



October 27, 2022

WATER AND SEWER RATES 101

CITY OF ALEDO, TEXAS





IMPORTANCE OF LOCAL OFFICIALS IN UTILITY MANAGEMENT

Utilities operate like a business, though the product being sold is a vital resource shared by all members of the community

Just like any business, Council is the “Board of Directors” and must be able to address complex industry challenges including rising costs, aging infrastructure, and customer affordability

The “Board” must ensure the viability of the business by ensuring revenues match or exceed expenses and financial metrics are met

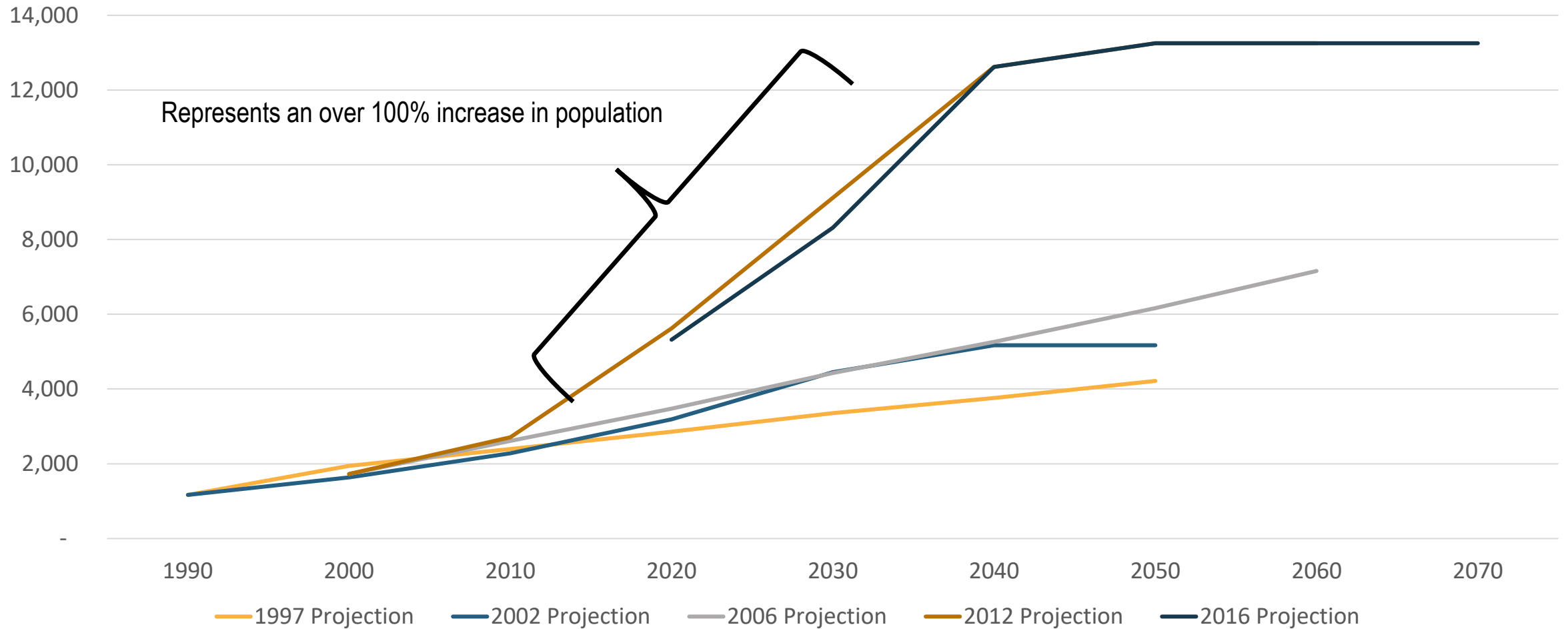
WHAT ARE PROPRIETARY (ENTERPRISE) FUNDS?

- Proprietary funds define operating revenues and expenses consistent with the precepts of GASB No. 9 paragraphs 16–19 and 31
 - Cash receipts from customers, cash receipts from interfund services provided and used with other funds, and other operating cash receipts; all other revenues or expenses recognized are non-operating
 - <https://www.gfoa.org/materials/basis-of-accounting-versus-budgetary-basis>
- Proprietary funds use the full accrual basis of accounting
 - Revenues are recognized when earned
 - Expenses are recognized when they are incurred
- Used for “Business-Type” Activities of Government



HISTORY OF WATER AND SEWER RATES IN ALEDO

TWDB POPULATION PROJECTIONS



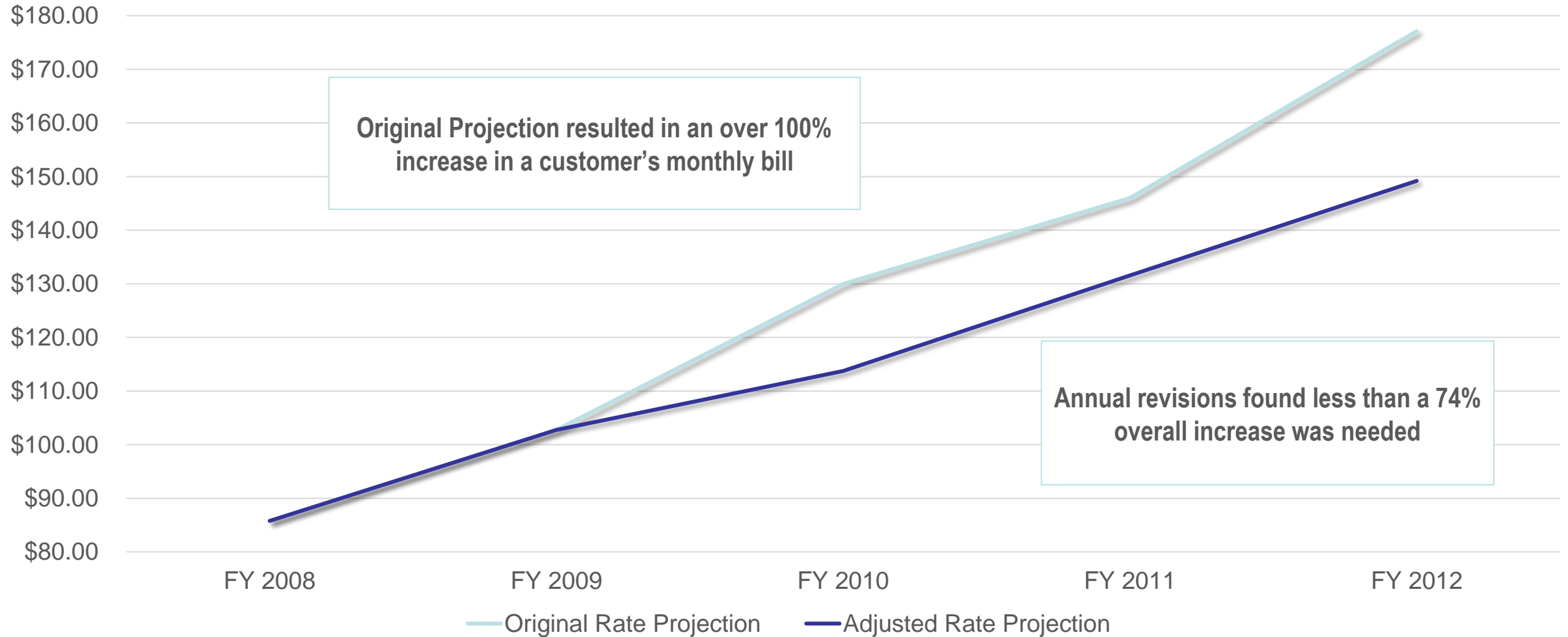
CHALLENGES TO MEET GROWING DEMAND

- TCEQ Issued Agreed Order (Fall 2006)
 - Sewer
 - WWTP Effluent Exceeding Ammonia-Nitrogen Discharge Limits
 - Water
 - Emergency Power
 - Rolling Hills well capacity and pressure tank capacity
- TCEQ Compliance Agreement (Spring 2010)
 - Water
 - Water quality issues related to Well No. 1
 - Well No. 1 taken out of service

REQUIRED CAPITAL IMPROVEMENTS FROM INITIAL GROWTH

- Water – Original Budget of \$7.8 Million
 - Connection to reliable surface water supply (Ft. Worth)
 - Make other required storage, pumping, and distribution line improvements
- Wastewater – Original Budget of \$8.7 Million
 - Substantial renovation of WWTP required
 - Modular design for Future Expansions
 - Design to accommodate Permit Requirements
 - 0.60 MGD Discharge Capacity
 - Noise and Odor Abatement
 - Phosphorous Treatment Capability
 - Ultraviolet Disinfection

ESTIMATED REVENUE INCREASES NEEDED TO MEET OBLIGATIONS



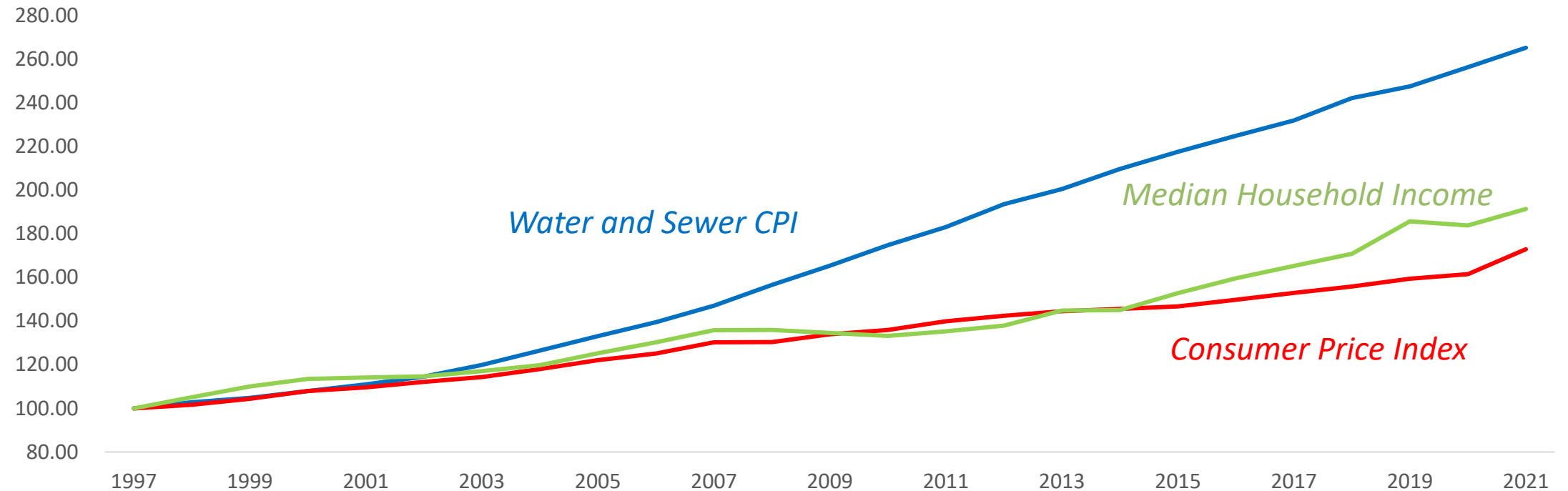
RESULTS OF CAPITAL INVESTMENT

- City was able to support substantial growth with sufficient infrastructure
- Capital program created new financial obligations
 - Long-term debt issuance
 - Total Principal and Interest Payment of \$1,100,421 for FY 2023
 - Represents 26% of the City's annual revenue required from water and sewer
 - New Annual Payments Required to the City of Ft. Worth
 - Total Annual Payment of \$475,000 for FY 2023
 - Represents approximately 11% of the City's annual revenue required from water and sewer
- City was able to hold rates constant from 2012 until 2022 as the City absorbed growth with limited additional infrastructure investment
 - City's rates over-time have been generally consistent with industry trends

ON-GOING CHALLENGES

- TCEQ Notice of Enforcement (December 2017)
 - Sewer: Permit Effluent Limit for Total Phosphorus
- TCEQ Issued Agreed Order (January 2019)
 - Sewer: Permit Effluent Limitations
- TCEQ Notice of Violation (September 2022)
 - Water: Chlorine Monitoring
- Continued Regulatory Requirements (Lead and Copper Rules)
- Capacity Expansion for additional growth, particularly water supply capacity and WWTP expansion
 - Estimated cost of \$3.5 million for water supply capacity
 - Estimated cost of \$24 million for WWTP capacity

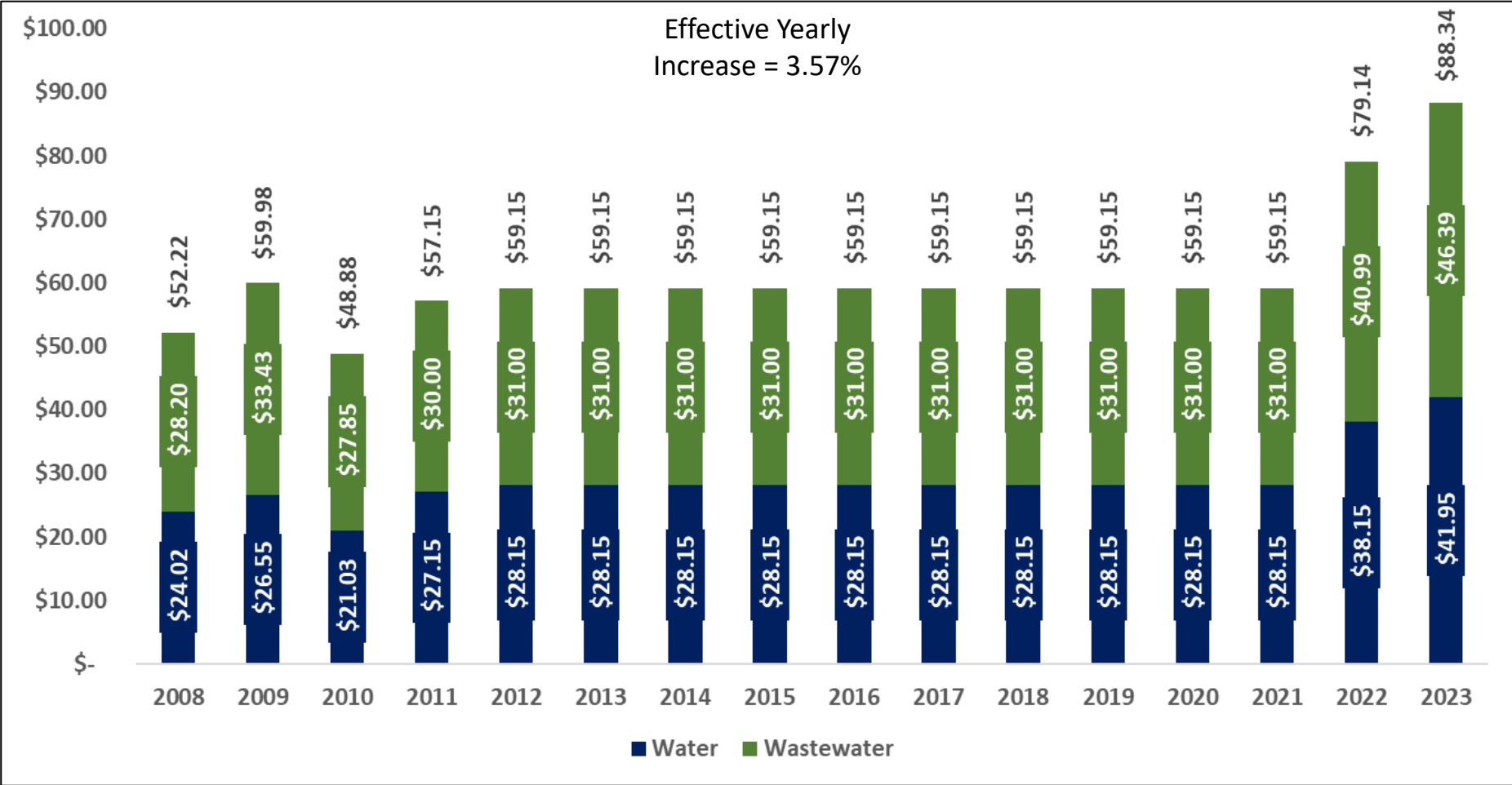
MHI, CPI AND WATER AND SEWER SERVICE INCREASES



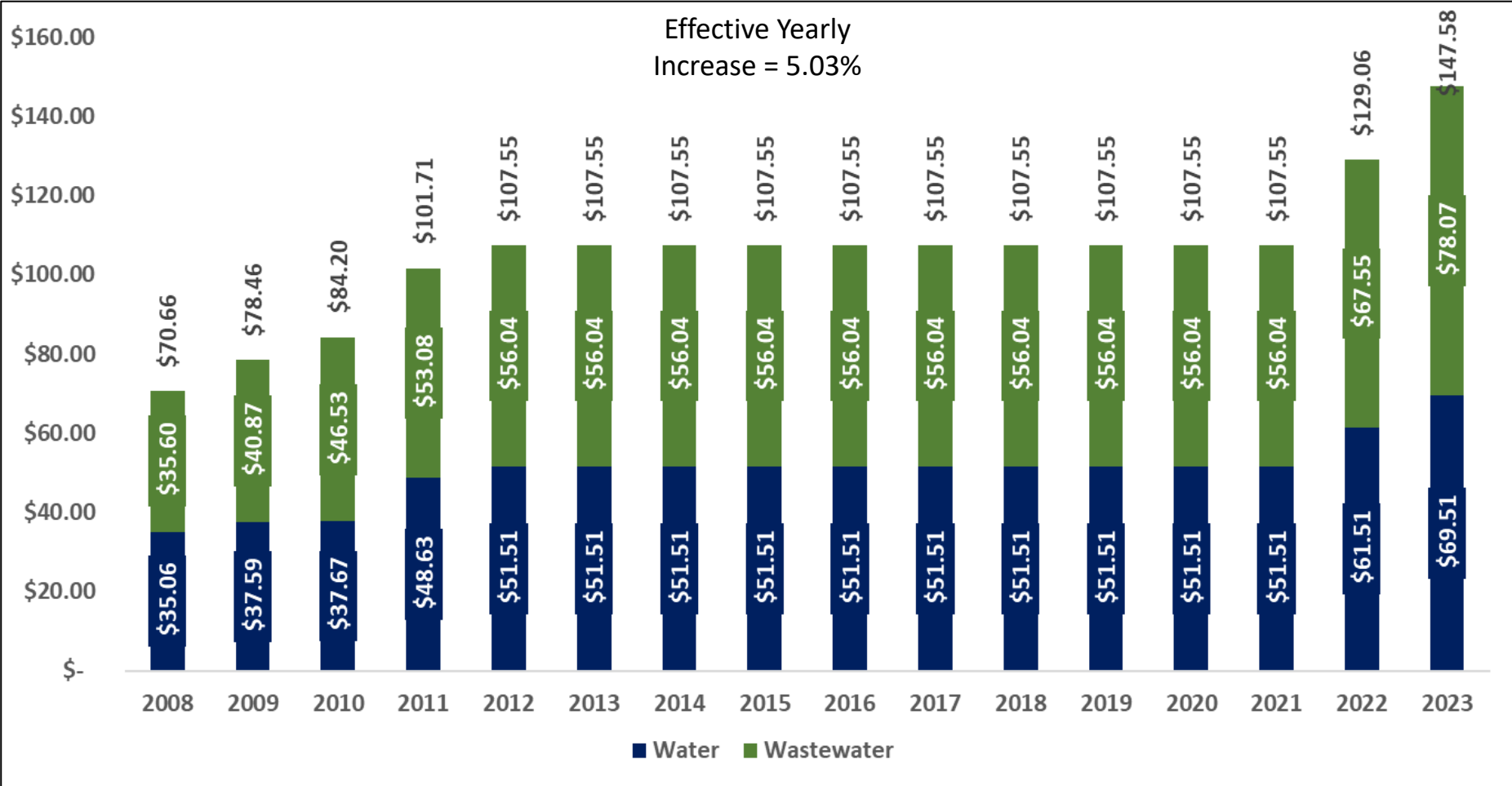
Index: 2000 = 100; Bureau of Labor Statistics (BLS), Bureau of the Census

- From 1997 to 2021:**
- Median household income (MHI) increased 91% (2.7% per year)
 - Inflation (CPI) increased 73% (2.3% per year)
 - Water and sewer service costs increased 165% (4.1% per year)

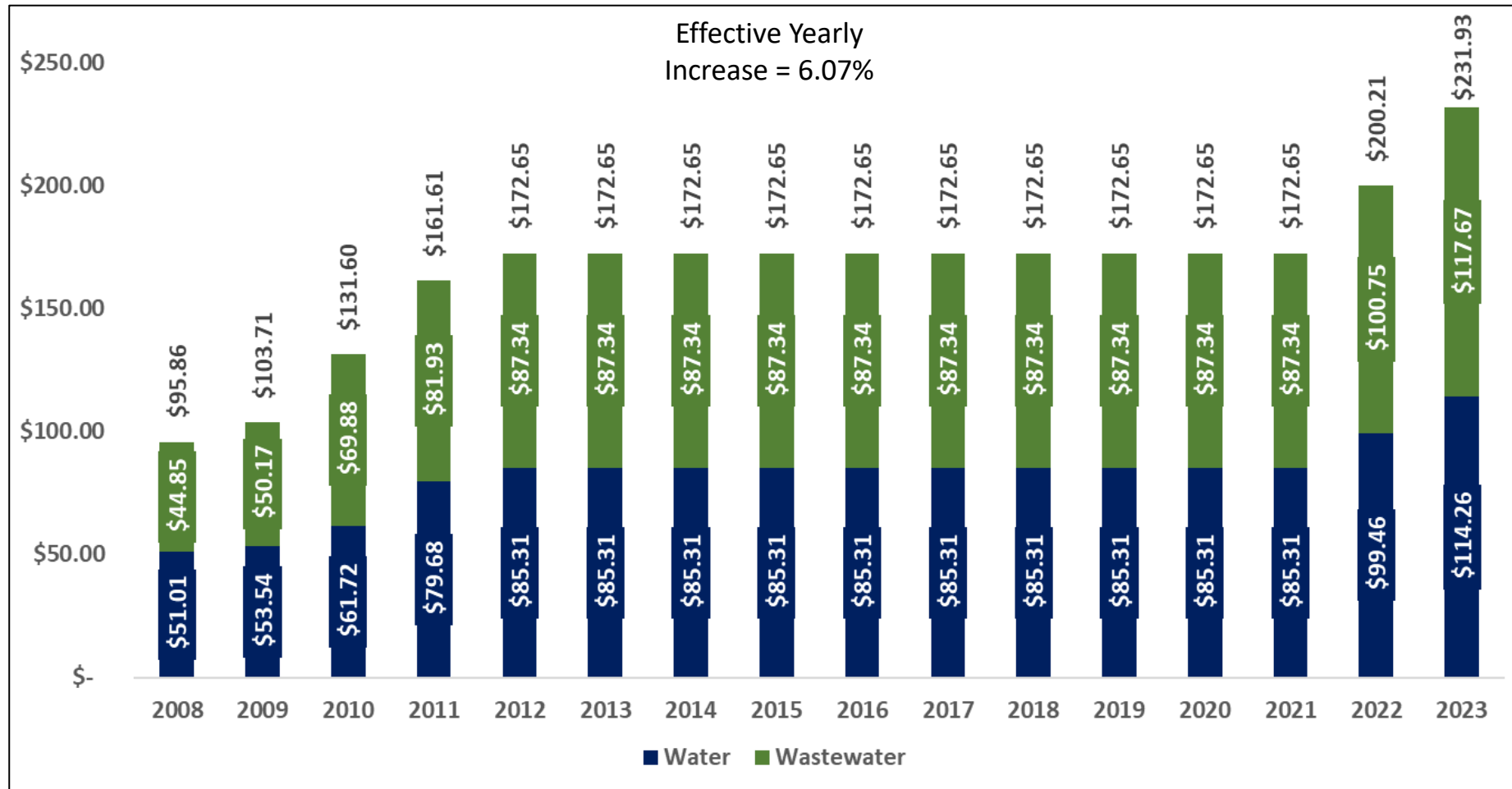
BILL HISTORY – 3,000 GALLONS



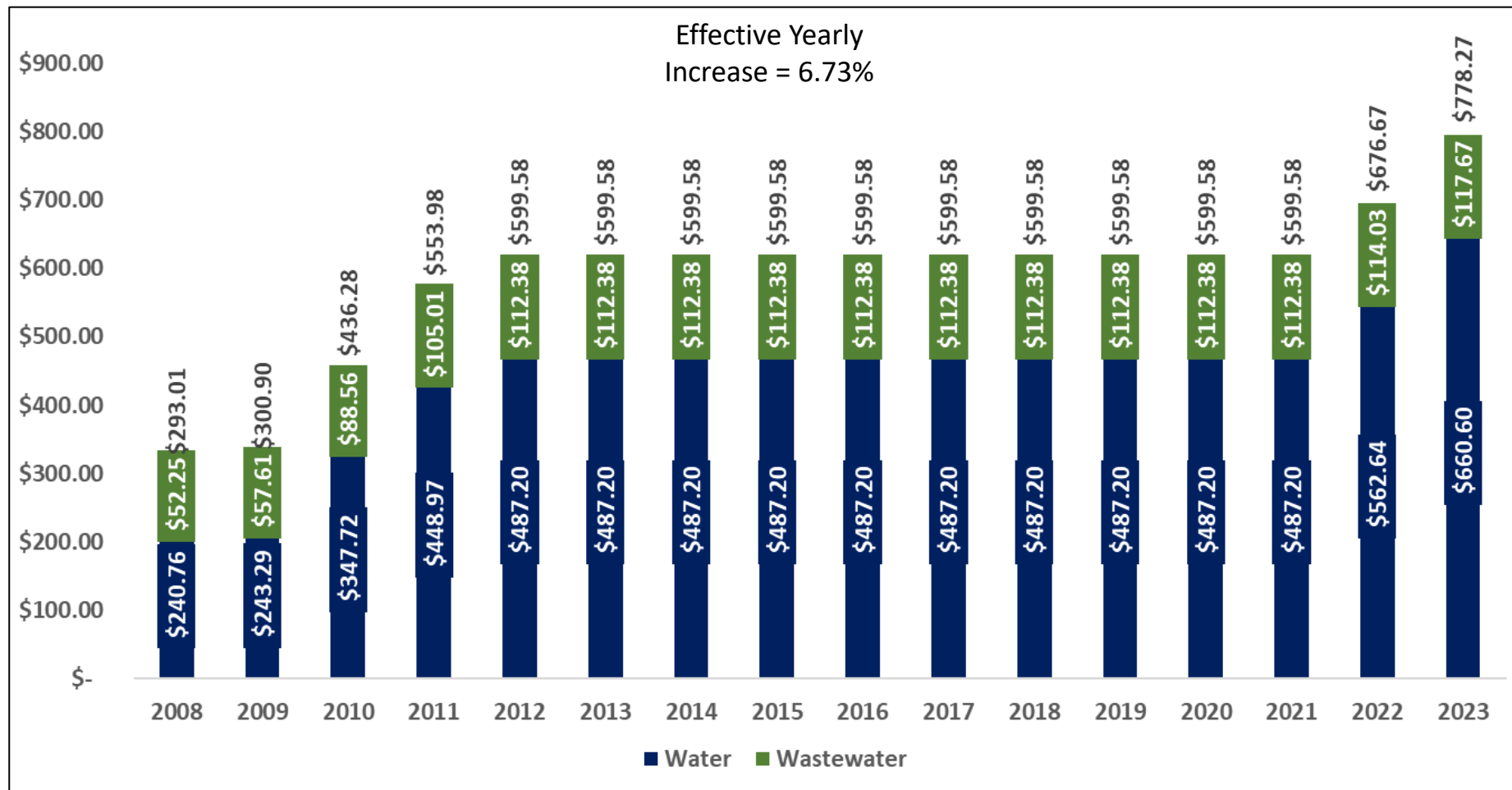
BILL HISTORY – 7,000 GALLONS



BILL HISTORY – 12,000 GALLONS



BILL HISTORY – 50,000 GALLONS



RATE ACTION IN 2022

- In December 2022, City took rate action for the first time since 2012
- Key Changes:
 - Ft. Worth wholesale charges separated as a unique surcharge and adjusted to reflect current costs
 - Water Rate Design amended – reduction of water rate tiers to simplify structure
 - Sewer Rate design amended – phase-in plan for conversion to winter average billing
 - End of \$330,000 Property Tax Subsidy to the Utility

PROPERTY TAX OFFSET

- Previously Offset Debt with \$330,000 in Property Tax Revenue
- Tax Revenue Now Being Used for General Fund Capital Projects
- Water and Wastewater Rates Had to Increase to Cover That Offset
 - Approximately \$19.21 Increase to 7,000 Gallon Water and Wastewater Bill in FY 2022

QUESTIONS

When is our water contract with the City of Fort Worth expiring?

- City of Fort Worth: September 30, 2031

Who is responsible for signing the current agreement for water with the City of Fort Worth?

- City of Fort Worth: The Mayor at the time signed the current contract

QUESTIONS

How are we negotiating a lower rate for water with the City of Fort Worth now that we are growing in size?

- The rate is not subject to negotiation. Fort Worth conducts a water rate study every year under the agreed-to methodology, and the rate is a product of that study. It is a uniform wholesale contract. All customers of Fort Worth are subject to the same methodology and same rates/rate structure.

QUESTION

Can you please share profit structure/rate of any entity that is profiting from our water rates?

- The City is a not-for-profit entity. While it must generate sufficient money to meet its financial metrics, any extra funds generated go towards maintaining adequate financial reserves, funding capital investment, and maintaining the financial stability of the business
- The City does pay the City of Ft. Worth for Wholesale Water. This rate is set by contract and includes a rate of return equal to the City's weighted average cost of debt plus 1.50%. For FY 2022 and FY 2023, the return was 5.59% and 5.50%, respectively.
- The City has an upcoming payment of approximately \$3.5 million to Fort Worth for additional water allocation to accommodate growth.

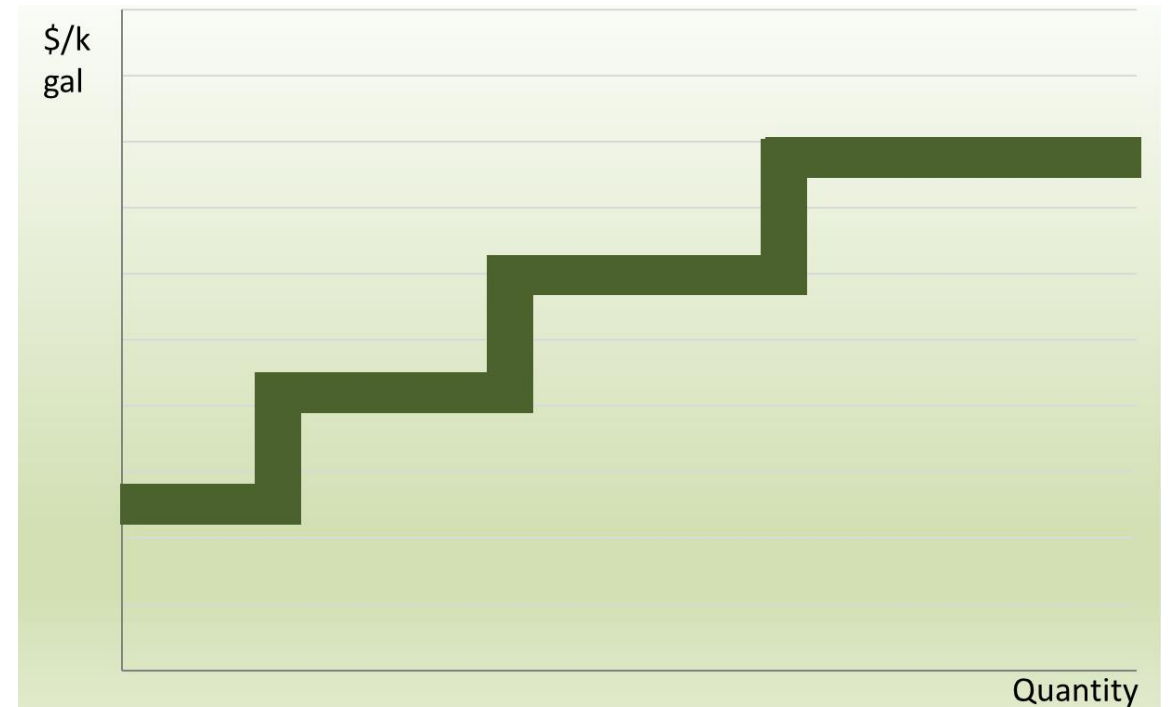
WATER RATE CHANGES IN 2022

ORDINANCE RATE PLAN - WATER

Residential	Effective 2011	Effective 1/15/2022	Effective 10/1/2022	Effective 10/1/2023	Effective 10/1/2024
Meter Size (includes 2,000 gal)					
¾" or less	\$ 27.15	\$ 32.31	\$ 35.06	\$ 38.39	\$ 41.17
1 "	67.87	80.77	87.64	95.96	102.91
1 ½"	135.74	161.54	175.29	191.94	205.84
2"	217.18	258.46	280.46	307.10	329.34
3"	407.22	484.61	525.86	575.81	617.51
4"	678.70	807.69	876.43	959.67	1,029.16
Volumetric Charge (000s)					
2,000–2,999	\$ 1.00				
3,000–6,999	5.84				
7,000–11,999	6.76				
12,000–16,999	7.67				
17,000–29,999	8.58				
30,000–59,999	12.60				
60,000–89,999	16.62				
90,000+	24.67				
2,000-6,999		\$ 2.62	\$ 3.54	\$ 4.14	\$ 4.66
7,000-11,999		4.37	5.60	6.42	7.13
12,000-19,999		6.64	8.28	9.39	10.35
20,000-49,999		9.59	11.76	13.24	14.53
50,000+		13.42	16.28	18.24	19.95
Purchased Water Pass-Through		\$ 3.22	\$ 3.35	\$ 3.49	\$ 3.62

INCLINING BLOCK RATE STRUCTURE

- Designed to send a pricing signal that encourages conservation
 - Unit rate increases with higher levels of use
- TWDB Funding requires a rate / pricing structure that does not “encourage use”
- Requires careful monitoring of overall revenue stability



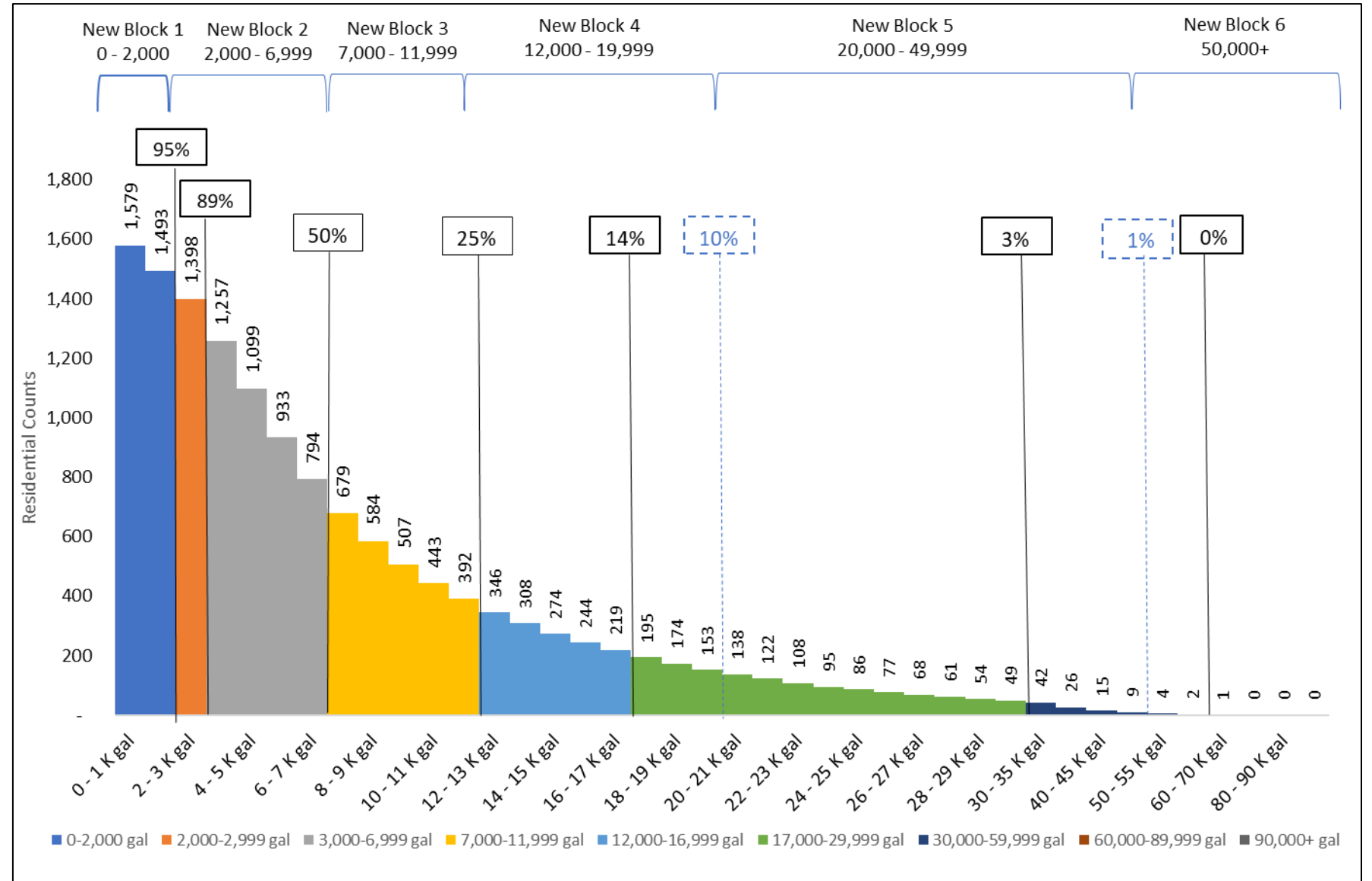
WATER BILL CALCULATION – FY 2023 RATES

	Rates	3,000 Gallon Usage		7,000 Gallon Usage		12,000 Gallon Usage	
		Volumes (kgal)	Charges	Volumes (kgal)	Charges	Volumes (kgal)	Charges
Meter Size – ¾" (includes 2,000 gal)	\$ 35.06	2,000	\$ 35.06	2,000	\$ 35.06	2,000	\$ 35.06
Volumetric							
2,000-6,999	\$ 3.54	1,000	\$ 3.54	5,000	\$ 17.70	5,000	\$ 17.70
7,000-11,999	5.60	0	0.00	0	0.00	5,000	28.00
12,000-19,999	8.28	0	0.00	0	0.00	0	0.00
20,000-49,999	11.76	0	0.00	0	0.00	0	0.00
50,000+	16.28	0	0.00	0	0.00	0	0.00
Purchased Water Pass-Through	3.35	1,000	3.35	5,000	16.75	10,000	33.50
Total Volumetric			\$ 6.89		\$ 34.45		\$ 79.20
Total Charges			\$ 41.95		\$ 69.51		\$ 114.26
Wholesale Percentage			8%		24%		29%

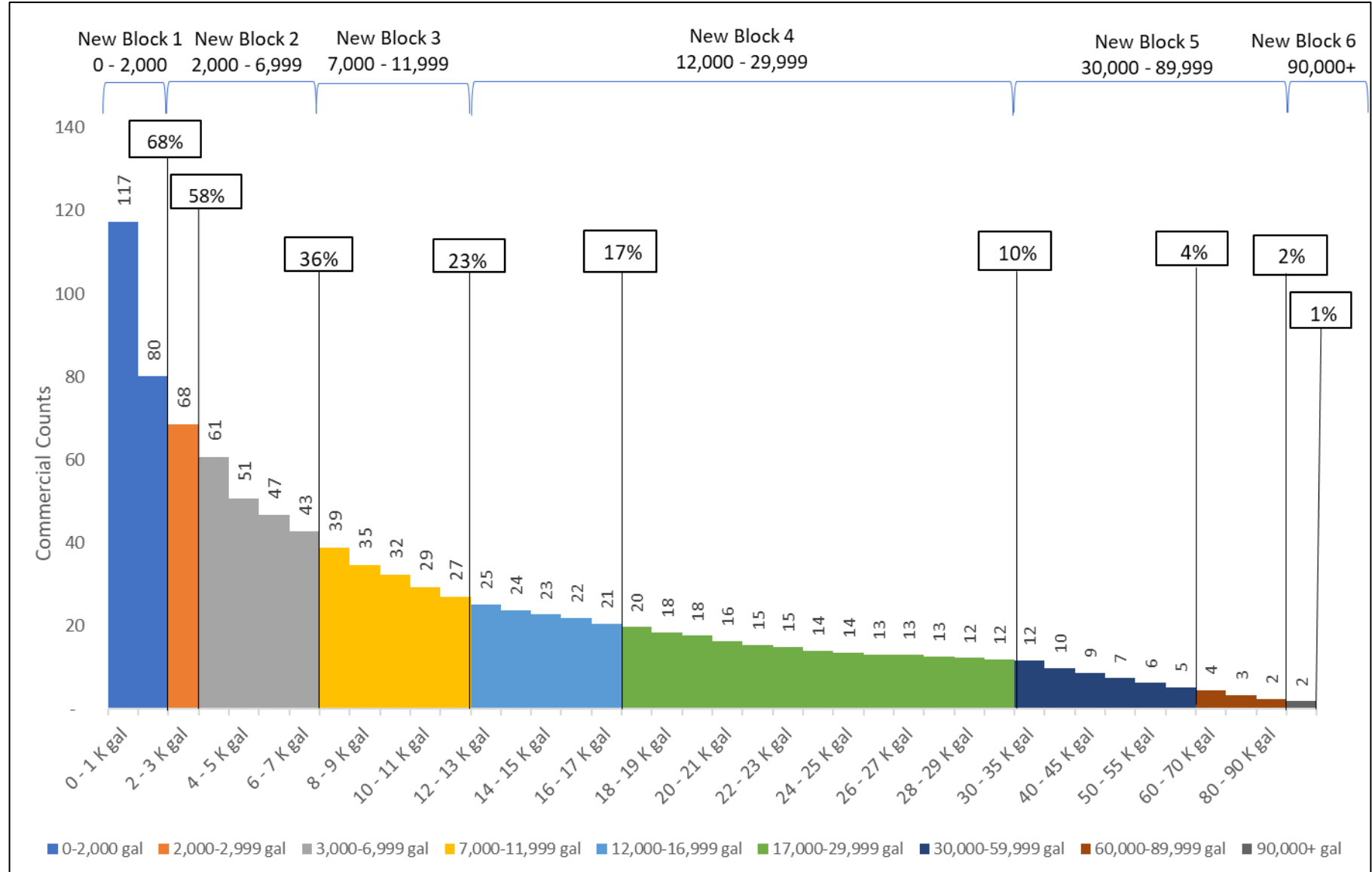
WATER BILL CALCULATION – FY 2023 RATES (LARGE VOLUMES)

	Rates	117,750 Gallon Usage		86,570 Gallon Usage		57,530 Gallon Usage	
		Volumes (kgal)	Charges	Volumes (kgal)	Charges	Volumes (kgal)	Charges
Meter Size – ¾" (includes 2,000 gal)	\$ 35.06	2,000	\$ 35.06	2,000	\$ 35.06	2,000	\$ 35.06
Volumetric							
2,000-6,999	\$ 3.54	5,000	\$ 17.70	5,000	\$ 17.70	5,000	\$ 17.70
7,000-11,999	5.60	5,000	28.00	5,000	28.00	5,000	28.00
12,000-19,999	8.28	8,000	66.24	8,000	66.24	8,000	66.24
20,000-49,999	11.76	30,000	352.80	30,000	352.80	30,000	352.80
50,000+	16.28	67,750	1,102.97	34,570	562.80	5,530	90.03
Purchased Water Pass-Through	3.35	115,750	387.76	84,570	283.31	55,530	186.03
Total Volumetric			\$ 1,955.47		\$ 1,310.85		\$ 740.80
Total Charges			\$ 1,990.53		\$ 1,345.91		\$ 775.86
Wholesale Percentage			19%		21%		24%

RESIDENTIAL FREQUENCY DISTRIBUTION



COMMERCIAL FREQUENCY DISTRIBUTION



WATER TIER STRUCTURE CHANGES IMPLEMENTED LAST YEAR

Residential	
0-2,000	0-2,000
2,000-2,999	2,000-6,999
3,000-6,999	
7,000-11,999	7,000-11,999
12,000-16,999	12,000-19,999
17,000-19,999	
20,000-29,999	20,000-49,999
30,000-49,999	
50,000-59,999	
60,000-89,999	50,000+
90,000+	
9 Tiers	6 Tiers

Commercial & Sprinkler	
0-2,000	0-2,000
2,000-2,999	2,000-6,999
3,000-6,999	
7,000-11,999	7,000-11,999
12,000-16,999	12,000-29,999
17,000-29,999	
30,000-59,999	30,000-89,999
60,000-89,999	
90,000+	90,000+
9 Tiers	6 Tiers

QUESTION

Is there any opportunity to modify the current tiering structure so that there are more incremental tiers that would encourage more reasonable conservation efforts?

- Yes. However, Council recently reduced the number of rate tiers to simplify the administration of the structure and make customer bills more understandable
- Most local communities utilize a 4-tier structure, and the general industry trend is to move to less tiers, not more

COMPARISON OF RATE STRUCTURES

Entity	Number of Water Tiers	Gallons Included in Minimum - Water	Gallons Included in Minimum - Sewer	Winter Average	Sewer Cap
Aledo	6	2,000	2,000	In Conversion	Yes – 12,000
Azle	7	2,057	0	Yes	No
Benbrook Water	9	2,992	0	Yes	Yes – 11,844
Deer Creek Water	7	1,000	N/A	N/A	N/A
Dyegard	4	0	N/A	N/A	N/A
Fort Worth	4	0	0	Yes	No
Granbury	4	0	0	No	No
Hudson Oaks	4	0	0	Yes	No
Lakes of Aledo	4	0	0	Yes	No
Parker County SUD	5	0	N/A	N/A	N/A
Springtown	4	0	0	Yes	No
Weatherford	4	0	2,992	Yes	Yes – 14,960
White Settlement	5	2,000	2,000	No	Yes – 14,000
Willow Park	4	0	0	Yes	No

SEWER RATE CHANGES IN 2022

ORDINANCE RATE PLAN – SEWER

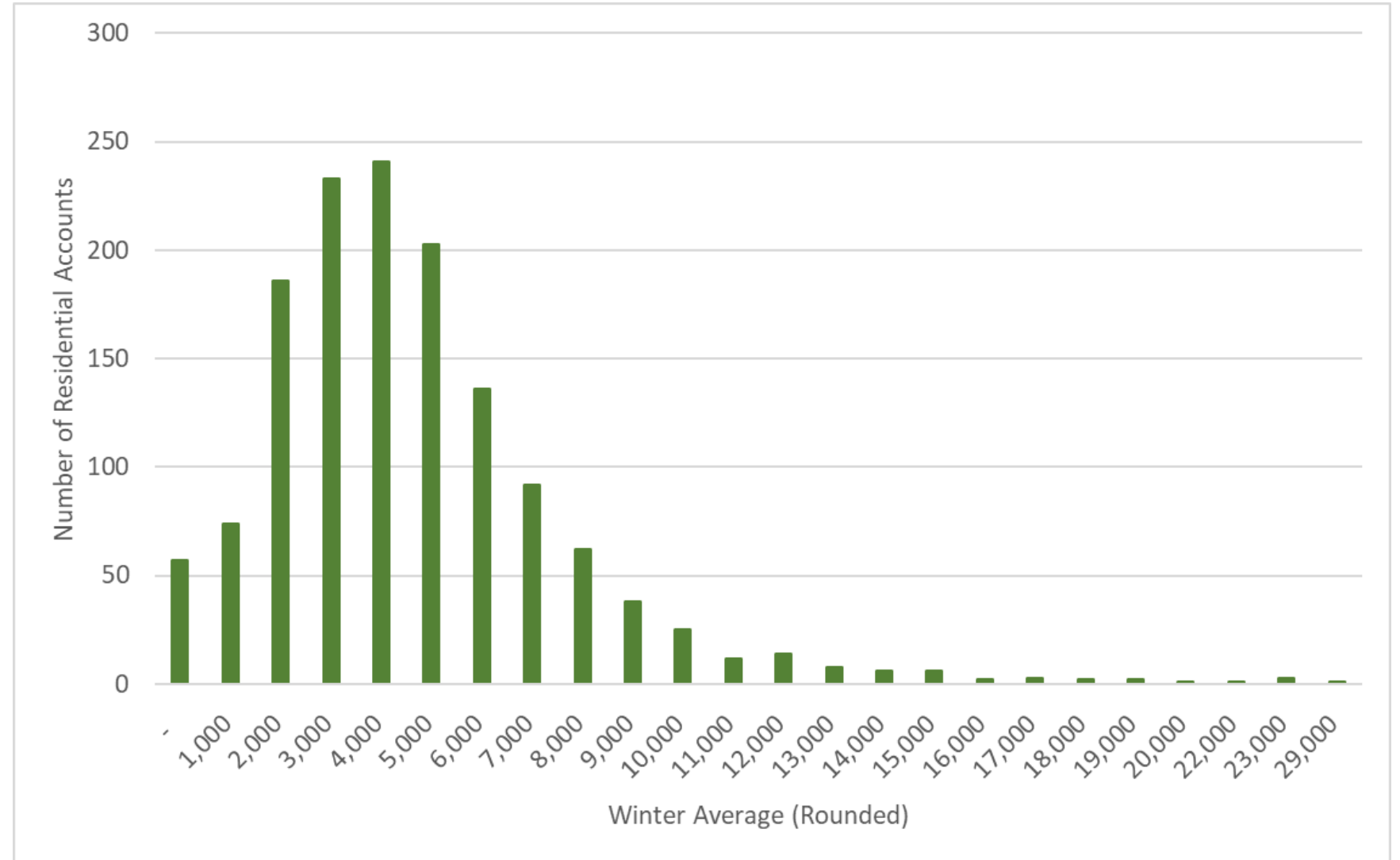
Residential	Effective 2011	Effective 1/15/2022	Effective 10/1/2022	Effective 10/1/2023	Effective 10/1/2024
Meter Size (includes 2,000 gal)	\$ 30.00	\$ 34.35	\$ 38.47	\$ 42.22	\$ 47.18
Volumetric Charge (000s)					
2,000-2,999	\$ 1.00	\$ 6.64	\$ 7.92	\$ 9.46	\$ 10.97
3,000–9,999	6.26	6.64	7.92	9.46	10.97
10,000-11,999	6.26	6.64	7.92	0.00	10.97
12,000-13,999	6.26	6.64	0.00	0.00	10.97
14,000-15,999	6.26	0.00	0.00	0.00	10.97
16,000+	0.00	0.00	0.00	0.00	10.97
Winter Average?	No	No	No	No	Yes

SEWER BILLING METHODOLOGIES

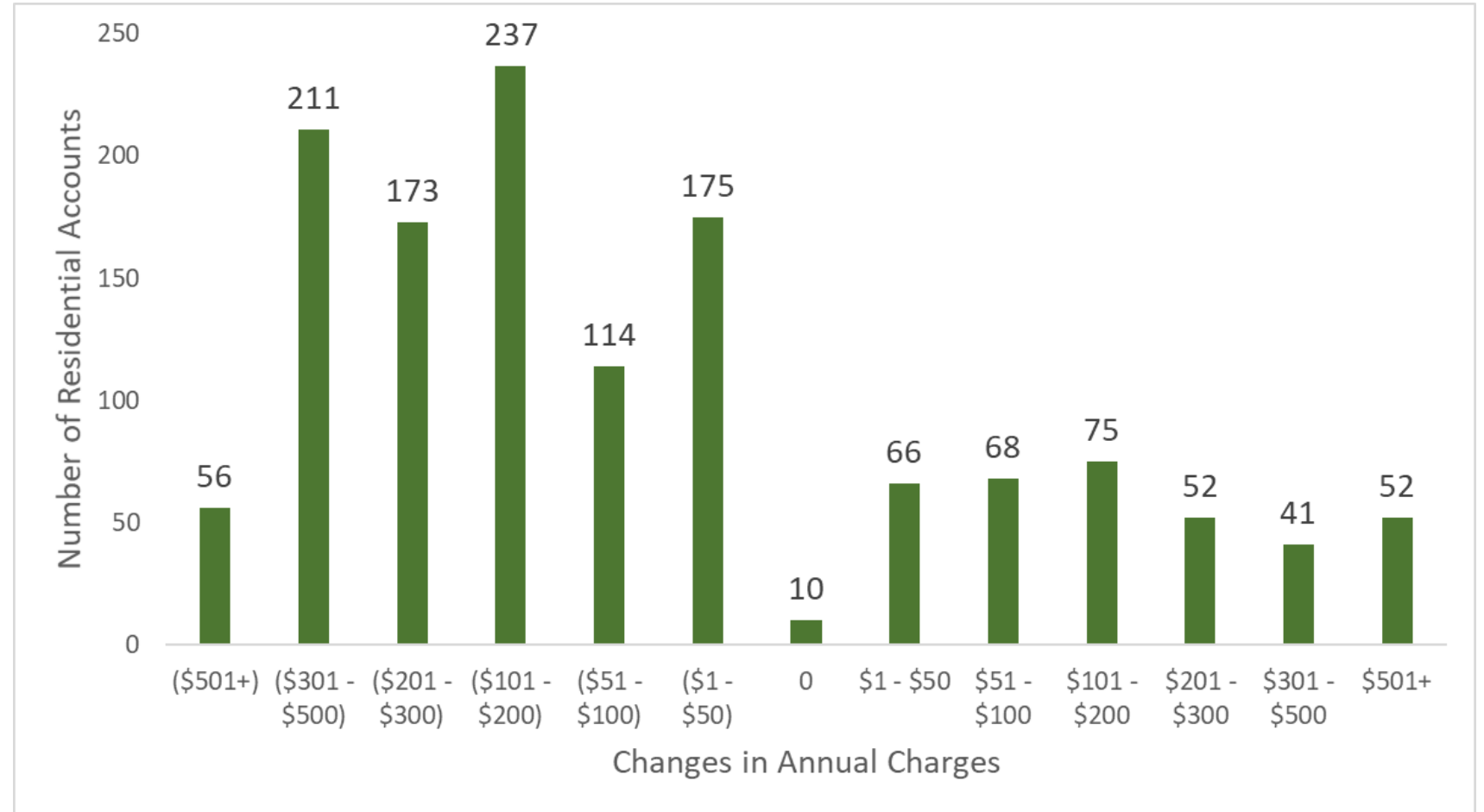


- Given that sewer flow is not metered, two methods are available to bill for sewer service:
 - Winter Average Water Use
 - Actual water use during the month up to a cap
- Two goals underly these methods:
 - Billed sewer flow should be reasonably approximate to the actual flow into the system and take into account the impact of irrigation
 - Sewer rates can also be used to encourage water conservation by encouraging efficient water use
- **Use of a winter average reduces billed units, requiring an increase in the unit rate**

WINTER AVERAGE HISTOGRAM (Rounded)



ANNUAL CHARGES IMPACT HISTOGRAM



73% of Customers would see decreases in Annual Charges

27% of Customers would see increases in Annual Charges

ANNUAL CHARGES IMPACT

	No. of Residential Customers	% of Residential Customers
Reduced Annual Charges	966	72.63%
No Change in Annual Charges	10	0.75%
Increase in Annual Charges	354	26.62%
Largest Change in Annual Charges		
Largest Reduction	(\$ 784.64)	
Largest Increase	\$ 1,419.13	
Median Change	(\$ 104.17)	
Average Change	(\$ 84.65)	

WINTER AVERAGING CONCLUSIONS

- Customers are impacted differently based on winter averaging
- Some will see bills go down; other bills will go up
 - Greatest increase on those with consistently higher water use
 - Most likely larger homes with more occupants
- Significant risk of customer response after switch



PHASE-IN APPROACH



- Reduce cap on sewer bill as rate is slowly increased
- Reevaluate annually based on customer use and adjust cap slowly
 - Mitigates rate shock
 - Would become part of annual rate review
- Fully switch to winter averaging when customer impact is minimized

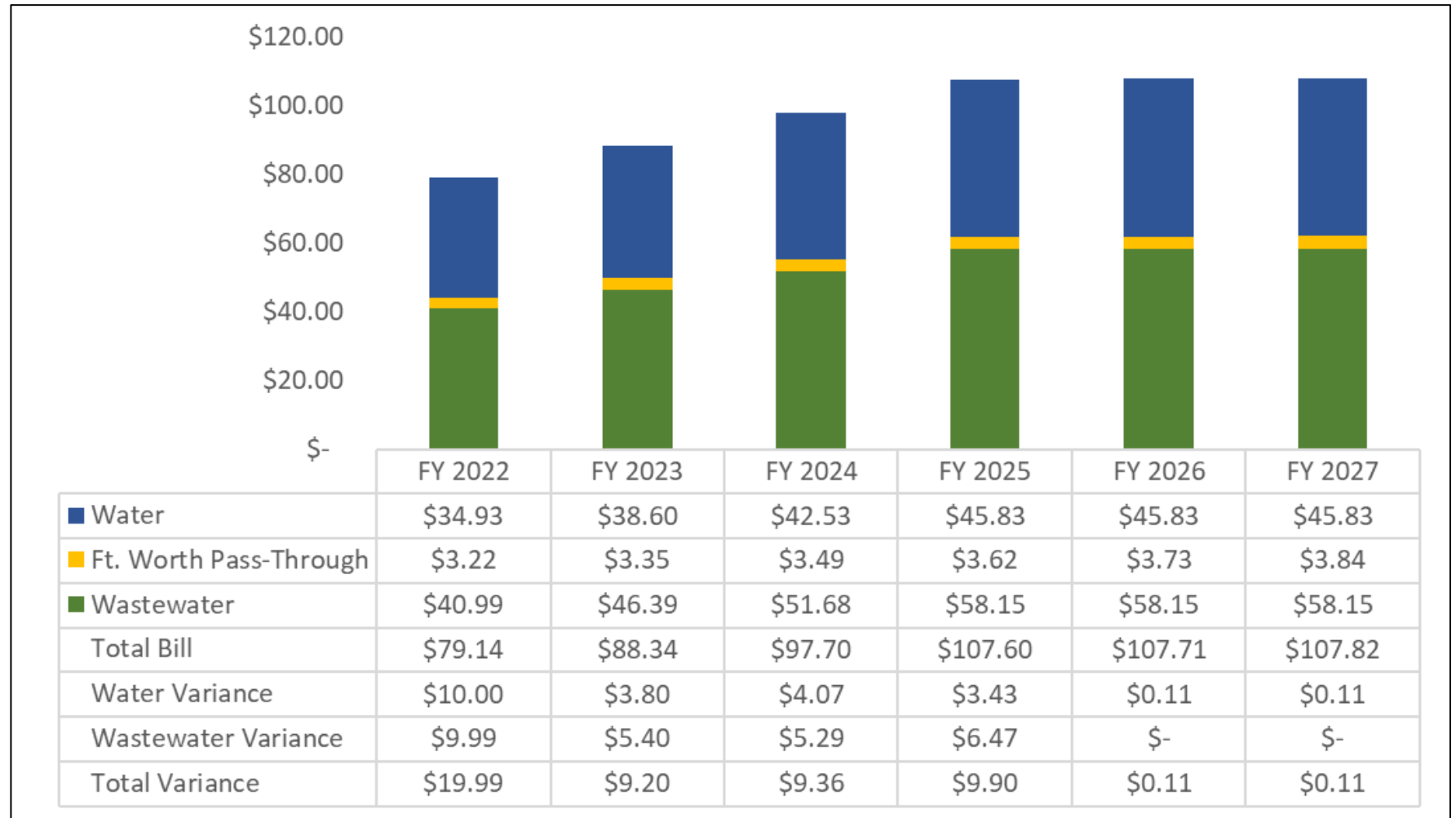
PROJECTED BILLS UNDER CURRENT ORDINANCE

BILL IMPACTS

Residential

3,000 gallons

Current Ordinance

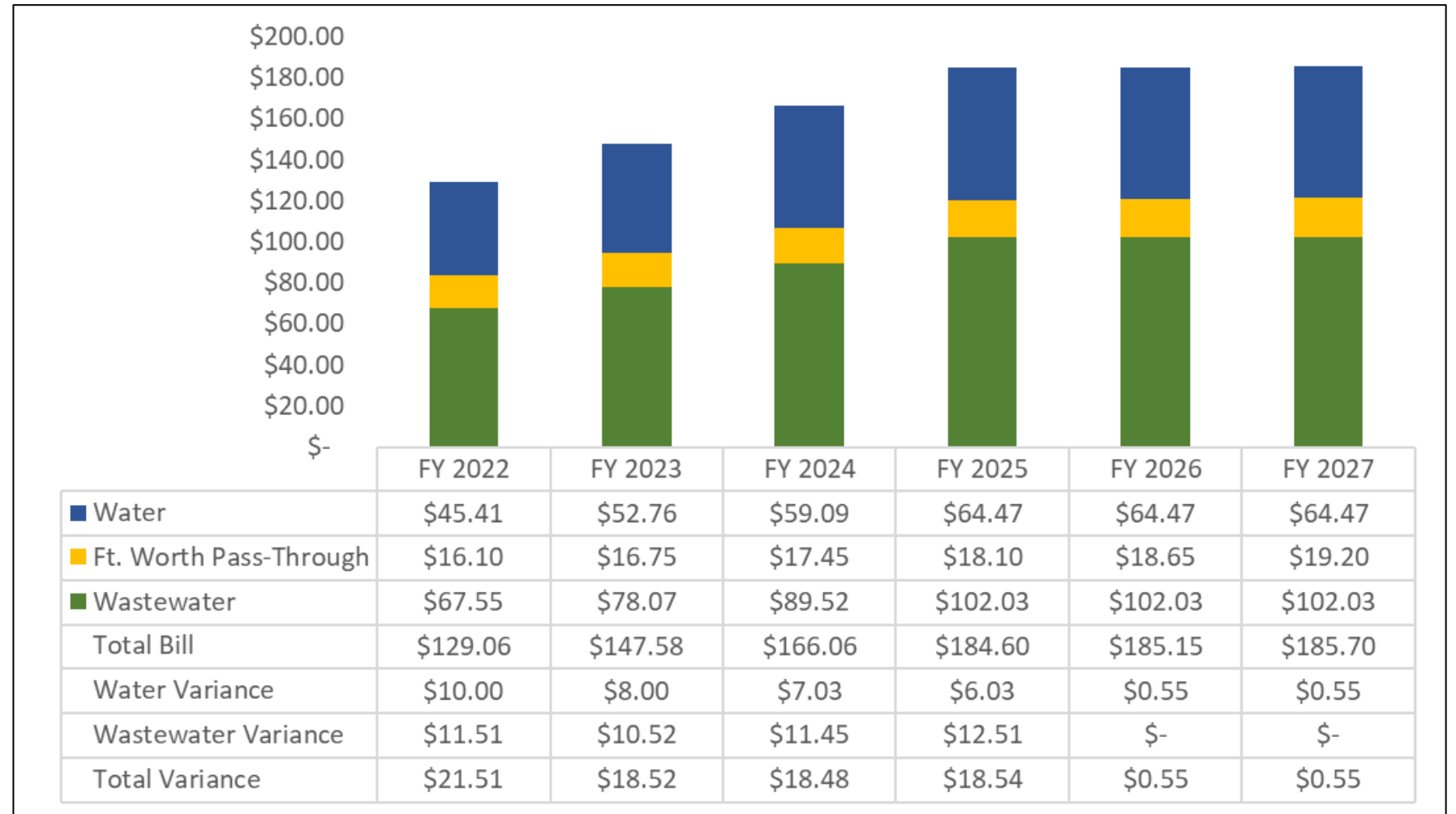


BILL IMPACTS

Residential

7,000 gallons

Current Ordinance

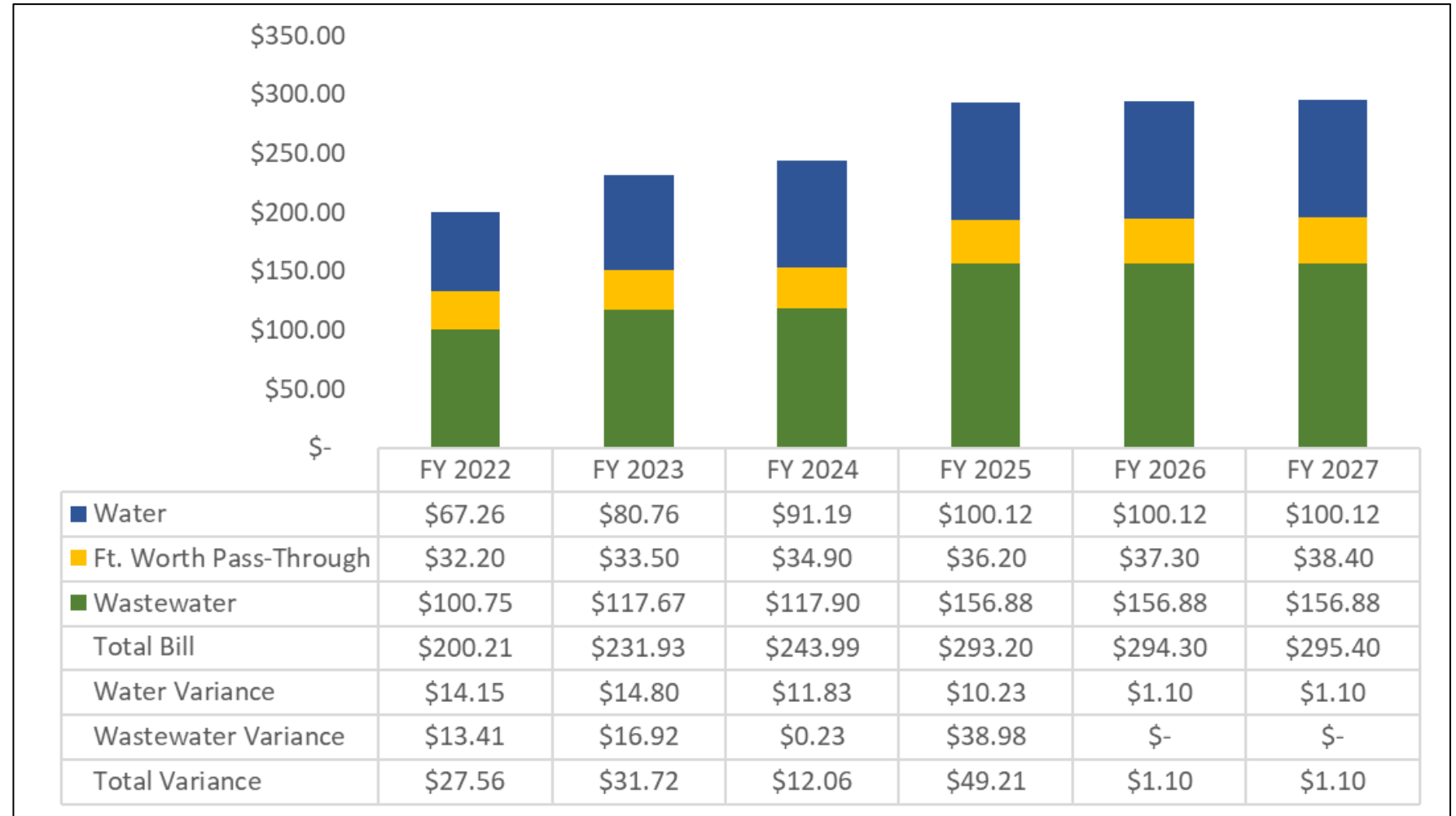


BILL IMPACTS

Residential

12,000 gallons

Current Ordinance



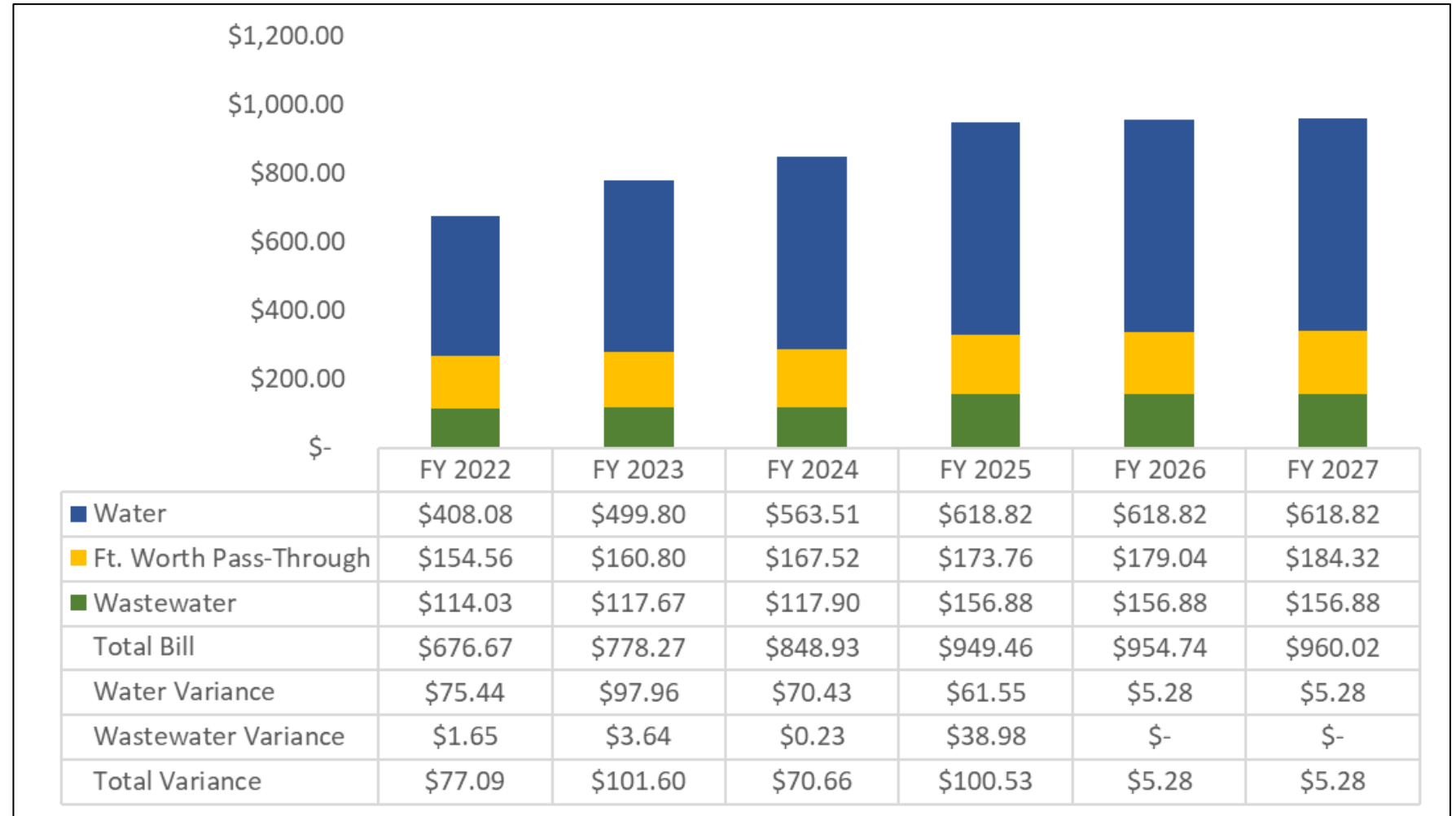
BILL IMPACTS

Residential

50,000 gallons

12,000 Winter
Average Assumed
Starting in FY 2025

Current Ordinance



HOW ARE UTILITY RATES SET?

UTILITY RATE-SETTING

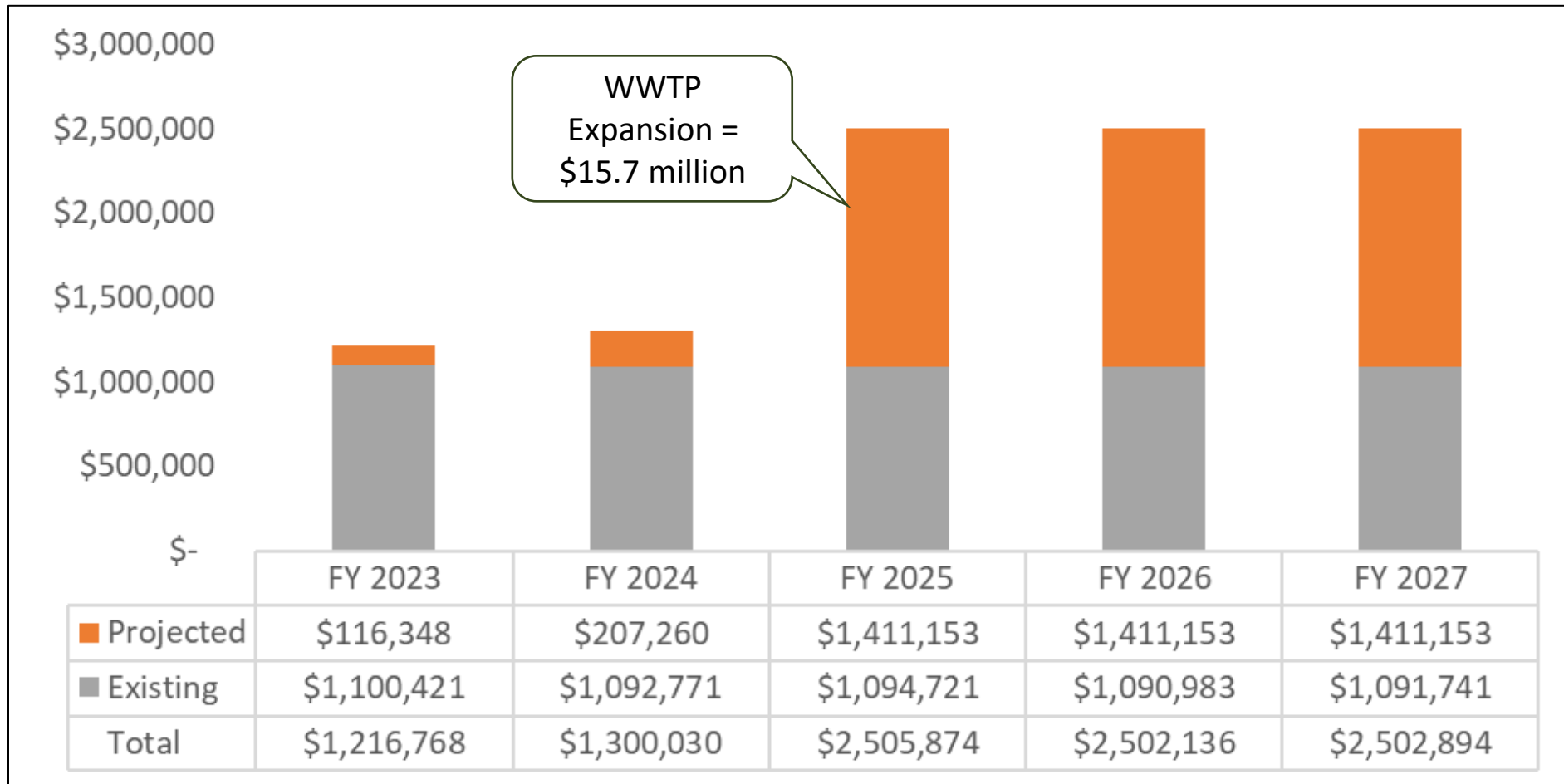
- Rates are set based on the most recently approved budget by Council
 - The budget document sets out the financial needs of the utility, and rates are set to recover these dollars
 - It covers operations and maintenance expense, payments to wholesale providers, debt service payments, and capital expenditures
- The City must also meet other financial obligations
 - Texas Water Development Board
 - City of Ft. Worth

CITY OBLIGATIONS

Revenues must:

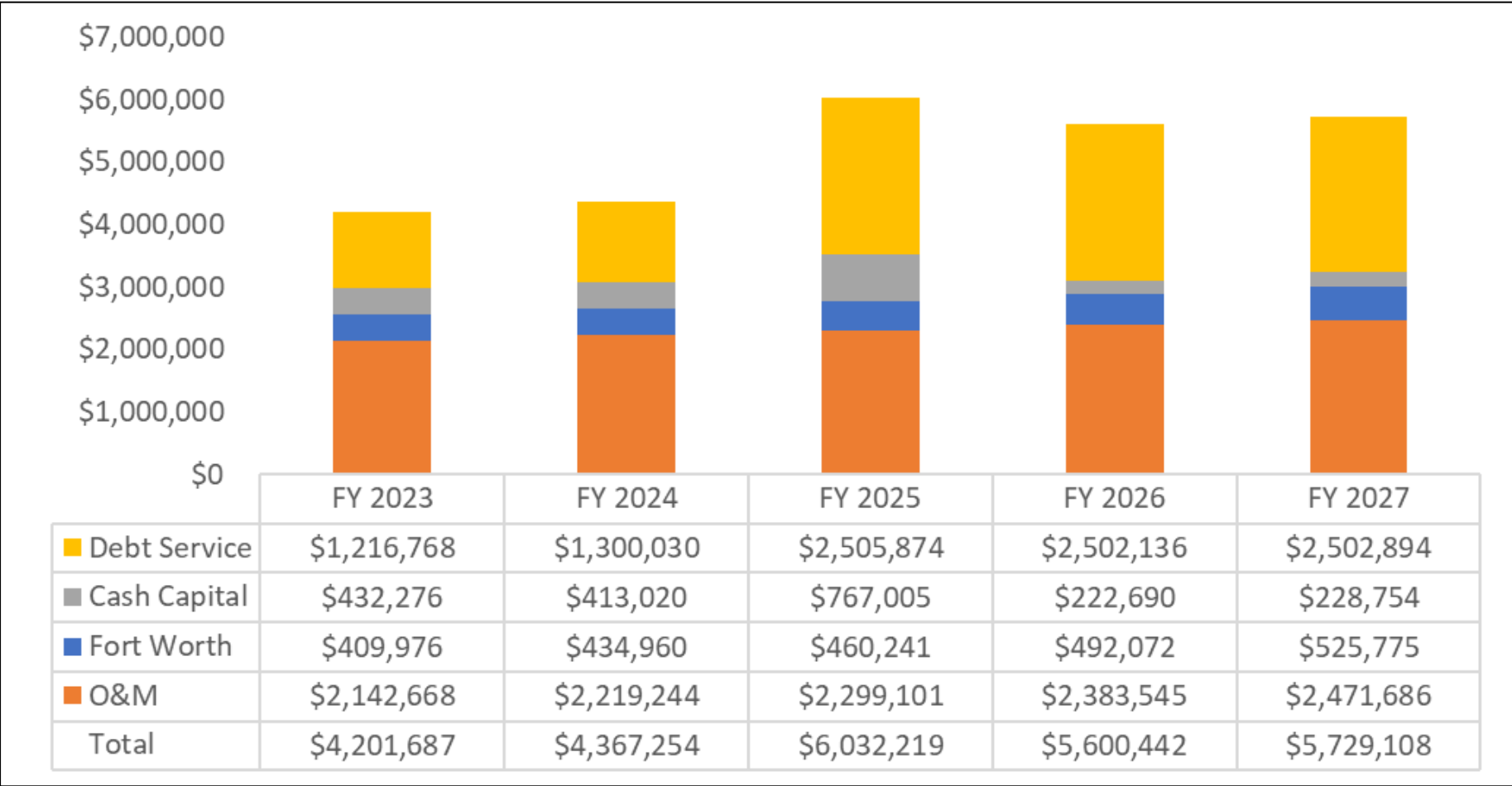
- Cover the cost of providing service
 - Includes the non-negotiable cost of wholesale service from Ft. Worth as well as the City's internal cost
 - Compensation to Ft. Worth comes before the payment of debt
- Be sufficient to produce gross revenues, net of operating and maintenance expenses, which are equal to 1.1 times the annual debt service payment
 - Calculation can consider all legally available funds
 - 1.1x is required by Texas Water Development Board

PROJECTED DEBT



Costs of WWTP Expansion was from FY 2022. The actual cost is expected to be closer to \$24 million.

PROJECTED EXPENSES



HISTORICAL UTILITY CASH PERFORMANCE

	FY 2018	FY 2019	FY 2020
Cash provided from Operating Activities	\$ 1,517,725	\$ 1,276,438	\$ 1,280,417
Other Cash Inflow / (Outflow):			
Principal Payments	(572,381)	(562,383)	(1,860,000)
Interest Payments and Amortization	(444,357)	(408,592)	(591,469)
Interest on Investments	71,610	121,875	52,569
Subtotal (Cash from Rate Performance)	\$ 572,597	\$ 427,338	(\$1,118,483)
Add: Property Tax Support	\$ 350,690	\$ 328,617	\$ 329,470
Deduct: Payment for Administrative Overhead	(130,940)	(131,935)	
Add: Debt Proceeds Net of Capital Asset Purchase (Restricted Use)	(565,509)	(188,069)	5,294,278
Add: Change in Restricted Assets	5,318		
Add: Impact Fees (Restricted Use Funds)	277,354	413,708	342,644
Net Cash Additions	\$ 509,510	\$ 849,659	\$4,847,909

IMPACT OF SUMMER 2022

2022 WEATHER FACTS

- 6th highest number of 100-degree days (47 days)
- 6th highest number of consecutive 100-degree days (21 days)
- July water use in Aledo was 66% higher than the same month in the prior year

YEAR OVER YEAR VOLUME COMPARISON



Month	Normal Rain	FY 2022 Rain
Oct	4.46	1.97
Nov	2.52	1.85
Dec	2.64	0.71
Jan	2.05	0.01
Feb	2.41	0.69
Mar	3.16	1.65
Apr	3.06	2.87
May	4.02	3.09
Jun	4.02	2.36
Jul	2.18	0.18
Aug	2.23	11.71
Sep	2.59	2.65
Total	35.34	29.74

HOW MUCH WATER DOES MY IRRIGATION SYSTEM USE?

Gallons	5 Min	10 Min	15 Min	20 Min
4 zones	3,200	6,400	9,600	16,000
5 zones	4,000	8,000	12,000	20,000
6 zones	4,800	9,600	14,400	24,000
7 zones	5,600	11,200	16,800	28,000
8 zones	6,400	12,800	19,200	32,000

Assumes watering 2x a week and 20 GPM flow

Source: <https://www.prospertx.gov/wp-content/uploads/2020/05/NEW-SPRINKLER.Irrigation.pdf>

QUESTION

In the rate structure notice, average monthly household usage was calculated at 7,000 gallons – where did this number come from?

- This average is reflective of projected Residential usage for the City as a whole. Based on historical trends and estimated growth, Residential usage was projected to be approximately 149,463,000 gallons. This consumption was estimated for 20,069 annual customers, which resulted in a 7,447-gallon average usage.
- This is reflective of the City as a whole, not a single subdivision.

REGIONAL MONTHLY BILL AND RATE COMPARISONS

COMMUNITY RATE COMPARISONS

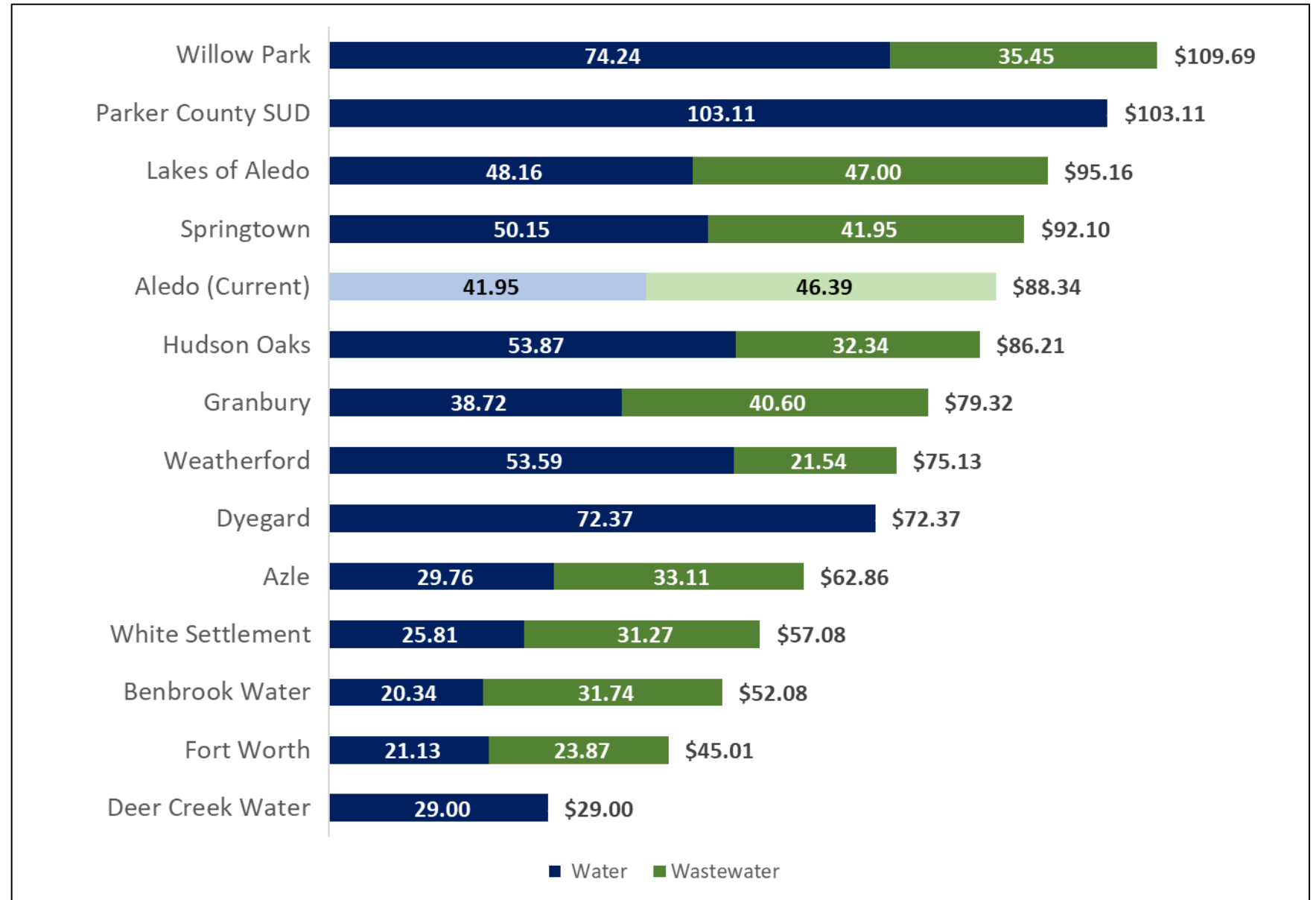


- Comparisons between communities are very common, but may not tell the whole story
- Each system is unique in geography, age of infrastructure, capital maintenance efforts, and typical usage patterns

REGIONAL BILL COMPARISONS

Residential

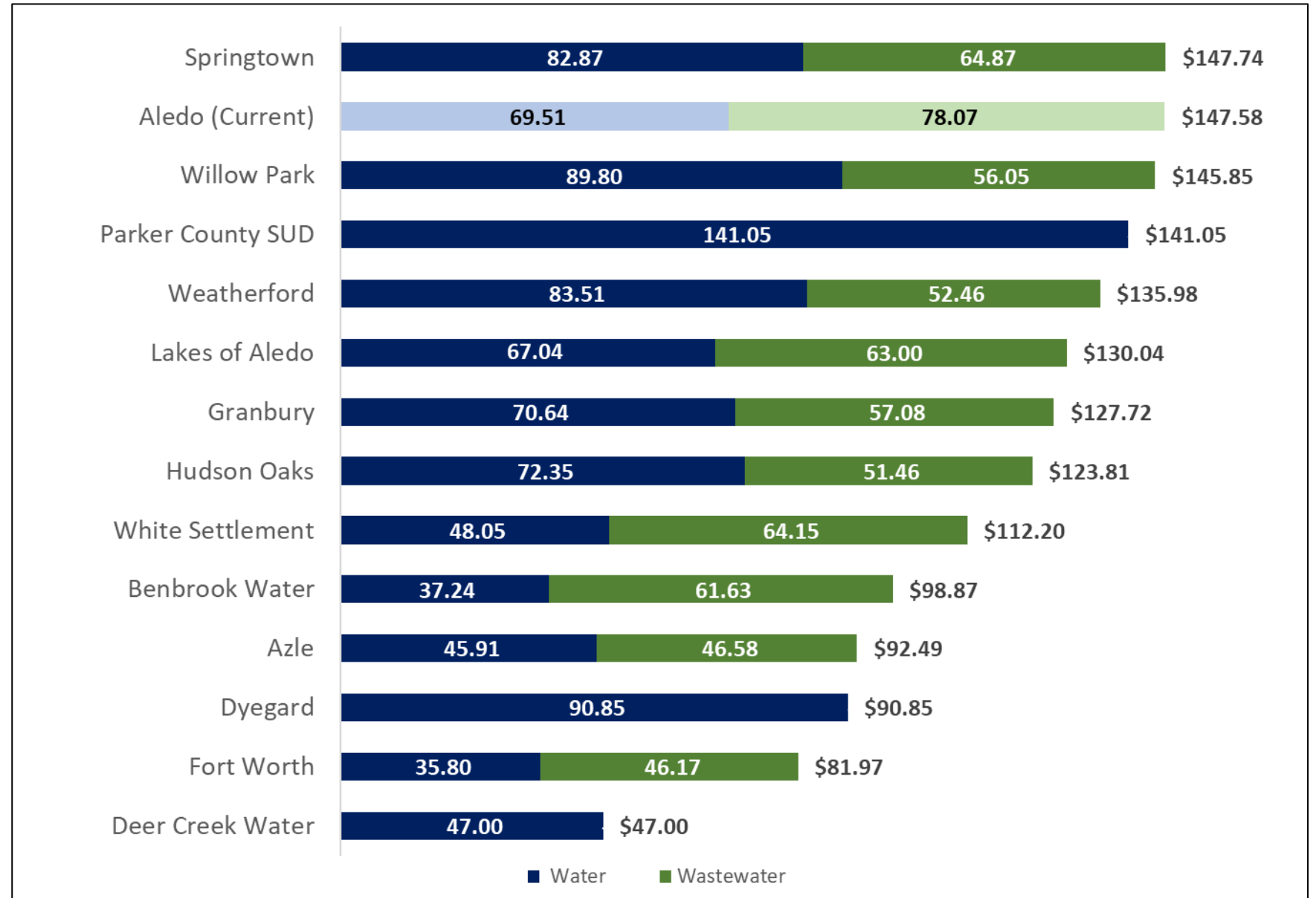
3,000 gallons



REGIONAL BILL COMPARISONS

Residential

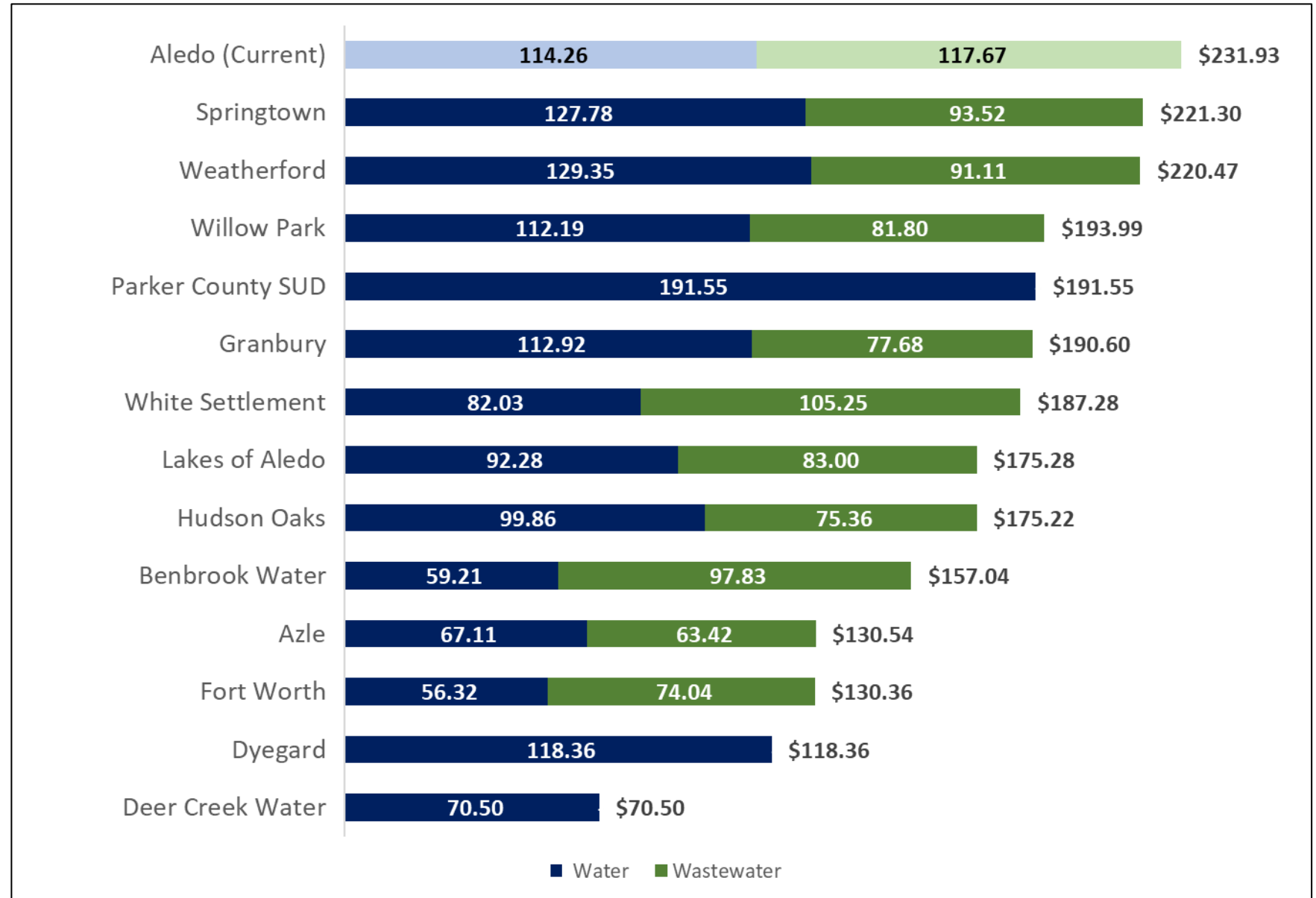
7,000 gallons



REGIONAL BILL COMPARISONS

Residential

12,000 gallons





QUESTIONS / DISCUSSION

NEWGEN STRATEGIES AND SOLUTIONS
275 W. CAMPBELL ROAD, SUITE 440
RICHARDSON, TEXAS 75080

CHRIS EKRU, CHIEF FINANCIAL OFFICER
972-232-2234
CEKRUT@NEWGENSTRATEGIES.NET