2020 Water and Wastewater Utilities Update

April 21, 2020
City Council Meeting
Agenda Item 14.A

William Tarbox
Public Works Director

Utilities Are A Partnership

- Every City department has a role in running the utilities including administration, operations, accounting, permitting, human resources, and emergency response.

- Special thanks to the following for help on this presentation
  - Cindy Mosser, Finance Director
  - James Russell-Field, Assistant Finance Director
  - Kyle Ochenduszko, Deputy Public Works Director
  - Carrie Wenslawski, Management Analyst, Public Works Department

Staff Recommendation

- Receive the water and wastewater utilities financial update report as requested.
- Staff is not recommending action by City Council.

What to Expect in This Presentation

- Historical summary of each utility
- NBS True-Up Analysis of water & wastewater finances
- Current picture of each enterprise fund

What's Coming Next?

- Condition Assessment/ Master Plan Update/ Updated Capital Improvement Program (CIP) Project list (summer 2020)
- Future financial plan/ utility rate study (TBD)
- Capacity fee update (winter 2020)

Overview

- Background
- Utilities Funding Structure
- Summary of Revenues
- Summary of Expenses
- Reserves
- Staffing
- Next Steps

Background

Background

- An “enterprise fund” is a governmental self-supporting fund that provides a good or service
- Separate from the General Fund
- The Water and Wastewater Funds are two of the City’s enterprise funds
- Funded mostly by ratepayers paying bi-monthly bills

Water Enterprise Fund

- People
  - 23.1 Full Time Equivalent (FTE) positions spread among a Water Treatment Plant (WTP), field distribution, engineering, administrative, and support staff
- Infrastructure
  - 2 pump stations in Cordelia & a 14 mile raw water line
  - 12 million gallons per day (MGD) conventional surface WTP staffed 24 hours/day
  - 4 active reservoirs in town (Lake Herman is our favorite!)
  - 4 pump stations in town
  - 160 miles of distribution mains and service lines
  - Partially funds City's water quality laboratory

Water Doesn’t Come from the Tap!

Water Use by Source

State Water Project

72%

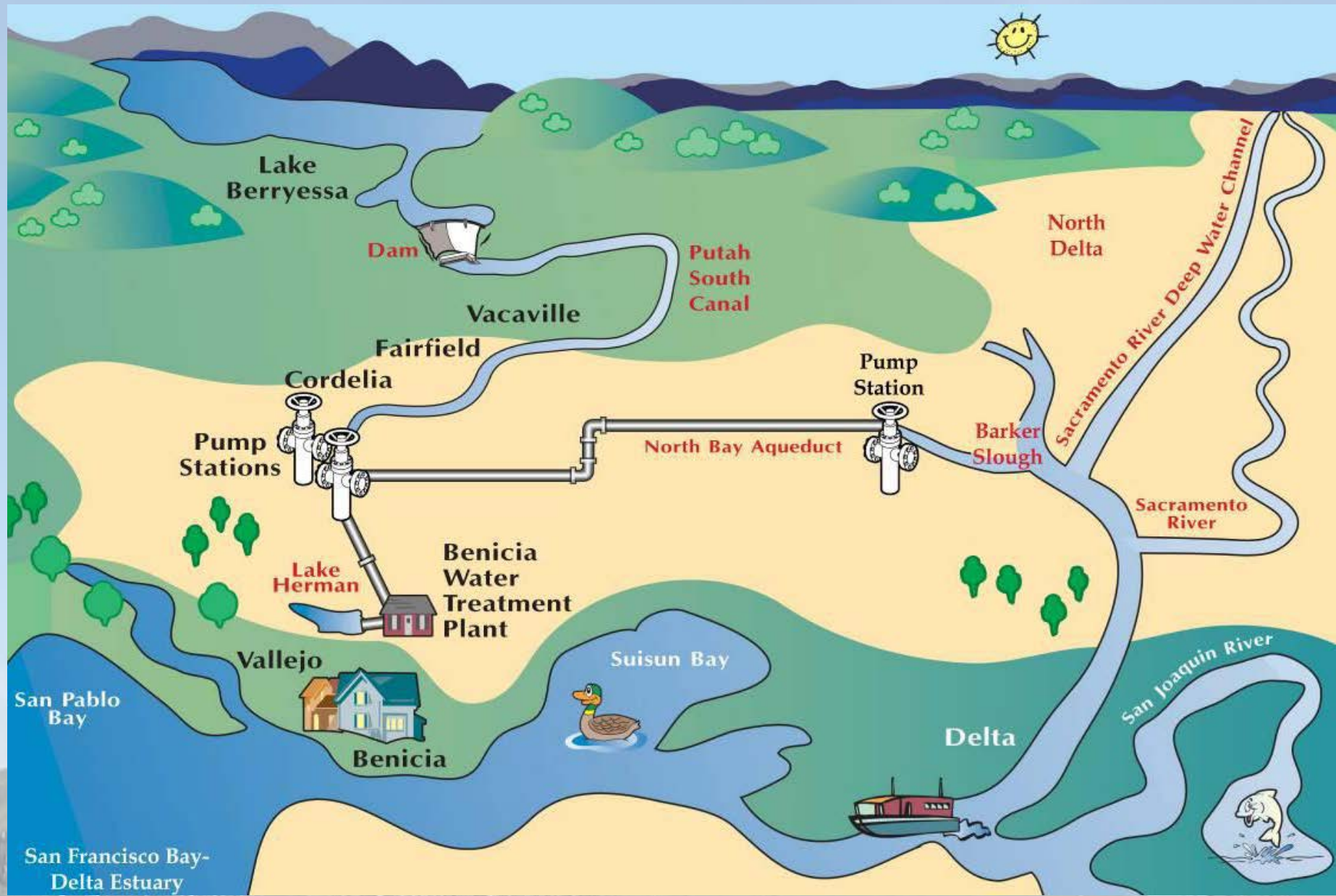
Solano Project

16%

Other

(Lake Herman, Vallejo, transfers, etc.)

12%



Wastewater Enterprise Fund

- People
  - 24.1 FTE spread among a Wastewater Treatment Plant (WWTP), field collections, engineering, administrative, and support staff
- Infrastructure
  - 21 lift stations
  - 160 miles of collection
  - 12 MGD secondary WWTP staffed 7 days per week
  - Partially funds City's water quality laboratory
  - 1,000 foot wastewater discharge outfall in Carquinez Strait

How Do We Treat Wastewater?

Water Rate History

2006 – 2016 Water Bi-Monthly Rate			
	Fixed	Variable ($/HCF*)	Percent Increase
FY06/07	$27.60	Tier 1 $1.37; Tier 2 $2.15; Tier 3 $2.30	2%
FY07/08	$27.60	Tier 1 $1.37; Tier 2 $2.15; Tier 3 $2.30	0%
FY08/09	$27.60	Tier 1 $1.37; Tier 2 $2.15; Tier 3 $2.30	0%
FY09/10	$27.60	Tier 1 $1.37; Tier 2 $2.15; Tier 3 $2.30	0%
FY10/11	$27.60	Tier 1 $1.37; Tier 2 $2.15; Tier 3 $2.30	0%
FY11/12	$27.60	Tier 1 $1.37; Tier 2 $2.15; Tier 3 $2.30	0%
FY12/13	$29.54	Tier 1 $1.46; Tier 2 $2.30; Tier 3 $2.46	7%
FY13/14	$33.36	Tier 1 $1.65; Tier 2 $2.60; Tier 3 $2.78	12.9%
FY14/15	$37.20	Tier 1 $1.84; Tier 2 $2.90; Tier 3 $3.10	11.5%
FY15/16	$39.72	Tier 1 $1.97; Tier 2 $3.10; Tier 3 $3.31	6.8%

* HCF = Hundred cubic feet (approximately 748 gallons)

Wastewater Rate History

2006 – 2016 Wastewater Bi-Monthly Rate			
	Fixed	Variable ($/HCF)	Percent Increase
FY06/07	$82.66	N/A	5%
FY07/08	$82.66	N/A	0%
FY08/09	$82.66	N/A	0%
FY09/10	$82.66	N/A	0%
FY10/11	$82.66	N/A	0%
FY11/12	$82.66	N/A	0%
FY12/13	$91.76	N/A	11%
FY13/14	$100.02	N/A	9%
FY14/15	$106.52	N/A	6.5%
FY15/16	$110.78	N/A	4%

2016-2021 Water & Wastewater Rates

- Current rate study
- Bring both utilities to financial solvency
- Initiate small maintenance projects and start saving for larger projects

	FY16/17	FY17/18	FY18/19	FY19/20	FY20/21
Water	20%	16%	10%	3%	3%
Wastewater	16%	12%	~~9%~~ 0% *	7%	5%

**Note: On April 17, 2018, City Council reduced the FY18/19 wastewater rate increase from 9% to 0%.*

Infrastructure Condition Assessment

- City Council approved contract and scope of work for Stantec consulting firm on May 7, 2019.

- Stantec will do the following by summer 2020:
  - Independently assess the useful life of the City's water and wastewater key infrastructure
  - Update the City's water and wastewater master plans
  - Provide a suggested update to both utilities' CIP project list

Utility Financial Status Update

- City staff engaged NBS, the same consulting firm that drafted 2016-21 rate study, to review audited financial statements FY16/17 through 18/19

- Test & validate assumptions in 2016-21 rate study

- The Executive Summary of the Water and Wastewater True-Up Analysis, dated April 13, 2020 (NBS True-Up Analysis), is provided as Attachment 2.

Utilities Funding Structure

Rates vs. Capacity Fees

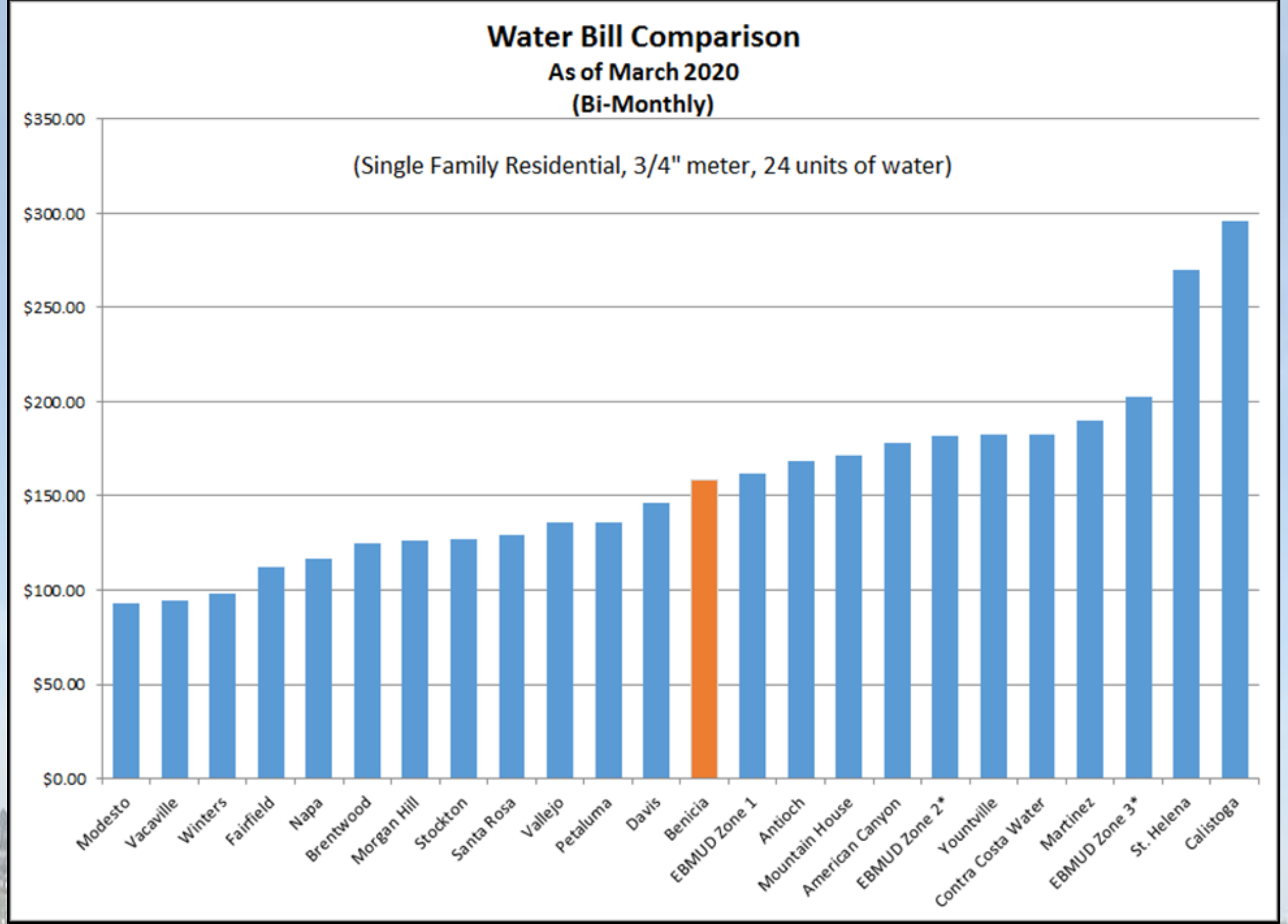
- Rates are assessed on current users; capacity fees are charges for future users.
- Most revenue for each utility comes from rates (bi-monthly bills).
- Capacity fees are one-time fees to recover the costs to provide facility capacity to new users, without burdening existing users, and cannot be used for any other use.
- Capacity fee funds are excluded from the scope of the NBS True-Up Analysis and this staff report.

Revenue Summary

Water Revenue

Revenues generally match 2016-21 rate study assumptions

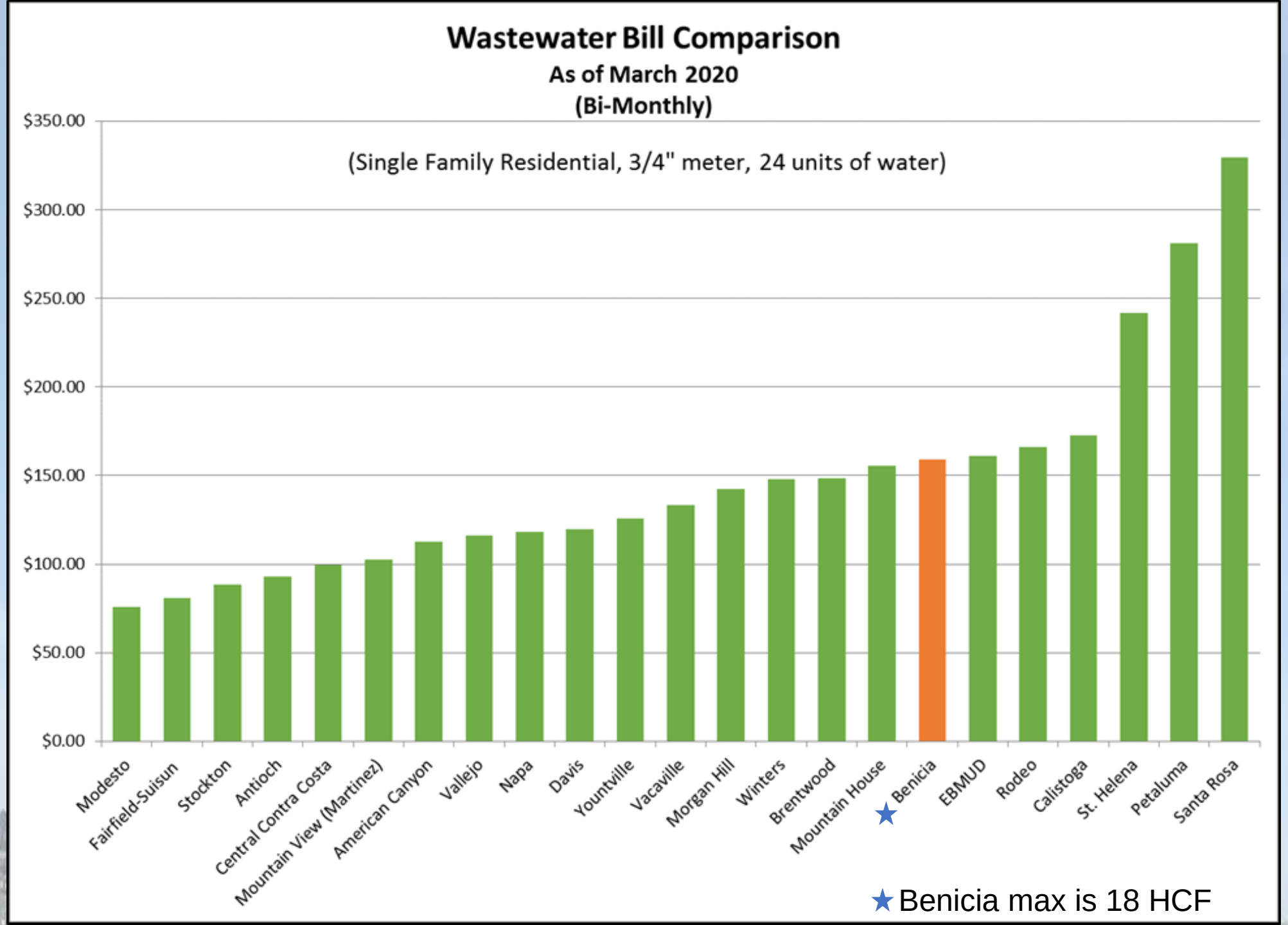
	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21
Rate Increase	20%	16%	10%	3%	3%
Single-Family Residential Fixed Rate	$26.00	$30.16	$ 33.18	$34.18	$35.20
Single-Family Residential Volumetric Rate ($/HCF)	$3.56	$4.13	$4.54	$ 4.67	$4.81
Revenue					
2016 Estimate	$7,195,583	$8,976,490	$9,811,177	$10,086,624	$10,370,334
2020 Actual/ Estimate	$7,200,858	$9,255,835*	$10,478,726	$10,836,110	$11,139,320
Percent Difference	0%	3%	7%	7%	7%


Water Bill Comparison
As of March 2020
(Bi-Monthly)
(Single Family Residential, 3/4" meter, 24 units of water)
$350.00
$300.00
$250.00
$200.00
$150.00
$100.00
$50.00
$0.00
Modesto
Vacaville
Winters
Fairfield
Napa
Brentwood
Morgan Hill
Stockton
Santa Rosa
Vallejo
Petaluma
Davis
Benicia
EBMUD Zone 1
Antioch
Mountain House
American Canyon
EBMUD Zone 2*
Yountville
Contra Costa Water
Martinez
EBMUD Zone 3*
St. Helena
Calistoga

Wastewater Revenue

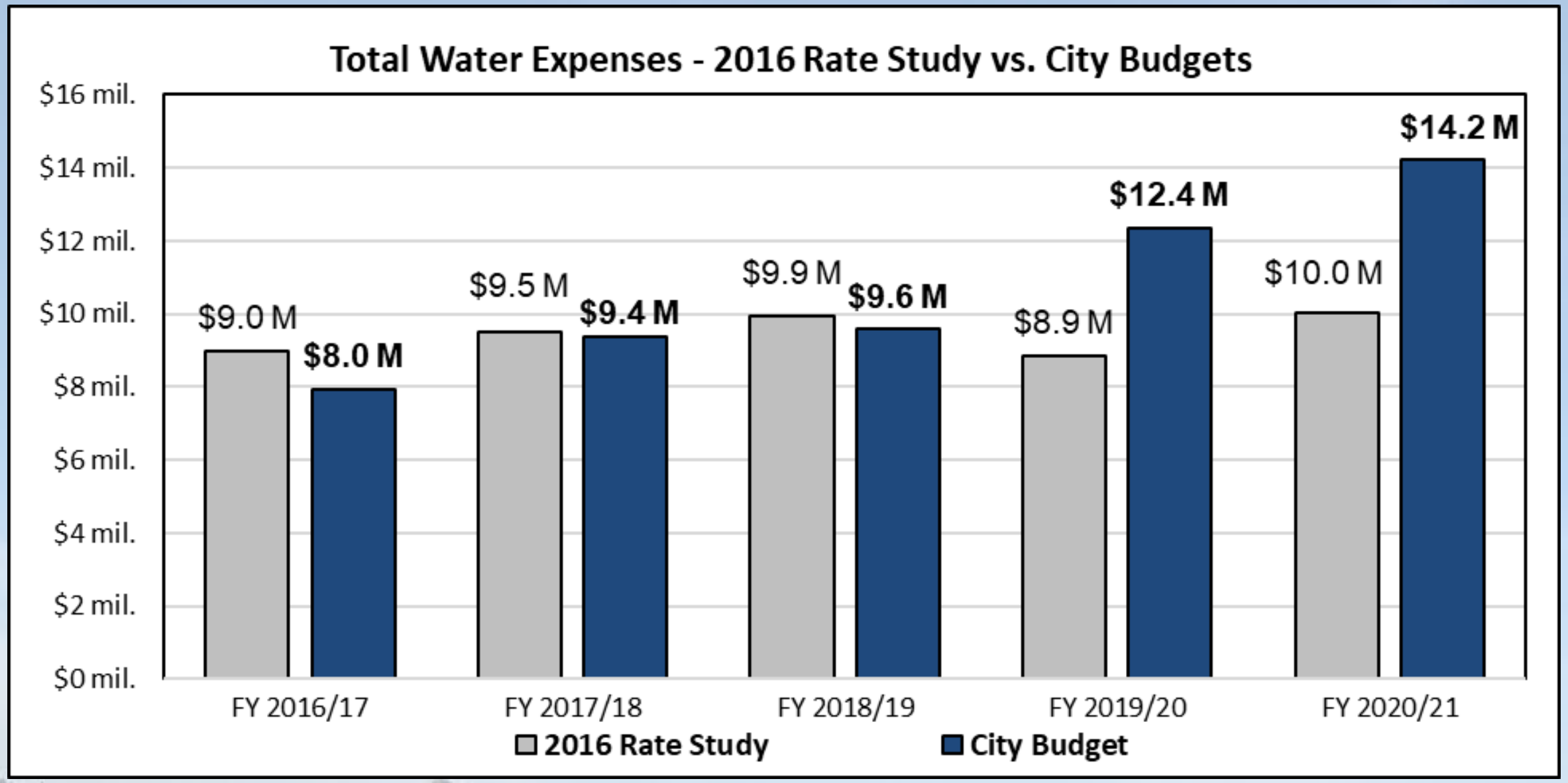
Revenues **do not** match 2016-21 rate study assumptions
2018 rate adjustment had significant negative impact on revenues

	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21
Rate Increase	16%	12%	~~9%~~ **0%**	7%	5%
Single-Family Residential Fixed Rate	$86.90	$97.34	$97.34	$104.14	$109.36
Single-Family Residential Volumetric Rate ($/HCF)	$2.54	$2.85	$2.85	$3.05	$3.20
Revenue					
2016 Estimate	$10,006,757	$11,207,568	$12,216,249	*$13,071,387*	*$13,724,956*
2020 Actual/*Estimate*	$8,648,995	$10,031,233	$10,269,361	*$11,214,980*	*$11,775,720*
Percent Difference	-15%	-11%	-17%	*-15%*	*-15%*



★Benicia max is 18 HCF

Expense Summary


Total Water Expenses - 2016 Rate Study vs. City Budgets
$16 mil.
$14 mil.
$12 mil.
$10 mil.
$8 mil.
$6 mil.
$4 mil.
$2 mil.
$0 mil.
$9.0 M
$8.0 M
$9.5 M
$9.4 M
$9.9 M
$9.6 M
$8.9 M
$12.4 M
$10.0 M
$14.2 M
FY 2016/17
FY 2017/18
FY 2018/19
FY 2019/20
FY 2020/21
2016 Rate Study
City Budget

Water Expense Categories Explained

Operations

Contracted Services

Supplies/Equipment

Chemicals

Untreated Water

Permits/Fees

Maintenance/Repairs

Utilities

Salaries and Benefits

Rate-Funded Capital Projects and Preventative Maintenance

Projects in the City's approved 5-Year Capital Improvement Program

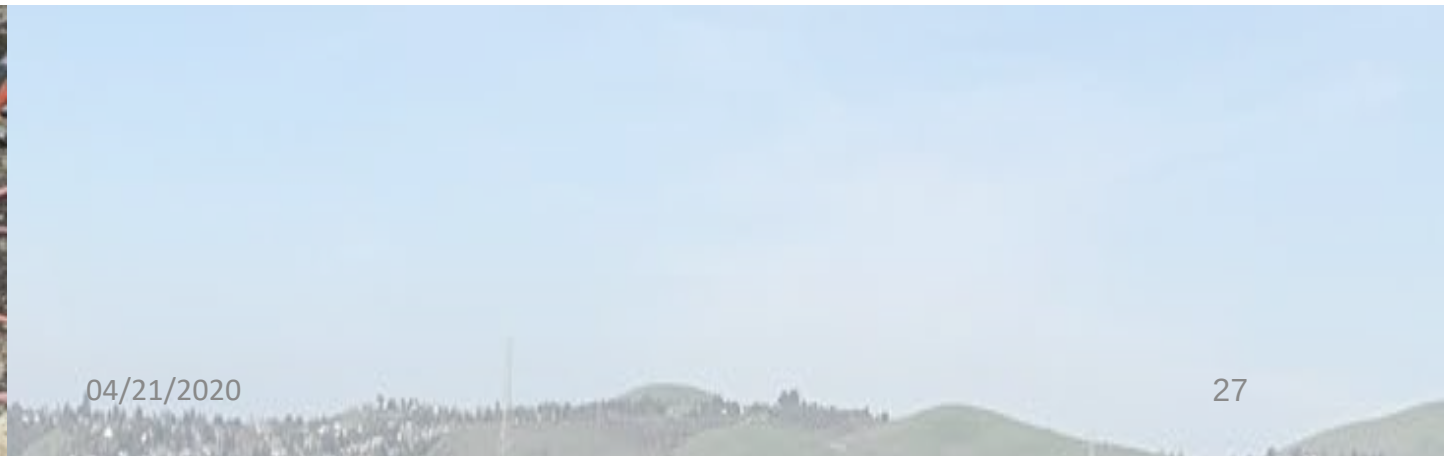
Preventive Maintenance Projects for the WTP

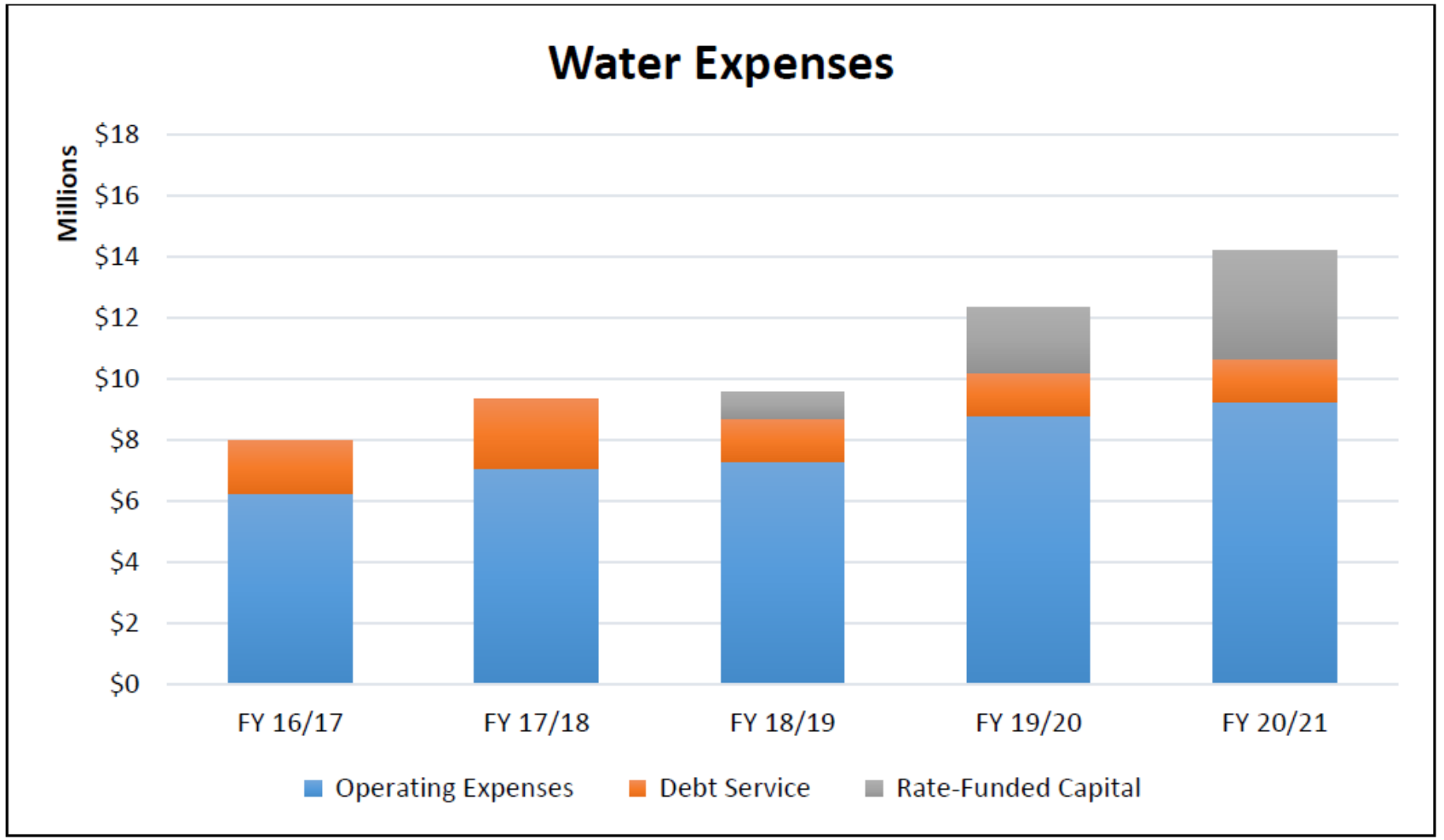
Preventive Maintenance Projects for the Water Distribution System

Debt Service Repayments

SRF Loan for the 2006 WTP Improvement Project

Lease Purchase Agreement for the 2017 AMI Water Meter Replacement Project




Water Expenses
Millions
$18
$16
$14
$12
$10
$8
$6
$4
$2
$0
FY 16/17
FY 17/18
FY 18/19
FY 19/20
FY 20/21
Operating Expenses
Debt Service
Rate-Funded Capital

Water Operations Data

- Zero violations in last decade
- Treat & distribute approximately 4,000 acre-feet of water per year
- 14,000 water quality tests in 2019
- Approximately 100 water leak repairs per year
- Approximately 5,000 customer service calls in 2019

Water Meter and AMI Project

$7,991,765 project to replace 9,580 aging and non-functioning water meters throughout the City and implementing Advanced Metering Infrastructure (AMI) technology in FY 17/18

WTP Chemical Building Electrical Project

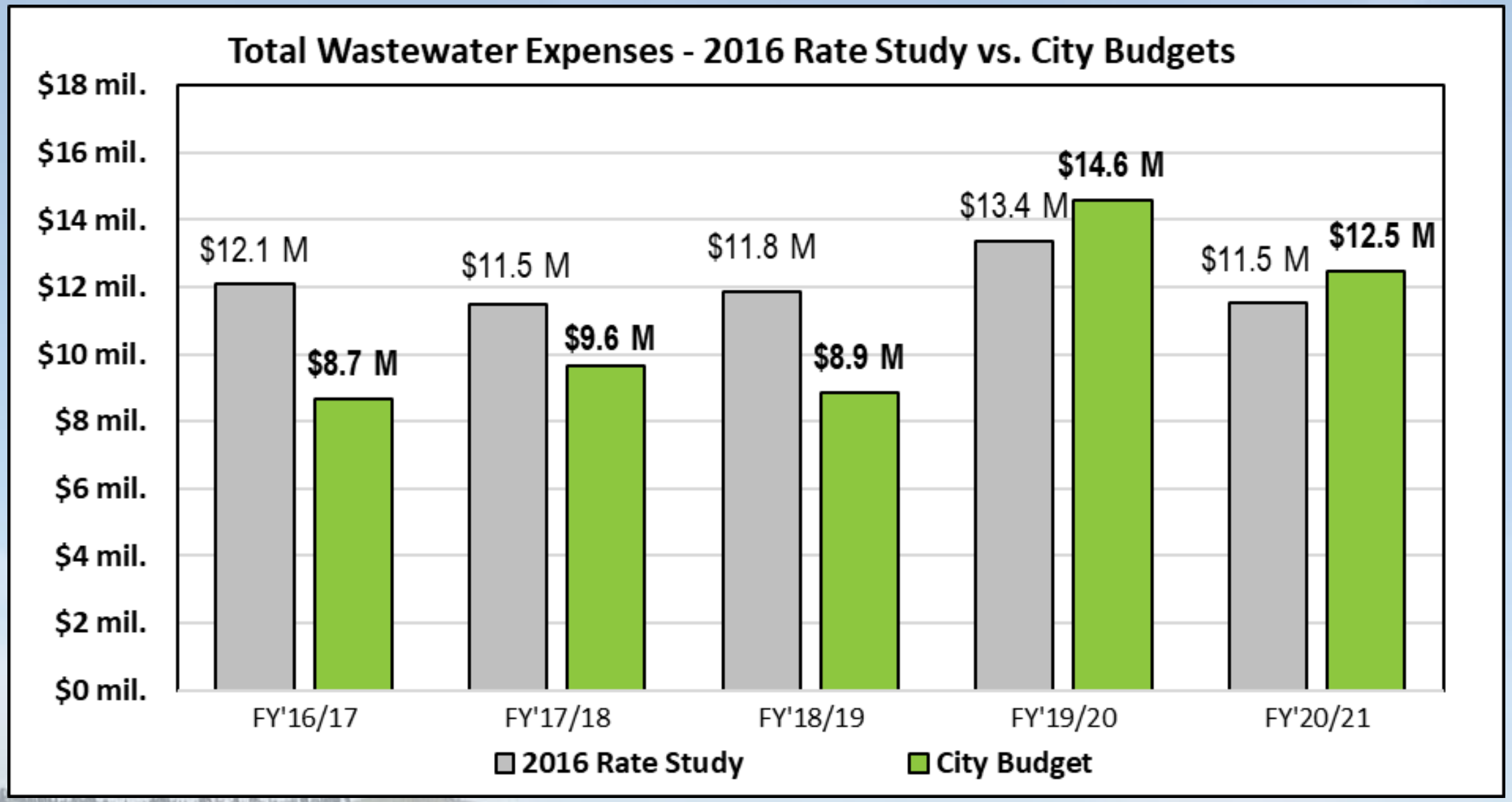
$271,469 project to upgrade and repair the chemical feed controlling system at the WTP in FY18/19

WTP Sediment Collector Replacement

$256,053 project to remove and replace the collector in Sedimentation Basin #1 in FY18/19

Water Project Status

- Construction/Implementation
  - Water Master Plan Update and Major Facilities Condition Assessment
  - WTP Treated Water Flow Meter
  - Lake Herman Telemetry/Gauging Project
  - Water Line Replacement Program
- Design
  - Chlorine Gas Conversion Project
  - Water Treatment Plant Utility Water System
  - Pump Station 2 Electrical and Mechanical Updates
- Planning
  - R2 Water Reservoir Recoating
  - West 7th Street 12-Inch Main Line
  - Drolette Way 8-Inch Reliability Loop
  - Valero Flow Meters


Total Wastewater Expenses - 2016 Rate Study vs. City Budgets
$18 mil.
$16 mil.
$14 mil.
$12 mil.
$10 mil.
$8 mil.
$6 mil.
$4 mil.
$2 mil.
$0 mil.
$12.1 M
$8.7 M
$11.5 M
$9.6 M
$11.8 M
$8.9 M
$13.4 M
$14.6 M
$11.5 M
$12.5 M
FY'16/17
FY'17/18
FY'18/19
FY'19/20
FY'20/21
2016 Rate Study
City Budget

Wastewater Expense Categories Explained

Operations

Contracted Services

Supplies/Equipment

Chemicals

Material Disposal

Permits/Fees

Maintenance/Repairs

Utilities

Salaries and Benefits

Rate-Funded Capital Projects and Preventative Maintenance

Projects in the City's approved 5-Year Capital Improvement Program

Preventive Maintenance Projects for the WWTP

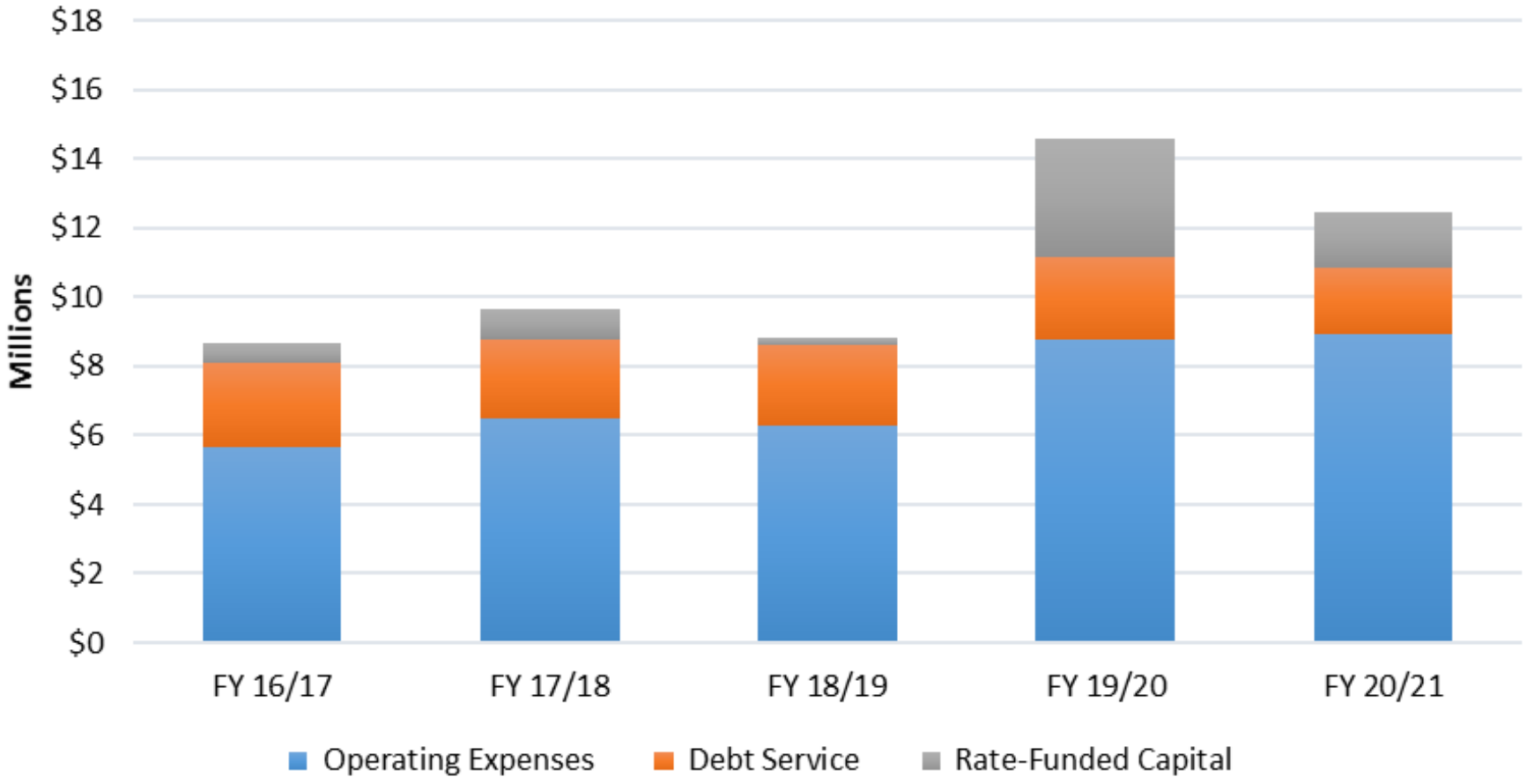
Preventive Maintenance Projects for the Wastewater Collection System

Debt Service Repayments

SRF Loan for the 1998 WWTP Improvement Project

SRF Loan for the 2004 Inflow and Infiltration Improvement Project

Wastewater Expenses

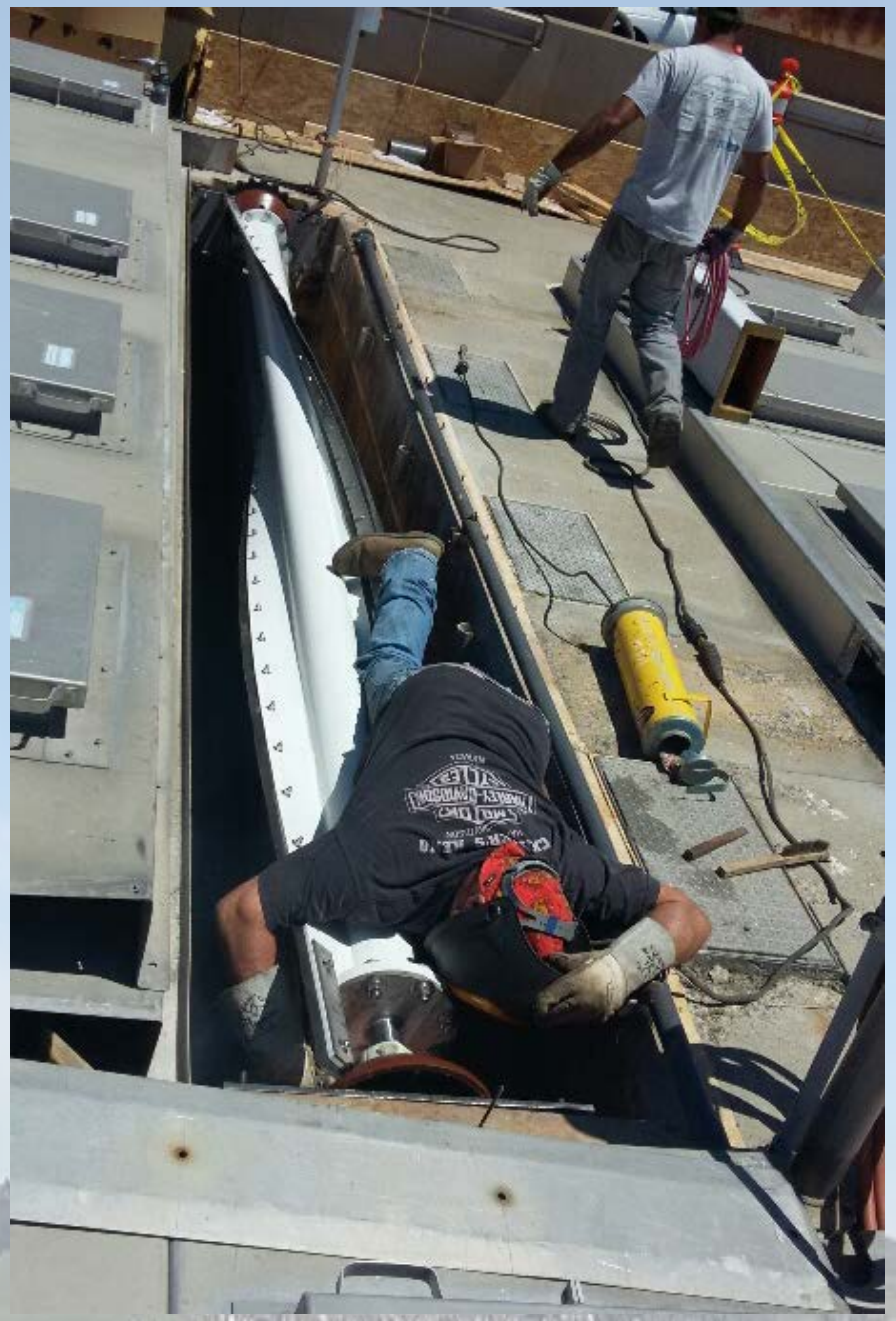


Wastewater Operations Data

- Zero violations in the last decade
- Treat approximately 2,200 acre-feet of wastewater per year
- 21 miles of wastewater lines cleaned in 2019
- Approximately 1,200 preventative and corrective maintenance activities performed in 2019

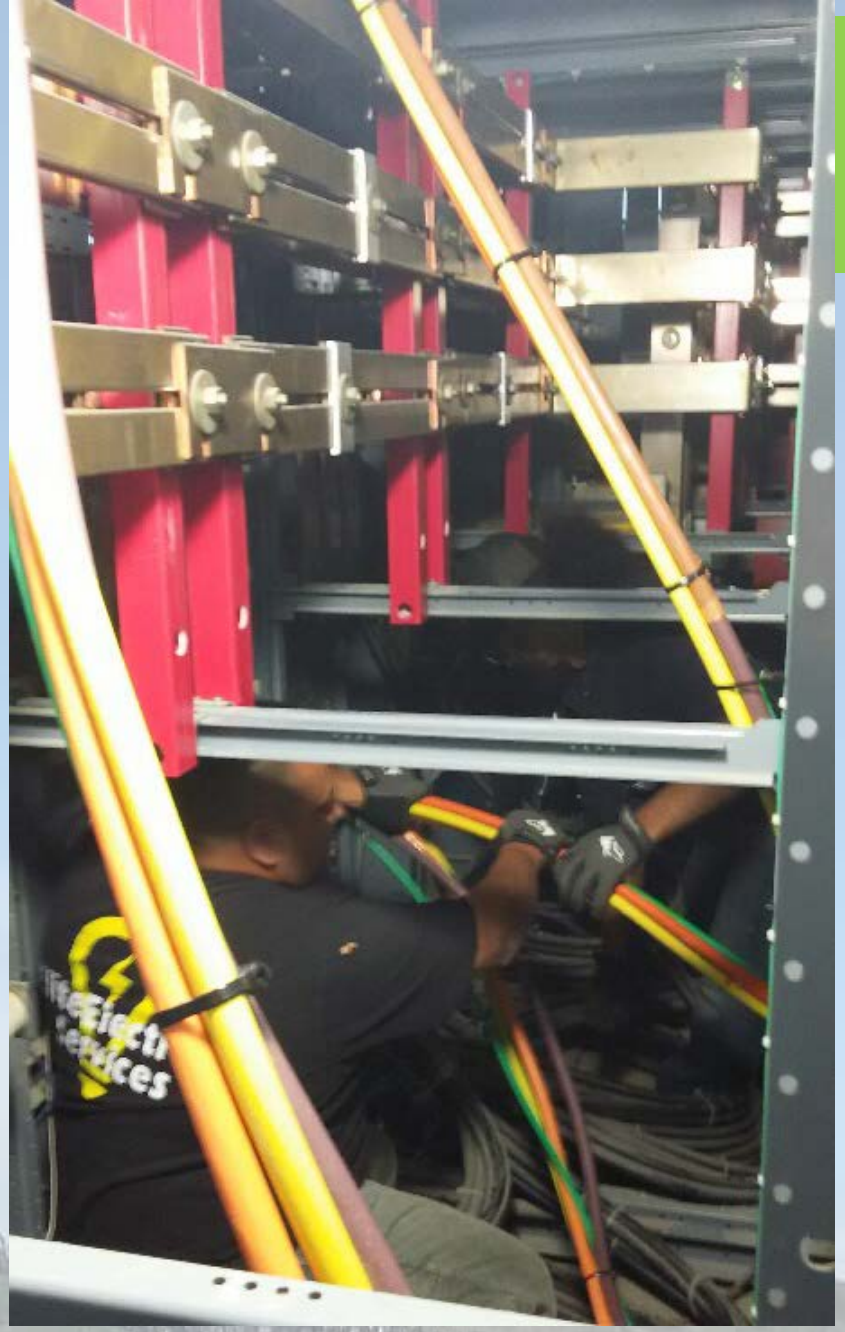
West 10th Street Sewer Realignment Project

$174,539 project realigned the sewer on West 10th Street and abandoned the manhole located on the edge of the Carquinez Strait shoreline in FY17/18



WWTP Helical Skimmer Replacement Project

$121,500 project replaced one of the four helical skimmers that remove oil and grease from the WWTP influent waste stream in FY17/18



WWTP Electrical System Improvement Project

$806,750 project replaced portions of the WWTP electrical distribution system in FY18/19

Wastewater Project Status

- Construction/Implementation
  - Water Master Plan Update and Major Facilities Condition Assessment
  - Bayshore Road/East J & K Street Sewer Improvements
- Design
  - Bayshore Road Sanitary Sewer Crossovers
  - West H and I Street Sewer Shoreline Project
  - WWTP Emergency Generator Control System Upgrade
  - WWTP Solids Building Platform Replacement
  - El Bonito Way Sewer Force Main Replacement
- Planning
  - WWTP Wireless System and Integration

Reserves Summary

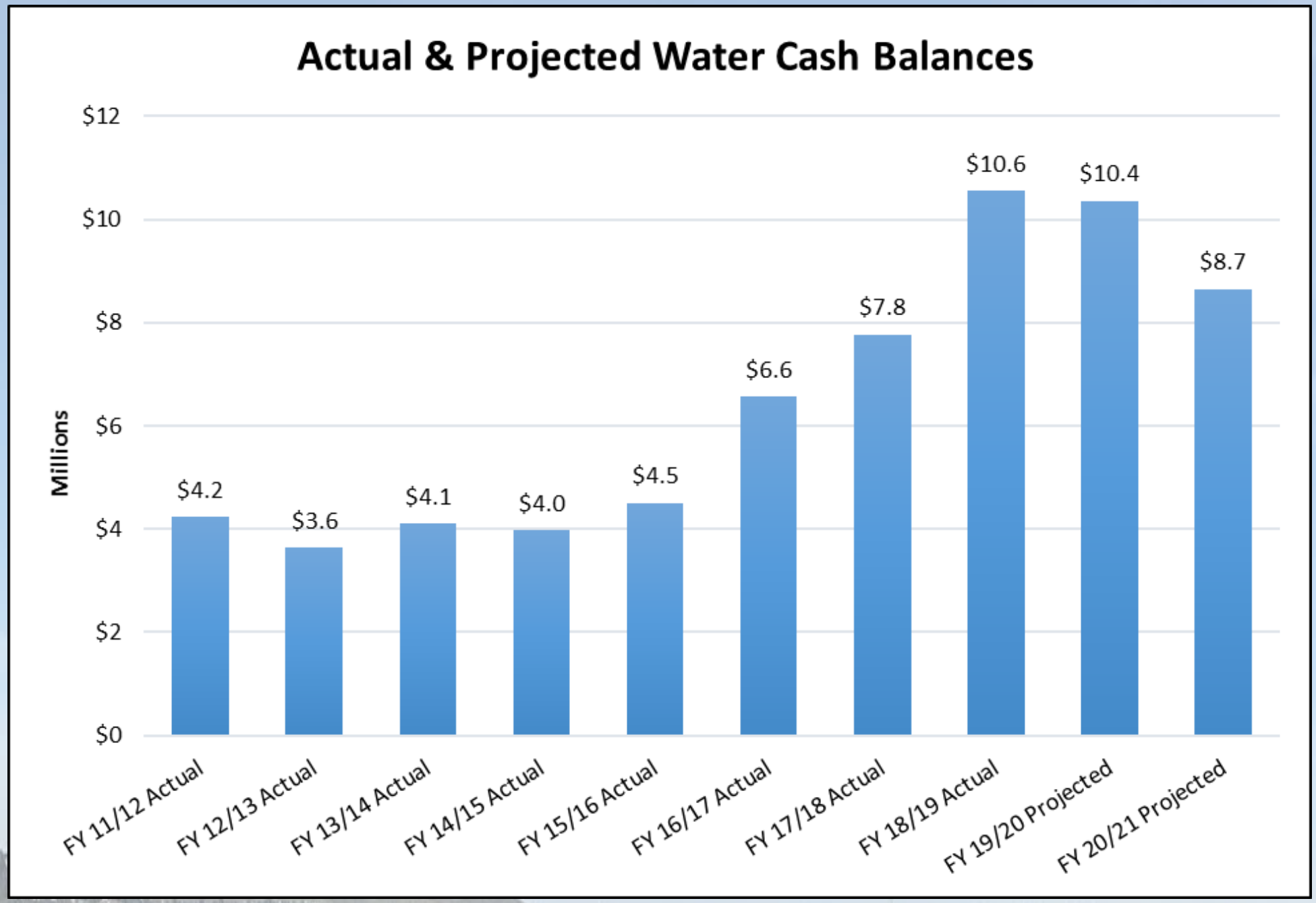
Why Keep Reserves?

- Because they are required by loan agreements and regulators
- Best business practice
- Reduces impacts of revenue spikes and seasonality
- Ensures enough cash is on hand to pay expenses
- Demonstrates to potential lenders the health of enterprise fund
- Allows City to pay for small projects (typically below $5 million) without seeking loans

Types of Reserves

Each utility must keep its own reserves

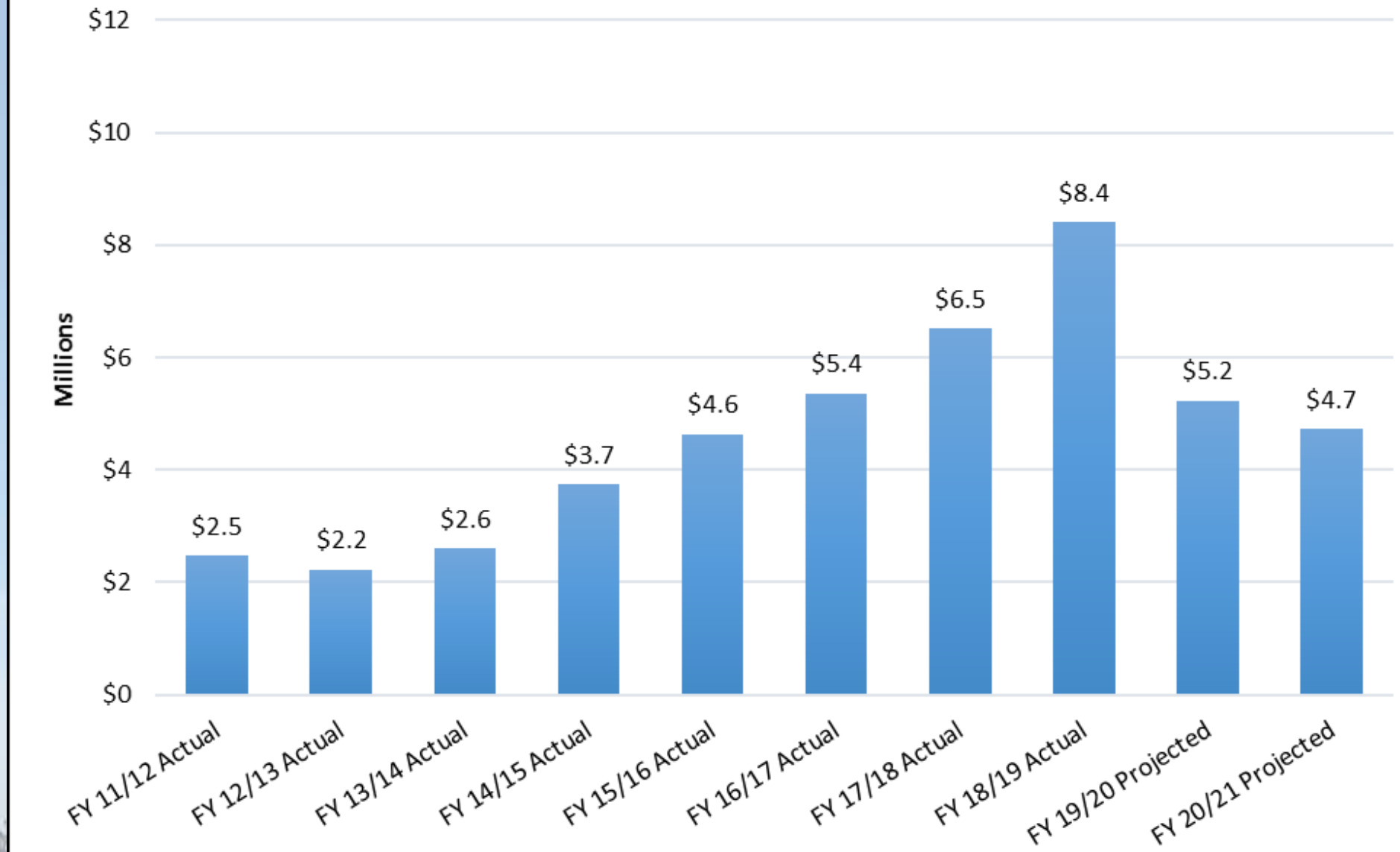
- Operations reserve
  - 20% of annual revenues (industry standard is 25%)
- Rehabilitation and replacement
  - 3% of net depreciable assets
- Rate stabilization fund
  - 30 days of the budgeted annual operating expenses
- Debt service coverage
  - Equal to the required principal and interest payments on outstanding debt during the fiscal year


Actual & Projected Water Cash Balances
Millions
$12
$10
$8
$6
$4
$2
$0
$4.2
$3.6
$4.1
$4.0
$4.5
$6.6
$7.8
$10.6
$10.4
$8.7
FY 11/12 Actual
FY 12/13 Actual
FY 13/14 Actual
FY 14/15 Actual
FY 15/16 Actual
FY 16/17 Actual
FY 17/18 Actual
FY 18/19 Actual
FY 19/20 Projected
FY 20/21 Projected

Historical and Current Water Cash Balances FY16/17 through FY20/21

($ millions)	Actual FY 16/17	Actual FY 17/18	Actual FY 18/19	Projected FY 19/20	Projected FY 20/21
Actual & Projected Cash	**$6.6**	**$7.8**	**$10.6**	**$10.4**	**$8.7**
Operating Reserve	2.0	2.1	2.4	2.4	2.5
Capital Rehab/Replacement	0.9	1.1	1.0	1.1	1.1
Rate Stabilization	0.5	0.6	0.6	0.7	0.8
Debt Reserve	1.7	2.3	1.4	1.4	1.4
Total Reserve Requirement	**$5.1**	**$5.4**	**$5.0**	**$5.6**	**$5.8**
Ending Cash	**$1.5**	**$1.7**	**$5.2**	**$4.8**	**$2.9**

Actual & Projected Wastewater Cash Balances



Historical and Current Wastewater Cash Balances FY16/17 through FY20/21

($ millions)	Actual FY 16/17	Actual FY 17/18	Actual FY 18/19	Projected FY 19/20	Projected FY 20/21
Actual & Projected Cash	**$5.4**	**$6.5**	**$8.4**	**$5.2**	**$4.7**
Operating Reserve	1.7	2.0	2.1	2.3	2.4
Capital Rehab/Replacement	1.5	1.1	1.3	1.4	1.4
Rate Stabilization	0.5	0.5	0.5	0.7	0.7
Debt Reserve	2.4	2.3	2.4	2.3	1.9
Total Reserve Requirement	**$6.1**	**$5.9**	**$6.3**	**$6.7**	**$6.4**
Ending Cash	**($0.7)**	**$0.6**	**$2.1**	**($1.5)**	**($1.7)**

Staffing

Staffing

- City struggles to attract qualified candidates in key roles due to compensation issues.
- Salaries are 6% to 21% below regional market rates. Lower salaries reduce expenses but create recruitment and retention issues.
- Staff in neighboring jurisdictions earn more than City supervisors.
- City utilities experiencing consistent vacancies at all levels.
- Current utility staffing models are below industry standards. Having less staff than needed reduces expenses but requires more overtime and some maintenance activities to be left unattended.
- **Lean staffing does not protect public health or ensure public safety.**

Next Steps

Next Steps

- Complete the water and wastewater utilities condition assessment, master plan update, and proposed CIP update.
- Begin another utilities rate study to set a financial plan for the future of each enterprise fund.
- Citywide capacity fee update

Staff Recommendation

- Receive the water and wastewater utilities financial update report as requested.
- Staff is not recommending action by City Council.

Questions?