



# City of Hendersonville Rate Study Results and Recommendations

*April 24, 2023*



# Agenda

2

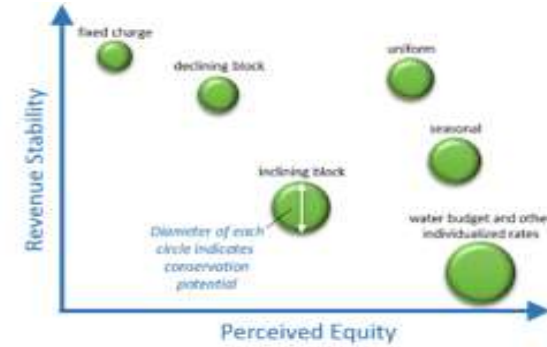
- 1) Overview of Rate Study Process
- 2) Financial Plan
- 3) Cost of Service Results
- 4) Rate Structure Analysis
- 5) Bill Impacts
- 6) System Development Fees
- 7) Recommendations





# Rate Study Process

3



## Financial Plan

How Much?

Defines how much total revenue is needed each year

## Cost of Service

From Whom?

Defines proportional revenue recovery between customer classes

## Rate Design

How to Collect?

Structure of how revenues are recovered by class



# Financial Plan



## Revenue Requirements

- Forecast of system operating expenditures
- Forecast of capital investments including existing debt obligations

## Revenue Forecast

- Forecast of system demands and customer counts
- Development of revenue forecast with existing rates and fees

## Evaluate Key Metrics

- Sufficiency of revenue to meet revenue requirements
- Ability to fall within range of reserve targets
- Meet debt service coverage requirements



Capital Costs

Debt Service

Operating Costs



## **Operating Expenditures**

- FY 24 budget used as a starting point for modeling
- Annual inflation by expenditure type to develop a 10-year forecast

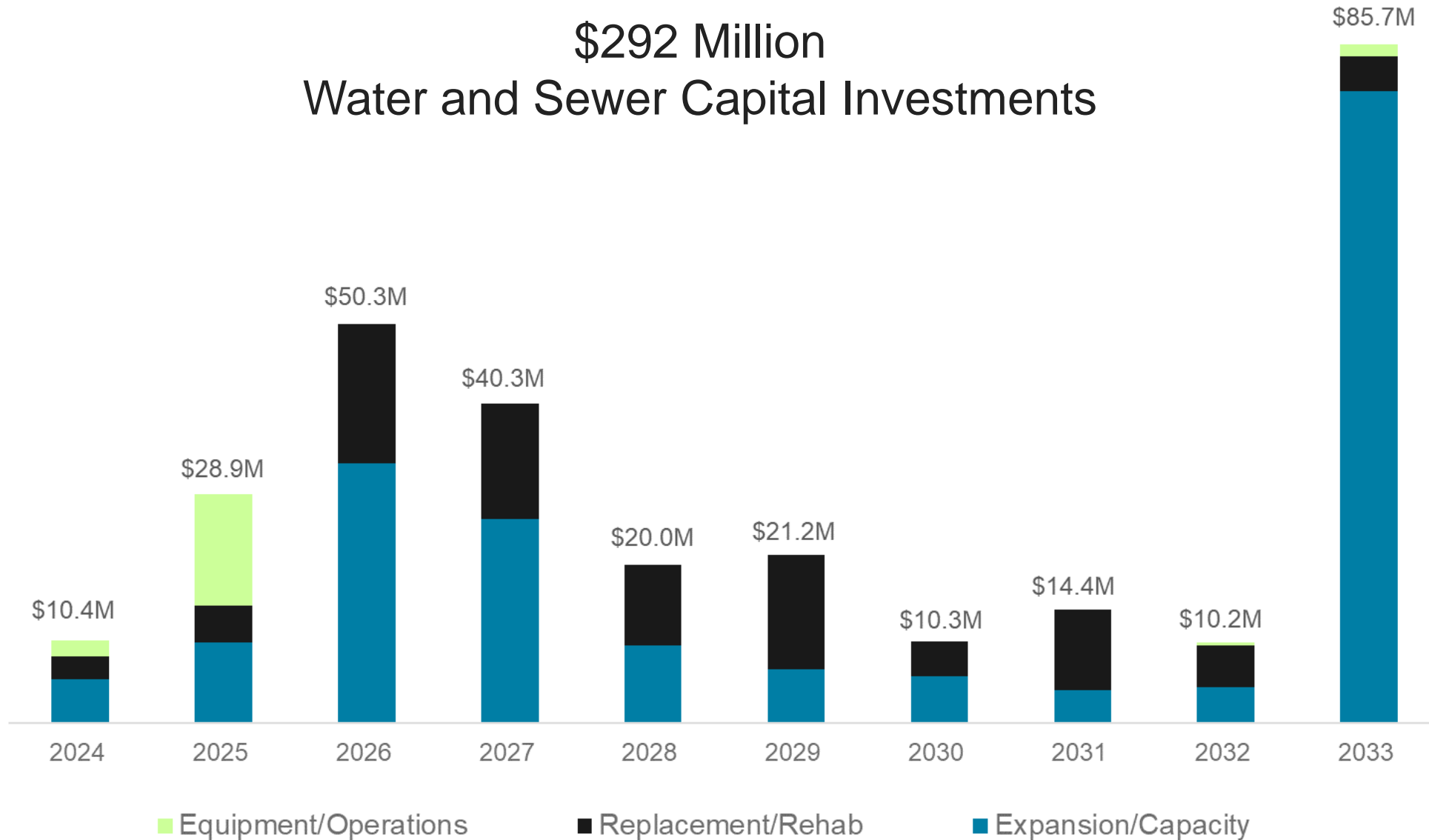
## **Capital Expenditures**

- Annual payment of existing debt service (FY 24 payment of \$3.9M)
- Ten-year capital plan
  - Funded with a blend of future borrowing and cash

## **Revenues**

- FY 24 budget used for non-rate revenue (assumed to remain flat over forecast period)
- Growth in customers at 0.5% inside City and 1.0% outside annually
- User rates adjusted as part of financial plan

**\$292 Million**  
**Water and Sewer Capital Investments**



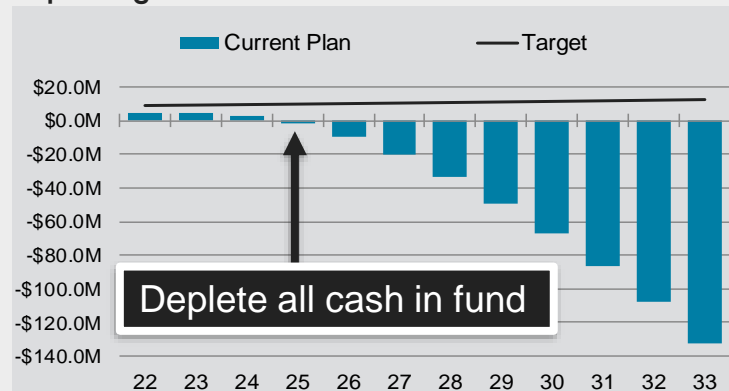


# No Rate Adjustments

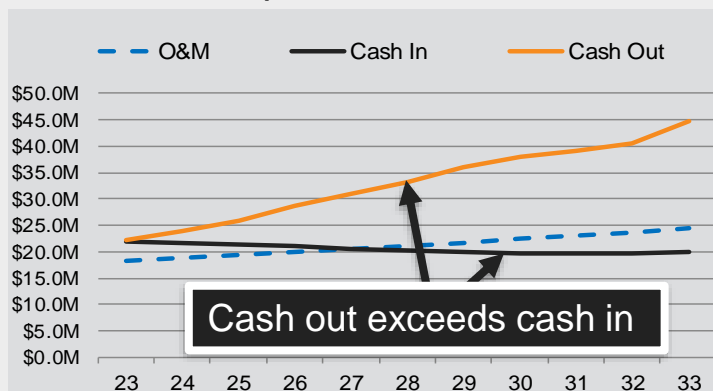
## Fail Debt Coverage Tests

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2027	FY 2033
Water Rate Plan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.0%	0.0%
Wastewater Rate Plan	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.0%	0.0%
Debt Service Coverage Test A	1.44	0.81	0.40	0.08	(0.16)	(0.37)	(0.53)	(0.74)	(0.94)	(1.13)	(1.12)		
Debt Service Coverage Test B	1.21	0.65	0.34	0.14	0.01	(0.06)	(0.12)	(0.17)	(0.20)	(0.22)	(0.21)		
Total Single Family Bill	\$62.33	\$62.33	\$62.33	\$62.33	\$62.33	\$62.33	\$62.33	\$62.33	\$62.33	\$62.33	\$62.33		

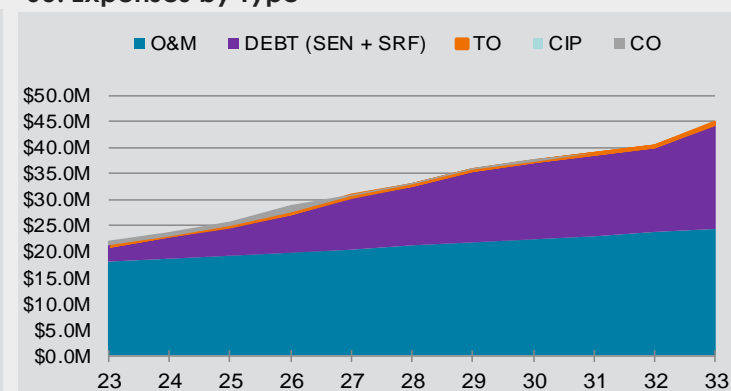
### Operating Fund - 60



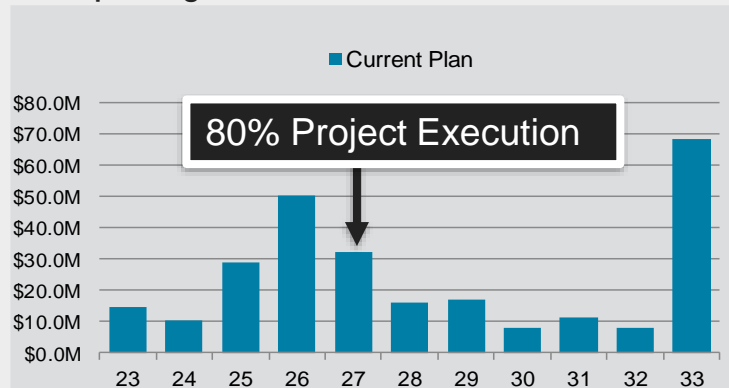
### 60: Revenues vs. Expenses



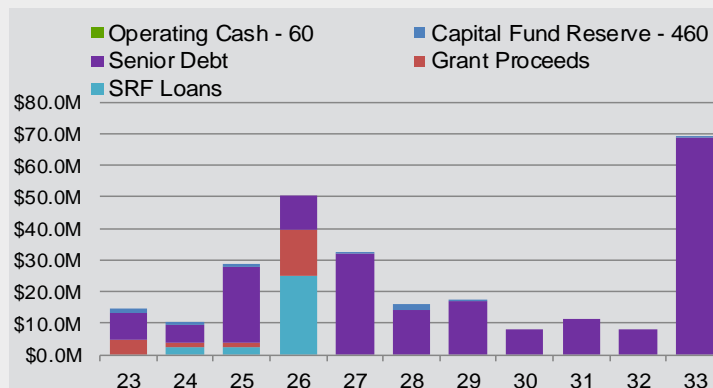
### 60: Expenses by Type



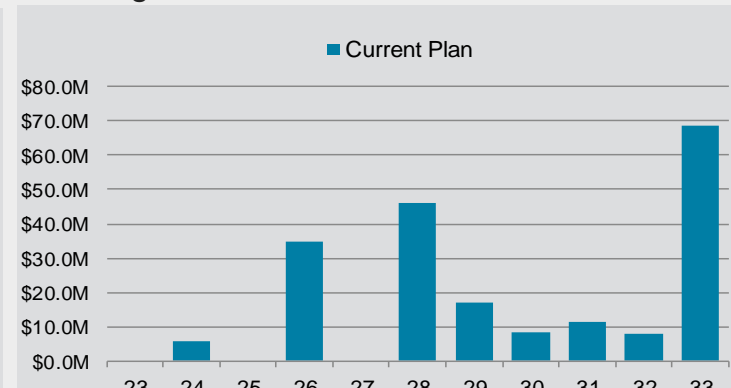
### CIP Spending



### CIP Funding



### Borrowing - Senior Debt





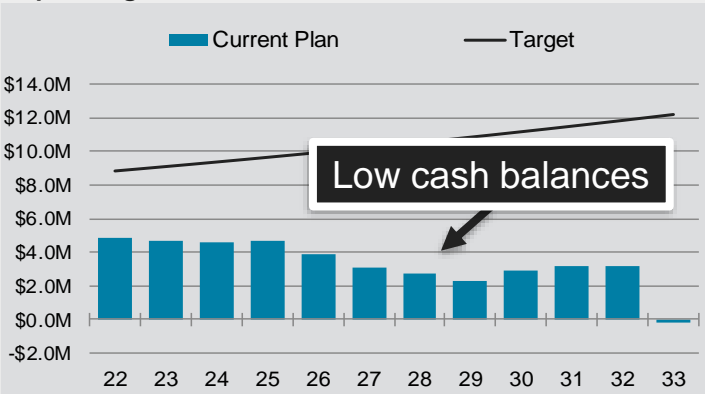
# Prior Rate Plan

## Fail Debt Coverage Tests

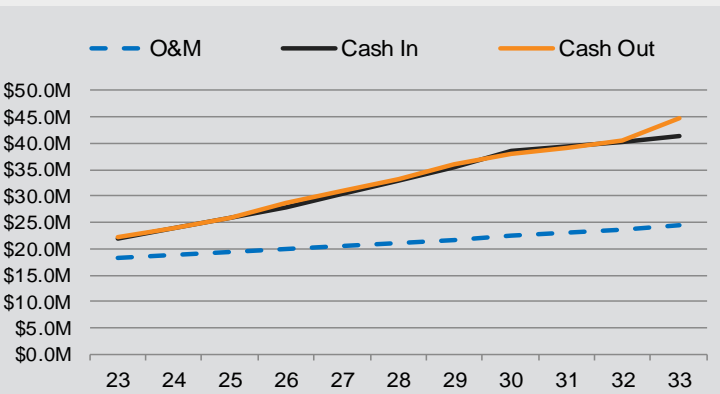
### Projected revenue increases

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2027	FY 2033
Water Rate Plan	0.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	2.00%	2.00%	2.00%	57.3%	130.0%
Wastewater Rate Plan	0.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	2.00%	2.00%	2.00%	30.9%	67.0%
Debt Service Coverage Test A	1.44	1.27	1.21	1.08	0.94	0.94	0.91	0.98	0.94	0.92	0.75		
Debt Service Coverage Test B	1.21	1.14	1.11	1.03	0.92	0.95	0.93	1.01	0.97	0.95	0.78		
Total Single Family Bill	\$62.33	\$67.77	\$73.71	\$80.23	\$87.34	\$95.15	\$103.74	\$113.13	\$115.39	\$117.71	\$119.39		

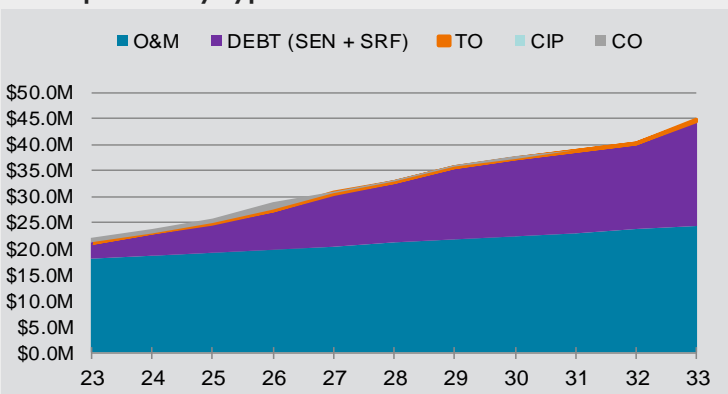
### Operating Fund - 60



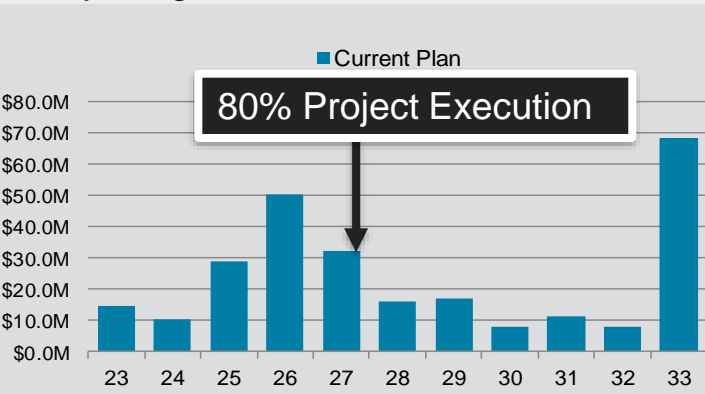
### 60: Revenues vs. Expenses



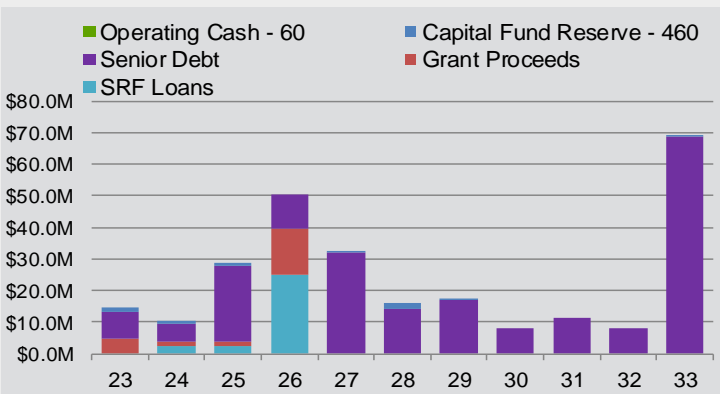
### 60: Expenses by Type



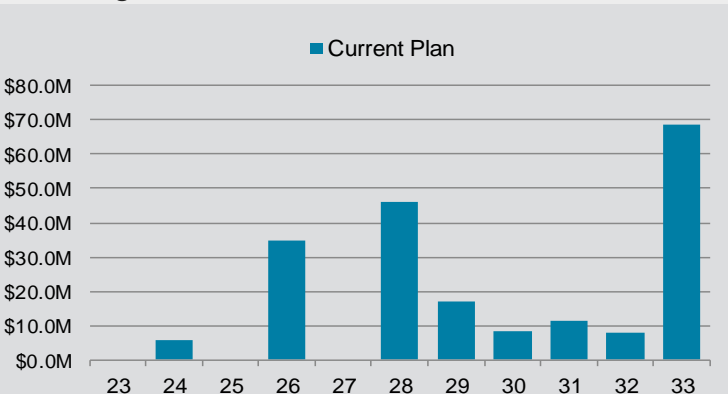
### CIP Spending



### CIP Funding



### Borrowing - Senior Debt





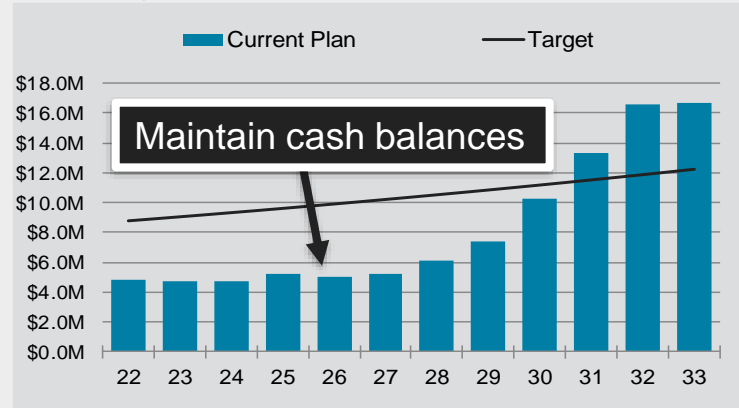
# Financial Management Plan

Meet debt coverage tests

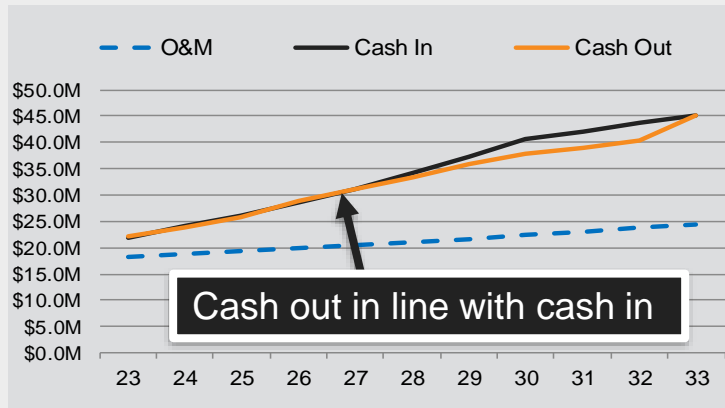
## Projected revenue increases

	2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2027	FY 2033
Water Rate Plan	0.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	3.00%	3.00%	3.00%	51.9%	120.3%
Wastewater Rate Plan	0.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	3.00%	3.00%	3.00%	57.3%	134.4%
Debt Service Coverage Test A	1.44	1.31	1.28	1.17	1.05	1.07	1.06	1.17	1.18	1.20	1.03		
Debt Service Coverage Test B	1.21	1.18	1.18	1.10	1.01	1.05	1.04	1.15	1.14	1.13	0.96		
Total Single Family Bill	\$62.33	\$69.59	\$77.71	\$86.76	\$96.87	\$108.19	\$120.81	\$134.89	\$138.94	\$143.10	\$146.25		

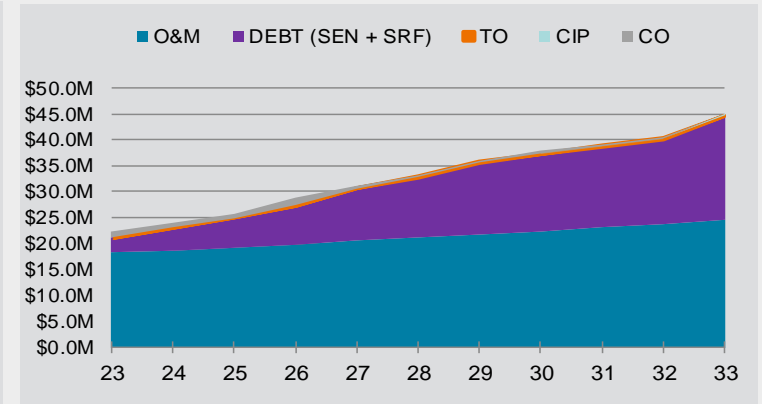
## Operating Fund - 60



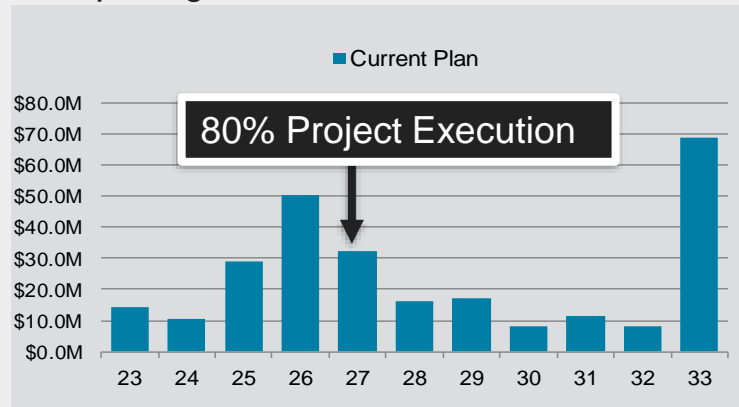
## 60: Revenues vs. Expenses



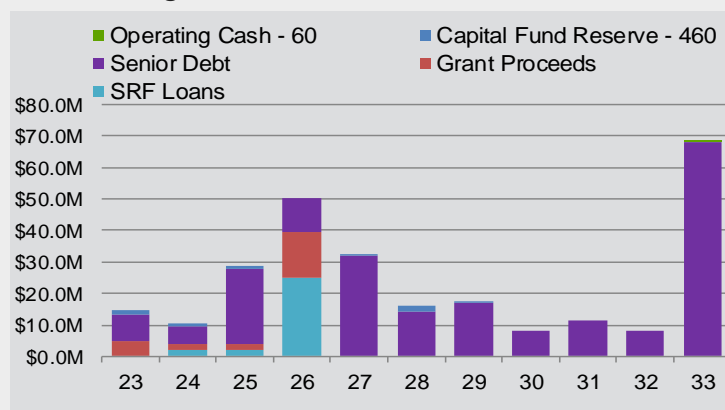
## 60: Expenses by Type



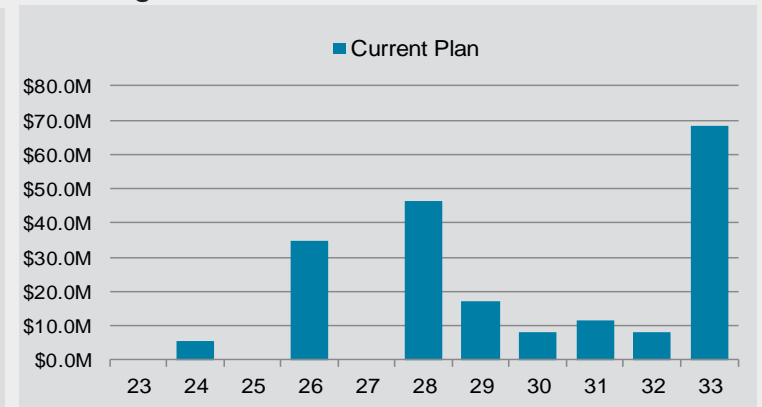
## CIP Spending



## CIP Funding



## Borrowing - Senior Debt

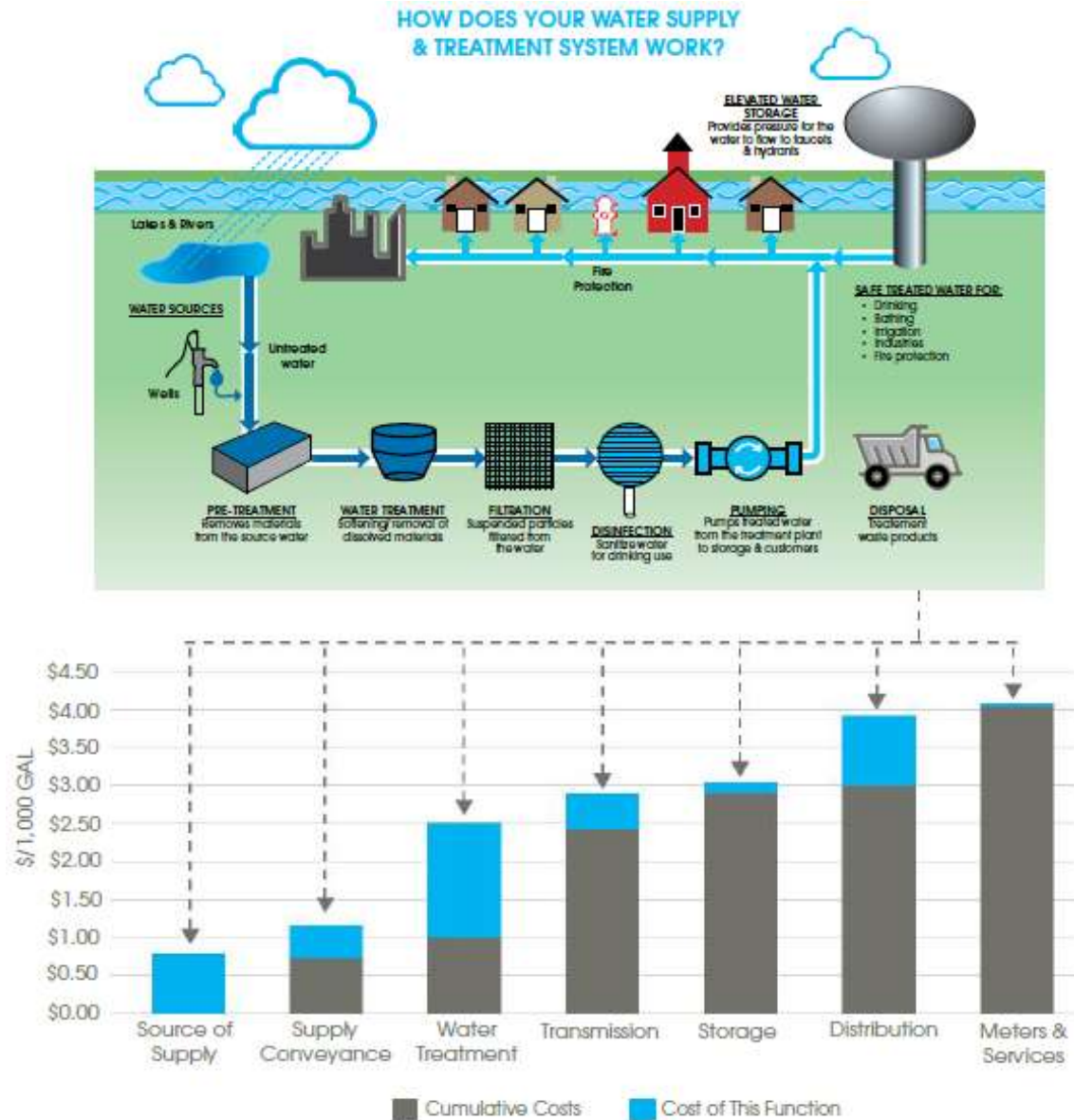




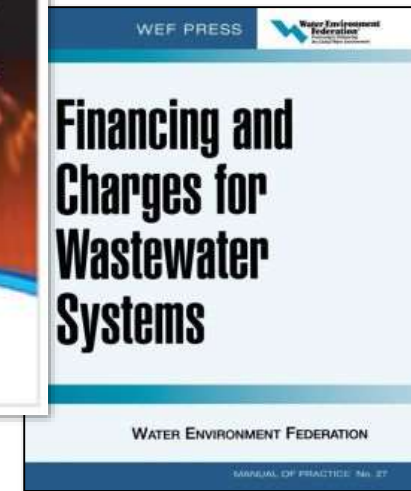
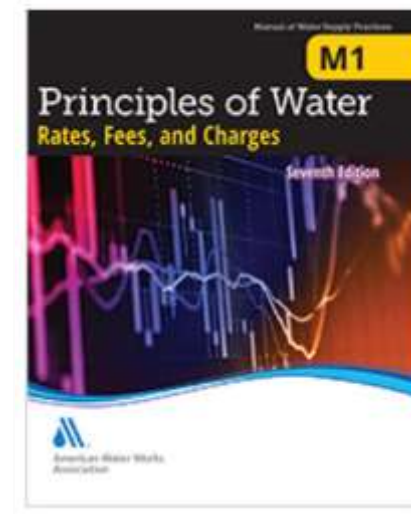
- Revenue increases from rates are required in FY 24 to meet debt coverage and cash balances
- Recommended adjustments
  - Water revenue increase: 11.00%
  - Sewer revenue increase: 12.00%
- Customer bill impacts will vary based on rate structure recommendations
- Future revenue increases will be required at similar levels
- Financial plan should be evaluated annually based on capital spending, growth, & other factors



## Cost of Service Results



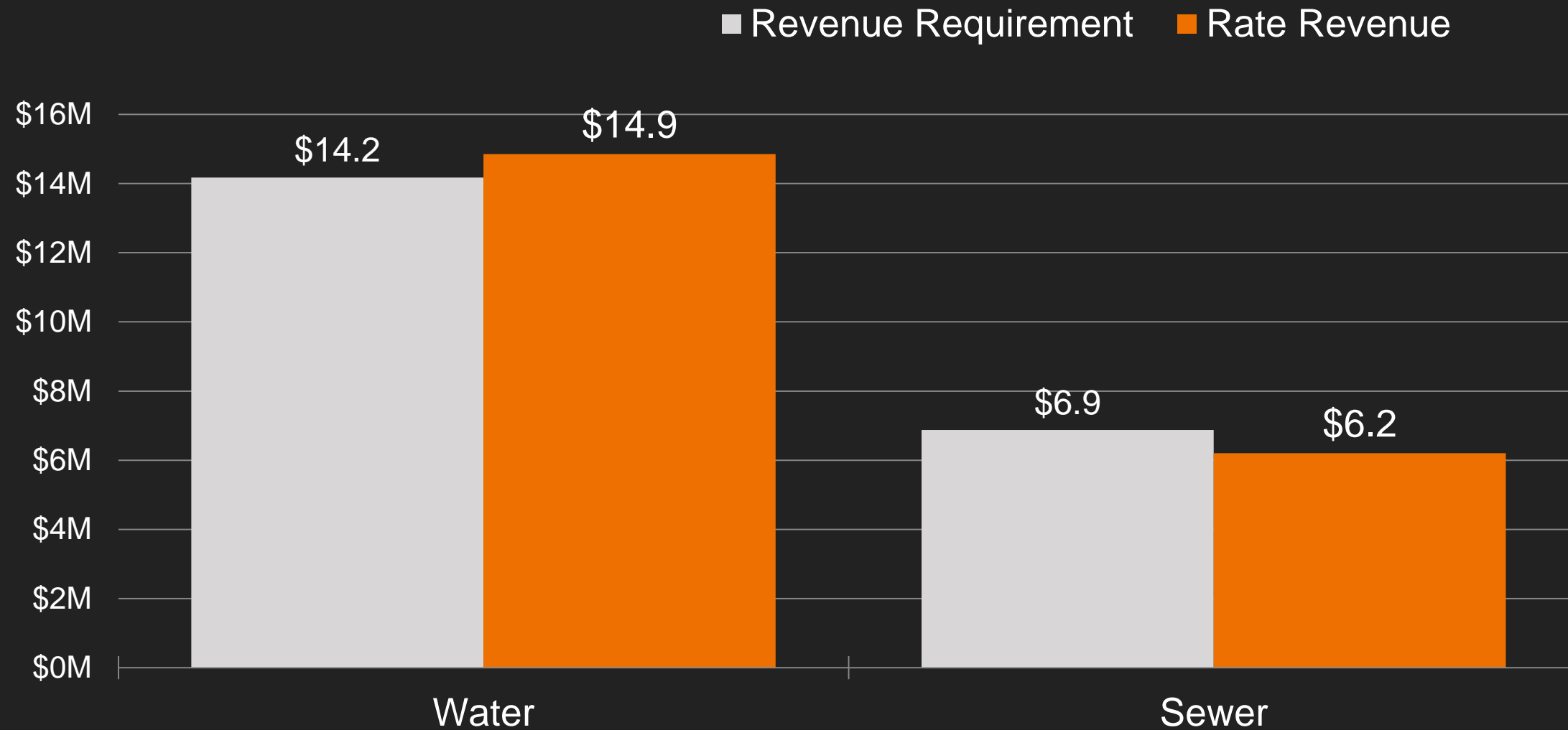
**Goal:** Determine the equitable distribution of revenue to be recovered by customer class based on the **cost to serve** each class



Use of Industry Standard Approaches

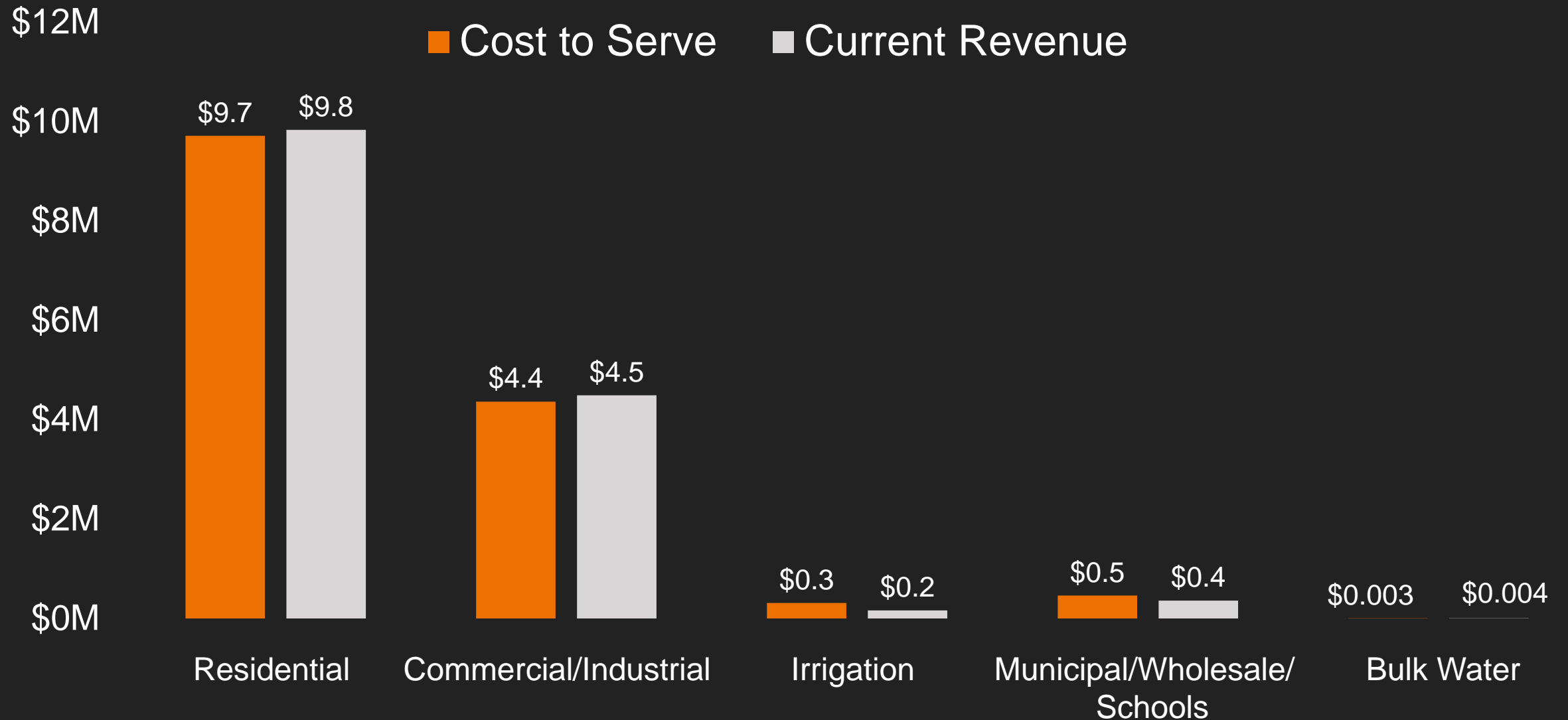


# Net Revenue Requirements by Service





# FY23 Water Cost to Serve vs. Current Revenue by Class (\$M)





# Cost of Service Summary

---

- Modest misalignment between water and sewer costs and revenue generated (~ 3% of revenues)
  - Recommend balancing of water and sewer cost of service and revenues over time
  - Financial plan reflects this balancing
- Customer class cost of service is **closely** aligned with recovery by class
  - Rate structure modifications designed to fully align with the cost of service



## Rate Structure Alternatives



# Pricing Goals and Objectives

18



**Customer Affordability** - Ability to provide service for basic needs at affordable prices



**Rate and Revenue Stability** - Limit volatility in annual revenues and rate adjustments



**Cost of Service Based** - Alignment between use of service and utility bill



**Administrative and Customer Understanding** - Ability to administrate and customer to understand



**Legal Defensibility** - Comply with industry standard and legal requirements



# City's Current Water Rates

19

Water Base Charges	Inside City	Outside City
3/4"	\$8.32	\$11.23
1"	\$9.71	\$13.11
1.5"	\$13.15	\$17.75
2"	\$17.55	\$23.69
3"	\$27.88	\$37.64
4"	\$42.60	\$57.51
6"	\$79.40	\$107.19
8"	\$123.56	\$166.81

Public Schools	
Base Charge Per Acct	\$8.32
All Usage	\$4.48

Water Volumetric Rates (per 1,000 gallon)	Inside City	Outside City
<b>Residential</b>		
0 to 6,000 gal.	\$4.48	\$6.05
6,001 to 14,000 gal.	\$4.93	\$6.65
14,001 gal. and over	\$5.60	\$7.56
<b>Commercial/Industrial</b>		
0 to 40,000 gal.	\$4.48	\$6.05
40,001 to 200,000 gal.	\$4.28	\$5.78
200,001 gal. and over	\$3.80	\$5.13
<b>Irrigation</b>		
0 to 40,000 gal.	\$5.60	\$7.56
40,001 gal. and over	\$6.10	\$8.06
<b>Municipal/Wholesale</b>	\$4.48	
<b>Bulk Water</b>	\$7.56	



# City's Current Sewer Rates

Sewer Base Charges	Inside City	Outside City
3/4"	\$8.92	\$13.38
1"	\$11.25	\$16.88
1.5"	\$17.05	\$25.58
2"	\$24.03	\$36.05
3"	\$40.44	\$60.66
4"	\$63.89	\$95.84
6"	\$122.45	\$183.68
8"	\$192.75	\$289.13

Sewer Volumetric Rates (per 1,000 gallon)	Inside City	Outside City
<b>Residential / Commercial</b>		
All Usage	\$6.33	\$9.50

Public Schools	
Base Charge Per Acct	\$8.92
All Usage	\$6.33

Municipal	
Base Charge Per Acct	\$8.92
All Usage	\$9.50



## Water and Sewer Base Charge

- Increase the portion of revenues collected from base charge
- Scale fixed charges consistent with industry standards

## Residential / Irrigation Water Rates

- Modify the tier quantities and differences in pricing between tiers
  - Creation of a “life-line” tier – increased customer bill control / affordability
  - Enhance conservation incentive – aligns with cost of service

## Commercial / Industrial Water Rates

- Move to a uniform rate in FY 2024

## Recommended FY 24 Water Base Charges

Meter Size	Inside City Account Charge	Inside City RTS Charge	Inside City Total Base Charge
3/4"	\$6.73	\$3.23	\$9.96
1"	\$6.73	\$5.39	\$12.12
1.5"	\$6.73	\$10.77	\$17.50
2"	\$6.73	\$17.24	\$23.97
3"	\$6.73	\$37.71	\$44.44
4"	\$6.73	\$64.65	\$71.38
6"	\$6.73	\$145.46	\$152.19
8"	\$6.73	\$172.39	\$179.12

Outside City Total Base Charge
\$12.95
\$15.75
\$22.76
\$31.16
\$57.77
\$92.79
\$197.84
\$232.86

## FY 23 Base Charges

Inside City	Outside City
\$8.32	\$11.23
\$9.71	\$13.11
\$13.15	\$17.75
\$17.55	\$23.69
\$27.88	\$37.64
\$42.60	\$57.51
\$79.40	\$107.19
\$123.56	\$166.81

Recommended base charges along with recommend volumetric rates would generate a 11% increase in water revenues



# Water Volumetric Rates: Life-line Tier

Addition of an initial quantity of water for basic indoor water needs at a lower rate



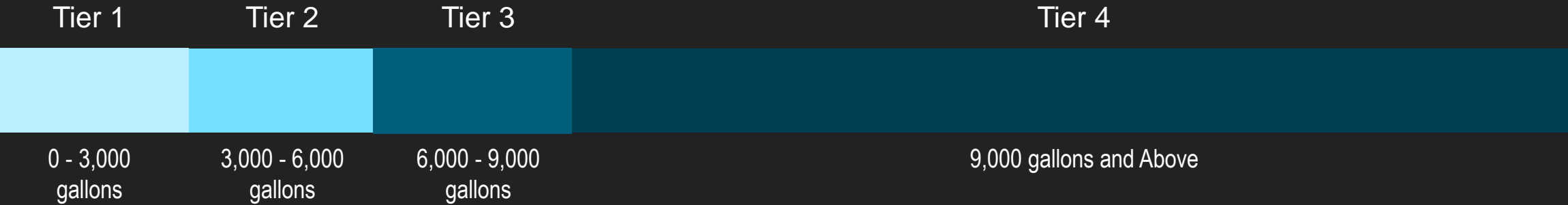
Life-line Tier = 3,000 gallons



## Current Monthly Water Tiers



## Recommended Monthly Water Tiers



## Recommended FY 24 Water Volumetric Rates

Water Volumetric Rates (per 1,000 gallon)	Rate Differential	Inside City	Outside City	
<b>Residential</b>				
0 to 3,000 gal.	0.75	\$3.76	\$4.89	Addition of Life-line Tier / Enhanced Conservation
3,001 to 6,000 gal.	1.00	\$5.01	\$6.51	
6,001 to 9,000 gal.	1.25	\$6.26	\$8.14	
9,001 gal. and over	1.50	\$7.52	\$9.77	
<b>Commercial/Industrial</b>				
0 to 50,000 gal.	1.00	\$5.01	\$6.51	Transition to Uniform Rates
50,001 to 100,000 gal.	1.00	\$5.01	\$6.51	
100,001 gal. and over	1.00	\$5.01	\$6.51	
<b>Irrigation</b>				
0 to 40,000 gal.	2.00	\$10.02	\$13.03	Enhanced Conservation
40,001 gal. and over	2.10	\$10.52	\$13.68	
<b>Municipal/Wholesale/Public Schools</b>		\$5.01		
<b>Bulk Water</b>		\$9.77		

## Recommended FY 24 Sewer Base Charges

Meter Size	Inside Account Charge	Inside RTS Charge	Inside City Total Base Charge	Outside City Total Base Charge
3/4"	\$7.60	\$3.56	\$11.16	\$16.74
1"	\$7.60	\$5.93	\$13.53	\$20.30
1.5"	\$7.60	\$11.87	\$19.47	\$29.20
2"	\$7.60	\$18.99	\$26.59	\$39.88
3"	\$7.60	\$41.54	\$49.14	\$73.71
4"	\$7.60	\$71.21	\$78.81	\$118.22
6"	\$7.60	\$160.23	\$167.83	\$251.74
8"	\$7.60	\$189.90	\$197.50	\$296.25

## FY 23 Base Charges

Inside City	Outside City
\$8.92	\$13.38
\$11.25	\$16.88
\$17.05	\$25.58
\$24.03	\$36.05
\$40.44	\$60.66
\$63.89	\$95.84
\$122.45	\$183.68
\$192.75	\$289.13

Recommended base charges along with recommend volumetric rates would generate a 12% increase in sewer revenues

## Recommended FY 24 Sewer Rates

Sewer Volumetric Rates (per 1,000 gallon)	Inside City	Outside City
<b>Residential / Commercial</b>		
All Usage	\$6.88	\$10.32
<b>Wholesale / Municipal</b>		
All Usage	\$10.32	

Public Schools	
Base Charge Per Acct	\$11.16
All Usage	\$6.88

Municipal	
Base Charge Per Acct	\$11.16
All Usage	\$10.32

## FY 23 Sewer Rates

Sewer Volumetric Rates (per 1,000 gallon)	Inside City	Outside City
<b>Residential / Commercial</b>		
All Usage	\$6.33	\$9.50
<b>Wholesale / Municipal</b>		
All Usage	\$9.50	

Public Schools	
Base Charge Per Acct	\$8.92
All Usage	\$6.33

Municipal	
Base Charge Per Acct	\$8.92
All Usage	\$9.50



## Bill Comparisons



# Average Monthly Household Spending

29



**\$150**  
on electricity



**\$105**  
on cell phone  
service



Water: **\$22**  
Sewer: **\$28**  
**Total: \$50**  
Hendersonville  
(Inside City Current)



Water: **\$21**  
Sewer: **\$32**  
**Total: \$53**  
Hendersonville  
(Inside City Proposed FY24)



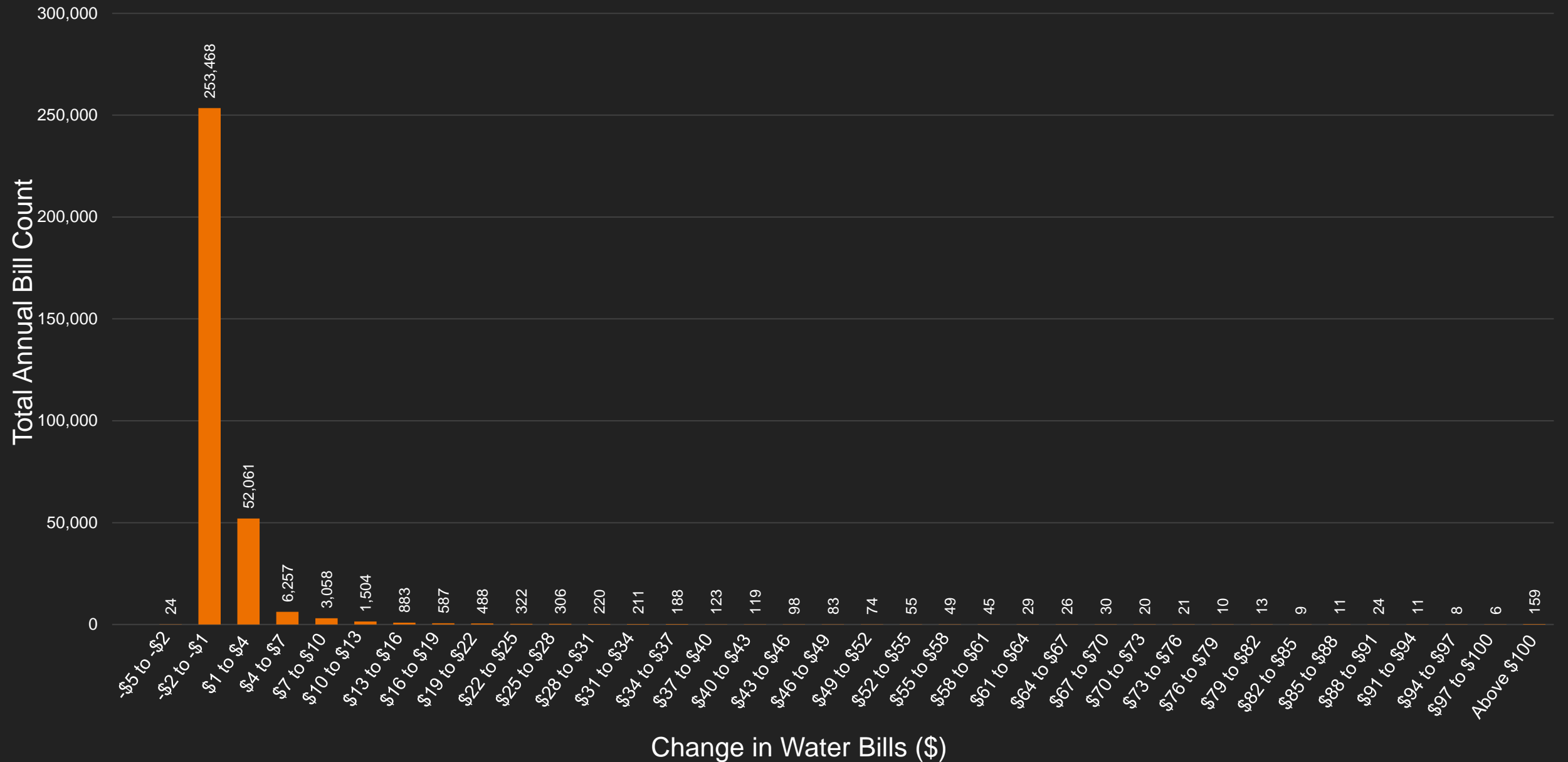
Water: **\$27**  
Sewer: **\$33**  
**Total: \$60**  
NC Average

- US Energy Information Administration, 2022 Electricity Reports
- US Bureau of Labor Statistics, Consumer Expenditure Survey, August 2022
- Current inside city residential rates for 3,000 gallons per month
- Outside City current and proposed residential bills for 3,000 gallons per month at \$71 and \$75, respectively



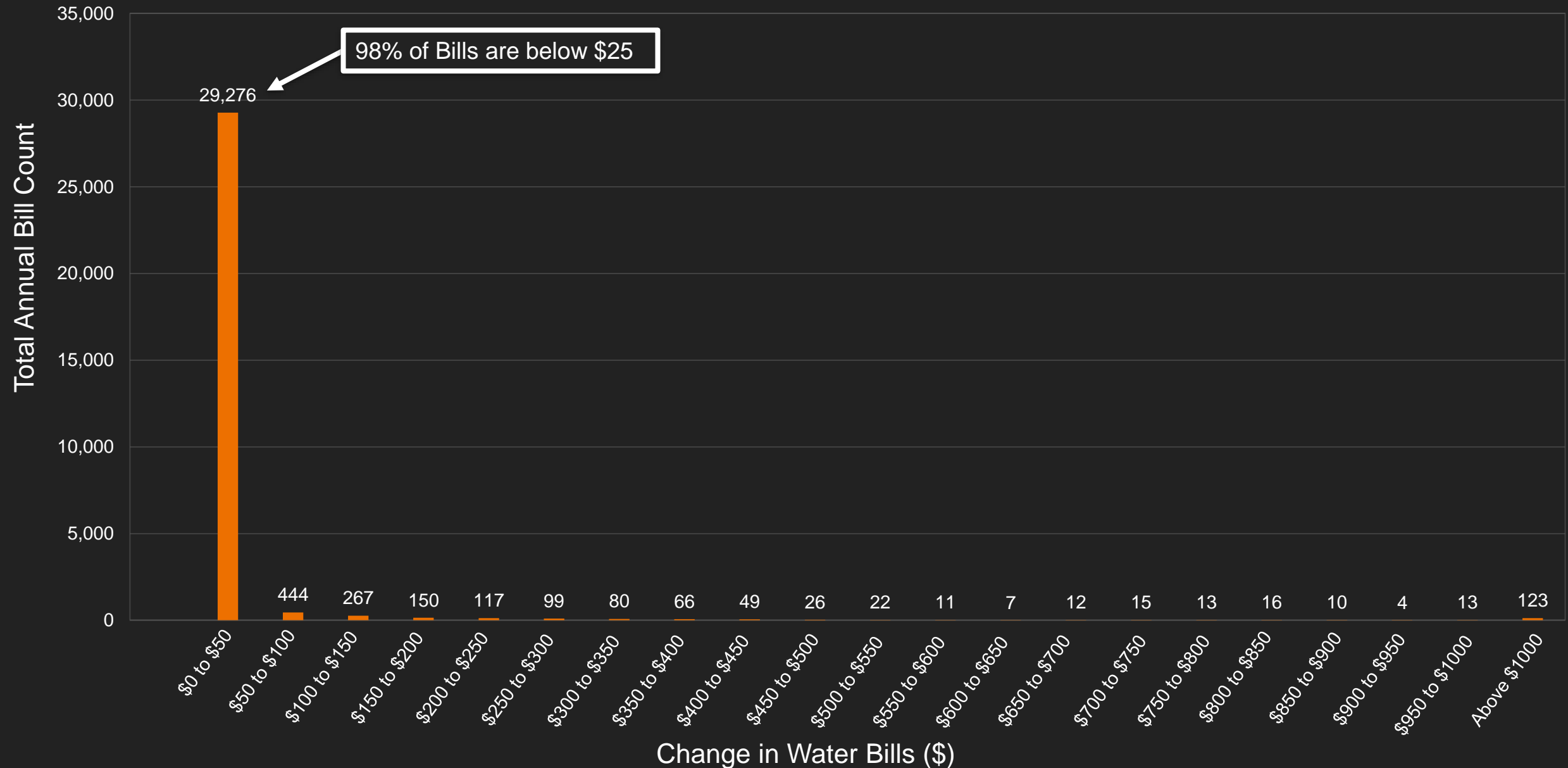
# Change in Monthly Residential Water Bills (\$)

30





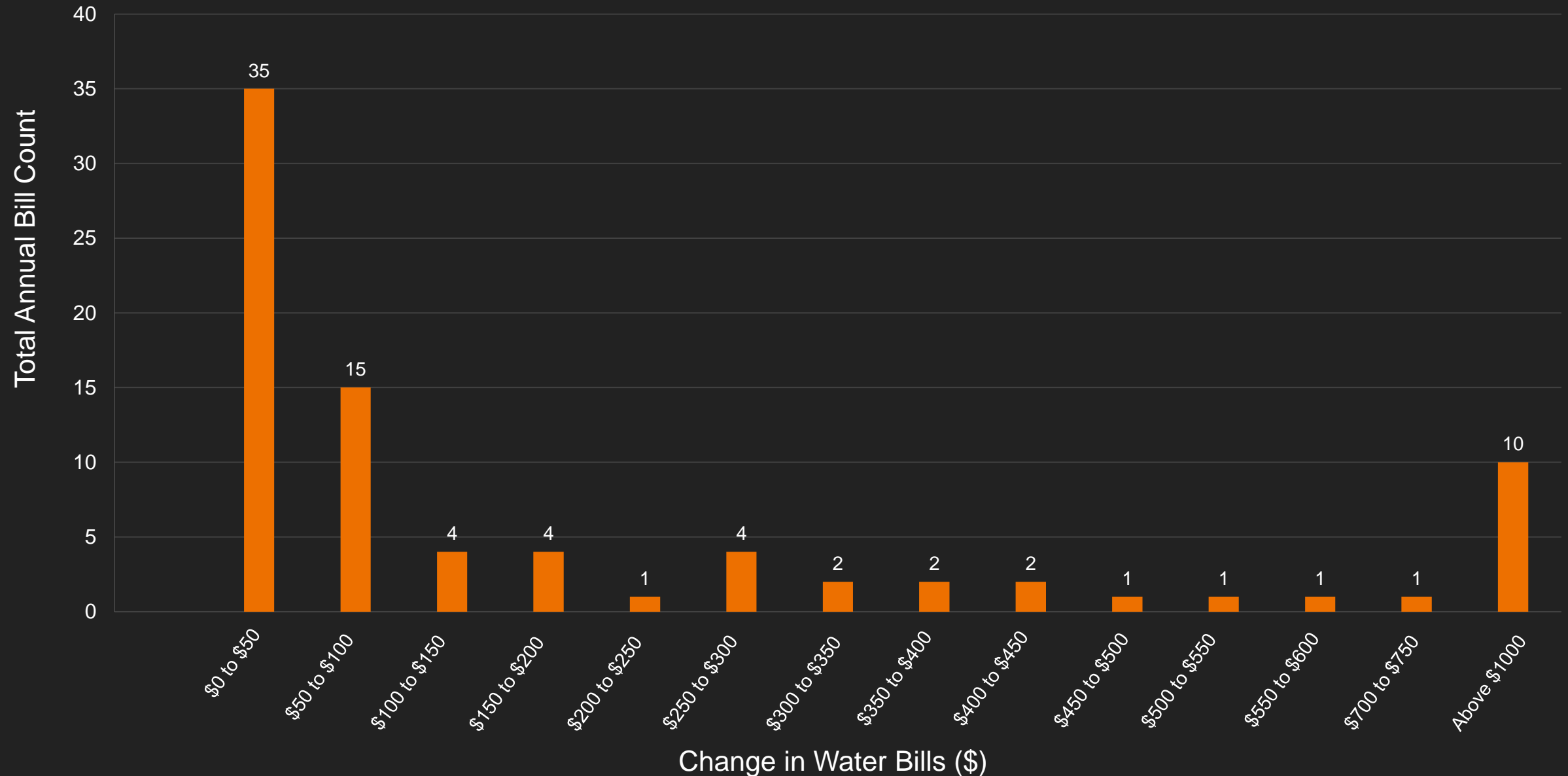
# Change in Monthly Commercial Water Bills (\$)





# Change in Monthly Industrial Water Bills (\$)

32





# Sample Residential Monthly Bills (3/4") - Inside

		Water Bill (Inside)				Sewer Bill (Inside)				Total Bill (Inside)			
Meter Size	Usage (gal)	Current Bill	Proposed Bill	\$ Change	% Change	Current Bill	Proposed Bill	\$ Change	% Change	Current Bill	Proposed Bill	\$ Change	% Change
3/4	1,000	\$ 12.80	\$ 13.72	\$ 0.92	7.2%	\$ 15.25	\$ 18.04	\$ 2.79	18.3%	\$ 28.05	\$ 31.76	\$ 3.71	13.2%
3/4	2,000	\$ 17.28	\$ 17.48	\$ 0.20	1.2%	\$ 21.58	\$ 24.92	\$ 3.34	15.5%	\$ 38.86	\$ 42.40	\$ 3.54	9.1%
3/4	3,000	\$ 21.76	\$ 21.24	\$ (0.52)	-2.4%	\$ 27.91	\$ 31.80	\$ 3.89	13.9%	\$ 49.67	\$ 53.04	\$ 3.37	6.8%
3/4	4,000	\$ 26.24	\$ 26.25	\$ 0.01	0.0%	\$ 34.24	\$ 38.68	\$ 4.44	13.0%	\$ 60.48	\$ 64.93	\$ 4.45	7.4%
3/4	5,000	\$ 30.72	\$ 31.26	\$ 0.54	1.8%	\$ 40.57	\$ 45.56	\$ 4.99	12.3%	\$ 71.29	\$ 76.82	\$ 5.53	7.8%
3/4	6,000	\$ 35.20	\$ 36.27	\$ 1.07	3.0%	\$ 46.90	\$ 52.44	\$ 5.54	11.8%	\$ 82.10	\$ 88.71	\$ 6.61	8.1%
3/4	7,000	\$ 40.13	\$ 42.53	\$ 2.40	6.0%	\$ 53.23	\$ 59.32	\$ 6.09	11.4%	\$ 93.36	\$ 101.86	\$ 8.50	9.1%
3/4	8,000	\$ 45.06	\$ 48.80	\$ 3.74	8.3%	\$ 59.56	\$ 66.20	\$ 6.64	11.2%	\$ 104.62	\$ 115.00	\$ 10.38	9.9%
3/4	9,000	\$ 49.99	\$ 55.06	\$ 5.07	10.1%	\$ 65.89	\$ 73.09	\$ 7.20	10.9%	\$ 115.88	\$ 128.15	\$ 12.27	10.6%
3/4	10,000	\$ 54.92	\$ 62.58	\$ 7.66	13.9%	\$ 72.22	\$ 79.97	\$ 7.75	10.7%	\$ 127.14	\$ 142.54	\$ 15.40	12.1%
3/4	11,000	\$ 59.85	\$ 70.09	\$ 10.24	17.1%	\$ 78.55	\$ 86.85	\$ 8.30	10.6%	\$ 138.40	\$ 156.94	\$ 18.54	13.4%
3/4	12,000	\$ 64.78	\$ 77.61	\$ 12.83	19.8%	\$ 84.88	\$ 93.73	\$ 8.85	10.4%	\$ 149.66	\$ 171.34	\$ 21.68	14.5%
3/4	13,000	\$ 69.71	\$ 85.13	\$ 15.42	22.1%	\$ 91.21	\$ 100.61	\$ 9.40	10.3%	\$ 160.92	\$ 185.73	\$ 24.81	15.4%
3/4	14,000	\$ 74.64	\$ 92.64	\$ 18.00	24.1%	\$ 97.54	\$ 107.49	\$ 9.95	10.2%	\$ 172.18	\$ 200.13	\$ 27.95	16.2%
3/4	15,000	\$ 80.24	\$ 100.16	\$ 19.92	24.8%	\$ 103.87	\$ 114.37	\$ 10.50	10.1%	\$ 184.11	\$ 214.53	\$ 30.42	16.5%
3/4	16,000	\$ 85.84	\$ 107.67	\$ 21.83	25.4%	\$ 110.20	\$ 121.25	\$ 11.05	10.0%	\$ 196.04	\$ 228.92	\$ 32.88	16.8%
3/4	17,000	\$ 91.44	\$ 115.19	\$ 23.75	26.0%	\$ 116.53	\$ 128.13	\$ 11.60	10.0%	\$ 207.97	\$ 243.32	\$ 35.35	17.0%
3/4	18,000	\$ 97.04	\$ 122.71	\$ 25.67	26.5%	\$ 122.86	\$ 135.01	\$ 12.15	9.9%	\$ 219.90	\$ 257.72	\$ 37.82	17.2%
3/4	19,000	\$ 102.64	\$ 130.22	\$ 27.58	26.9%	\$ 129.19	\$ 141.89	\$ 12.70	9.8%	\$ 231.83	\$ 272.12	\$ 40.29	17.4%
3/4	20,000	\$ 108.24	\$ 137.74	\$ 29.50	27.3%	\$ 135.52	\$ 148.77	\$ 13.25	9.8%	\$ 243.76	\$ 286.51	\$ 42.75	17.5%

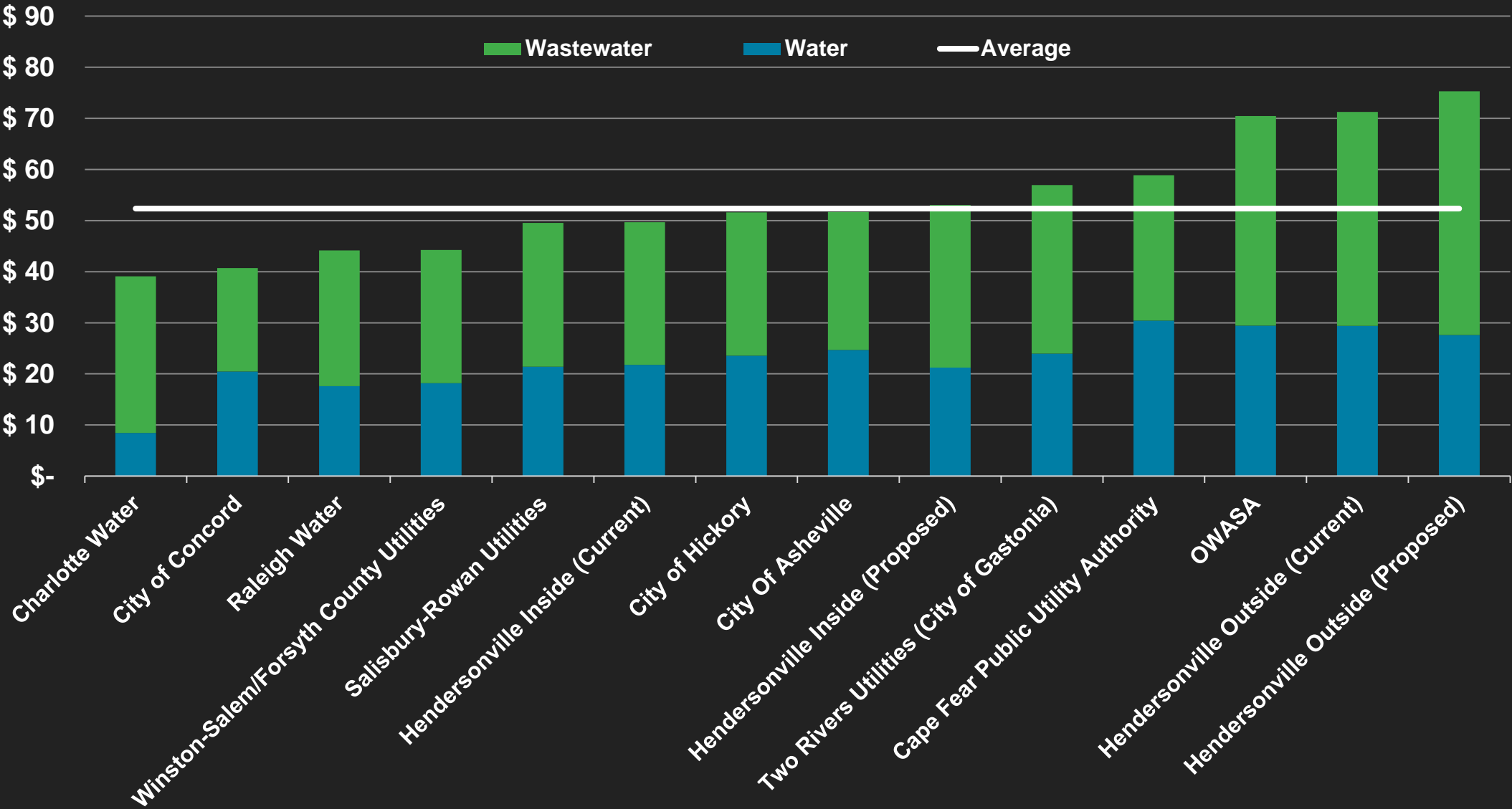


# Sample Residential Monthly Bills (3/4") – Outside

Meter Size	Usage (gal)	Water Bill (Outside)				Sewer Bill (Outside)				Total Bill (Outside)			
		Current Bill	Proposed Bill	\$ Change	% Change	Current Bill	Proposed Bill	\$ Change	% Change	Current Bill	Proposed Bill	\$ Change	% Change
3/4	1,000	\$ 17.28	\$ 17.84	\$ 0.56	3.2%	\$ 22.88	\$ 27.06	\$ 4.18	18.3%	\$ 40.16	\$ 44.90	\$ 4.74	11.8%
3/4	2,000	\$ 23.33	\$ 22.72	\$ (0.61)	-2.6%	\$ 32.37	\$ 37.38	\$ 5.01	15.5%	\$ 55.70	\$ 60.10	\$ 4.40	7.9%
3/4	3,000	\$ 29.38	\$ 27.61	\$ (1.77)	-6.0%	\$ 41.87	\$ 47.70	\$ 5.84	13.9%	\$ 71.24	\$ 75.31	\$ 4.07	5.7%
3/4	4,000	\$ 35.42	\$ 34.12	\$ (1.30)	-3.7%	\$ 51.36	\$ 58.02	\$ 6.66	13.0%	\$ 86.78	\$ 92.14	\$ 5.36	6.2%
3/4	5,000	\$ 41.47	\$ 40.64	\$ (0.84)	-2.0%	\$ 60.86	\$ 68.34	\$ 7.49	12.3%	\$ 102.33	\$ 108.98	\$ 6.65	6.5%
3/4	6,000	\$ 47.52	\$ 47.15	\$ (0.37)	-0.8%	\$ 70.35	\$ 78.66	\$ 8.31	11.8%	\$ 117.87	\$ 125.82	\$ 7.95	6.7%
3/4	7,000	\$ 54.18	\$ 55.29	\$ 1.12	2.1%	\$ 79.85	\$ 88.99	\$ 9.14	11.4%	\$ 134.02	\$ 144.28	\$ 10.26	7.7%
3/4	8,000	\$ 60.83	\$ 63.44	\$ 2.60	4.3%	\$ 89.34	\$ 99.31	\$ 9.97	11.2%	\$ 150.17	\$ 162.74	\$ 12.57	8.4%
3/4	9,000	\$ 67.49	\$ 71.58	\$ 4.09	6.1%	\$ 98.84	\$ 109.63	\$ 10.79	10.9%	\$ 166.32	\$ 181.21	\$ 14.88	8.9%
3/4	10,000	\$ 74.14	\$ 81.35	\$ 7.21	9.7%	\$ 108.33	\$ 119.95	\$ 11.62	10.7%	\$ 182.47	\$ 201.30	\$ 18.83	10.3%
3/4	11,000	\$ 80.80	\$ 91.12	\$ 10.32	12.8%	\$ 117.83	\$ 130.27	\$ 12.44	10.6%	\$ 198.62	\$ 221.39	\$ 22.77	11.5%
3/4	12,000	\$ 87.45	\$ 100.89	\$ 13.44	15.4%	\$ 127.32	\$ 140.59	\$ 13.27	10.4%	\$ 214.77	\$ 241.48	\$ 26.71	12.4%
3/4	13,000	\$ 94.11	\$ 110.66	\$ 16.56	17.6%	\$ 136.82	\$ 150.91	\$ 14.10	10.3%	\$ 230.92	\$ 261.58	\$ 30.65	13.3%
3/4	14,000	\$ 100.76	\$ 120.43	\$ 19.67	19.5%	\$ 146.31	\$ 161.23	\$ 14.92	10.2%	\$ 247.07	\$ 281.67	\$ 34.59	14.0%
3/4	15,000	\$ 108.32	\$ 130.21	\$ 21.88	20.2%	\$ 155.81	\$ 171.55	\$ 15.75	10.1%	\$ 264.13	\$ 301.76	\$ 37.63	14.2%
3/4	16,000	\$ 115.88	\$ 139.98	\$ 24.09	20.8%	\$ 165.30	\$ 181.88	\$ 16.58	10.0%	\$ 281.18	\$ 321.85	\$ 40.67	14.5%
3/4	17,000	\$ 123.44	\$ 149.75	\$ 26.30	21.3%	\$ 174.80	\$ 192.20	\$ 17.40	10.0%	\$ 298.24	\$ 341.94	\$ 43.71	14.7%
3/4	18,000	\$ 131.00	\$ 159.52	\$ 28.52	21.8%	\$ 184.29	\$ 202.52	\$ 18.23	9.9%	\$ 315.29	\$ 362.04	\$ 46.74	14.8%
3/4	19,000	\$ 138.56	\$ 169.29	\$ 30.73	22.2%	\$ 193.79	\$ 212.84	\$ 19.05	9.8%	\$ 332.35	\$ 382.13	\$ 49.78	15.0%
3/4	20,000	\$ 146.12	\$ 179.06	\$ 32.94	22.5%	\$ 203.28	\$ 223.16	\$ 19.88	9.8%	\$ 349.40	\$ 402.22	\$ 52.82	15.1%



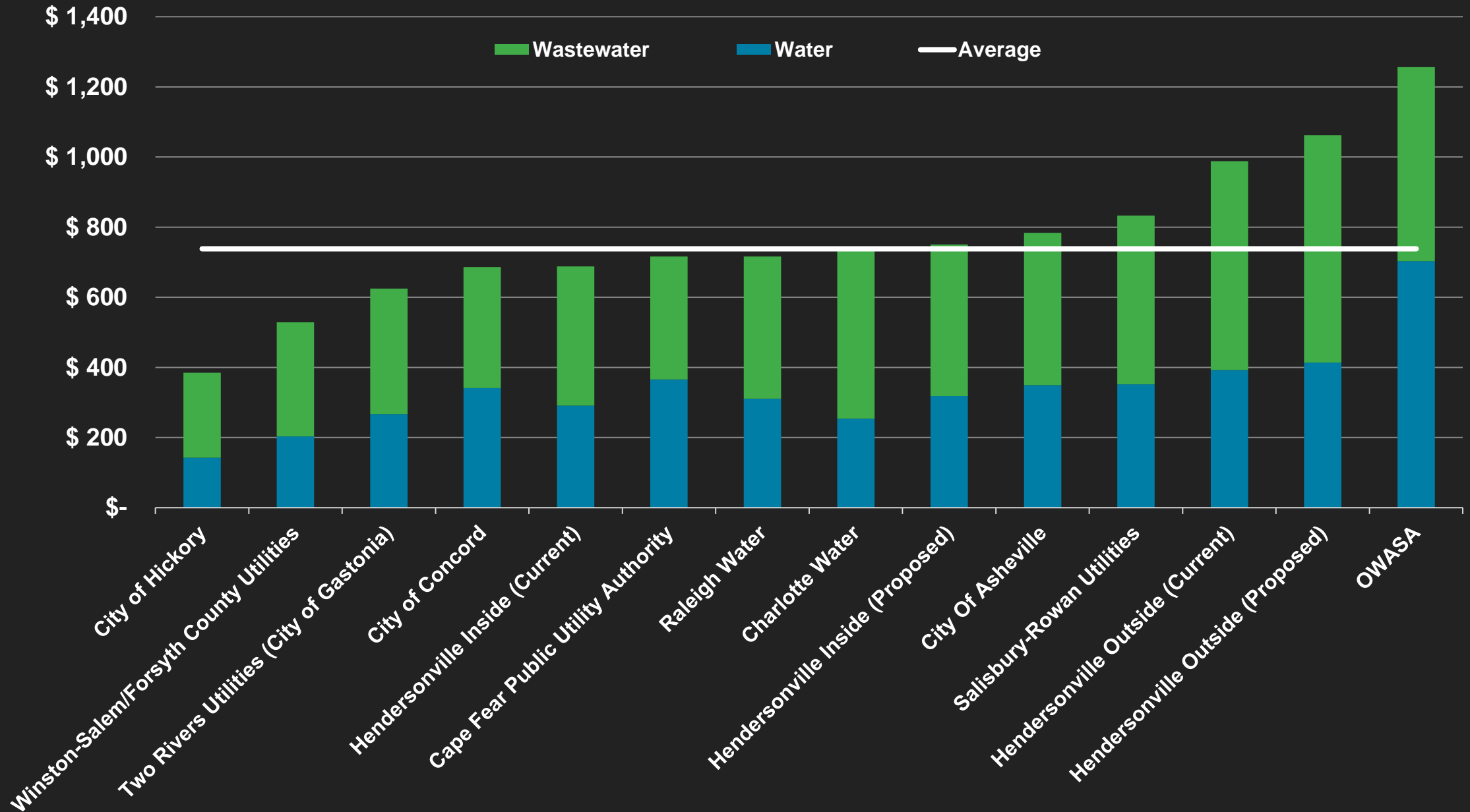
# Residential Bill Comparisons (3/4" Meter, 3 kgal)





# Commercial/Industrial Bill Comparisons (1.5" Meter, 60 kgal)

36





## System Development Fees

- Fees charged for new connections joining the water and wastewater system and connections requiring additional system capacity
- Intended to recover the cost of constructing water and wastewater capacity, “growth pays for growth”
- Fees are applied based on units of service (representing potential demand on utility system / large user vs. small user)
- Fees are legislated in North Carolina
  - Public Water and Sewer System Development Fee Act (NC General Statutes - Chapter 162A Article 8) approved July 2017



- SDFs allow community to recover at least a portion of cost of constructing system infrastructure
- Lack of SDFs places full cost of infrastructure on user rates
- SDFs have potential impact on development but are very common in North Carolina
- Requirements and limitations on the use of SDFs given legislation
  - Separate tracking of revenues from SDFs
  - Limitations on use of proceeds depending on approach

Methodology	Description	Appropriate For
<b>Buy-In Method</b>	Fees are based on cost of constructing existing utility system	System with ample existing capacity to sell
<b>Incremental Cost Method</b>	Fees are based on planned growth-related capital improvements	System with limited or no existing capacity to sell
<b>Combined Method</b>	Fees are based on cost of existing system and planned capital improvements	System with existing capacity to sell and with planning growth-related capital projects

Recommend the use of the combined-in method for water and sewer SDFs for City



$$\text{System Development Fee} = \frac{\text{Value of System} - \text{Credit}}{\text{System Capacity}}$$

## 1) Value of Utility System

- Depreciated value of current assets in place, escalated to current replacement cost
- Plus: The value of future planned capital projects that will **add** capacity to the system (*10-Year Capital Plan*)

## 2) Credits

- Outstanding principal on existing utility debt
- NPV of principal on future debt over planning period (must equal at least 25% of expansion capital projects, if not additional credit required)
- Donated/contributed and non-core system assets

## 3) System Capacity

- Total capacity in the utility system measured in units of service (Equivalent Residential Units or ERUs) with the existing system and expansion of the system



# Water SDF Calculation

42

	Source / Treatment	Transmission / Distribution	Total
Replacement Value of Existing Depreciated Assets	\$34,607,998	\$51,705,500	\$86,313,497
Expansion Capital Projects	63,485,535	45,005,000	108,490,535
<b>Total Value</b>	<b>\$98,093,533</b>	<b>\$96,710,500</b>	<b>\$194,804,032</b>
<i>Less Credits</i>			
Outstanding Debt Principal	(\$7,240,635)	(\$10,817,749)	(\$18,058,384)
Donated and Non-Core Assets	(1,219,302)	(8,960,275)	(10,179,577)
Revenue Credit (NPV of future debt principal over period)	(26,613,455)	(18,866,322)	(45,479,777)
<b>Net System Value</b>	<b>\$63,020,141</b>	<b>\$58,066,154</b>	<b>\$121,086,295</b>
System Capacity - Million Gallons per Day*	18.0	18.0	
Level of Service per ERU (gallons per day)	277	277	
<b>Equivalent Residential Units (ERU)</b>	<b>64,935</b>	<b>64,935</b>	
<b>Water System Development Fee Per ERU</b>	<b>\$971</b>	<b>\$894</b>	<b>\$1,865</b>

*\*Includes 6 MGD WTP plant expansion*



# Sewer SDF Calculation

43

	Treatment	Conveyance / Collection	Total
Replacement Value of Existing Depreciated Assets	\$28,145,176	\$35,802,595	\$63,947,771
Expansion Capital Projects	57,750,769	16,212,000	73,962,769
<b>Total Value</b>	<b>\$85,895,945</b>	<b>\$52,014,595</b>	<b>\$137,910,540</b>
<i>Less Credits</i>			
Outstanding Debt Principal	(\$6,446,996)	(\$8,201,021)	(\$14,648,017)
Donated and Non-Core Assets	(63,282)	(2,629,945)	(2,693,227)
Revenue Credit (NPV of future debt principal over period)	(24,209,412)	(6,796,152)	(31,005,564)
<b>Net System Value</b>	<b>\$55,176,255</b>	<b>\$34,387,477</b>	<b>\$89,563,732</b>
System Capacity - Million Gallons per Day*	7.8	7.8	
Level of Service per ERU (gallons per day)	277	277	
<b>Equivalent Residential Units (ERU)</b>	<b>28,139</b>	<b>28,139</b>	
<b>Wastewater System Development Fee Per ERU</b>	<b>\$1,961</b>	<b>\$1,222</b>	<b>\$3,183</b>

*\*Includes 3 MGD WWTP plant expansion*



# Assessment of System Development Fees

- SDFs must be applied based on units of service (represents potential demand)
- SDFs are often scaled by meter size based on hydraulic capacity of meter
- Recommend the use of American Water Works Association (AWWA) meter equivalents

Meter size	Equivalent Residential Units (ERU)
3/4"	1.00
1"	1.67
1 1/2"	3.33
2"	5.33
3"	11.67
4"	21.00
6"	43.33
8"	93.33



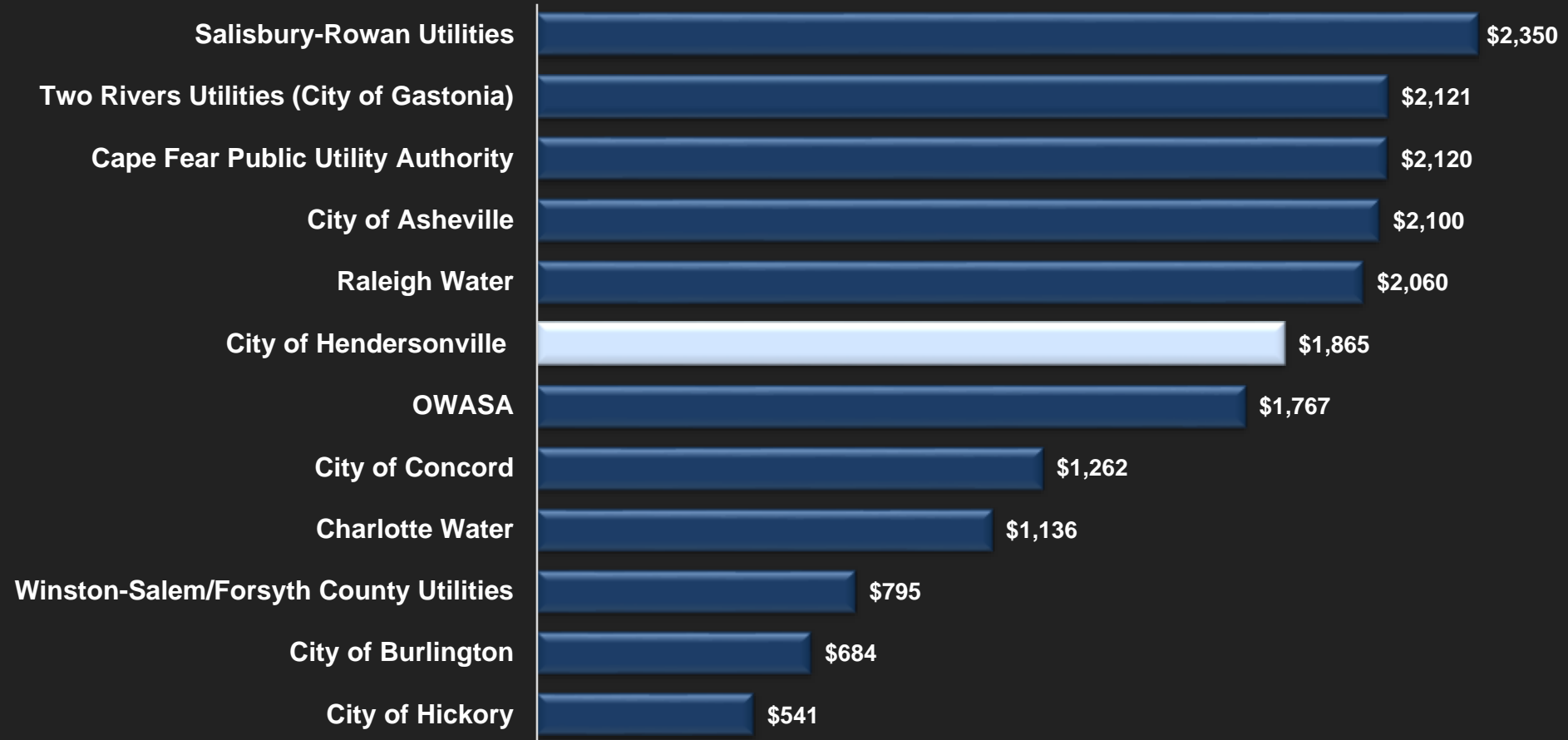
# Calculated System Development Fees

45

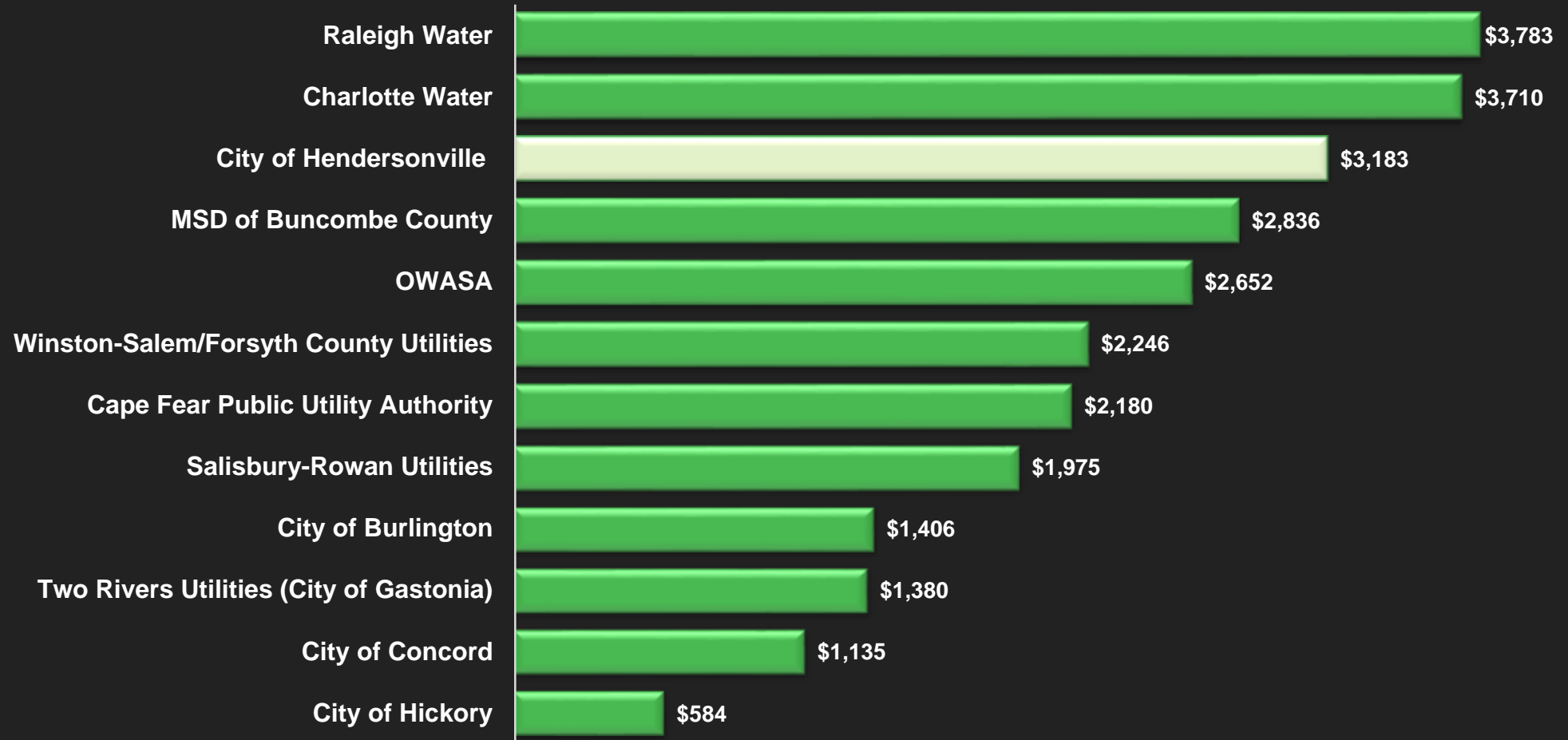
Meter size	Calculated Water SDF	Current No. of Water Meters	Calculated Wastewater SDF	Current No. of Wastewater Customers	Combined SDF
3/4"	\$1,865	29,564	\$3,183	9,767	\$5,048
1"	\$3,108	622	\$5,305	297	\$8,413
1 1/2"	\$6,217	317	\$10,610	177	\$16,827
2"	\$9,947	142	\$16,976	79	\$26,923
3"	\$21,758	24	\$37,135	12	\$58,893
4"	\$39,165	11	\$66,843	4	\$106,008
6"	\$80,817	11	\$137,930	2	\$218,747
8"	\$174,067	0	\$297,080	0	\$471,147



## Water System Development Fees (3/4" Meter - Residential)



## Sewer System Development Fees (3/4" Meter - Residential)

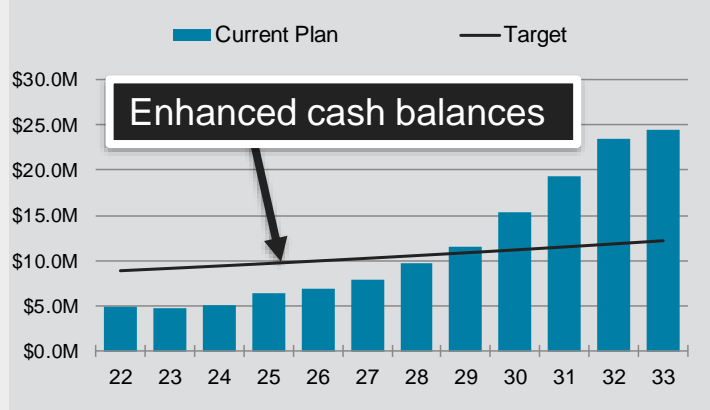




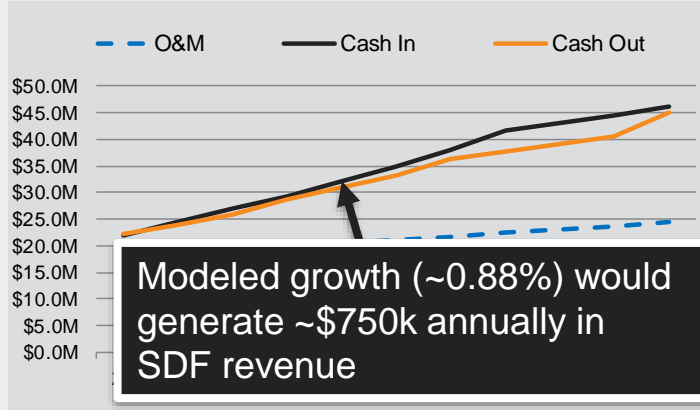
# Financial Management Plan - Addition of SDFs

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031	FY 2032	FY 2033	FY 2027	FY 2033
Water Rate Plan	0.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	11.00%	3.00%	3.00%	3.00%	51.9%	120.3%
Wastewater Rate Plan	0.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	3.00%	3.00%	3.00%	57.3%	134.4%
Debt Service Coverage Test A	1.44	1.31	1.29	1.20	1.08	1.12	1.11	1.22	1.24	1.27	1.10		
Debt Service Coverage Test B	1.21	1.18	1.18	1.11	1.01	1.06	1.05	1.16	1.14	1.14	0.96		
Total Single Family Bill	\$62.33	\$69.59	\$77.71	\$86.76	\$96.87	\$108.19	\$120.81	\$134.89	\$138.94	\$143.10	\$146.25		

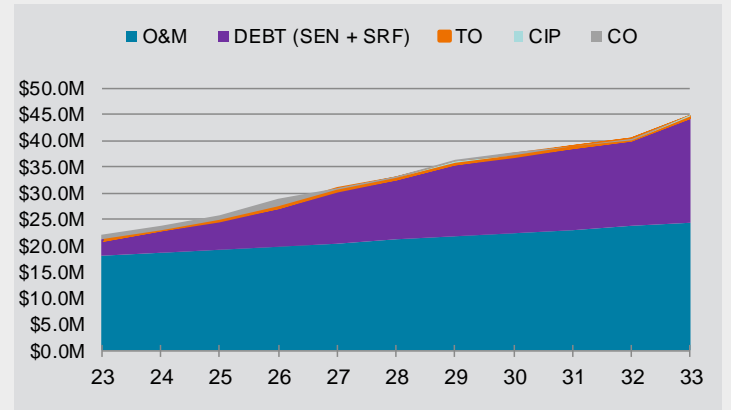
Operating Fund - 60



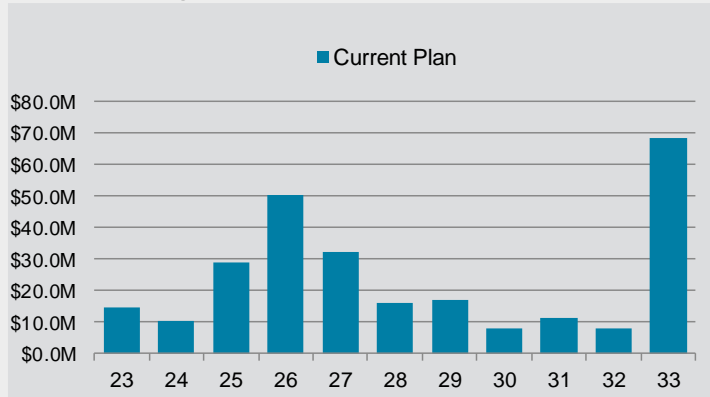
60: Revenues vs. Expenses



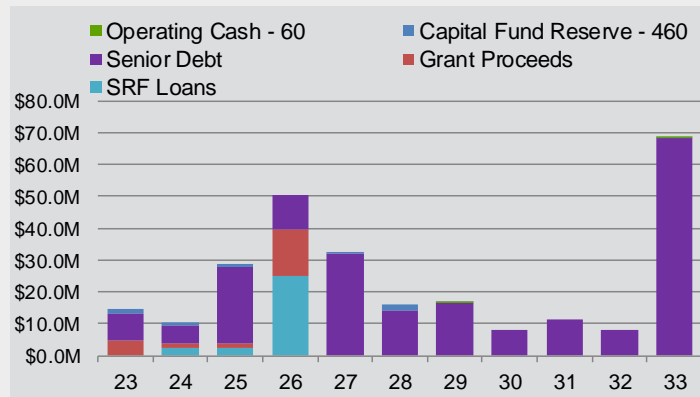
60: Expenses by Type



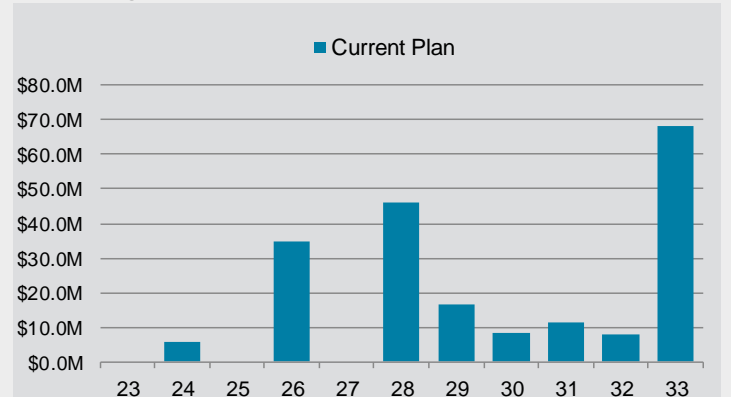
CIP Spending



CIP Funding



Borrowing - Senior Debt





# Recommendations



1. Revenue increases from rates are required in FY 24 to meet debt coverage and cash balances
  - Recommended adjustments: Water 11%, Sewer 12%
2. Recommended water and sewer rate structure changes
  - Increase base charges and align scaling with industry standards
  - Modify residential water volumetric rates to include life-line tier and enhanced conservation
  - Adopt uniform commercial/industrial water volumetric rates
  - Enhanced conservation for irrigation rates
3. Consider the adoption of system development fees





**Additional Questions/Discussion**



**David Hyder**

Senior Principal

(202) 585-6391

David.Hyder@Stantec.com

**Lisa Gresehover**

Principal

(215) 496-4592

Lisa.gresehover@Stantec.com