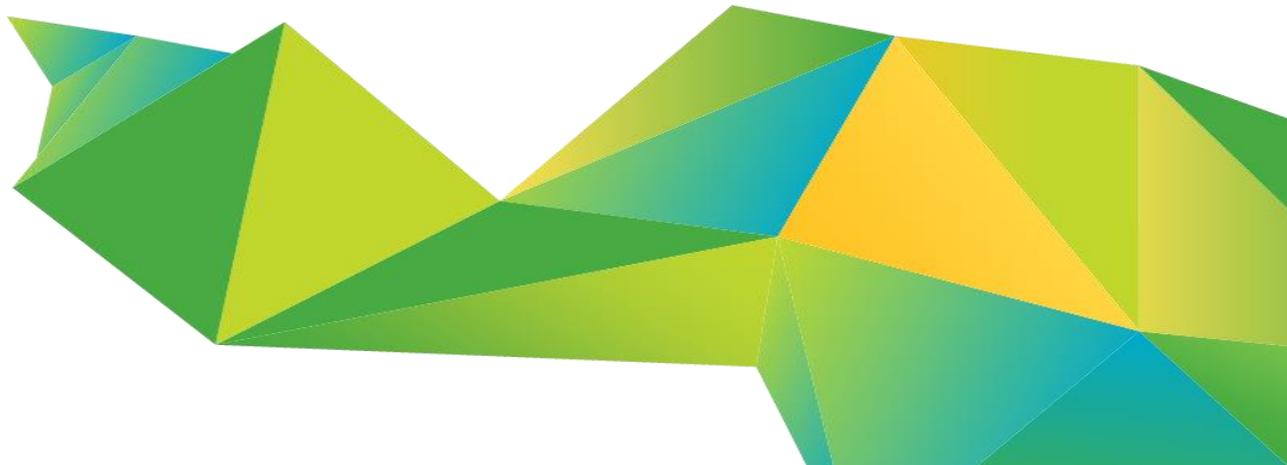




# Infrastructure & Utility Rate Study Findings

September 12, 2022



# Agenda

## Utility Condition Assessment (City Staff)

- Water Distribution Operations
- Sanitary Sewer Operations
- Stormwater Operations
- Water Meter System

## Utility Rate Study (Consultant)

- Overview
- Stormwater Utility System
- Water and Wastewater Utility System

## Discussions and Questions

# Utility Condition Assessment



# Utility System History

Hallandale Beach is the 76th largest city out of 282 in Florida and incorporated in 1927.

It has 41,217 residents over 4.4 square miles. The city has 81 miles of water transmission and distribution lines, 72 miles of gravity sewer and force mains 42 miles of storm water pipes and 16 sanitary sewer lift stations

Additionally, the city produces approximately 7.1 million gallons of water per day. Many infrastructure components of the water plant are due for rehabilitation and replacement.

# Infrastructure Age

On average, water –main and force-main infrastructure have an engineered life span of 30 years, dependent upon the material it is made of. In many areas of the City, infrastructure is either at , or significantly exceeds the engineered life span. Without a significant increase in rehabilitation and replacement efforts, we run the risk of a continued and escalating number of utility infrastructure failures.

Recommendations assessed by the 2016 BODR (Basis of Design Report), 2016 Wastewater Masterplan, 2019 10-Year Water Supply Plan and the 2014 Water, Wastewater and Stormwater Facilities Plan describe the years beyond the engineered life span many of our infrastructure components are.



# Water Distribution Operations

# Water Distribution Operations

Over the past three years our city's water distribution system has suffered the following;

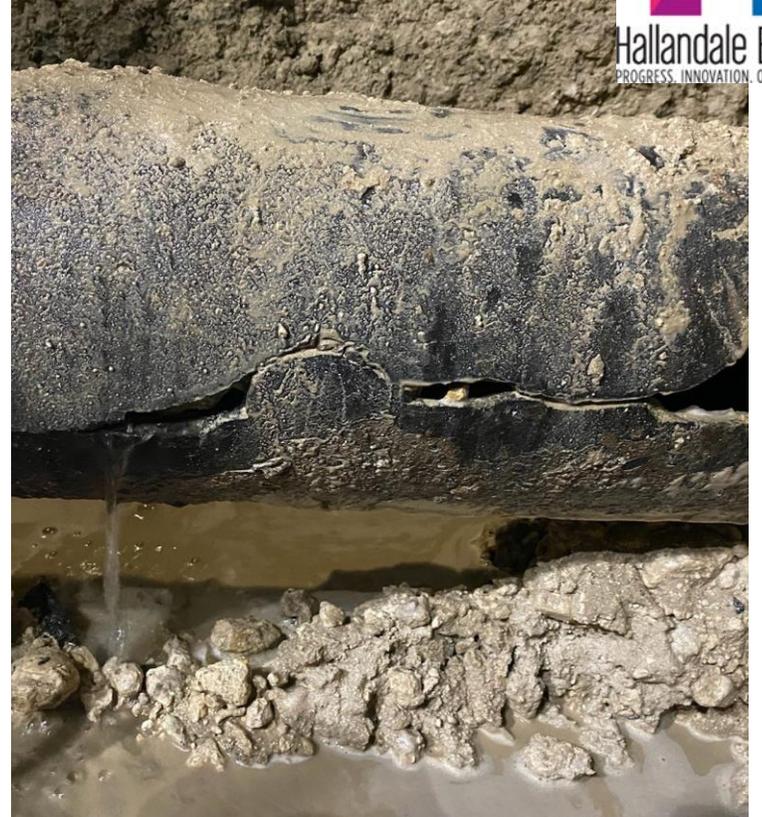
WATER LEAKS/WATER MAIN BREAKS

510

PRECAUTIONARY BOIL WATER NOTICES

35





# Watermains Failures



# Watermain Failures

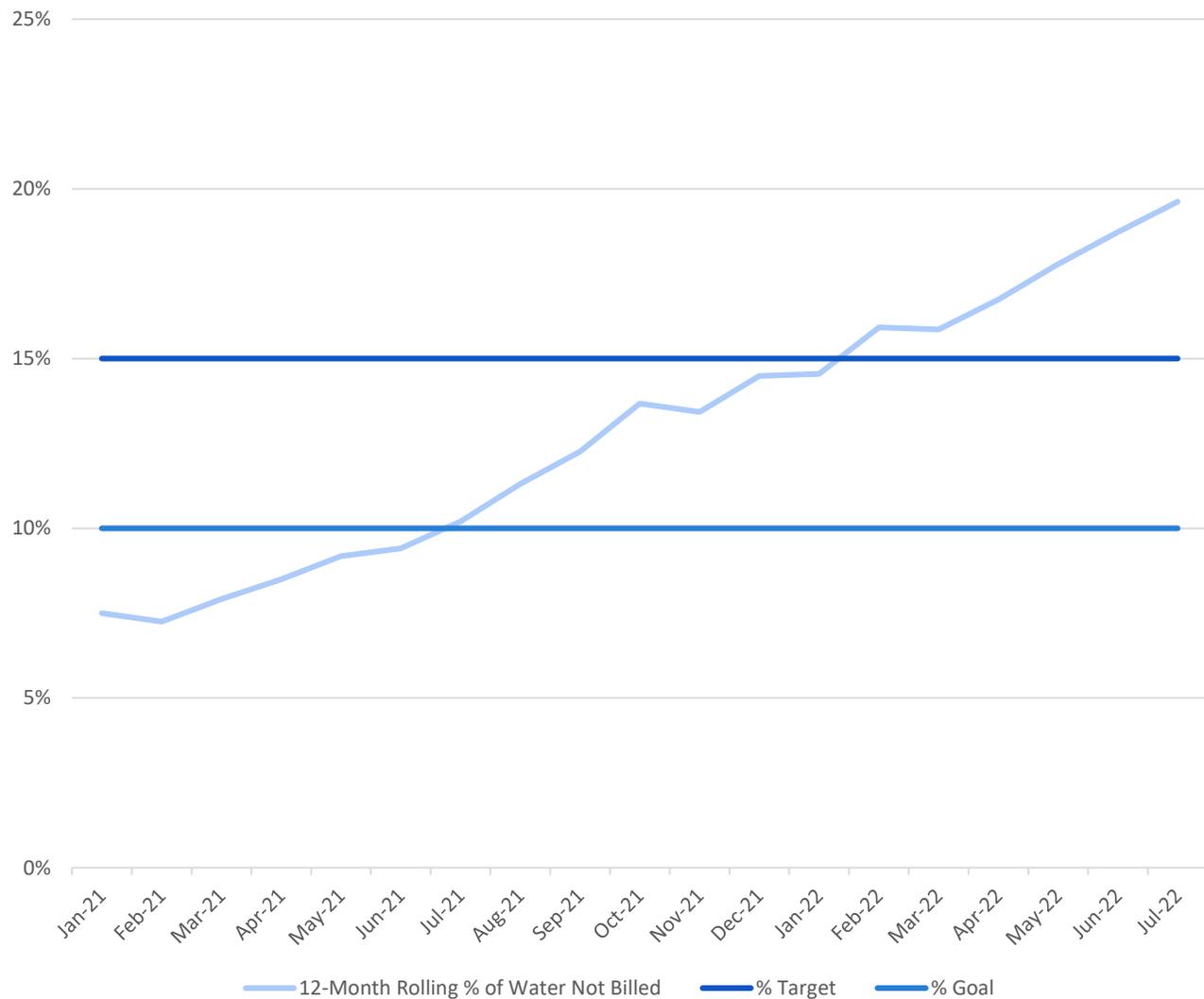


# Watermain Failures



# Water Treatment Plant

12-Month Rolling % of Water Not Billed



Water Loss,  
Unbilled, or  
Unaccounted  
For 2021-2022

# Sanitary Sewer Operations

# Sanitary Sewer Operations

The Sanitary Sewer has faced great challenges over the past three years.

- Two force main failures due to degradation.
- Four lift station failures inclusive of sewage spills into the environment
- Multiple lift stations have had to be place on bypass for repairs to their force mains, pumps and electrical components.

(Lift Station #2 and Lift Station #11)





# Sewer Main Failures



# Sewer Mains Failure

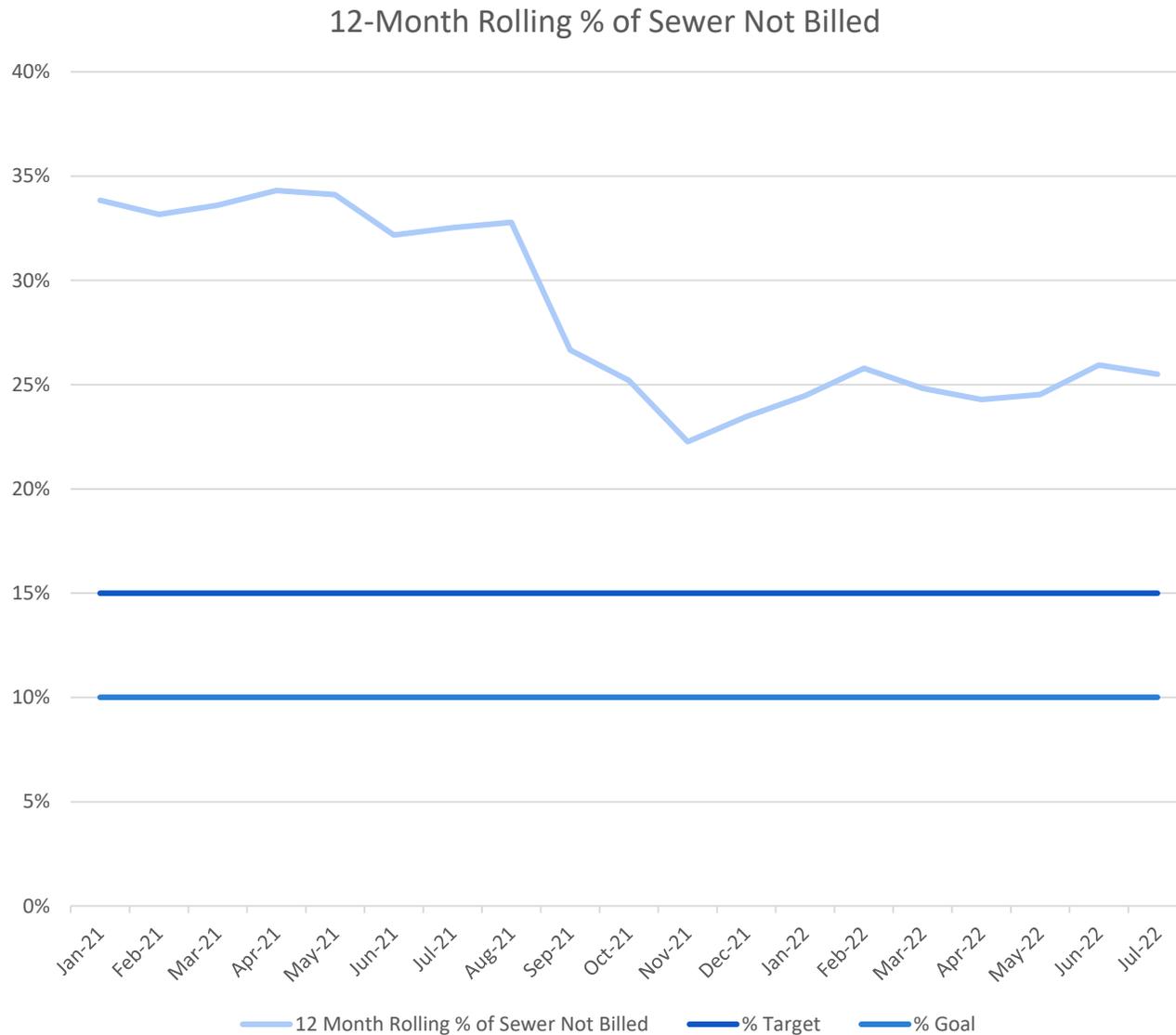


# Sewer Lift Station Failure



## Sanitary Sewer Operations: Rag and Debris Impacts

# Sewer Flows Unbilled or Unaccounted For 2021-2022

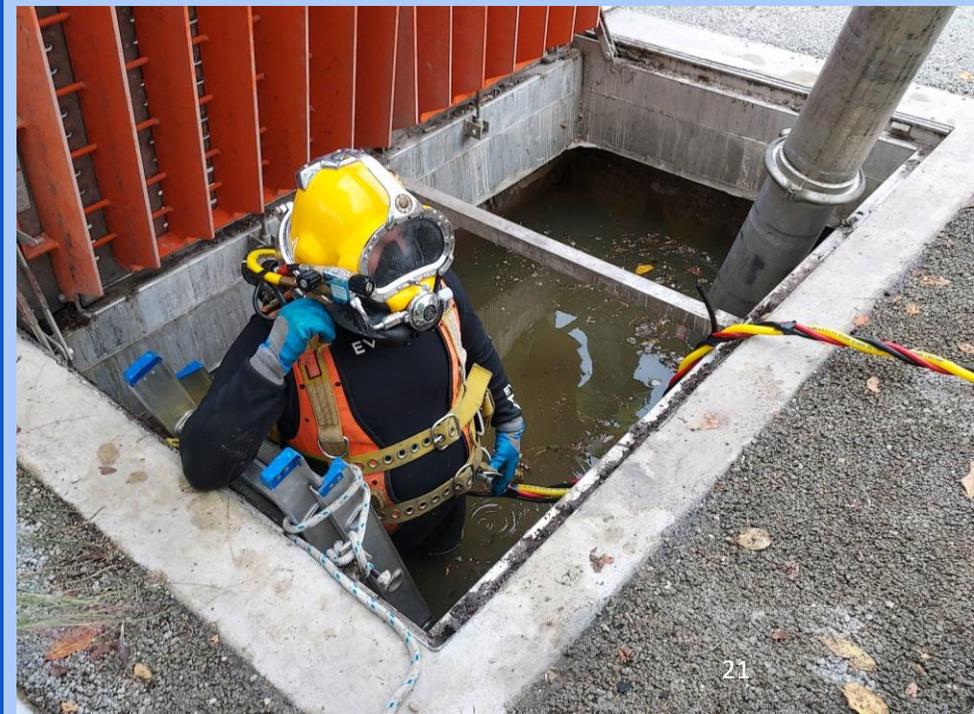


# Stormwater Operations

# Stormwater Operations

Stormwater management continues to need our attention. Our large diameter pipes are aged and often inundated with dirt and debris. We have improved our system maintenance; however, our system is need of the following:

- System-wide point repairs to NW section piping.
- Connection of the French drain system to the positive displacement system.
- Tidal valve installations to reduce Intercoastal waterway high tide impacts to our stormwater system.





## Examples of Stormwater Impacts



# Stormwater Impacts



## Examples of Stormwater: Failures

# Utility Infrastructure Projects Snapshot

UTILITY PROJECTS

\$348,481,492

UNFUNDED

\$117,888,444

BOND FUNDED

\$180,978,742

GRANT FUNDED

\$19,752,008

AVERAGE AGE

47 YRS

AVERAGE PAST DUE

25 YRS

# Water Meter System Assessment

# Water Meter System Assessment

The Public Works team reached out to Sensus, (software vendor) and Core & Main, (meter component supplier) to assist with assessing the city's water meters and operations. The analysis has allowed to recognize the following:

- The vendor did not perform the work outlined within the original installation contract effectively, many meters were never replaced.
- An in-depth training on the software and meters was not performed at the conclusion of the project with our finance and utility teams.
- Meters were installed within the sidewalks, behind homes and in water filled locations.
- No annual maintenance program was established.
- The project closeout notification to Sensus for the initial calibration to their system was not performed.
- The utility team was not trained on best management maintenance and troubleshooting practices.



SUB shut off

# Water Meter System: Next Steps

## SENSUS

The Sensus team is offering to assist us with an overall course correction that will look like the following:

- Core and Main will assist the city in the development of our meter inventory, field deployment plan, operations SOP's, and finance SOP's.
- Sensus will provide 647 water meter registers
- 500 Advanced warranty replacement registers provided by Sensus for Core+ project
- 147 Warranty replacement registers.
- Provide additional warranty replacement of meters (registers, fx's etc.) as discovered during change out.

# Water Meter System: Next Steps

## CORE and Main

Will be coming to perform a project with our team which will consist of the following.

### Installation Services

- Installation and restoration of Flex Net system to achieve minimum 98.5% RIS
- Includes all software updates
- Hallandale Beach employee training
- Firmware updates to existing Sensus Smart Points as needed
- Network RF analysis to determine if additional infrastructure is required

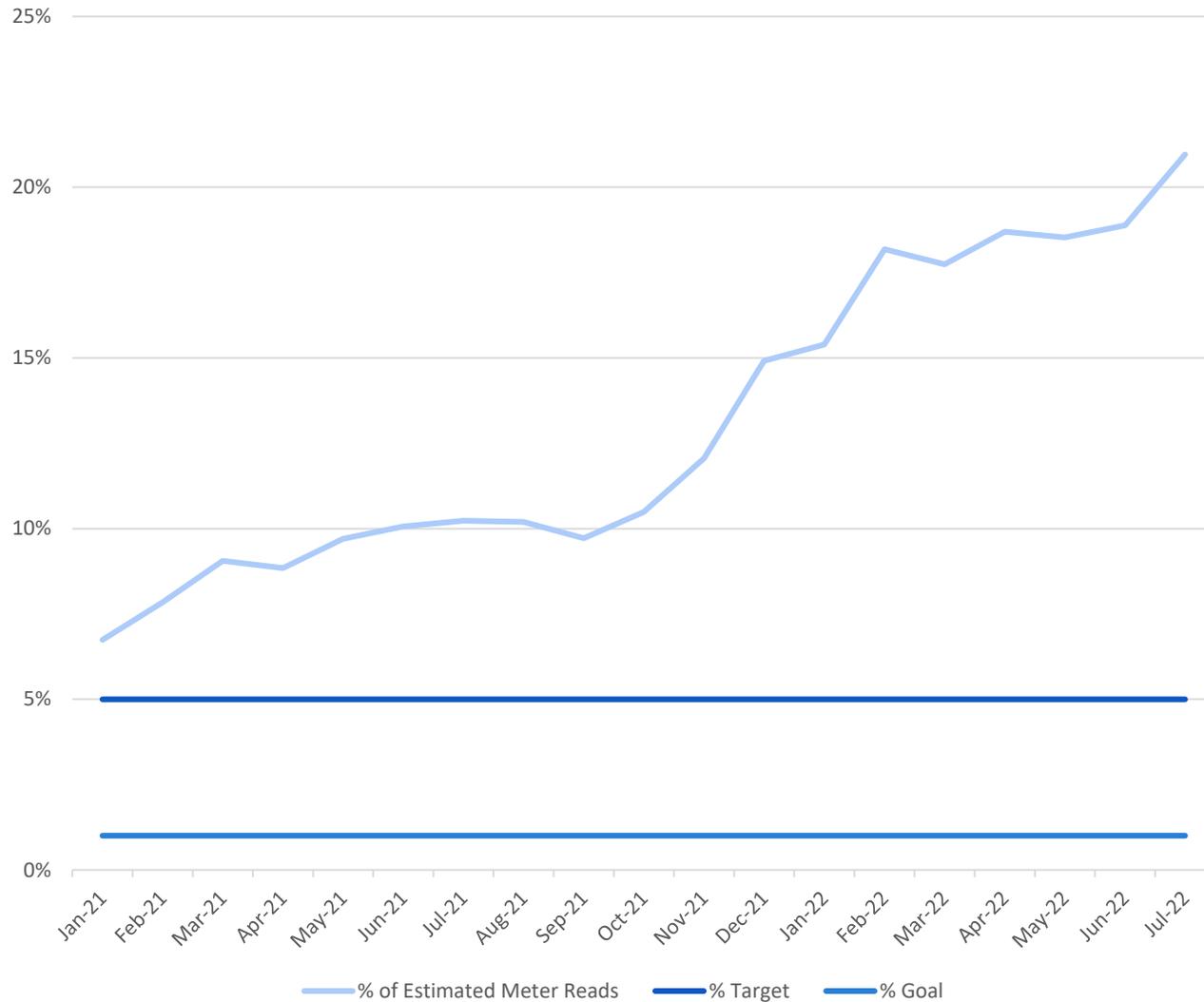
### Managed Service

- Onsite restoration services – achieve 98.5% minimum efficiency.
- Warranty & RMA services included – RMA reports provided
- Initiative-taking system management training

### Work Order Management Software

- Integration and training
- Data Hosting Services
- Application and field mobile software up to four users

% Estimated Meter Reads Billed



# Estimated Meter Reads Billed % 2021-2022

Additional Examples of  
System Failure Pictures Have  
Been Provided.

# City of Hallandale Beach

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Utility Water, Wastewater, and Stormwater Rate Study



# Utility Rate Study Tasks

- Develop Utility System Financial Forecast
  - › Water, Wastewater, and Stormwater Systems
  - › Customer and Revenue Forecast
  - › Operating and Other Expenditure Projections
  - › Develop Capital Funding Plan
  - › Identify Potential Need for Additional Borrowing to Fund Future Capital Improvements
  - › Estimate Future Water, Wastewater, and Stormwater Rate Adjustment Needs
  - › Forecast Period – Fiscal Year 2022 Through 2028

# Financial Targets and Considerations

- Develop Plan to Promote Long-term Financial Sustainability and Creditworthiness
- Maintain Utility Cash Reserves at Adequate Levels
  - › Minimum Operating Balance – 90 Days of Revenues
- Maintain Renewal and Replacement Fund Balance at 7.5% of Prior Year Revenues per City Policy
- Fulfill All Debt Service Coverage Requirements
  - › Senior and Subordinate Lien Requirement 115%
- Achieve Positive Cash Flow

# Utility System Overview

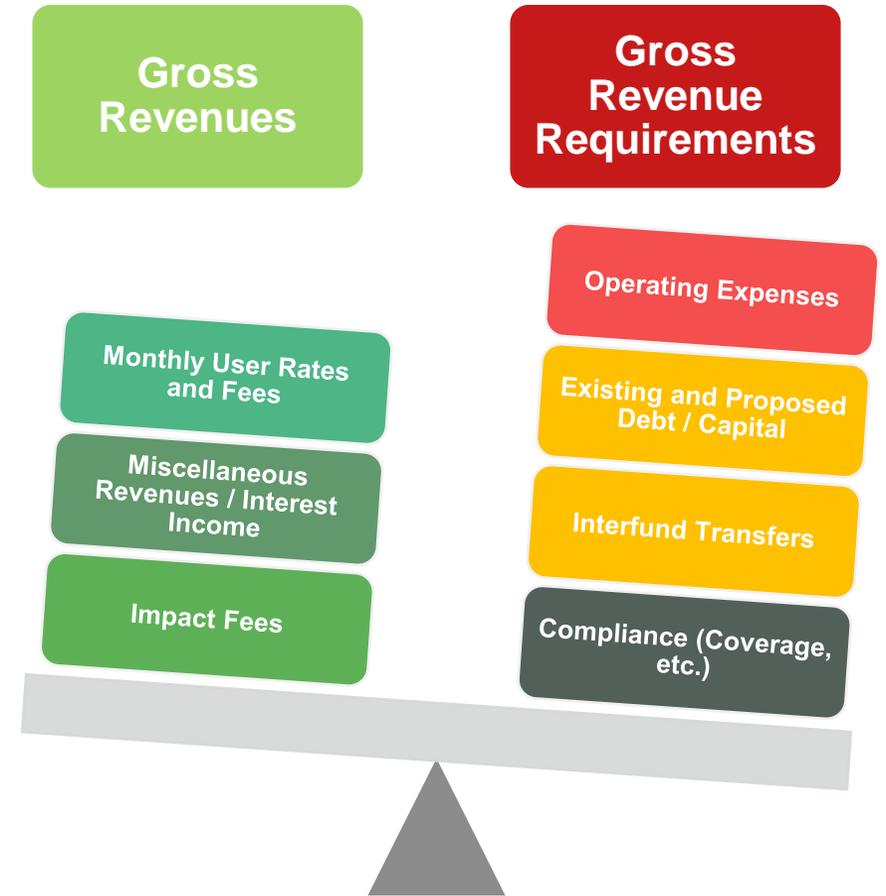
- Utility System Provides Essential Service to City Customers on a Continuous Basis
  - › Public Health and Safety – Primary Objective
- Highly Regulated Environment
  - › Environmental Protection Agency
  - › Florida Department of Environmental Protection
- Permits Require Satisfactory Operating Performance

# Utility System Overview (cont'd.)

- Enterprise Funds – Account for Business-type Activities Where the Government Sells Goods or Services to the General Public
- Enterprise Funds Typically Pay for the Costs of Services Provided Through the Application of Monthly Rates And Fees
  - › Monthly User Rates / Fees
  - › Miscellaneous Charges
  - › Impact Fees

# Utility System Overview (cont'd.)

- City Water, Wastewater, and Stormwater Systems Operate as Enterprise Funds
  - › Utility System Rates Recover Utility System Revenue Requirements



# Stormwater Utility System



# Customers, Revenues and Expenditures

- City Currently Provides Stormwater Service to Approximately 48,156 Equivalent Residential Units (ERUs)
- Stormwater Rate Revenue Forecast
  - › Stormwater Drainage Fees – \$4.3M to \$4.5M
- Operating Expense Forecast
  - › Operating Expenses – \$2.6M in 2023 to \$3.0M by 2027
  - › Average Annual Change of 3.89% per Year
- R&R Transfers

# Existing Debt Service Obligations

- Total Existing Annual Debt Service Payment of Approximately \$605,000 per Year
  - › Allocated to Water, Wastewater and Stormwater Systems
- Stormwater System Allocation is Approximately \$205,000
  - › Utility System Senior Lien –
    - 2014 BB&T Loan – Approximately \$205,000
    - To be Paid Off in Fiscal Year 2025

# Capital Improvement Program

- Total Estimated Cost – \$56.2 Million

Major Projects	Total Cost
Foster Road 60" Trunk Line (FY25-FY27)	\$12,006,000
Atlantic Shores Boulevard 96" Trunk Line (FY25)	10,598,400
N.W. 3 <sup>rd</sup> Street 48" Trunk Line (FY25-FY29)	8,876,200
N.W. 7 <sup>th</sup> Avenue 48" Trunk Line (FY 28-FY29)	8,280,000
S.W. 11 <sup>th</sup> Avenue 48" Trunk Line (FY27-FY28)	7,849,400
Vehicles & equipment replacement (FY23-FY27)	2,513,900
Flap Gates – Golden Isles (FY28-FY29)	2,219,000
Flap Gates – Three Islands (FY28-FY29)	1,987,000
Retention Pond Rehabilitation (FY23)	1,900,000
<b>Total Project Cost</b>	<b>\$56,229,900</b>

# Stormwater CIP Funding Sources

CIP Funding Sources	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Total
Revenues and Reserves	\$2,753,900	\$415,000	\$1,572,800	\$3,915,000	\$3,415,000	\$12,071,700
2025 Revenue Bonds <sup>1</sup>	0	0	12,164,400	1,720,000	2,220,000	16,104,400
2027 Revenue Bonds <sup>1</sup>	0	0	0	0	28,053,800	28,053,800
Total Funding Sources	\$2,753,900	\$415,000	\$13,737,200	\$5,635,000	\$33,688,800	\$56,229,900

1. Future debt service payments forecast in the amount of:

2025 Revenue Bonds – \$1,068,000 beginning in FY 2025

2027 Revenue Bonds – \$1,968,900 beginning in FY 2027

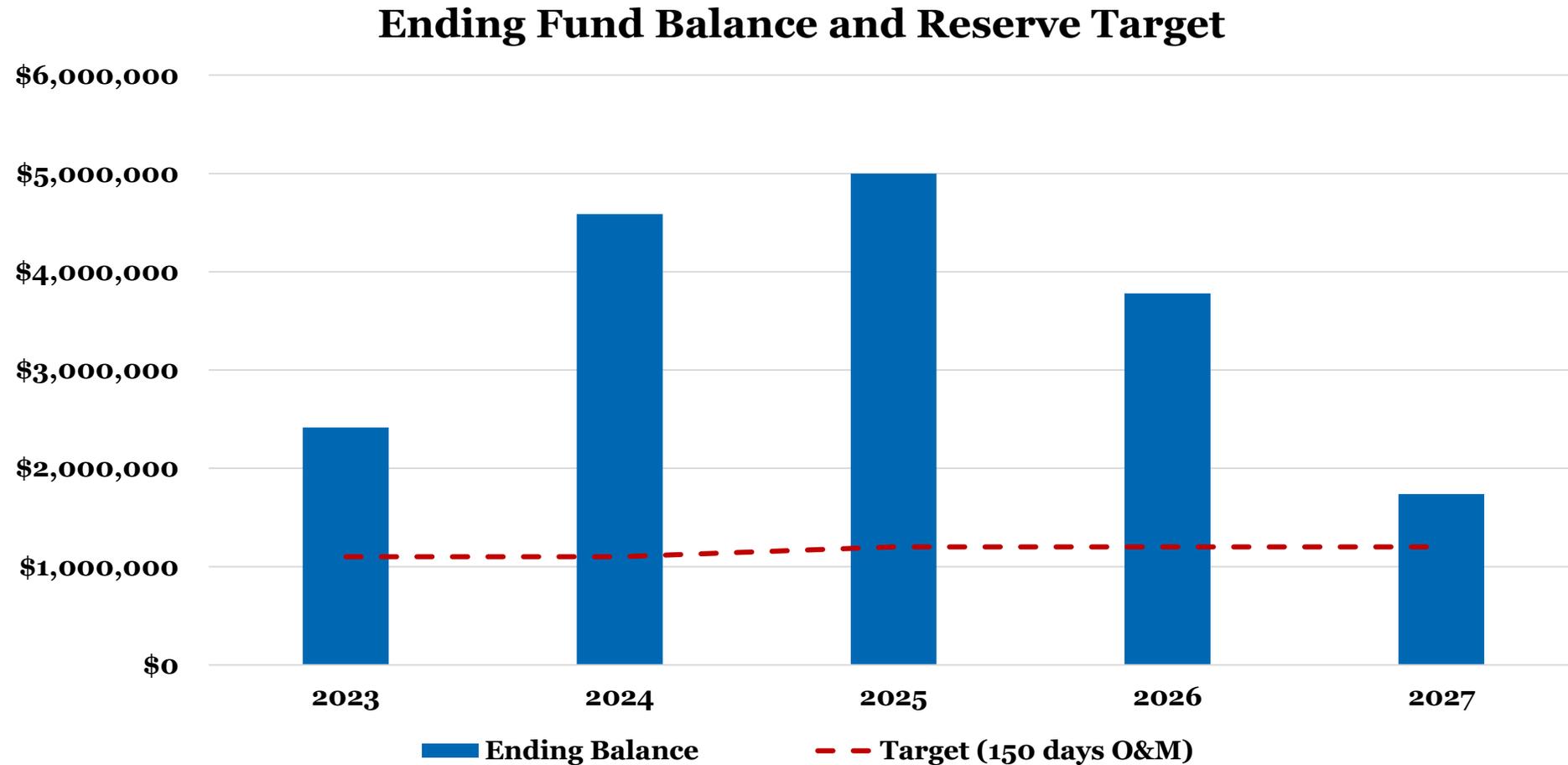
# Stormwater Rate Study Results

## Proposed Rate Revenue Adjustments [\*]

<u>Description</u>	<u>Stormwater Monthly Bill</u>		
	<u>% Change</u>	<u>Rate/ERU</u>	<u>\$ Change</u>
<u>Projected:</u>			
October 2022 (FY 2023)	10.00%	\$8.11	\$0.74
October 2023 (FY 2024)	10.00%	\$8.92	\$0.81
October 2024 (FY 2025)	10.00%	\$9.81	\$0.89
October 2025 (FY 2026)	10.00%	\$10.79	\$0.98
October 2026 (FY 2027)	10.00%	\$11.87	\$1.08

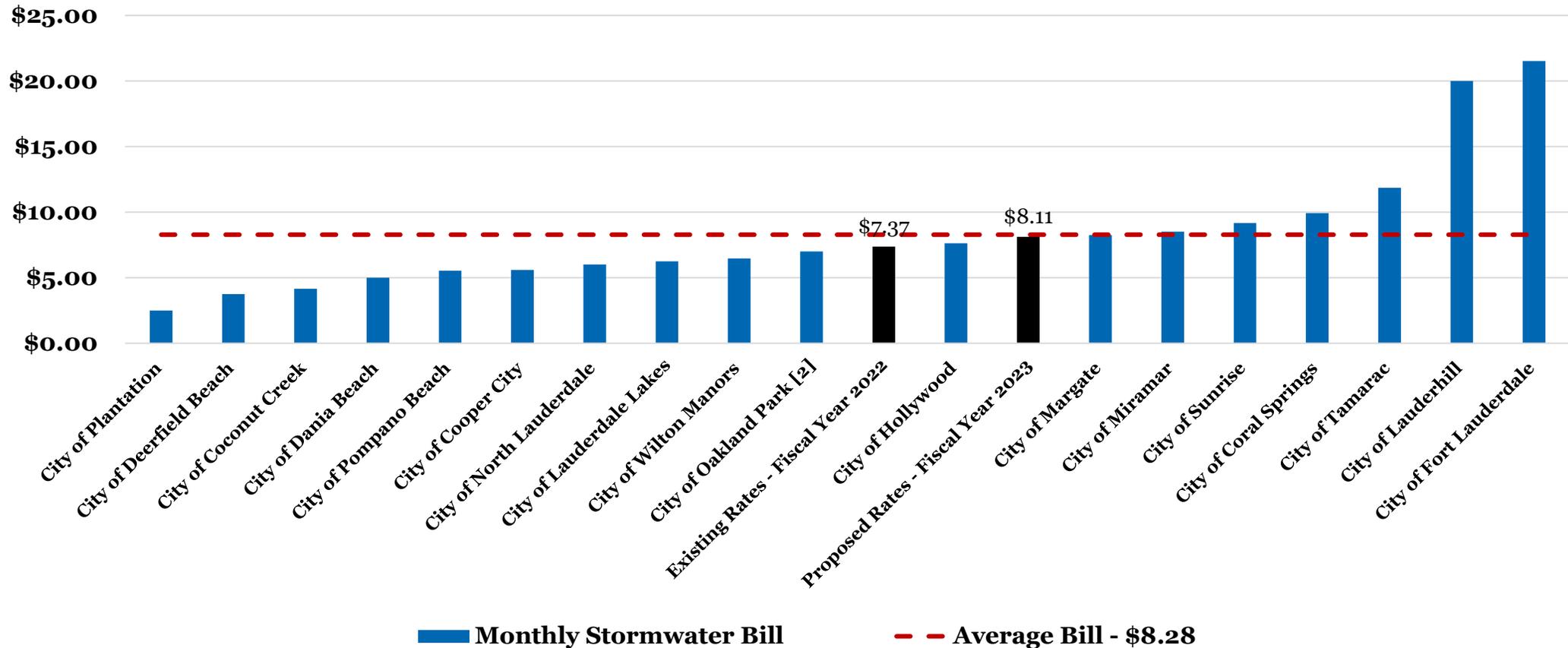
[\*] Rate increases assumed to be applied uniformly (or “across the board”).

# Ending Fund Balance

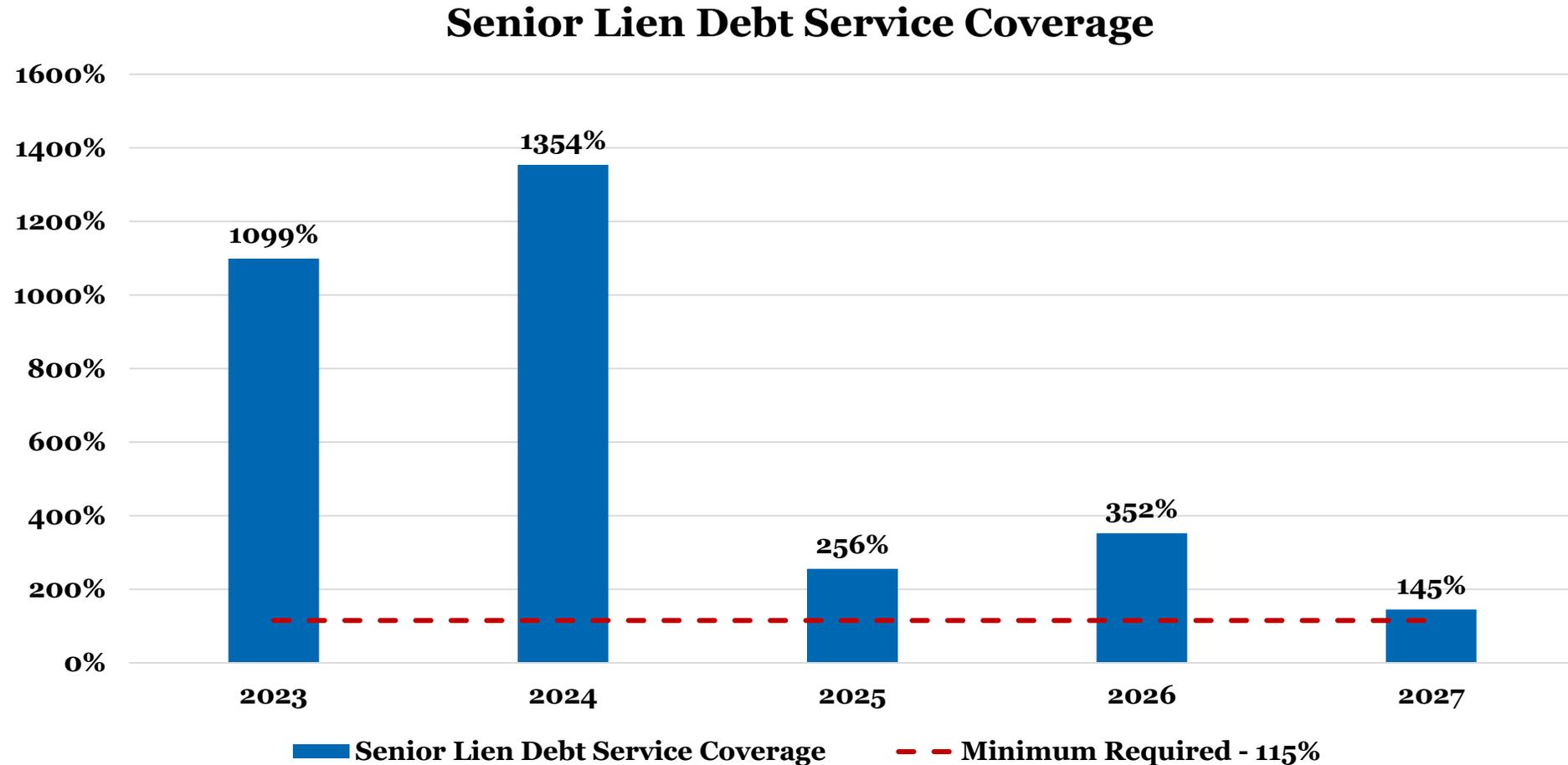


# Stormwater Bill Comparison

## Single-family Residential Stormwater Monthly Bill Comparison



# Projected Debt Service Coverage



# Water and Wastewater Utility System



# Customers and Revenues

- Existing Customers – Approx. 6,900 Water / 6,000 Sewer
- Growth in Accounts of Approximately 1.2% per Year During the Study Period
- Monthly User Rate Revenues – \$25.8M to \$27.6M
  - › Water and Irrigation Rate Revenues Include a 3% Rate Increase for 2022
  - › Wastewater Rate Revenues Include a 2% Rate Increase for 2022
- Other Operating Revenues
  - › \$1.1M in FY 2022 to \$1.2M by FY 2028
- Impact Fee Revenues
  - › Approximately \$850,000 per Year
    - Front End Loaded Growth Tapering Down Over Time

# Operating Expenditures

- Operating expenses of \$24.2 million in FY 2022 increasing to \$34.1 million by FY 2028
- Average annual increase of approximately 5.9% per year
  - › Budget amounts escalated for various factors including estimated Hollywood wholesale service cost increases, general inflation, fuel costs, electrical costs, chemicals, labor, benefits, etc.

# Interfund Transfers

- Payment in Lieu of Franchise Fees
  - › New Cost to System Starting in FY 2023
  - › \$1.5M in FY 2023 Increasing to \$2.5M by FY 2028
- Transfer to Renewal and Replacement Fund
  - › City Target to Maintain 7.5% of Prior Year Revenues in Fund
  - › Deposits Projected in FY 2024 – 2028 of Approximately \$156k per Year

# Existing Debt Service Obligations

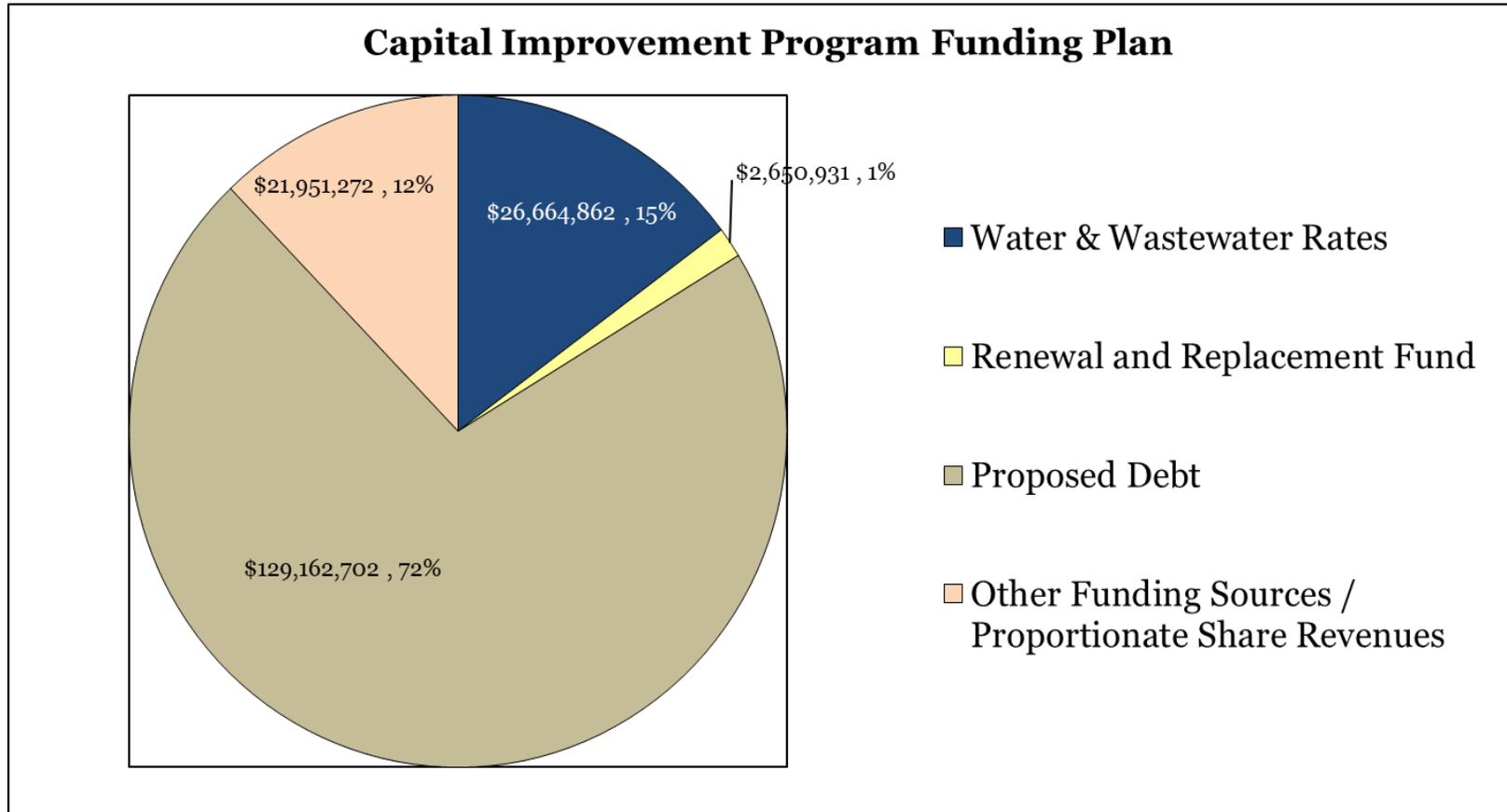
- Senior Lien – Water / Sewer System Allocation
  - › 2012 Chase Bank Loan – Approximately \$263,000
    - To be Paid Off in Fiscal Year 2022
  - › 2014 BB&T Loan – Approximately \$399,000
    - To be Paid off in Fiscal Year 2025
- Subordinate Lien –
  - › SRF Loan #WW061720 – Approximately \$31,000 per Year
  - › SRF Loan #WW061721 – Approximately \$185,000 per Year
- Existing Water and Wastewater Debt Service of Approximately \$786,000 per Year Decreasing to \$0.2 Million in 2026 as Debts Payoff Over Time

# Capital Improvement Program (CIP)

- Five-year Total Estimated Cost – \$180.4 Million

<b>Sample of Major Projects</b>	<b>5 Year Total Cost</b>
Lift Station Capacity Improvements	\$24.5 Million
NF Skid No.3 and RO Skid #2	\$13.4 Million
Floridan Aquifer Water Supply Wells	\$11.5 Million
WTP Filters 1-6 Rehab	\$9.0 Million
Dixie Highway 12 Inch Water Main	\$6.7 Million
Forcemain Improvements	\$3.9 Million
Dixie Highway Forcemain	\$2.8 Million

# Capital Improvement Program (CIP) (cont'd.)



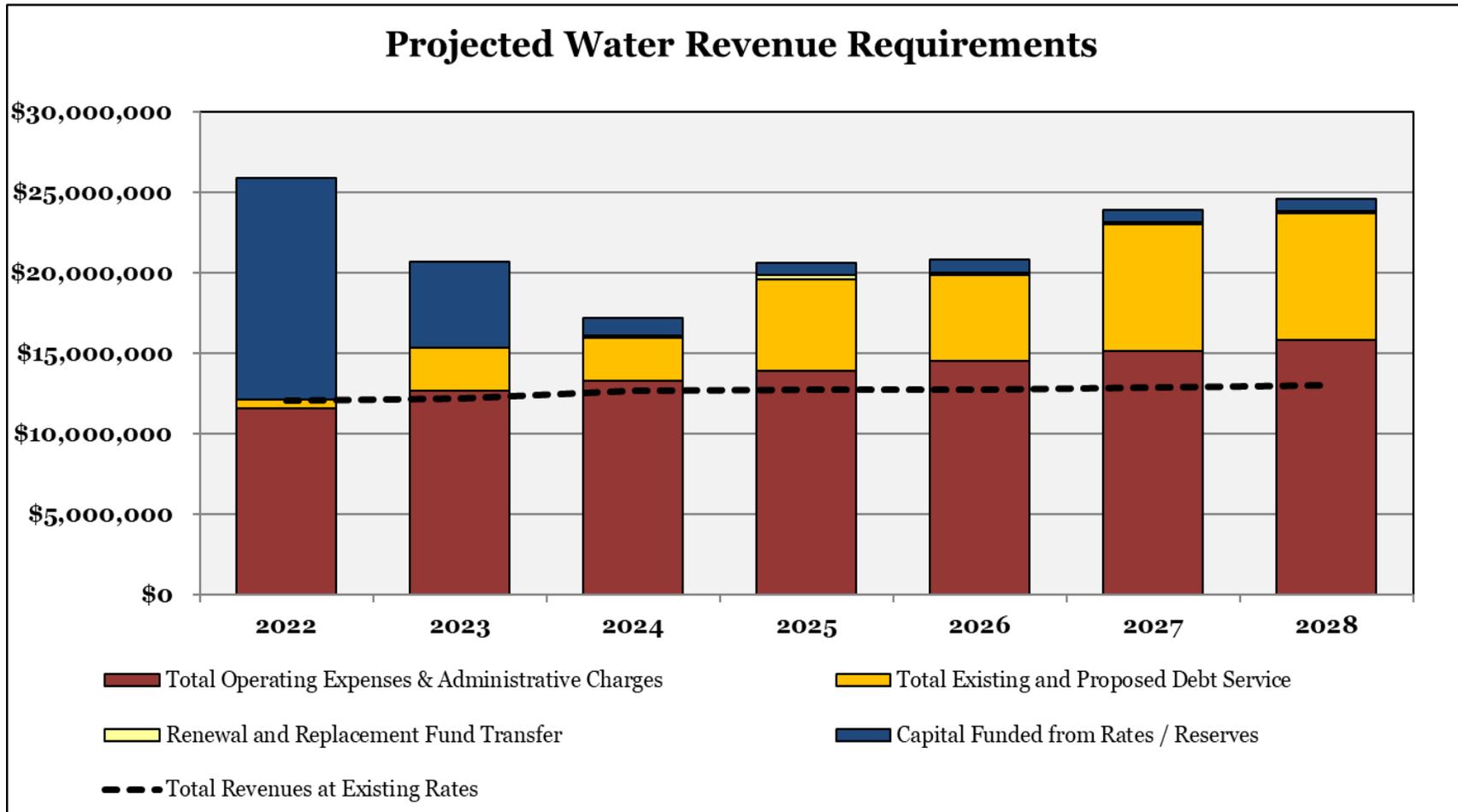
# Proposed Debt Service Obligations

- CIP Assumes Three Bond Issuances in Fiscal Years 2023, 2025, and 2027

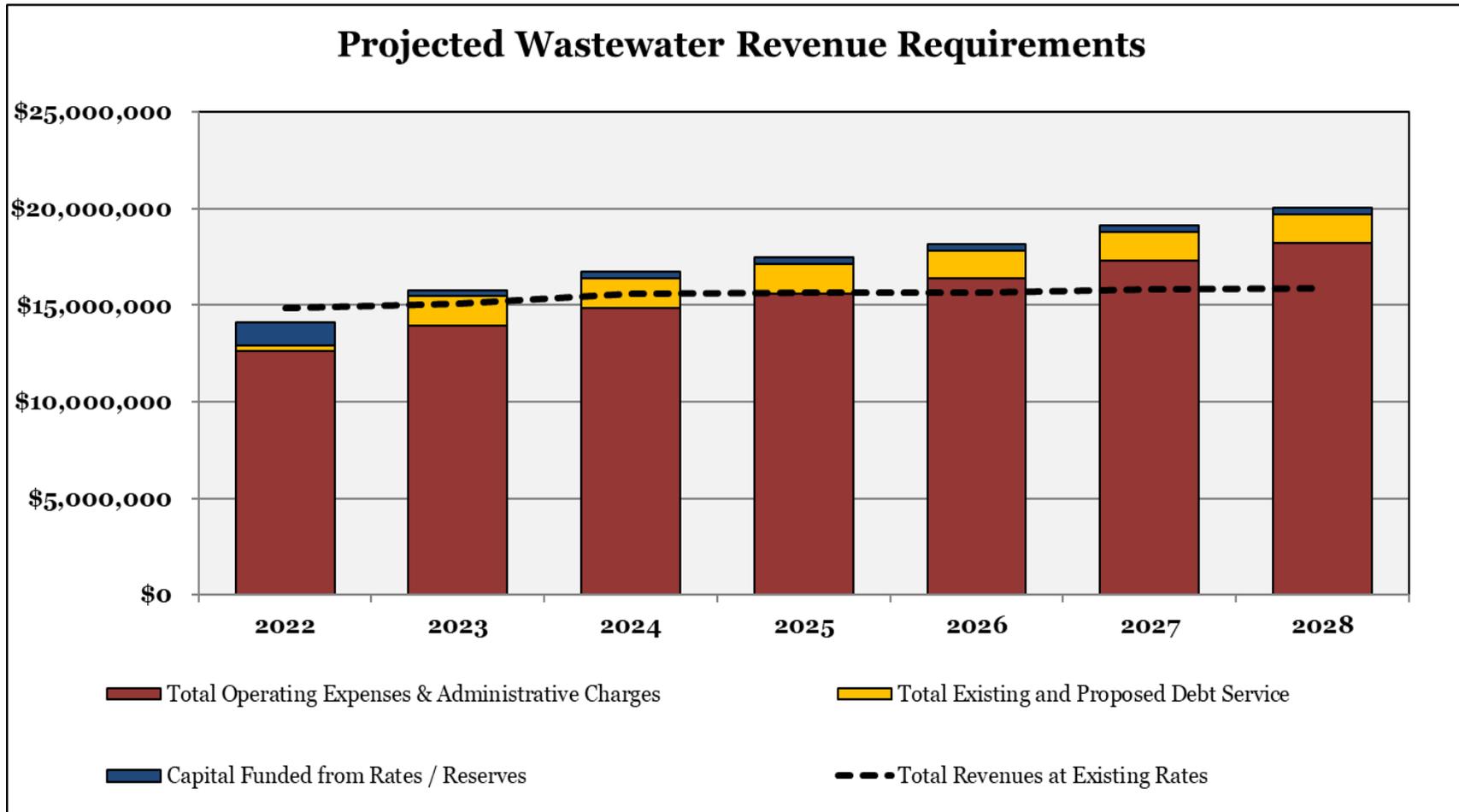
<u>Proposed Debt</u>	<u>Estimated Project Cost</u>	<u>Principal Amount</u>	<u>Loan Term</u>	<u>Interest Rate</u>	<u>Annual Debt Service Payment</u>	<u>1<sup>st</sup> Year of Debt Service</u>
Senior 1	\$53,203,002	\$57,920,000	30	4.50%	\$3,555,798	Fiscal Year 2023
Senior 2	\$43,064,100	\$47,070,000	30	5.00%	\$3,061,971	Fiscal Year 2025
Senior 3	\$32,895,600	\$36,105,000	30	5.50%	\$2,484,219	Fiscal Year 2027
<b>Total</b>	<b>\$129,162,702</b>	<b>\$141,095,000</b>	<b>N/A</b>	<b>N/A</b>	<b>\$9,101,988</b>	<b>N/A</b>

[\*] Proposed loan information based on information provided by the City's Financial Advisor.

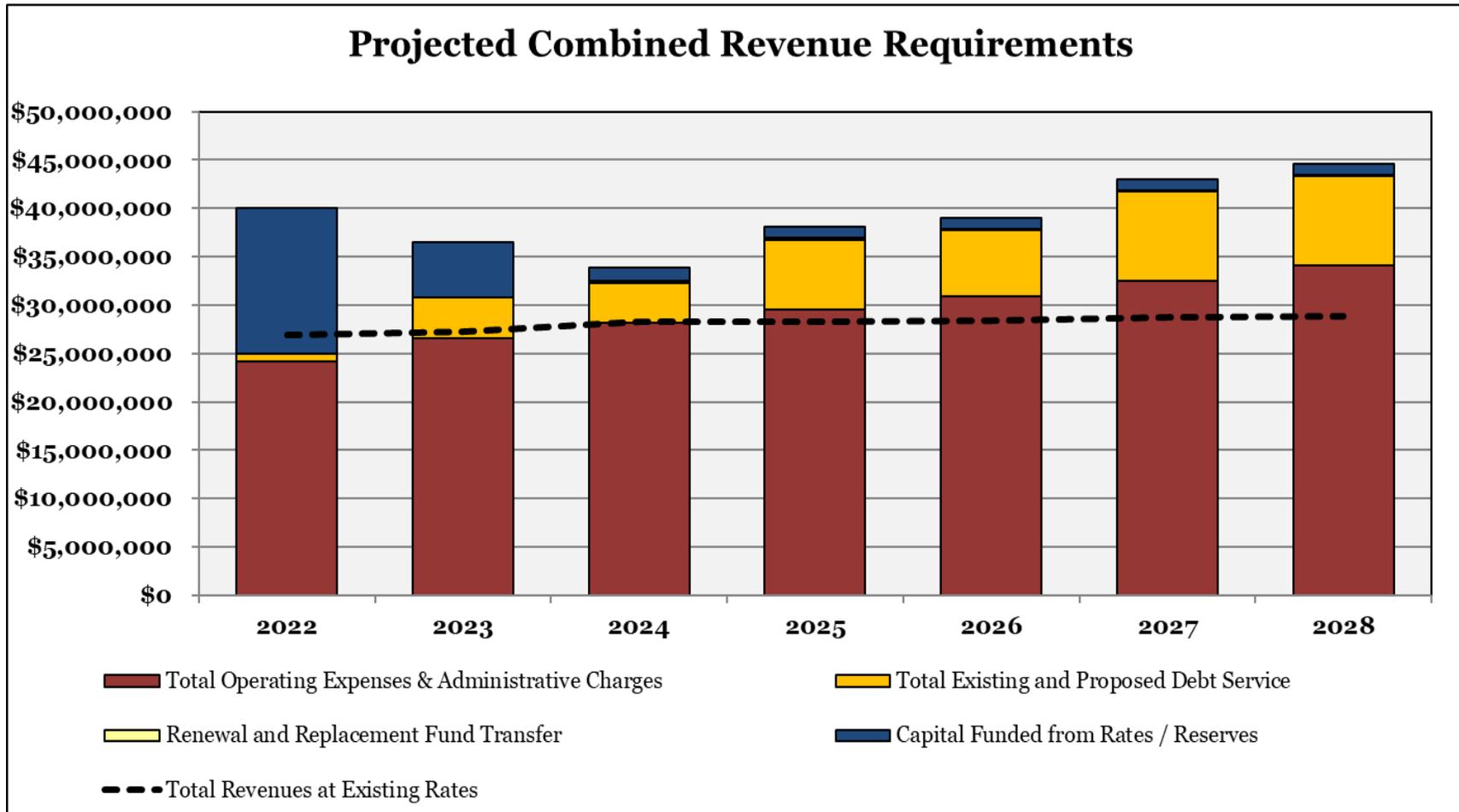
# Revenue Sufficiency at Existing Rates



# Revenue Sufficiency at Existing Rates (cont'd.)



# Revenue Sufficiency at Existing Rates (cont'd.)



# Utility Rate Study Results

## Proposed Rate Revenue Adjustments [\*]

<u>Description</u>	<u>Water</u>	<u>Wastewater</u>
<u>Projected:</u>		
October 2022 (FY 2023)	40.00%	5.25%
October 2023 (FY 2024)	17.00%	5.25%
October 2024 (FY 2025)	10.00%	5.25%
October 2025 (FY 2026)	7.00%	5.25%
October 2026 (FY 2027)	5.25%	5.25%
October 2027 (FY 2028)	3.75%	3.75%

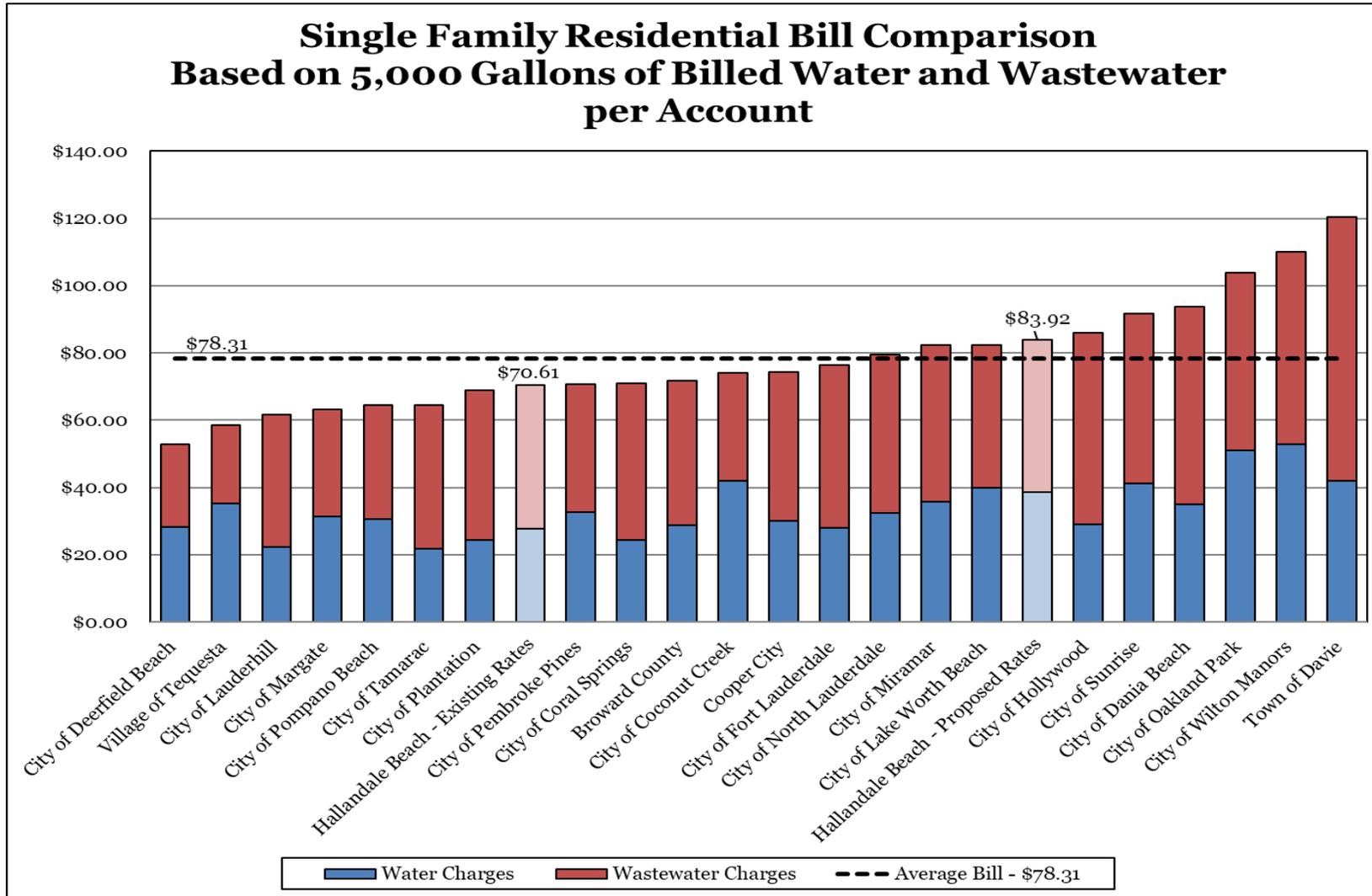
[\*] Rate increases assumed to be applied uniformly (or “across the board”) to the monthly base and usage charges.

# Water and Wastewater Bill Comparison

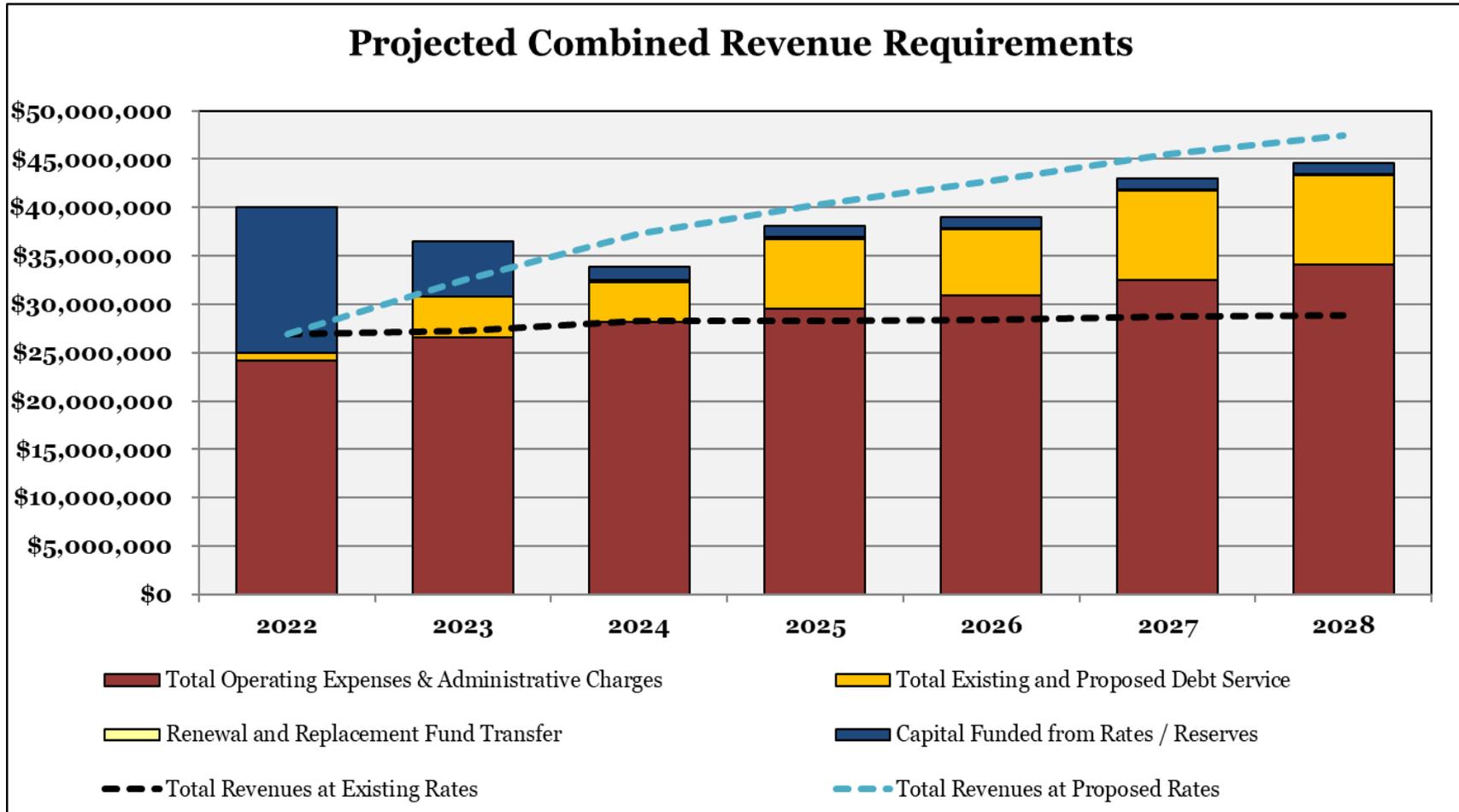
## Sample Residential Monthly Bill Comparisons

<u>Monthly Gallons</u>	<u>Percentage of Bills</u>	<u>Existing FY 22 Monthly Bill</u>	<u>Proposed FY 23 Monthly Bill</u>	<u>Monthly \$ Bill Change</u>	<u>Monthly % Bill Change</u>
<b><u>Water System</u></b>					
0	13.54%	\$21.59	\$30.23	\$8.64	40.00%
5,000	63.13%	\$27.66	\$38.72	\$11.06	40.00%
10,000	89.10%	\$35.81	\$50.12	\$14.31	40.00%
<b><u>Wastewater System</u></b>					
0	13.54%	\$21.02	\$22.12	\$1.10	5.25%
5,000	63.13%	\$42.95	\$45.20	\$2.25	5.25%
10,000	89.10%	\$66.15	\$69.60	\$3.45	5.25%
<b><u>Combined Water and Wastewater Systems</u></b>					
0	13.54%	\$42.61	\$52.35	\$9.74	22.86%
5,000	63.13%	\$70.61	\$83.92	\$13.31	18.85%
10,000	89.10%	\$101.96	\$119.72	\$17.76	17.42%

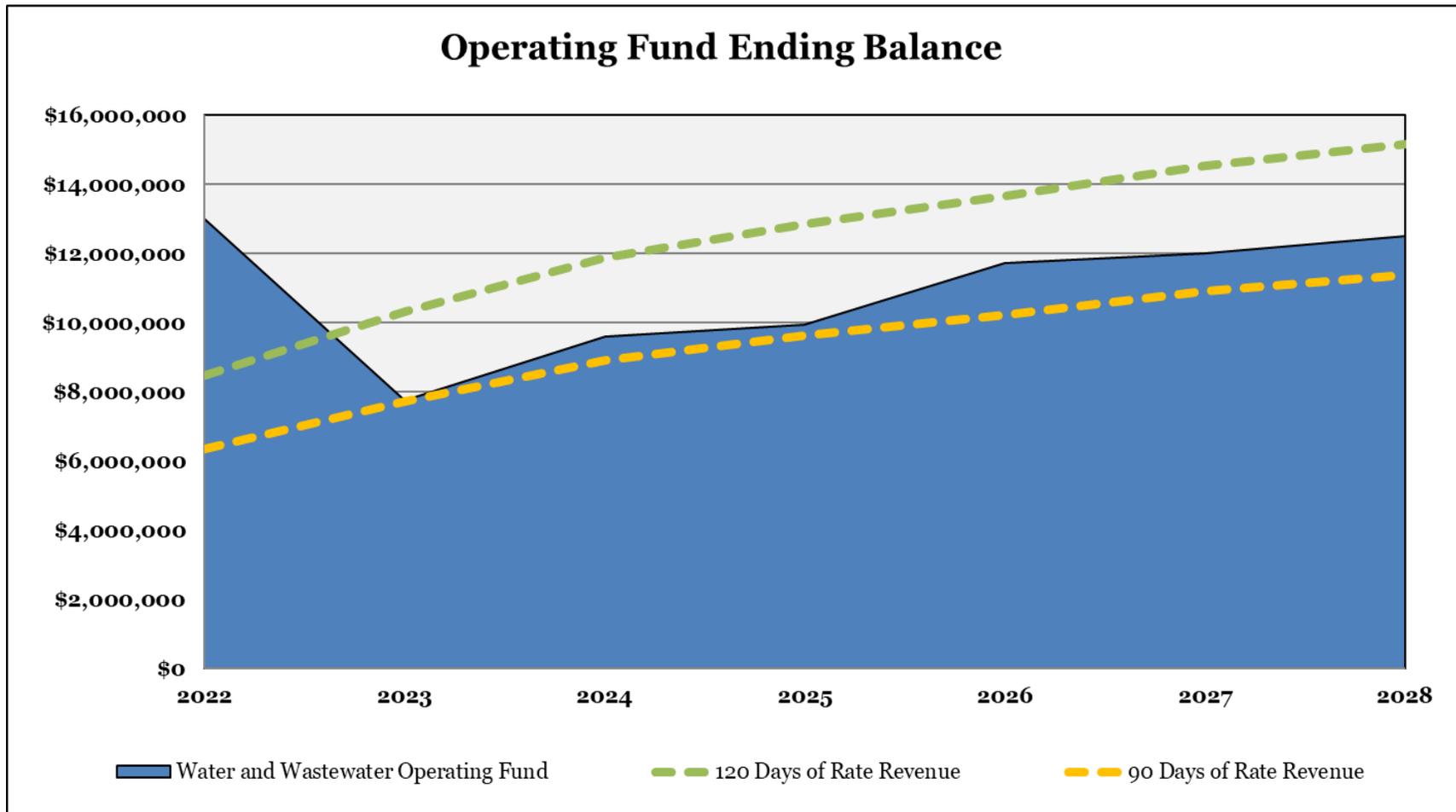
# Water and Wastewater Bill Comparison (cont'd.)



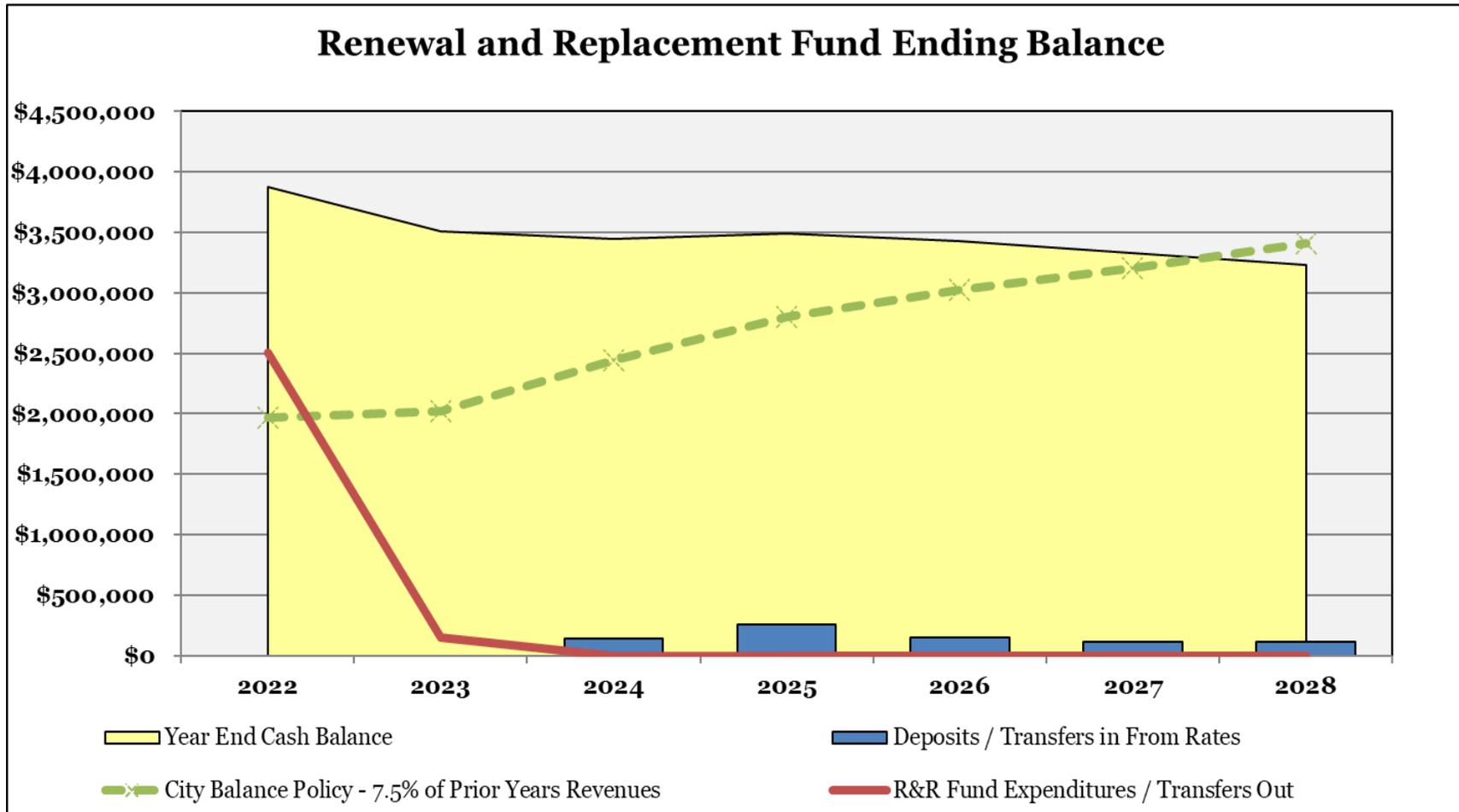
# Projected Revenue Sufficiency



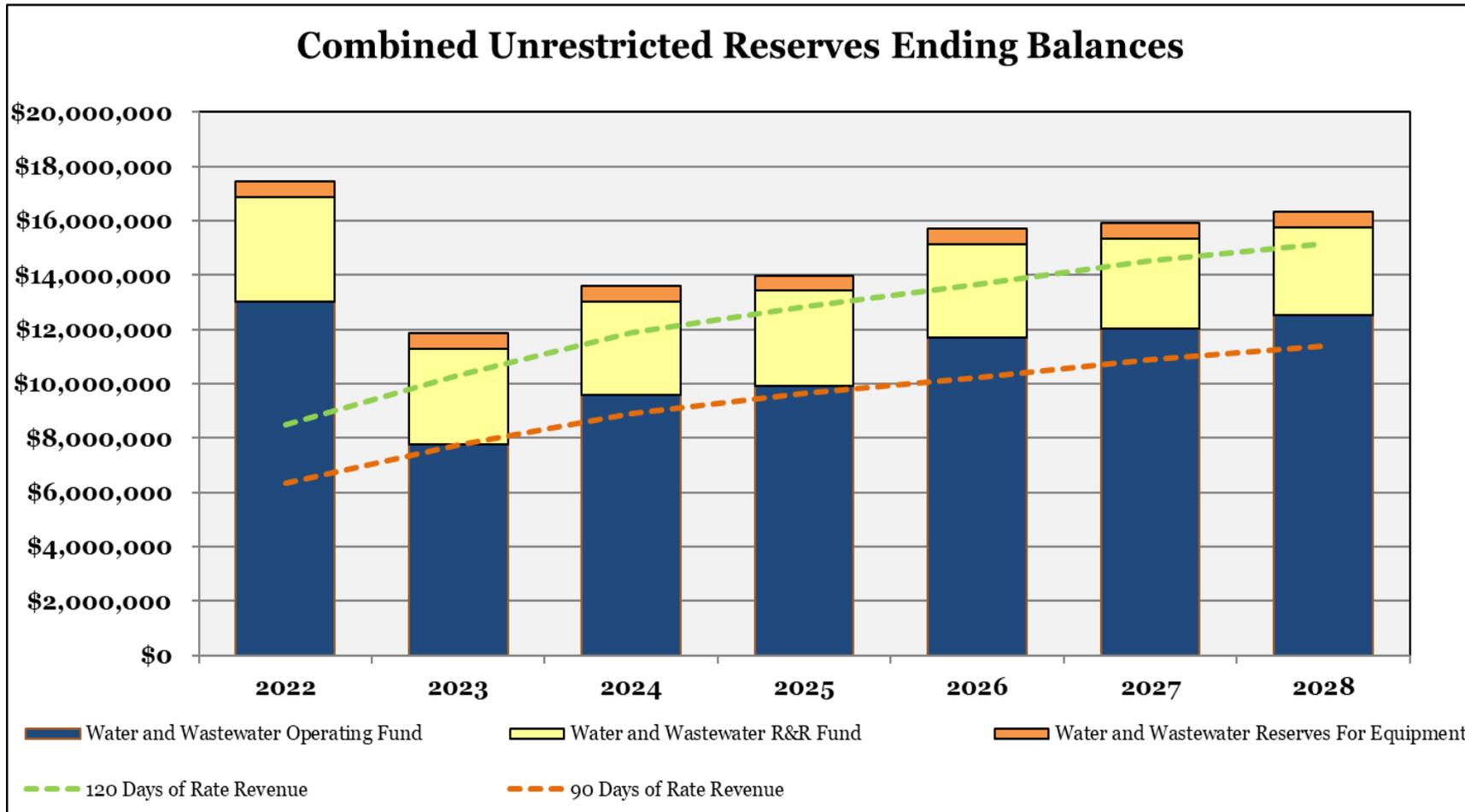
# Projected Operating Reserves Ending Cash Balances



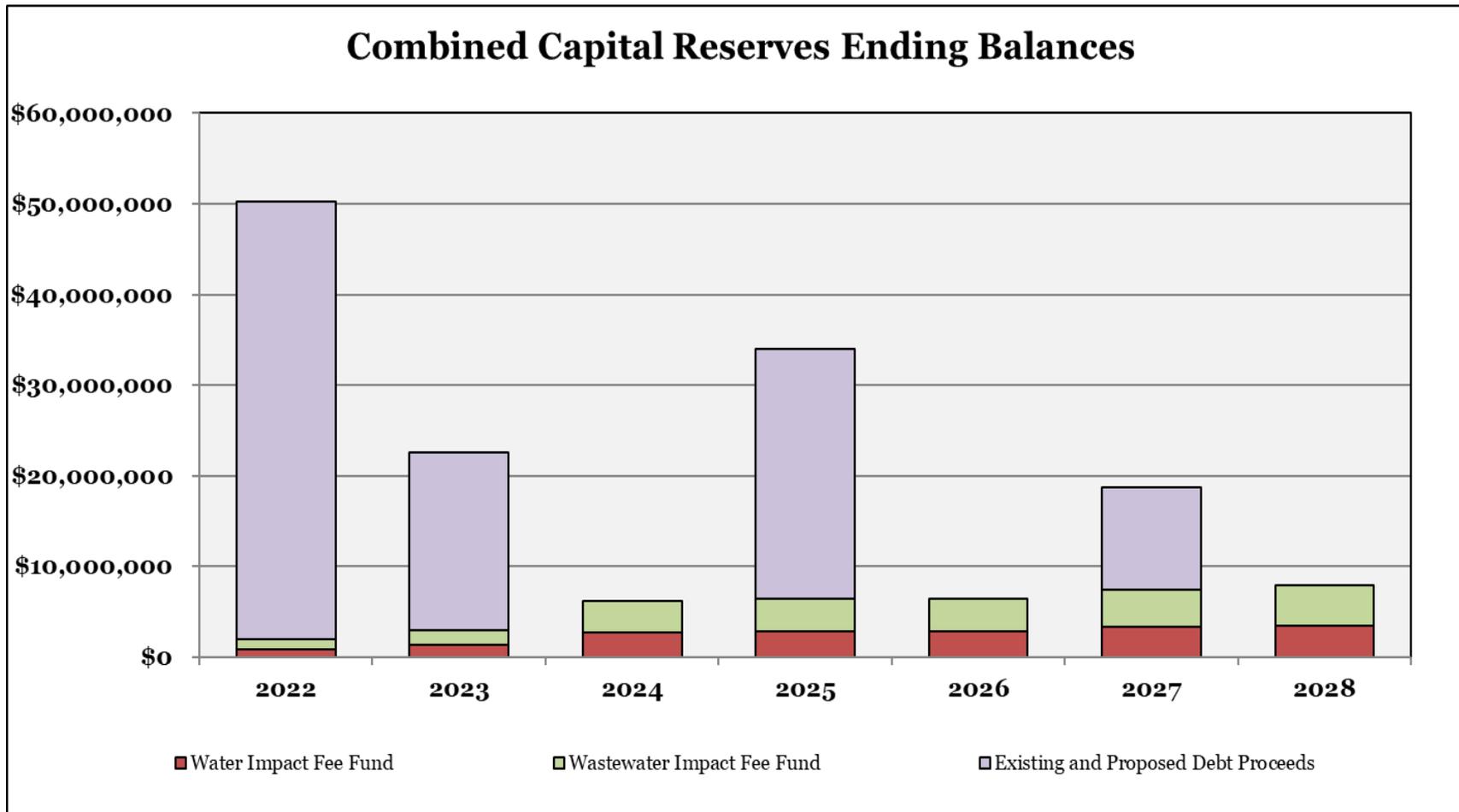
# Projected R&R Fund Ending Cash Balances



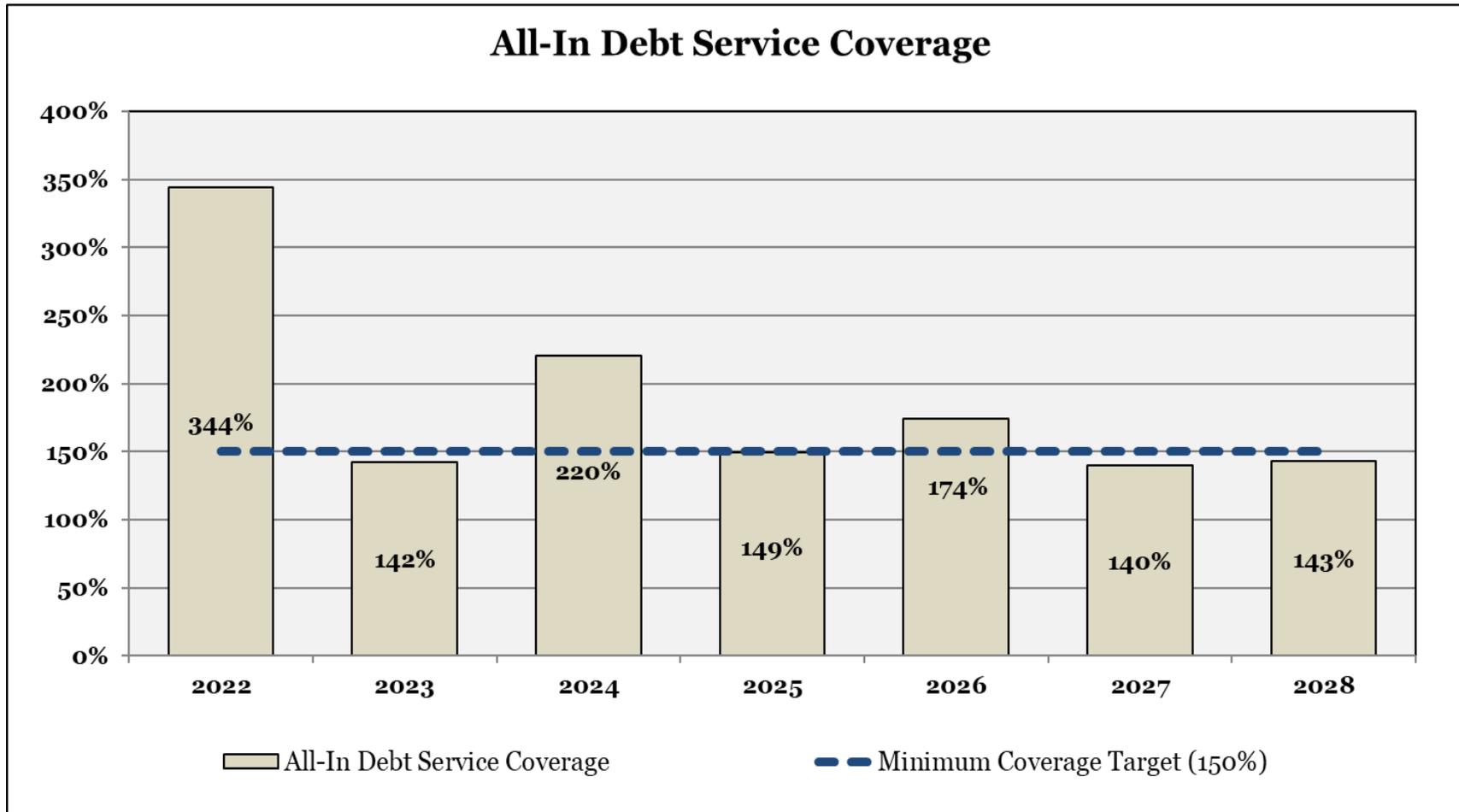
# Projected Unrestricted Reserves Ending Cash Balances



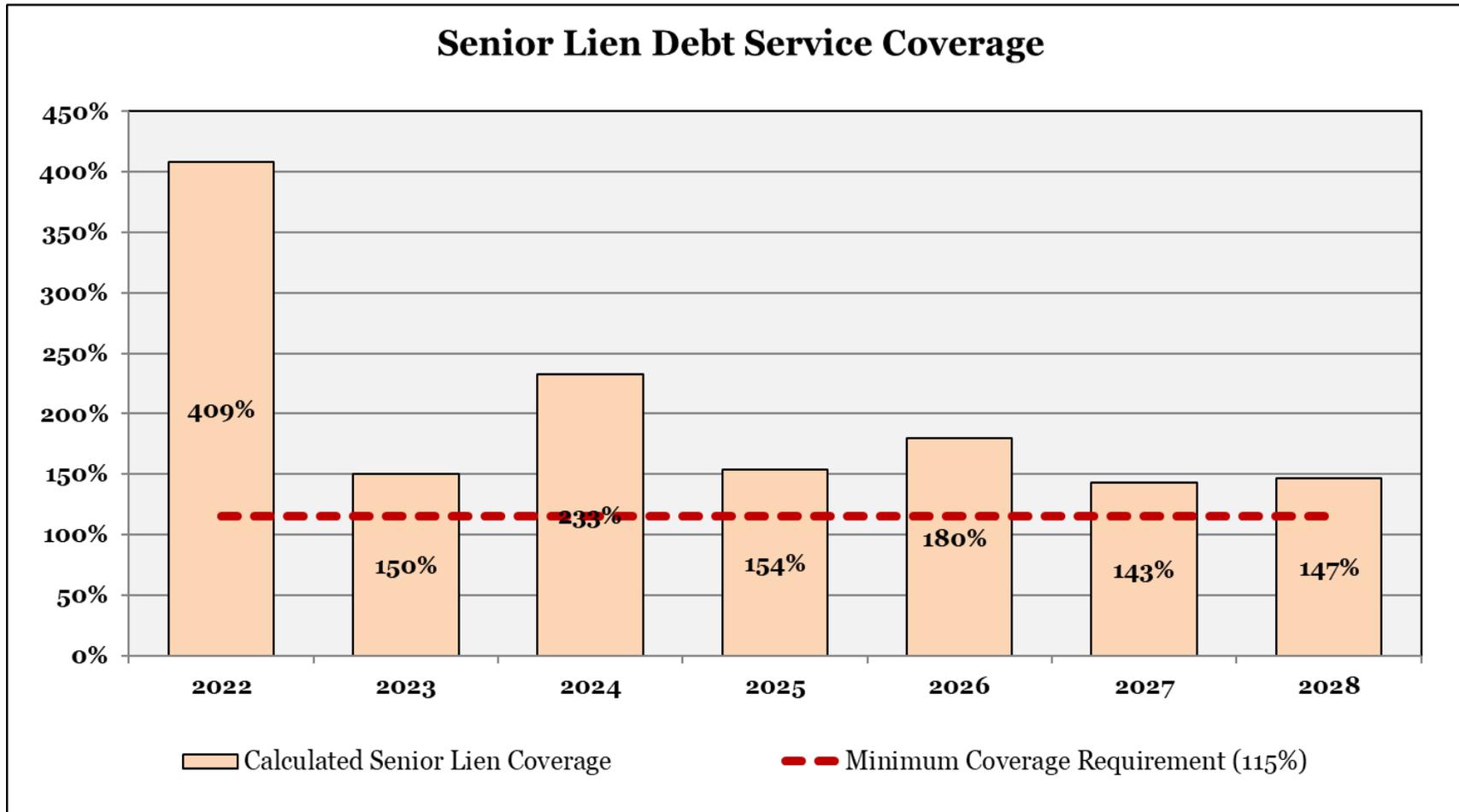
# Projected Capital Reserves Ending Cash Balances



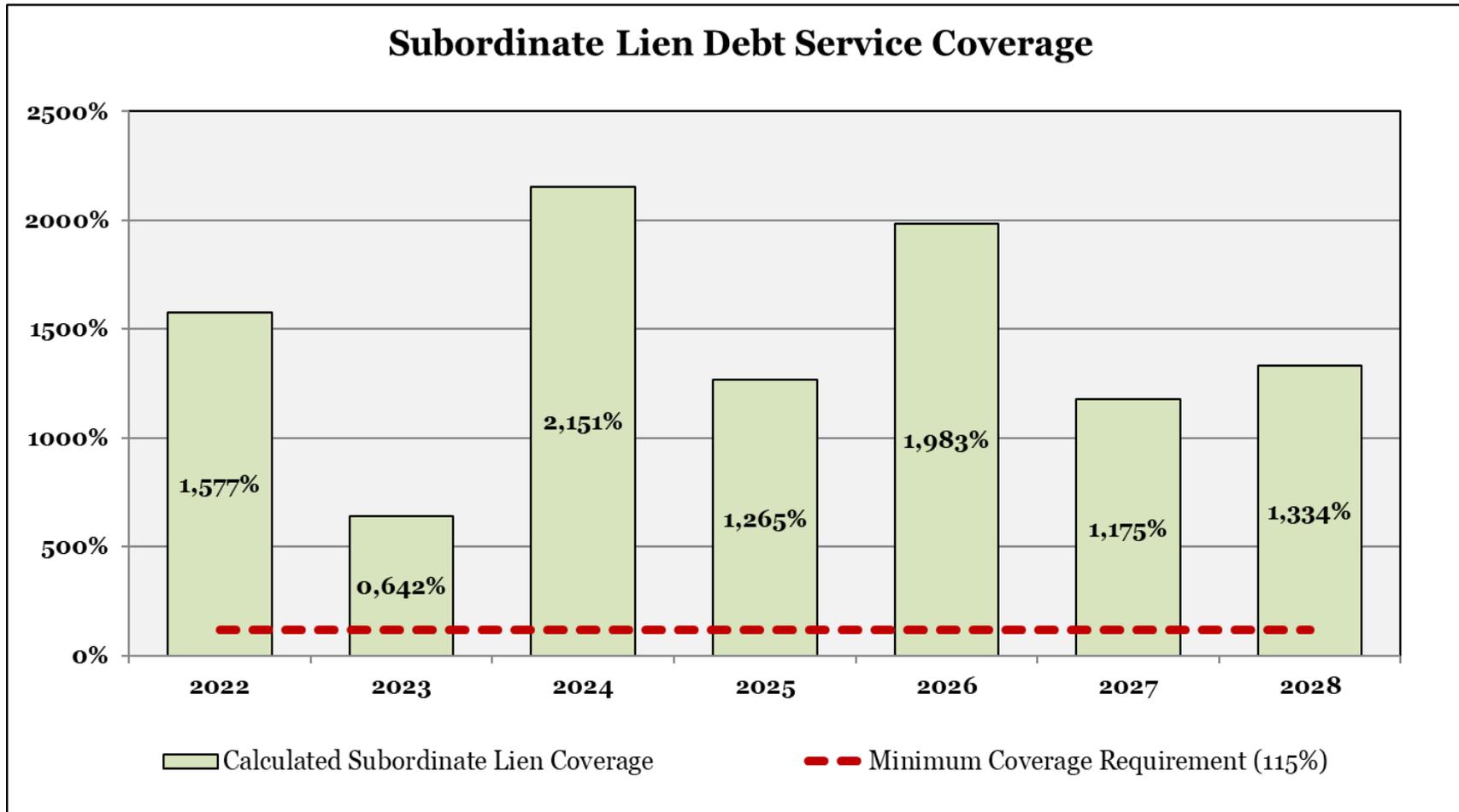
# Projected Debt Service Coverage



# Projected Debt Service Coverage (cont'd.)



# Projected Debt Service Coverage (cont'd.)



# Recommendations and Conclusions

- Adopt the Proposed Rate Adjustment Plan
- All Coverage Requirements Fulfilled During Forecast Period
- Cash Reserves at or Above Targeted Levels

# Other Observations and Comments

- Due to Current Economic Conditions and Inflationary Environment City Should Consider Periodic Review of Forecast
- Phase II of Project to Include Rate Design Options for Water, Wastewater, and Stormwater Rates
- Bond Feasibility Study to Support Debt Issuances to Follow

# Discussions & Questions





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However, except in circumstances where Raftelis expressly agrees otherwise in writing, Raftelis is not acting as a Municipal Advisor, and the opinions or views contained herein are not intended to be, and do not constitute “advice” within the meaning of the Municipal Advisor Rule.