

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**

BACKGROUND ON RATES

21st Century Water & Wastewater Rate Facts

City of
Bellaire

- 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 of
Bellaire

- 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

City of
Bellaire

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

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

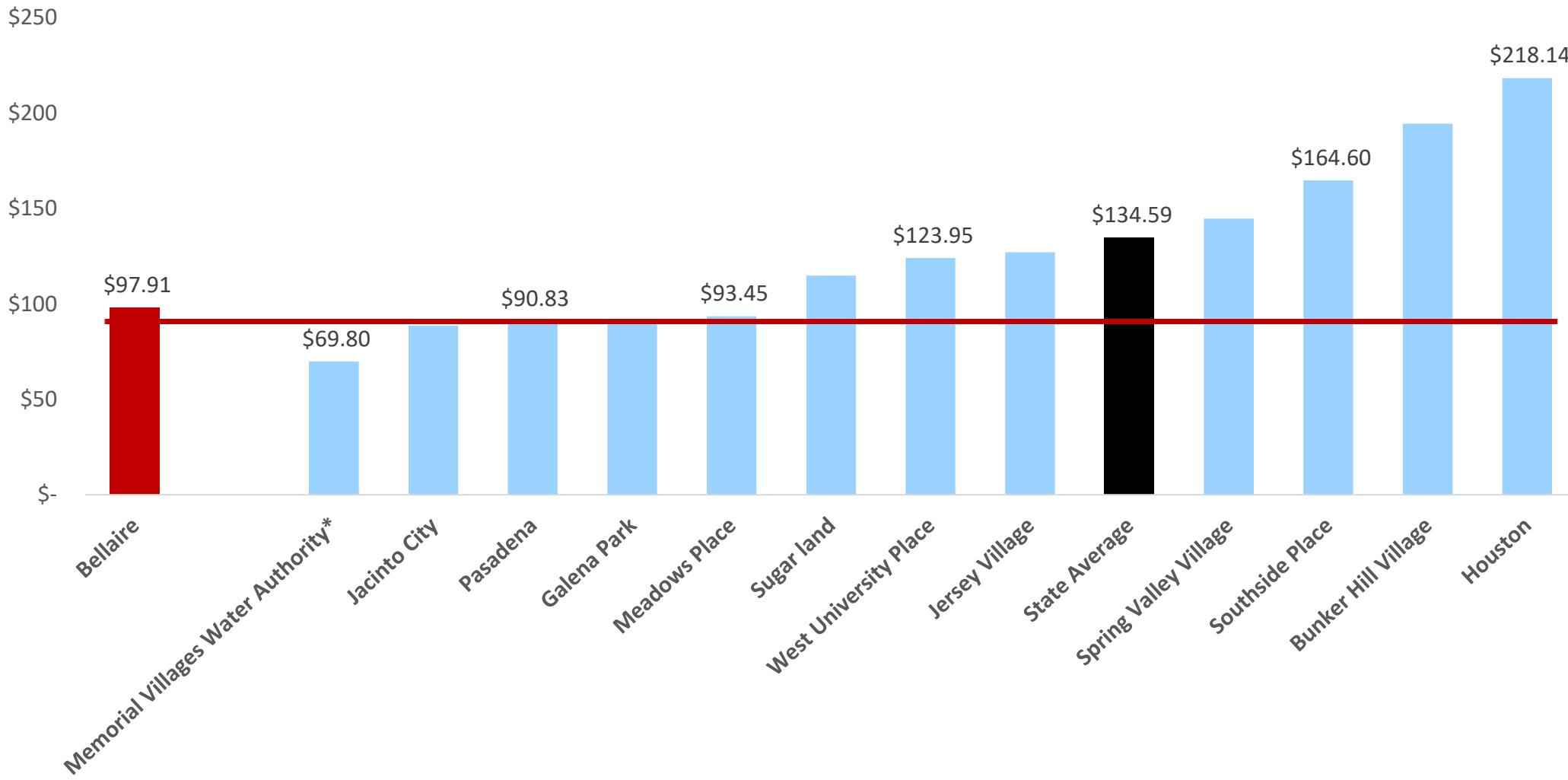
WW RATE STRUCTURE	Res and Comm
Base Charge by Meter Size	
All Meter Sizes	\$10.20

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

Monthly Residential Charges | 10kGal Water and Wastewater

City of
Bellaire

PRELIMINARY & SUBJECT TO CHANGE



*Rates as of February 2024

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

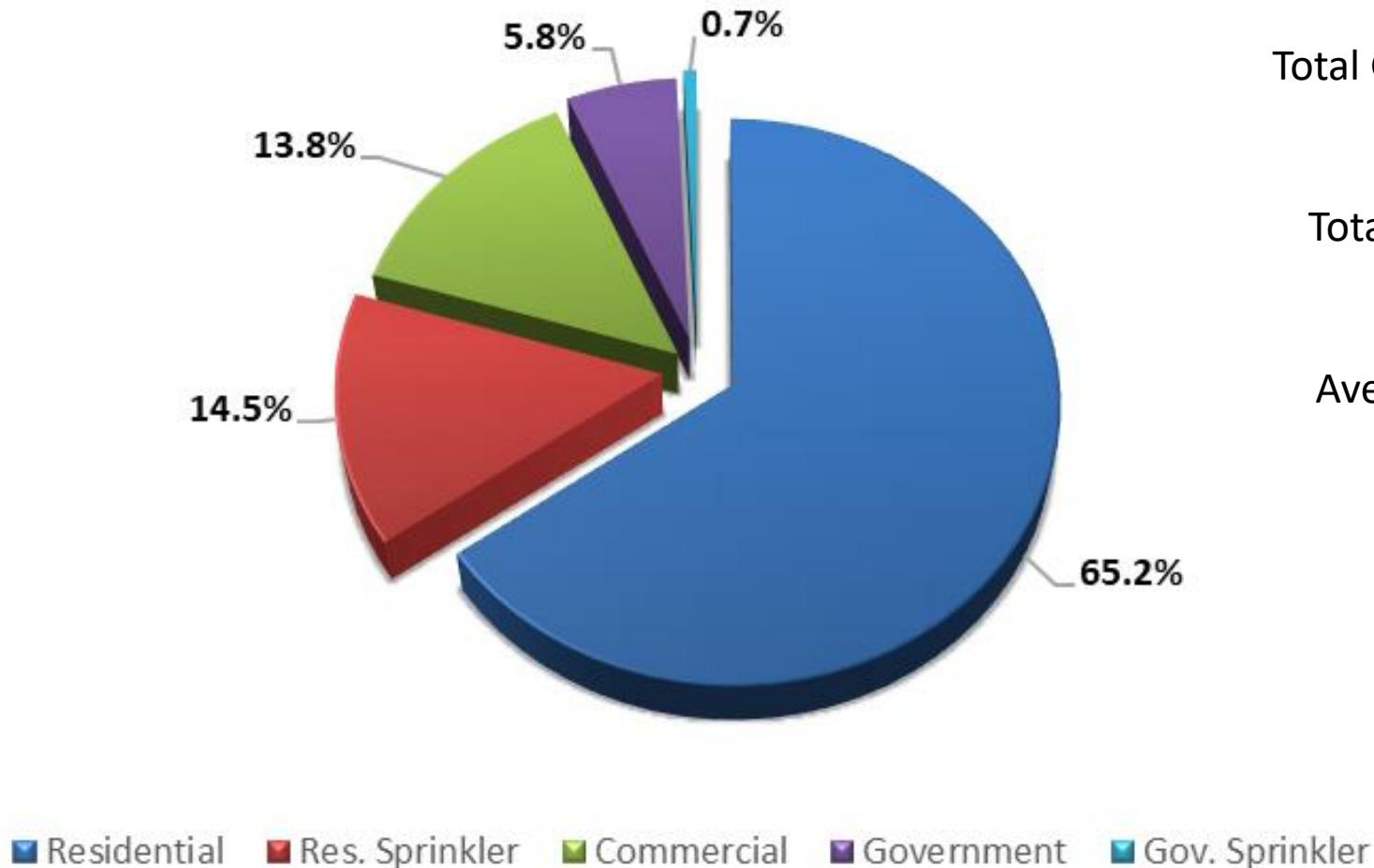
CUSTOMERS & VOLUMES

RATE MODEL CUSTOMER CLASS

WATER Customers	WASTEWATER Customers
Residential 6,189	Residential 6,077
Res. Sprinkler 959	Commercial 292
Commercial 308	Government 5
Comm. Sprinkler -	
Government 19	
Gov. Sprinkler 67	
Total 7,542	Total 6,374

Water Consumption by Customer Class | Test Year 2024

City of
Bellaire



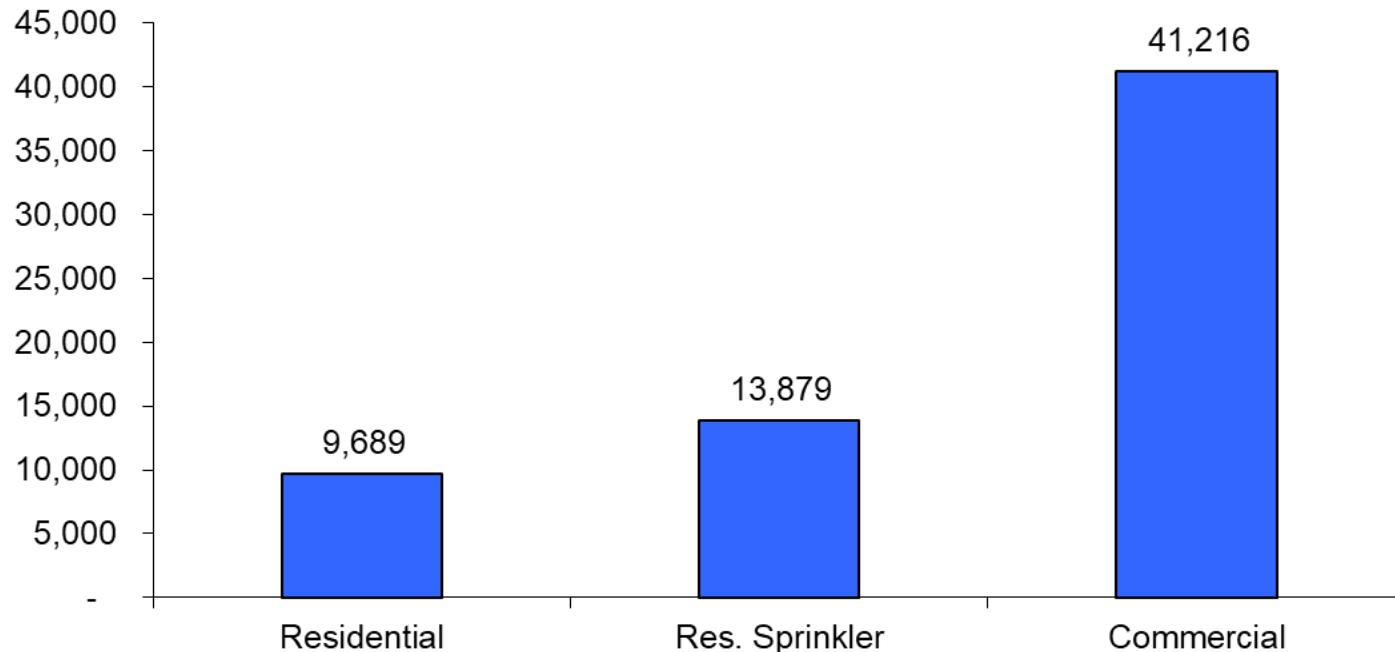
Total Ground and Surface Water:
1.3B Gallons

Total Metered Consumption:
1.1B Gallons

Average System Water Loss:
±20.9%

TY Average Monthly Water Consumption (gallons)

City of
Bellaire



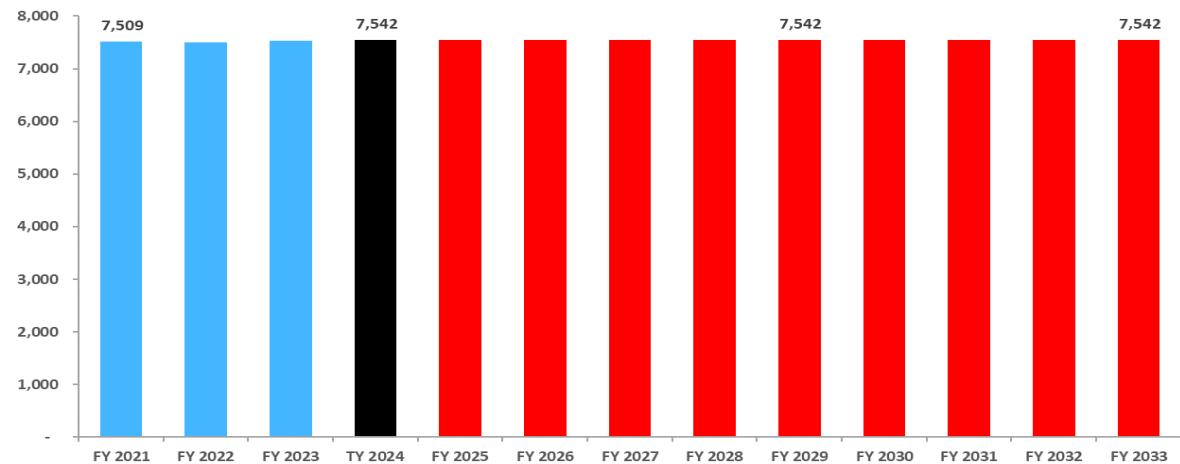
**West University Place average residential water use is 9,405 gal. per mo.*

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

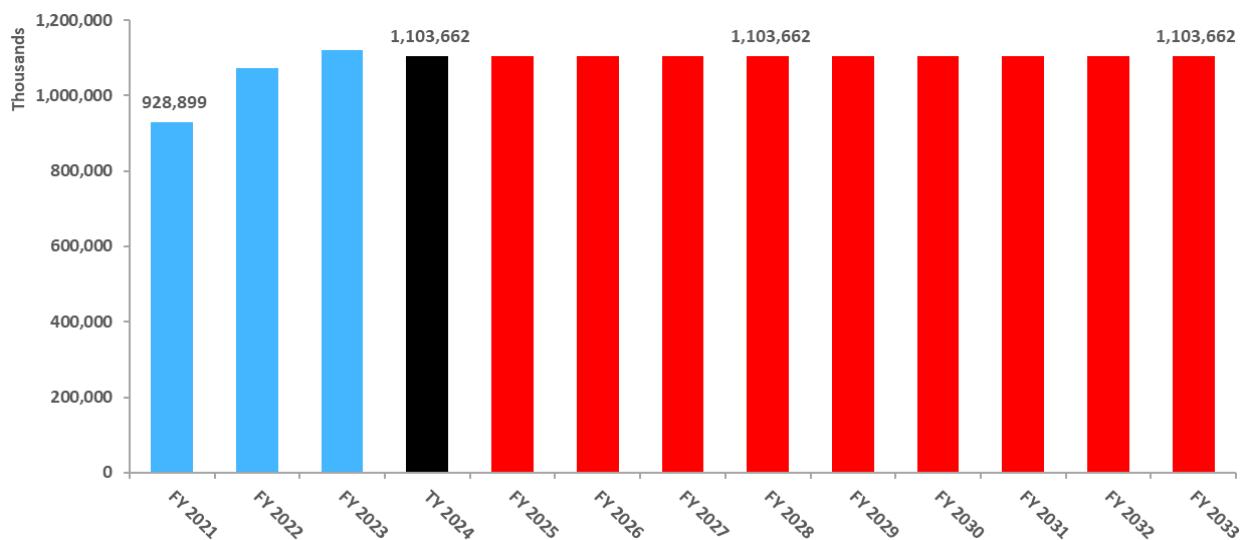
Historical and Forecast Water Accounts and Consumption

City of
Bellaire

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.



WATER & WASTEWATER CURRENT AND FORECAST COST OF SERVICE

Key Assumptions for Forecast Financial and Rate Plan

City of
Bellaire

- Forecast COH water purchases will remain at the test year levels ($\pm 693\text{MG}$ 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**

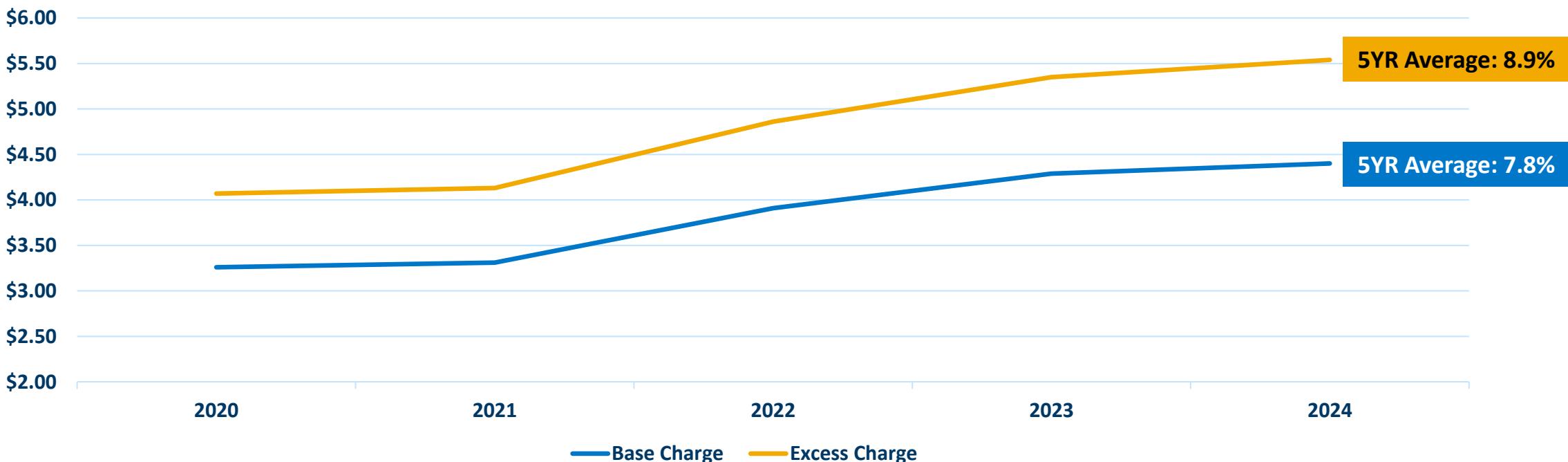
**City is conducting a CIP study, and the final CIP number will change. Recommended rate plan is based only on known CIP projects.*

WATER			WASTEWATER		
WAXXX	Central Well Chlorine Building	\$ 60,000	WW2203	Wastewater Treatment Plant Fine Screen Replacement	\$ 100,000
WAXXX	Renwick Well Generator	164,284	WW2202	Wastewater Collection System Improvements	275,000
WA2202	Fire Hydrant Rehabilitation and Replacement	100,000	Future Projects		
WA2203	Water Distribution System Valve Improvements	232,000	Future Projects		
WA2205	Priority Water Line Improvements	636,400	Future Projects		
WAXXX	Water Tower Rehab	2,100,000	Future Projects		
WA2205	Priority Water Line Improvements	700,000	Future Projects		
Total Water CIP		\$ 3,992,684	Total Wastewater CIP		
Total Water and Wastewater CIP		\$ 4,367,684			

City of Houston Annual Rate Adjustments

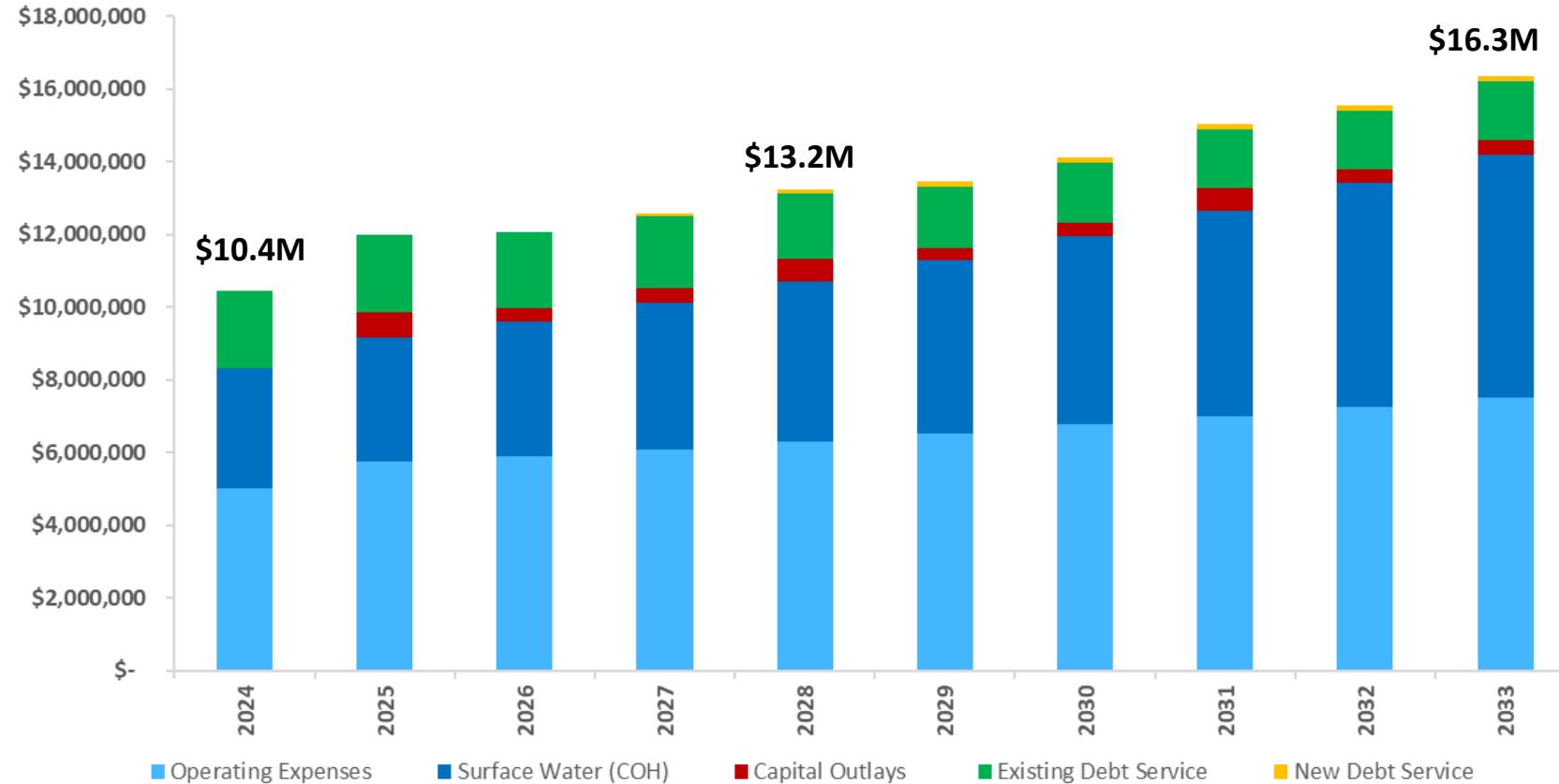
City of
Bellaire

- 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

City of
Bellaire



Forecast Net Revenue Requirement | Water and Wastewater

City of
Bellaire

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 large industrial water pump unit is visible in the background, consisting of a central pump body with multiple suction and discharge ports, surrounded by a network of pipes, valves, and structural supports. The unit is situated in a workshop or industrial setting with other equipment and a window in the background.

WATER & WASTEWATER PROPOSED RATE PLANS

WATER & WASTEWATER

SCENARIO 1 | STATUS QUO

SCENARIO 1 | STATUS QUO

City of
Bellaire

- 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



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

			Proposed Rate Plan															
Current			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

City of
Bellaire

		Current	Proposed Rate Plan					
			Effective Oct-24	Effective Oct-25	Effective Oct-26	Effective Oct-27	Forecast Oct-28	
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

City of
Bellaire

- 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



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

	Current	Proposed Rate Plan					Forecast Oct-28
		Effective Oct-24	Effective Oct-25	Effective Oct-26	Effective Oct-27		
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

City of
Bellaire

		Current	Proposed Rate Plan				
			Effective Oct-24	Effective Oct-25	Effective Oct-26	Effective Oct-27	Forecast Oct-28
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

City of
Bellaire

	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

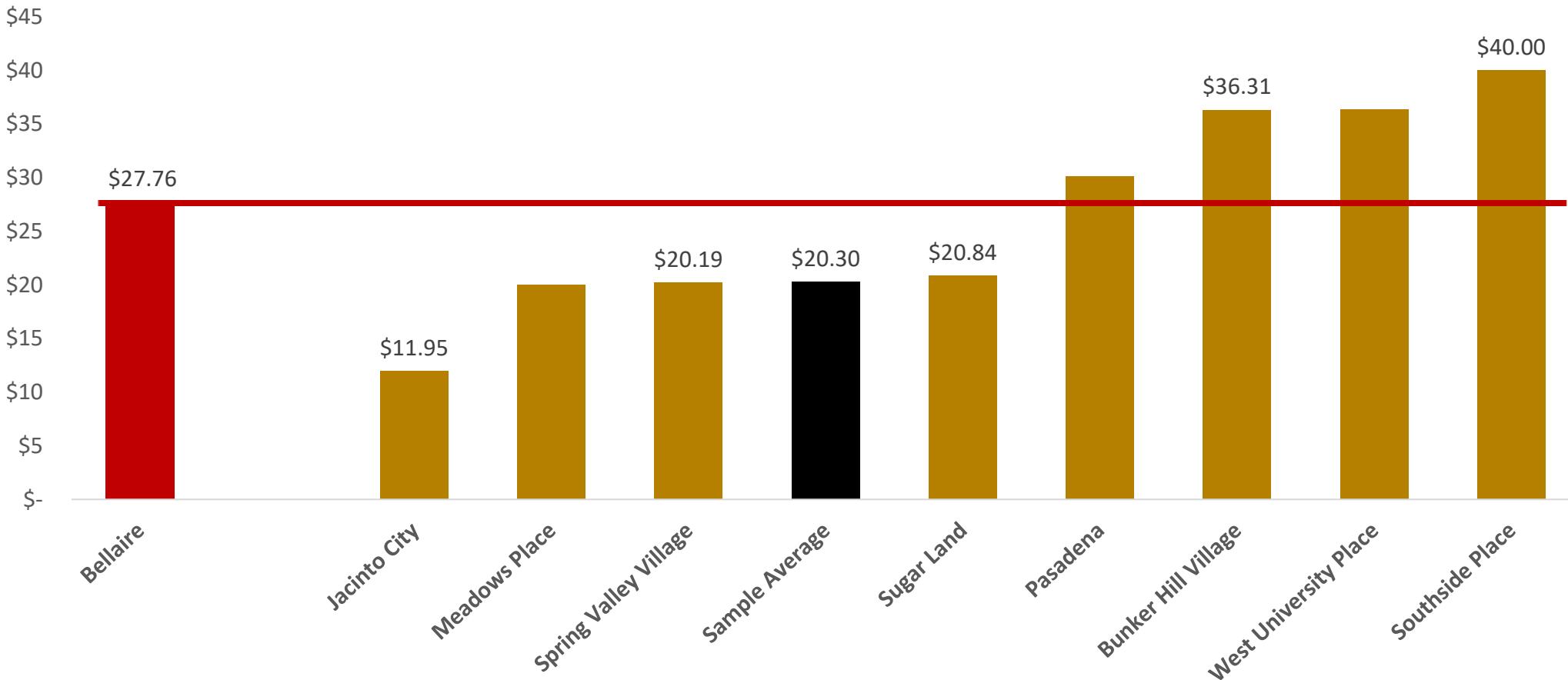
City of
Bellaire

	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%

SANITATION AND RECYCLING

Monthly Residential Charges | Sanitation and Recycling

City of
Bellaire



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

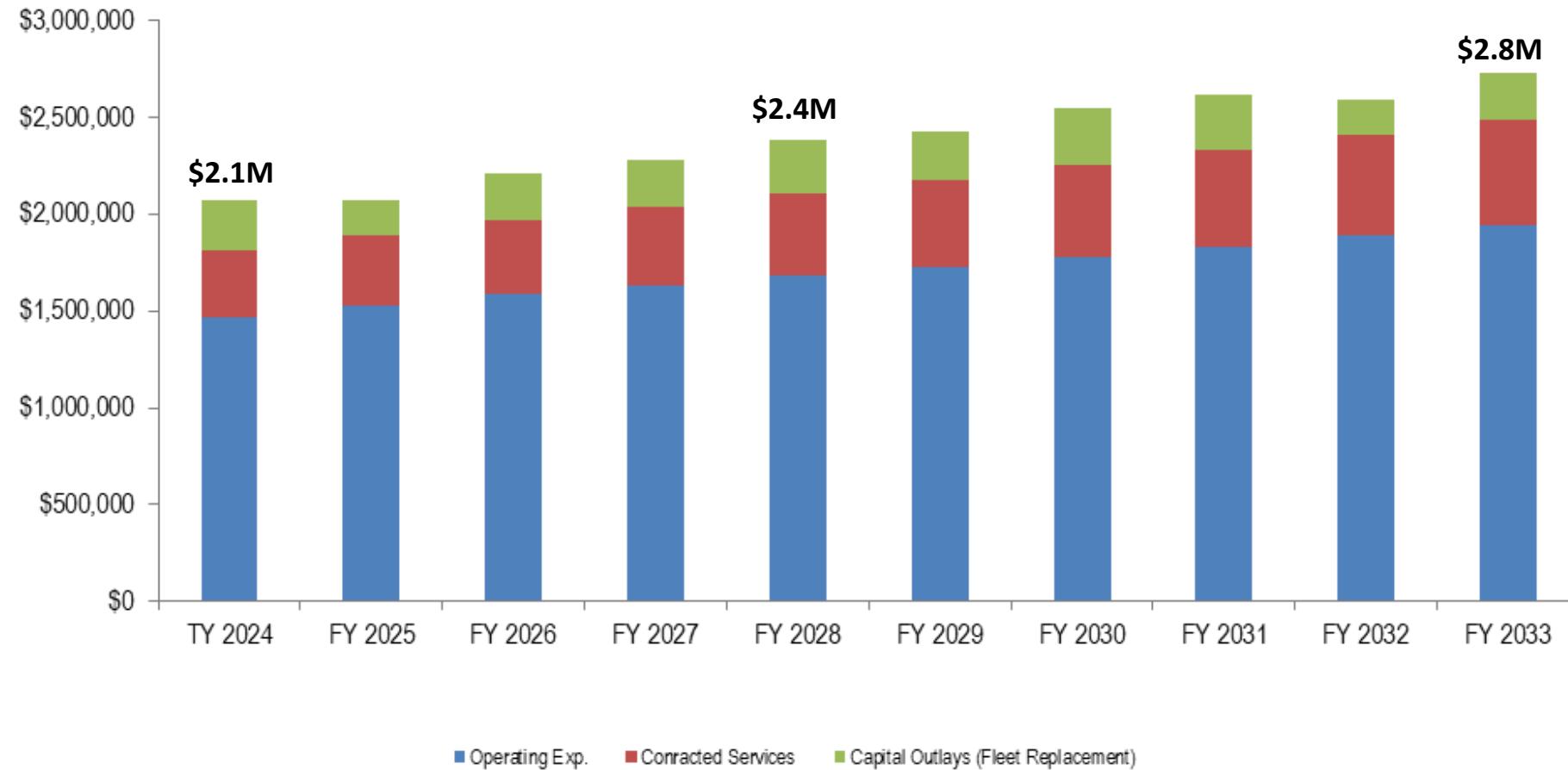
Solid Waste Key Assumptions

- 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

City of
Bellaire



Forecast Net Revenue Requirement | Solid Waste

City of
Bellaire

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

CITY OF BELLAIRE

SANITATION RECOMMENDED RATE PLAN

	Current	Forecast	Forecast	Forecast	Forecast	Forecast
		Oct-24	Oct-25	Oct-26	Oct-27	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%

SUMMARY

- 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