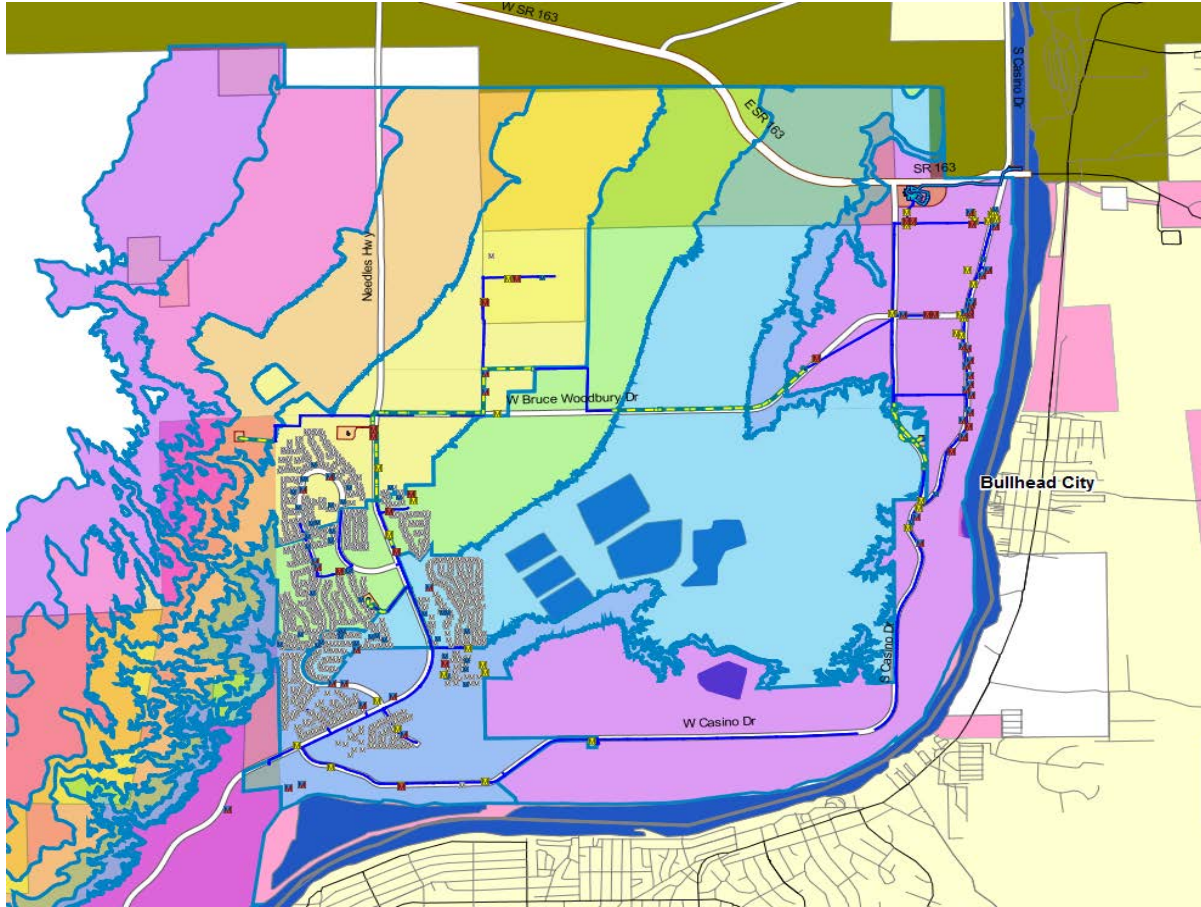
Trihalomethanes (TTHM) are a group of chemicals that are formed with chlorine comes in contact with naturally occurring organics found in drinking water.

The EPA has strict limits on the amount of TTHMs allowed within a distribution system, and some mitigation is required to control the level of TTHMs within the BBWD distribution system.

The 1000 Zone Tank requires installation of a TTHM mitigation system.

10 YEAR COST: \$140,000

CAPITAL NEEDS: PRESSURE ZONE BYPASS



A pressure zone bypass will allow water stored in Pressure Zone Tank Nos. 1100 and 1150 be available to support the 750 zone.

This project will increase reliability for Laughlin's highest-demand area during planned or emergency outages.

10 YEAR COST: \$18,000

CAPITAL NEEDS: OTHER NEEDS

The Rialta Tank requires replacement of its Motor Control Center. (\$150,000)

The intake structure needs a replacement of its Cathodic Protection System, which is more than 20 years old and protects the inlet pipeline. (\$110,000)

The Motor Control Center along Casino Drive does not meet current safety standards and a replacement is required. (\$100,000)

Six filter inlet valves are leaking, cannot be repaired and have served their useful life. (\$50,000)

FUNDING OVERVIEW

SOURCES OF FUNDS

The Big Bend Water District relies upon the following sources of funds to cover expenditures:

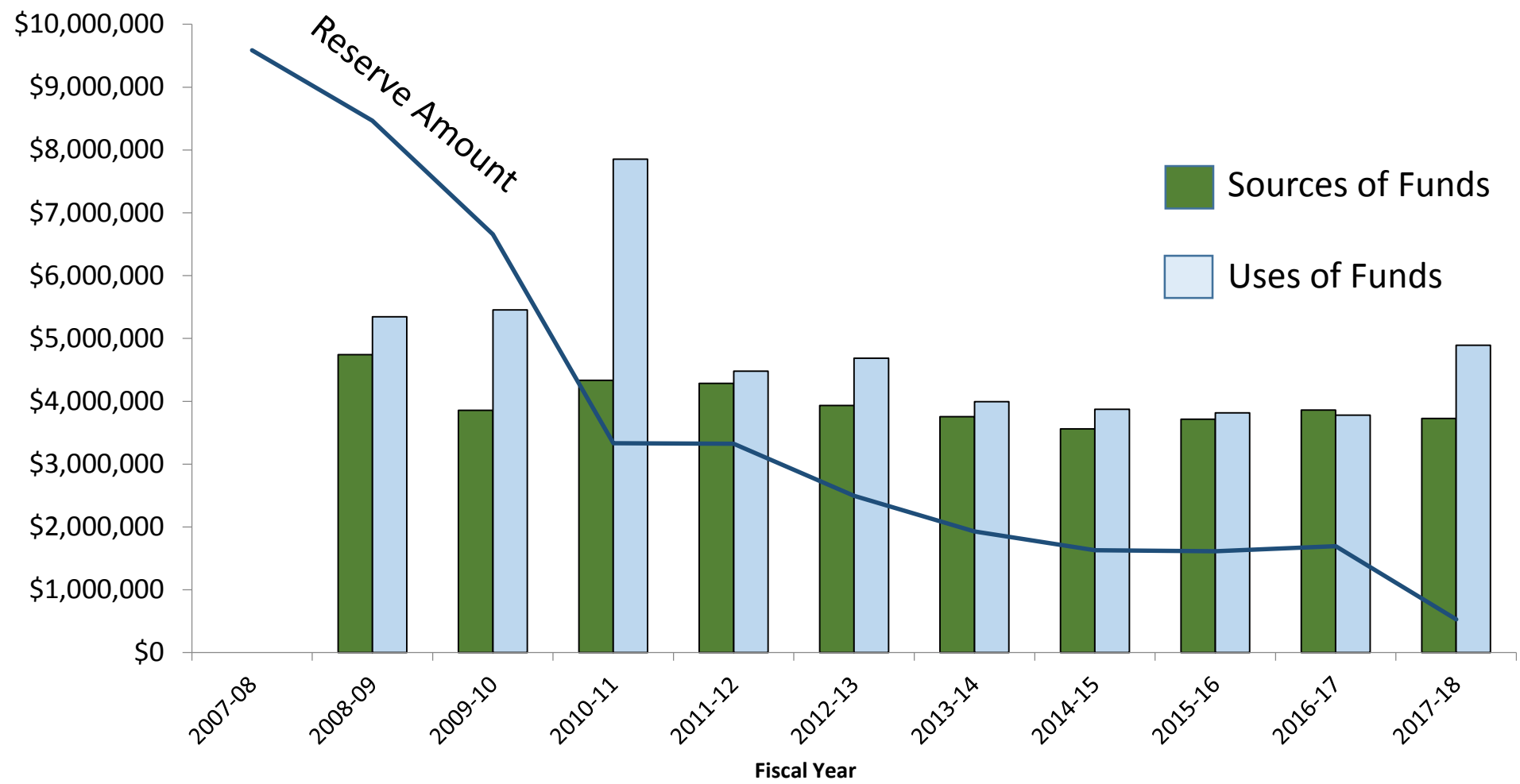
- **Water Charges:** Water rates and fees collected from customers for service and consumption
- **Interest Income:** Income earned from investing the Big Bend Water District reserves
- **System Development Charges:** Revenue collected from new system connections
- **Sales Tax:** A portion of a quarter-cent of taxable sales in Clark County is designated for water and wastewater improvements
- **Grant Proceeds:** When available, grant funding has helped offset expenditures

USES OF FUNDS

The Big Bend Water District expends proceeds in the following ways:

- **Energy:** Power costs required to operate system
- **Payroll & Related:** Salaries and benefits for the team dedicated to operate the system and maintain the system
- **Operating Expenses:** Materials, supplies, truck maintenance, etc.
- **Capital Expenditures:** Costs incurred when making improvements or repairs to the existing water system to expand the life or service levels, and/or new infrastructure
- **Debt Service:** Principal and interest payments on debt

HISTORICAL SOURCES AND USES



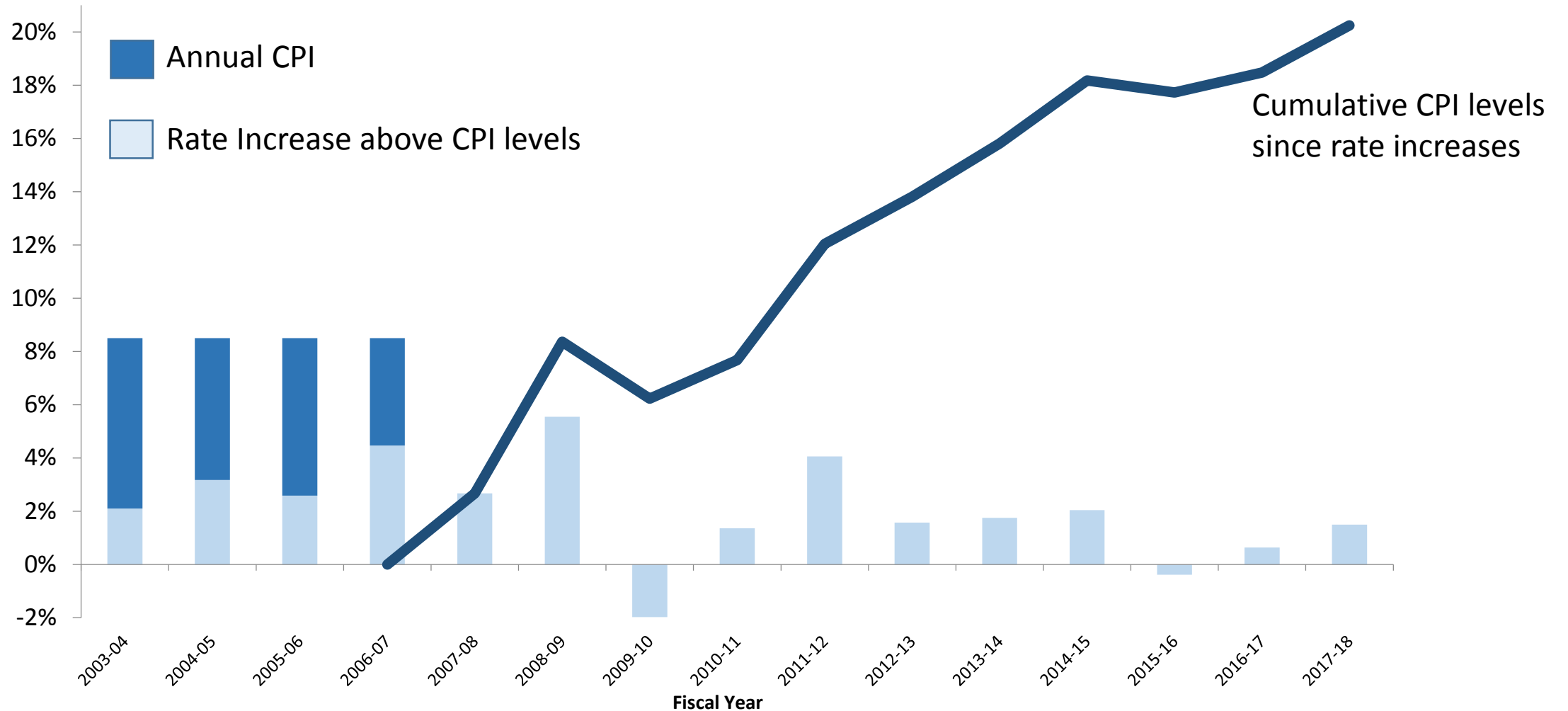
WATER RATE HISTORY

Laughlin customers experienced consecutive rate increases from 2003-2006.

Year	Tier 1 Rates		Tier 2 Rates	
	Rate per 1,000 gal.	Annual Increase	Rate per 1,000 gal.	Annual Increase
2002	\$1.94		\$2.43	
2003	\$2.11	8.8%	\$2.64	8.6%
2004	\$2.29	8.5%	\$2.86	8.3%
2005	\$2.49	8.7%	\$3.11	8.7%
2006	\$2.70	8.4%	\$3.38	8.7%

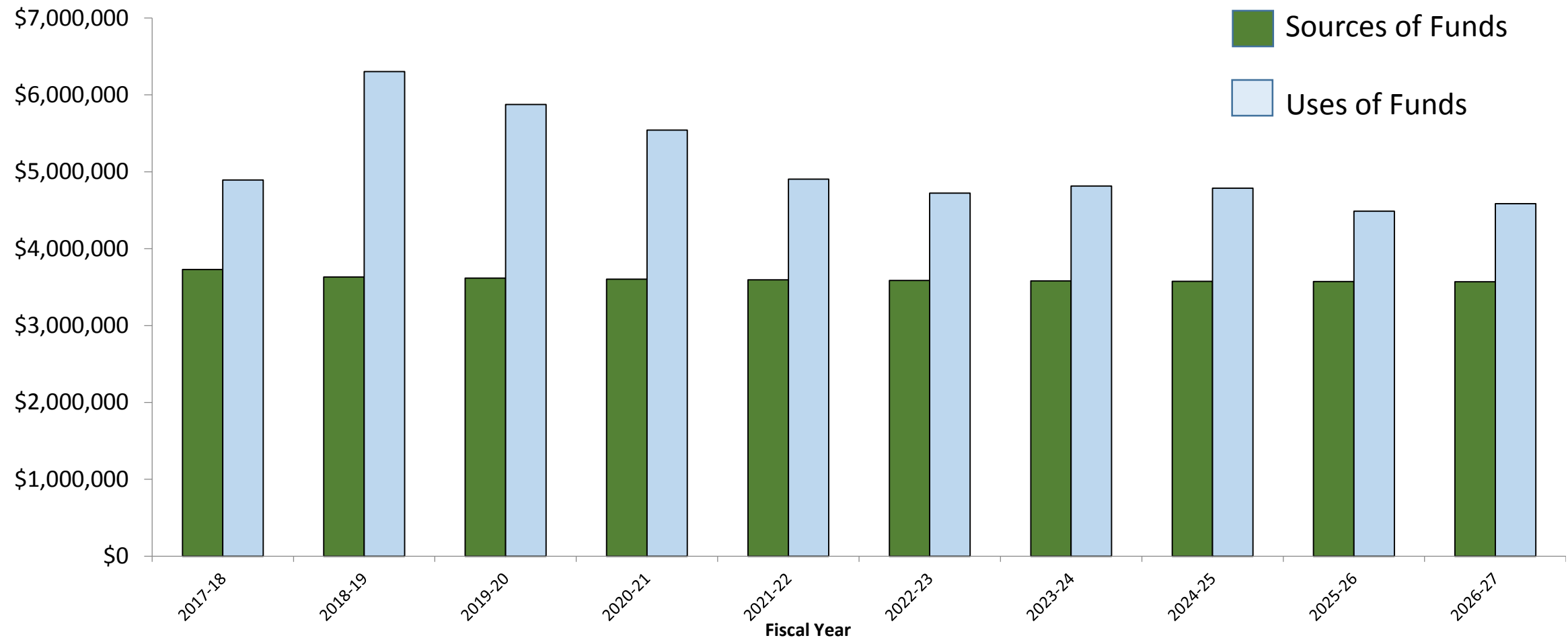
FUNDING OUTLOOK

Inflation has increased by 20% since last rate increase



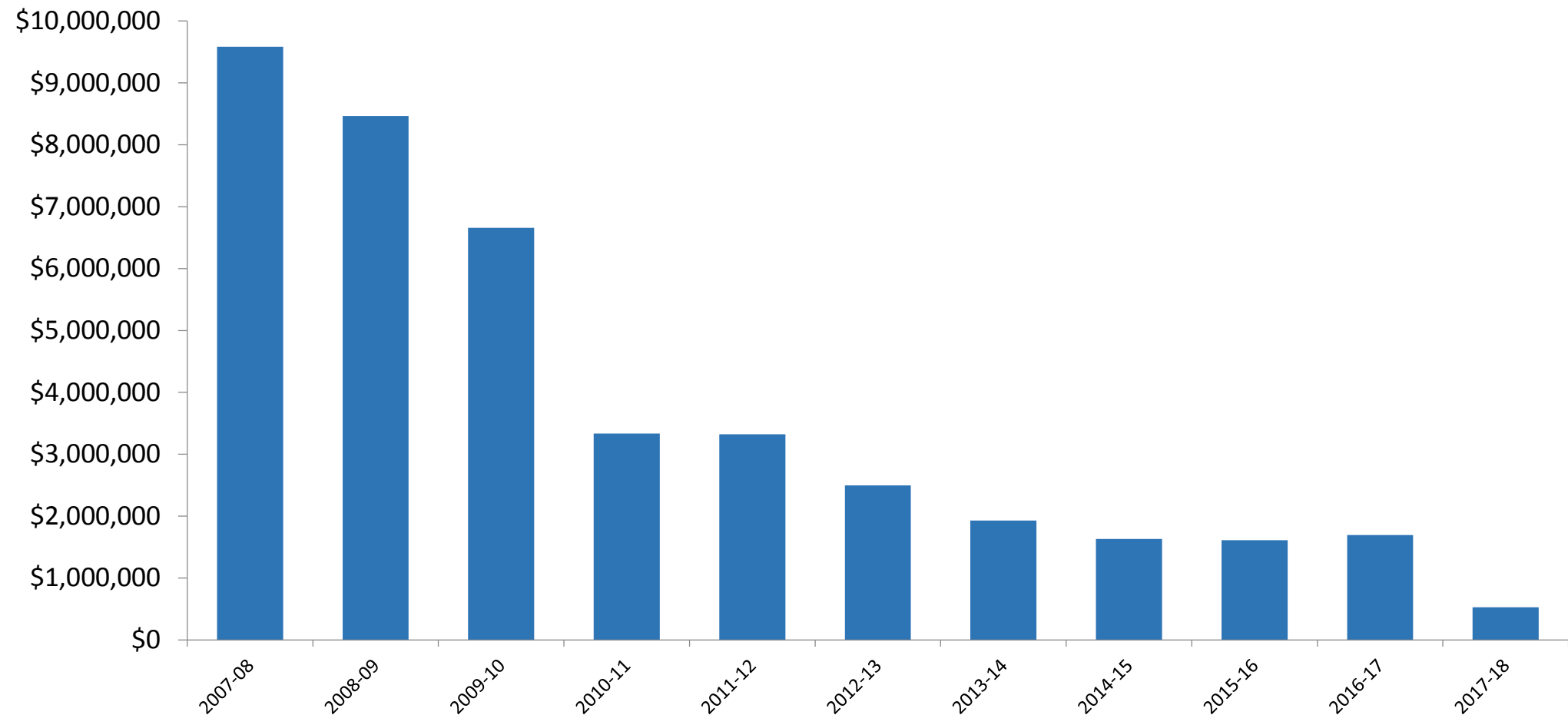
10-YEAR PROJECTIONS – BASELINE

Projected funding gap of \$14 million by 2026-27

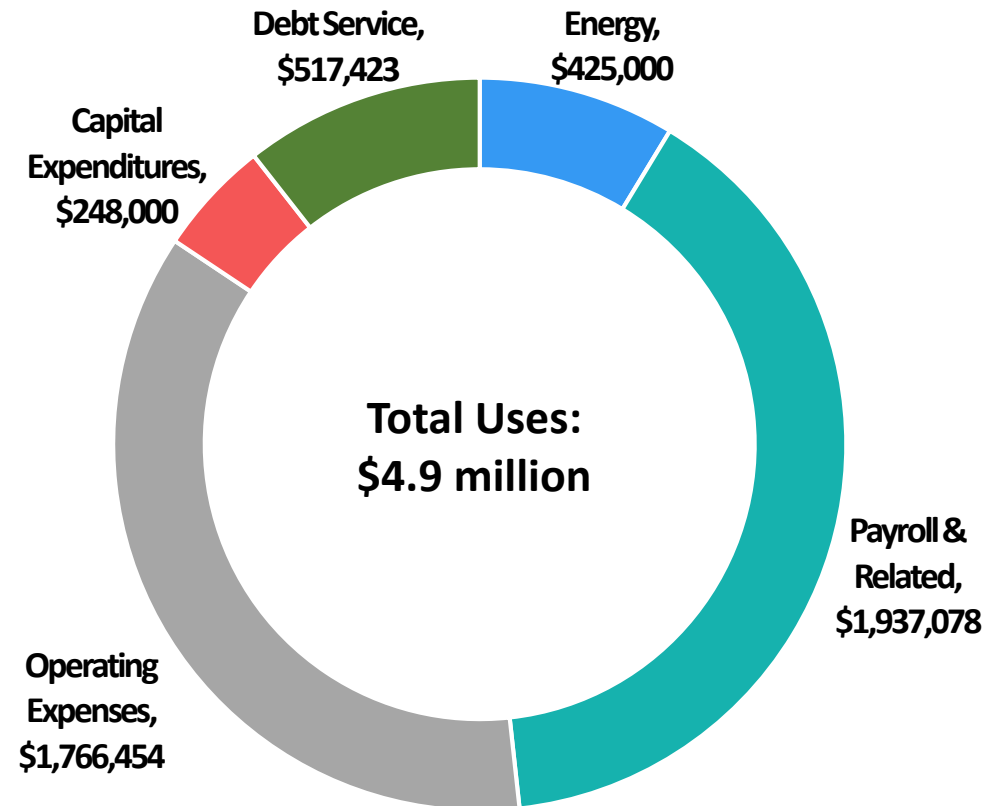
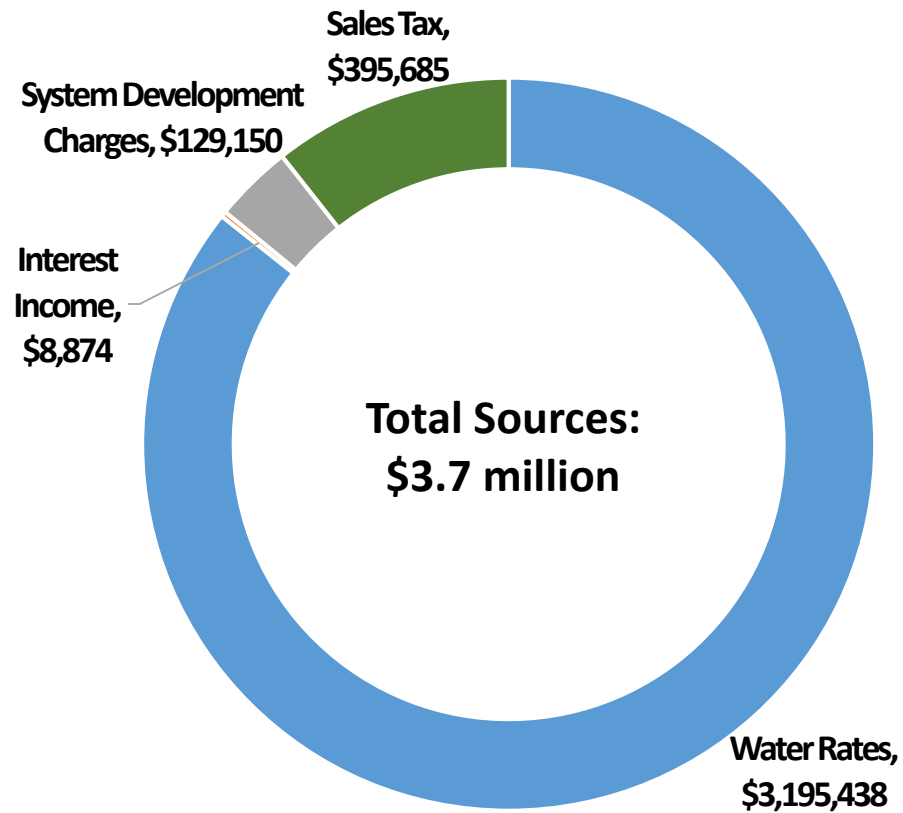


FUNDING OUTLOOK

Reserves are projected to be fully expended by 2018



2017-18 BUDGET



BBWD FUNDING PROJECTIONS

Funding the gap can be accomplished through a number of ways:

Pursuing Other Sources

- ✓ Grants
- ✓ State funds
- ✓ Other revenue sources

Issuing Debt

- ✓ Bonds
- ✓ Low interest loans

Increasing Water Rates

- ✓ Service Charge
- ✓ Water Rates

OTHER SOURCES - **GRANTS**

When available, grant funding can be used to offset costs.

The LVVWD has secured more than \$1 million in grant funding to fund improvements to the BBWD:

- 2010: Service line installations, electrical upgrades and pond lining (\$1 million from the Bureau of Reclamation)
- 2011: Filter flow meters and leak detection equipment (\$197,505 from the Bureau of Reclamation)
- 2017: Emergency well (\$300,000 from the Bureau of Reclamation)

OTHER SOURCES - **GRANTS**

In July, the BBWD received notice that the Bureau of Reclamation awarded \$300,000 to help fund the costs of the emergency well.

- The funding is contingent on a matched amount**
- The project is part of its Drought Resiliency grant program, which funds projects that address drought-related impacts and risks**
- The Assistance Agreement is scheduled to go to the BBWD Board of Trustees for approval in August**

OTHER SOURCES - GRANTS

In the past, the Bureau of Reclamation has funded AMI installations in other rural communities operated by the LVVWD.

When funding becomes available, staff will prepare a grant application for AMI installation in BBWD, which can help offset capital costs.

Grant applications are competitive and not guaranteed.

OTHER SOURCES – STATE FUNDING

The State of Nevada maintains Principal Forgiveness Loans through the State Revolving Fund Loan for improvements to water systems.

These Principal Forgiveness Loans are awarded to water systems throughout Nevada in amounts that cannot exceed \$500,000.

- New infrastructure**
- Repairs, replacement, rehabilitation**

The Big Bend Water District's Emergency Well project was added to the Priority List earlier this year; funding is anticipated later this year.

Applications are competitive and not guaranteed.

OTHER SOURCES – FORT MOHAVE LAND DEVELOPMENT FUND

- **The state of Nevada established the Fort Mohave Land Development Fund in 1959.**
- **The Fund was created for, and is used to develop, the Fort Mohave Valley.**
- **The Fund is administered by Clark County where it remains separate from other County funds.**
- **Use of the resources within the Fund requires approval by the Clark County Commission.**

OTHER SOURCES – FORT MOHAVE LAND DEVELOPMENT FUND

Uses of the fund is outlined under Chapter 427, Sec. 9 of Nevada Statute:

- Purchase and acquire lands**
- Develop the Fort Mohave Valley or any general improvement district, special district, town or city whose territory contains land in the Fort Mohave Valley.**
- Development as defined in the statute includes planning, design, and construction of capital improvements which develop the land in the Fort Mohave Valley.**

OTHER SOURCES – FORT MOHAVE LAND DEVELOPMENT FUND

COUNTY FUNDS 234 & 434:

Original amount received from the Colorado River Commission was \$9,250,545 and deposited into County Fund 234 in FY 2007.

Revenues:

Right of Way for AT&T:	\$24,390 / year since 2008
Land Lease – Parcel A:	\$560,000 / year since FY 2016
Land Lease – Parcel B:	\$370,650 / year since FY 2016
Interest Earnings	

OTHER SOURCES – FORT MOHAVE LAND DEVELOPMENT FUND

COUNTY FUNDS 234 & 434:

Expenditures:

To date, primarily used for design & engineering on the Bridge project (up to \$5 million approved by both the LTAB and County Commission)

Cash:

Current Available Cash Balance at 7/25/17: \$8,470,572 (unaudited)*

**Adjusted for the remaining balance on the Bridge apportionment*

ISSUING DEBT / LOW INTEREST LOAN

- **Commonly used by water utilities to fund capital programs**
- **Payments spread out over life of infrastructure (20 – 30 years)**
- **Helps minimize immediate rate impacts**

INCREASING WATER RATES

- **Increases can be made to the Service Charge (a fixed rate), the water rates (a variable rate) or a combination of both**
 - **Service charge increases are typically a more reliable revenue source**
 - **Water rate increases help send conservation signals**

RATE MODEL

The Rate Model will include the 10-year projected uses of funds from the following:

Capital Costs

- ✓ 10-Year Capital Program

Operating & Maintenance

- ✓ Payroll & Related
- ✓ Energy
- ✓ Operating Expenses

Debt Service

- ✓ Currently issued debt is scheduled to retire in 2024-25

Funding Reserves

- ✓ Rebuilding reserves (90 days of operating & maintenance costs, or 25% annual O&M costs)

RATE SCENARIOS

All scenarios assume implementation of 10-Year Capital Program

BASELINE

No new funding sources

CIP is funded by Pay-Go

No increases to water rates

Scenario 1

\$0.5 m in addl. funding

Debt issuance

Water rates fund gap

Scenario 2

\$3.5 m in addl. funding

Debt issuance

Water rates fund gap

Scenario 3

\$5.5 m in addl. funding

Pay-Go

Water rates fund gap

Scenario 4

\$5.5 m in addl. funding

Debt issuance

Water rates fund gap

SAMPLE CUSTOMERS

Single Family Resident

Elementary School

Gaming/Resort

Multi-Family Residential

Small Business

Standalone Restaurant

Outlet Mall

Non Profit (Church)

Non Profit (American Legion)

Library

Park

NEXT MEETING

August 7 at 10:00 a.m.

Tentative Discussion Topics: Rate making, rate scenarios, sample customers