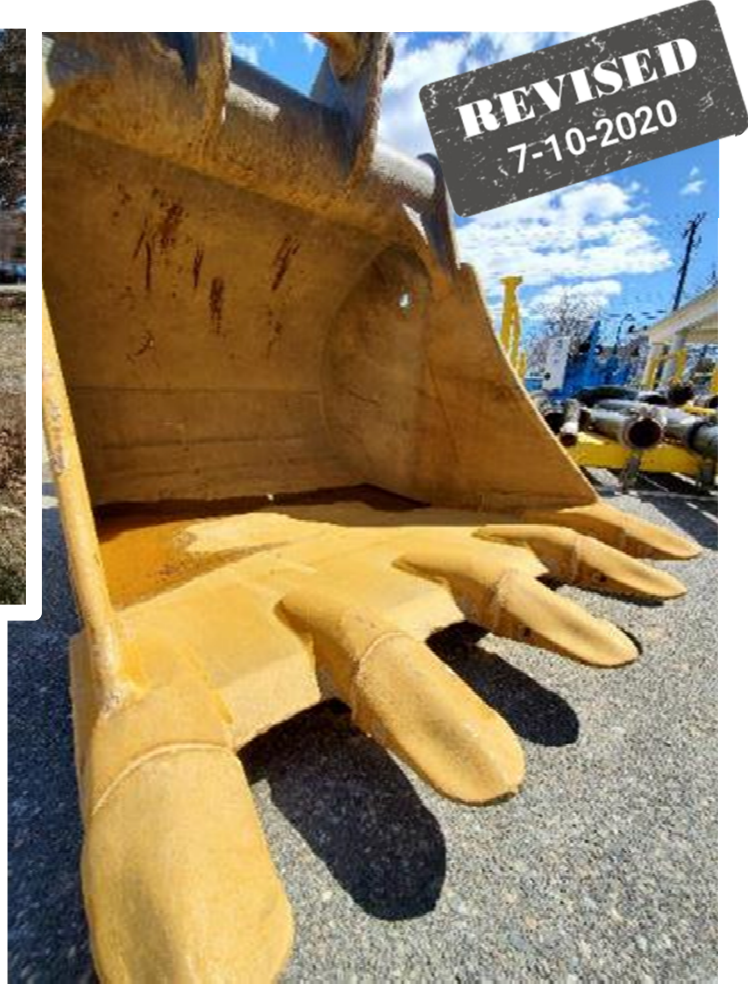

BOURNE SEWER RATE EVALUATION

Bourne Sewer Commission

July 14, 2020 Workshop

4D

Tighe&Bond

INTRODUCTION

REVISED
7-10-2020

This handout is designed specifically for use in a virtual meeting environment where some participants may be connected by telephone only. The goal is to provide a comprehensive overview of the evaluation in an intentionally condensed fashion to minimize the total number of pages.

Bourne Sewer System History and Overview

Existing sewer system

- Constructed in the 1990's
- Services the Downtown, Taylor Point and Hideaway Village Areas
- Paid by owners through betterments
- Sewage goes to Wareham for treatment through Intermunicipal Agreement (IMA)
- Sewer users are billed based upon a base fee which includes 45,000 gallons of use, anything over that billed at $0.01 per gallon.

New Wastewater Treatment Plant

- Need first identified in early 2000's
- Designed to support projected development in existing sewer service area
- Intended to be fully funded by new growth with no impact on existing rate payers.

Development Fees

- 2006 Existing fee structure established
- 2017 Capacity management policy developed

Project Goals

Rate Evaluation: Determine if new plant costs will be supported entirely by growth.

- Add costs of new plant to existing costs
- Estimate future revenue under existing connection fees and from future users
- Determine user cost impacts

Connection Fee and Allocation Evaluation

- Review existing development fees
- Review capacity allocation policy

RATE EVALUATION PROCESS

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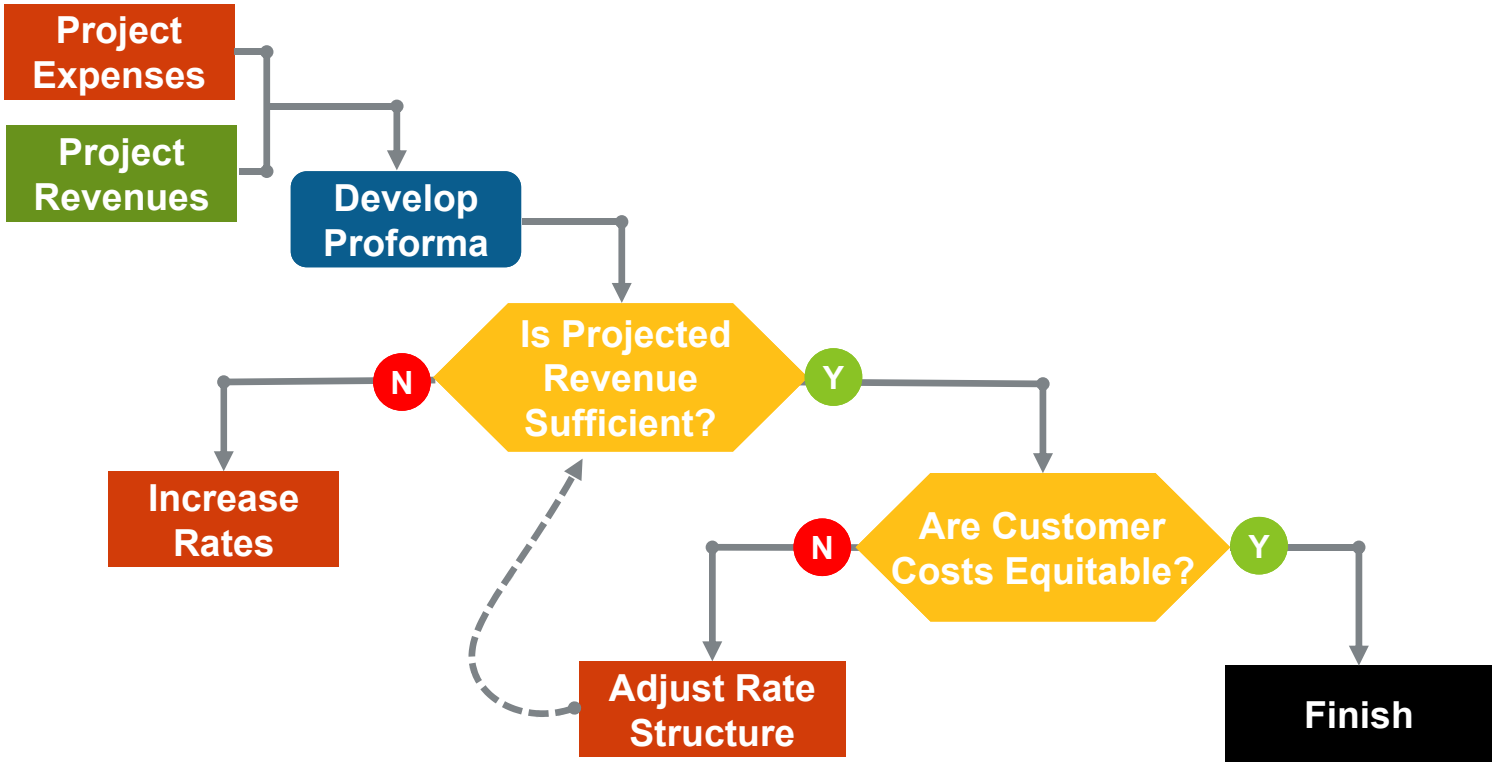

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PROJECTING EXPENSES

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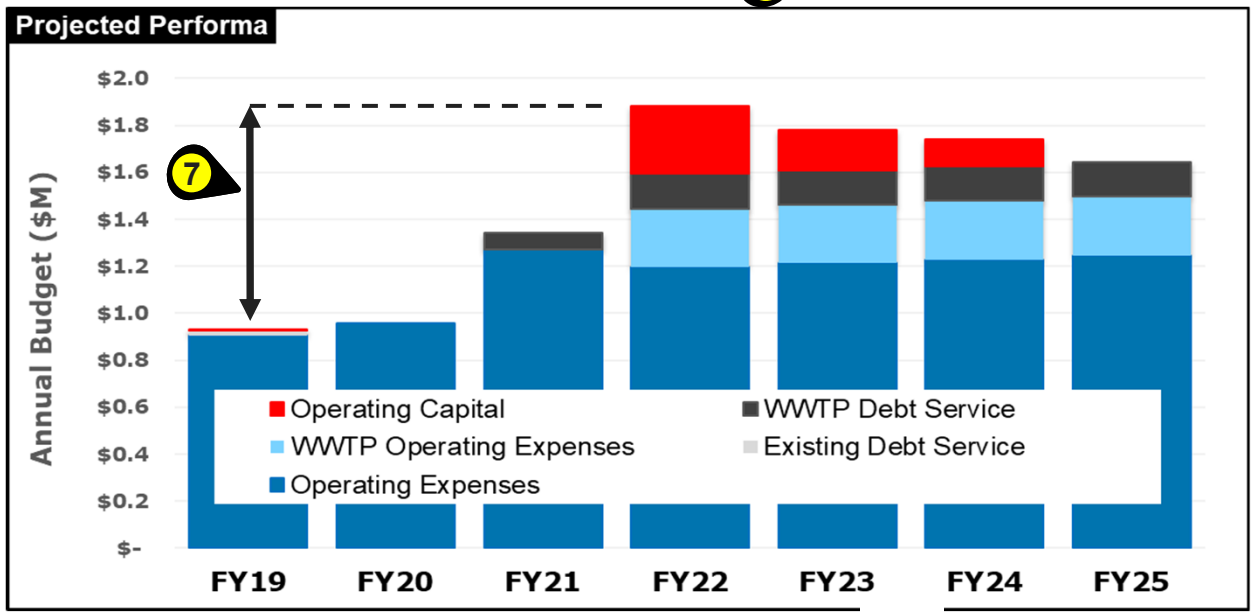
	Actual Values FY19	Actual Values FY20	Budget Values FY21	Projected Values FY22	Projected Values FY23	Projected Values FY24	Projected Values FY25
Operating Expenses							
Wareham - Operating	$213,912	$400,000	$410,000	$420,250	$430,756	$441,525	$452,563
Personnel Services	$170,024	$106,494	$197,380	$243,315	$249,397	$255,632	$262,023
Wareham - Capital	$188,478	$188,478	$188,478	$188,478	$188,478	$188,478	$188,478
Transfer Out (Indirects)	$128,607	$128,607	$140,944	$145,877	$150,983	$156,267	$161,736
Purchase of Services	$145,524	$92,776	$113,150	$79,796	$81,791	$83,836	$85,932
Other Charges and Expenditures	$47,408	$32,614	$105,375	$108,009	$110,710	$113,477	$116,314
Transfer Out (Reserve)	$0	$0	$100,000	$0	$0	$0	$0
Supplies	$12,661	$6,715	$20,028	$20,616	$21,223	$21,851	$22,498
Subtotal	**$906,615**	**$955,684**	**$1,275,355**	**$1,206,341**	**$1,233,339**	**$1,261,066**	**$1,289,545**
Delta Previous	3.4%	0.0%	9.6%	-5.4%	2.2%	2.2%	2.3%
Capital							
Operating Capital	$3,679	$0	$0	$290,000	$170,000	$115,000	$0
New Debt Service	$0	$0	$0	$0	$0	$0	$0
Existing Debt Service	$20,500	$0	$0	$0	$0	$0	$0
Subtotal	**$24,179**	**$0**	**$0**	**$290,000**	**$170,000**	**$115,000**	**$0**
New WWTP							
Operating Expenses	$0	$0		$250,000	$250,000	$250,000	$250,000
Debt Service	$0	$0	$72,000	$146,776	$146,776	$146,776	$146,776
Subtotal	**$0**	**$0**	**$72,000**	**$396,776**	**$396,776**	**$396,776**	**$396,776**
TOTAL EXPENSES	**$930,794**	**$955,684**	**$1,347,355**	**$1,893,117**	**$1,800,115**	**$1,772,843**	**$1,686,321**



Key points:

1. Operating expenses projected to increase by about 3.5% annually
2. Wareham costs based on June 2019 settlement agreement. Cost escalates 2.5% annually
3. Plant O&M cost based upon estimate, actual cost will vary based upon future contracts costs and actual startup – based upon March 2021 completion
4. Based upon FY21 budget, should replace with information from schedule C.
5. Operating Capital reflects deferred projects including $100k Infiltration & Inflow investigation (MADEP required).
6. Based upon Budget, actual costs likely to be lower. For FY19 the actual expenditure was 77% of budget.
7. Budget levels nearly double by FY22 which tends to bring out any inequities in a water or sewer rate structure

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PROJECTING REVENUE

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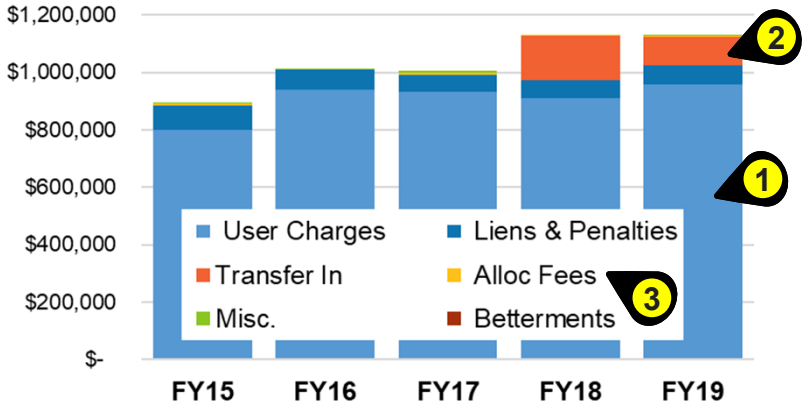
Historic Revenue by Source



Key points:

1. The majority of revenue has come from user charges
2. In the past, transfers were used to minimize rate increases
3. Once debt and CIP costs hit, development revenue becomes more important.

Projecting Revenue From New and Existing Customers

Existing Customers

User Charges: Based upon analysis of previous years usage data

New Customers (Development) Broken down into two categories:

Known: Projects that the Town is aware of and are in the development process

Projected: Estimated from undeveloped non-residential parcels

User Charges

Known: Based upon flow data provided in application materials or estimated combined with estimated connection year.

Projected: Based upon planning level flow estimates

Development Charges

Known: Based upon data provided in application materials or estimated combined with estimated connection year.

Projected: Based upon planning level data

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PROJECTING REVENUE FROM USER CHARGES

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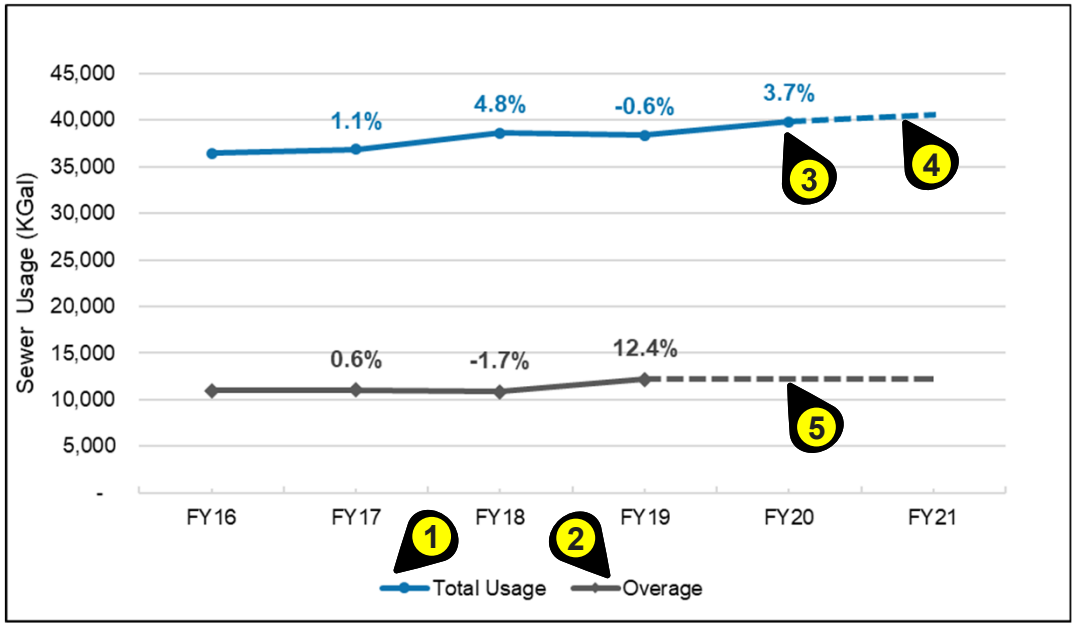
Usage Analysis – Existing Customers



Usage Analysis – Known Development

Development (6)	Flow Year	Units (7)	Allocated (gpd)	Expected Flow (gpd) (8)
Hampton Inn	2020	10	15,243	
Oak Bay Brewery	2020	1	1,661	
Veterinary Clinic	2020	1		-
Blended Berries	2020	1	440	
Mahoney's on Main	2020	1	3,465	
Vincent Michienzi (85-93 Main)	2020	1	13,000	6,500
Calamar/ 25 Perry	2021	120	16,800	8,400
James McLaughlin	2021	1	79	40
MMA Cadet Housing	2021	1	7,070	3,535
Bay Motor Inn	2022	1	11,985	5,993
Choubah Engineering	2022	1	41	21
GENCON/Robert Gendron	2023	109	17,750	8,875
100 Main	2023	121	26,080	13,040
Bourne Scenic Park	2023	20	17,700	8,850
CMP Development LLC	2023	1	46,475	23,238
Total				**78,490**

Key points:

1. Total amount of water use as measured by Buzzards Bay Water District
2. Amount of usage over the 45K gallons allotted per billable unit under the current rate structure
3. 2020 based upon first 6 months of meter data extrapolated to full year using data from previous years water use.
4. Estimated to increase at 2% annually
5. Overage trends differently than total usage because of masking effect of existing fee structure. Projected to remain at 2019 levels.
6. First year of flow, based upon best estimate. Green indicates project usage appears in 2019 flow data
7. Allocated flow is based upon Title 5 (Septic System planning level flow estimates based upon type of use). Generally considered to be a maximum day flow or about twice the average daily flow
8. 50% of Title 5 flow, considered to be an average daily flow

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PROJECTING REVENUE FROM DEVELOPMENT FEES

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FEE STRUCTURES

Existing Fee Structure

Fee	Amount and Basis
Existing Fee Structure (as of 2006)	
Design Review and Construction Inspection Fee	$1,500 (commercial only)
Commercial Sewer Permit Fee	$150 + $0.010 per square foot of building floor space
Sewer Connection Fee	Annual sewer fee times the number of business units.
Residential Sewer Permit Fee	$100 + $100 for each additional unit.
Sewer System Development Charge	$5,769.678 per acre plus $36.703 per foot of frontage.
2017 Commercial Allocation Policy Fees	
Application Fee	$1,500
Preliminary Allocation Fee	$5,000 plus $1 per projected flow
Operational Allocation Fee	Number of units x current annual base rate sewer fee

Key points:

1. 2006 Sewer Development Charge was based upon betterment structure used to pay for system in the 1990's. This method is designed to distribute the costs of sewer (horizontal) construction.
2. The proposed system development charge distributes the $2.4M of new WWTP debt assigned to the sewer enterprise fund using the widely accepted ERU methodology.

Proposed ERU Based Development Fee

Service Development Charge

1. Determine number of Equivalent Residential units

Divide total plant capacity by average residential usage

Total Capacity	100,000	gpd
Residential usage	150	gpd
Equals	**667**	**ERU's**

2. Determine ERU cost

Cost to be recovered	$2,400,000	
Total ERU's	667	
Equals	**$3,600**	**Per ERU**

PROJECTED DEVELOPMENT REVENUE

Existing Fee Structure

REVISED 7-10-2020

Known Development

Development	Flow Year	Units	Allocated (gpd)	Expected Flow (gpd)	2017 Commercial Allocation Policy: Application Fee	2017 Commercial Allocation Policy: Preliminary Allocation Fee (calc)	2006 Fee Structure: System Development Charge	Grand Total (2)	Total Billed (3)	Total Remaining (4)
Hampton Inn	2020	100	15,243		$1,500	$21,743	$39,231	**$62,474**	$48,533	
Oak Bay Brewery	2020	1	1,661		$1,500	$8,756	$8,757	**$19,013**	$8,756	
Veterinary Clinic	2020	1		-	$1,500	$6,681	$10,514	**$18,694**		
Blended Berries	2020	1	440		$1,500	$6,940	$31,816	**$40,256**		
Mahoney's on Main	2020	1	3,465		$1,500	$9,965	$5,414	**$16,879**		$16,879
Vincent Michienzi (85-93 Main)	2020	1	13,000	6,500	$1,500	$19,500	$20,810	**$41,810**	$21,000	$20,810
Calamar/ 25 Perry	2021	120	16,800	8,400	$1,500	$23,300	$70,922	**$95,722**	$21,800	$73,922
James McLaughlin	2021	1	79	40	$1,500	$6,830	$15,011	**$23,341**	$6,579	$16,762
MMA Cadet Housing	2021	1	7,070	3,535	$1,500	$13,570	$18,586	**$33,656**	$13,570	$20,086
Bay Motor Inn	2022	1	11,985	5,993	$1,500	$6,684	$49,184	**$57,368**		$57,368
Choubah Engineering	2022	1	41	21	$1,500	$6,541	$68,358	**$76,399**		$76,399
GENCON/Robert Gendron	2023	109	17,750	8,875	$1,500	$24,250	$31,450	**$57,200**	$24,250	$32,950
100 Main	2023	121	26,080	13,040	$1,500	$32,580	$9,875	**$43,955**		$43,955
Bourne Scenic Park	2023	20	17,700	8,850	$1,500	$24,200	$58,961	**$84,661**		$84,661
CMP Development LLC	2023	1	46,475	23,238	$1,500	$52,975	$39,491	**$93,966**		$93,966
Total				**78,490**	**$22,500**	**$264,514**	**$478,379**	**$765,394**	**$144,488**	**$537,757**

Projected Development

Land Use Description	Title 5 Estimated Flow (gpd)	Expected Flow (gpd)	Est No Units	Application Fee	Preliminary Allocation Fee	System Development Charge	Grand Total
Vacant, Selectmen or City Council (Municipal)	1,468	734	12	$ 1,500	$ 7,968	$ 18,570	**$ 28,038**
Developable Commercial Land	1,411	706	12	$ 1,500	$ 7,911	$ 18,273	**$ 27,684**
Undevelopable Commercial Land	501	250	5	$ 1,500	$ 7,001	$ 5,805	**$ 14,306**
Undevelopable Commercial Land	736	368	6	$ 1,500	$ 7,236	$ 7,089	**$ 15,825**
Vacant, Selectmen or City Council (Municipal)	645	322	6	$ 1,500	$ 7,145	$ 19,619	**$ 28,264**
Vacant, Selectmen or City Council (Municipal)	954	477	8	$ 1,500	$ 7,454	$ 15,593	**$ 24,547**
Developable Commercial Land	1,015	507	9	$ 1,500	$ 7,515	$ 9,809	**$ 18,824**
Developable Commercial Land	1,346	673	11	$ 1,500	$ 7,846	$ 15,678	**$ 25,024**
Developable Commercial Land	1,699	849	14	$ 1,500	$ 8,199	$ 9,639	**$ 19,337**
Developable Commercial Land	1,668	834	14	$ 1,500	$ 8,168	$ 10,732	**$ 20,401**
Vacant, Selectmen or City Council (Municipal)	4,252	2,126	35	$ 1,500	$ 10,752	$ 23,962	**$ 36,213**
Vacant, Selectmen or City Council (Municipal)	23,392	11,696	190	$ 1,500	$ 29,892	$ 90,595	**$ 121,986**
-	9,061	4,530	74	$ 1,500	$ 15,561	$ 38,683	**$ 55,744**
Undevelopable Commercial Land	684	342	6	$ 1,500	$ 7,184	$ 14,071	**$ 22,754**
	48,831	**24,415**	**402**	**$21,000**	**$139,831**	**$298,116**	**$458,947**

Key points:

1. Assumed
2. Consists of the three charges shown which represent Bourne's intended application of existing fees
3. Total received to date
4. Remaining charges anticipated to be billed
5. Parcels selected based upon land use descriptions. Developable residential parcels not included based upon previous discussion relative to zoning restrictions
6. Development fees distributed based upon the assumed timeline

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PROJECTING REVENUE FROM DEVELOPMENT FEES

REVISED 7-10-2020

Proposed Fee Structure

Known Development

Development	Flow Year	Expected Flow (gpd)	No. ERU's	ERU System Development Charge
Hampton Inn	2020			$ -
Oak Bay Brewery	2020			$ -
Veterinary Clinic	2020	-		$ -
Blended Berries	2020			$ -
Mahoney's on Main	2020			$ -
Vincent Michienzi (85-93 Main)	2020	6,500	44	$ 158,400
Calamar/ 25 Perry	2021	8,400	56	$ 201,600
James McLaughlin	2021	40	1	$ 3,600
MMA Cadet Housing	2021	3,535	24	$ 86,400
Bay Motor Inn	2022	5,993	40	$ 144,000
Choubah Engineering	2022	21	1	$ 3,600
GENCON/Robert Gendron	2023	8,875	60	$ 216,000
100 Main	2023	13,040	87	$ 313,200
Bourne Scenic Park	2023	8,850	59	$ 212,400
CMP Development LLC	2023	23,238	155	$ 558,000
Total		**78,490**	**527**	**$1,897,200**

Known Development

Land Use Description	Title 5 Estimated Flow (gpd)	Expected Flow (gpd)	No. ERU's	ERU System Development Charge
Vacant, Selectmen or City Council (Municipal)	1,468	734	5	$ 35,232.00
Developable Commercial Land	1,411	706	5	$ 33,871.20
Undevelopable Commercial Land	501	250	2	$ 12,021.60
Undevelopable Commercial Land	736	368	3	$ 17,668.80
Vacant, Selectmen or City Council (Municipal)	645	322	3	$ 15,472.80
Vacant, Selectmen or City Council (Municipal)	954	477	4	$ 22,896.00
Developable Commercial Land	1,015	507	4	$ 24,357.60
Developable Commercial Land	1,346	673	5	$ 32,304.00
Developable Commercial Land	1,699	849	6	$ 40,771.20
Developable Commercial Land	1,668	834	6	$ 40,039.20
Vacant, Selectmen or City Council (Municipal)	4,252	2,126	15	$ 102,036.00
Vacant, Selectmen or City Council (Municipal)	23,392	11,696	78	$ 561,400.80
-	9,061	4,530	31	$ 217,452.00
Undevelopable Commercial Land	684	342	3	$ 16,413.60
	48,831	**24,415**	**170**	**$1,171,937**

DEVELOPMENT FEE SUMMARY

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Existing Fee Structure

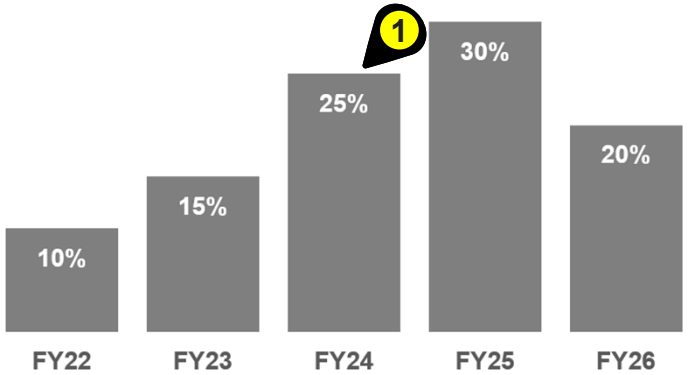
	Known	Projected	Total	Debt Service	Stabilization Balance
2020	$ 144,488		$ 144,488	$ -	$ 144,488
2021	$ 211,408	$ -	$ 211,408	$ 72,000	$ 283,896
2022	$ 133,767	$ 45,895	$ 179,662	$ 148,981	$ 314,577
2023	$ 235,827	$ 68,842	$ 304,669	$ 148,981	$ 470,265
2024	$ -	$ 114,737	$ 114,737	$ 148,981	$ 436,021
2025	$ -	$ 137,684	$ 137,684	$ 148,981	$ 424,724
2026		$ 91,789	$ 91,789	$ 148,981	$ 367,533
2027		$ -	$ -	$ 148,981	$ 218,552
2028		$ -	$ -	$ 148,981	$ 69,571
2029		$ -	$ -	$ 148,981	$ (79,409)
Total	**$ 725,490**	**$ 458,947**	**$ 1,184,437**		

Proposed Fee Structure

	Known	Projected	Total	Debt Service	Stabilization Balance
2020	$ 144,488.00	$ -	$ 144,488	$ -	$ 144,488
2021	$ 450,000	$ -	$ 450,000	$ 72,000	$ 522,488
2022	$ 147,600	$ 61,200	$ 208,800	$ 148,981	$ 582,307
2023	$ 1,299,600	$ 91,800	$ 1,391,400	$ 148,981	$ 1,824,727
2024	$ -	$ 153,000	$ 153,000	$ 148,981	$ 1,828,746
2025	$ -	$ 183,600	$ 183,600	$ 148,981	$ 1,863,365
2026	$ -	$ 122,400	$ 122,400	$ 148,981	$ 1,836,784
2027	$ -		$ -	$ 148,981	$ 1,687,804
2028	$ -		$ -	$ 148,981	$ 1,538,823
2029	$ -		$ -	$ 148,981	$ 1,389,842
	$ 2,041,688	**$ 612,000**	**$ 2,653,688**		

Key points:

1. Projected development is assumed to follow the timeline shown below (i.e. 25% of all projected development fees are assumed to be collected in FY24).
2. While the goal of System Development charges is to recover the $2.4M in new WWTP Debt assigned to the Sewer Enterprise, the debt service represents the actual cost that must be paid each year
3. Assumes that all development fee revenue is deposited into the Capital Stabilization Fund and used only to pay debt service
4. Existing fee structure does not recover full cost of capital as it was not designed for that purpose



Assumed Projected Development Timeline

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PROJECTING REVENUES – USER FEES

Evaluation of Existing Fee Structure

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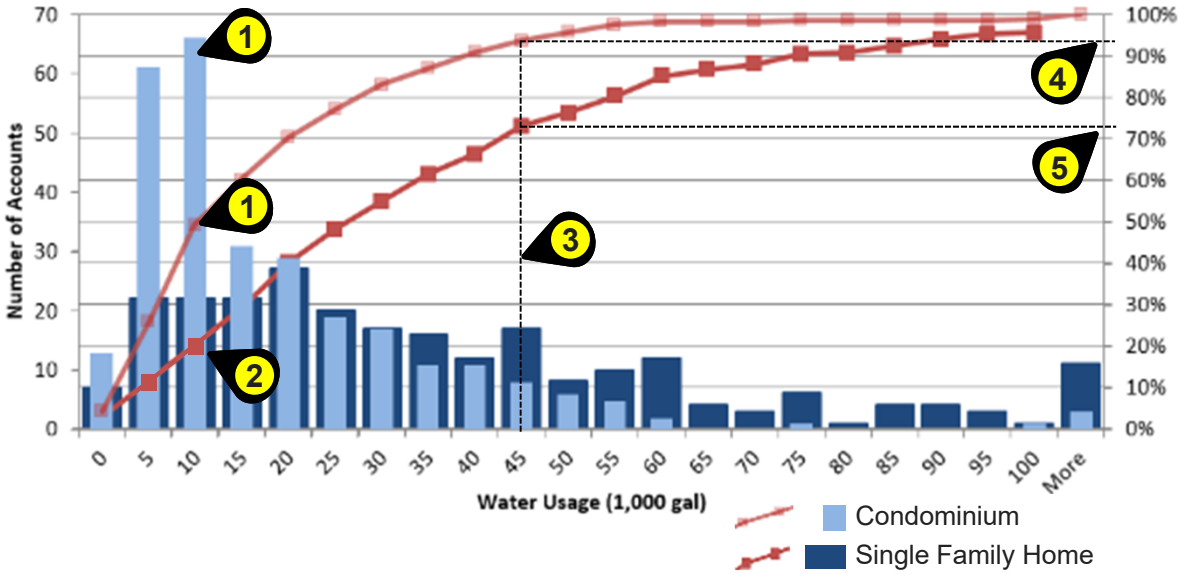
Residential Condo and Single Family Usage Evaluation



Key points:

1. Example data point. This shows that out of all the condominium customer accounts, 65 of them (or 50% of them) used a total of 10,000 gallons of water in 2018.
2. Similarly, 21 of the single family customers (~20% of them) also used 10,000 gallons of water in 2018. This means condo's use less water than houses.
3. Bourne's current sewer user rate includes 45,000 gallons of usage before customers are charged for overage.
4. Usage data appears to be heavily skewed by seasonal aspect. This is exacerbated by the fact that usage is only billed once per year.

Pros and Cons of existing rate structure

The generous usage allowance means most residential customers never exceed the minimum charge.

Users are effectively paying for more usage than than they actually need.

Residential Usage

- MADEP target max usage = 65 gallons per person per day for residential. This equals 94,000 gallons per year.
- 50,000 gallons per year equals 2 people at 65 gallons per person per day or average family at 50 gpd
- 20,000 gpd example is seasonal cottage

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PROJECTING REVENUES – USER FEES

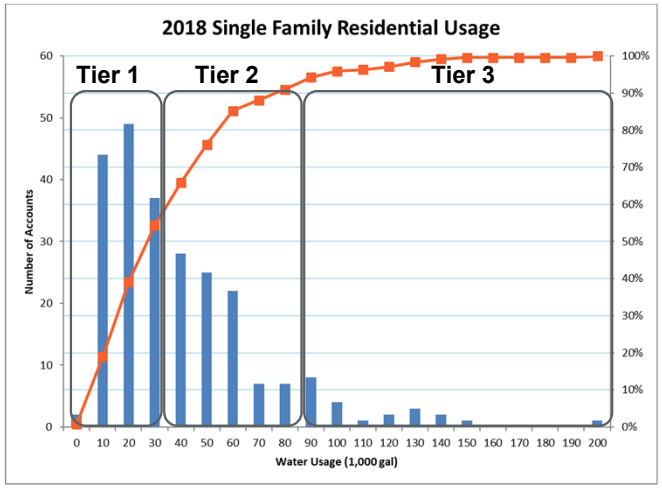
REVISED 7-10-2020

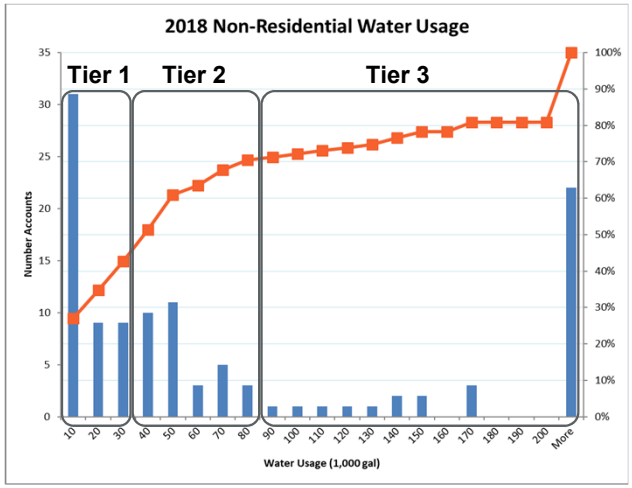
Alternative Rate Structure Development

The existing rates charge by the number of billing units, however this is not defined for non-residential customers which results in inconsistent user costs. As an alternative, a rate structure that maintains the base rate and a usage charge was developed. Many systems use base charges that increase according to the size of the water meter, this reflects the fact that larger users have a proportionally larger impact on system operations and costs. Since Bourne does not own the water system, this information was not available, thus the same Equivalent Residential Unit (ERU) method was used to establish the number of ERU's per customer. The customer's base charge would equal the number of ERU's times the Base Fee ($600 per ERU in FY21).

With Tiered (or stepped) rates, the usage portion of the customers bill increases with the amount of usage. This is commonly used to encourage water conservation. The proposed tiers are based upon evaluation of the existing water use for both single family residential and non-residential users. The steps in a tier are defined by the volumetric increase and rate increase. Tiers volumes were developed based upon analysis of existing water use for both single family and non-residential customers.

Usage Analysis





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RATE ALTERNATIVE A – STATUS QUO

Existing Rate and Fee Structure (usage and development fees)

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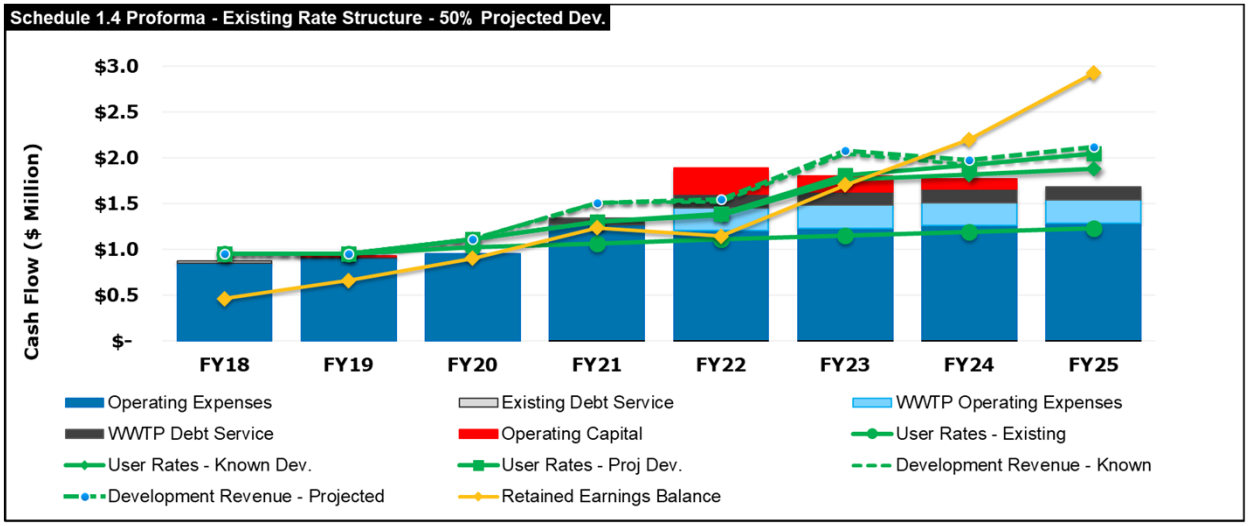
Revenue	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
User Rates - Existing	$ 955,370	$ 958,468	$ 1,027,974	$ 1,069,470	$ 1,110,966	$ 1,152,462	$ 1,193,958	$ 1,235,454
User Rates - Known Dev.		$ -	$ 86,010	$ 232,124	$ 262,923	$ 612,123	$ 630,363	$ 648,603
User Rates - Proj Dev.		$ -	$ -	$ -	$ 18,677	$ 48,402	$ 100,186	$ 166,058
Development Revenue - Known			$ -	$ 211,408	$ 133,767	$ 235,827	$ -	$ -
Development Revenue - Projected			$ -	$ -	$ 22,947	$ 34,421	$ 57,368	$ 68,842
Non Rate		$ 170,811	$ 83,202	$ 96,335	$ 102,703	$ 132,132	$ 139,939	$ 148,731
Total Revenue		$ 1,129,280	$ 1,197,187	$ 1,609,337	$ 1,651,983	$ 2,215,367	$ 2,121,814	$ 2,267,688
Net Revenue (Revenue-Expense)	$ 35,189	$ 198,486	$ 241,503	$ 333,982	$ (94,358)	$ 562,028	$ 495,747	$ 728,143
Retained Earnings Balance	$466,478	$664,964	$906,467	$1,240,448	$1,146,090	$1,708,118	$2,203,865	$2,932,009
Retained Earnings as Percent of OpEx	55%	73%	95%	97%	95%	138%	175%	227%



User Rates

Description	Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
Base Fee	Annual	$776	$812	$879	$919	$959	$999	$1,039	$1,079
Overage	Usage	$0.0100	$0.0100	$0.0100	$0.0100	$0.0100	$0.0100	$0.0100	$0.0100
Increase		$24	$36	$67	$40	$40	$40	$40	$40

Residential Costs

Scenario	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
Alternative A	$ 776	$ 826	$ 1,060	$ 1,100	$ 1,140	$ 1,180	$ 1,220	$ 1,260
Increase		$ 50	$ 234	$ 40	$ 40	$ 40	$ 40	$ 40

Key points:

1. Most recent data
2. Base fee goes up by $40 per year which is considered to be the status quo in terms of estimating burden on existing rate payers
3. User rate revenue for developments subject to change due to assumptions of billable units.
4. Assumes ***ALL*** known development and **50%** of projected development move forward as previously shown.
5. Average household (2.66 people) using 65 gpd each (State target) or 62.2K gal per year.

Alternative A supports enterprise without undue burden on existing rate payers*.

** Based upon FY18 financial data, projected usage and development assumptions shown herein.*

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RATE ALTERNATIVE B – NEW RATES & FEES

ERU and Tiered Usage Rates with ERU Based Development Fees

REVISED 7-10-2020

Schedule 1.2 Proforma - Tiered ERU Rates - 50% Projected Dev.

Revenue	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
User Rates - Existing	$ 955,370	$ 958,468	$ 1,027,974	$ 1,011,795	$ 1,019,216	$ 1,026,785	$ 1,034,505	$ 1,042,381
User Rates - Known Dev.			$ 86,010	$ 350,209	$ 351,301	$ 557,640	$ 604,315	$ 611,157
User Rates - Proj Dev.				$ 3,198	$ 27,916	$ 54,955	$ 79,887	$ 94,950
Development Revenue - Known			$ -	$ 450,000	$ 147,600	$ 1,299,600	$ -	$ -
Development Revenue - Proj				$ -	$ 30,600	$ 45,900	$ 76,500	$ 91,800
Non-Rate		$ 170,811	$ 70,218	$ 95,930	$ 98,256	$ 115,122	$ 120,675	$ 122,760
TOTAL REVENUE	Total	$ 1,129,280	$ 1,184,202	$ 1,911,131	$ 1,674,888	$ 3,100,002	$ 1,915,883	$ 1,963,048
Net Revenue (Revenue-Expense)	$ 257,284	$ 198,486	$ 228,518	$ 635,776	$ (71,453)	$ 1,446,664	$ 289,816	$ 423,503
Retained Earnings Balance	466,478	$664,964	$893,482	$1,529,258	$1,457,805	$2,904,468	$3,194,285	$3,617,787
Retained Earnings as Percent of Op Ex	55%	73%	93%	120%	121%	235%	253%	281%

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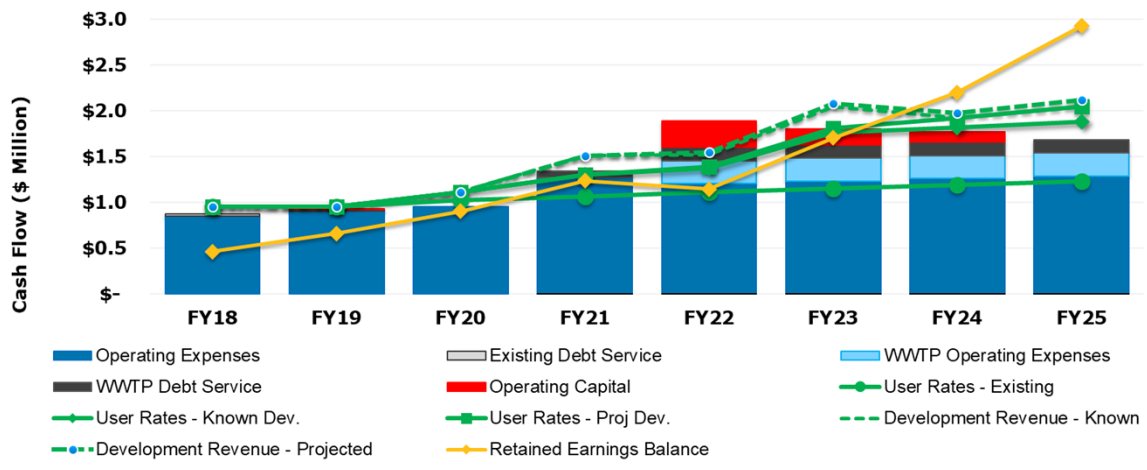
Schedule 1.4 Proforma - Existing Rate Structure - 50% Projected Dev.



User Rates

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Category	Type	FY18	FY19	FY20	FY2	FY22	FY23	FY24	FY25
Base Fee	Annual	$776	$812	$879	$575	$575	$575	$575	$575
Tier 1	Usage				$0.0065	$0.0065	$0.0065	$0.0065	$0.0065
Tier 2	Usage				$0.0098	$0.0098	$0.0098	$0.0098	$0.0098
Tier 3	Usage				$0.0130	$0.0130	$0.0130	$0.0130	$0.0130

Residential Costs

5

Scenario	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
Alternative B	$ 776	$ 826	$ 1,060	$ 1,093	$ 1,093	$ 1,093	$ 1,093	$ 1,093
Increase		$ 50	$ 234	$ 33	$ -	$ -	$ -	$ -

Key points:

1. Most recent data
2. Base fee is based upon the number of ERU's (same as current number of units for all residential users, average daily flow / 150 gallons per day for non-residential). ***No usage is included in base fee***. Annual billing frequency assumed for usage.
3. User rate revenue for developments subject to change due to assumptions of billable units.
4. Assumes ***ALL*** known development and 50% of projected development move forward as previously shown.
5. Average household (2.66 people) using 65 gpd each (State target) or 62.2K gal per year.

Alternative B supports enterprise without undue burden on existing rate payers* - see page 15 for more.

** Based upon FY18 financial data, projected usage and development assumptions shown herein.*

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CUSTOMER COST IMPACTS

REVISED 7-10-2020

Land Use Code	LOCATION	2018 USAGE (Gal x 1,000)	2019 USAGE (Gal x 1,000)	Billable Units	No. of ERU's	Annual Bill Existing Rates	Annual Bill Tiered Rates	Delta
Business Condo	271 MAIN STREET (NAPA AUTO PARTS)	41	57	2	1	$ 1,838	$1,033	-$805
Business Condo	258 MAIN STREET (BUZZARDS BAY PROF.)	490	540	17	9	$ 15,623	$11,821	-$3,802
Gasoline Service Stations	246 MAIN STREET (SUPER PETR.)	29	17	1	1	$ 919	$686	-$234
Gasoline Service Stations	160 MAIN STREET (CUMBERLAND FARMS)	485	500	1	9	$ 5,469	$11,301	$5,832
Hotel	Perry Lane (Hampton Inn)		168	1	1	$ 2,149	$2,385	$236
Mixed Use (Primarily Comm.)	7 & 9 ST MARGARETS STREET	148	120	6	3	$ 5,514	$2,911	-$2,603
Mixed Use (Primarily Comm.)	145 MAIN STREET	350	321	3	7	$ 3,377	$7,824	$4,447
Mixed Use (Primarily Comm.)	267 MAIN STREET (LAUNDRY MAT)	2,350	2450	1	43	$ 24,969	$56,201	$31,232
Residential Condo	10-C HORSESHOE LANE	5	3	1	1	$ 919	$595	-$325
Residential Condo	20-H BAKERS LANE	20	16	1	1	$ 919	$679	-$240
Residential Condo	21-S BOG VIEW DRIVE	119	116	1	1	$ 1,629	$1,709	$80
Restaurants/Food Service	57 MAIN STREET (MAHONEY'S ON MAIN ST)	10	321	1	1	$ 3,679	$4,374	$695
Restaurants/Food Service	225 MAIN STREET (BETTY ANNE'S)	94	105	1	2	$ 1,519	$2,141	$622
Restaurants/Food Service	278 MAIN STREET (DUNKIN DONUTS)	560	540	1	11	$ 5,869	$12,971	$7,102
Single Family Residential	18 EVERETT ROAD	15	15	1	1	$ 919	$673	-$247
Single Family Residential	225A MAIN STREET	60	50	1	1	$ 969	$965	-$4
Single Family Residential	24 OLD BRIDGE ROAD	95	100	1	1	$ 1,469	$1,501	$32
Two-Family Residential	17 BAY DRIVE	15	16	2	2	$ 1,838	$1,254	-$584
Two-Family Residential	33 OLD BRIDGE ROAD	74	80	2	2	$ 1,838	$1,833	-$6
Two-Family Residential	34 HARRISON AVENUE	144	133	2	2	$ 2,053	$2,505	$452

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Key points:

1. Representative sampling of most common user types showing range of usage.
2. Example of inconsistent application of billable units for existing rate structure
3. Single family typically used as test case for determining rate impacts.

Residential Usage

- Bourne has large seasonal component ~40% of single family homes likely to be seasonal
- MADEP target max usage = 65 gallons per person per day for residential. This equals 94K gallons per year for a 4 person household.
- 50,000 gallons per year equals 2 people at 65 gallons per person per day or average family (2.5 people) at 50 gpd
- 15,000 gpd example is likely seasonal

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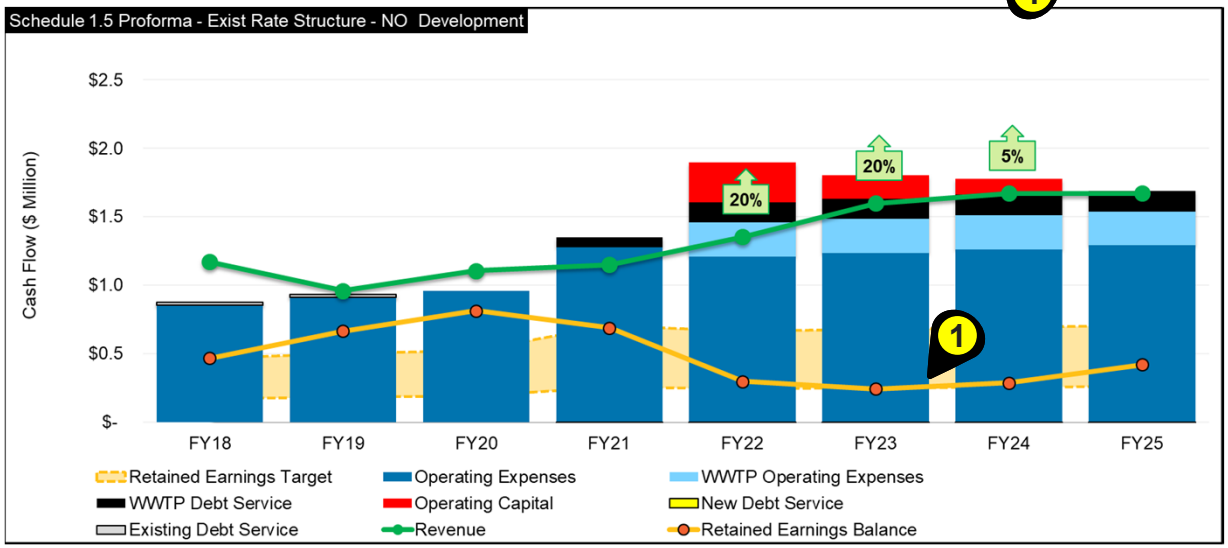
RATE ALTERNATIVE A1 – STATUS QUO
NO NEW DEVELOPMENT

REVISED 7-10-2020

		FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
Revenue	*Rate Increase*					20%	20%	5%	
Base Fee		$ 804,285	$ 958,947	$ 911,875	$ 953	1,144,045	$ 1,372,854	$ 1,441,496	$ 1,441,496
Overage		$ 367,052		$ 116,100	$ 116,	$ 116,100	$ 116,100	$ 116,100	$ 116,100
Non-Rate Revenue		$ 87,217	$ -	$ 77,182	$ 80,086	$ 93,433	$ 109,450	$ 114,255	$ 114,255
Total Revenue		$ 1,171,337	$ 958,947	$ 1,105,156	$ 1,149,556	$ 1,353,578	$ 1,598,403	$ 1,671,851	$ 1,671,851
Revenue Summary									
Existing		$ 1,171,337	$ 958,947	$ 1,105,156	$ 1,149,556	$ 1,353,578	$ 1,598,403	$ 1,671,851	$ 1,671,851
Projected									
Net Revenue (Revenue-Expense)		$ 296,761	$ 28,153	$ 149,472	$ (125,799)	$ (392,764)	$ (54,935)	$ 45,785	$ 132,306
Retained Earnings Balance		$466,478	$664,964	$814,436	$688,637	$295,873	$240,938	$286,723	$419,028
Retained Earnings as Percent of Operating Expens		55%	73%	85%	54%	25%	20%	23%	32%

1



Key points:

1. Rates adjusted to maintain retained earnings balance above 20% of operating costs.
2. Base fee increases are much higher to make up for development revenue. **FY21 same as in alternative A.**

Alternative A without development revenue does not support enterprise without undue burden on existing rate payers*.

User Rates

Description	Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
Base Fee	Annual	$776	$812	$879	$919	$1,103	$1,323	$1,390	$1,390
Overage	Usage	$0.0100	$0.0100	$0.0100	$0.0100	$0.0100	$0.0100	$0.0100	$0.0100
Increase			$24	$36	$67	$40	$184	$221	$66	$0

Residential Costs

Scenario	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
Alternative A1	$ 776	$ 826	$ 1,060	$ 1,100	$ 1,284	$ 1,504	$ 1,571	$ 1,571
Increase		$ 50	$ 234	$ 40	$ 184	$ 221	$ 66	$ -

2

2

** Based upon FY18 financial data, projected usage and development assumptions shown herein.*

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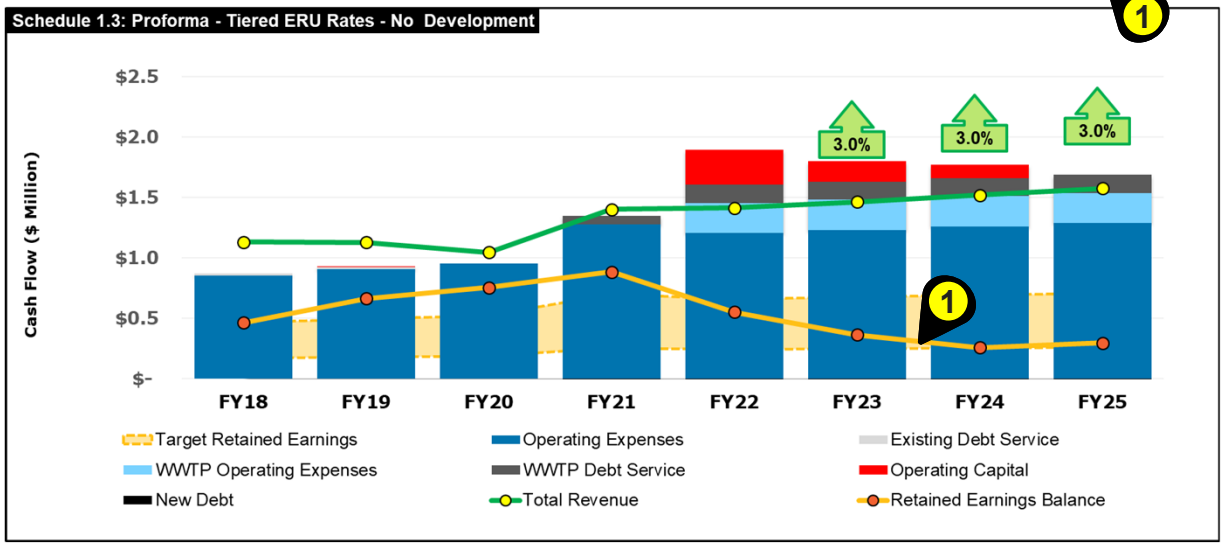
RATE ALTERNATIVE B1 – NEW RATES
NO NEW DEVELOPMENT

REVISED 7-10-2020

Revenue	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
						3.0%	3.0%	3.0%
Base Fee	$ 909,765	$ 958,947	$ 959,868	$ 850,425	$ 850,425	$ 875,938	$ 902,216	$ 929,282
Non-Rate Revenue	$ 222,095	$ 170,811	$ 87,306	$ 96,720	$ 97,359	$ 100,795	$ 104,368	$ 108,084
Tier 1				$ 101,285	$ 103,311	$ 108,538	$ 114,030	$ 119,800
Tier 2				$ 97,926	$ 99,885	$ 104,939	$ 110,249	$ 115,827
Tier 3				$ 257,458	$ 262,607	$ 275,895	$ 289,855	$ 304,522
System Development			$ -	$ -	$ -	$ -	$ -	$ -
Total Revenue	$ 1,131,860	$ 1,129,758	$ 1,047,174	$ 1,403,814	$ 1,413,586	$ 1,466,105	$ 1,520,718	$ 1,577,515
delta previous (Rate Revenue)		$ 49,182	$ 155,516	$ (109,443)	$ -	$ 25,513	$ 26,278	$ 27,066
delta previous (Total Revenue)		$ (2,102)	$ (82,584)	$ 356,639	$ 9,773	$ 52,518	$ 54,613	$ 56,797
Net Revenue (Revenue-Expense)	$ 257,284	$ 198,964	$ 91,491	$ 128,459	$ (332,755)	$ (187,234)	$ (105,349)	$ 37,970
Retained Earnings Balance	$466,478	$664,964	$756,454	$884,913	$552,158	$364,924	$259,576	$297,546
Retained Earnings as Percent of Operating Expens	55%	73%	79%	69%	46%	30%	21%	23%

1



Key points:

1. Rates adjusted to maintain retained earnings balance above 20% of operating costs
2. Base fee increases are much higher to make up for development revenue. **FY21 same as in alternative A.**

Alternative B without development revenue does not support enterprise without undue burden on existing rate payers*.

User Rates

Description	Type	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
Base Fee	Annual	$776	$812	$879	$1,011	$1,162	$1,279	$1,279	$1,279
Overage	Usage	$0.0100	$0.0100	$0.0100	$0.0100	$0.0100	$0.0100	$0.0100	$0.0100
Increase			$24	$36	$67	$132	$152	$116	$0	$0

Residential Costs

Scenario	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
Alternative B1	$ 776	$ 826	$ 1,060	$ 1,212	$ 1,334	$ 1,574	$ 1,605	$ 1,605
Increase		$ 50	$ 234	$ 152	$ 121	$ 240	$ 31	$ -

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** Based upon FY18 financial data, projected usage and development assumptions shown herein.*

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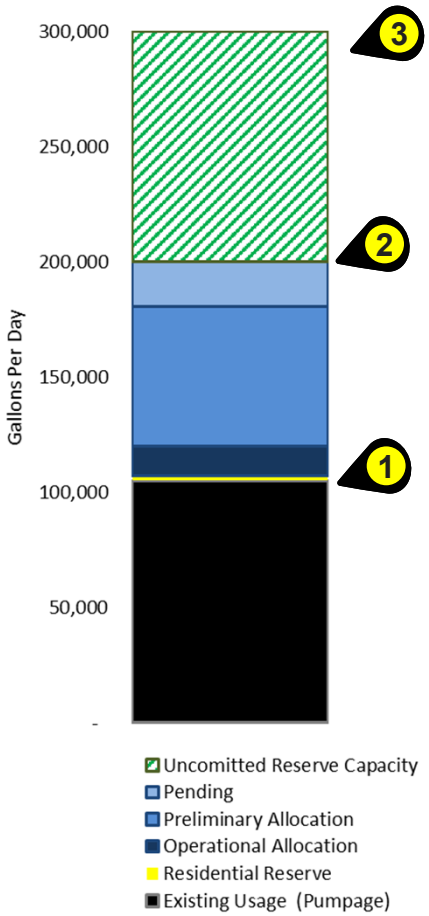
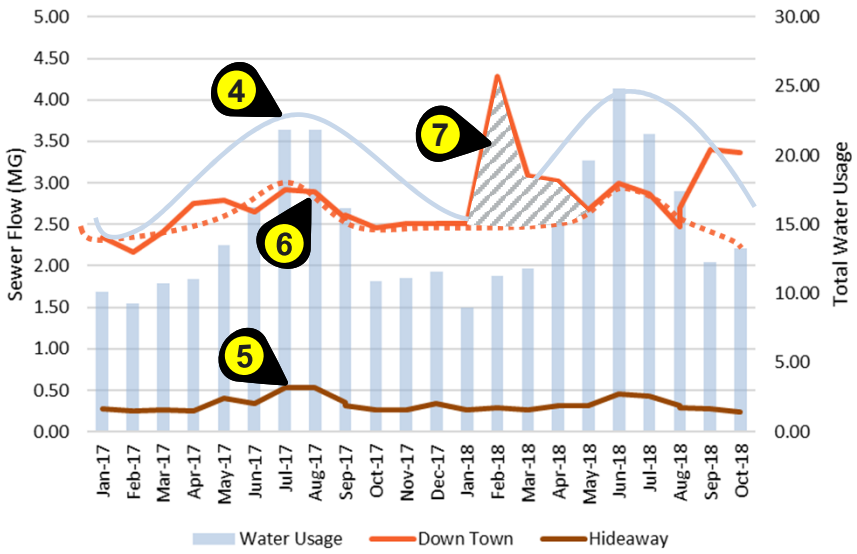
CAPACITY MANAGEMENT AND FLOWS

REVISED 7-10-2020

Capacity Status



Why Infiltration & Inflow is Important



Key Points

1. Based upon 2019 metered usage as pump station totals not available. Bourne should compare pumpage numbers to estimate volume of infiltration & inflow.
2. Allocations based upon Title 5 flow values which are roughly 2X expected daily flows thus understating the amount of available capacity
3. Assumes new WWTP on line
4. Blue bars represent total water usage (not just sewered area), blue curve shows seasonal increase in water usage
5. Amount of sewage pumped from Hideaway Station
6. Amount of sewage pumped from Down Town Pump station, curve represents expected increase corresponding to water use increase
7. Unexpected spike in Feb 2018 most likely due to infiltration & inflow. Feb 2018 precipitation was 7.15 in vs 2.76 for Feb 2017

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FINDINGS, CONCLUSIONS & RECOMMENDATIONS

REVISED 7-10-2020

FINDINGS &CONCLUSIONS

1. Existing rate structure does not accurately reflect usage, some pay too much, some pay too little
2. The June 2019 settlement with Wareham resulted in a ~40% increase in treatment costs.
3. Lack of clarity related to definition of billable units impacts customer equity and cost comparisons, adjustments to new rates will not be even across user types
4. Revenue from existing users at status quo rates will not support the enterprise. Revenue from development is required.
5. Usage data is heavily skewed from seasonal aspect, water district reads semi-annually which would allow for a much better understanding of seasonal influence.
6. The operations and management of the Bourne Sewer System has become considerably more complicated with the addition of the new WWTP

Coastal Community Sewer Costs

Town	Cost
Scituate	$563
Wareham	$596
Statewide Average	**$862**
Plymouth	$990
Bourne	$1,224
Provincetown	$1,243
Gloucester	$1,302
Cohasset	$1,313

Based upon 2017 Tighe & Bond Sewer Rate Survey, annual costs based upon 120 HCF of usage (~90K gallons)

RECOMMENDATIONS

1. Meet with Buzzards Bay Water District to discuss options for balancing development needs with water conservation. Continue to negotiate IMA with Wareham, revisit cost sharing methodology
2. Retained earnings appears to be sufficient to allow selection of rate Alternative A or B for FY21, confirm projections against FY19 actual and FY20 estimated revenues.
3. Based upon resolution of development issue migrate to new fee structure, discuss timing and administration of fees with town counsel. Incorporate fee structure, timing and requirements into Sewer Regulations, separate out fees for easy adjustment. Reduce Title 5 allocations by 50% to better approximate expected flows, refine as uncommitted reserve capacity diminishes (obtain more accurate information, etc.)
4. Revisit staff roles relative to Wastewater management, adjust responsibilities to meet new requirements
5. Continue to monitor usage, expenses and revenue on annual basis