

CITY OF BELLAIRE

Water, Wastewater, and Solid Waste Rate Study
Council Presentation

May 2024

City of
Bellaire



- **Background on Rates**
- **Customers and Volumes**
- **Current and Forecast Cost of Service**
- **Proposed Rate Plan**
- **Solid Waste and Recycling**
- **Summary and Next Steps**

The background of the slide is a photograph of industrial machinery, likely a water treatment or pumping system, featuring large pipes, valves, and electric motors. The entire image is covered with a semi-transparent blue overlay. The text 'BACKGROUND ON RATES' is centered in white, bold, uppercase letters.

BACKGROUND ON RATES

21st Century Water & Wastewater Rate Facts

- American Water Works Association (AWWA) forecasts that water and wastewater rates across the U.S. will **triple** over the next 15 years
- Rate adjustments are primarily due to reasons beyond a utility's direct control – inflation, necessary Capital Improvement Plans, wholesale costs, and other indirect expenses
- Average utility has been increasing rates 5-6% per year, a trend that is expected to continue and may accelerate
- Notably, 30-40% of utilities charge rates that **do not cover their costs**



City of Bellaire

Water and Wastewater Rate Background

- City increased its water and wastewater rates by 10% in October 2023
- Inflation continues to drive up utility operating and capital costs annually
- City is currently expected to invest \$4.37 million in CIP projects in FY2024-2028 – an amount that will likely increase with water/wastewater capital planning efforts
- City of Houston (COH) costs are forecast to increase due to annual rate adjustments
- Combination of above factors results in need to implement a new long-term rate plan



Current Water and Wastewater Rate Structure

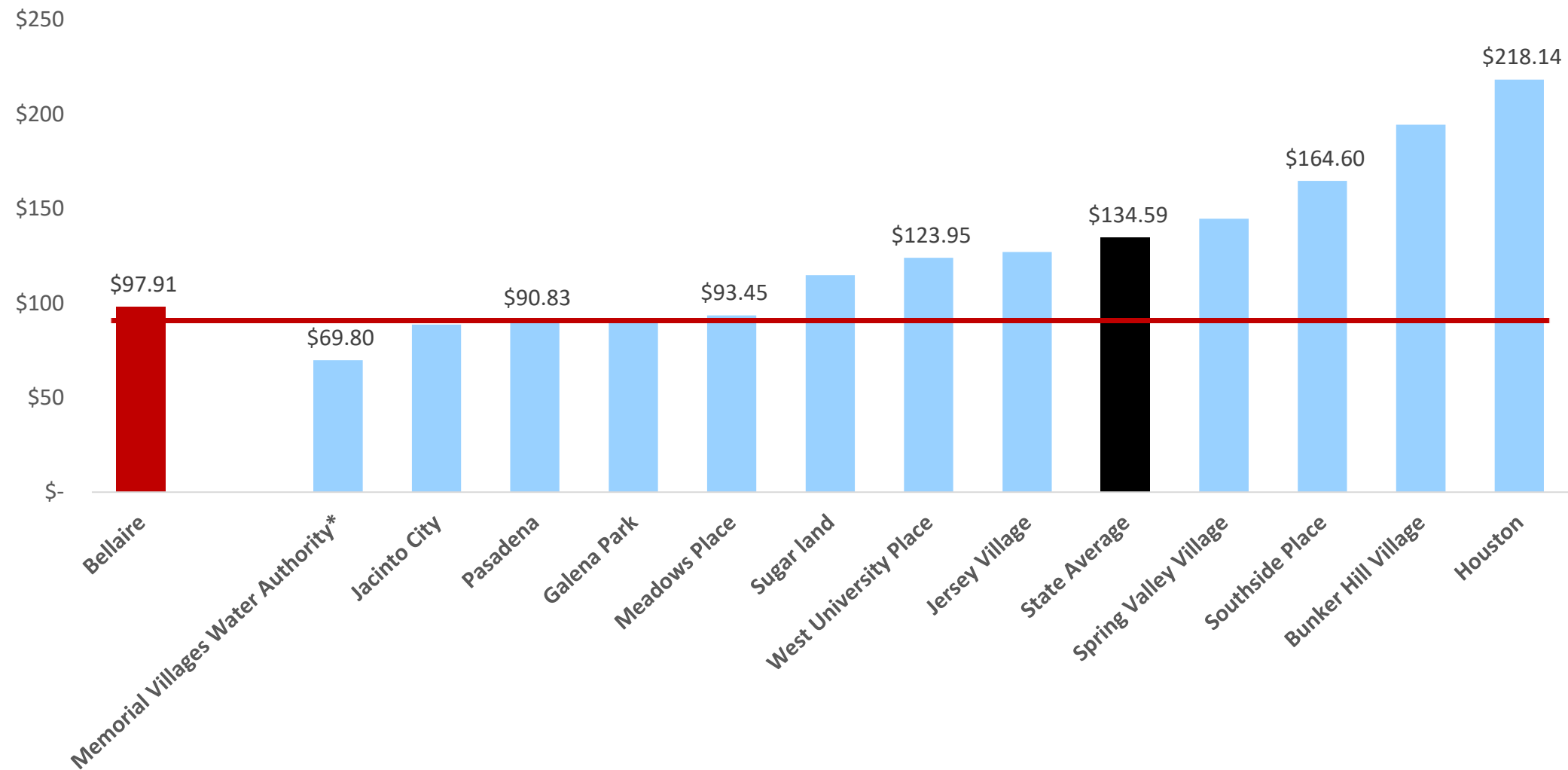
WATER RATE STRUCTURE	Res, Comm, Sprinkler
Base Charge by Meter Size	
5/8 & 3/4"	\$9.99
1"	24.97
1½"	49.98
2"	79.89
2½"	119.83
3"	149.78
4"	249.63
6"	499.26
8"	798.81

WW RATE STRUCTURE	Res and Comm
Base Charge by Meter Size	
All Meter Sizes	\$10.20

WATER RATE STRUCTURE	Res, Comm, Sprinkler
Volume Rate per kGal	
0 - 2,000	\$2.39
2,001 - 4,000	3.21
4,001 - 6,000	4.01
6,001 - 8,000	4.39
8,001 - 10,000	5.21
10,000 - 15,000	6.00
15,001 - 20,000	6.40
20,000 - Above	7.20

WW RATE STRUCTURE	Res and Comm
Volume Rate per kGal	
All Volumes	\$3.93

Monthly Residential Charges | 10kGal Water and Wastewater



*Rates as of February 2024

Bellaire's average residential user uses 9,689 gal. of water/mo.

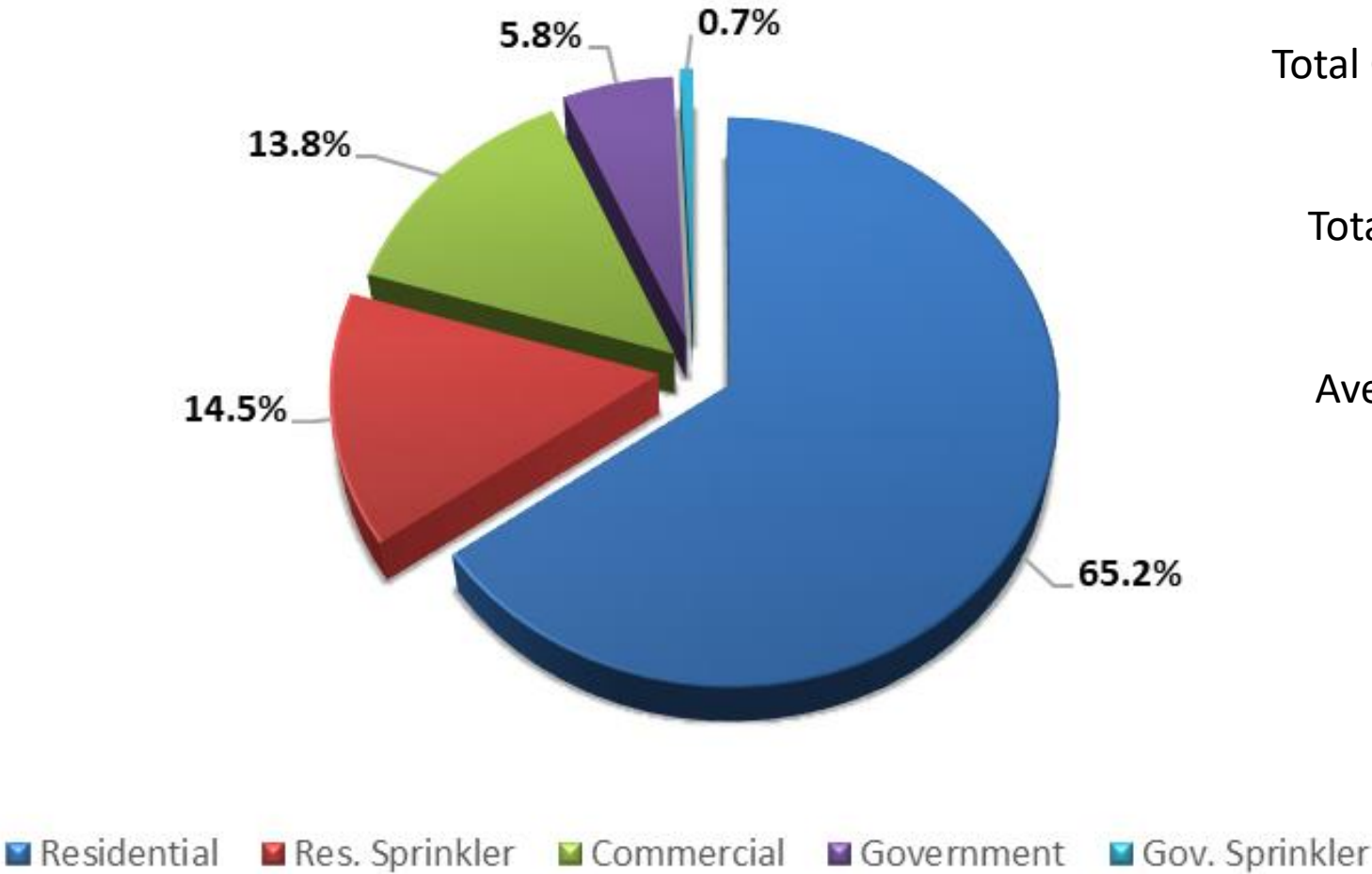
The background image shows industrial machinery, possibly a pump or compressor system, with large pipes and a motor. The entire image is covered with a semi-transparent blue overlay. The text "CUSTOMERS & VOLUMES" is centered in white, bold, uppercase letters.

CUSTOMERS & VOLUMES

Water and Wastewater Accounts | Test Year 2024

RATE MODEL CUSTOMER CLASS			
WATER Customers		WASTEWATER Customers	
Residential	6,189	Residential	6,077
Res. Sprinkler	959	Commercial	292
Commercial	308	Government	<u>5</u>
Comm. Sprinkler	-		
Government	19		
Gov. Sprinkler	<u>67</u>		
Total	7,542	Total	6,374

Water Consumption by Customer Class | Test Year 2024

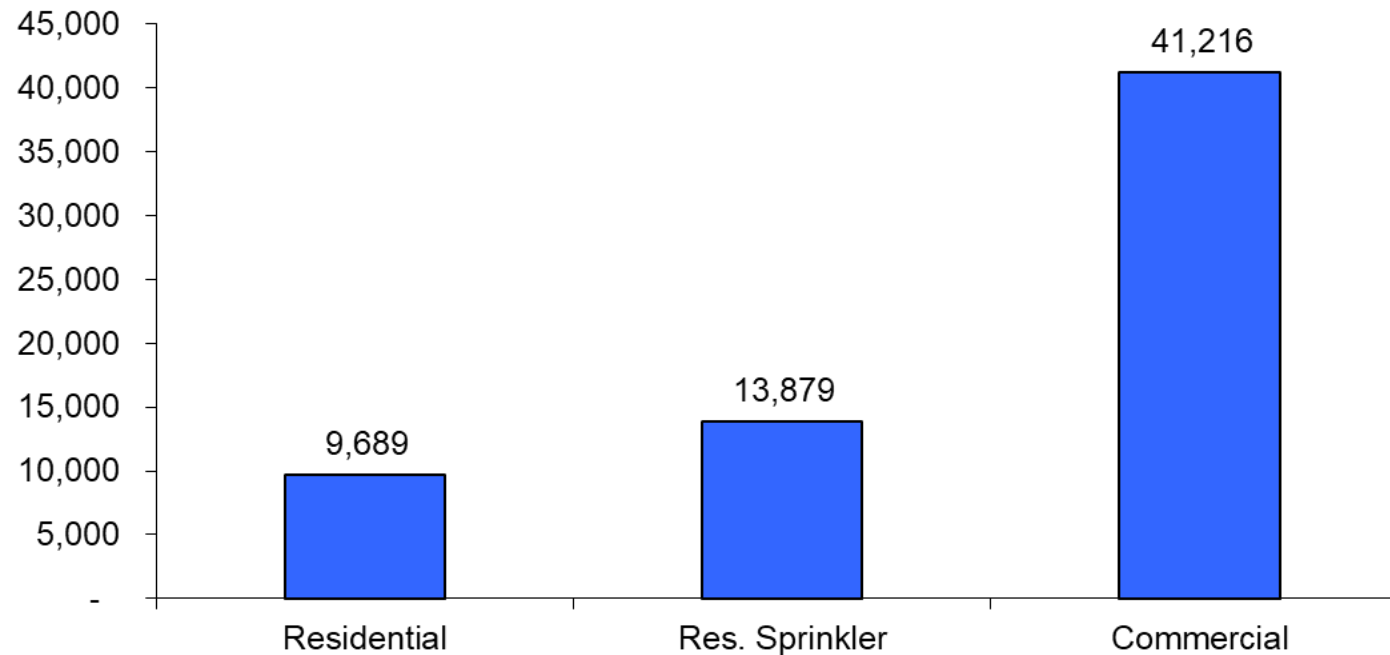


Total Ground and Surface Water:
1.3B Gallons

Total Metered Consumption:
1.1B Gallons

Average System Water Loss:
±20.9%

TY Average Monthly Water Consumption (gallons)

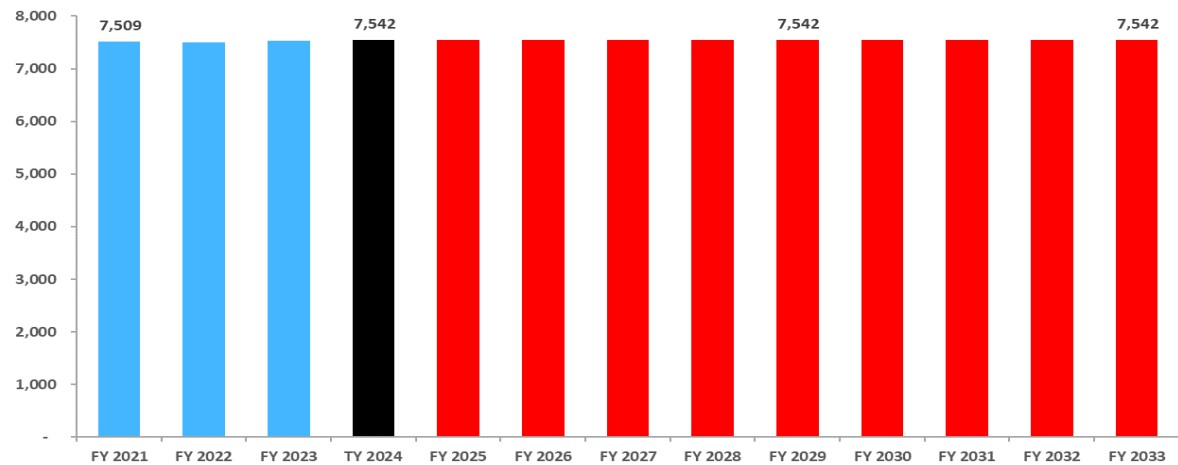


Monthly water usage varies considerably with weather patterns, the model is based on the overall trend.

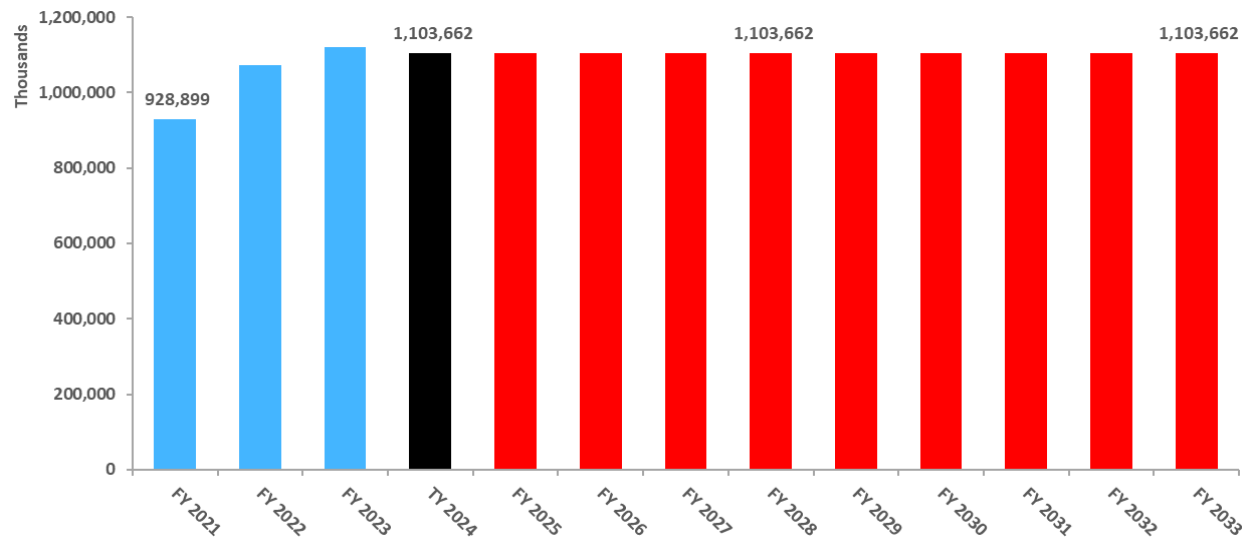
**West University Place average residential water use is 9,405 gal. per mo.*

Historical and Forecast Water Accounts and Consumption

Accounts:



Consumption:



Project team estimates that forecast number of accounts (approx. 7,540 acc) and metered water consumption (approx. 1.1B gallons) will remain relatively constant over the forecast period.

However, actual water usage may vary considerably with weather patterns.

The model is based on the overall trend.

A blue-tinted photograph of a water treatment plant. The image shows large industrial pipes, valves, and machinery. In the foreground, there are large horizontal pipes. In the background, there are vertical pipes and a large window on the right side. The overall scene is industrial and technical.

WATER & WASTEWATER CURRENT AND FORECAST COST OF SERVICE

Key Assumptions for Forecast Financial and Rate Plan

- Forecast COH water purchases will remain at the test year levels (± 693 MG or 63% of total metered consumption)
- Most operating expenses will increase at 3% per year; certain expenses (e.g. insurance, fuel, chemicals, etc.) increase at a higher rate
- TY2024 model adjustment is \$63k for Water Main Maintenance (based on 5-YR average) and \$495k for COH water (based on actual purchases)
- FY2025 model adjustments are \$472k (include chemicals, fuel, trash hauls, WWT maintenance, and other professional)
- The model includes additional O&M spending for known issues (\$633k in FY2025)

- COH rate is forecast to increase by **9%** each year
- Known Water and WW CIP for FY 2024-2028 are: **\$4.37M***
- Previously funded projects: **\$2.27M**
- Projects to be funded by long-term debt: **\$2.1M**
- New debt is expected to be issued in FY2026-2028
- New debt terms: **25-years, 4.0% interest**

**City is conducting a CIP study, and the final CIP number will change. Recommended rate plan is based only on known CIP projects.*

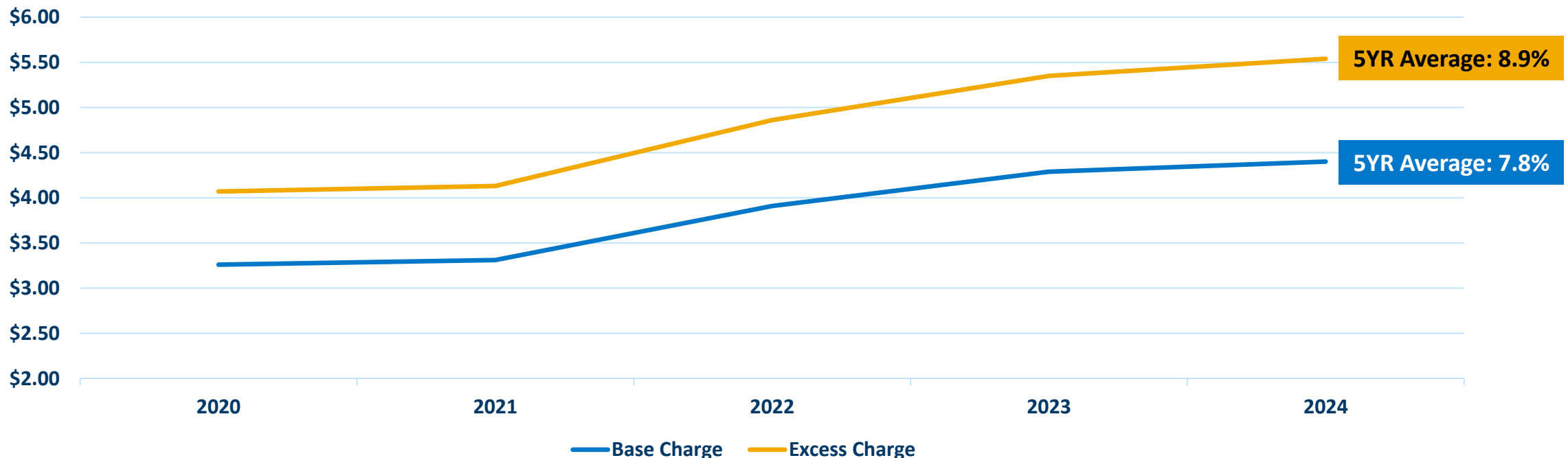
CIP Forecast FY 2024-2028

WATER			
WAXXXX	Central Well Chlorine Building	\$	60,000
WAXXXX	Renwick Well Generator		164,284
WA2202	Fire Hydrant Rehabilitation and Replaceme		100,000
WA2203	Water Distribution System Valve Improven		232,000
WA2205	Priority Water Line Improvements		636,400
WAXXXX	Water Tower Rehab		2,100,000
WA2205	Priority Water Line Improvements		700,000
Total Water CIP		\$	3,992,684
Total Water and Wastewater CIP			
		\$	4,367,684

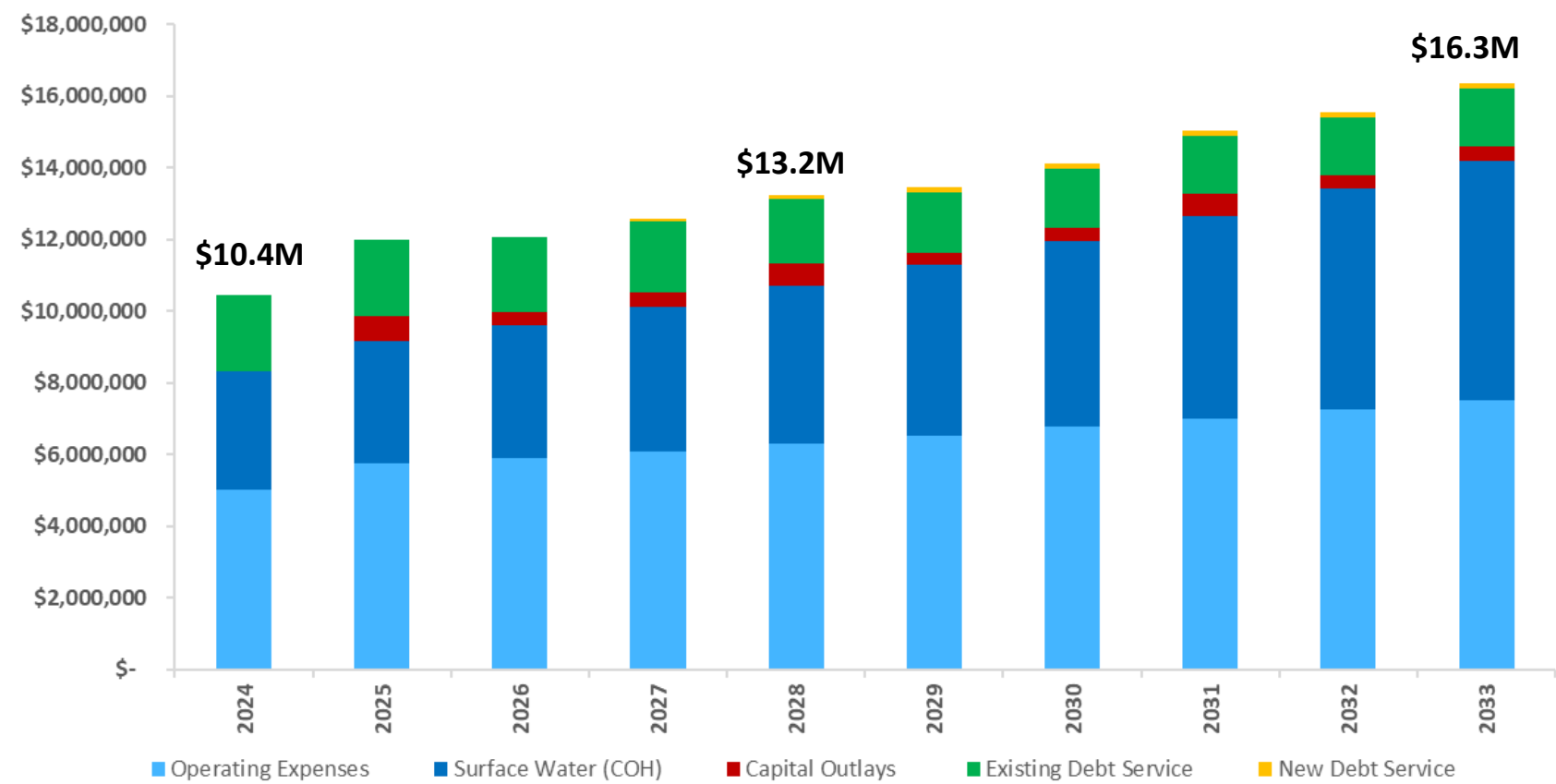
WASTEWATER			
WW2203	Wastewater Treatment Plant Fine Screen Replaceme	\$	100,000
WW2202	Wastewater Collection System Improvements		275,000
	Future Projects		-
	Future Projects		-
	Future Projects		-
	Future Projects		-
	Future Projects		-
Total Wastewater CIP		\$	375,000

City of Houston Annual Rate Adjustments

- COH applies annual rate adjustments based on inflationary indices described in Section 5.2 of the Master Ordinance and Ordinance No. 2010-305 (% adjustments) **AND** Ordinance No. 2021-515 (5-YR rate plan \$ adjustments)
- Historically, annual COH rate increases have ranged between 1.2% and 18.1%
- Base charge and excess charge increase at different paces



Forecast Cost of Service | Water and Wastewater



Forecast Net Revenue Requirement | Water and Wastewater

CURRENT AND FORECAST NET REVENUE REQUIREMENT

	Operating Expenses	Surface Water (COH)	Capital Outlays	Debt Service	Total Cost of Service	Less Non-Rate Revenues	Net Revenue Requirement
TOTAL Revenue Requirement							
TY 2024	\$ 4,999,428	\$ 3,322,163	\$ -	\$ 2,111,256	\$ 10,432,847	\$ 302,340	\$ 10,130,507
FY 2025	5,749,215	3,411,444	712,962	2,109,220	11,982,841	302,340	11,680,501
FY 2026	5,891,717	3,709,062	366,458	2,109,213	12,076,450	302,340	11,774,110
FY 2027	6,095,878	4,033,183	380,539	2,055,134	12,564,734	302,340	12,262,394
FY 2028	6,308,682	4,394,161	628,635	1,908,446	13,239,924	302,340	12,937,584
FY 2029	6,530,515	4,770,655	322,642	1,845,326	13,469,137	302,340	13,166,797
FY 2030	6,761,779	5,189,421	358,808	1,798,086	14,108,094	302,340	13,805,754
FY 2031	7,002,897	5,645,558	641,044	1,741,566	15,031,064	302,340	14,728,724
FY 2032	7,254,310	6,153,680	391,022	1,743,402	15,542,413	302,340	15,240,074
FY 2033	7,516,479	6,683,661	399,219	1,740,157	16,339,516	302,340	16,037,176

A blue-tinted photograph of a water treatment plant. The image shows large industrial pipes, valves, and machinery. In the foreground, there's a large horizontal pipe with a flange. In the background, there are vertical pipes and what looks like a large storage tank or filter. The overall scene is industrial and technical.

WATER & WASTEWATER PROPOSED RATE PLANS

WATER & WASTEWATER SCENARIO 1 | STATUS QUO

SCENARIO 1 | STATUS QUO

- Status Quo Scenario – Keeps the Existing Rate Structure and Tiers
- 5-year rate plan with adjustments assumed to be effective October 1st of each year
- Assumes no change in fundamental rate structure
- Uniform percentage adjustments for base and volume charges
- Higher increases for water, lesser increases for wastewater
- Significant one-time rate increase in FY2025, lesser increases afterwards



SCENARIO 1 | STATUS QUO | RATE PLAN

The rate plan fully funds all aspects of the water and wastewater utility based on the existing market conditions and assumptions.

			Proposed Rate Plan				
			Effective Oct-24	Effective Oct-25	Effective Oct-26	Effective Oct-27	Forecast Oct-28
Water Rates -- Residential, Commercial, and Sprinkler							
Monthly Minimum Charge							
5/8" & 3/4"	\$	9.99	\$ 12.29	\$ 13.52	\$ 14.19	\$ 14.90	\$ 15.65
1"		24.97	30.71	33.78	35.47	37.25	39.11
1 1/2"		49.98	61.48	67.62	71.00	74.55	78.28
2"		79.89	98.26	108.09	113.50	119.17	125.13
2 1/2"		119.83	147.39	162.13	170.24	178.75	187.69
3"		149.78	184.23	202.65	212.78	223.42	234.60
4"		249.63	307.04	337.75	354.64	372.37	390.99
6"		499.26	614.09	675.50	709.27	744.74	781.97
8"		798.81	982.54	1,080.79	1,134.83	1,191.57	1,251.15
Volume Rate Per 1,000 Gal							
-	2,000	2.39	2.94	3.23	3.40	3.57	3.74
2,001	4,000	3.21	3.95	4.34	4.56	4.79	5.03
4,001	6,000	4.01	4.93	5.43	5.70	5.98	6.28
6,001	8,000	4.39	5.40	5.94	6.24	6.55	6.88
8,001	10,000	5.21	6.41	7.05	7.40	7.77	8.16
10,001	15,000	6.00	7.38	8.12	8.52	8.95	9.40
15,001	20,000	6.40	7.87	8.66	9.09	9.55	10.02
20,001	Above	7.20	8.86	9.74	10.23	10.74	11.28
Wastewater Rates - Residential and Commercial							
Monthly Minimum Charge							
All Meters	\$	10.20	\$ 11.83	\$ 12.54	\$ 13.17	\$ 13.83	\$ 14.38
Volume Rate Per 1,000 Gal							
Volume Charge		3.93	4.56	4.83	5.07	5.33	5.54

SCENARIO 1 | STATUS QUO | IMPACT ON BILLS

			Proposed Rate Plan				
			Effective Oct-24	Effective Oct-25	Effective Oct-26	Effective Oct-27	Forecast Oct-28
Current							
Residential Monthly Charge -- 5/8" Meter							
5,000 Gal W	Total	\$ 55.05	\$ 65.62	\$ 70.80	\$ 74.34	\$ 78.06	\$ 81.55
5,000 Gal WW	Increase -- \$		10.57	5.18	3.54	3.72	3.50
	Increase -- %		19.2%	7.9%	5.0%	5.0%	4.5%
10,000 Gal W	Total	97.91	116.96	126.36	132.68	139.32	145.61
10,000 Gal WW	Increase -- \$		19.05	9.40	6.32	6.63	6.29
	Increase -- %		19.5%	8.0%	5.0%	5.0%	4.5%
20,000 Gal W	Total	199.21	238.81	258.57	271.50	285.08	298.13
20,000 Gal WW	Increase -- \$		39.60	19.76	12.93	13.58	13.05
	Increase -- %		19.9%	8.3%	5.0%	5.0%	4.6%
Commercial Monthly Charge -- 2" Meter							
20,000 Gal W	Total	\$ 269.11	\$ 324.79	\$ 353.15	\$ 370.81	\$ 389.35	\$ 407.61
20,000 Gal WW	Increase -- \$		55.68	28.36	17.66	18.54	18.26
	Increase -- %		20.7%	8.7%	5.0%	5.0%	4.7%
40,000 Gal W	Total	491.71	593.09	644.63	676.86	710.70	743.97
40,000 Gal WW	Increase -- \$		101.38	51.54	32.23	33.84	33.27
	Increase -- %		20.6%	8.7%	5.0%	5.0%	4.7%

**WATER & WASTEWATER
SCENARIO 2 | LIMITED TIERS**

SCENARIO 2 | LIMITED TIERS

- Conservation Scenario – Introduces new tier structure for Water to promote conservation:

Gallons Used	Volumetric Rate
0 – 5,000	\$3.50
5,000 – 10,000	\$5.25
10,000 – 15,000	\$7.88
15,000 – 20,000	\$9.84
20,000 - Above	\$12.30

- Wastewater tier structure remains unchanged
- New tier structure will benefit low- and moderate-use customers (up to 10k gal./mo.)
- High-use customers (over 20k gal./mo.) will be impacted the most



SCENARIO 2 | LIMITED TIERS | RATE PLAN

The rate plan fully funds all aspects of the water and wastewater utility based on the existing market conditions and assumptions.

					Proposed Rate Plan				
					Effective Oct-24	Effective Oct-25	Effective Oct-26	Effective Oct-27	Forecast Oct-28
Water Rates – Residential, Commercial, and Sprinkler									
Monthly Minimum Charge									
	5/8" & 3/4"	\$	9.99		\$ 11.99	\$ 12.83	\$ 13.47	\$ 14.14	\$ 14.85
	1"		24.97		29.96	32.06	33.66	35.35	37.12
	1 1/2"		49.98		59.98	64.17	67.38	70.75	74.29
	2"		79.89		95.87	102.58	107.71	113.09	118.75
	2 1/2"		119.83		143.80	153.86	161.55	169.63	178.11
	3"		149.78		179.74	192.32	201.93	212.03	222.63
	4"		249.63		299.56	320.52	336.55	353.38	371.05
	6"		499.26		599.11	641.05	673.10	706.76	742.10
	8"		798.81		958.57	1,025.67	1,076.96	1,130.80	1,187.34
Volume Rate Per 1,000 Gal									
	-	5,000	2.39 - 4.01		3.50	3.75	3.93	4.13	4.34
	5,001	10,000	4.01 - 5.21		5.25	5.62	5.90	6.19	6.50
	10,001	15,000	6.00		7.88	8.43	8.85	9.29	9.75
	15,001	20,000	6.40		9.84	10.53	11.06	11.61	12.19
	20,001	Above	7.20		12.30	13.17	13.82	14.52	15.24
Wastewater Rates - Residential and Commercial									
Monthly Minimum Charge									
	All Meters	\$	10.20		\$ 11.73	\$ 12.55	\$ 13.18	\$ 13.84	\$ 14.39
Volume Rate Per 1,000 Gal									
	Volume Charge		3.93		4.52	4.84	5.08	5.33	5.54

SCENARIO 2 | LIMITED TIERS | BILL IMPACT

				Proposed Rate Plan				
				Effective Oct-24	Effective Oct-25	Effective Oct-26	Effective Oct-27	Forecast Oct-28
Current								
Residential Monthly Charge -- 5/8" Meter								
5,000 Gal W	Total	\$	55.05	\$ 63.82	\$ 68.28	\$ 71.70	\$ 75.28	\$ 78.64
5,000 Gal WW	Increase -- \$			8.77	4.47	3.41	3.58	3.36
	Increase -- %			15.9%	7.0%	5.0%	5.0%	4.5%
10,000 Gal W	Total		97.91	112.66	120.55	126.58	132.91	138.88
10,000 Gal WW	Increase -- \$			14.75	7.89	6.03	6.33	5.97
	Increase -- %			15.1%	7.0%	5.0%	5.0%	4.5%
20,000 Gal W	Total		199.21	246.45	263.70	276.89	290.73	304.06
20,000 Gal WW	Increase -- \$			47.24	17.25	13.19	13.84	13.33
	Increase -- %			23.7%	7.0%	5.0%	5.0%	4.6%
Commercial Monthly Charge -- 2" Meter								
20,000 Gal W	Total	\$	269.11	\$ 330.33	\$ 353.45	\$ 371.13	\$ 389.68	\$ 407.96
20,000 Gal WW	Increase -- \$			61.22	23.12	17.67	18.56	18.28
	Increase -- %			22.7%	7.0%	5.0%	5.0%	4.7%
40,000 Gal W	Total		491.71	666.82	713.49	749.17	786.63	823.69
40,000 Gal WW	Increase -- \$			175.11	46.68	35.67	37.46	37.06
	Increase -- %			35.6%	7.0%	5.0%	5.0%	4.7%

Scenario Comparison

	Current	Effective Oct-24	Effective Oct-25	Effective Oct-26	Effective Oct-27	Effective Oct-28
Residential Monthly Charge -- 5,000 Gal Water, 5,000 Gal WW						
Scenario I -- Status Quo	\$ 55.05	\$ 65.62	\$ 70.80	\$ 74.34	\$ 78.06	\$ 81.55
Scenario II -- Conservation	55.05	63.82	68.28	71.70	75.28	78.64
<u>Increase -- Dollars</u>						
Scenario I -- Status Quo		10.57	5.18	3.54	3.72	3.50
Scenario II -- Conservation		8.77	4.47	3.41	3.58	3.36
<u>Increase -- Percentage</u>						
Scenario I -- Status Quo		19.2%	7.9%	5.0%	5.0%	4.5%
Scenario II -- Conservation		15.9%	7.0%	5.0%	5.0%	4.5%
Residential Monthly Charge -- 10,000 Gal Water, 10,000 Gal WW						
Scenario I -- Status Quo	\$ 97.91	\$ 116.96	\$ 126.36	\$ 132.68	\$ 139.32	\$ 145.61
Scenario II -- Conservation	97.91	112.66	120.55	126.58	132.91	138.88
<u>Increase -- Dollars</u>						
Scenario I -- Status Quo		19.05	9.40	6.32	6.63	6.29
Scenario II -- Conservation		14.75	7.89	6.03	6.33	5.97
<u>Increase -- Percentage</u>						
Scenario I -- Status Quo		19.5%	8.0%	5.0%	5.0%	4.5%
Scenario II -- Conservation		15.1%	7.0%	5.0%	5.0%	4.5%

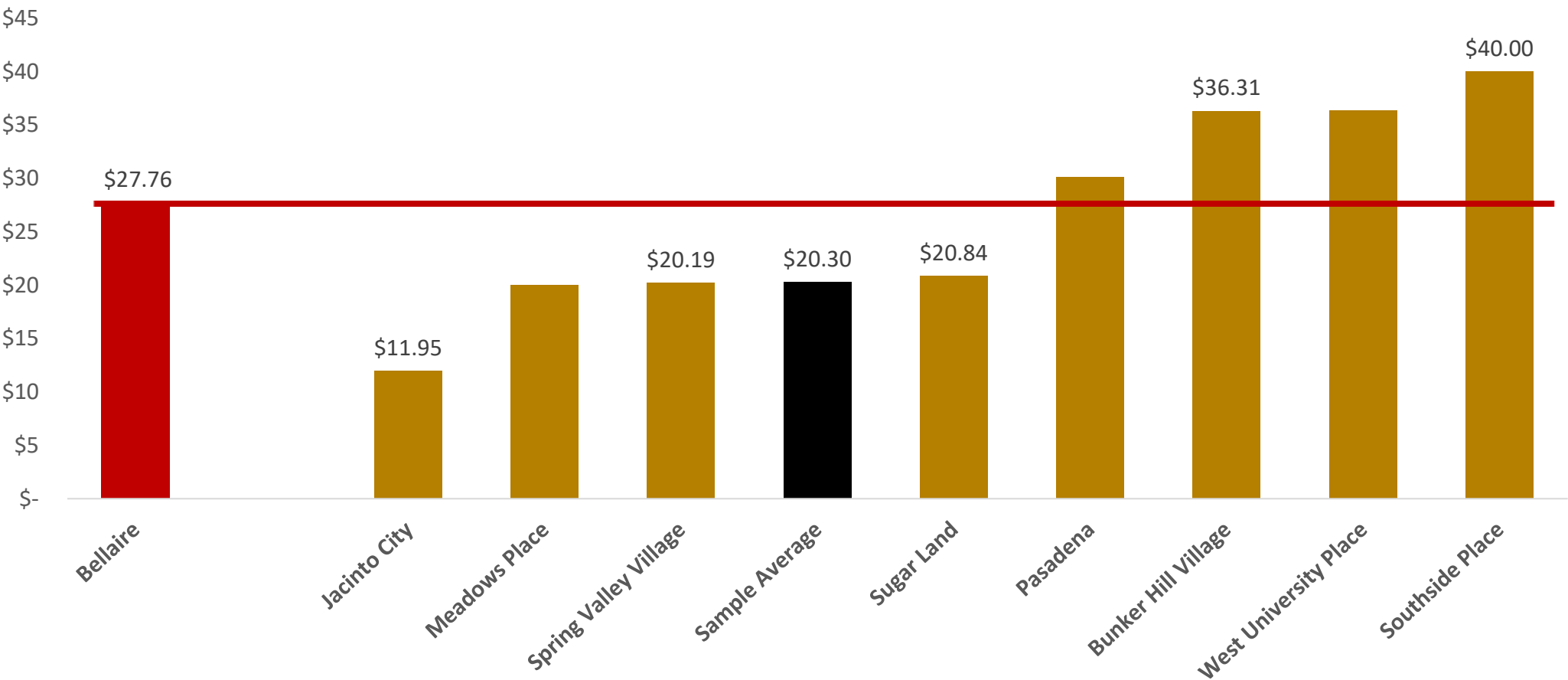
Scenario Comparison

	Current	Effective Oct-24	Effective Oct-25	Effective Oct-26	Effective Oct-27	Effective Oct-28
Residential Monthly Charge -- 20,000 Gal Water, 20,000 Gal WW						
Scenario I -- Status Quo	\$ 199.21	\$ 238.81	\$ 258.57	\$ 271.50	\$ 285.08	\$ 298.13
Scenario II -- Conservation	199.21	246.45	263.70	276.89	290.73	304.06
<u>Increase -- Dollars</u>						
Scenario I -- Status Quo		39.60	19.76	12.93	13.58	13.05
Scenario II -- Conservation		47.24	17.25	13.19	13.84	13.33
<u>Increase -- Percentage</u>						
Scenario I -- Status Quo		19.9%	8.3%	5.0%	5.0%	4.6%
Scenario II -- Conservation		23.7%	7.0%	5.0%	5.0%	4.6%
Commercial Monthly Charge -- 40,000 Gal Water, 40,000 Gal WW						
Scenario I -- Status Quo	\$ 491.71	\$ 593.09	\$ 644.63	\$ 676.86	\$ 710.70	\$ 743.97
Scenario II -- Conservation	491.71	666.82	713.49	749.17	786.63	823.69
<u>Increase -- Dollars</u>						
Scenario I -- Status Quo		101.38	51.54	32.23	33.84	33.27
Scenario II -- Conservation		175.11	46.68	35.67	37.46	37.06
<u>Increase -- Percentage</u>						
Scenario I -- Status Quo		20.6%	8.7%	5.0%	5.0%	4.7%
Scenario II -- Conservation		35.6%	7.0%	5.0%	5.0%	4.7%

The background image shows industrial machinery, likely part of a water treatment plant, featuring large pipes, valves, and a motor. A semi-transparent blue overlay covers the entire image. The text "SANITATION AND RECYCLING" is centered in white, bold, uppercase letters.

SANITATION AND RECYCLING

Monthly Residential Charges | Sanitation and Recycling



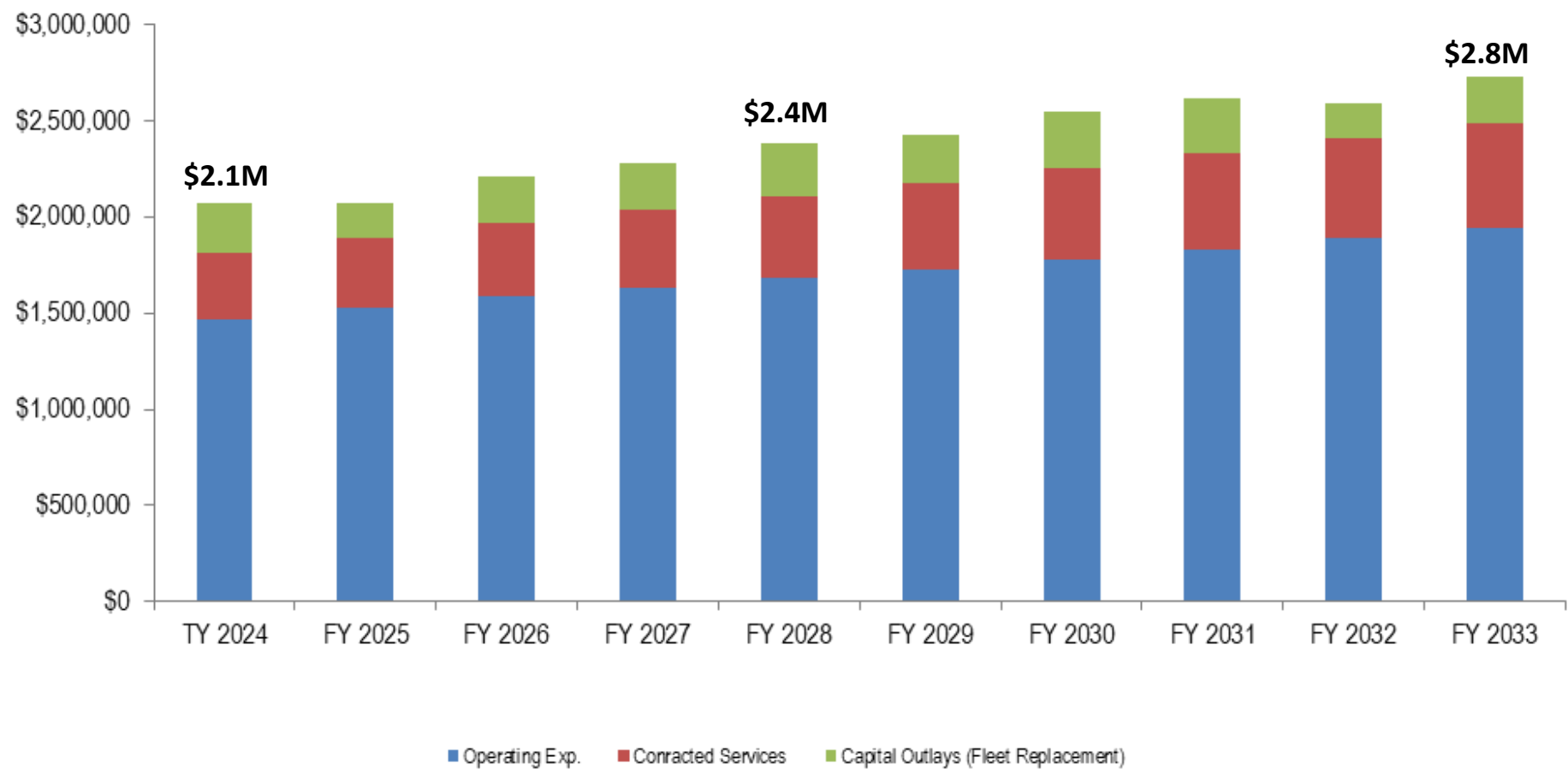
**Houston Sanitation Department is funded from the General Fund*

Solid Waste Key Assumptions

- Operating expenses are forecast to increase by 3-4% annually
- Republic Services and Recycle America costs are forecast to increase by 5% each year
- No change in 2/1 (trash/recycling) pickup policy
- Fleet vehicles will be replaced according to the Fleet Replacement Schedule
- 6,066 active SW accounts in the Test Year. The number of SW accounts will remain flat for the forecast period
- Rate increases in October of each year



Forecast Cost of Service | Solid Waste



Forecast Net Revenue Requirement | Solid Waste

FORECAST SANITATION NET REVENUE REQUIREMENT								
	Operating Expenses	Contracted Services	Capital Outlays	Debt Service	Total Cost of Service	Less Non-Rate Revenues	Net Revenue Requirement	
Sanitation Revenue Requirement								
TY 2024	\$ 1,467,976	\$ 348,750	\$ 260,109	\$ -	\$ 2,076,835	\$ (32,760)	\$ 2,044,075	
FY 2025	1,520,162	366,475	176,852	-	2,063,489	(32,782)	2,030,707	
FY 2026	1,574,321	385,101	237,394	-	2,196,816	(32,805)	2,164,011	
FY 2027	1,630,533	404,672	241,523	-	2,276,728	(32,827)	2,243,901	
FY 2028	1,688,880	425,239	278,324	-	2,392,443	(32,849)	2,359,594	
FY 2029	1,749,449	446,850	251,844	-	2,448,144	(32,871)	2,415,272	
FY 2030	1,812,331	469,559	293,214	-	2,575,105	(32,894)	2,542,211	
FY 2031	1,877,620	493,423	292,240	-	2,663,282	(32,916)	2,630,366	
FY 2032	1,945,413	518,498	185,023	-	2,648,934	(32,938)	2,615,996	
FY 2033	2,015,813	544,848	242,501	-	2,803,162	(32,960)	2,770,202	

Solid Waste Rate Plan and Impact on Monthly Bill

CITY OF BELLAIRE

SANITATION RECOMMENDED RATE PLAN

	Current	Forecast Oct-24	Forecast Oct-25	Forecast Oct-26	Forecast Oct-27	Forecast Oct-28
Solid Waste Monthly Fee - All Residential						
Residential -- Sanitation	\$ 24.72	\$ 26.45	\$ 27.77	\$ 28.88	\$ 30.04	\$ 31.24
Residential -- Recycling	3.04	3.25	3.42	3.55	3.69	3.84
Total	\$ 27.76	\$ 29.70	\$ 31.19	\$ 32.44	\$ 33.73	\$ 35.08
Increase - \$		1.94	1.49	1.25	1.30	1.35
Increase - %		7.0%	5.0%	4.0%	4.0%	4.0%

The background image shows industrial machinery, possibly a pump or compressor system, with large pipes, valves, and a motor. The entire image is covered with a semi-transparent blue overlay. The word "SUMMARY" is centered in white, bold, uppercase letters.

SUMMARY

Summary and Next Steps

- Review proposed rate plans
- Revise recommendations based on Council feedback from workshop
- Prepare final Council presentation and present formal rate plan for adoption





QUESTIONS & DISCUSSION