Austin Kehmeier (Unsplash)

Town of Bridgewater, MA

Water and Sewer Rate Study

July 2025

Opening Thoughts

Many Commonwealth municipalities are facing similar challenges in funding their public utilities:

- New and evolving regulatory requirements
- Rapid increase in infrastructure costs
- Growth-related service expansion
- Accommodation of State-mandated housing development goals
- Ensuring equitability between long-time residents and new customers

- Bridgewater is entering a period of significant capital investments
  - Wastewater compliance
  - Water / Wastewater capacity constraints
- Utilities are concurrently experiencing demand for growth and new sources
- This is an appropriate time to consider changes to existing practices to meet these needs, as they agree with Town goals
- Current Practices
  - Connection size-based fixed charges for water
  - Flat fixed charges for sewer
  - Multi-tier inclining rate blocks for usage in both utilities
  - Current rates will not support the needed investments in the Town's Capital Improvements Plans

Water and Sewer Rate Study at a glance

- Bridgewater engaged Raftelis to strategically address the impacts of needed system upgrades for both water and sewer utilities

1

Background & Framework

- Financial goals and policies
- Drivers

2

Financial Plan ($)

- Yearly cash needs
- Evaluation of CIP and financing options
- Cash flow analysis for financial sufficiency

3

Rate Design

- Historical consumption analysis
- Rate options modeling
- Customer impact analyses

4

Rate Adoption

- Recommendations
- Presentation
- Report
- Public information mailer

Step 1 – Identifying the revenue needed to ensure Enterprise Fund sustainability

Step 2 – Updating charges and rates to equitably generate needed revenues from the customer base

Background & Drivers

Bridgewater has begun major capital upgrade programs and wants to maintain the fiscal sustainability of both its Enterprise funded public utilities.

Major future investments required to meet evolving regulations which apply to both water and sewer utilities

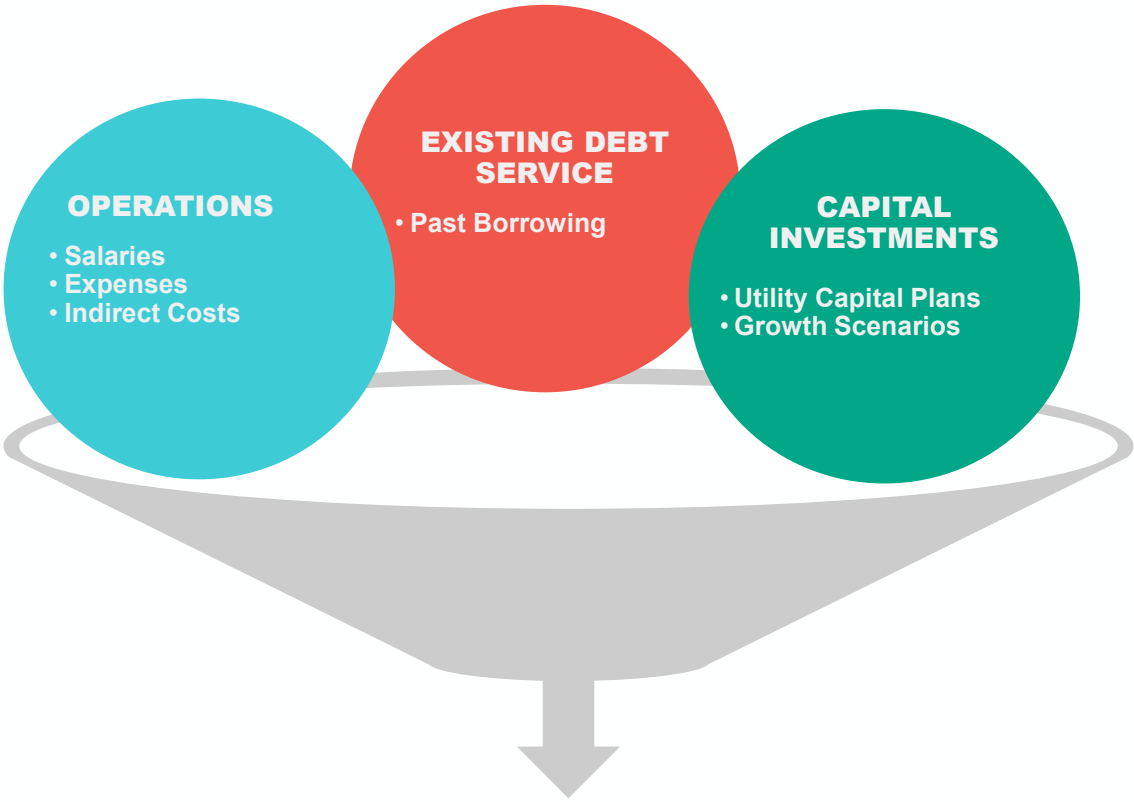
1. Water – PFAS regulations and source development
    - plus current system replacement to address breaks and water discoloration
2. Sewer – Treatment Plant - New NPDES permit requirements
    - plus on-going I/I management to maximize value of current treatment assets

Valid concerns about current systems' ability to support future growth

*ensure new connections share proportionally in expansion costs?

Financial Plan

- Rational method to identify the costs which the rates are intended to cover.
- Three primary cost categories.



Combined with Bridgewater's existing practices for reserves, these costs identify the amount of revenue the charges and rates are designed to generate

Determine the annual revenue needs for each utility to cover the full cost of service

Modeling Considerations

Cost Component	Basis
Operation & Maintenance Costs	Current and Historical Budgets; escalated in future years
Current Enterprise Fund Debt Service	Budgets, Town documentation; actual obligations
Capital Improvements Included	Water and Sewer Departments; current cost estimates escalated to anticipated year of construction
Capital Financing Assumptions	Cash financing or use of GO bonds at current rates with 20-year financing periods

Based upon evolving regulatory requirements and previously presented water and sewer capital investment needs

Capital Improvement Programs

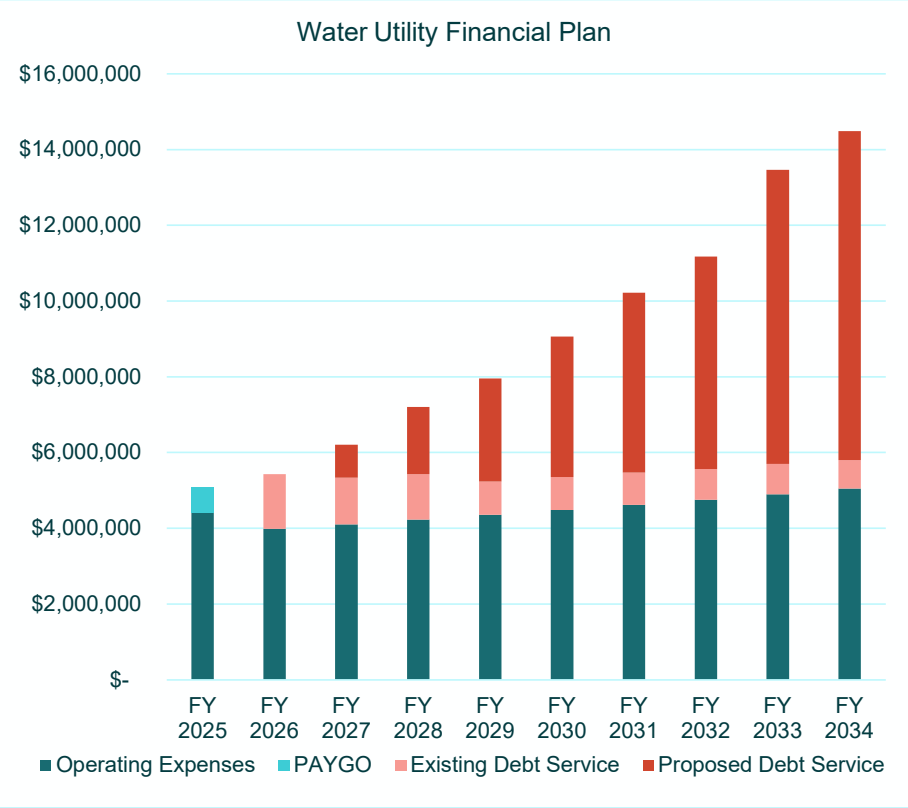
WATER DIVISION

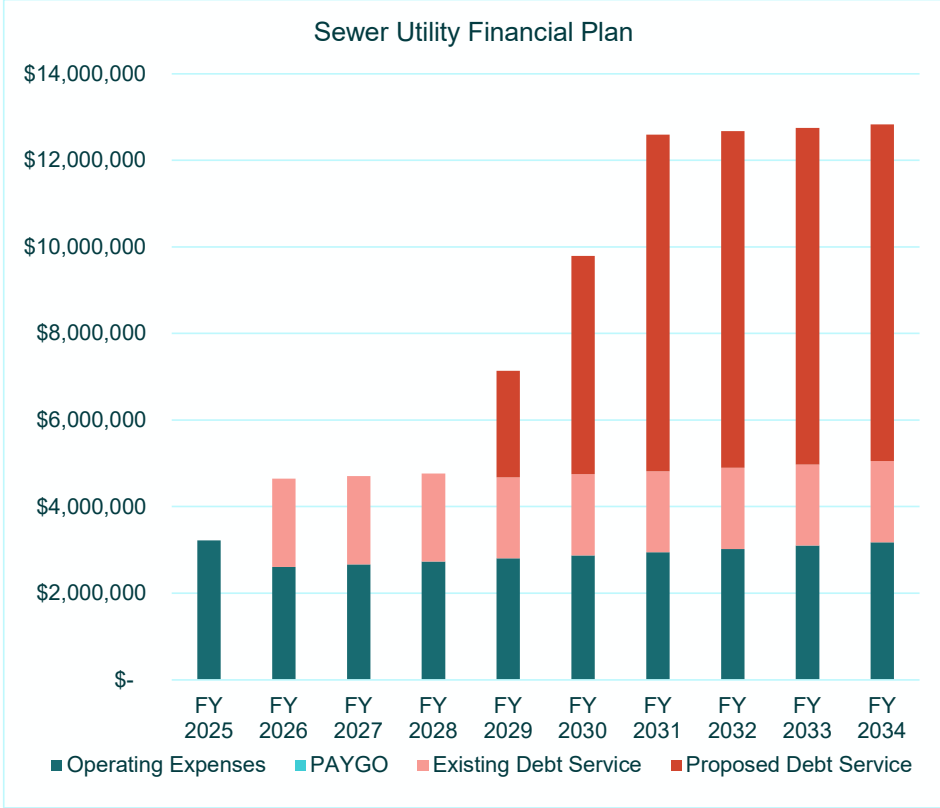
- $51.5M (2025 dollars) of planned spending in Water Fund from 2025-2029
- $65.5M (2025 dollars) of planned spending in the water Fund from 2030-2034
- $12.6M (2025 dollars) average annual capital spending on drinking water compliance/public utility compliance projects from 2026-2030

SEWER DIVISION

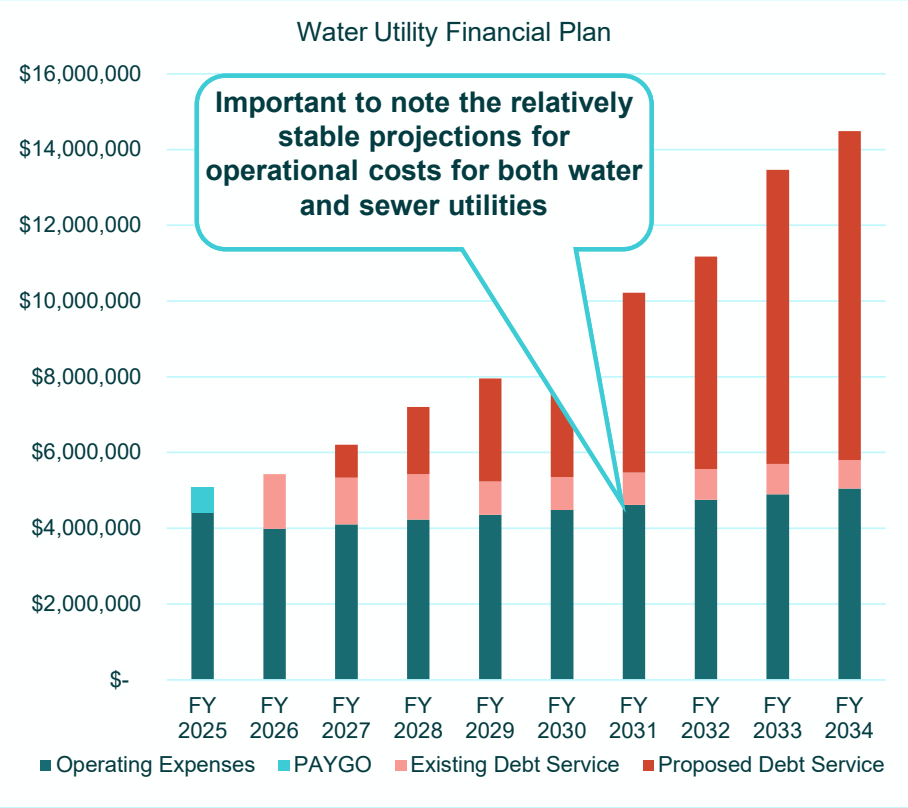
- $66M (2025 dollars) of planned spending in Sewer Fund from 2025-2029
- $33.2M (2025 dollars) of planned spending in Sewer Fund from 2030-2034
- $99M (2025 dollars) for Morris Avenue Wastewater Treatment Plant

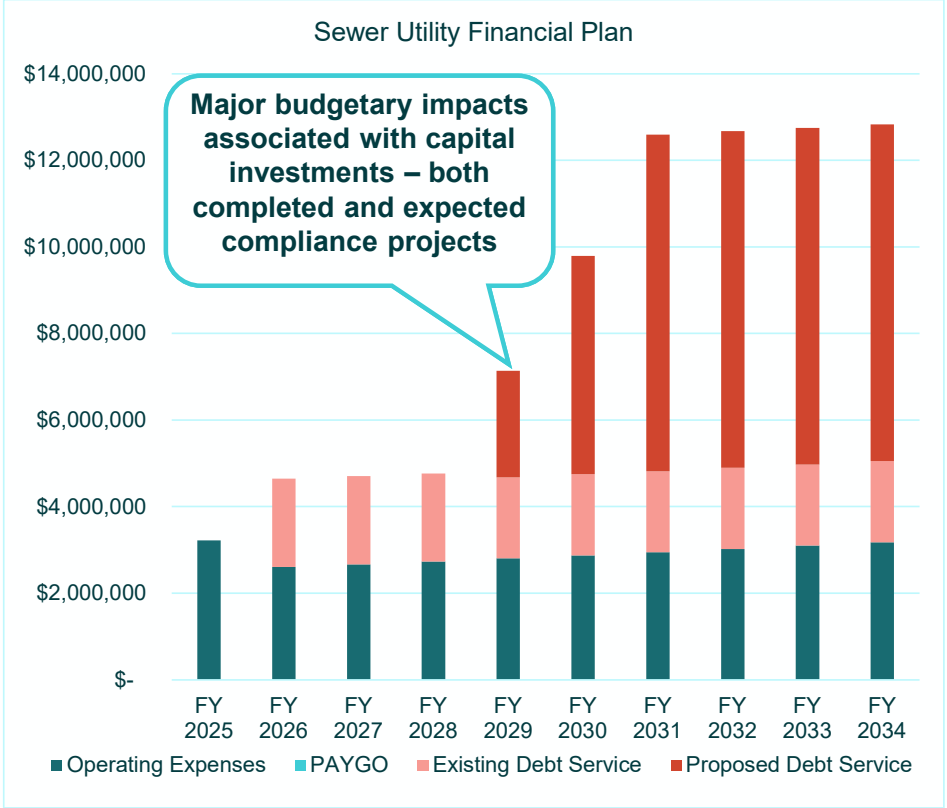
Financial Plan/Expense Projections



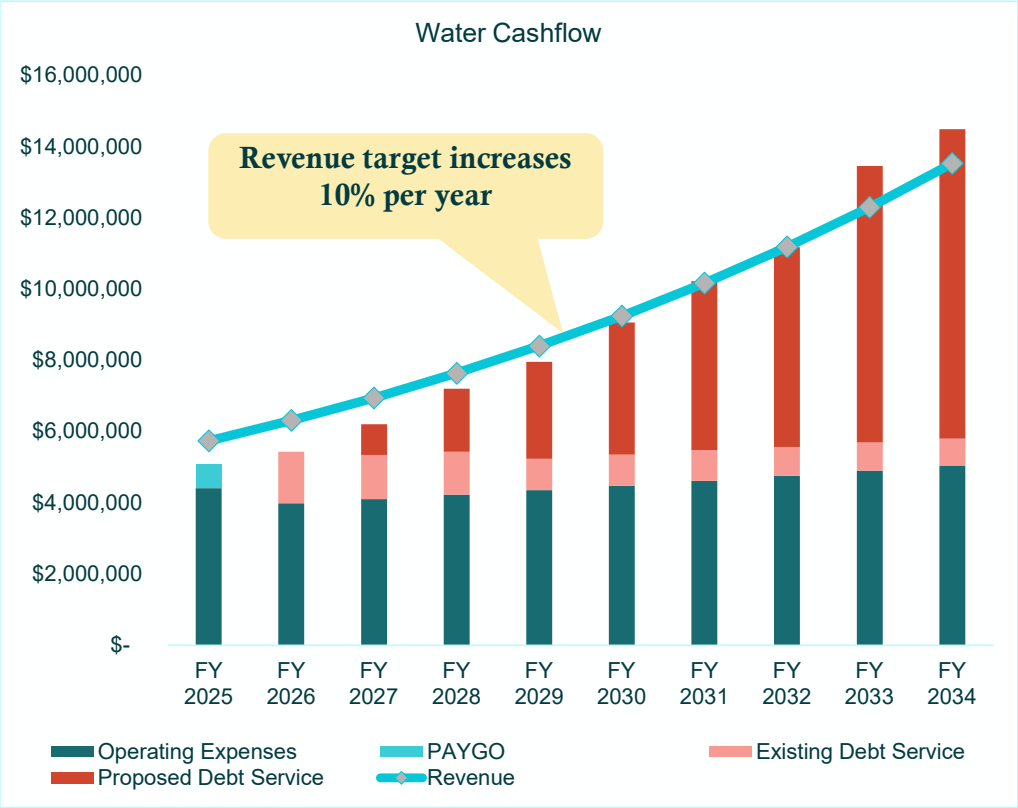


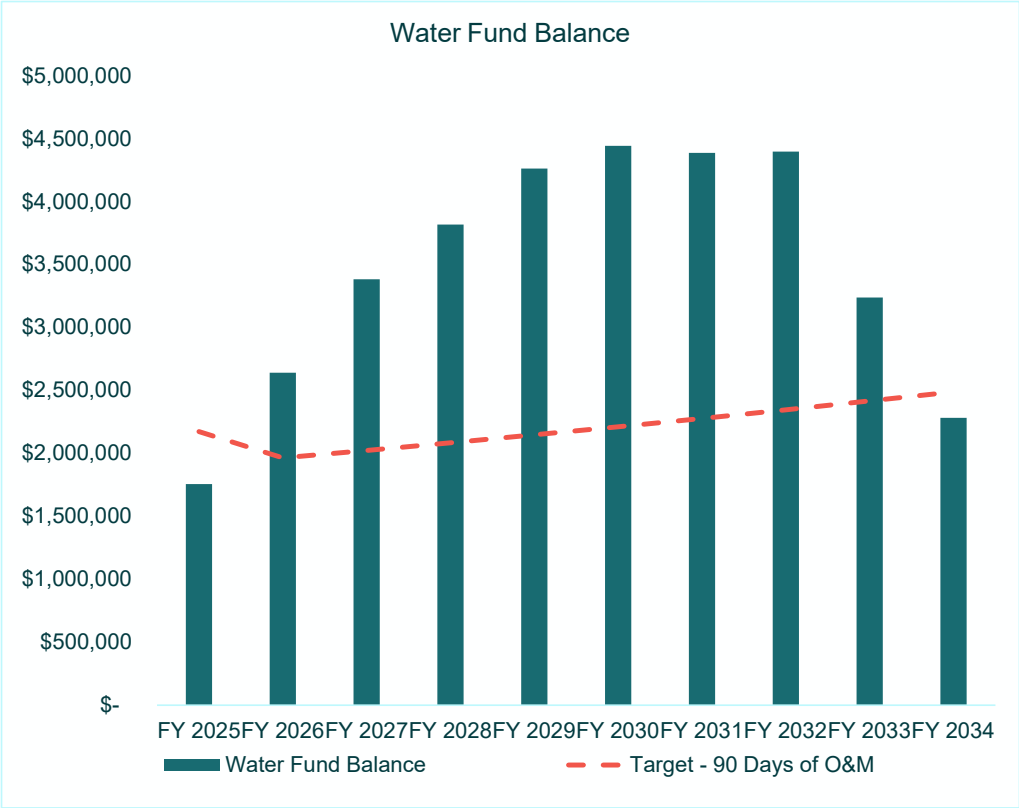
Financial Plan/Projections



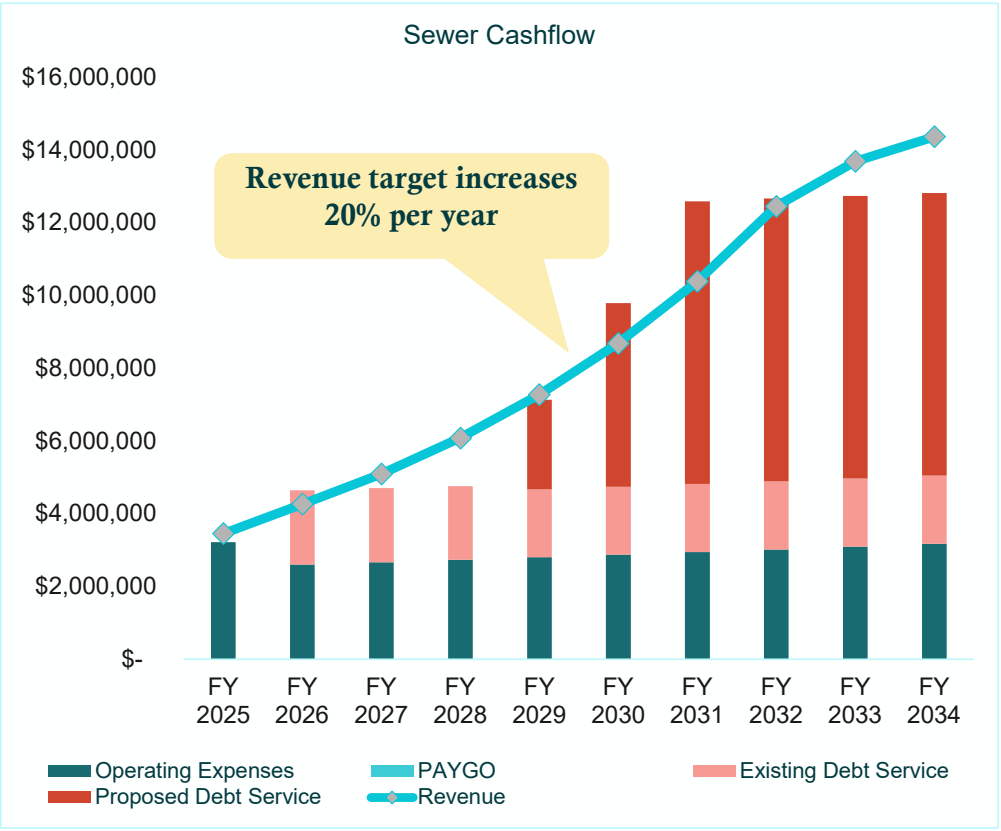


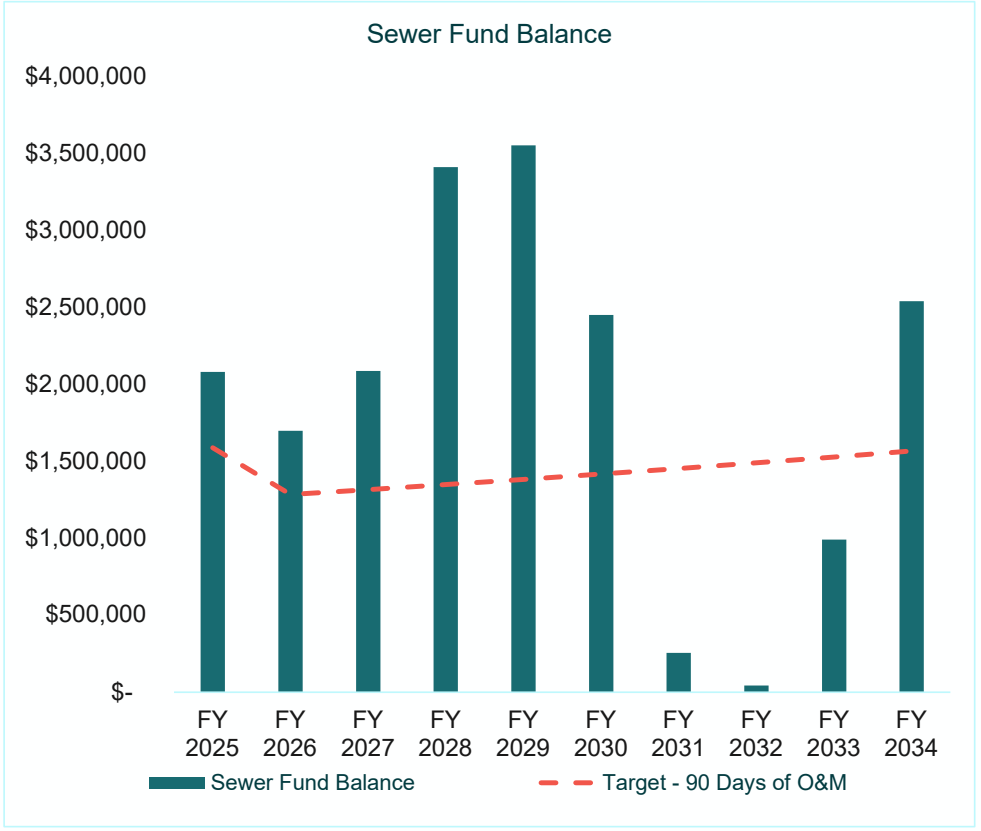
Financial Plan/Projections - Water





Financial Plan/Projections - Projections





Rate Design

GOALS:

1. Fully cover the costs of operating and ensuring the long-term adequacy of supplies/capacity
2. Based upon historical billing data and maintenance of current 3-tier volumetric inclining block rate structure
3. Align rates with community goals
4. Target equitability between rate payers based upon the demands they place upon shared, community assets
5. Maintain reserves balances necessary for prudent financial management

Background on Bridgewater Customers

- Large majority of both water and sewer customers are served via a 5/8” meter
- Bridgewater currently has flat fixed sewer charges – not in alignment with industry

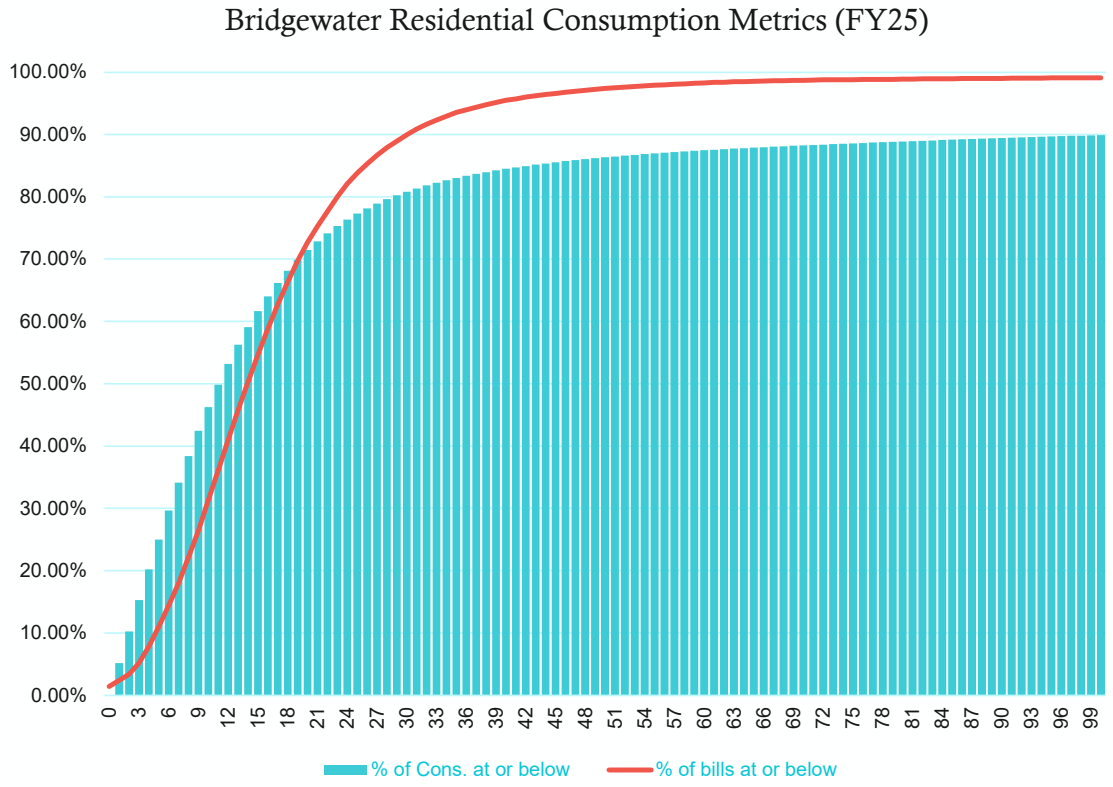
Customer Counts-Connection

Water

Size	Count
5/8"	7,598
3/4"	-
1"	105
1 1/2"	23
2"	99
3"	18
4"	12

Sewer

Size	Count
5/8"	2,841
3/4"	-
1"	52
1 1/2"	18
2"	99
3"	18
4"	11



Background on Bridgewater Customers

Quarterly Water Bills - Average Usage and Bill by Tier

	% of Bills in Tier	Average Usage (CCF)	Water Bill
1st Tier - 1-1,500 cu ft	54.6%	9.20	$ 59.22
2nd Tier - 1,501 - 10,000 cu ft	44.5%	25.50	$ 163.65
3rd Tier - Over 10,000 cu ft	0.9%	319.00	$ 2,866.99

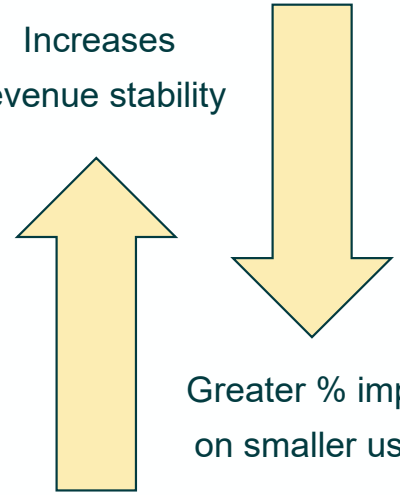
Quarterly Sewer Bills - Average Usage and Bill by Tier

	% of Bills in Tier	Average Usage (CCF)	Sewer Bill
1st Tier - 1-1,500 cu ft	61.4%	8.52	$ 81.10
2nd Tier - 1,501 - 3,000 cu ft	28.2%	21.03	$ 148.11
3rd Tier - Over 3,000 cu ft	10.5%	102.82	$ 966.29

Rate Levers – Considerations

Higher Fixed Charges

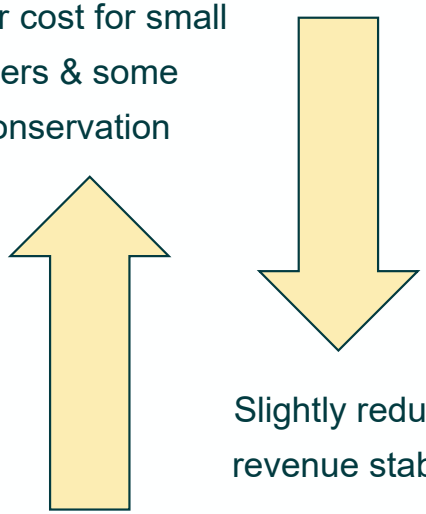
Increases revenue stability



Greater % impact on smaller users

More Steeply-inclined Block Structure

Lower cost for small users & some conservation

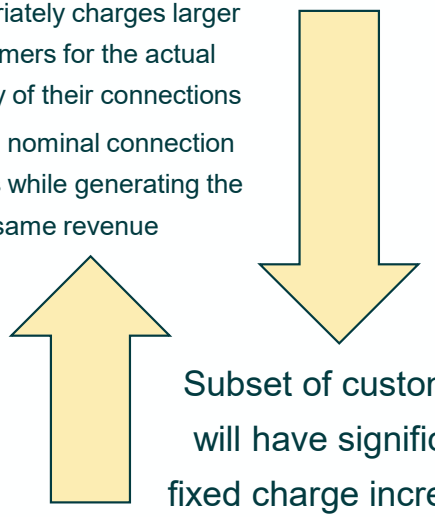


Slightly reduced revenue stability

Adoption of Sewer connection size-linked fixed charges

Appropriately charges larger customers for the actual capacity of their connections

Lowers nominal connection charges while generating the same revenue



Subset of customers will have significant fixed charge increases

General Rate Impacts

- Lower volumetric rates across all tiers
- Lower volumetric rates for small users
- Aligns sewer billing with water and industry standards

Rate Option Variables – Fixed charges

Current Connection Size Fixed Charge Factors

Connection Size Factors for Fixed Charge

Size	Water	Sewer	AWWA Std.
5/8"	1.00	1.00	1.00
3/4"	1.00	1.00	
1"	3.00	1.00	2.50
1 1/2"	5.00	1.00	5.00
2"	8.00	1.00	8.00
3"	16.00	1.00	15.00
4"	25.00	1.00	25.00

Lack of size-based sewer fixed charges mean very large users pay the same as the smallest of residential customers

Proposed Connection Size Fixed Charge Factors

Connection Size Factors for Fixed Charge

Size	Water	Sewer	AWWA Std.
5/8" res	1.00	1.00	1.00
5/8" non-res	1.50	1.50	
3/4"	1.00	1.00	
1" res	3.00	3.00	2.50
1" non-res	4.50	4.50	
1 1/2" res	5.00	5.00	5.00
1 1/2" non-res	7.50	7.50	
2" res	8.00	8.00	8.00
2" non-res	12.00	12.00	
3" res	16.00	16.00	15.00
3" non- res	24.00	24.00	
4" res	25.00	25.00	25.00
4" non-res	37.50	37.50	

Use of size-based sewer fixed charges better align the Town's utilities with industry standard practices and ensure all customers contribute equitably

- Bridgewater's current water fixed charge differentials are in line with industry standards
- No meter size differential differences on sewer charges, creates an imbalance between small connection customers and larger connection customers
- Proposed fixed charges include a premium on non-residential customers (Commercial, Industrial, and Institutional)
- Proposed fixed charges improve equability between all users in the system

FY 2026 Rate Recommendations - Water

Current Structure

Meter Size	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
5/8"	$ 25.00	$ 27.50	$ 30.25	$ 33.28	$ 36.60	$ 40.26
3/4"	$ 25.00	$ 27.50	$ 30.25	$ 33.28	$ 36.60	$ 40.26
1"	$ 75.00	$ 82.50	$ 90.75	$ 99.83	$ 109.81	$ 120.79
1 1/2"	$ 125.00	$ 137.50	$ 151.25	$ 166.38	$ 183.01	$ 201.31
2"	$ 200.00	$ 220.00	$ 242.00	$ 266.20	$ 292.82	$ 322.10
3"	$ 400.00	$ 440.00	$ 484.00	$ 532.40	$ 585.64	$ 644.20
4"	$ 625.00	$ 687.50	$ 756.25	$ 831.88	$ 915.06	$ 1,006.57
Tier 1 0-15 CCF	$ 3.72	$ 4.09	$ 4.50	$ 4.95	$ 5.45	$ 5.99
Tier 2 15-100 CCF	$ 7.89	$ 8.68	$ 9.55	$ 10.50	$ 11.55	$ 12.71
Tier 3 100+ CCF	$ 9.66	$ 10.63	$ 11.69	$ 12.86	$ 14.14	$ 15.56

Generates 17.5% of revenue needs from fixed charges

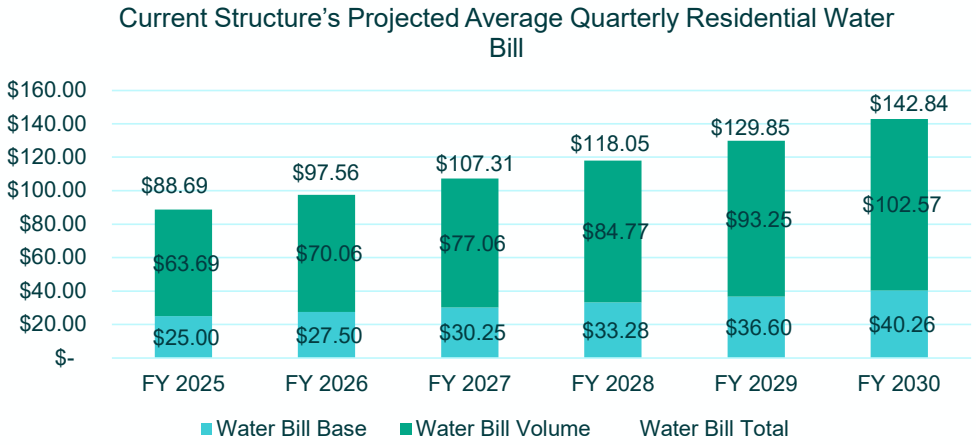
New Proposed Structure

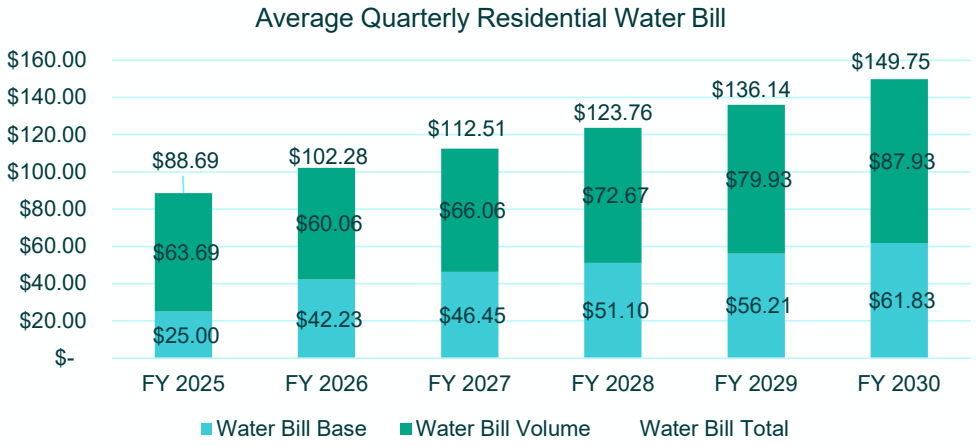
Meter Size	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
5/8" res	$ 25.00	$ 42.23	$ 46.45	$ 51.10	$ 56.21	$ 61.83
5/8" non-res	$ 25.00	$ 63.34	$ 69.68	$ 76.64	$ 84.31	$ 92.74
3/4"	$ 25.00	$ 42.23	$ 46.45	$ 51.10	$ 56.21	$ 61.83
1" res	$ 75.00	$ 126.68	$ 139.35	$ 153.29	$ 168.62	$ 185.48
1" non-res	$ 75.00	$ 190.03	$ 209.03	$ 229.93	$ 252.93	$ 278.22
1 1/2" res	$ 125.00	$ 211.14	$ 232.25	$ 255.48	$ 281.03	$ 309.13
1 1/2" non-res	$ 125.00	$ 316.71	$ 348.38	$ 383.22	$ 421.54	$ 463.70
2" res	$ 200.00	$ 337.82	$ 371.61	$ 408.77	$ 449.64	$ 494.61
2" non-res	$ 200.00	$ 506.74	$ 557.41	$ 613.15	$ 674.47	$ 741.91
3" res	$ 400.00	$ 675.65	$ 743.21	$ 817.54	$ 899.29	$ 989.22
3" non- res	$ 400.00	$ 1,013.47	$ 1,114.82	$ 1,226.30	$ 1,348.93	$ 1,483.83
4" res	$ 625.00	$ 1,055.70	$ 1,161.27	$ 1,277.40	$ 1,405.14	$ 1,545.65
4" non-res	$ 625.00	$ 1,583.55	$ 1,741.91	$ 1,916.10	$ 2,107.71	$ 2,318.48
Tier 1 0-15 CCF	$ 3.72	$ 3.51	$ 3.86	$ 4.24	$ 4.67	$ 5.14
Tier 2 15-100 CCF	$ 7.89	$ 7.44	$ 8.18	$ 9.00	$ 9.90	$ 10.89
Tier 3 100+ CCF	$ 9.66	$ 9.11	$ 10.02	$ 11.02	$ 12.12	$ 13.34

Generates 30% of revenue needs from fixed charges

- Bridgewater's projected rates with the current structure include a 10% annual increase in the revenue requirement
- In Bridgewater's current structure 82.3% of revenues are from volumetric charges, 17.7% from fixed
- We recommend:
  - Increasing fixed charge to generate 30% of overall rate revenue needs
  - Institute non-residential fixed charges
- Increasing fixed charges are directly related to a decrease in volumetric rates

FY 2026 Rate Recommendations - Water





- Average Quarterly Water Bills are based on a residential 5/8" meter and quarterly consumption of 16CCF
- Average Residential Water Bills see a slight uptick in total bill as fixed charges are designed to have a larger percentage of overall revenue generation for the utility

FY 2026 Rate Recommendations - Sewer

Current Structure

Meter Size	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
5/8"	$ 50.00	$ 60.00	$ 72.00	$ 86.40	$ 103.68	$ 124.42
3/4"	$ 50.00	$ 60.00	$ 72.00	$ 86.40	$ 103.68	$ 124.42
1"	$ 50.00	$ 60.00	$ 72.00	$ 86.40	$ 103.68	$ 124.42
1 1/2"	$ 50.00	$ 60.00	$ 72.00	$ 86.40	$ 103.68	$ 124.42
2"	$ 50.00	$ 60.00	$ 72.00	$ 86.40	$ 103.68	$ 124.42
3"	$ 50.00	$ 60.00	$ 72.00	$ 86.40	$ 103.68	$ 124.42
4"	$ 50.00	$ 60.00	$ 72.00	$ 86.40	$ 103.68	$ 124.42
Tier 1 0-15 CCF	$ 3.65	$ 4.38	$ 5.26	$ 6.31	$ 7.57	$ 9.08
Tier 2 15-30 CCF	$ 7.19	$ 8.63	$ 10.35	$ 12.42	$ 14.91	$ 17.89
Tier 3 30+ CCF	$ 10.35	$ 12.42	$ 14.90	$ 17.88	$ 21.46	$ 25.75

Generates 19.1% of revenue needs from fixed charges

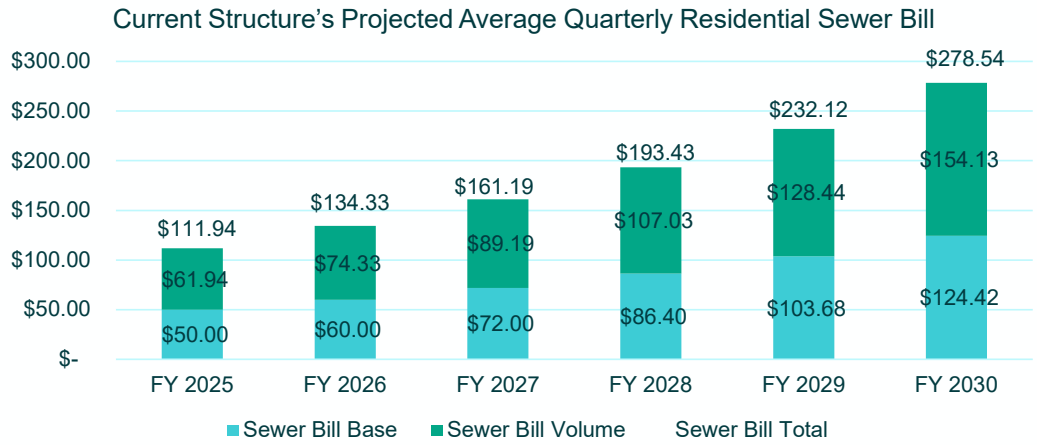
New Proposed Structure

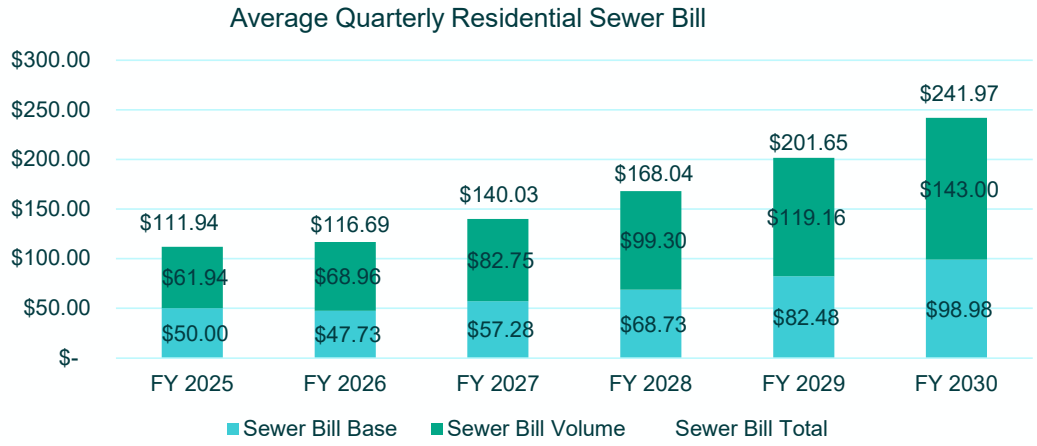
Meter Size	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
5/8" res	$ 50.00	$ 47.73	$ 57.28	$ 68.73	$ 82.48	$ 98.98
5/8" non-res	$ 50.00	$ 71.60	$ 85.92	$ 103.10	$ 123.72	$ 148.47
3/4"	$ 50.00	$ 47.73	$ 57.28	$ 68.73	$ 82.48	$ 98.98
1" res	$ 50.00	$ 143.20	$ 171.84	$ 206.20	$ 247.44	$ 296.93
1" non-res	$ 50.00	$ 214.80	$ 257.75	$ 309.31	$ 371.17	$ 445.40
1 1/2" res	$ 50.00	$ 238.66	$ 286.39	$ 343.67	$ 412.41	$ 494.89
1 1/2" non-res	$ 50.00	$ 357.99	$ 429.59	$ 515.51	$ 618.61	$ 742.33
2" res	$ 50.00	$ 381.86	$ 458.23	$ 549.88	$ 659.85	$ 791.82
2" non-res	$ 50.00	$ 572.79	$ 687.35	$ 824.81	$ 989.78	$ 1,187.73
3" res	$ 50.00	$ 763.72	$ 916.46	$ 1,099.75	$ 1,319.70	$ 1,583.64
3" non- res	$ 50.00	$ 1,145.58	$ 1,374.69	$ 1,649.63	$ 1,979.56	$ 2,375.47
4" res	$ 50.00	$ 1,193.31	$ 1,431.97	$ 1,718.36	$ 2,062.04	$ 2,474.44
4" non-res	$ 50.00	$ 1,789.96	$ 2,147.96	$ 2,577.55	$ 3,093.06	$ 3,711.67
Tier 1 0-15 CCF	$ 3.65	$ 4.06	$ 4.88	$ 5.85	$ 7.02	$ 8.43
Tier 2 15-30 CCF	$ 7.19	$ 8.00	$ 9.61	$ 11.53	$ 13.83	$ 16.60
Tier 3 30+ CCF	$ 10.35	$ 11.52	$ 13.83	$ 16.59	$ 19.91	$ 23.89

Generates 25% of revenue needs from fixed charges

- Bridgewater's projected rates with the current structure include a 20% annual increase in the revenue requirement
- In Bridgewater's current structure 80.8% of revenues are from volumetric charges, 19.1% from fixed
- We recommend:
  - Setting fixed charge to generate 25% of overall rate revenue needs
  - Institute size-based and non-residential fixed charges
- As with water, higher fixed charge revenues are directly related to lower volumetric rates
- Decreased res. fixed charges due to changes

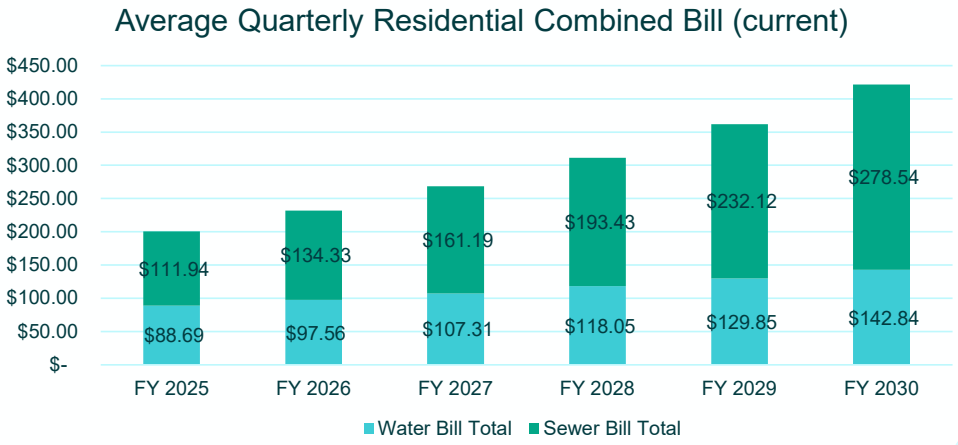
FY 2026 Rate Recommendations - Sewer

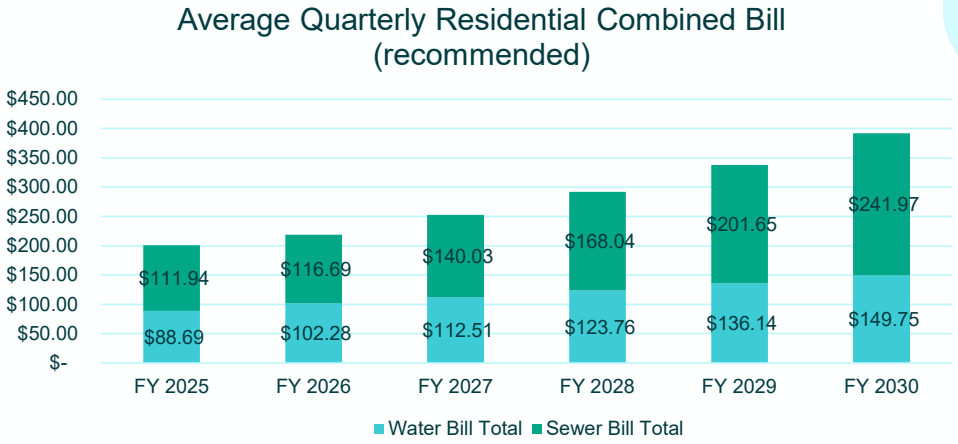




- Average Quarterly Bills are based on a residential 5/8" meter and quarterly consumption of 16CCF
- Under the proposed structure, the average residential sewer bill will be lower than using the current structure due to the modification to the fixed charge billing practices

FY 2026 Rate Recommendations - Combined





Average residential combined bills will be ~7% lower with recommended changes than they would be with current rate structure

- The recommended rates include:
  - Fully funding water and sewer operations and investments
  - Increasing fixed charge revenue goals to provide improved revenue stability
  - Alignment of fixed-charge practices with prevalent industry practices
- Average residential customers can expect lower combined bills with the adoption of recommended changes than would occur under the current rates structure

Final Thoughts

- *Town is entering a period of significant capital investments*
- *Town is concurrently experiencing demand for growth and new capacity*
- *This is an appropriate time to make changes to existing practices to meet these needs*
- Bridgewater may wish to consider updating connection charges to ensure equitability between current/long-time customers and new customers
- Especially important if the new customers are directly related to Town spending on source and capacity expansion expenses

<u>Bridgewater has multiple tools to face this challenge for its public utilities:</u>

- New and evolving regulatory requirements
- Rapid increase in infrastructure costs

The recommended rates will help ensure Bridgewater meets these challenges as fairly as possible for all customers' benefit.

Updating connection charges and policies can assist greatly in ensuring equitability as community growth is accommodated

- Growth-related expenses
- Accommodation of State-mandated housing development goals
- Ensuring equitability between long-time residents and new customers

Q&A

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Capital Improvements Plan – Water* FY2025 – FY2030

Table from model

	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030
Capital Improvements Plan	*Planned*	*Planned*	*Planned*	*Planned*	*Planned*	*Planned*
Water						
Phase 1	$ -					
Phase 2 2026-2060		12,605,400	12,605,400	12,605,400	12,605,400	12,605,400
Phase 3 2031-2035						
Phase 4 2036-2040						
Phase 5 2041-2045						
GREAT HILL CONCRETE STANDPIPE RESTORATION	167,500					
WTR Wells #10a #10b Pilot & Design	478,150					
No. D5 - Chevy (or equivalent) Express Van		60,000				
No. D6 - Chevy (or equivalent) Express Van		80,000				
Sandblasting & painting of filters at Carver WTP			113,000			
No. T4 - Ford F250 (or equivalent) Pickup Truck			100,000			
No. D1 - Backhoe				148,000		

** - all values on table presented in FY25, un-escalated dollars.*

"Phase 2" projects included from Apex presentation

- Annual Well Redevelopment (One well per year)
- Tank Analysis and Water Supply Strategy Alternatives
- Vernon St. New Well and Treatment Facility
- Pump Upgrades and New Raw Water Transmission Main
- Carver Pond WTP Building Addition for PFAS Removal
- High St. WTP Building Addition for PFAS Removal
- Sprague Hill Tank Rehabilitation
- Connection to Aquaria Regional Desalinization Plant

Capital Improvements Plan – Water* FY2031-FY2035

Table from model

Capital Improvements Plan	FY 2031 Planned	FY 2032 Planned	FY 2033 Planned	FY 2034 Projected	FY 2035 Projected
Water					
Phase 1					
Phase 2 2026-2060					
Phase 3 2031-2035	9,400,000	9,400,000	9,400,000	9,400,000	9,400,000
Phase 4 2036-2040					
Phase 5 2041-2045					
GREAT HILL CONCRETE STANDPIPE RESTORATION					
WTR Wells #10a #10b Pilot & Design					
No. D5 - Chevy (or equivalent) Express Van					
No. D6 - Chevy (or equivalent) Express Van					
Sandblasting & painting of filters at Carver WTP					
No. T4 - Ford F250 (or equivalent) Pickup Truck					
No. D1 - Backhoe					
No. T6 - Ford F250 4x4 Supercab	80,000				
No. D11 -Ford F250 4x4 Supercab	90,000				
CPTP MEDIA FILTER REPLACEMENT	360,000				
Water Main Replacement		7,493,544			
Water Main Replacement		6,875,208			
No. D4 - Freightliner M2 106 (or equivalent) Dump Truck			150,000		
No. D14-F550 FORD UTILITY TRUCK			92,625		
No. D15 2024 EZEC UTILITY TRAILER			23,000		
No. D8 - John Deere 50G Excavator w/Trailer				220,000	
No. D13-Ford F350 Superduty Dump Truck & Equipment					100,000
D16 2024 Ford F550 Stock # 40624					100,000

"Phase 3" projects included from Apex presentation

- Annual Well Redevelopment (one well per year)
- Replace existing 6" and 8" AC, CI Water Main along Vernon Street
- Great Hill Tank Rehabilitation
- Connection to Aquaria Regional Desalinization Plant

** - all values on table presented in FY25, un-escalated dollars.*

Capital Improvements Plan – Sewer* FY2025-FY2035

Table from model

Capital Improvements Plan	FY 2025 Planned	FY 2026 Planned	FY 2027 Planned	FY 2028 Planned	FY 2029 Planned	FY 2030 Planned	FY 2031 Planned	FY 2032 Planned	FY 2033 Planned	FY 2034 Projected	FY 2035 Projected
Sewer											
Phase 2 WWTP Upgrade Placeholder				33,000,000	33,000,000	33,000,000					
(2) 2019 Ford F250 Pickup Trucks						140,000					
No. S4- John Deere 624 L (or equivalent) Loader											
No. S9-Ford F250 Pickup Truck- with utility body							50,000				
No. S10- Hangcha Forklift											

** - all values on table presented in FY25, un-escalated dollars.*