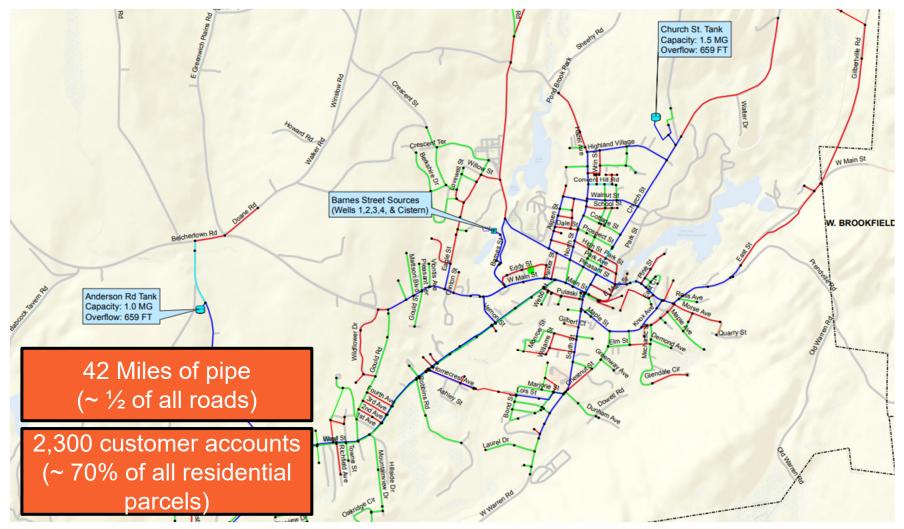


### **RECOMMENDATIONS** Water and Sewer Rate Evaluations Ware, MA

Board of Selectmen Meeting November 16, 2021



### WATER SYSTEM



Wright Pierce - 2016 Master Plan

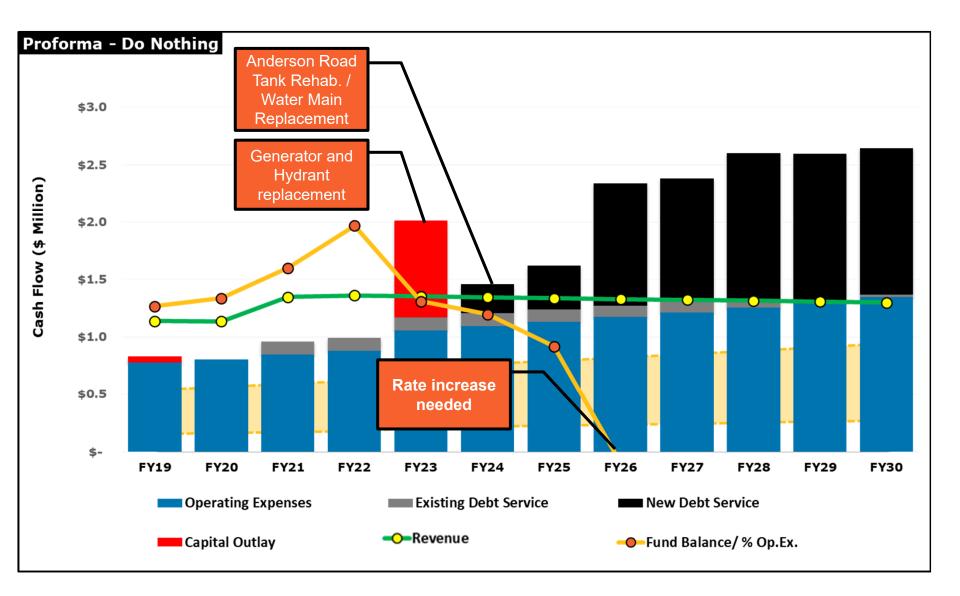


## **CAPITAL NEEDS - WATER**

Сар	ital Imp	oroveme	ent Planner					
ID	System	Scope	Description	Funding source	Interest Rate	Estimated Cost	Start Year	Term
2	Source	Other	Dismal Swamp Well Generator + Well #4	Rate		\$500,000	2023	1
3	Distribution	Other	Hydrant Replacement (5 per year)	Rate		\$175,000	2023	1
4	Storage	Eng.+Const.	Anderson Road Water Tank Rehabilitation	Debt	4.5%	\$1,400,000	2024	20
6	Distribution	Eng.+Const.	Water Main Replacement #1-12" DI (~3,800LF)	Debt	4.5%	\$1,520,000	2024	20
5	Storage	Eng.+Const.	Church St WST Water Tank Rehabilitation	Debt	4.5%	\$1,400,000	2025	20
1	Treatment	Eng.+Const.	Water Filtration Plant	USDA	1.750%	\$13,276,000	2026	40
7	Distribution	Eng.+Const.	Water Main Replacement #2-8" DI (~5,860LF)	Debt	4.5%	\$2,000,000	2026	20
8	Distribution	Eng.+Const.	Water Main Replacement #3-8" DI (~5,860LF)	Debt	4.5%	\$2,100,000	2028	20
				Total		<b>\$22</b> ,371,000	1	
				a		ng it will ed in the		

### Tighe&Bond

# **PROFORMA - WATER**



### Tighe&Bond

# WATER RATES AND CUSTOMER COST

Rates	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Base	\$36.00	\$36.72	\$38.19	\$41.24	\$45.37	\$49.91	\$57.39	\$66.00	\$69.30	\$70.69
Usage	\$5.75	\$5.87	\$6.10	\$6.59	\$7.25	\$7.97	\$9.17	\$10.54	\$11.07	\$11.29
	Increase (%)	2.0%	3.8%	7.4%	9.1%	9.1%	13.0%	13.0%	4.8%	2.0%
Annual Cost	\$374.00	\$381.48	\$396.74	\$428.48	\$471.33	\$518.46	\$596.23	\$685.66	\$719.94	\$734.34
	Increase (\$)	\$7.48	\$15.26	\$31.74	\$42.85	\$47.13	\$77.77	\$89.43	\$34.28	\$14.40



Costs based upon 125 gallons per day - which equals -2.5 people using 50 gallons per person per day

- or -

\$426

2000 2002 2004 2006 2009 2010 2012 2014 2017

Annual Average Cost of Water

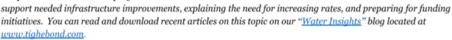
2 people using 65 gallons per person per day

#### The cost of water is rising, yet often too slowly to cover aging infrastructure.

Average annualized water costs of the rate structures reported in the survey was \$595, with the median at \$568, a low of \$123 and a high of \$2,025. 65% of survey respondents have increased rates since our last survey (2014). The cost of water has increased 12% over 3 years.

One of the most commonly reported challenges facing water systems across Massachusetts is our aging infrastructure. A rate structure designed to provide sustainable revenue for operations and capital programs is critical to assure reliable, safe drinking water and effective fire protection.

Tighe & Bond offers municipalities and water companies assistance developing sustainable rates to

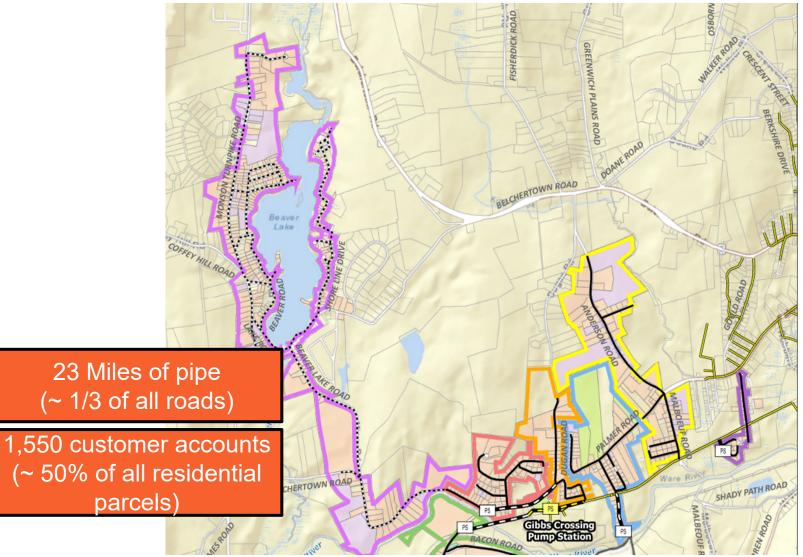


In 2017 the average cost of water was \$595, based upon 250 gallons per day. Converting to 125 gallons per day, the 2017 average cost was \$300.



\$532

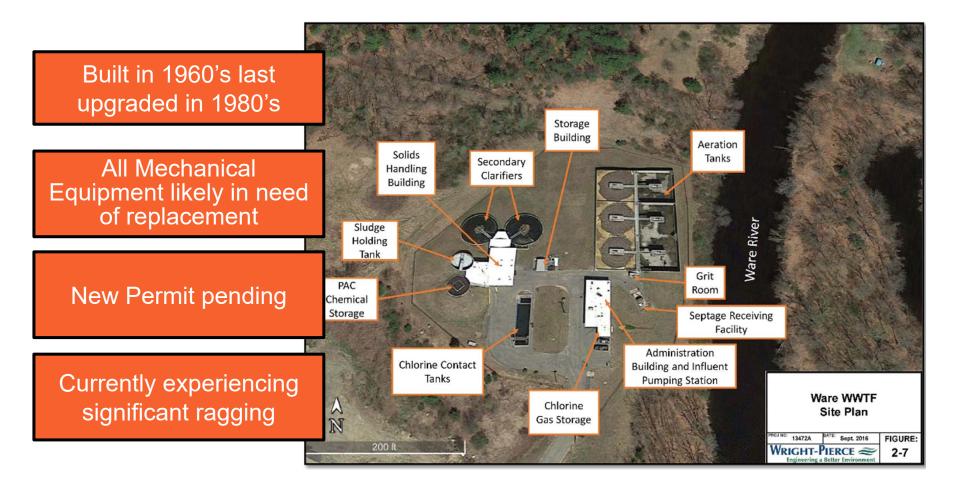
## **SEWER SYSTEM**



Wright Pierce - 2016 Master Plan



# **SEWER SYSTEM - WWTP**



### Tighe&Bond

# **SEWER SYSTEM - WWTP**

Excessive ragging due to flushable wipes is impacting all aspects of operations

One of 3 influent pumps sent out to repair – leaving no spare

Threat of sewer overflows into homes / rivers is significantly increased

New discharge permit likely to include new nutrient removal limits, requiring upgrade





# **SEWER SYSTEM - WWTP**

Proposed screen is designed to remove rags and debris allowing operators to focus on operations

Proposed plant assessment will help define scope of upgrades/ condition





### **PROJECTING EXPENSES**

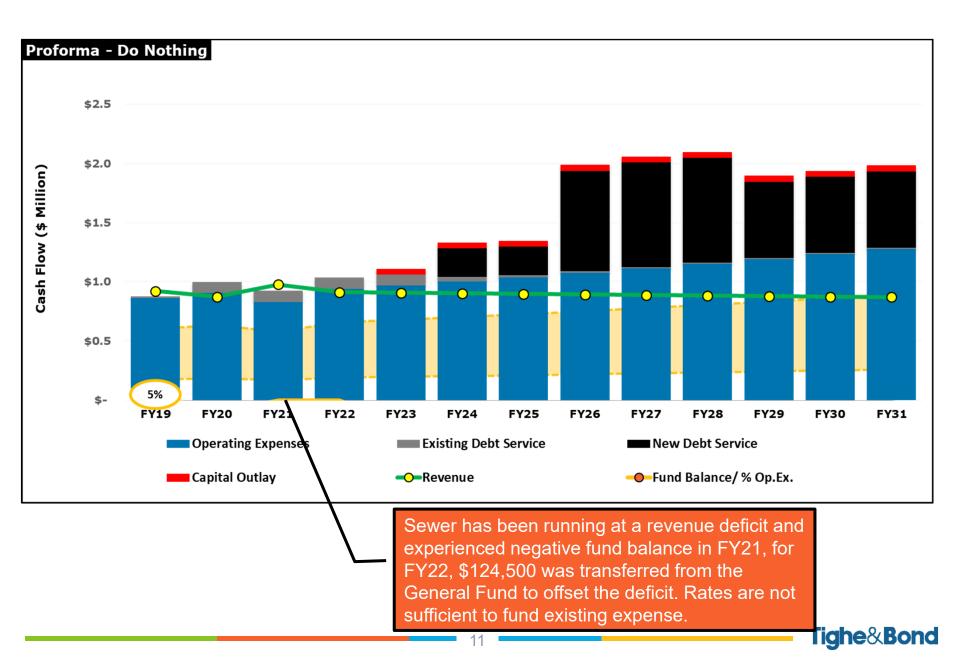
Capital Improvement Planner												5
ID	System	Scope	Description	Funding source	Interest Rate		imated Cost	Cost Year	E	scalated Cost	Start Year	Term
1	Collection	Eng.+Const.	Influent Screen Upgrade	ARPA		<b>\$</b> 1	,400,000	2023	\$	1,400,000	2023	1
2	Collection	Engineering	WWTF Assessment	Rate		\$	50,000	2023	\$	50,000	2023	1
2	Treatment	Engineering	WWTF Improvements	Debt	3.0%	<b>\$</b> 1	,000,000	2022	\$	1,070,000	2024	5
3	Treatment	Construction	WWTF Improvements	SRF	2.4%	\$ 10	,000,000	2021	\$	11,600,000	2026	30
4	Collection	Eng.+Const.	Sewer Rehabilitation	Debt	3.0%	<b>\$</b> 1	,000,000	2021	\$	1,200,000	2027	20
5	Collection	Eng.+Const.	Ongoing SSES and Rehabilitaiton	Rate		\$	50,000	2021	\$	50,000	2024	10
6	Collection	Eng.+Const.	Project No. 1 - Longview Street	Debt	3.0%	\$	-	2021	\$	-	2026	20
7	Collection	Eng.+Const.	Project No. 2 - Meadow Het	Debt	3.0%	\$	-	2021	\$	-	2027	20
8	Collection	Eng.+Const.	Project No. 3 - Malboeuf Road	Debt	3.0%	\$	-	2021	\$	-	2028	20
9	Collection	Eng.+Const.	Project No. 4 - Mountain View-	Debt	3.0%	\$	-	2021	\$	-	2029	20
10	Collection	Eng.+Const.	Project No. 5 - Palmer Road	Debt	3.0%	\$	-	2021	\$	-	2030	20
11	Collection	Eng.+Const.	Project No. 6 - Old Belchertown	Debt	3.0%	\$	-	2021	\$	-	2032	20
12	Collection	Eng.+Const.	Project No. 7 - Beaver Lake	Debt	3.0%	S	-	2021	\$	-	2033	20
				Total		\$1	3,500,000		\$	15,370,000		

#### Notes & Key Points

- 1. Critical need project, funding with ARPA money was proposed by DPW
- 2. WWTF Upgrade project: \$10M used for planning purposes
- 3. Design cost assumed to be funded through BAN or other short-term financing
- 4. Assessment project is to review and update previous (2016) scope and cost
- 5. Timing (start year) based upon distribution of costs NOT upon engineering review of criticality or condition and should be considered as placeholders pending further evaluation. All subsequent rate adjustments and cost impacts are subject to change based upon changes to the CIP.
- 6. Need for sewer extensions should be revisited



### **SEWER PROFORMA**



# SEWER RATES AND CUSTOMER COSTS

Rates	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Base	\$44.00	\$50.60	\$58.19	\$66.92	\$76.96	\$92.35	\$106.20	\$106.20	\$106.20	\$106.20
Usage	\$5.25	\$6.04	\$6.94	\$7.98	\$9.18	\$11.02	\$12.67	\$12.67	\$12.67	\$12.67
Inc	rease (%)	<b>13.0</b> %	13.0%	<b>13.0</b> %	<b>13.0</b> %	<b>16.7</b> %	<b>13.0</b> %	0.0%	0.0%	0.0%
Annual Cost	\$386.00	\$443.90	\$510.49	\$587.06	\$675.12	\$810.14	\$931.66	\$931.66	\$931.66	\$931.66
Increase (\$)		\$57.90	\$66.58	\$76.57	\$88.06	\$135.02	\$121.52	\$0.00	\$0.00	\$0.00



#### Costs based upon 125 gallons per day

- which equals -

2.5 people using 50 gallons per person per day

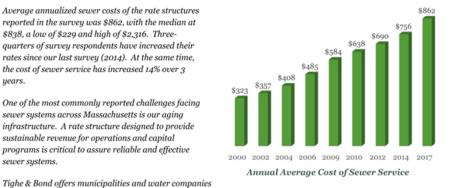
- or -

2 people using 65 gallons per person per day

#### The cost of sewer service is rising.

Average annualized sewer costs of the rate structures reported in the survey was \$862, with the median at \$838, a low of \$229 and high of \$2,316. Threequarters of survey respondents have increased their rates since our last survey (2014). At the same time, the cost of sewer service has increased 14% over 3 years.

One of the most commonly reported challenges facing sewer systems across Massachusetts is our aging infrastructure. A rate structure designed to provide sustainable revenue for operations and capital programs is critical to assure reliable and effective sewer systems.



assistance developing sustainable rates to support needed infrastructure improvements, explaining the need for rate increases, and how to prepare for funding initiatives. You can read and download helpful articles on this topic on our "Water Insights" blog located at www.tighebond.com.

In 2017 the average cost of water was \$595, based upon 250 gallons per day. Converting to 125 gallons per day, the 2017 average cost was \$431.



### **RESIDENTIAL CUSTOMER IMPACTS & AFFORDABILITY -**

**Measuring Affordability.** Affordability, like temperature, is highly subjective. To determine whether or not water and sewer costs represents a financial burden we use the two most common and appropriate indicators.

**The Residential Indicator.** Adopted from EPA guidance developed in the late 90's to determine the cost impacts of federal regulatory programs, this indicator divides the total annual cost of water and sewer and divides it by the median household income. A score of 4% or more is considered to be a financial burden.

Residential Indicator An	Residential Indicator Annual Cost as % MHI - MHI Escalated at 1% per year													
Scenario	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31				
100% Rate Funded	1.9%	2.1%	2.4%	2.7%	3.1%	3.6%	3.8%	3.9%	3.9%	3.9%				

**The Household Burden Indicator.** Introduced in 2019, this indicator is based the lowest quintile income (the lowest 20%), which is more representative of household financial status. The second component, the Poverty Prevalence Indicator is the percentage of the community below 200% of the Federal Poverty Level. The burden is determined by using the chart below.

Household Burden - LQI Escalated at 1% per year													
Scenario	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31			
100% Rate Funded	4.5%	4.9%	5.4%	6.1%	7.0%	7.9%	8.3%	8.4%	8.4%	8.3%			

		Household	Poverty Prevalence Indicator					
Ware Income Data (US Cens		Burden Indicator	>= 35%	20% to 35%	<20%			
Median Household Income: Lowest Quintile Income:	\$42,769 \$17,621	> = 10%	Very High Burden	High Burden	Moderate – High Burden			
Poverty Prevalence Indicator:		7% to 10%	High Burden	Moderate – High Burden	Moderate - Low Burden			
		<7%	Moderate - High Burden	Moderate - Low Burden	Low Burden			

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