



# WATER RATE EVALUATION

Townsend, MA

January, 2022

# WATER RATE FUNDAMENTALS

## Rate Setting Principals & Goals

1

*Recover full cost of service*



All Requirements  
Met



Fully  
Staffed



Proactive  
Repair & Maintenance

2

*Distribute costs equitably*



Residential  
- VS -  
Non-Residential



Large Households  
- VS -  
Small Households



Essential Use  
- VS -  
Discretionary Use

3

*Provide revenue stability & resource protection*



Usage  
Trends



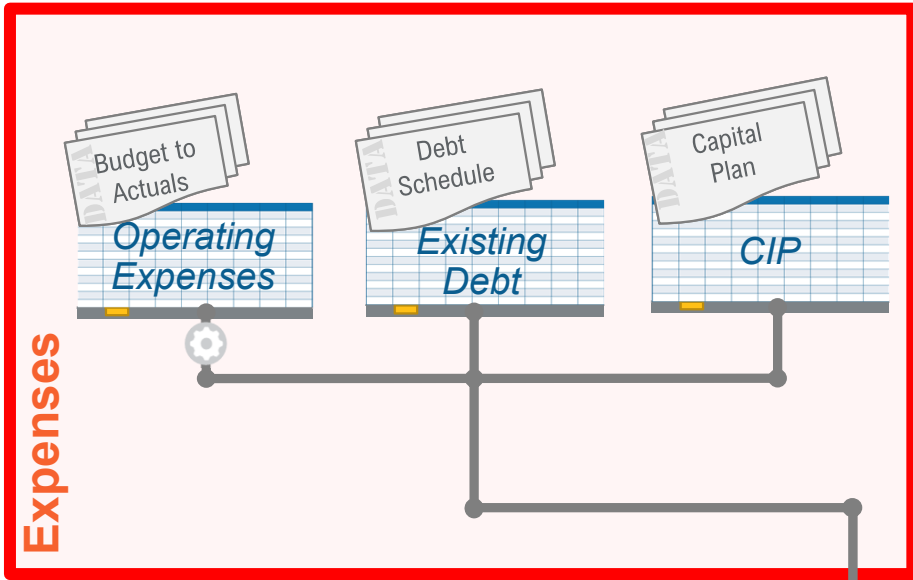
Rate  
Design



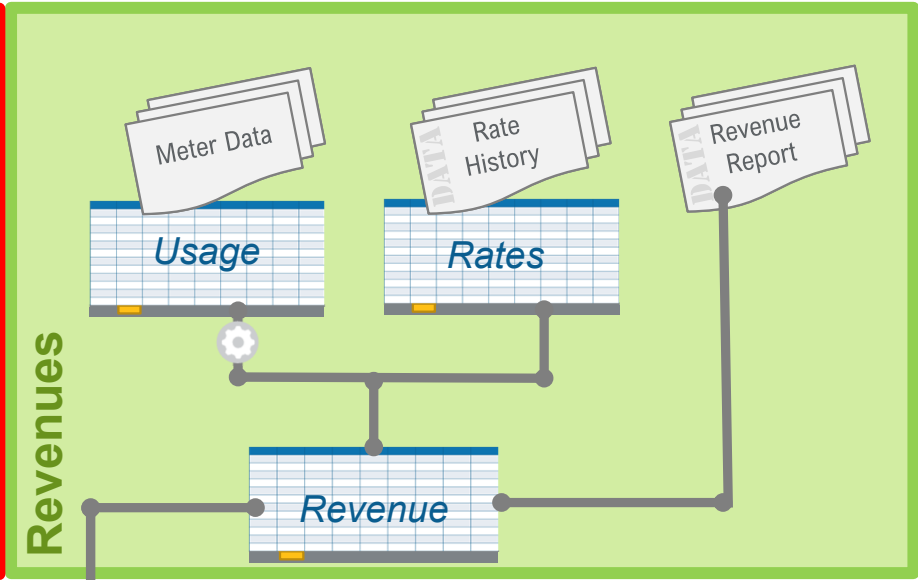
Permit  
Limits

# EVALUATING WATER RATES

## 1. Project expenses



## 2. Project revenues



3. Calculate net revenue
4. Adjust rates to maintain fund balance
5. Calculate user costs
6. Evaluate equity
7. Evaluate affordability

# PROJECTING EXPENSES

## Operating Expenses

### Expense Trending Analysis

Category	Trend	FY18 - FY21				FY23	Escalator	
		Average Budget	% Change	Average Actual	Average Turnback	Budget		
Personal Services		\$ 371,808	5.0%	\$ 299,858	19.4%	\$575,503	3.0%	1
Articles		\$ 436,339	-3.8%	\$ 153,558	64.8%	\$0		
Purchase Of Services		\$ 186,893	7.1%	\$ 187,436	-0.3%	\$248,000	3.0%	1
Capital Outlay		\$ 880,041	-320.1%	\$ 424,041	51.8%	\$0		1
Debt Service		\$ 128,102	-1.0%	\$ 121,584	5.1%	\$134,000		
Supplies		\$ 83,042	11.5%	\$ 98,739	-18.9%	\$218,700	3.0%	
Repair & Maint Bldg		\$ 26,667	45.0%	\$ 10,804	59.5%	\$50,000	3.0%	
Repair & Maint Equip		\$ 26,667	25.0%	\$ 24,403	8.5%	\$40,000	3.0%	1
Repair & Maint Dist		\$ 28,500	50.0%	\$ 26,995	5.3%	\$0		
Other Charges And Expenses		\$ 11,911	39.7%	\$ 10,482	12.0%	\$27,225	3.0%	
Repair & Maint SCADA		\$ 11,833	2.4%	\$ 6,889	41.8%	\$16,000	3.0%	2
Transfer Out		\$ -	--	\$ 135,000	--	\$0		
Indirects		\$ -	--	\$ 221,380	--	\$0		3
Grand Total		\$ 2,182,303		\$ 1,304,975	40.2%	\$1,309,428		

1. Taken from CIP (p. 5) not projected
2. Not used
3. See p.6

# CAPITAL IMPROVEMENT PLAN

## Capital Improvement Planner

System Component	Scope	Description	Funding source	Interest Rate	Estimated Cost	Start Year	Term
Pumping	Construction	Main St. Pump Station Rehabilitation	Rate		\$ 600,000	2021	1
Distribution	Construction	Main St. and Greely Road Valve Project	Rate		\$ 70,000	2022	1
Source	Other	Main St Wellhouse Generator	ARPA		\$ 120,000	2023	1
Source	Other	Cross St. Wellhouse Generator	ARPA		\$ 100,000	2023	1
Distribution	Other	Fusing Machine for Water Mains	Rate		\$ 25,000	2023	1
Enterprise	Other	36" Wide Scanner Copier	Rate		\$ 7,000	2023	1
Treatment	Engineering	PFAS Water Treatment Plant - Prelim Engineering	ARPA		\$ 205,000	2023	1
Treatment	Engineering	PFAS Water Treatment Plant - Design	Debt	4.0%	\$ 495,000	2023	5
Distribution	Other	Trailer Mounted Gate Exerciser with vacuum	Rate		\$ 85,000	2026	1
Distribution	Engineering	Year 1 - Watermain Replacement 950' S. Row Road	Rate		\$ 55,000	2026	1
Distribution	Construction	Year 1 - Watermain Replacement 950' S. Row Road	Debt	4.0%	\$ 550,000	2024	20
Distribution	Engineering	Valve and Hydrant Replacement Program	Rate			2024	5
Distribution	Construction	Valve and Hydrant Replacement Program	Rate		\$ 90,000	2026	5
Enterprise	Vehicle	Hybrid or Electric Dump Truck (F 450 or Equivalent) with snowplow	Rate		\$ 83,000	2025	1
Treatment	Construction	PFAS Water Treatment Plant	SRF	1.0%	\$ 12,828,846	2025	30
Distribution	Engineering	Year 2 - Watermain Replacement 2,200' S.Row to Emery St.	Rate		\$ 80,000	2027	1
Distribution	Construction	Year 2 - Watermain Replacement 2,200' S.Row to Emery St.	Debt	4.0%	\$ 770,000	2027	20
Distribution	Engineering	Year 3 - Watermain Replacement 2,000 Emery Street to Exist. System	Rate		\$ 75,000	2028	1
Distribution	Construction	Year 3 - Watermain Replacement 2,000 Emery Street to Exist. System	Debt	4.0%	\$ 740,000	2028	20
Distribution	Engineering	Year 4 - Watermain Replacement 1,850' New Fitchburg Road	Rate		\$ 75,000	2029	1
Distribution	Construction	Year 4 - Watermain Replacement 1,850' New Fitchburg Road	Debt	4.0%	\$ 730,000	2029	20
Enterprise	Vehicle	Utility Truck plus equipment	Rate		\$ 60,000	2030	1
Distribution	Engineering	Year 5 - Watermain Replacement 1,650' New Fitchburg Road	Rate		\$ 70,000	2030	1
Distribution	Construction	Year 5 - Watermain Replacement 1,650' New Fitchburg Road	Debt	4.0%	\$ 675,000	2031	20
			Total		\$18,588,846		

1. Total construction cost estimated at \$14.8M with assumed principal forgiveness of \$1.96M (13.26%)

# EXPENSES

## Dashboard

Town of

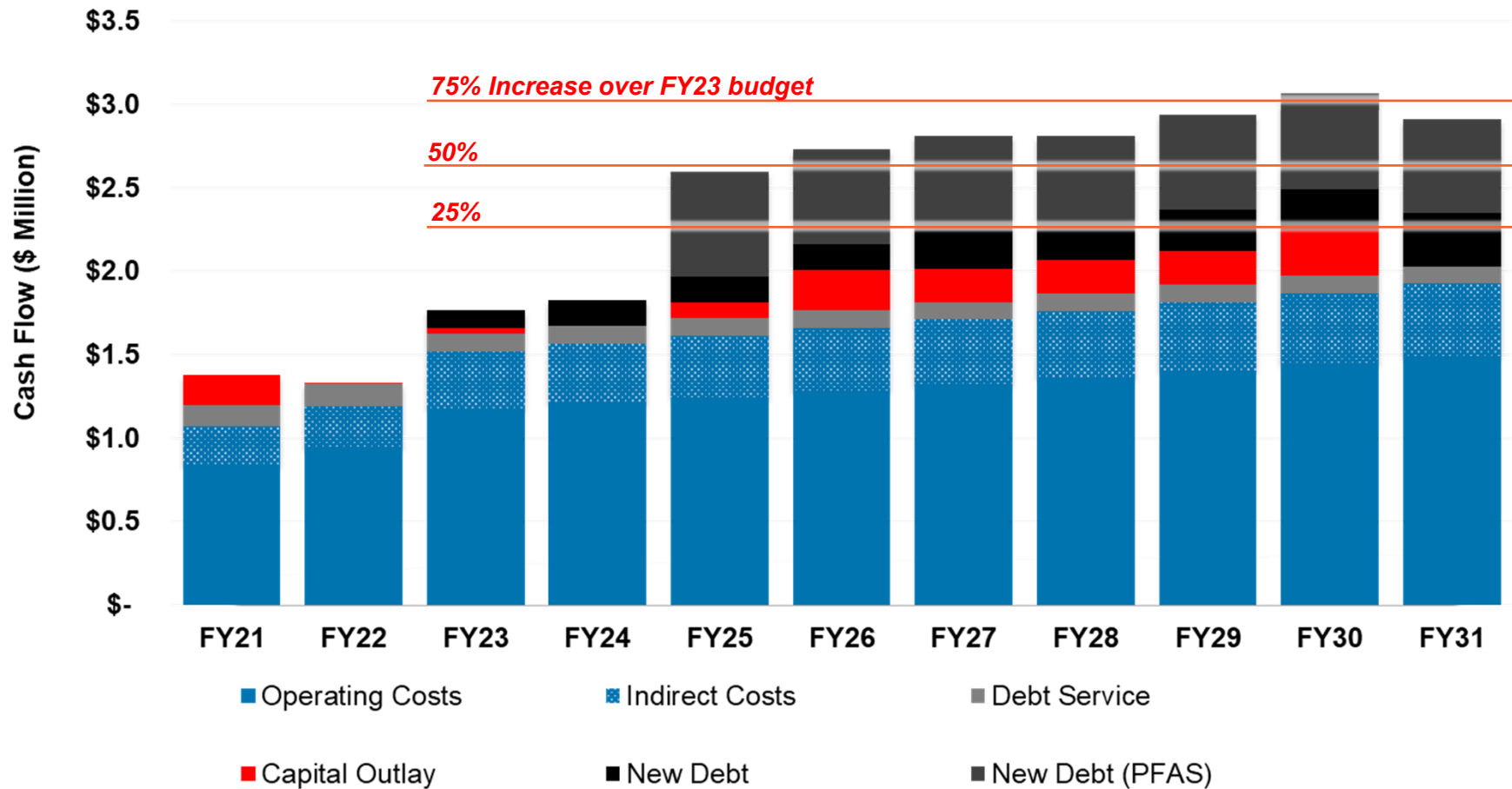


### Water Enterprise Financial Model

	Budget FY20	Budget FY21	Budget FY22	Projected FY23	Projected FY24	Projected FY25	Projected FY26
<b>Operating Expenses</b>							
Personal Services	\$363,990	\$395,316	\$455,200	\$575,503	\$592,768	\$610,551	\$628,868
Purchase Of Services	\$194,200	\$197,280	\$229,930	\$248,000	\$255,440	\$263,103	\$270,996
Supplies	\$75,500	\$98,125	\$143,618	\$218,700	\$225,261	\$232,019	\$238,979
Repair & Maint Bldg	\$25,000	\$50,000	\$50,000	\$50,000	\$51,500	\$53,045	\$54,636
Repair & Maint Equip	\$20,000	\$40,000	\$40,000	\$40,000	\$41,200	\$42,436	\$43,709
Repair & Maint Dist	\$27,000	\$30,000	\$0	\$0	\$0	\$0	\$0
Other Charges And Expenses	\$17,311	\$15,270	\$12,025	\$27,225	\$28,042	\$28,883	\$29,749
Repair & Maint SCADA	\$15,000	\$10,500	\$15,000	\$16,000	\$16,480	\$16,974	\$17,484
<b>Subtotal</b>	<b>\$738,001</b>	<b>\$836,491</b>	<b>\$945,773</b>	<b>\$1,175,428</b>	<b>\$1,210,691</b>	<b>\$1,247,012</b>	<b>\$1,284,422</b>
	▲ 13.4%	▲ 11.8%	▲ 11.6%	▲ 19.5%	▲ 2.9%	▲ 2.9%	▲ 2.9%
Indirects	\$233,070	\$234,125	\$243,944	\$343,281	\$353,579	\$364,187	\$375,112
	▲ 15.5%	▲ 0.5%	▲ 4.0%	▲ 28.9%	▲ 2.9%	▲ 2.9%	▲ 2.9%
<b>Capital Expenses</b>							
Capital Outlay	\$1,124,729	\$180,343	\$10,000	\$34,000	\$0	\$94,000	\$241,000
Articles	\$537,283	\$371,634	\$0				
Debt Service	\$127,258	\$127,257	\$134,000	\$103,957	\$103,957	\$103,957	\$103,957
New Debt Service (SRF)	\$0	\$0	\$0	\$0	\$0	\$635,352	\$572,238
New Debt Service	\$0	\$0	\$0	\$111,190	\$155,413	\$155,413	\$155,413
<b>Subtotal</b>	<b>\$1,789,270</b>	<b>\$679,234</b>	<b>\$144,000</b>	<b>\$249,147</b>	<b>\$259,370</b>	<b>\$988,722</b>	<b>\$1,072,608</b>
	▼ 4.2%	▼ 163.4%	▼ 371.7%	▲ 42.2%	▲ 3.9%	▲ 73.8%	▲ 7.8%
Capital Outlay (ARPA)*			\$0	\$425,000	\$0	\$0	\$0
* NOT included in Total Expenses							
<b>TOTAL BUDGET</b>	<b>\$2,760,341</b>	<b>\$1,749,850</b>	<b>\$1,333,717</b>	<b>\$1,767,856</b>	<b>\$1,823,640</b>	<b>\$2,599,921</b>	<b>\$2,732,142</b>
	▲ 2.2%	▼ 57.7%	▼ 31.2%	▲ 24.6%	▲ 3.1%	▲ 29.9%	▲ 4.8%

# EXPENSES

## Water Proforma - Proposed Rates



# PROJECTING REVENUE

## Revenue categories

### Rate Revenue:

- Derived from customer payments
- Accounts for about 90% of total revenue, 70% of Rate Revenue is based upon usage
- Is forecasted using projected usage and water rates.

### Non-Rate:

- Derived from all other sources of revenue
- Is forecasted based upon historic values

#### Usage Analysis and Projections

##### Projected Water Usage

Decreasing by

**-1.90%**

Per year

X . X%



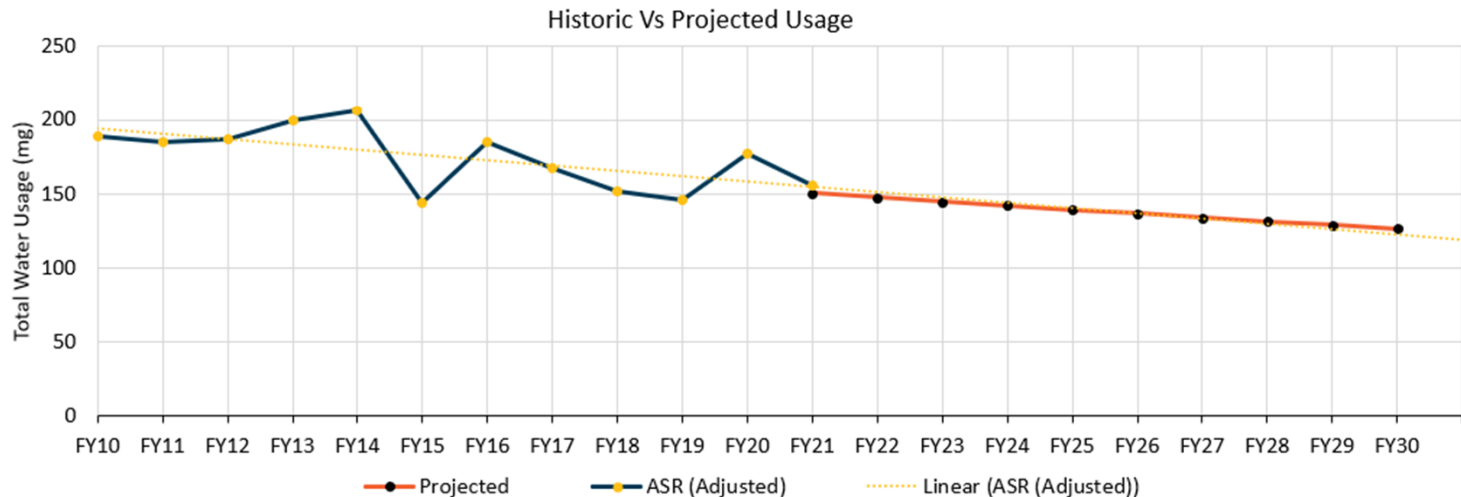
##### Projected Customer Base

No Change

**0.00%**

(0 Accounts Per year)

X . X



# REVENUES

## Historic Revenues and Projected Non-Rate Revenue

Historic Revenue Summary (Actuals)				Non-Rate Revenue Projections		
Row Labels	FY19	FY20	FY21	FY22	FY23	FY24
<b>Rate Revenue</b>						
Water - User Charges	\$970,358	\$926,206	\$1,231,920			
<b>Rate Revenue Total</b>	<b>\$970,358</b>	<b>\$926,206</b>	<b>\$1,231,920</b>			
<b>Liens, Penalties &amp; Py</b>						
Water - Liens Collected W /Taxes	\$15,615	\$23,812	\$24,043			
Water - Interest And Demands (Late Charges)	\$16,731	\$14,902	\$15,308			
Water-Liens Collw/Tax Title	\$759					
<b>Liens, Penalties &amp; Py Total</b>	<b>\$33,105</b>	<b>\$38,715</b>	<b>\$39,351</b>	<b>\$35,000</b>	<b>\$35,000</b>	<b>\$35,000</b>
<b>System Development</b>						
Water - Connection Charges	\$16,000	\$15,600	\$6,500			
<b>System Development Total</b>	<b>\$16,000</b>	<b>\$15,600</b>	<b>\$6,500</b>	<b>\$12,000</b>	<b>\$12,000</b>	<b>\$12,000</b>
<b>Transfer In</b>						
Transfers In From Water Enterprise Fund		\$170,000	\$100,000			
<b>Transfer In Total</b>		<b>\$170,000</b>	<b>\$100,000</b>			
<b>Non-Rate Revenue</b>						
Water - Other Service Charges	\$30,513	\$26,130	\$27,824			
Water - Backflow Prevention Charges	\$8,547	\$9,416	\$11,393			
Water-Utility Fees			\$1,117			
Water Scrap Metal Revenue			\$7,007			
Water - Interest On Investment - Bartholomew	\$18,109	\$18,173	\$11,155			
Water - Solar Energy Rebate	\$218	\$2,306	\$1,780			
Water Enterprise - Transfers In From Capital Project	\$4,690					
<b>Non-Rate Revenue Total</b>	<b>\$62,076</b>	<b>\$56,025</b>	<b>\$60,276</b>	<b>\$60,000</b>	<b>\$60,000</b>	<b>\$60,000</b>
<b>Grand Total</b>	<b>\$1,081,539</b>	<b>\$1,206,546</b>	<b>\$1,438,046</b>	<b>\$107,000</b>	<b>\$107,000</b>	<b>\$107,000</b>

# PROFORMA

## Dashboard

Town of

*Townsend*

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	▲ 2.2%	▼ 57.7%	▼ 31.2%	▲ 24.6%	▲ 3.1%	▲ 29.9%	▲ 4.8%

	FY20	FY21	FY22	FY23	FY24	FY25	FY26
<b>Revenue</b>							
Rate Revenue	\$ 926,206	\$ 1,231,920	\$ 1,153,730	\$ 1,138,043	\$ 1,122,654	\$ 1,107,558	\$ 1,092,748
Non Rate Revenue	\$ 280,340	\$ 206,127	\$ 107,000	\$ 107,000	\$ 107,000	\$ 107,000	\$ 107,000
<b>Total Revenue</b>	<b>\$ 1,206,546</b>	<b>\$ 1,438,046</b>	<b>\$ 1,260,730</b>	<b>\$ 1,245,043</b>	<b>\$ 1,229,654</b>	<b>\$ 1,214,558</b>	<b>\$ 1,199,748</b>
Delta previous (Rate Revenue)		▲ 33.0%	▼ 6.3%	▼ 1.4%	▼ 1.4%	▼ 1.3%	▼ 1.3%

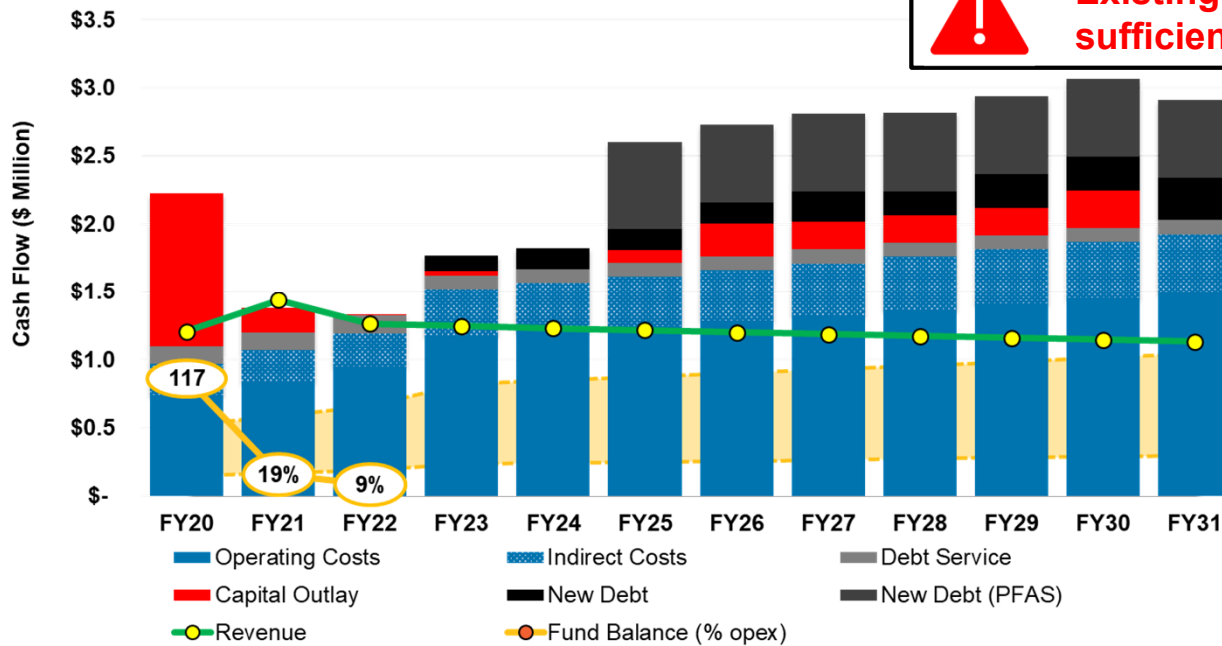
<b>Net Revenue</b>	<b>\$ 1,206,546</b>	<b>\$ (311,803)</b>	<b>\$ (72,987)</b>	<b>\$ (522,813)</b>	<b>\$ (593,986)</b>	<b>\$ (1,385,363)</b>	<b>\$ (1,532,394)</b>
Fund Balance	<b>\$861,883</b>	<b>\$156,875</b>	<b>\$83,888</b>	<b>-\$438,925</b>	<b>-\$1,032,911</b>	<b>-\$2,418,274</b>	<b>-\$3,950,669</b>
(as % OpEx)	<b>117%</b>	<b>19%</b>	<b>9%</b>	<b>-37%</b>	<b>-85%</b>	<b>-194%</b>	<b>-308%</b>

# PROFORMA

## Existing rates at projected usage

	FY20	FY21	FY22	FY23	FY24	FY25	FY26
<b>Revenue</b>	<i>Rate Increase</i>						
Rate Revenue	\$ 926,206	\$ 1,231,920	\$ 1,153,730	\$ 1,138,043	\$ 1,122,654	\$ 1,107,558	\$ 1,092,748
Non Rate Revenue	\$ 280,340	\$ 206,127	\$ 107,000	\$ 107,000	\$ 107,000	\$ 107,000	\$ 107,000
<b>Total Revenue</b>	<b>\$ 1,206,546</b>	<b>\$ 1,438,046</b>	<b>\$ 1,260,730</b>	<b>\$ 1,245,043</b>	<b>\$ 1,229,654</b>	<b>\$ 1,214,558</b>	<b>\$ 1,199,748</b>
Delta previous (Rate Revenue)		▲ 33.0%	▼ 6.3%	▼ 1.4%	▼ 1.4%	▼ 1.3%	▼ 1.3%
<b>Net Revenue</b>	<b>\$ 1,206,546</b>	<b>\$ (311,803)</b>	<b>\$ (72,987)</b>	<b>\$ (522,813)</b>	<b>\$ (593,986)</b>	<b>\$ (1,385,363)</b>	<b>\$ (1,532,394)</b>
Fund Balance	\$861,883	\$156,875	\$83,888	-\$438,925	-\$1,032,911	-\$2,418,274	-\$3,950,669
(as % OpEx)	117%	19%	9%	-37%	-85%	-194%	-308%

### Water Proforma - Existing Rates



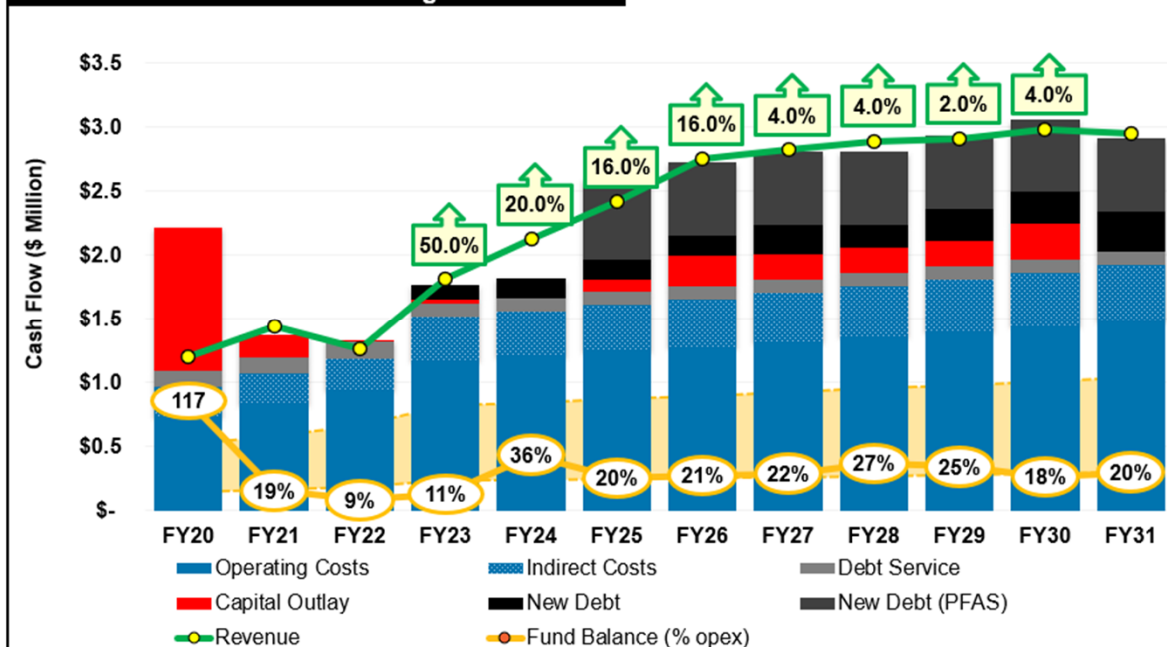
# PROFORMA

## Alternative A – Maintain Existing Rate Structure

	FY20	FY21	FY22	FY23	FY24	FY25	FY26
<b>Revenue</b>	<i>Rate Increase</i>			<b>50.0%</b>	<b>20.0%</b>	<b>16.0%</b>	<b>16.0%</b>
Rate Revenue	\$ 926,206	\$ 1,231,920	\$ 1,153,730	\$ 1,707,065	\$ 2,020,777	\$ 2,312,580	\$ 2,646,723
Non Rate Revenue	\$ 280,340	\$ 206,127	\$ 107,000	\$ 107,000	\$ 107,000	\$ 107,000	\$ 107,000
<b>Total Revenue</b>	<b>\$ 1,206,546</b>	<b>\$ 1,438,046</b>	<b>\$ 1,260,730</b>	<b>\$ 1,814,065</b>	<b>\$ 2,127,777</b>	<b>\$ 2,419,580</b>	<b>\$ 2,753,723</b>
Delta previous (Rate Revenue)		▲ 33.0%	▼ 6.3%	▲ 48.0%	▲ 18.4%	▲ 14.4%	▲ 14.4%
<b>Net Revenue</b>	<b>\$ 1,206,546</b>	<b>\$ (311,803)</b>	<b>\$ (72,987)</b>	<b>\$ 46,208</b>	<b>\$ 304,137</b>	<b>\$ (180,340)</b>	<b>\$ 21,581</b>
Fund Balance	<b>\$861,883</b>	<b>\$156,875</b>	<b>\$83,888</b>	<b>\$130,096</b>	<b>\$434,233</b>	<b>\$253,893</b>	<b>\$275,474</b>
(as % OpEx)	<b>117%</b>	<b>19%</b>	<b>9%</b>	<b>11%</b>	<b>36%</b>	<b>20%</b>	<b>21%</b>

### Rates

#### Water Proforma - Maintain Existing Rate Structure



<i>Rate Increase</i>		<b>50%</b>	
Description	Type	FY22	FY23
WATR	Base Charge	\$37.50	\$56.25
WATR	Usage \$/KG	\$5.36	\$8.04
TWD	Base Charge	\$37.50	\$56.25
TWD	Usage \$/HCF	\$4.32	\$6.48

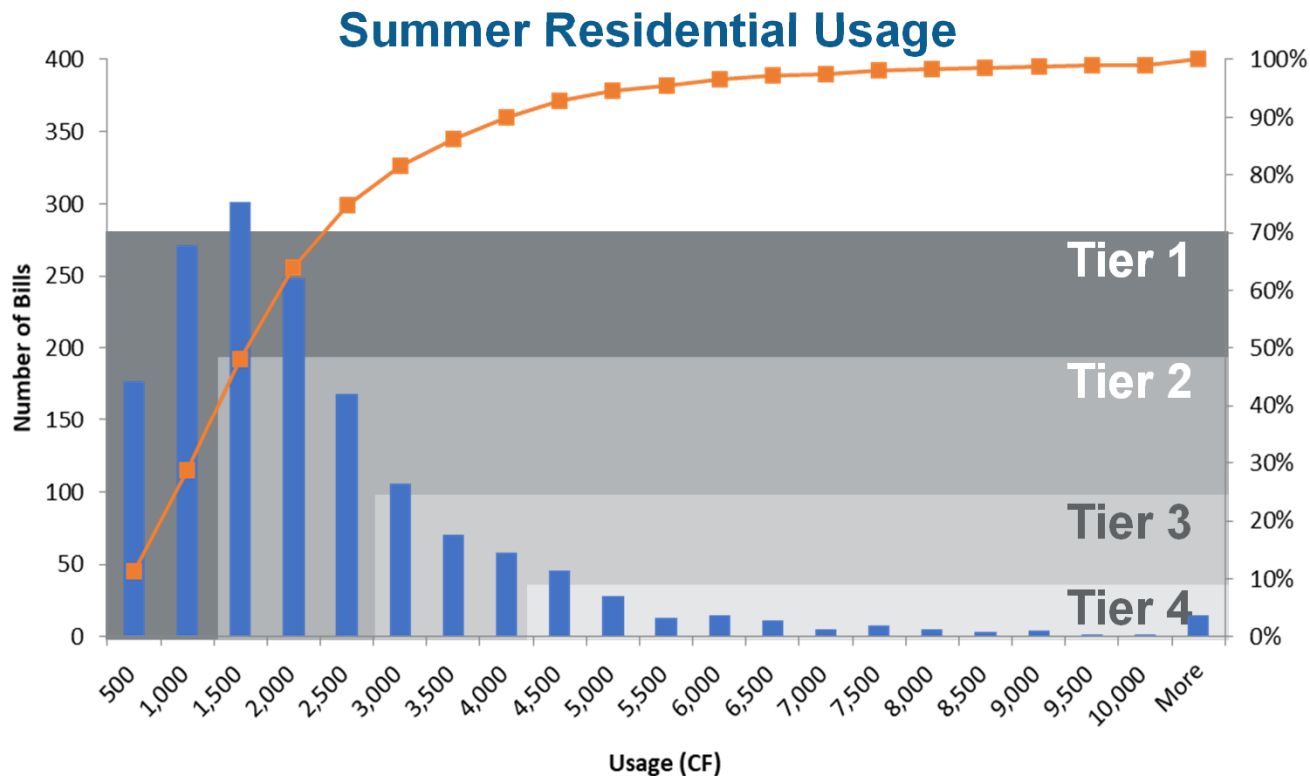
# ALTERNATIVE B – TIERED RATES

## Existing Rate Structure

- All customers pay same base charge
- All usage billed at same rate

## Tiered Rate Structure

- All customers pay same base charge
- Usage cost goes up based upon volume used
  - Used to encourage water conservation
  - Based upon evaluation of usage patterns
  - Used by 65% of Water Systems in 2017 Tighe & Bond water rate survey

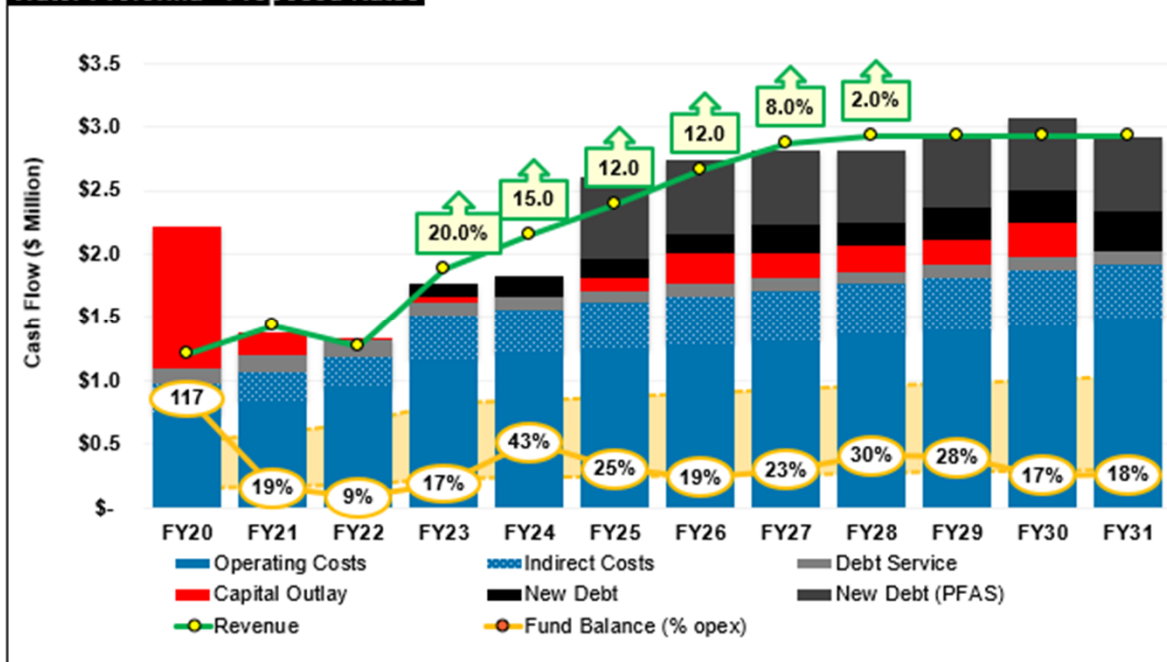


# PROFORMA

## Alternative B – Tiered Rate Structure

	FY20	FY21	FY22	FY23	FY24	FY25	FY26
<b>Revenue - Alt. B</b>				20.0%	15.0%	12.0%	12.0%
Rate Revenue	\$ 926,206	\$ 1,231,920	\$ 1,153,730	\$ 1,772,633	\$ 2,038,528	\$ 2,283,152	\$ 2,557,130
Non Rate Revenue	\$ 280,340	\$ 206,127	\$ 107,000	\$ 107,000	\$ 107,000	\$ 107,000	\$ 107,000
<b>Total Revenue</b>	<b>\$ 1,206,546</b>	<b>\$ 1,438,046</b>	<b>\$ 1,260,730</b>	<b>\$ 1,879,633</b>	<b>\$ 2,145,528</b>	<b>\$ 2,390,152</b>	<b>\$ 2,664,130</b>
<i>delta previous</i>		▲ 33.0%	▼ 6.3%	▲ 53.6%	▲ 15.0%	▲ 12.0%	▲ 12.0%
<b>Net Revenue (Revenue-Expense)</b>	<b>\$ (1,553,795)</b>	<b>\$ (311,803)</b>	<b>\$ (72,987)</b>	<b>\$ 111,777</b>	<b>\$ 321,888</b>	<b>\$ (209,769)</b>	<b>\$ (68,012)</b>
Retained Earnings Balance	<b>\$861,883</b>	<b>\$156,875</b>	<b>\$83,888</b>	<b>\$195,665</b>	<b>\$517,553</b>	<b>\$307,784</b>	<b>\$239,772</b>
(as % OpEx)	117%	19%	9%	17%	43%	25%	19%

**Water Proforma - Proposed Rates**



### Rates

		<b>Rate Increase</b>	
Description	Type	FY22	FY23
WATR	Base Charge	\$37.50	\$45.00
WATR	Usage \$/KG	\$5.36	
TWD	Base Charge	\$37.50	\$45.00
TWD	Usage \$/HCF	\$4.32	
Residential T1	Usage \$/HCF		\$5.18
Residential T2	Usage \$/HCF		\$7.78
Residential T3	Usage \$/HCF		\$10.37
Residential T4	Usage \$/HCF		\$12.96
Non Residential T1	Usage \$/HCF		\$5.18
Non Residential T2	Usage \$/HCF		\$7.78

### Tier Volumes (CF)

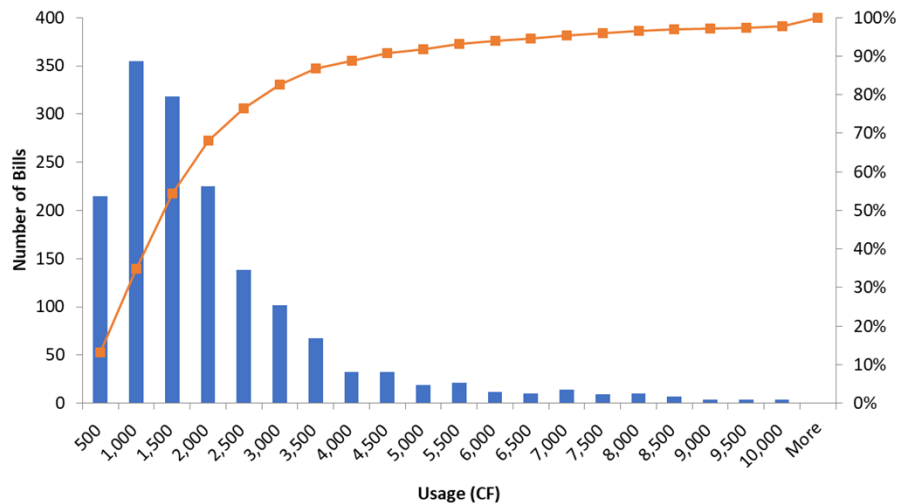
Type	Residential	Non-Residential
Tier 1	1,500	5,000
Tier 2	3,000	5,000+
Tier 3	4,500	
Tier 4	4,500+	

Note: Tier 1 starts at 0 CF

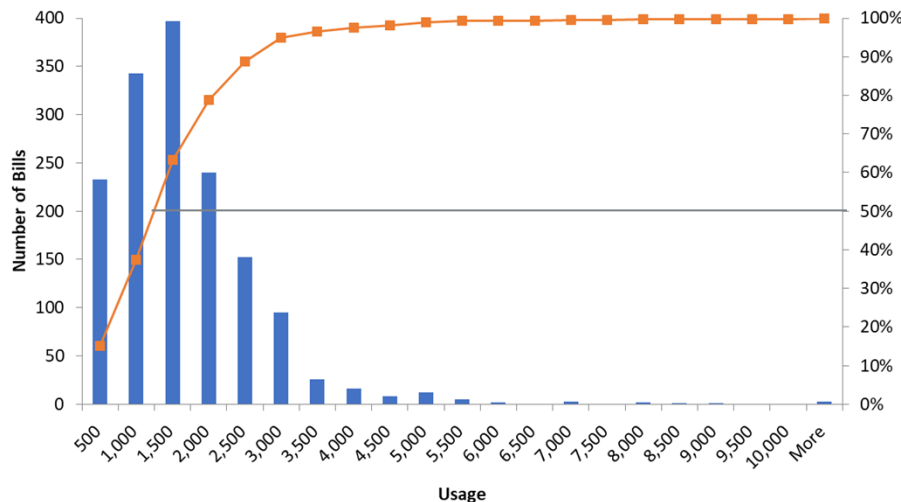
# CUSTOMER COST IMPACTS

## Residential – Low water users

“Summer”



“Winter”



User	Period	Water Bill / Rate Structure				
		Usage (cf)	Tiered Rates	Existing	Delta	S/W
1	"Summer"	1,500	\$122.76	\$153.45	\$ (30.69)	0.9
	"Winter"	1,600	\$130.54	\$159.93	\$ (29.39)	
2	"Summer"	1,500	\$122.76	\$153.45	\$ (30.69)	1.7
	"Winter"	900	\$91.66	\$114.57	\$ (22.91)	
3	"Summer"	1,500	\$122.76	\$153.45	\$ (30.69)	0.8
	"Winter"	1,800	\$146.09	\$172.89	\$ (26.80)	
4	"Summer"	1,500	\$122.76	\$153.45	\$ (30.69)	0.8
	"Winter"	1,800	\$146.09	\$172.89	\$ (26.80)	

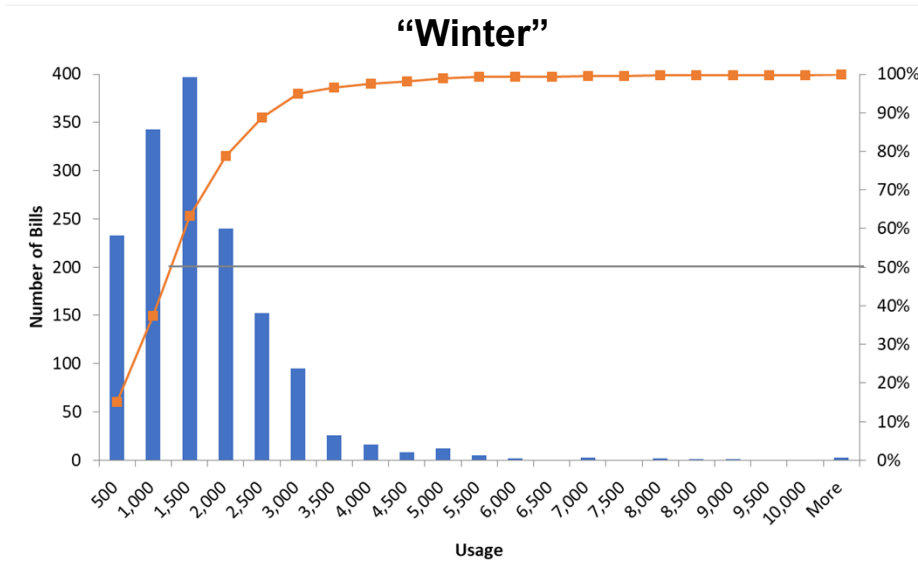
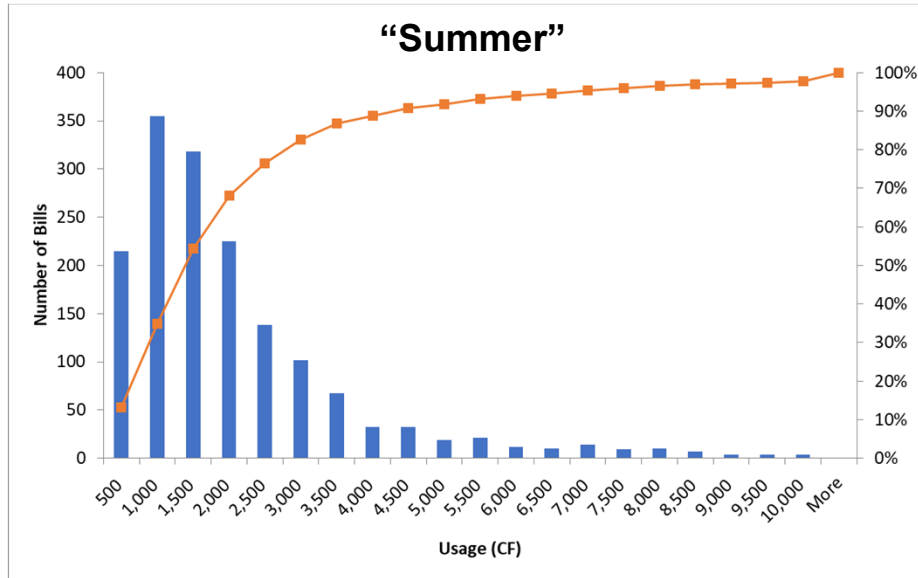
Example:



2 People each using 65 Gallons per day  
Minimal Discretionary Usage

# CUSTOMER COST IMPACTS

## Residential – Moderate water users



Water Bill / Rate Structure						
User	Period	Usage (cf)	Tiered Rates	Existing	Delta	S/W
1	"Summer"	3,100	\$249.77	\$257.13	\$ (7.36)	1.1
	"Winter"	2,900	\$231.62	\$244.17	\$ (12.55)	
2	"Summer"	3,100	\$249.77	\$257.13	\$ (7.36)	1.2
	"Winter"	2,500	\$200.52	\$218.25	\$ (17.73)	
3	"Summer"	3,100	\$249.77	\$257.13	\$ (7.36)	1.2
	"Winter"	2,500	\$200.52	\$218.25	\$ (17.73)	
4	"Summer"	3,100	\$249.77	\$257.13	\$ (7.36)	1.1
	"Winter"	2,700	\$216.07	\$231.21	\$ (15.14)	

Example:

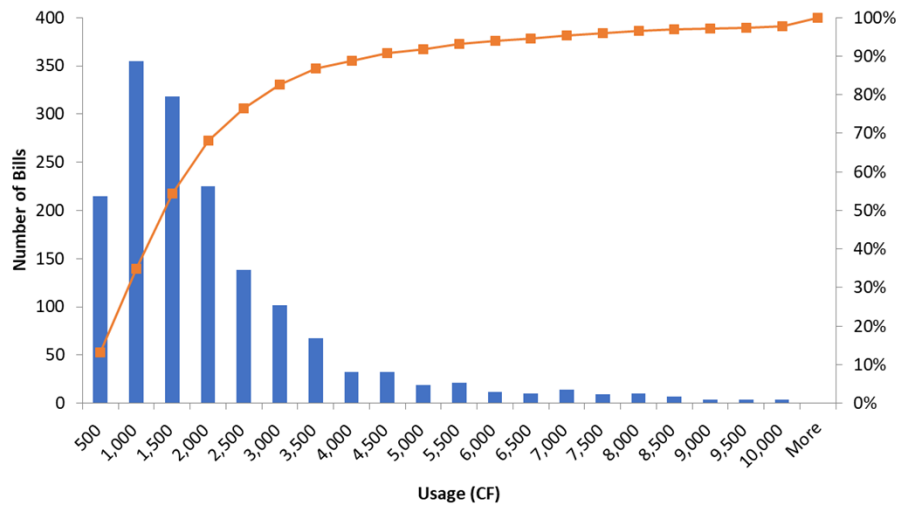


4 People each using 65 Gallons per day  
Minimal Discretionary Usage

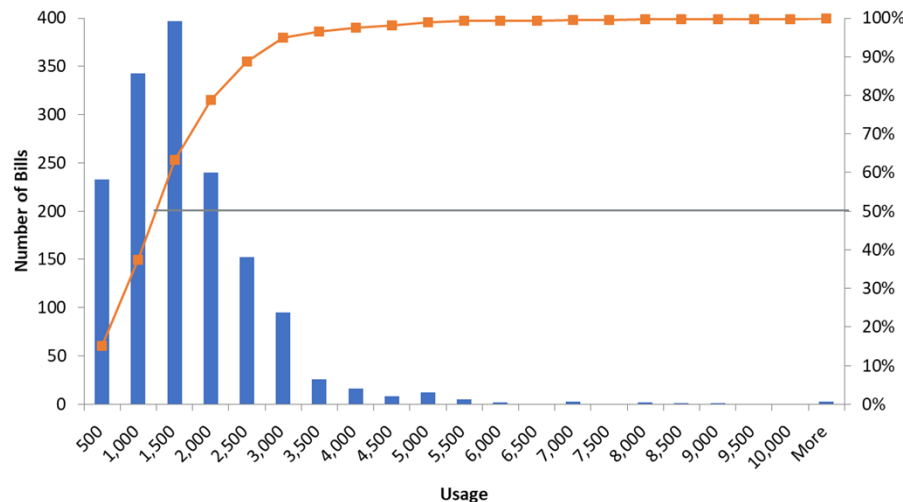
# CUSTOMER COST IMPACTS

## Residential – High water users

“Summer”



“Winter”



User	Period	Usage (cf)	Water Bill / Rate Structure			
			Tiered Rates	Existing	Delta	S/W
1	"Summer"	41,800	\$5,229.00	\$2,764.89	\$ 2,464	13.5
	"Winter"	3,100	\$249.77	\$257.13	\$ (7.36)	
2	"Summer"	34,417	\$4,272.16	\$2,286.47	\$ 1,986	25.4
	"Winter"	1,356	\$115.30	\$144.12	\$ (28.82)	
3	"Summer"	17,876	\$1,940.17	\$1,270.86	\$ 669	2.0
	"Winter"	9,036	\$883.36	\$698.03	\$ 185.33	
4	"Summer"	17,456	\$2,074.02	\$1,187.40	\$ 887	3.7
	"Winter"	4,667	\$416.56	\$358.67	\$ 57.89	

# CUSTOMER COST IMPACTS

## Non-Residential – Top 10

User		Period	Usage (cf)	Water Bill / Rate Structure		Delta	S/W
				Tiered Rates	Existing		
1	Industrial	"Summer"	398,986	\$30,855.95	\$25,966.79	\$ 4,889.16	1.7
		"Winter"	238,420	\$18,420.88	\$15,562.12	\$ 2,858.77	
2	Apartments	"Summer"	85,368	\$6,299.82	\$5,756.85	\$ 542.97	0.8
		"Winter"	106,300	\$7,927.49	\$7,113.24	\$ 814.25	
3	Commercial	"Summer"	111,610	\$8,586.63	\$7,457.33	\$ 1,129.31	2.0
		"Winter"	55,160	\$4,197.08	\$3,799.37	\$ 397.71	
4	Apartments	"Summer"	49,700	\$3,695.47	\$3,333.06	\$ 362.41	0.9
		"Winter"	53,000	\$3,952.08	\$3,546.90	\$ 405.18	
5	School	"Summer"	53,053	\$4,072.03	\$3,944.08	\$ 127.95	1.7
		"Winter"	31,632	\$2,256.10	\$2,556.00	\$ (299.90)	
6	Industrial	"Summer"	27,400	\$2,046.02	\$1,831.77	\$ 214.25	0.6
		"Winter"	44,400	\$3,367.94	\$2,933.37	\$ 434.57	
7	Apartments	"Summer"	20,626	\$1,411.92	\$1,505.31	\$ (93.39)	0.4
		"Winter"	47,876	\$3,469.04	\$3,271.11	\$ 197.92	
8	Industrial	"Summer"	28,000	\$2,092.68	\$1,870.65	\$ 222.03	0.9
		"Winter"	31,600	\$2,372.62	\$2,103.93	\$ 268.69	
9	Apartments	"Summer"	36,399	\$2,745.79	\$2,414.91	\$ 330.88	3.8
		"Winter"	9,699	\$669.59	\$684.75	\$ (15.15)	
10	Agricultural	"Summer"	31,730	\$2,382.72	\$2,112.35	\$ 270.37	2.3
		"Winter"	13,930	\$998.60	\$958.91	\$ 39.68	

# RESIDENTIAL FINANCIAL BURDEN & 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.

## Annual Cost

Scenario	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	Total
Alt. A - Maintain Existing Rate Structure	\$ 409	\$ 614	\$ 737	\$ 854	\$ 991	\$ 1,031	\$ 1,072	\$ 1,093	\$ 1,137	\$ 1,137	\$ 8,666.40
<i>Increase</i>	\$ -	\$ 205	\$ 123	\$ 118	\$ 137	\$ 40	\$ 41	\$ 21	\$ 44		
Alt. B - Tiered Rates	\$ 409	\$ 491	\$ 565	\$ 632	\$ 708	\$ 765	\$ 780	\$ 780	\$ 780	\$ 780	\$ 6,282.87
<i>Increase</i>	\$ -	\$ 82	\$ 74	\$ 68	\$ 76	\$ 57	\$ 15	\$ -	\$ -	\$ -	

**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 2% or more is considered to be a financial burden.

Scenario	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31
Alt. A - Maintain Existing Rate Structure	1.3%	1.5%	1.7%	1.9%	2.1%	2.1%	2.2%	2.2%	2.3%	2.3%
Alt. B - Tiered Rates	1.3%	1.4%	1.5%	1.6%	1.7%	1.7%	1.8%	1.8%	1.8%	1.8%

**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 (HBI) - Static LQI

Scenario	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31
Existing										
Alt. A - Maintain Existing Rate Structure	5.3%	6.5%	7.2%	7.8%	8.6%	8.9%	9.1%	9.2%	9.5%	9.5%
Alt. B - Tiered Rates	5.3%	5.7%	6.2%	6.6%	7.0%	7.3%	7.4%	7.4%	7.4%	7.4%

## Townsend Income Data (US Census)

Median Household Income: \$72,500

Lowest Quintile Income: \$17,265

Poverty Prevalence Indicator: 18%

Household Burden Indicator	Poverty Prevalence Indicator		
	>= 35%	20% to 35%	<20%
> = 10%	Very High Burden	High Burden	Moderate – High Burden
7% to 10%	High Burden	Moderate – High Burden	Moderate - Low Burden
<7%	Moderate - High Burden	Moderate - Low Burden	Low Burden

Note: \$500 in annual cost was included in both analysis to represent septic system costs