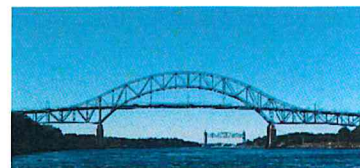


# Bourne Board of Sewer Commissioners Agenda



RECEIVED

2021 APR 23 PM 1:37

TOWN CLERK BOURNE

Date

April 27, 2021

Time

6:30 P.M.

Location

Zoom Remote  
Public Access-See below

Note this Zoom videoconference meeting is being televised, streamed or recorded by Bourne TV.

If anyone from the public wishes to provide public comment, they can access the Zoom meeting by calling:

**1-929-205-6099 Meeting ID: 851 3508 4567 Passcode: 755935**

If you already have the Zoom App downloaded to your device or computer, you may simply join the meeting by entering the Meeting ID and Password noted above, or go to <https://zoom.us/meetings> and look for the Join Meeting button.

Participants wishing to speak should click the “Reactions” icon on the lower toolbar and then click “Raise Hand” in the dialog box to notify the Chair. The Chair will recognize participants. The ‘Chat’ keyboard feature will not be utilized for discussion or recognition during this meeting.

For Participants who are calling into the meeting and wishing to speak should press \*9 to notify the Chair. The Chair will recognize participants.

Please MUTE your phone/microphone upon entry.

All items within the meeting agenda are subject to deliberation and vote(s) by the Board of Sewer Commissioners.

## Sewer Commissioners Meeting

### 6:30 P.M. Call Public Session to Order in Open Session

1. Salute to the Flag
2. Consent Agenda
  - A. Correspondence
  - B. Public Comment
3. Sewer Allocation Updates
  - A. 12 Wagner Way – GENCON (Robert Gendron)
  - B. 100 Block – Vincent Michienzi
  - C. 85-93 Main Street – Vincent Michienzi

- D. 227 Main Street – James McLaughlin
- E. 223 Main Street – Bay Motor Inn
- F. 2 Kendall Rae Place – CMP Development LLC
- G. 340 Main Street – 340 Main Street LLC

4. Sewer Business

- A. System Development Charge discussion and possible vote
- B. Sewer Enterprise Fund - Retained Earnings Policy outline
- C. Cape Cod & Island Water Protection Fund Reimbursement discussion
- D. Wareham Capital Projects discussion
- E. Buzzards Bay Wastewater Facility use discussion
- F. FY 22 Sewer Budget discussion and possible vote

5. New Business

- A. Any new sewer business (not foreseen 48 hours ahead of this meeting)

6. Adjourn

Future Agenda Items

- A. Comprehensive Wastewater Management Plan
- B. Savary Avenue
- C. Inflow and Infiltration Study
- D. Upper Bay Project (Bourne-Wareham-Marion-South Plymouth)/Buzzards Bay Coalition
- E. Sewer Rate Analysis
- F. Bourne/Wareham Inter-municipal Agreement subcommittee
- G. Bourne/Wareham Inter-municipal Agreement Capital
- H. Sewer Policy and Regulations (Section 1 and Section 2 Adoption, Section 3 thru 9 and Appendix – 3<sup>rd</sup> Reading)
- I. Joint Base Cape Cod/Converge update

Signed,

James Potter  
Chairman, Bourne Board of Sewer Commissioners

Bourne Board of Sewer Commissioners

James Potter, Chairman  
Jared MacDonald, Vice Chairman  
Judith Froman, Clerk  
Peter Meier  
George Slade

## Buzzards Bay Commercial Wastewater Summary Sheet (April 23, 2021)

OWNER	LOCATION	GPD Req'd	GPD Exist'g	\$1500 App Paid Date	Planning Board Approval Date	Preliminary Allocation Approval Date	Prelim Alloc Fee (2017) <sup>1</sup>	Prelim Allocation Date Paid	Sewer Develop Charge (2006) <sup>2</sup>	Comments	6-Month Review Date
	2020 GPD Downtown Actual Use	112496									
	2% Residential Reserve	6000									
<b>Operational Allocations</b>											
Vincent Michienzi	85-93 Main Street	13000	931	10/24/2018		10/15/2018	\$18,000.00	10/24/2019		Temporary Certificate of Occupancy	11/25/19, 5/25/2020, 9/8/2020
HAMPTON INN	12 Kendall Rae Place	15243	4614			9/30/2014		11/11/2019	\$48,533.12	Certificate of Occupancy issued in January 2020	On-line (3 year review Jan 2023) 2020 = 4614gpd
	<b>Total Operational GPD</b>	<b>146739</b>									
<b>Preliminary Allocations</b>											
GENCON/Robert Gendron	12 Wagner Way	17750		1/5/2018		6/18/2019	\$22,750.00	11/20/2019			11/25/2019, 5/25/2020, 2/1/2021
CALAMAR	13 Kendall Rae Place	16800			1/29/2018	9/19/2017	\$21,800.00	1/6/2020		Calamar representatives appeared at the Board of Selectmen on April 6, 2021	11/25/19, 5/25/2020
Vincent Michienzi	100 Block	26080				10/13/2015				-1000 gpd 11/25/2019 (originally 27080)	11/25/19, 5/25/2020, 9/8/2020
Oak Bay Brewery	140 Main Street	2256		8/23/2019	11/14/2019	12/18/2019	\$7,256.00	1/16/2020		Sewer Allocation revoked on March 23, 2021	N/A
MMA Cadet Housing	11 Buttermilk Way	7070	310	12/27/2019	N/A	1/28/2020	\$12,070.00	2/20/2020		11 Buttermilk Way was reviewed by the BOSC on Feb 23, 2021	9/8/2020
James McLaughlin	227 Main Street	79	40	12/31/2019	10/10/2019	1/28/2020	\$5,079.00	2/7/2020			9/8/2020
Bay Motor Inn	223 Main Street	11985	640	5/20/2020		7/28/2020	\$16,335.00	9/1/2020		Approval after BBWD moratorium sent letter 08.03.2020	2/1/2021
CMP Development LLC	2 Kendall Rae Place	46475		2/25/2020		7/28/2020	\$0.00			Approval after BBWD moratorium sent letter 08.03.2020	10/28/2020
340 Main St LLC	340 Main St	3095		8/19/2020	2/27/2020	8/25/2020	\$8,095.00	11/2/2020		Potential 2nd phase to include 18-24 residential units / sent letter 09.01.2020	2/1/2021
	<b>Total Approved GPD</b>	<b>278329</b>									
	<b>Total Available GPD</b>	<b>21671</b>									
<b>Pending Applications</b>		Requested:									
<b>Projects Not Counted</b>		Requested:									
Louis Costa	25-27 Main Street	0	36				\$0.00	N/A		Waiver Received	Waiver Req'd
Judah Branagan	6 Washington Ave	880	0					N/A		Approval not required	
						Fees total to Date:	\$111,385.00		\$48,533.12		

<sup>1</sup> Preliminary Allocation Fee is based on the Commercial Wastewater Management Allocation Policy approved in 2017

<sup>2</sup> Sewer Development Charge based on the Sewer Use Charges Certificate of Vote dated January 17, 2006



## CERTIFICATE OF VOTE

At a meeting of the Sewer Commissioners of the Town of Bourne, held on January 17, 2006, a quorum being present and voting throughout, upon a motion duly made and seconded, it was

VOTED: Sewer Use Charges as follows:

Design Review and Construction Inspection Fee: \$1,500

Commercial Sewer Permit Fee:

\$150 plus \$.10 per square foot of building floor space

Sewer Connection Fee:

Annual sewer use fee times the number of business units

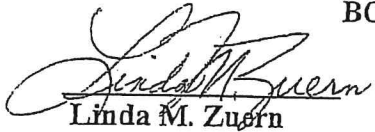
Residential Sewer Permit Fee:

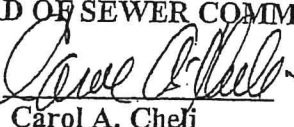
\$100 for residential properties plus \$100 for each addition unit


Sewer System Development Charge:

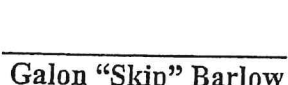
\$73.406 per foot of frontage plus \$11,539.356 per acre


BOARD OF SEWER COMMISSIONERS

  
Linda M. Zuern

  
Carol A. Cheli

  
Richard E. LaFarge

  
Galon "Skip" Barlow

  
W. Thomas Barlow

A True Record

  
Town Clerk

RECEIVED  
TOWN OF BOURNE

2006 MAR - 3 AM 11:35

TOWN OFFICE



## Cannon, Glenn

---

**From:** Amy Lowell <amy.lowell@falmouthma.gov>  
**Sent:** Thursday, April 8, 2021 4:42 PM  
**To:** Cannon, Glenn  
**Cc:** Peter McConarty  
**Subject:** RE: Sewer System Development Charge

Hello Gregg,

Falmouth does not have a system development charge for new (or modified) connections to the sewer existing system. We charged betterments when the projects were first built, and we build some wastewater capital costs into the sewer rate (charged on semi-annual water and sewer bill, based on metered water use). WWTF Upgrades, even big ones, have been paid for by the town as a whole.

Amy

Amy Lowell  
Wastewater Superintendent  
416 Gifford Street  
Falmouth, MA 02540  
(508) 457-2543 x 3018  
amy.lowell@falmouthma.gov

---

**From:** Peter McConarty <peter.mcconarty@falmouthma.gov>  
**Sent:** Thursday, April 8, 2021 11:07 AM  
**To:** Amy Lowell <amy.lowell@falmouthma.gov>  
**Subject:** FW: Sewer System Development Charge

Hi Amy,

I received the below email from the Assistant Town Administrator of Bourne inquiring about new wastewater hookup charges.

Can you respond to Glenn's below email.

Thank You,  
Peter

**Peter M. McConarty, P.E., P.L.S. | Director**  
**Falmouth Department of Public Works**  
**416 Gifford Street, Falmouth, MA 02540**  
**P: 508.457.2543**

---

**From:** Cannon, Glenn [<mailto:gcannon@townofbourne.com>]  
**Sent:** Tuesday, April 6, 2021 4:15 PM  
**To:** Falmouth Department of Public Works <[dpw@falmouthma.gov](mailto:dpw@falmouthma.gov)>  
**Subject:** Sewer System Development Charge

Hi Peter,

It has been awhile since we have spoken, I hope you and your family are doing well.

Bourne is considering charging a "System Development Fee" to pay for our new wastewater treatment facility.

Very basic (Flow from Development/Treatment Capacity of the new Plant) x (Cost of the new Plant).

Does Falmouth have a "System Development Charge" for New Commercial Development?

Glenn

Glenn Cannon, P.E.  
Town of Bourne  
Assistant Town Administrator  
24 Perry Avenue  
Buzzards Bay, MA 02532  
(508) 759-0600 Ext 1348  
[gcannon@townofbourne.com](mailto:gcannon@townofbourne.com)

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This email has been scanned for spam and viruses by Proofpoint Essentials. Click [here](#) to report this email as spam.



The Middleborough Board of Selectmen, acting as the Water & Sewer Commissioners, voted on March 8, 2004, to adopt the following Infiltration and Inflow Policy and New Sewer Rates and Charges, effective immediately:

**TOWN OF MIDDLEBOROUGH  
WASTEWATER POLICY  
AND  
PLAN OF SEWER SERVICE AREA**

1. No extensions or connections are allowed outside the existing sewer service area unless the Board of Selectmen declare a public health emergency and vote approval at a regularly convened public meeting.
2. Connections to the existing sewer system service area are permitted provided the lot in question has a sewer line fronting on the property (either side of the street) or passing through it.
3. Any extensions outside of the sewer service area – not considered a public health emergency by the Board of Selectmen – shall be approved by Town Meeting.
4. Project flows shall be based upon estimates calculated by 314CMR5.0. Projects requiring participation in the I/I Removal Process shall be responsible for I/I Removal or Fees in excess of the original project estimate following full buildout.
5. Projects using two thousand (2,000) gallons per day or more of wastewater flow, require special permission. The Board of Selectmen may approve the proposed project provided the following steps are taken:
  - a. The developer must apply to the Board of Selectmen and receive approval of a connection permit for any project use exceeding two thousand (2,000) gallons per day.
  - b. All connection permits approved by the Board of Selectmen will be conditioned on the project proponent's removal of two (2) gallons of infiltration and/or inflow (I/I) for every gallon of projected flow from the proposed use.
  - c. The project proponent will have the opportunity to apply three (3) programs to reduce I/I to the 2 for 1 requirement for flows over 2,000 gallons per day. These options are:

Option 1 is a Water and Sewer Use Reduction Program;

Option 2 is for Construction Funding by a developer.

Option 3 is a Town Sewer Project Engineering/Construction Fund.



Options are described in the attached work program.

- d. Section 5 (above) applies to both new project flows and existing customers expanding their use in excess of 2,000 gallons per day.
6. The Superintendent of the Wastewater Department shall review the proposed work plan and provide a recommendation to the Board of Selectmen for approval. The Superintendent will be responsible for certifying completion of the project work.
7. If the Town's engineering consultant is required to participate in review of any of the options, the Superintendent of the Wastewater Department shall provide an estimate of costs. These costs are part of the total obligation by the project proponent.
8. The Board of Selectmen shall be presented the information and authorize the connection to the sewer system, through the Wastewater Department Superintendent.

**TOWN OF MIDDLEBOROUGH  
WASTEWATER DEPARTMENT**

EFFECTIVE MARCH - 2004

**A. Wastewater Flow Quarterly Charges**

- |  |   |
|--|---|
| <p><b>1. Minimum Quarterly Charge for 500 cubic feet of wastewater ***</b></p> | <p><b>2. Wastewater Meter Flow Over 500 cu. ft. Charges</b></p> |
|--|---|

Water Meter Size	Charge	Cubic Feet	Charge per Cu.Ft.
5/8 inch	\$ 17.78	501 to 2,500 cu. ft.	= \$ 1.24 cu. ft.
3/4 inch	21.10	2,501 to 25,000 cu. ft.	= \$ 1.89 cu. ft.
1 inch	27.75	25,001 or over cu. ft.	= \$ 2.85 cu. ft.
1 1/4 inch	36.42		
1 1/2 inch	44.41		
2 inch	54.38		
3 inch	117.65		
4 inch	177.56		
6 inch	344.00		
8 inch	776.76		

**B. Septage Charges for Haulers**

Middleborough Origin Septage

1. \$ 35.00 per 1000 gallons hauled to Wastewater Treatment Facility as a minimum charge.
2. Over 1000 gallons = \$ 3.50 per 100 gallons or \$ 0.035 per gallon.

Lakeville Permitted Origin Septage

1. \$ 70.00 per 1000 gallons hauled to Wastewater Treatment Facility as a minimum charge.
2. Over 1000 gallons = \$ 7.00 per 100 gallons or \$ 0.070 per gallon.

Gate Charge for Middleborough or Lakeville Permitted Haulers

1. Septage received outside normal discharge hours (7AM to 3:30 PM M-F, and 7AM to 11AM Saturday) are charged \$ 48.00 per load to offset callback.

**C. Existing Sewer System Service Area**

The following fee schedule shall apply to existing homes, commercial, industrial or motel/hotels, or new construction within the existing sewer system service area, that have lot frontage, as described in the Town's Wastewater Policy and that have paid a betterment fee.

For properties that are connected to the sewer system and are requesting additional wastewater flow in excess of 400% of the average flow for the 12 month period prior to the quarter ending March 31, 2004, fees outlined under Section D (below) shall be applied. I/ Removal or Fees will also apply if the flow increase exceeds 2,000 gallons per day in total.

**Fee Schedule**

	Description	Application Fee
1.	Residential Home	\$ 125.00
2.	Commercial	250.00 + \$ 0.05 per square foot
3.	Industrial	250.00 + \$ 0.05 per square foot
4.	Motel/Hotel	250.00 + \$ 100 per room
5.	Permit Connection Fee	200.00 (1)

- (1) All sewer connections must obtain a permit from the Wastewater Division. Permit fees must be paid to cover inspections and office work. Permits must be paid in full prior to the commencement of work.

**D. Wastewater Fees and Charges for Tie in's Outside The Sewer System Service Area Or Outside of Middleborough**

The following application fee schedule and P.O.T.W. tie-in fees shall apply for tie in's to the sewer collection system, for classifications listed below: All sewer connection costs will be borne by project proponents. If there is a potential for other future tie ins, or other benefit to the Town, the Board of Selectmen can negotiate in its best interest.

**Application Fee Schedule and P.O.T.W.**

1.	Permit Connection Fee	200.00
2.	Connection Fees and Classification of Users	
	a. Residential/Single not in SSSA	4,000.00
	b. Motel - Hotel	5,000.00 per 1000 gallons/day (1)
	c. Beneficial Use -Non Profits	Board vote to assess Fee
	d. Commercial/Industrial	5,000.00 per 1000 gallons/day (1)
	e. Duplex per lot	4,000.00
	f. Triple Family/Apartments	1,300.00 per bedroom
	g. Reuse of Commercial Bldgs (if upgrade req'd)	5,000.00 per 1000 gallons (\$ 4,000.00 credit for original connection)



- (1) A minimum of \$ 5000.00 will be required for flows less than 1000 gpd for these categories.
3. Publicly Owned Treatment Works Tie In Fees of Middleborough.
- (a) Calculation for POTW Tie in Fee is as follows:

Variables	Description
A	Proposed Wastewater Flow (or increase in Flow) to POTW in mgd (1)
B	Design Flow of Middleborough POTW - constant = 2.16 mgd
C	Percent of POTW Flow = $C = A \text{ divided by } B = \text{ \_\_\_\_\_\%}$
D	1974 Cost of POTW - constant = \$ 5,864,778
E	1974 Consumer Price Index (CPI) = 48.9
F	Current Consumer Price Index (CPI) = \$ \_\_\_\_\_\
G	Current Value of POTW = $(E/F \text{ times } D/X) = \$ \text{ \_\_\_\_\_\}$
H	Tie In Fee

POTW FORMULA  $H = G \text{ times } C = \$ \text{ \_\_\_\_\_\}$

- (1) Increase in Flow in excess of 200% of the average Flow for the Twelve Month Period prior to the Quarter ending March 31, 2004 will trigger the Fees and Charges under Section D. for Customers outside of Middleborough.
- (1) I/I Removal or Fees will also apply if the Flow Increase exceeds 2,000 gallons per day in total.

## INFILTRATION- INFLOW WORK PROGRAM

### General

The project proponent will have a choice of three options or a combination of options in order to accomplish the goal of removal of 2 gallons of I/I for every gallon that is added to the Town of Middleborough's wastewater flow.

The Board of Selectmen, acting as Sewer Commissioners shall determine the needs of any of the programs and will provide an approval of any selected or combination of Options, based upon recommendations from the Wastewater Superintendent. If agreement cannot be reached, the Selectmen, acting as Sewer Commissioners, shall make the choice.

### OPTION 1 - WATER AND SEWER USE REDUCTION PROGRAM

#### Introduction

A Water and Sewer Use Reduction Program (the "WASURP") will be implemented to reduce the amount of water that is currently being used by existing water users which are connected to the Town of Middleborough's sewer service area. The end result will be an equivalent two for one (2 to 1) reduction in wastewater flowing into the sewer system and the Town's wastewater treatment facility.

#### Components of the Program

The WASURP will consist of replacement or retrofitting of various water-using devices in existing buildings in the Town of Middleborough, whose owners choose to participate. All participants are to be presently connected to the sewer system.

Each replacement or retrofit of a water-using device will carry a stipulated gallonage savings, based on average savings achieved in similar programs implemented in other communities or in conjunction with the Massachusetts Department of Environmental Protection.

Devices to be considered for retrofit or replacement include toilets, toilet dams, flushometers, showerheads, faucet aerators, and flow-limiting devices on commercial machines that utilize water and discharge to the Town's sewer system, such as dishwashers, car washes, industrial processes, etc.

#### Candidate Participants

Participation in the WASURP by existing water users will be voluntary. The following existing user groups are candidates for participation in the WASURP:

1. Schools: Potential water and sewer use reduction opportunities include:
  - Replacing flushometers in toilets
  - Replacing flushometers in urinals
  - Installing aerators in lavatory faucets
  - Installing low-flow showerheads in locker rooms
  - Installing flow-limiting devices in cafeteria dishwashers

2. Municipal Buildings: Potential water and sewer use reduction opportunities include:
  - Replacing flushometers in toilets
  - Replacing flushometers in urinals
  - Installing aerators in lavatory faucets
3. Multifamily Housing units: Potential water and sewer use reduction opportunities include:
  - Installing toilet dams in toilets
  - Installing aerators in lavatory and kitchen faucets
  - Installing low-flow showerheads in bathrooms
4. Single family homes: Potential water and sewer use reduction opportunities include:
  - Installing toilet dams in toilets
  - Installing aerators in lavatory and kitchen faucets
  - Installing low-flow showerheads in bathrooms
5. Business or commercial users: Potential water and sewer use reduction opportunities include:
  - Replacing flushometers in toilets
  - Replacing flushometers in urinals
  - Installing aerators in lavatory faucets
  - Installing flow-limiting devices on commercial or industrial processes which utilize water then discard it as wastewater to the sewer system.

## Implementation

### 1. General

Implementation will begin with a detailed survey of existing water and sewer users to identify the most likely candidates to achieve the required water and sewer use reduction of the required two for one gallons per day. Based on the results of the fieldwork, specific participants will be selected and the detailed components of the WASURP will be finalized.

Once developed, an implementation plan with its specific components will be submitted to the Town of Middleborough's Wastewater Department Superintendent for approval.

### 2. Achievement of Use Reduction

Credit for reduction of water and sewer use will be granted on a stipulated basis as the various components of the WASURP are implemented, utilizing the user reductions set forth in Exhibit A for Residential Users, and in Exhibit B for schools, municipal, and commercial users. The stipulated savings set forth in Exhibits A and B have been developed for similar programs using industry averages for existing fixture water flows, occupancy loads, and number of uses per day. The total stipulated use reduction will be calculated using the actual population of the schools or other facilities which participate, and the actual number of households which participate. The quantity of savings for components not listed in Exhibits A & B such as commercial dishwashers, laundry



machines, or industrial processes, will be provided and approved by the Town of Middleborough Wastewater Department Superintendent.

Schedule of Implementation

A schedule of implementation will be provided and shall be limited to one (1) year.

3. Method of Implementation

a. The identified potential participants will be sent a notice by mail, outlining the WASURP and asking for voluntary participation, along with a request for types, years and flow of toilets, and any general information such as dishwasher and washing machine use.

b. Once the accumulated information is provided in a table, an estimated cost of materials and construction services will be provided to the Wastewater Department. This cost shall be reviewed by the Town's Wastewater Department and submitted to the Board of Selectmen for approval.

c. The proponent will select a local self insured plumber/company for contact to be made for installation of the water saving devices.

d. A final submittal of installed devices and estimated water and sewer use reduction shall be provided to the Board of Selectmen through the Wastewater Department Superintendent.

OPTION 2 - CONSTRUCTION PROJECT PERFORMANCE

This option will allow the project proponent to provide construction services for repair of identified I/I projects. The overall construction cost will be limited to two dollars and fifty cents (\$ 2.50) for every one gallon of I/I removed. The project proponent shall be required to hire an insured and experienced general construction contractor to perform the work.

EXAMPLE:

Developer requests 3,000 gallons of wastewater flow.

(3,000 gallons) times (2 for 1 Removal) = 6,000 gallons of I/I to remove.

Payment to Wastewater Account is = 6,000 gallons times \$ 2.50 per gallon = \$ 15,000

OPTION 3 - TOWN SEWER PROJECT ENGINEERING AND/OR CONSTRUCTION FUND

This option allows a project proponent to contribute to a Town Sewer Project Fund that will accumulate dollars for the town to perform I/I studies and construction within the Sewer Service Area. The project proponent will be required to contribute three dollars (\$ 3.00) for every gallon of flow, according to the following formula:

FORMULA.:

Developer requests 3,000 gallons of wastewater flow.

(3,000 gallons) times (2 for 1 Removal) = 6,000 gallons of I/I to remove.

Payment to Wastewater Fund is = 6,000 gallons times \$ 3.00 per gallon = \$ 18,000









## **WORK PROGRAM**

### **General**

The project proponent will have a choice of three options or a combination of options in order to accomplish the goal of removal of 2 gallons of I/I for every gallon that is added to the Town of Middleborough's wastewater flow.

The Board of Selectmen, acting as Sewer Commissioners shall determine the needs of any of the programs and will provide an approval of any selected or combination of Options, based upon recommendations from the Wastewater Superintendent.

### **OPTION 1 - WATER AND SEWER USE REDUCTION PROGRAM**

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#### **Components of the Program**

The WASURP will consist of replacement or retrofitting of various water-using devices in existing buildings in the Town of Middleborough, whose owners choose to participate. All participants are to be presently connected to the sewer system area.

Each replacement or retrofit of a water-using device will carry a stipulated gallonage savings, based on average savings achieved in similar programs implemented in other communities or in conjunction with the Massachusetts Department of Environmental Protection.

Devices to be considered for retrofit or replacement include toilets, toilet dams, flushometers, showerheads, faucet aerators, and flow-limiting devices on commercial machines that utilize water and discharge to the Town's sewer system, such as dishwashers, car washes, industrial processes, etc.

#### **Candidate Participants**

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  - Installing flow-limiting devices on commercial or industrial processes which utilize water then discard it as wastewater to the sewer system.

## Implementation

### 1. General

Implementation will begin with a detailed survey of existing water and sewer users to identify the most likely candidates to achieve the required water and sewer use reduction of the required two for one gallons per day. Based on the results of the fieldwork, specific participants will be selected and the detailed components of the WASURP will be finalized.

Once developed, an implementation plan with its specific components will be submitted to the Town of Middleborough's Wastewater Department Superintendent for approval.

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averages for existing fixture water flows, occupancy loads, and number of uses per day. The total stipulated use reduction will be calculated using the actual population of the schools or other facilities which participate, and the actual number of households which participate. The quantity of savings for components not listed in Exhibits A & B such as commercial dishwashers, laundry machines, or industrial processes, will be provided and approved by the Town of Middleborough Wastewater Department Superintendent.

#### Schedule of Implementation

A schedule of implementation will be provided and shall be limited to one (1) year.

### 3. Method of Implementation

a. The identified projects will be sent a notice by mail, outlining the WASURP and asking for voluntary participation, along with a request for types, years and flow of toilets, and any general information such as dishwasher and washing machine use.

b. Once the accumulated information is provided in a table, an estimated cost of materials and construction services will be provided to the Wastewater Department. This cost shall be reviewed by the Town's Wastewater Department and submitted to the Board of Selectmen for approval.

c. The proponent will select a local self insured plumber/company for contact to be made for installation of the water saving devices.

d. A final submittal of installed devices and estimated water and sewer use reduction shall be provided to the Board of Selectmen through the Wastewater Department Superintendent.

### OPTION 2 - CONSTRUCTION PROJECT PERFORMANCE

This option will allow the project proponent to provide construction services for repair of identified I/I projects. The overall construction cost will be limited to two dollars and fifty cents (\$ 2.50) for every one gallon of I/I removed. The project proponent shall be required to hire an insured and experienced general construction contractor to perform the work.

#### EXAMPLE:

Developer requests 3,000 gallons of wastewater flow.

(3,000 gallons) times (2 for 1 Removal) = 6,000 gallons of I/I to remove.

Payment to Wastewater Account is = 6,000 gallons times \$ 2.50 per gallon = \$ 15,000



**OPTION 3 - TOWN SEWER PROJECT ENGINEERING AND/OR CONSTRUCTION FUND**

This option allows a project proponent to contribute to a Town Sewer Project Fund that will accumulate dollars for the town to perform I/I studies within the Sewer Service Area. The project proponent will be required to contribute three dollars (\$ 3.00) for every gallon of flow, according to the following formula:

**FORMULA.:**

Developer requests 3,000 gallons of wastewater flow.

(3,000 gallons) times (2 for 1 Removal) = 6,000 gallons of I/I to remove.

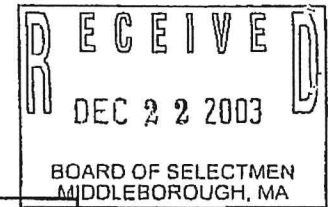
Payment to Wastewater Fund is = 6,000 gallons times \$ 3.00 per gallon = \$ 18,000

**EXHIBITS A AND B**

## EXHIBITS A AND B

# EXHIBIT A

## WATER AND SEWER REDUCTION PROGRAM WATER SAVINGS FOR RESIDENTIAL USERS Water Savings per Household



A	B	C	D	E	F	G	H	I
Fixture	Years Manufactured or Installed <sup>1</sup>	Existing Device Usage	Replacement Device Usage	Retrofit Savings <sup>2</sup> (C-D)	Usage Rate  (uses /capita/day)	Gallons Saved/capita/ day <sup>3</sup> (ExF)	Capita/ Household <sup>1</sup>	Average Daily Savings / Household <sup>9</sup> (gal. saved/day) (GxH)
Toilet Dams		5 -7 gpf <sup>1</sup>	3-5 gpf	2 gpf <sup>4</sup>	4.2 lpd <sup>5</sup>	8.4 gpcd	2.64 cph	22.2 gpd
Toilets	1994 - Present	1.6 gpf <sup>6</sup>						
	1980-1994	3.5 gpf <sup>6</sup>	1.6 gpf <sup>6</sup>	1.9 gpf	4.2 lpd <sup>5</sup>	8.0 gpcd	2.64 cph	21.1 gpd
	1950s - 1980	5.0 gpf <sup>6</sup>	1.6 gpf <sup>6</sup>	3.4 gpf	4.2 lpd <sup>5</sup>	14.3 gpcd	2.64 cph	37.7 gpd
	Pre 1950s	7.0 gpf <sup>6</sup>	1.6 gpf <sup>6</sup>	5.4 gpf	4.2 lpd <sup>5</sup>	22.7 gpcd	2.64 cph	59.9 gpd
Faucets	1994 - Present	1.7 gpm <sup>7</sup>						
	1980-1994	1.8 gpm <sup>7</sup>	1.7 gpm <sup>7</sup>	0.1 gpm	8.1 mpd <sup>7</sup>	0.8 gpcd	2.64 cph	2.1 gpd
	Pre 1980s	3.3 gpm <sup>7</sup>	1.7 gpm <sup>7</sup>	1.6 gpm	8.1 mpd <sup>7</sup>	13.0 gpcd	2.64 cph	34.2 gpd
Showerheads	1994 - Present	1.7 gpm <sup>8</sup>						
	1980-1994	1.8 gpm <sup>8</sup>	1.7 gpm <sup>8</sup>	0.1 gpm	5.3 mpd <sup>8</sup>	0.5 gpcd	2.64 cph	1.4 gpd
	Pre 1980s	4.3 gpm <sup>8</sup>	1.7 gpm <sup>8</sup>	2.6 gpm	5.3 mpd <sup>8</sup>	13.8 gpcd	2.64 cph	36.4 gpd

### Notes:

- 1 Handbook of Water Use and Conservation, Amy Vickers Assoc., 2001
- 2 Retrofit Savings = Existing device usage - replacement device usage.
- 3 Gallons saved per capita per day = Retrofit Savings x Usage Rate
- 4 Installation of toilet tank displacement device; Weymouth Conservation Program
- 5 Based on Weymouth Conservation Program
- 6 Table 2.2 - Handbook of Water Use and Conservation, Amy Vickers Assoc., 2001
- 7 Table 2.15 - Handbook of Water Use and Conservation, Amy Vickers Assoc., 2001
- 8 Table 2.11 - Handbook of Water Use and Conservation, Amy Vickers Assoc., 2002
- 9 Average Daily Savings per Household = Gallons Saved per Capita per Day x Capita per Household

gpf = gallons per flush

gpm = gallons per minute

lpd = flushes per day

gpcd = gallons per capita per day

mpd = minutes per day

cph = capita per household

# EXHIBIT B

## WATER AND SEWER REDUCTION PROGRAM

### Water Savings for School, Municipality, Commercial

A	B	C	D	E	F	G	H	For Schools		For Commercial and Municipal Buildings	
Fixture	Users	Years Manufactured or Installed <sup>1</sup>	Existing Device Usage	Replacement Device Usage	Retrofit Savings <sup>2</sup> (gal. saved/user/fixture) (D-E)	Usage Rate (uses/capita/day)	Gallons Saved/Capita /Day <sup>3</sup> (FxG)	I	J	K	L
								Ratio - Schools days/total days in a year <sup>4</sup> (180/365)	Average Daily Savings (gal. saved/capita/day) <sup>5</sup> (HxI)	Ratio - Working days/total days in a year <sup>6</sup> (260/365)	Average Daily Savings (gal. saved/capita/day) <sup>7</sup> (HxK)
Toilet	Male	1994 - Present	1.6 gpf <sup>a</sup>								
		1980-1994	3.5 gpf <sup>a</sup>	1.6 gpf <sup>a</sup>	1.9 gpf	1 fpd <sup>a</sup>	1.9 gpcd	0.49	0.9	0.71	1.4
		1950s - 1980	5.0 gpf <sup>a</sup>	1.6 gpf <sup>a</sup>	3.4 gpf	1 fpd <sup>a</sup>	3.4 gpcd	0.49	1.7	0.71	2.4
		Pre 1950s	7.0 gpf <sup>a</sup>	1.6 gpf <sup>a</sup>	5.4 gpf	1 fpd <sup>a</sup>	5.4 gpcd	0.49	2.7	0.71	3.8
Toilet	Female	1994 - Present	1.6 gpf <sup>a</sup>								
		1980-1994	3.5 gpf <sup>a</sup>	1.6 gpf <sup>a</sup>	1.9 gpf	3 fpd <sup>a</sup>	5.7 gpcd	0.49	2.8	0.71	4.1
		1950s - 1980	5.0 gpf <sup>a</sup>	1.6 gpf <sup>a</sup>	3.4 gpf	3 fpd <sup>a</sup>	10.2 gpcd	0.49	5.0	0.71	7.3
		Pre 1950s	7.0 gpf <sup>a</sup>	1.6 gpf <sup>a</sup>	5.4 gpf	3 fpd <sup>a</sup>	16.2 gpcd	0.49	8.0	0.71	11.5
Urinal	Male	1994 - Present	1.0 gpf <sup>a</sup>								
		1980-1994	1.5 gpf <sup>a</sup>	1.0 gpf <sup>a</sup>	0.5 gpf	2 fpd <sup>a</sup>	1.0 gpcd	0.49	0.5	0.71	0.7
		Pre 1980s	5.0 gpf <sup>a</sup>	1.0 gpf <sup>a</sup>	4.0 gpf	2 fpd <sup>a</sup>	8.0 gpcd	0.49	3.9	0.71	5.7
Faucets	Male & Female	1994 - Present	1.7 gpm <sup>10</sup>								
		1980-1994	2.0 gpm <sup>10</sup>	1.7 gpm <sup>10</sup>	0.3 gpm	1 mpd <sup>11</sup>	0.3 gpcd	0.49	0.1	0.71	0.2
		Pre 1980s	3.3 gpm <sup>10</sup>	1.7 gpm <sup>10</sup>	1.6 gpm	1 mpd <sup>11</sup>	1.6 gpcd	0.49	0.8	0.71	1.1
Shower	Male & Female	1994 - Present	1.7 gpm <sup>12</sup>								
		1980-1994	1.8 gpm <sup>12</sup>	1.7 gpm <sup>12</sup>	0.1 gpm	5.3 mpd <sup>12</sup>	0.5 gpcd	0.49	0.3	0.71	0.4
		Pre 1980s	4.3 gpm <sup>12</sup>	1.7 gpm <sup>12</sup>	2.6 gpm	5.3 mpd <sup>12</sup>	13.8 gpcd	0.49	6.8	0.71	9.8

Notes:

- 1 Handbook of Water Use and Conservation, Amy Vickers Assoc., 2001
- 2 Retrofit Savings = Existing device usage - replacement device usage.
- 3 Gallons saved per capita per day = Retrofit Savings x Usage Rate
- 4 School Ratio = 180 school days/ 365 total days
- 5 Average Daily School Savings = gallons saved per capita per day x capita x school day ratio
- 6 Working Day Ratio = 260 working days/ 365 total days
- 7 Average Daily Municipal and Commercial Savings = gallons saved per capita per day x capita x working day ratio
- 8 Table 2.4 - Handbook of Water Use and Conservation, Amy Vickers Assoc., 2001
- 9 Table 2.10 - Handbook of Water Use and Conservation, Amy Vickers Assoc., 2001
- 10 Table 2.15 - Handbook of Water Use and Conservation, Amy Vickers Assoc., 2001
- 11 Faucet Usage Rate (schools, municipal and commercial buildings) assumes 3 uses per day x 20 seconds per use x 1 minute per 60 seconds
- 12 Table 2.11 - Handbook of Water Use and Conservation, Amy Vickers Assoc., 2001

gpf = gallons per flush

mpd = minutes per day

gpm = gallons per minute

fpd = flushes per day

gpcd = gallons per capita per day

TOWN OF PLYMOUTH  
SEWER CONNECTION PERMIT POLICY

Effective September 10, 2019

At their meeting on September 10, 2019, the Board of Selectmen voted to adopt the following policy governing the permitting of the Sewer Connections.

**Part 1: Sewer Connection Privilege Permit Fee:**

- The Administrative Fee to apply for a Sewer Connection Permit will be \$100.00.
- The Sewer Connection Privilege Permit Fee will be \$10.00 per gallon as computed in Part 3 of this agreement.
- Payment of the above fees in no way exempts new users to pay sewer user charges and other sewer fees as determine by the Board of Selectmen.
- If the applicant does not begin construction within one year of the date the connection fee is paid for, the applicant's sewer allocation will be rescinded and must re-apply under new rate structure and standards. **If the applicant is held up due to obtaining permits or appeals that are no fault of their own, they can be granted up to 3 years additional time to break ground.**
- If within 6-months of the date a connection fee is paid, the applicant will have the ability to withdraw its permit to enter the sewer system and will receive a 25 per cent reimbursement of fees paid.



## **Part 2: Eligibility for New Sewer Connection Permit**

To be eligible for a Sewer Connection Permit, a person or entity will be required to submit a Sewer Connection Application provided by the Department of Public Works Sewer Division. At a minimum, the application shall include the name of the person or entity, the location of the proposed Sewer Connection, the requested gallons of wastewater, the basis of that projection, and an estimated date when construction will be completed.

A non-refundable fee of \$100 must accompany the application form to compensate the town for staff work associated with reviewing the application. Upon receipt of the application, the Department of Public Works will do the following:

1. Review the application for accuracy.
2. Verify the flow projections using Title V standards to determine if the applicant is currently using sewer flow in accordance with previously issued Sewer Connection Permits.
3. Applicant has demonstrated the Sewer Connection alignment and installation are in accordance with the Sewer Division installation standards.
4. Determine the applicant's status on payment of prior water fees, sewer fees, rent, real and personal property taxes, and all other fees and taxes due the Town of Plymouth.
5. Verify that the applicant's sewer discharge complies with the town's industrial pre-treatment program.
6. In the case of an applicant that is exempt from local property taxes, refer that applicant to the Board of Selectmen for discussion on payment in lieu of tax options.

### **Part 3: Issuance of Sewer Connection Permits**

It is the policy of the Department of Public Works to issue Sewer Connection Permits, apart from public facilities, on a “first come, first served” basis. This criterion is conditional on sewer capacity available in that sector of the community, and subject to the applicant’s compliance with the following conditions at the time of permit issuance:

1. That the applicant pays a Sewer Connection Fee to connect to the sewer system as outlined in Part 1 of this agreement. The fee is established to recoup the cost to the town to construct capital facilities including administrative, permit conditions, engineering and legal expenses associated with providing sewer capacity, sewer line extensions, infiltration and inflow mitigation, and pumping facilities. The fee is based on the number of gallons of sewer flow requested in the Sewer Connection Application.
2. Verification that the applicant is current on all water fees, sewer fees, rent, real and personal property taxes, and all other fees and taxes due to the Town of Plymouth.
3. The execution by the applicant of a Sewer Connection Permit, wherein the applicant agrees to the following special conditions;
  - (a.) That the applicant will forfeit the permit and permit fees if the applicant fails to obtain a building permit and commence construction of the proposed project within one year from the date the permit is issued by the Town. If within 6 months of the date a connection fee is paid, the applicant will have the ability to withdraw its permit upon written notification of the applicant to enter the sewer system and will receive a 25 per cent reimbursement of fees paid.

- (b.) That the applicant authorizes the installation of a new water meter at the property location if deemed necessary by the Department of Public Works and allows access to the property to permit reading of the meter on a quarterly basis by the town.
  - (c.) That the applicant agrees to the following process and actions in the event the flows exceed the amount stated on the permit issued by the town:
  - (d) Applicants who pay connection fees within 90 days of notification will have one year from the date in which the fee was paid to commence construction, or the permit will be rescinded. If the applicant is held up due to obtaining permits or appeals that are no fault of their own, they can be granted up to 3 years additional time to break ground.
4. Sewer Connection Permits are a privilege and can only be allocated by the town of Plymouth Sewer Division. No applicant that has been assigned a Sewer Connection Permit may sell said permit to any other property except for transferring to a new property owner that the permit has been assigned to and meets the terms and conditions of the Sewer Connection Policy.

#### **Part 4: Waiver on Start of Construction Date:**

**Up to 60 days** prior to the one-year condition of commencing construction from the date the Sewer Connection Permit is issued, the applicant may apply for an extension of up to 6 months. The process to obtain a waiver is as follows:

**Up to 60 days** of the termination date to begin construction, the applicant may write a letter to the Department of Public Works requesting up to a 6-month extension of the Sewer Connection Permit. The request will be forwarded to the Director Public Works for a decision.

### **Part 5: Payment Schedules and Assessment Schedule:**

From time to time an applicant will request to pay Sewer Connection Permit Fee over time. The Board of Selectmen may approve a payment schedule for any applicant that **meets the terms and conditions** of the Town Finance Director, interest is paid at 2% over Town's borrowing rates, and there are appropriate liens to insure payment as prescribed.

### **Part 6: Mandatory Sewer Connection Bylaw:**

#### **Chapter 149**

#### **SEWERS**

##### **§ 149-1. Selectmen to promulgate regulations.**

**[HISTORY: Adopted by the Special Town Meeting of the Town of Plymouth 11-20-1989 by Art. 11. Amendments noted where applicable.]**

#### **GENERAL REFERENCES**

**Water -- See Ch. 191.**

##### **§ 149-1. Selectmen to promulgate regulations.**

- A. The Board of Selectmen may adopt sewer regulations for the purpose of governing the use of the Town of Plymouth sewer treatment facility and all its appurtenances, which regulations shall be subject to the civil penalty enforcement provisions of MGL c. 83, § 10 and shall also have the force of a bylaw.
- The sewer regulations shall provide for criminal fines and civil penalties as authorized by the General Laws and may, at the election of the Board of Selectmen, be enforced by criminal or civil prosecution or by noncriminal disposition pursuant to the provisions of MGL c. 40, § 21D.

§ 149-2. Sewer Connections. [Adopted 10-26-2004 ATM by Art. 25]

A. SEWER CONNECTION REQUIRED

**Owners of all properties used for human occupancy, employment, recreation or other purposes within an area of the Town in which there is now located or in the future may be located a common sewer, to be sewerred as identified in the final wastewater facilities plan dated June 16, 1997 provided that said common sewer is within 100-feet of the street front property line and abutting on any public or private way in which there is a common sewer, is hereby required at his/her expense, if there exists sufficient capacity within the Town's sewer system, to connect said building by sufficient drain to the common sewer as follows:**

- (1) **For all new construction of residential, commercial, industrial, and/or mixed-use buildings.** ~~The owner of any occupied structure to be constructed shall, if there exists sufficient capacity within the Town's sewer system, connect said building by a sufficient drain to the common sewer;~~
- (2) The owner of any occupied structure served by a Soil Absorption System (SAS) **requesting any change of use, or alteration to a structure that results in increased wastewater flow, including single-family dwellings.** ~~constructed prior to March 31, 1995, if there exists sufficient capacity within the Town's sewer system, may increase the sewer flow from such building only upon connecting such building by a sufficient drain to the common sewer;~~
- (3) The owner of any occupied structure, **excluding residential structures containing less than 3-dwelling units,** served by a Soil Absorption System (SAS) **shall be required to connect to the common sewer within 180-days of receiving official notice from the Department of Public Works** ~~constructed subsequent to March 31, 1995, if there exists sufficient capacity within the Town's sewer system, may increase the sewer flow from such building, provided that the Board of Health certifies that the SAS is sufficient to handle the existing sewer flow, and further provided that the increased flow is directed by a sufficient drain to the common sewer; and~~
- (4) The owner of any occupied structure served by a Soil Absorption System (SAS) determined by the Board of Health to be failing shall connect said building ~~by a sufficient drain~~ to the common sewer. **[Adopted 10-23-2018 ATM by Art. 16]**

B. OCCUPANCY OF STRUCTURES REQUIRED TO BE SEWERED

No occupied structure hereafter constructed, or any part of an existing occupied structure, that is required to be connected to the common sewer as set forth above, shall be occupied until such connection is completed.

C. VIOLATIONS AND PENALTIES

Any person who violates this Bylaw shall be subject to a fine of \$300.00 per day, with each day the violation continues constituting a separate violation. This bylaw may be enforced through the non-criminal disposition procedure of G.L. c.40, §21D. The Director of Public Works, or his designee, or any police officer of the Town, shall be the enforcing agent under this bylaw.

D. RELATION TO OTHER LAW

This Bylaw shall not be construed to limit or constrain in any way the powers of the Board of Health, pursuant to G.L. c.83, §11 or other applicable law, to require connection to the common sewer.

**§ 149-3. Sewer Betterment Assessments [Added 4-8-2013 ATM by Art. 30]**

- A. The Board of Selectmen, acting as sewer commissioners in accordance with G.L. c.83, §14, 15, and 23, may assess betterments upon benefitted properties for all, or such lesser portion as the Board shall determine, of the cost of constructing municipal sewer system facilities;
- B. In fixing the amount of such betterments, the Board of Selectmen may, at their discretion, utilize the fixed uniform rate or the uniform unit rate method as set forth in G.L. c.83, §15.
- C. Further in accordance with G.L. c.83, §15, the Selectmen may, in assessing such betterments, separate the costs of general benefit facilities, including but not limited to pumping stations, trunk and force mains, from that of special benefit facilities, including but not limited to sewer mains, serving adjacent properties, and may apportion an equitable portion of the costs of the general benefit facilities by the uniform unit method on all properties benefitted by such facilities;
- D. The Selectmen may assess and collect estimated betterment assessments for the construction of sewer facilities in accordance with G.L. c.83, §15B.



### **Part 7: Special Considerations and Appeals**

From time to time there will be unanticipated circumstances where the Board of Selectmen will want to modify the conditions in this agreement for a condition not anticipated in this agreement or is in the best interest of the sewer system and community at large. If an applicant has such a case it would have the right to an appeal through the following conditions.

1. A letter would be written from the applicant to the Director of Public Works and Town Manager requesting relief as outlined.
2. The Director of Public Works and Town Manager would have **30 days** to make a recommendation to the Board of Selectmen.
3. The Board of Selectmen would have **30 days** to render a decision.

The intent of appeal section is not created to relieve the intent of this policy, but to consider appeals that are in the best interest of the sewer system and community in special circumstances and hardships.

### **Part 8: Revising Sewer Connection Policy:**

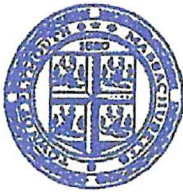
It is recognized that it will be necessary to modify the Revised Sewer Connection Policy from time to time as changes warrant. The Board of Selectmen reserves this right.

APPROVED BY THE BOARD OF SELECTMEN: Date: September 10, 2019. This agreement in no way relieves an applicant of all other conditions of being part of the Plymouth Sewer System, or Town, State and Federal Regulations.

**Town of Plymouth**  
**Sewer Connection Permit Policy**  
**Fee Schedule**  
**September 10, 2019**

Summary of Fees		
<b>Administrative Fee:</b>		
<b>\$100</b>		
<i>The Administrative Fee applies to <u>all</u> Sewer Connections.</i>		
<b>Sewer Development Fee:</b>		
<i>Connection Type</i>	<i>Flow</i>	<i>Fee</i>
Residential Connection – currently on septic, with a certified failed Title 5 system	<b>ALL FLOWS</b>	<b>\$ 10 / gallon</b>
Residential Connection – currently on septic		
Existing Sewer Customer – renovation of space/ increase in sewer flows		
New Sewer Connections		
<i>Development fees are calculated based on Title 5 wastewater flows.</i>		

Construction of Sewer Connections		
The owner shall be responsible for the construction of the Sewer Connection in its entirety. All costs and expenses associated with the installation and connection from the building to the Town sewer shall be borne by the owner. All construction means, materials and methods must comply with DPW standards.		
Inspections:		
1 – 2 inspections	\$ 0 / inspection	Inspections, coordinated through the DPW Sewer Division, are required for <i>all</i> Sewer Connections.
> 2 inspections	\$ 50 / inspection	
Street Opening Permits:		
\$125 Administrative Fee \$150 Utility Installer's License plus applicable Bonds and Insurance		A Street Opening Permit is required for any work within the traveled way and/or right-of-way. Street Opening permits can be obtained through the DPW Engineering Division.



## TOWN OF PLYMOUTH

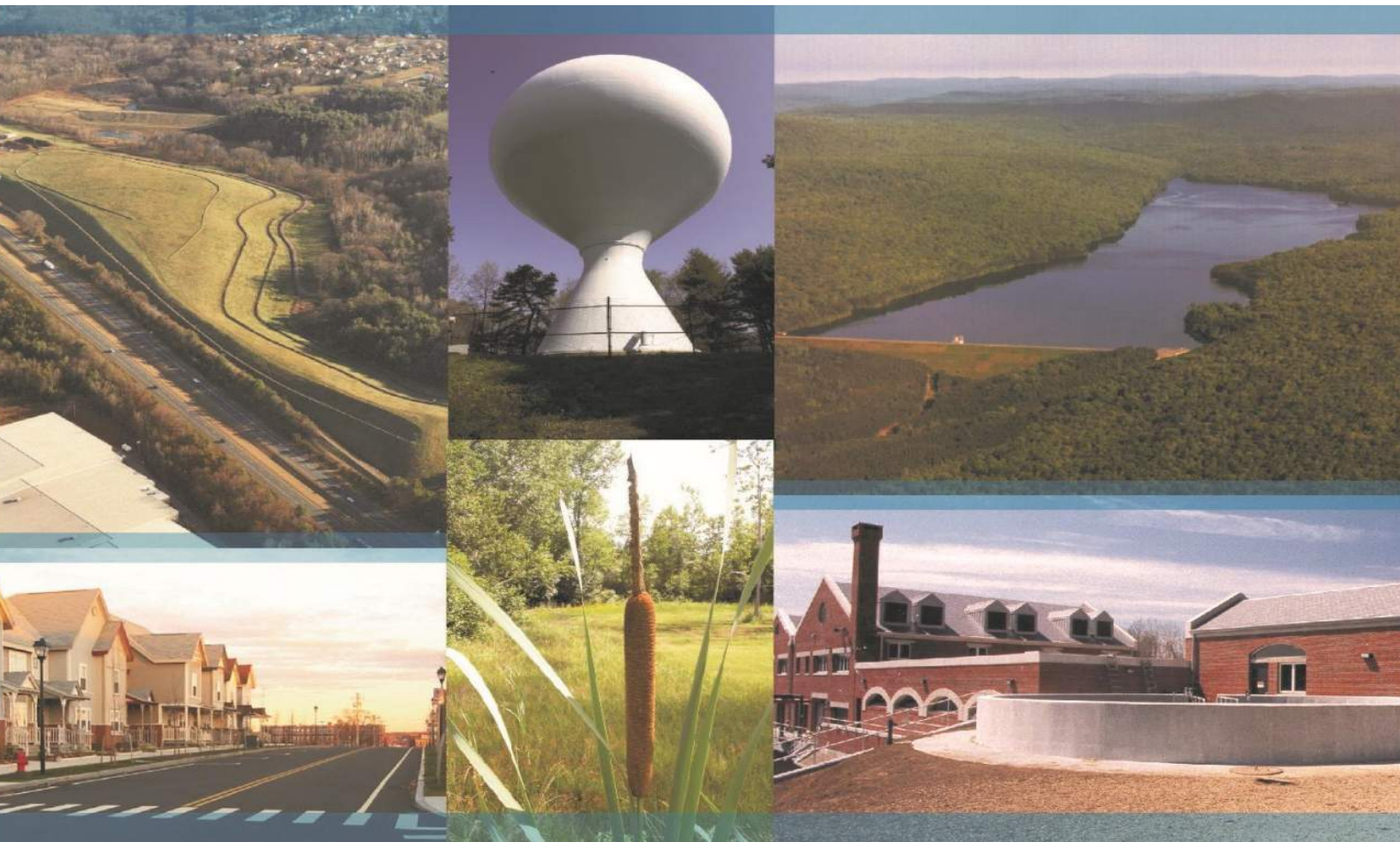
Department of Public Works  
Sewer Division  
131 Camelot Drive  
Plymouth, Massachusetts 02360  
Office: (508) 830-4158  
Fax: (508) 732-0238

### SEWER CONNECTION APPLICATION CHECKLIST

- ☐ Obtain a "Sewer Connection Application Form" at the Sewer Division 131 Camelot Drive. Applications can also be found on the Town's website under the Sewer Division tab
- ☐ Please read the Sewer Connection Policy before applying for a Sewer Connection.
- ☐ Complete the form, sign and date it. (It must be signed by the property Owner.)
- ☐ Bring the completed form along with a check made out to The Town of Plymouth in the amount of \$100 to the Sewer Division office. The application fee is non-refundable.
- ☐ For new construction, submit a copy of the construction plans. For remodeling existing buildings, submit before and after floor plans (non-returnable) and a copy of the Assessor's Field Card.

- Permits will only be considered for approved building lots.
- Fees will be those in effect when the permit application is approved. Please see attached Sewer Connection Policy for Fee Schedule.
- All permits expire one year after issuance if the applicant fails to obtain a building permit unless a waiver is granted.
- Once a completed application packet is submitted to the Sewer Division office, we will review, approve or reject your application within 10 working days. Complicated applications or appeals may require more time for review. Once the review is complete, the DPW will notify you of its determination. Upon approval, you will have 90 days to pay all the fees and pick up your permit at the Sewer Division office.
- Restaurants and other establishments where food is prepared or where wastes contain grease in excessive amounts or any waste, sand or other harmful ingredients which can be discharged and are connected to the wastewater system, shall be provided with a suitable trap or separator. Such traps shall not be required for private living quarters or dwelling units. All traps or separators shall be of a type and capacity approved by the DPW and shall be located to be readily accessible for cleaning and inspection. Grease traps shall have a minimum depth of 4 feet and a minimum capacity of 2,000 gallons and shall have sufficient capacity to provide at least a 24-hour detention period for the kitchen flow. Kitchen flow shall be calculated in accordance with 310 CMR 15.00 (Title V). Grease traps shall be provided with a minimum 24-inch diameter manhole frame and cover to grade over both the inlet and outlet. Grease traps shall be inspected monthly and shall be cleaned when the level of grease is 25 percent of the effective depth of the trap or at least every three months. The owner shall provide written evidence to the Department that all traps are being cleaned and inspected at least every three months.





# Sewer Rate and Capacity Management Evaluation

Town of Bourne

February 2020

**REVISED**  
7/10/2020

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APPENDIX – Handout from July 12, 2020 Sewer Commission Meeting



## **Section 1**

### **Introduction**



*This report was released in February 2020 and discussed at an in-person workshop held on March 16, 2020 which effectively began the COVID-19 quarantine period. The rate evaluation was further discussed at the July 2, 2020 and July 12, 2020 sewer commission meetings. One of the many impacts of COVID-19 were that meetings were no longer held in person and the July meetings were conducted via the Zoom video conferencing platform. To better support this platform, Tighe & Bond combined the elements of a written report and a presentation in the form of a detailed "handout" which consists primarily of the core figures and tables with key discussion points identified. While the handout contains the same elements as the report it is based upon more updated data and information. This document is a convergence of the detailed July 10 handout and the original text from the February 5, 2020 revised final draft. Updated information or tie-ins to the handouts (with page numbers) are clearly indicated. The handout is included in its entirety as an appendix.*

The Town of Bourne owns and operates a municipal sewer system that collects wastewater from 604 residential and commercial parcels in the downtown, Taylor Point and Hideaway Village areas. The existing sewer system, constructed in early 1990's, consists of collection and pumping facilities only; all wastewater is sent to the Town of Wareham for disposal. Water is provided by the Buzzards Bay Water District.

The capacity of the Bourne sewer system is limited to 200,000 gallons per day (gpd) by the Intermunicipal Agreement (IMA) with Wareham, which was executed on February 23, 2010, and is valid through February 2030. In response to strong commercial growth in the downtown area, Bourne moved forward with the design and construction of its own municipal wastewater treatment plant (WWTP). The design capacity of the new treatment plant is 100,000 gallons per day, which increases the total sewer capacity to 300,000 gallons per day.

The Town engaged Tighe & Bond to review the existing capacity allocation policy, develop an impact fee policy and create an electronic rate model. The goal is to evaluate the viability of maintaining the existing rate structure compared to alternative rate structures.

During the data development phase, we discovered that the Town Meeting authorization or the WWTF clearly set the Town's expectations in terms of customer impacts. Given its significance, the entire motion is provided below:

## Article 2, October 2017 Special Town Meeting

**MOTION:** That the sum of Six Million Five Hundred Fifty-Eight Thousand Dollars (\$6,558,000.00) is appropriated to make various wastewater system and wastewater treatment improvements for the protection of human and environmental health and to enhance the economic development in Bourne, such funds to be used for planning, constructing, originally equipping and furnishing a wastewater treatment facility and ancillary space on town-owned land, including the payment of all costs incidental and related thereto, and that to meet this appropriation, the Treasurer, with the approval of the Selectmen, is authorized to borrow said amount under and pursuant to Chapter 44, Section 8(14) of the General Laws, or pursuant to any other enabling authority, and to issue bonds or notes of the Town therefor;

provided, however, that no sums shall be borrowed or expended pursuant to this motion unless and until the Selectmen shall have determined that sewer rates and charges have been established to pay all costs of operating and maintaining the Town's sewer enterprise, including the cost of any existing debt service currently payable from the sewer enterprise, and that sewer rates have been so established as to provide for the full payment in each year of debt service on Two Million Four Hundred Thousand Dollars (\$2,400,000) of bonds or notes issued pursuant to this vote. The amount authorized to be borrowed by this vote shall be reduced to the extent of any grants received by the Town on account of this project. Any premium received upon the sale of any bonds or notes approved by this vote, less any such premium applied to the payment of the costs of issuance of such bonds or notes, may be applied to the payment of costs approved by this vote in accordance with Chapter 44, Section 20 of the General Laws, thereby reducing the amount authorized to be borrowed to pay such costs by a like amount.

*VOTED: AYES 132; NAYS 24; declared a 2/3rds vote.*

Our rate evaluations start with examining the revenue projected from existing rate structures against the estimated revenue needs (expenses) over a ten-year planning period. If the projected revenue falls short of the revenue needs, percentage increases are applied uniformly to all components of the rate structure (i.e. base fees and usage charges) to maintain the desired reserve balance. The cost impacts to residential customers are then calculated and reviewed in terms of equity. From there, incremental modifications to the existing rate structure are developed and reviewed. Typically, the residential costs for all alternatives are reviewed against each other with the lowest cost generally representing the most desirable option. The language outlined in the motion however sets a clear standard for evaluating not only the rate structure but fees as well, which was subsequently adopted as the primary project goal.

## Section 2

# Capacity Allocation Assessment

### 2.1 Defining and Measuring Sewer Capacity

The function of a public sewer system is to collect and transport wastewater from customers to a wastewater treatment plant where the wastewater is treated using both biological and chemical/physical processes.

Treated wastewater is discharged to either a surface water body or groundwater via subsurface disposal. A discharge permit is required for the above mentioned scenarios and are governed by different federal agencies. Surface water discharges are governed by the National Pollution Discharge Elimination System (NPDES) program while groundwater discharge administered by the Massachusetts Department of Environmental Protection (MADEP). The discharge permit defines effluent quality requirements and the maximum amount of treated wastewater that may be discharged. As a result, all **wastewater treatment plants have a finite capacity.**

Bourne is considered a secondary system (no treatment) and currently sends all sewerage from its collection system to the Town of Wareham for disposal as authorized under the Intermunicipal Agreement (IMA) between the two towns. The IMA provides Bourne 200,000 gallons per day of capacity.

### 2.2 Capacity allocation policy

In 2017, the Town developed the Commercial Wastewater Management Allocation Policy (the Policy), which is designed to support growth by developing an impartial method of allocating capacity to new commercial developments.

The Policy consists of the following steps:

**Application.** An application is submitted as the first step to provide general information about a project, proposed location, and descriptions. More importantly, the application requires information relative to the applicant's intent and progress towards obtaining ownership of the parcel and securing financing. The last and most important information provided is the estimated flow that will be generated from the completed project site.

**Preliminary Allocation.** The Town has 60 days to respond and issue a preliminary allocation to the applicant provided that the applicant has demonstrated that project financing is available, ownership of the identified parcel has been secured, and that the estimated flow is less than the Uncommitted Reserve Capacity. The pool from which capacity is allocated from is referred to as the **Uncommitted Reserve Capacity (UCRC)** which is defined as the total available (permitted) capacity minus preliminary allocations, operational allocations, existing residential flow and the residential reserve (2% of residential flow). The preliminary allocation reserves the requested capacity for the applicant and provides the applicant with two years to initiate construction.

**Operational Allocation.** The preliminary allocation is converted to an operational allocation by the approval of the Town once a building permit has been issued. It

is assumed that the allocation amount is the same as that requested in the preliminary allocation application.

### 2.2.1 Program Maintenance

The policy has several checks and balances designed to maintain the system:

**Public Hearing:** The Board is required to conduct a public hearing within six months of the preliminary allocation approval. At the public hearing, the applicant is required to submit a report on their plans for development within the next two years. If the applicant fails to demonstrate sufficient plans for development, the allocation is considered void and the capacity returns to the Uncommitted Reserve Capacity.

**Operational Allocation Review:** If a property with an approved operational allocation has not commenced to discharge within two years, the allocation is voided and returned to the Uncommitted Reserve Capacity. Three years after the initial connection, the actual flows are compared to the approved allocation, if the actual flow is greater than the allocation, the property owner must apply for an additional allocation, if less, the difference is returned to the uncommitted reserve capacity.

**Annual Update of the Uncommitted Reserve Capacity:** The policy requires the Board to determine the uncommitted reserve capacity annually in September. The status of all allocations is to be reviewed as part of the determination.

## 2.3 Determination of Uncommitted Reserve Capacity

The Uncommitted Reserve Capacity (UCR) is calculated for 2018 based upon the following components as described in Section 2.1, and further described below:

1. **Existing Residential Usage.** The capacity allocation provided by the Wareham IMA is based upon the total volume of sewage that enters the Wareham collection system as determined by summing the flows from Bourne's two pump stations; Main Street and Hideaway. No distinction is made between residential and non-residential sewage. The total pumped volume for 2017 and 2018 is shown below in Table 2-1

**Table 2-1**

Total Wastewater Pumped (gpd)

Year	Main Street	Hideaway	Total
CY 2017	85,156	11,063	96,220
CY 2018	89,050	10,363	99,413



See page 2-7 for updated pumpage data

2. **Existing Allocations.** Existing allocations as of December 2019, are shown in the following tables.

**Table 2-2**

Recent Approvals (Operational)

<b>Owner</b>	<b>Location</b>	<b>Allocation (gpd)</b>	<b>Application Date</b>	<b>Approval Date</b>
▶ Hampton Inn	12 Kendall Rae Place	15,243	-	9/30/2014
Vincent Michienzi	85-93 Main Street	13,000	10/24/2018	10/15/2018
<b>TOTAL</b>		<b>28,243</b>		

**Table 2-3**

Pending Approvals (Preliminary)

<b>Owner</b>	<b>Location</b>	<b>Allocation (gpd)</b>	<b>Application Date</b>	<b>Approval Date</b>
GENCON/ 12 Wagner	12 Wagner Way	17,750	1/5/2018	6/18/2019
Calamar / 25 Perry	13 Kendall Rae Place	16,800	12/21/17	9/19/2017
Vincent Michienzi/ 100 Block	Cohasset / Main	26,080	-	10/13/2015
<b>TOTAL</b>		<b>60,630</b>		

**Table 2-4**

Pending Applications

<b>Owner</b>	<b>Location</b>	<b>Allocation (gpd)</b>	<b>Application date</b>	<b>Approval date</b>
▶ Oak Bay Brewery	140 Main Street	2,256	8/23/2019	12/18/2019
James McLaughlin	227 Main Street	79	12/31/2019	TBD
MMA Cadet Housing	11 Buttermilk Way	7,070	12/27/2019	TBD
<b>TOTAL</b>		<b>9,405</b>		

The resulting Uncommitted Reserve Capacity based upon 2018 usage is shown below in Figure 2-1.



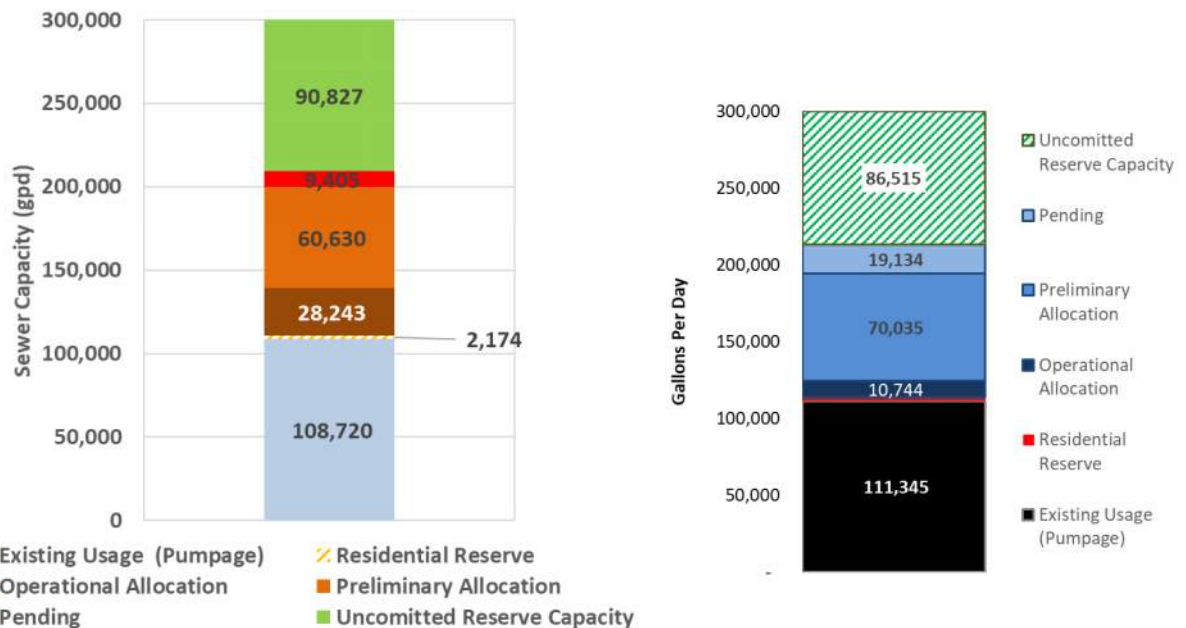
Projects marked with triangle above have come online since the project started, see handout page 8 for additional information

**Figure 2-1**

Uncommitted Reserve Capacity



Revised URC determined based upon 2019 pumpage with allocations for projects indicated on previous page removed.



The total of existing and allocated capacities is 199,679 gallons per day, which is almost at the existing allotted capacity defined by the Wareham IMA. However, it is important to understand that the inherent accuracy of this value is directly related to the method used to determine each component.

### 2.3.1 Accuracy of Uncommitted Reserve Capacity

The Uncommitted Reserve Capacity effectively defines the amount of commercial development that can be supported by the new WWTP. Sewer flows are determined by a variety of different methods for different purposes and each method has inherent accuracy limitations. Understanding these methods is important to maximize the value of the new WWTP investment.

The different uses of sewer flow and the methods used to determine them are as follows:

**Customer Billing:** Measuring actual sewer flow for small diameter pipes is impractical, so industry practice is to use metered water usage as a proxy. In Bourne, metered water usage data is provided by the Buzzard's Bay Water District. The Water District reads water meters twice each year and provides Bourne with a summary of annual (calendar year) usage by customer consisting of the two metered usages.

**Disposal Costs:** The annual operating cost assessed to Bourne by Wareham was based upon the actual sewerage that entered the Wareham sewer system<sup>1</sup> as measured at Bourne's two pump stations.

<sup>1</sup> On June 11, 2019 the two towns entered into a settlement agreement intended to resolve "multi fiscal year dispute" that effectively changed the basis of the operational charge to a fixed fee from a flow-based fee. For the purposes of this

**Allocations:** Allocations are based upon Title V, the common name for 310 CMR 15.000 The State Environmental Code Title V. Title V are the design guidelines for onsite wastewater disposal (septic) systems. Title V contains estimated flow values for residential and a variety of non-residential applications. These values are considered to represent a maximum day value versus the average day that Bourne manages to, it is also generally considered out of date and/or overly conservative.

The easiest Title V flow to evaluate against existing usage is for residential users. Title V estimates residential sewer usage to be 110 gallons per day per bedroom. Section 4.3 contains a distribution of usage for single family customers and shows that 50% had an annual usage of 20,000 gallons or less. A 3 bedroom assumption equals 18 gallons per day per bedroom. Using the residential water use value of 50 gallons per day per person reported by the Water District and assuming a 3-person household with 3 bedrooms, this equals 50 gallons per day per bedroom or 45% of Title V. **A 45% reduction factor was used in the financial analyses shown in Section 4.** The reduction factor for non-residential use is more difficult to determine as the Title V estimated flows are not available for existing non-residential customers.



Evaluations changed to reflect a 50% reduction factor.

**Wareham IMA:** The operational assessment of the IMA is based upon actual pumpage<sup>1</sup>, while sewer customers are based upon metered water use. While it is common practice to bill sewer based upon water usage, the two can vary significantly for the following reasons:

- 1- Not all drinking water becomes sewage.** The Buzzards Bay Water District experiences a 75% increase in water demand in the summer, much of this is related to outdoor water use, which does not contribute to the sewer flow. Table 2-5 compares the actual sewage flow as measured at the pump stations to the amount of wastewater customers were billed based upon water usage.
  
- 2- Not all sewer flow is from drinking water.** Gravity sewers are susceptible to inflow and infiltration (I&I), which is ground water or stormwater that leaks into or enters the sewer system through illicit connections. I&I negatively impacts Bourne in two ways; it robs capacity that could otherwise support additional residential and commercial developments (and generate revenue) and increases the cost of disposal.

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*evaluation we have assumed that the operational charge will return to a flow basis in the future.*



In recognition of the significance of Infiltration and Inflow statewide, the MADEP required all sewer systems to submit an Infiltration and Inflow Study by December 2018 or request an extension. Bourne requested an extension; thus, no data is available. To develop an order of magnitude understanding of I&I, water consumption and sewer pump station data were compared. Figure 2-2 shows this comparison, the water data reflects the usage for the entire water

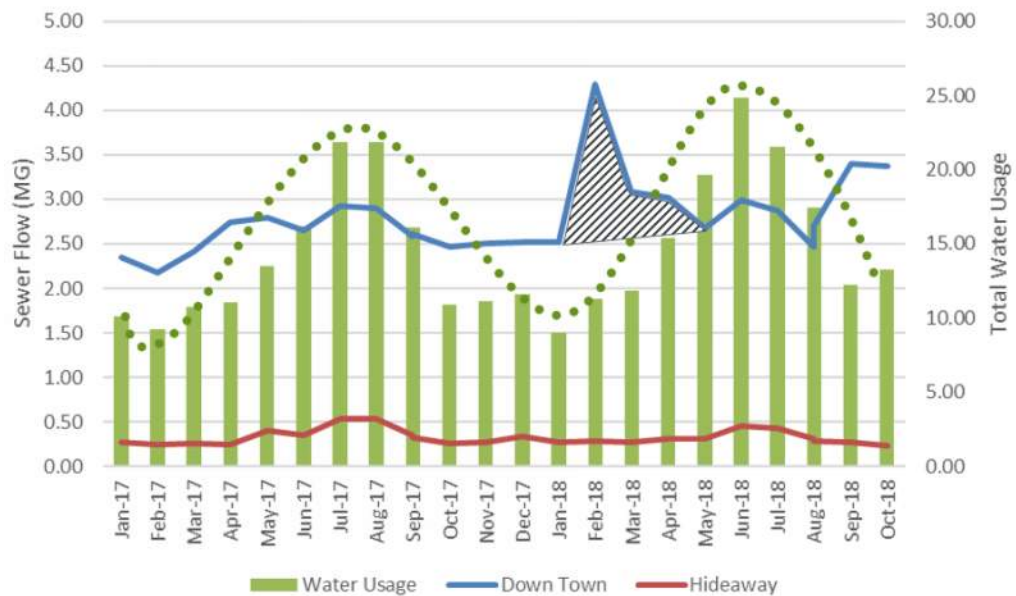
Year	Total Pumped	Total Billed	Delta %
CY 2018	39,683	38,637	103%
CY 2019	40,640	38,345	106%
<b>Delta %</b>	<b>2.4%</b>	<b>-0.8%</b>	<b>--</b>

system so while the actual

volume is not meaningful, the peaks are valid.

**Figure 2-2**

Water Usage vs. Sewer Flow



**Table 2-5**

Comparison of Billed vs Pumped Sewerage (kgal) by Calendar Year (CY)

Year	Total Pumped	Total Billed	Delta %
CY 2017	35,120	36,869	-5%
CY 2018	39,683	38,637	103%
<b>Delta %</b>	<b>11%</b>	<b>5%</b>	<b>--</b>



Updated table showing 2019 data. The pump station flow increased by 11% from 2017 to 2018 while usage went up 10%, this is reflected in the chart and is likely associated with Infiltration and Inflow. In 2019 pump station flow went up again by 2.4% however, usage went down by almost a percentage point. This indicates a potential increase in Infiltration and Inflow in 2019.

Water usage shows the expected seasonal increases peaking in July for both years. The Hideaway pump station flows are generally constant, with subtle increases coincident with the water use peaks. The difference in peak magnitude between water and the Hideaway Pump Station support the statement that not all drinking water contributes to sewer flow.

The Downtown pump station also experienced coincident increases for July but more importantly, there was a significant peak in February 2018, the second lowest month for water use. Pump station flows do not return to normal levels until May, this supports the statement that not all sewerage is related to drinking water.

One possible reason for the difference in response between the two sewer pump stations is that Hideaway is served by low pressure sewers (grinder pumps) while the Downtown area is served by gravity sewers. Low pressure sewers by their nature do not experience I&I because they operate under pressure. Gravity sewers, however, generally experience some level of I&I. For Bourne this is evidenced by the shaded area in Figure 2-2.

## Section 3 Financial Evaluation – Revenue Needs











The first step of a water or sewer rate evaluation is to determine the future revenue needs (expenses) for the analysis period. These expenses consist of three primary categories: operating, capital and debt, each described in more detail below. The figures and schedules shown in this section were taken from the spreadsheet model developed for this project. The model is based in Microsoft Excel and consists of numerous modules or 'tabs' which are referred to in the text. The actual expenses, remaining debt service obligations and starting retained earnings balances were provided by the Town.

### 3.1 Operating Expenses

Operating expenses consist of the day to day cost of maintaining the sewer system, including labor, expenses and supplies. The entire chart of accounts (all line items) are entered into model, sorted by order of largest to smallest then reviewed for trends.

Schedule 3.2 shows the trending analysis, for brevity only the top 10 expenses are shown.

#### Schedule 3.2: Historic Trending Analysis

Category	Average Budget	Average Expended	Average Turnback	Trend %	Trends	Escalator
Wareham - Operating	\$350,500	\$272,229	20%	-5%		2.5%
Wareham - Capital	\$188,478	\$188,478	0%	0%		0.0%
Transfer Out (Indirects)		\$129,546		-1%		2.5%
Transfer Out (Reserve)		\$100,000				--
Purchase of Services	\$30,833	\$28,086	-12%	202%		2.5%
Personnel Services	\$62,987	\$66,423	-7%	14%		2.5%
Personnel Services	\$53,430	\$52,706	0%	2%		2.5%
Rate Funded Capital	\$70,000	\$32,126	51%	35%		2.5%
Existing Debt Service	\$25,163	\$26,453	0%	66%		2.5%
Purchase of Services	\$33,333	\$17,952	42%	472%		2.5%

The escalation factors shown above are based upon a review of the last five years (FY15-FY19) budget to actual reports. The average turnback represents the average percent change between the budget and actual expenses for each line item. The turn backs are not factored into the projections but instead serve as an additional measure of conservatism. The budgeted values are used for FY20 and expenses for FY21 on are estimated by applying the escalators from above to the previous value for each year.

Schedule 3.2 shows that the most significant expense item are the charges levied by the Town of Wareham in accordance with the provisions of the existing IMA. The actual trend for the operating cost line item (SERVICES – WASTE REMOVAL AND DISP) indicates that this item has trended downward by an average of 5% over the analysis period. Due to June 11, 2019 settlement agreement however, the projected starting value of \$400,000 per year with an annual escalation rate of 2.5% was used.

Other noteworthy line items are the laborers salaries which have increased by 14% over the last five years (this may be the result of adding staff) and the transfer to General Fund which is not budgeted and thus was projected based upon the expended value from the FY20 budget to actual report. Also, starting in FY21, \$40,000 was added to the line items

for administrator salaries and indirect costs to reflect a portion of the Town Engineer salary to reflect work on sewer related items which is discussed in Section 5.

## 3.2 Capital Expenses

Capital expenses are associated with system improvements, expansions or other capital purchases. Figure 3-1 shows the projects from the CIP tab of the model, the projects and costs were taken directly from the Town's FY20 Capital Improvement Plan.

**Figure 3-1**  
Capital Improvements

Capital Improvement Planner			
Description	Funding source	Interest rate	Estimated Cost
Safety Equipment Upgrades [Exhaust systems/filter/vent]	Rate	--	\$65,000
Pumps and Alarm Panels	Rate	--	\$65,000
Repair or Replace Sewer Covers	Rate	--	\$15,000
Inspection Camera System	Rate	--	\$15,000
Replace Grates in Wet Well	Rate	--	\$100,000
Replace M-9	Rate	--	\$65,000
Replace M-7	Rate	--	\$25,000
Study of Sewer Line Repirs and Replacement	Rate	--	\$40,000
Treatment Plant Enterprise Share	Debt	2.0%	\$2,400,000
			<b>\$2,790,000</b>

The funding source is either rate funded (also called operating capital) or debt. Cost year represents the year that the budget was developed and is used to escalate costs. Impact year is the year that the cost hits the enterprise account, which for debt funded projects occurs at the end of the construction period. A 5% annual construction cost escalator is applied to all projects. The most significant capital project is the new wastewater treatment plant, the CIP reflects the enterprise funds share of the future debt service which is described more fully below.

### 3.2.1 Costs Associated with New Treatment Plant

Costs associated with the new treatment plant consist of operating costs and debt service. The debt service is funded by a variety of sources including the sewer enterprise fund. The breakdown is shown in Table 3-1, the impact year is assumed to be FY21. The annual operating costs are estimated to be \$250,000 annually. All WWTP costs were provided by the Wastewater Facility Design and Building Committee.

**Table 3-1**

## Wastewater Treatment Plant Funding Summary

Project Element	Value
Estimated Project Cost	\$9,693,000
Mass Works Grant	-\$1,500,000
EDA Grant	-\$2,335,850
<b>Total to be funded by debt</b>	<b>\$5,857,150</b>

Debt Funding Sources	Value
State Revolving Fund Loan (General Fund)	\$2,260,410
State Revolving Fund Loan (Sewer Enterprise)	\$2,400,000
General Fund Borrowing	\$1,196,740
<b>Total debt funding</b>	<b>\$5,857,150</b>

Typically, the operating and capital costs associated with the new plant would be included in the various line items shown in the model dashboard, however, given that the cost impact of the new plant is a key concern, these costs are broken out and summed separately.

Reviewing the increases of total expenses shown at the bottom of Schedule 1.1, the increase from FY19 to FY20 is partly due to the fact that the FY19 values are based upon actuals, while FY20 are based upon budgeted values. The more important factor is the increase from FY20 to FY21, which is when the costs for the new wastewater plant begin to impact the enterprise fund.

## Schedule 1.1: Expenses

	Historic Actuals FY17	Actual Values FY18	Actual Values FY19	Budget Values FY20	Projected Values FY21	FY22
<b>Operating Expenses</b>						
Personnel Services	\$173,638	\$160,614	\$170,024	\$192,538	\$237,352	\$243,285
Purchase of Services	\$76,163	\$23,626	\$145,524	\$157,696	\$161,639	\$165,680
Supplies	\$12,602	\$13,018	\$12,661	\$20,321	\$20,829	\$21,349
Wareham - Operating	\$250,000	\$294,997	\$213,912	\$410,000	\$420,250	\$430,756
Wareham - Capital	\$188,478	\$188,478	\$188,478	\$188,478	\$188,478	\$188,478
Transfer Out (Indirects)	\$126,705	\$124,404	\$128,607	\$138,077	\$181,529	\$186,067
Transfer Out (Reserve)	\$0	\$59,445	\$0	\$0	\$0	\$0
<b>Subtotal</b>	<b>\$827,585</b>	<b>\$864,583</b>	<b>\$859,206</b>	<b>\$1,107,110</b>	<b>\$1,210,075</b>	<b>\$1,235,615</b>
Delta Previous		4.5%		28.9%	9.3%	2.1%
<b>CIP/ Debt</b>						
Rate Funded Capital	\$10,927	\$47,939	\$50,808	\$105,000	\$240,000	\$125,000
New Debt Service	\$0	\$0	\$0	\$0	\$0	\$0
Existing Debt Service	\$17,270	\$45,522	\$43,500	\$22,000	\$21,000	\$0
<b>Subtotal</b>	<b>\$28,197</b>	<b>\$93,461</b>	<b>\$94,308</b>	<b>\$127,000</b>	<b>\$261,000</b>	<b>\$125,000</b>
Delta previous		231%		35%	106%	-52%
<b>New WWTP</b>						
Operating Expenses	\$0	\$0	\$0	\$0		\$256,250
Debt Service	\$0	\$0	\$0	\$0	\$161,821	\$161,821
<b>Subtotal</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$161,821</b>	<b>\$418,071</b>
<b>TOTAL EXPENSES</b>	<b>\$855,782</b>	<b>\$958,044</b>	<b>\$953,514</b>	<b>\$1,234,110</b>	<b>\$1,632,896</b>	<b>\$1,778,686</b>



See handout page 4 for updated expense data.

## **Section 4 Rates and Revenue**

The next step of the financial evaluation is to estimate revenues from the existing rate and fee structure. The results are used in the rate evaluation found in Section 4.3.

Sewer enterprise revenue consists of rate revenue, and non-rate revenue. Rate revenue is the direct result of customer payment of sewer bills and currently represents 90% of Bourne's total sewer revenue. Non-Rate Revenue consists of liens and penalties associated with non-payment of sewer bills (projected as a percent of revenue), transfers from the general fund (which were not projected forward) and fees associated with development.

The methodology and data used for projecting each element of future revenue are described below. The Town's operating assumption and basis for approval of the new treatment plant was that the revenue from connection fees and future usage associated with new commercial customers would recuperate the capital and operating costs, so determining revenue from development is an important concern.

### **4.1 Revenue Associated with Development**

Development based revenue consists of the fees and charges paid by developers prior to construction as well as the future rate revenue associated with completed projects. Projecting these revenues requires numerous assumptions and estimations in terms of timing and ultimate water usage.

Future revenue from development fees depends on the fee structure, the projected amount of development and the timing or pace of development. For the purposes of this evaluation, development or growth associated with projects currently in the capacity allocation process are categorized as 'Known'<sup>2</sup> development and development estimated from vacant parcels is described as 'Projected'. Estimating future revenue from development requires also estimating the timeline for development

#### **4.1.1 Development Fee Structure**

At the January 17, 2006 Sewer Commission Meeting, the commission approved the following fees:

- 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 per unit x the number of business units. (commercial only)
- 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.

\* Indicates that the fee did not exist prior to this meeting.

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<sup>2</sup> Some of these projects have since become active and technically are no longer in the 'pipeline', they are noted as such but remain included for continuity.

In 2017, the Capacity Allocation Policy discussed in Section 2 was adopted. The fees associated with the new allocation process are as follows:

Application Fee (one-time): \$1,500

Preliminary Allocation Fee (one-time): \$5,000 plus \$1 per projected flow

Operational Allocation Fees: Number of units x current annual base rate sewer fee.

#### **4.1.1.1 Fee Revenue from Known Development**

The projects currently in the allocation process are shown in Table 4-1, for each project, the existing step in the process is given as well as an estimated date for connection (commencement of discharge).

**Table 4-1**

Known Development Characteristics and Assumed Timeline

<b>Project/Owner</b>	<b>No. Units<sup>1</sup></b>	<b>Allocated Flow<sup>2</sup> (gpd)</b>	<b>Est. Total Annual Flow<sup>3</sup> (kgal)</b>	<b>Est. Overage<sup>4</sup> (kgal)</b>	<b>Allocation Step</b>	<b>Flow Year<sup>5</sup></b>
Hampton Inn	100	15,243	7,622	-	Operational	2020
100 Main	121	27,080	13,540	-	Preliminary	2022
Calamar/ 25 Perry	120	16,800	8,400	-	Preliminary	2022
GENCON/Robert Gendron	109	17,715	8,858	-	Preliminary	2022
Veterinary Clinic	1		-	-	Operational	2020
Blended Berries	1	440	220	-	Operational	2020
Mahoney's on Main	1	3,465	1,733	-	Operational	2020
Oak Bay Brewery	1	1,661	6,500	-	Application	2023
85-93 Main	1	13,000	41,202	-	Application	2023
Bourne Scenic Park	22	17,700	7,965	1,917	None	2023
<b>Total</b>	<b>477</b>	<b>36,266</b>	<b>57,620</b>	<b>1,917</b>		

Notes:

1. Projects with 1 unit were assumed
2. Assumed to be based upon Title V
3. Assumed to be 50% of Title V
4. Based upon number of units and estimated annual flow
5. Projects shown starting in 2020 are reportedly connected to the system, these projects remain in the table to serve as placeholders for the wastewater volume until actual usage data is received.



See handout page 8 for more updated information.

**Table 4-2**

Projected Revenue from Known Developments –2006 Fee Structure

<b>Project/Owner</b>	<b>Design, Review and Construction</b>	<b>Commercial Sewer Permit Fee</b>	<b>Sewer Connection Fee</b>	<b>System Development Charge</b>	<b>TOTAL</b>
Hampton Inn*					
100 Main	\$1,500	\$1,509	\$98,252	\$9,875	<b>\$111,136</b>
Calamar/ 25 Perry	\$1,500	\$48,763	\$97,440	\$70,922	<b>\$218,625</b>
GENCON/Robert Gendron	\$1,500	\$100	\$116,928	\$31,450	<b>\$149,978</b>
Veterinary Clinic*					
Blended Berries*					
Mahoney's on Main*					
Oak Bay Brewery	\$1,500	\$150	\$11,368	\$8,075	<b>\$21,093</b>
85-93 Main	\$1,500	\$9,210	\$86,072	\$20,810	<b>\$117,592</b>
Bourne Scenic Park	\$1,500	No Data	\$19,172	\$40,000	<b>\$59,172</b>
<b>Total</b>	<b>\$4,500</b>	<b>\$9,360</b>	<b>\$116,612</b>	<b>\$68,885</b>	<b>\$197,857</b>

Projects indicated with an asterisk however were reported to have begun active discharge, prior to the Town's decision and thus no additional fees will be assessed.

**Table 4-3**

Projected Revenue from Known Developments –2017 Allocation Fees

<b>Project/Owner</b>	<b>Application Fee</b>	<b>Preliminary Allocation Fee</b>	<b>Operational Allocation Fee</b>	<b>TOTAL</b>
Hampton Inn*				
100 Main	\$1,500	\$33,580	\$102,366	<b>\$137,446</b>
Calamar/ 25 Perry	\$1,500	\$23,300	\$101,520	<b>\$126,320</b>
GENCON/Robert Gendron	\$1,500	\$24,250	\$121,824	<b>\$147,574</b>
Veterinary Clinic*				
Blended Berries*				
Mahoney's on Main*				
Oak Bay Brewery	\$1,500	\$21,743	\$104,904	<b>\$128,147</b>
85-93 Main	\$1,500	\$33,580	\$102,366	<b>\$137,446</b>
Bourne Scenic Park	\$1,500	\$24,200	\$19,172	<b>\$44,872</b>
<b>Total</b>	<b>\$4,500</b>	<b>\$79,523</b>	<b>\$226,442</b>	<b>\$310,465</b>



See note on next page.

**Table 4-4**

Total projected revenue –Total Fees, Known Developments

<b>Project/Owner</b>	<b>2006 Fees</b>	<b>2017 Fees</b>	<b>GRAND TOTAL</b>
----------------------	------------------	------------------	------------------------



Hampton Inn*			
100 Main	\$111,136	\$137,446	<b>\$248,582</b>
Calamar/ 25 Perry	\$218,625	\$126,320	<b>\$344,945</b>
GENCON/Robert Gendron	\$149,978	\$147,574	<b>\$297,552</b>
Veterinary Clinic*			
Blended Berries*			
Mahoney's on Main*			
Oak Bay Brewery	\$21,093	\$128,147	<b>\$149,240</b>
85-93 Main	\$117,592	\$137,446	<b>\$255,038</b>
Bourne Scenic Park	\$	\$44,872	<b>\$44,872</b>
<b>Total</b>	<b>\$138,685</b>	<b>\$310,465</b>	<b>\$449,150</b>



See handout page 8 for updated/revised development fee information.

#### 4.1.1.2 Projected Fee Revenue from Projected Development

To estimate future development, the parcel database was analyzed and 27 parcels not already in the allocation process were identified for potential development based upon land use codes. Vacant residential parcels were not included as they reportedly do not meet zoning requirements.

**Table 4-5**

Projected Development Parcels

<b>Address</b>	<b>Land Use Code</b>	<b>Land Use Description</b>	<b>Est. Demand (GPD)</b>	<b>Est. Units</b>
105 MAIN ST	3900	Developable Commercial Land	1,699	14
11 MAIN ST	3900	Developable Commercial Land	1,015	9
129-137 MAIN ST	3900	Developable Commercial Land	1,346	11
2 CANAL VIEW RD	3900	Developable Commercial Land	1,411	12
2 KENDALL RAE PL	3900	Developable Commercial Land	17,729	144
69-73 MAIN ST	3900	Developable Commercial Land	1,668	14
29 COHASSET AVE	3920	Undevelopable Commercial Land	736	6
32-A COHASSET AVE	3920	Undevelopable Commercial Land	501	5
6 WASHINGTON AVE	3920	Undevelopable Commercial Land	684	6
8 TAYLOR RD	9010	-	9,061	74
0 BEACH AREA	9300	Vacant, Selectmen or City Council (Municipal)	1,468	12
20 MAIN ST	9300	Vacant, Selectmen or City Council (Municipal)	954	8

<b>Address</b>	<b>Land Use Code</b>	<b>Land Use Description</b>	<b>Est. Demand (GPD)</b>	<b>Est. Units</b>
22 MAIN ST	9300	Vacant, Selectmen or City Council (Municipal)	645	6
229 MAIN ST	9300	Vacant, Selectmen or City Council (Municipal)	4,252	35
90 MAIN ST	9300	Vacant, Selectmen or City Council (Municipal)	23,392	190
<b>Total</b>			<b>5,735</b>	<b>54</b>

**Notes**

1. Parcels identified as 'undevelopable' were included as providing sewer service may make them developable. No further investigation into suitability was conducted.
2. Commercial sewer demand estimated at 50 gallons per day per 1,000 square feet of estimated floor area is based upon a 0.13 Floor Area Ratio (FAR).
3. Residential sewer demand estimated at 47 gallons per day per person<sup>3</sup> and a household size of three people.
4. No definition of billable unit exists, units based on the existing per unit flow allowance of 45,000 gallons per year.

**4.1.1.3 Assumed Development Timeframe**

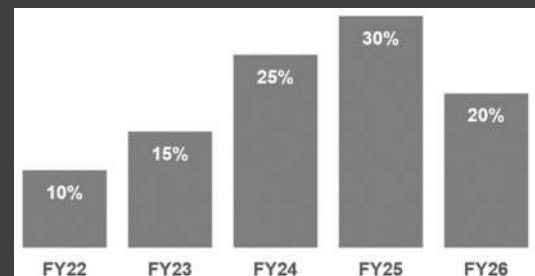
In order to include the revenue and additional units generated by development, the following development timeline was assumed. The steps refer to the allocation process steps. This timeline reflects a general slowing of the economy.

**Table 4-6**

Assumed Development Timeframe

<b>Year</b>	<b>Step 1/2</b>	<b>Step 3</b>
FY21	5%	-
FY22	30%	5%
FY23	30%	30%
FY24	20%	30%
FY25	15%	20%
FY26	-	15%
<b>Total</b>	<b>100%</b>	<b>100%</b>

Revised assumed development timeline from handout page 10.



The percentages shown in Table 4-6 were used to apply the development timeline to the existing sewer system capacity and flows.

<sup>3</sup> From the 2018 Annual Statistical Report submitted by the Buzzards Bay Water District.

## 4.2 Projected Usage and Units

The revenue generated from sewer rates varies based upon the number of billable units and the volume of water used by those units as well as the rate structure itself. The rate model calculates rate revenue based upon projected water use and estimated number of additional customers.

### 4.2.1 Projected Billable Units

Schedule 2.1 shows the contribution of development in terms of additional units, which increase base fee revenues. The additional units are based upon the data from Table 4-1 and Table 4-5 distributed according to the assumed timing shown in Table 4-5.

**Schedule 2.1 - Number of Units**

Category	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Total Units- No Development	1,092	1,092	1,092	1,092	1,092	1,092	1,092	1,092	1,092	1,092	1,092
Additional Units - Known Development		102	332	333	477	477	477	477	477	477	477
Additional Units - Projected Development			34	233	432	565	665	665	665	665	665
Total Units	1,092	1,194	1,458	1,658	2,001	2,134	2,234	2,234	2,234	2,234	2,234



Revised.

**Schedule 2.1 - Number of Units**

Category	Type	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30
Total Units- No Development	Annual	1,092	1,092	1,092	1,092	1,092	1,092	1,092	1,092	1,092	1,092	1,092	1,092
Additional Units - Known Development	Annual		103	227	229	480	480	480	480	480	480	480	480
Additional Units - Projected Development	Annual			0	41	102	203	324	405	405	405	405	405
Total Units		1,092	1,195	1,319	1,362	1,674	1,775	1,896	1,977	1,977	1,977	1,977	1,977

Schedule 2.2 shows the projected overage, note that there is **no additional projected overage** (based upon estimated actual flows). The existing usage has been increasing by 3% per year, a more conservative 2% was used for projections.

**Schedule 2.2 - Water Usage (Kgal)**

Block	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Overage: Existing Users	10,875	10,875	10,875	10,875	10,875	10,875	10,875	10,875	10,875	10,875	10,875
Estimated Overage - Known Development		551	551	779	779	779	779	779	779	779	779
Estimated Overage - Projected Development			-	-	-	-	-	-	-	-	-
	10,875	11,427	11,427	11,655	11,655	11,655	11,655	11,655	11,655	11,655	11,655



Revised to reflect additional (FY19) usage data.

**Schedule 2.2 - Water Usage (Kgal)**

Block	Type	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Overage: Existing Users		12,221	12,221	12,221	12,221	12,221	12,221	12,221	12,221	12,221	12,221	12,221
Estimated Overage - Known Development	Overage		-	3,573	5,715	16,482	16,482	16,482	16,482	16,482	16,482	16,482
Estimated Overage - Projected Development	Overage			-	-	-	-	-	-	-	-	-
		12,221	12,221	15,794	17,936	28,703	28,703	28,703	28,703	28,703	28,703	28,703

## 4.3 Sewer Rate Evaluation

In order to evaluate the efficacy of a given rate structure, revenues are projected for the existing rate structure based upon the projected usage and connected units and compared against the revenue needs discussed in Section 3. If the retained earnings (reserves) are projected to fall below the 20% target minimum, a percentage increase is applied to the

rates. Once the rates are adjusted so that the target reserves are met, cost impacts are calculated and evaluated.

### 4.3.1 Evaluating Customer Rate Impacts

The Town's stated goal for the new WWTP was to not impact existing customers. To quantify this, the rate increases from FY17 to FY19 were used as a benchmark. Schedule 4.3A shows the increase in base fee based upon the average increase between FY17 and FY19 of \$37 per year. The projected customer cost for a typical residential customer (3-person household using 50 gallons per day each) is also shown. These costs are used to evaluate the various scenarios.

**Schedule 4.3 A- Existing Rate Structure - Status Quo Rate Increases**

Description	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Base Fee	\$752	\$776	\$812	\$879	\$919	\$959	\$999	\$1,039	\$1,079	\$1,119	\$1,159	\$1,199	\$1,239
Increase in Base Fee (\$)		\$24	\$36	\$67	\$40	\$40	\$40	\$40	\$40	\$40	\$40	\$40	\$40
Increase in Base Fee (%)				8%	5%	4%	4%	4%	4%	4%	4%	3%	
Annual Cost - Typical Res.	\$752	\$776	\$826	\$977	\$919	\$959	\$999	\$1,039	\$1,079	\$1,119	\$1,159	\$1,199	\$1,239
Annual Cost Increase		\$24	\$50	\$151	-\$58	\$40	\$40	\$40	\$40	\$40	\$40	\$40	\$40

### 4.3.2 Projected Revenue - Existing Rates with Projected Development

Schedule 5.7 shows the revenue resulting from applying the projected number of accounts and usage to the existing rates (with no increases) as well as adding the projected fee revenue from both known and projected developments. For purposes of analysis each revenue element is broken out by existing users, known development and projected development.

**Schedule 5.7 - Calculated Revenue: Existing Rates - Full Development**

Category	Type	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Base Fee: Existing Users	Base Fee	\$ 959,868	\$ 959,868	\$ 959,868	\$ 959,868	\$ 959,868	\$ 959,868	\$ 959,868	\$ 959,868	\$ 959,868	\$ 959,868
Base Fee: Known Development	Base Fee	\$ 89,658	\$ 291,828	\$ 292,707	\$ 419,283	\$ 419,283	\$ 419,283	\$ 419,283	\$ 419,283	\$ 419,283	\$ 419,283
Base Fee: Projected Development	Base Fee	\$ -	\$ 29,886	\$ 204,807	\$ 379,728	\$ 496,635	\$ 584,535	\$ 584,535	\$ 584,535	\$ 584,535	\$ 584,535
Overage: Existing Users	Overage	\$ 108,754	\$ 108,754	\$ 108,754	\$ 108,754	\$ 108,754	\$ 108,754	\$ 108,754	\$ 108,754	\$ 108,754	\$ 108,754
Overage: Known Development	Overage	\$ 5,514	\$ 5,514	\$ 7,792	\$ 7,792	\$ 7,792	\$ 7,792	\$ 7,792	\$ 7,792	\$ 7,792	\$ 7,792
Overage: Projected Development	Overage	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Allocation Fees: Known Development	Alloc	\$ -	\$ 205,184	\$ 9,057	\$ 172,724	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Allocation Fees: Projected Development	Alloc	\$ -	\$ 8,156	\$ 76,981	\$ 217,205	\$ 200,893	\$ 136,648	\$ 84,135	\$ -	\$ -	\$ -
System Development Charge: Known	Development	\$ -	\$ 29,258	\$ 8,075	\$ 74,248	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
System Development Charge: Projected	Development	\$ -	\$ -	\$ 16,880	\$ 101,282	\$ 101,282	\$ 67,521	\$ 50,641	\$ -	\$ -	\$ -
<b>Total</b>		<b>\$ 1,163,794</b>	<b>\$ 1,638,447</b>	<b>\$ 1,684,921</b>	<b>\$ 2,440,884</b>	<b>\$ 2,294,507</b>	<b>\$ 2,284,401</b>	<b>\$ 2,215,008</b>	<b>\$ 2,080,232</b>	<b>\$ 2,080,232</b>	<b>\$ 2,080,232</b>



Revised to reflect revised usage projections, decreased development and the FY21 rates.

**Schedule 5.7 - Calculated Revenue: Existing Rate Structure - 50% Projected Dev.**

Category	Type	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Base Fee: Existing Users	Base Fee	\$ 959,868	\$ 1,003,548	\$ 1,047,228	\$ 1,090,908	\$ 1,134,588	\$ 1,178,268	\$ 1,221,948	\$ 1,265,628	\$ 1,309,308	\$ 1,352,988
Base Fee: Known Development	Base Fee	\$ 90,537	\$ 208,613	\$ 219,611	\$ 479,520	\$ 498,720	\$ 517,920	\$ 537,120	\$ 556,320	\$ 575,520	\$ 594,720
Base Fee: Projected Development	Base Fee	\$ -	\$ -	\$ 19,660	\$ 50,949	\$ 105,459	\$ 174,798	\$ 226,598	\$ 234,698	\$ 242,798	\$ 250,898
Overage: Existing Users	Overage	\$ 122,210	\$ 122,210	\$ 122,210	\$ 122,210	\$ 122,210	\$ 122,210	\$ 122,210	\$ 122,210	\$ 122,210	\$ 122,210
Overage: Known Development	Overage	\$ -	\$ 35,728	\$ 57,150	\$ 164,820	\$ 164,820	\$ 164,820	\$ 164,820	\$ 164,820	\$ 164,820	\$ 164,820
Overage: Projected Development	Overage	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Development Charges- Known	Development	\$ -	\$ 211,370	\$ 133,767	\$ 235,827	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Development Charges- Projected	Development	\$ -	\$ -	\$ 22,947	\$ 34,421	\$ 57,368	\$ 68,842	\$ 45,895	\$ -	\$ -	\$ -
<b>Total</b>		<b>\$ 1,172,615</b>	<b>\$ 1,581,469</b>	<b>\$ 1,622,573</b>	<b>\$ 2,178,655</b>	<b>\$ 2,083,165</b>	<b>\$ 2,226,858</b>	<b>\$ 2,318,590</b>	<b>\$ 2,343,675</b>	<b>\$ 2,414,655</b>	<b>\$ 2,485,635</b>

### 4.3.3 Proforma - Existing Rates with Projected Development

The proforma compares the projected revenue to the revenue needs developed in Section 3 and estimates the retained earnings for each year of the analysis period. The proforma is shown in Schedule 1.4.

Schedule 1.4 Proforma - Existing Rates - Full Development

	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
<b>Revenue</b>													
Base Fee	\$ 931,500	\$ 909,765	\$ 964,597	\$ 997,050	\$ 1,217,503	\$ 1,384,513	\$ 1,670,935	\$ 1,781,997	\$ 1,865,502	\$ 1,865,502	\$ 1,865,502	\$ 1,865,502	\$ 1,865,502
Overage				\$ 108,554	\$ 108,554	\$ 110,719	\$ 110,719	\$ 110,719	\$ 110,719	\$ 110,719	\$ 110,719	\$ 110,719	\$ 110,719
Allocation Fees					\$ 213,340	\$ 86,038	\$ 389,929	\$ 230,893	\$ 136,648	\$ 84,135	\$ -	\$ -	\$ -
System Development					\$ -	\$ 29,258	\$ 24,955	\$ 175,530	\$ 101,282	\$ 67,521	\$ -	\$ -	\$ -
Non Rate			\$ 65,161	\$ 85,568	\$ 100,999	\$ 112,842	\$ 132,891	\$ 140,665	\$ 146,511	\$ 146,511	\$ 146,511	\$ 146,511	\$ 146,511
<b>Total Revenue</b>	<b>\$ 931,500</b>	<b>\$ 909,765</b>	<b>\$ 1,029,758</b>	<b>\$ 1,191,172</b>	<b>\$ 1,669,654</b>	<b>\$ 1,719,066</b>	<b>\$ 2,480,004</b>	<b>\$ 2,335,556</b>	<b>\$ 2,326,900</b>	<b>\$ 2,257,507</b>	<b>\$ 2,122,731</b>	<b>\$ 2,122,731</b>	<b>\$ 2,122,731</b>
<b>Revenue Summary</b>													
Existing	\$ 931,821	\$ 955,370	\$ 1,060,618	\$ 1,100,758	\$ 1,116,190	\$ 1,128,032	\$ 1,148,082	\$ 1,155,856	\$ 1,161,702	\$ 1,161,702	\$ 1,161,702	\$ 1,161,702	\$ 1,161,702
Known				\$ 90,413	\$ 516,916	\$ 302,606	\$ 652,693	\$ 405,721	\$ 405,721	\$ 405,721	\$ 405,721	\$ 405,721	\$ 405,721
Projected				\$ -	\$ 36,548	\$ 288,428	\$ 679,229	\$ 773,979	\$ 759,477	\$ 690,084	\$ 555,308	\$ 555,308	\$ 555,308
	\$ 1,191,172	\$ 1,669,654	\$ 1,719,066	\$ 1,719,066	\$ 1,719,066	\$ 1,719,066	\$ 2,480,004	\$ 2,335,556	\$ 2,326,900	\$ 2,257,507	\$ 2,122,731	\$ 2,122,731	\$ 2,122,731
<b>Net Revenue (Revenue-Expense)</b>	<b>\$ 75,719</b>	<b>\$ (48,278)</b>	<b>\$ 76,244</b>	<b>\$ (42,838)</b>	<b>\$ 36,758</b>	<b>\$ (56,620)</b>	<b>\$ 623,733</b>	<b>\$ 500,886</b>	<b>\$ 572,996</b>	<b>\$ 468,512</b>	<b>\$ 297,769</b>	<b>\$ 260,903</b>	<b>\$ 223,114</b>
Retained Earnings Balance	\$781,330	\$466,478	\$842,722	\$499,784	\$836,542	\$476,922	\$1,400,656	\$1,804,542	\$2,874,638	\$2,643,050	\$2,940,819	\$3,204,722	\$3,424,837
Retained Earnings as Percent of Operating Expense	88%	64%	63%	45%	44%	39%	87%	124%	165%	197%	214%	228%	239%

**Schedule 1.4 Proforma - Existing Rates - Full Development**

**Typical Residential Cost**

	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	TOTAL
Annual Cost	\$626	\$977	\$977	\$977	\$977	\$977	\$977	\$977	\$977	\$977	\$977	\$9,619



See handout page 13 for updated/revised proforma

The top of the proforma summarizes the revenue, below the revenue summary, the net revenue, projected retained earnings is calculated. In the chart on the left, the columns represent the various expense categories, the dark green lines represents the projected revenue from the existing users, while the light green and dashed green line represent total revenue (development fees plus additional user rate revenue) for known development and projected development respectively. To the right of the proforma chart the cost for a typical residential customer (three-person household using 50 gallons per person per day).

The proforma shows that starting in FY20, revenues are about equal with the expenses, in FY21 the WWTP expenses hit the enterprise but are offset by the fees from known developments (solid light green line). As of FY23 however the expenses are only met if **all development revenue** is included. The customer impacts are acceptable since the rates do not increase at all, however the reliance on projected development **leaves the Town vulnerable if there were a decrease in development**. To quantify this vulnerability, the impact on rates with no projected development revenue was determined. This alternative technically satisfies the project goal in terms of customer impact as the existing rates do not increase.

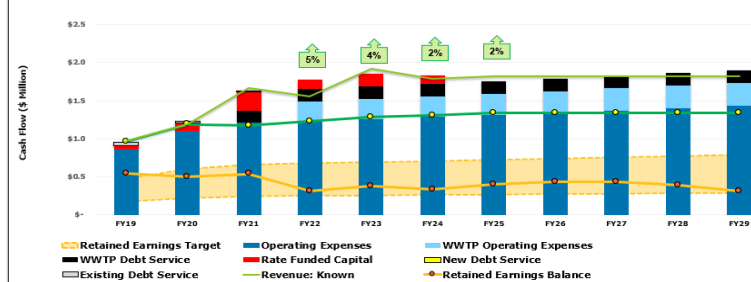
### 4.3.4 Projected Revenue – Existing Rate Structure with no projected development

Schedule 1.5 presents the same proforma as Schedule 1.4 with the revenue associated with **projected development removed**. As shown below, a number of **rate increases** were required to maintain the retained earnings target, the rates increases are shown just below the Year designation in the tabular portion and again in the proforma chart. The projected rates are shown in Schedule 4.4.

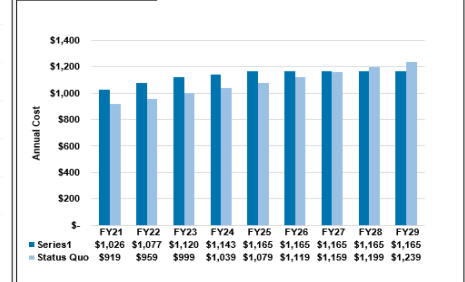
Schedule 1.5 Proforma - Exist Rate Structure - No Projected Development

	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
<b>Revenue</b>													
Base Fee	\$ 780,125	\$ 804,285	\$ 964,597	\$ 997,050	\$ 1,248,567	\$ 1,311,916	\$ 1,502,268	\$ 1,532,313	\$ 1,562,959	\$ 1,562,959	\$ 1,562,959	\$ 1,562,959	\$ 1,562,959
Overage	\$ 350,256	\$ 367,052	\$ -	\$ 108,554	\$ 113,982	\$ 122,067	\$ 126,950	\$ 129,489	\$ 132,079	\$ 132,079	\$ 132,079	\$ 132,079	\$ 132,079
Allocation Fees	\$ -	\$ -	\$ -	\$ -	\$ 213,340	\$ 86,038	\$ 389,929	\$ 200,893	\$ 136,648	\$ 84,135	\$ -	\$ -	\$ -
Non-Rate Revenue	\$ 87,302	\$ 90,169	\$ -	\$ 85,569	\$ 103,954	\$ 100,554	\$ 122,221	\$ 124,502	\$ 126,828	\$ 126,828	\$ 126,828	\$ 126,828	\$ 126,828
<b>Total Revenue</b>	<b>\$ 1,130,380</b>	<b>\$ 1,171,337</b>	<b>\$ 964,597</b>	<b>\$ 1,191,172</b>	<b>\$ 1,679,443</b>	<b>\$ 1,628,575</b>	<b>\$ 2,141,368</b>	<b>\$ 1,987,197</b>	<b>\$ 1,958,514</b>	<b>\$ 1,906,001</b>	<b>\$ 1,821,866</b>	<b>\$ 1,821,866</b>	<b>\$ 1,821,866</b>
Revenue Summary													
Existing	\$ 1,130,380	\$ 1,171,337	\$ 964,597	\$ 1,191,172	\$ 1,169,504	\$ 1,227,802	\$ 1,286,238	\$ 1,311,800	\$ 1,337,872	\$ 1,337,872	\$ 1,337,872	\$ 1,337,872	\$ 1,337,872
Projected	\$ -	\$ -	\$ -	\$ -	\$ 501,783	\$ 323,792	\$ 637,924	\$ 474,504	\$ 483,994	\$ 483,994	\$ 483,994	\$ 483,994	\$ 483,994
<b>Net Revenue (Revenue-Expense)</b>	<b>\$ 274,599</b>	<b>\$ 213,293</b>	<b>\$ 11,084</b>	<b>\$ (42,938)</b>	<b>\$ 38,391</b>	<b>\$ (227,082)</b>	<b>\$ 67,892</b>	<b>\$ (48,386)</b>	<b>\$ 67,982</b>	<b>\$ 32,872</b>	<b>\$ (3,096)</b>	<b>\$ (39,962)</b>	<b>\$ (77,750)</b>
Retained Earnings Balance	\$ 731,330	\$ 466,478	\$ 642,722	\$ 499,764	\$ 636,175	\$ 311,083	\$ 378,975	\$ 330,609	\$ 398,570	\$ 431,442	\$ 428,347	\$ 388,385	\$ 310,634
Retained Earnings as Percent of Operating Expense	88%	54%	63%	45%	44%	25%	30%	26%	30%	32%	31%	28%	22%

Schedule 1.5 Proforma - Exist Rate Structure - No Projected Development



Typical Residential Cost



Typical Residential Cost	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	TOTAL
Annual Cost	\$ 826	\$ 977	\$ 1,026	\$ 1,077	\$ 1,120	\$ 1,143	\$ 1,165	\$ 1,165	\$ 1,165	\$ 1,165	\$ 1,165	\$ 10,005

As a result of increasing rates, the estimated residential costs exceed the status quo, thus this alternative fails to meet the project goal and alternative rate structures were developed and analyzed.

Schedule 4.4 - Exist Rate Structure - No Projected Development

Description	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Base Fee	\$923	\$969	\$1,008	\$1,028	\$1,049	\$1,049	\$1,049	\$1,049	\$1,049
Overage	\$0.0105	\$0.0110	\$0.0115	\$0.0117	\$0.0119	\$0.0119	\$0.0119	\$0.0119	\$0.0119



This scenario modified to include NO development (the above scenario includes known development), plus the previously mentioned revisions. See handout page 16 for updated/revised information

### 4.3.5 Projected Revenue – Modified Rate Structures

Alternative rate structures are generated in a step wise, incremental fashion starting with the existing rate structure. The first alternative was to maintain a fixed portion and a usage portion with no usage included in the base fee (no overage, all usage billed). Several combinations of base and usage fees were modelled but were not successful in raising needed revenue without unduly impacting residential users.

The next two most common rate structure modifications are to increase the base fee by service (water meter) size, and tiered rates. Customer meter data was not available, so only tiered rates were evaluated.

#### 4.3.5.1 Tiered Rates

The current overage fee is a flat rate where any additional usage over 45,000 gallons will be charged at one cent per gallon with no limits. Under a tiered rate structure, the cost per unit volume (1,000 gallons) of water usage increases in incrementally. This is same as the drinking water rate structure where source conservation is often an overriding concern but in the case of Bourne, sewer conservation measures are necessary due to a finite capacity.

To determine the efficacy of a tiered rate structure, the following steps are completed:

1. Separate usage data into customer types to determine the residential fraction
2. Develop usage histograms for residential and non-residential users
3. Develop the volumetric tier component based upon the usage histograms
4. Break existing usage into the proposed tiers as model input
5. Develop starting point price for Tier 1 and cost ratios for Tiers 2 and 3
6. Review proforma while adjusting rates to meet revenue requirements
7. Review customer cost impacts and revise tier cost ratio as required
8. Iterate as required.

#### **4.3.5.2 Usage Data Broken Out by User Type**

A tiered rate structure is defined by its two variables; the volume of each usage tier and the price increment for each tier. There is this little 'rule of thumb' or guidance for tier setting beyond the suggestion that first tier capture roughly half of the users. Beyond that the best practice is to evaluate the distribution of existing water use.

To separate usage by user class, a parcel database with land use codes was obtained from Mass GIS and the sewer customer addresses were used to match metered usage to customer parcels. There are 42 different land use codes in the parcel database, 12 of which are residential. Table 4-7 shows the proportion of residential to non-residential users in terms of usage, accounts and units.

**Table 4-7**

2018 Residential as Percent of Total Use and Accounts

<b>Land Use Code</b>	<b>Total Usage (KGal)</b>	<b>% of Total</b>	<b>Total Accounts</b>	<b>Total Units</b>
Residential	20,791	54%	586	775
Non-Residential	17,846	46%	118	317
<b>Total</b>	<b>38,637</b>	<b>100%</b>	<b>704</b>	<b>1,092</b>

Usage between residential and non-residential is split nearly 50-50, which underlays the focus on commercial development in the sewer service area. However, the total number of accounts and units is heavily skewed towards residential. To understand the usage distribution across all user types (residential and non-residential), Table 4-8 summarizes usage and account data for the top ten land use codes in terms of usage, which comprise 80% of the total usage.

**Table 4-8**

Top Ten Water Use by Land Use Code



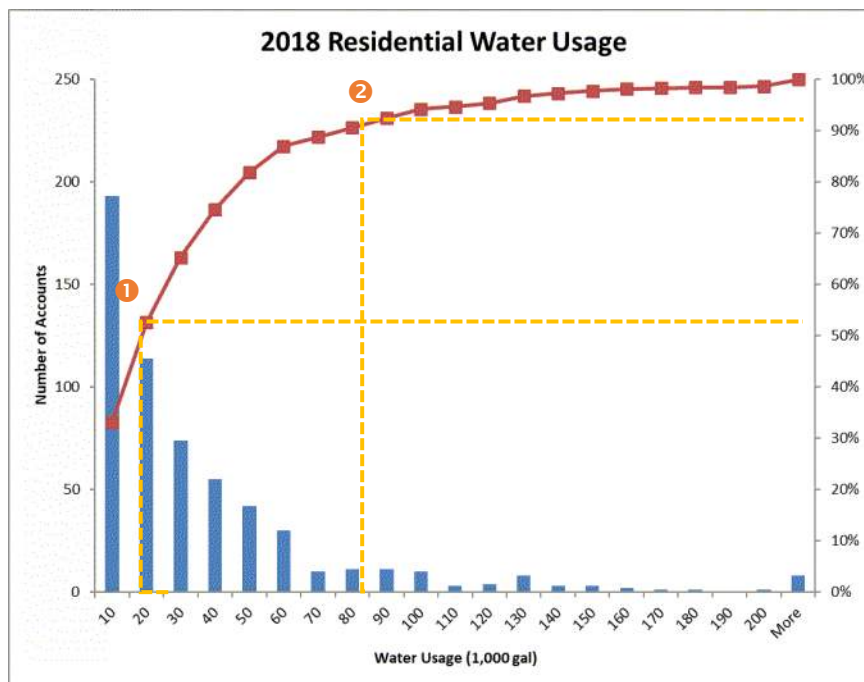
Land Use Code	Total Usage (gal)	% of Total	No. Accounts	No. Units
Single Family Residential	8,627	22%	249	257
Mixed Use (Primarily Commercial, some Residential)	5,821	15%	26	68
Developable Commercial Land	3,348	9%	1	106
Residential Condo	2,933	8%	151	153
Apartments with More than Eight Units	2,260	6%	4	106
Apartments with Four to Eight Units	2,221	6%	14	51
Residential Condominium	1,910	5%	132	134
Restaurants/Food Service	1,323	3%	6	6
Two-Family Residential	1,214	3%	17	35
Business Condo	1,062	3%	4	30

#### 4.3.5.3 Analyzing Water Use Distribution Patterns

Histograms were developed for residential and non-residential usage for the most recent year (2018). Figure 4-1 shows the distribution of residential usage. The horizontal axis represents the total water used in 10,000-gallon increments while the vertical axis represents the number of accounts corresponding to each volume. Each of the blue columns represent the number of accounts. The red line represents the cumulative total percentage that each column represents.

**Figure 4-1**

2018 Residential Water Use

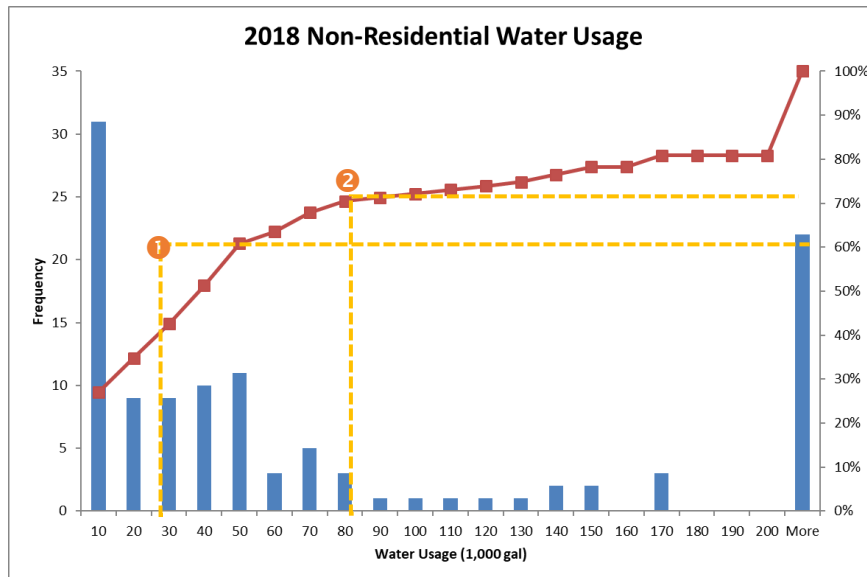


The proposed rate structure consists of three tiers with the boundaries defined by the gold lines. Tier 1 includes usage up to 30,000 gallons represented by point 1 and captures just over 50% of all residential accounts. Tier 2 starts at 30,001 gallons and ends at 85,000 gallons (point 2) and captures over 90% of all residential users. Tier 3 captures all usage above 85,000 gallons. Figure 4-2 shows the same tier structure applied to non-residential usage.



**Figure 4-2**

2018 Non-Residential Water Use



See handout pages 11 and 12 for additional usage analysis information.

As Figure 4-2 shows, the distribution of non-residential usage is quite different than residential, this is to be expected as there is a wide range of water uses across the non-residential spectrum while the residential users tend to be more homogeneous and vary primarily in the magnitude of use.

#### 4.3.5.4 Subtotaling Existing Usage by the Proposed Tiers

The 2018 water usage values were grouped into the proposed usage tiers and escalated the same as the usage in the previous two scenarios. The estimated usage for known developments were also broken into these tiers. The results are shown in Table 4-9 and Table 4-10.

**Table 4-9**

Existing Customer Usage Broken into the Proposed Tiers

Block	FY18	FY19	FY20	FY21	FY22	FY23	FY24
Tier 1	13,081	13,343	13,609	13,912	14,280	14,685	14,979
Tier 2	8,108	8,270	8,436	8,659	8,997	9,342	9,529
Tier 3	17,122	17,770	18,122	18,427	18,767	19,107	19,456



Revised and corrected.

#### Schedule 2.2 - Water Usage (Kgal)

Block	Type	FY19	FY20	FY21	FY22	FY23	FY24
Usage Tier 1 - Existing	Usage	13,081	13,343	13,327	13,594	13,865	14,143
Usage Tier 2 - Existing	Usage	8,108	8,270	8,590	8,762	8,937	9,116
Usage Tier 3 - Existing	Usage	17,422	17,770	16,938	17,277	17,622	17,975
		38,611	39,383	38,855	39,632	40,425	41,233

**Table 4-10**

Estimated Usage from Known Development Under Proposed Tiers

Block	FY21	FY22	FY23
Tier 1	30	90	120
Tier 2	55	165	165
Tier 3	2,697	10,986	17,789



Revised based upon revised usage and development assumptions.

Block	FY21	FY22	FY23
Tier 1	180	180	270
Tier 2	262	262	427
Tier 3	18,030	18,030	23,467

The usage shown in Table 4-10 is based upon the development scenario described in Section 4.1

#### 4.3.5.5 Starting Rates

Water or sewer rates exist in a continuum where each year's rate is based upon the previous years increased by either a percentage or a dollar amount. However, when rate structures are changed it is often necessary to reestablish a starting point. This starting point is the first year for proposed rate changes, in this case, FY21.

The starting rates are shown below in Schedule 4.2

#### Schedule 4.2 - Tiered Rates - No Projected Development

Description	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Base Fee	\$150	\$150	\$150	\$150	\$153	\$156	\$159	\$159	\$159
Tier 1	\$0.0150	\$0.0150	\$0.0150	\$0.0150	\$0.0153	\$0.0156	\$0.0159	\$0.0159	\$0.0159
Tier 2	\$0.0225	\$0.0225	\$0.0225	\$0.0225	\$0.0230	\$0.0234	\$0.0239	\$0.0239	\$0.0239
Tier 3	\$0.0330	\$0.0330	\$0.0330	\$0.0330	\$0.0337	\$0.0343	\$0.0350	\$0.0350	\$0.0350

The tiered rate structure was revised by shifting revenue generation towards the base fee and away from usage to increase revenue stability and equity of existing residential users.

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#### Schedule 4.1 - Tiered ERU Rates - 0% Projected Dev.

Category	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
Base Fee	\$575	\$575	\$575	\$575	\$575	\$575	\$575	\$575	\$575
Tier 1	\$0.0065	\$0.0065	\$0.0065	\$0.0065	\$0.0065	\$0.0065	\$0.0065	\$0.0065	\$0.0065
Tier 2	\$0.0098	\$0.0098	\$0.0098	\$0.0098	\$0.0098	\$0.0098	\$0.0098	\$0.0098	\$0.0098
Tier 3	\$0.0130	\$0.0130	\$0.0130	\$0.0130	\$0.0130	\$0.0130	\$0.0130	\$0.0130	\$0.0130

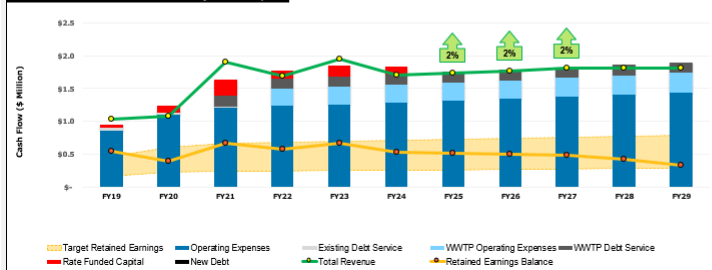
As mentioned previously, the second dimension of a tiered rate structure is the price increment. The rate model computes the cost of tiers 2, 3, etc. by multiplying the tier 1 starting rate by the price increments. The rates for years FY22 on are all based upon the prior year's value multiplied by the rate increases shown in the individual proformas. The starting price increments are 1.5 for tier 2 and 2.2 for tier 3. Again, there is little guidance in terms of establishing the price increment, the methodology used is to start with a conservative (in this case, a relatively small increment), test for efficacy and revise if required.

See handout pages 14 for revised proforma.

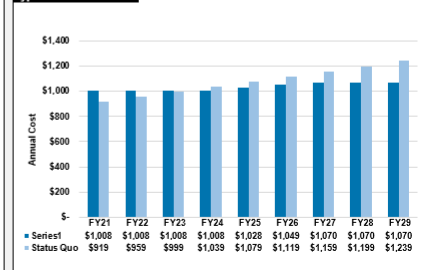
#### Schedule 1.3: Proforma - Tiered Rates - No Projected Development

	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
<b>Revenue</b>													
Base Fee	\$ 331,500	\$ 309,765	\$ 964,597	\$ 997,050	\$ 202,320	\$ 203,063	\$ 223,583	\$ 223,583	\$ 228,054	\$ 232,615	\$ 237,268	\$ 237,268	\$ 237,268
Non-Rate Revenue	\$ 73,847	\$ 141,353	\$ 65,161	\$ 81,642	\$ 16,977	\$ 117,511	\$ 118,348	\$ 118,348	\$ 121,163	\$ 123,423	\$ 125,728	\$ 125,728	\$ 125,728
Tier 1					\$ 249,204	\$ 249,632	\$ 249,632	\$ 249,632	\$ 254,624	\$ 259,717	\$ 264,911	\$ 264,911	\$ 264,911
Tier 2					\$ 91,555	\$ 92,731	\$ 92,731	\$ 92,731	\$ 94,585	\$ 96,477	\$ 98,406	\$ 98,406	\$ 98,406
Tier 3					\$ 1,010,631	\$ 1,016,519	\$ 1,016,519	\$ 1,016,519	\$ 1,036,849	\$ 1,057,586	\$ 1,078,738	\$ 1,078,738	\$ 1,078,738
Allocation Fees					\$ 206,080	\$ 9,057	\$ 172,724	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
System Development					\$ 23,289	\$ 0,075	\$ 74,249	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total Revenue</b>	<b>\$1,085,348</b>	<b>\$1,051,118</b>	<b>\$1,029,758</b>	<b>\$1,078,692</b>	<b>\$1,906,624</b>	<b>\$1,696,585</b>	<b>\$1,948,393</b>	<b>\$1,701,411</b>	<b>\$1,735,276</b>	<b>\$1,769,818</b>	<b>\$1,805,050</b>	<b>\$1,805,050</b>	<b>\$1,805,050</b>
depreciation (Rate Revenue)			\$ 54,332	\$ 54,411	\$ (794,130)	\$ 143	\$ 26,529	\$ -	\$ 4,472	\$ 4,561	\$ 4,592	\$ -	\$ -
depreciation (Total Revenue)			\$ (21,348)	\$ 40,454	\$ 127,932	\$ (219,031)	\$ 251,796	\$ (241,972)	\$ 33,165	\$ 34,542	\$ 35,233	\$ -	\$ -
<b>Net Revenue (Revenue-Expense)</b>	<b>\$ 149,566</b>	<b>\$ 93,075</b>	<b>\$ 76,244</b>	<b>\$ (55,438)</b>	<b>\$ 273,726</b>	<b>\$ (52,100)</b>	<b>\$ 92,112</b>	<b>\$ (113,259)</b>	<b>\$ (16,229)</b>	<b>\$ (19,177)</b>	<b>\$ (19,911)</b>	<b>\$ (16,770)</b>	<b>\$ (14,566)</b>
Retained Earnings Balance	\$ 731,339	\$ 466,478	\$ 542,722	\$ 397,305	\$ 661,032	\$ 576,933	\$ 671,044	\$ 597,785	\$ 519,157	\$ 499,980	\$ 480,068	\$ 423,290	\$ 328,724
Retained Earnings as Percent of Operating Expense	88%	84%	83%	35%	55%	47%	53%	42%	39%	37%	35%	30%	23%

Schedule 1.3: Proforma - Tiered Rates - No Projected Development



Typical Residential Cost



The proforma resulting from applying the rates shown above to the usage previously described is shown below. Small rate increases are required throughout the analysis period, the resultant customer cost impacts are less than the targets established in Section 4.3.1, therefore this scenario meets the project goals.

#### **4.3.6 Projected Revenue - Revised Service Development Charge (SDC)**

The System Development Charge described in Section 4.1.1 was based upon the betterment formula used to fund construction of the original sewer system. The minutes of the January 17, 2006 Sewer Commission Meeting indicate that current values of \$73.406 per foot of frontage and \$11,539.356 were arrived at by simply doubling the values used in the original betterments based upon the statement that construction costs had more than doubled since. Although this fact is not in dispute, it is recommended that System Development Charges be based upon a defensible methodology and cost basis.

As discussed previously there are two methods for determining System Development Charges, buy-in or growth approach. For purposes of evaluation, the planned facility / growth approach was deemed most appropriate.

The method used to develop an alternative fee was adopted from the Water Environment Federation's Manual of Practice No. 27, Financing and Charges for Wastewater Systems, 4<sup>th</sup> Ed. The methodology consists of determining an appropriate unit of measure or scaling factor by which the growth-related costs are divided by to obtain a per unit cost. The per unit cost can then be applied to a variety of development projects.

##### **4.3.6.1 Growth Related Costs**

The growth-related cost was taken to be the \$2.4M in construction debt allocated to the sewer enterprise. Note that the SDC is only intended to recover fixed capital costs and not operating costs.

##### **4.3.6.2 Scaling Factor**

Our understanding based upon discussions with the Town is that the new WWTP is designed to add hydraulic capacity versus biological treatment capacity, or stated differently, there is no existing concern over high strength wastes. To allocate the 100,000 gallons per day of capacity to be provided by the new plant the Equivalent Residential Unit (ERU) was selected. The ERU is used to represent non-residential uses as a multiple of a typical residential user.

Capacity is allocated to future projects based upon Title V flow estimates, and as discussed in Section 2, overestimates actual daily average flow, which the 100,000 gpd represents. The usage used for the typical residential user is 150 gpd which equals the 50 gallons per day per person for a three-person household also discussed in Section 2. This represents 45% of the 330 gallons per day assigned to a 3-bedroom house in Title V. Dividing 100,00 by 150 results in 667 ERU's. To obtain the value of 1 ERU the total cost of \$2.4M is divided by 667, which results in a value of \$3,600.

##### **4.3.6.3 Estimating Revenue From revised SDC**

Table 4-11 compares fee revenue between the current and revised fee structures for selected developments.

**Table 4-11**

Comparison of Estimated Fee Revenue

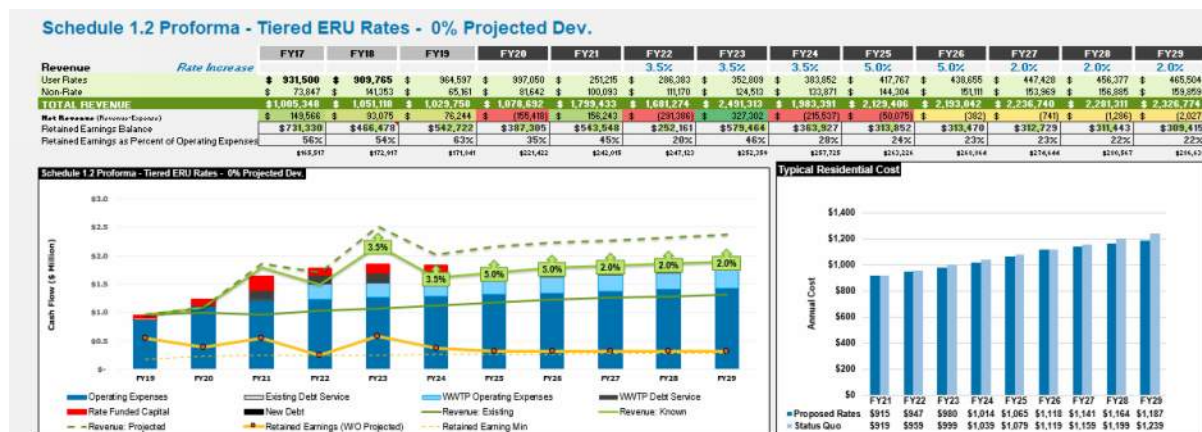
Development	Existing Fees		ERU Based Fee		Delta
	No. Units	Total	ERU's	Fee	
Hampton Inn <sup>1</sup>	100	<b>\$293,238</b>	46	<b>\$164,624</b>	-78%
100 Main	121	<b>\$248,582</b>	81	<b>\$292,464</b>	15%
Calamar/ 25 Perry	120	<b>\$344,945</b>	50	<b>\$181,440</b>	-90%
Bourne Scenic Park <sup>2</sup>	22	<b>\$84,360</b>	53	<b>\$191,160</b>	56%

Notes:

1. Shown for comparison only, Hampton Inn's total fee of \$48,533 was based upon 2006 fee structure only and 1 Unit.
2. SDC for Bourne Scenic Park is estimated.

Note – the calculations shown on handout page 8 reflect further discussion relative to the application of the existing fee structure.

With the exception of Calamar, the new fee structure results in higher fee totals, with 100 Main and Bourne Scenic Park doubling. While it is important to have an established basis for SDC development, an equally important consideration is that excessive costs could drive off development. In recognition of the fact that the additional development would also contribute to user fees (rate revenue), the Tiered Rate alternative was reevaluated with the decreased ERU rate and development rate revenue calculated using the ERU's as billable units. The Proforma is shown below as Schedule 1.2.



This scenario requires moderate rate increases throughout the analysis period to maintain the desired reserve balance. The residential user costs from this scenario are below the status quo costs which meet one of the project goals.

**Note:** Due to the rapidly changing economic conditions, the two scenarios ultimately discussed were 100% known development/ 50% projected development and no development at all. See handout pp. 13 & 14.

previous scenarios were developed based upon either 0% or 100% development to frame

outcomes, however the most likely scenario is something in between. To evaluate the impact of partial development, the scenario shown above was modeled with 50% of projected development. The proforma is shown below.

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

	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29
<b>Revenue</b>													
Use Rates	\$ 931,500	\$ 909,765	\$ 964,597	\$ 997,050	\$ 251,215	\$ 276,690	\$ 329,351	\$ 353,137	\$ 373,257	\$ 380,824	\$ 388,440	\$ 396,209	\$ 404,133
Non-Rate	\$ 73,847	\$ 141,353	\$ 65,161	\$ 81,642	\$ 100,093	\$ 107,687	\$ 116,778	\$ 123,813	\$ 129,833	\$ 132,266	\$ 134,748	\$ 137,280	\$ 139,862
<b>TOTAL REVENUE</b>	<b>\$ 1,005,347</b>	<b>\$ 1,051,118</b>	<b>\$ 1,029,758</b>	<b>\$ 1,078,692</b>	<b>\$ 1,799,433</b>	<b>\$ 1,628,036</b>	<b>\$ 2,373,074</b>	<b>\$ 1,829,648</b>	<b>\$ 1,908,207</b>	<b>\$ 1,904,994</b>	<b>\$ 1,942,931</b>	<b>\$ 1,981,626</b>	<b>\$ 2,021,095</b>
<b>Net Revenue (Revenue-Expense)</b>	<b>\$ 149,566</b>	<b>\$ 93,076</b>	<b>\$ 76,244</b>	<b>\$ (155,418)</b>	<b>\$ 188,413</b>	<b>\$ (237,752)</b>	<b>\$ 381,148</b>	<b>\$ (162,021)</b>	<b>\$ (23,654)</b>	<b>\$ (44,909)</b>	<b>\$ (46,158)</b>	<b>\$ (47,612)</b>	<b>\$ (49,279)</b>
Retained Earnings Balance	\$ 731,330	\$ 466,478	\$ 542,722	\$ 387,305	\$ 575,710	\$ 337,966	\$ 719,114	\$ 557,093	\$ 533,439	\$ 488,530	\$ 442,372	\$ 394,760	\$ 348,481
Retained Earnings as Percent of Operating Expense	56%	54%	63%	35%	48%	27%	57%	43%	41%	36%	32%	28%	24%
	\$15,517	\$12,417	\$11,441	\$21,422	\$24,015	\$247,123	\$282,359	\$271,725	\$243,224	\$249,344	\$274,444	\$299,547	\$285,639

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

**Typical Residential Cost**

<b>Typical Residential Cost</b>													
<b>Annual Cost</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>FY23</b>	<b>FY24</b>	<b>FY25</b>	<b>FY26</b>	<b>FY27</b>	<b>FY28</b>	<b>FY29</b>	<b>FY30</b>	<b>FY31</b>	<b>FY32</b>
	\$762	\$776	\$826	\$977	\$915	\$915	\$915	\$933	\$952	\$971	\$990	\$1,010	\$1,030

Under the 50% development scenario, minimal rate increases are required, and the residential costs represents the lowest of all scenarios except for the existing rate scenario.



See handout page 15 for extended customer impact analysis

## Section 5

# Conclusions and Recommendations

### 5.1 Capacity Management and Allocation Policy

#### 5.1.1 Administrative

**Approval:** The version of the allocation policy found on the Town website is not signed by the Board of Sewer Commissioners and may call into question the validity of its application, if challenged. We recommend that a signed version to be uploaded immediately.

**Residential Exclusion:** The policy states that it does not apply to single family residences and residential buildings with up to four units. According the Town, vacant parcels were not initially assessed betterments as part of the collection system construction. Additionally, the policy appears to assume that all if not most existing usage used to calculate the uncommitted reserve capacity is residential use. Table 5-1 shows the summary of water use by customer type. The existing usage is almost exactly divided between residential and non-residential so there does not appear to be sufficient justification for a residential exclusion.

**Table 5-1**

Residential vs Non-Residential Usage

User Class	2018 Water Usage	
	Gallons (x 1,000)	% of Total
Residential	20,791	54%
Non-Residential	17,846	46%
TOTAL	38,637	100%

**Project Identification:** Projects are defined to by a combination of address and developers name, consolidating data from different sources was difficult due to inconsistent naming. We recommend using the parcel or assigning a unique identifier to each project to prevent further confusion.

#### Estimated Flows:

The application form requires the requested allocation volume and the *basis* for that volume. The estimated flows provided by Bourne were all based upon Title V estimates. Although Title V is generally not representative of actual sewer flow, it has become the default standard for demand projections in Massachusetts. We recommend that Bourne standardize on this practice for consistency.

#### 5.1.2 Managing Uncommitted Reserve Capacity

**Reconciling Actual vs Estimated Flows.** Section V Paragraph A states “within six months of adoption of the policy the Board shall conduct a public hearing in order to review the Allocations to parcels on which betterments have been paid but no development has occurred.”

- a. Presuming that the policy has been approved, this language should be changed to represent the schedule moving forward.



- b. Relative to use of the word 'betterment', the original sewer system was funded by betterments, however our understanding is this is no longer being used as a funding mechanism. The word betterment should be replaced with the appropriate fee, if that was the intent.
- c. Section V Paragraph C requires reconciliation of actual versus estimated usage after three years. We recommend the reconciliation timeline to be shortened to once the project is at full capacity and no more than 12 months.

**Increasing Usage.** Existing usage has been increasing between 3% and 5% with no increase in users. This potentially reduces capacity independent of growth and should be monitored.

## 5.2 Development Fees

When new users enter or connect to an existing water or sewer system it is common for the municipality to assign a variety of connection fees and charges. These fees and charges fall into two categories, those directly related to the actual project (pipe connections, review fees, inspection fees, etc.) and System Development Charges (SDC's).

### 5.2.1 Existing Fees

The existing fee structure instituted in 2006 contains four individual fee components for commercial developers (see Section 4.1.1). The design review and construction inspection components are clearly administrative, and the System Development Charge is self-explanatory. It is not clear what costs the Sewer Permit Fee or Connection Fee are intended to recover or clear distinction between the two.

The 2017 Commercial Wastewater Management Allocation Policy includes three additional charges also described in 4.1.1, it is not clear if the intent of the 2017 policy was to supplement or expand the existing fees; the operational allocation fee appears to overlap with the sewer connection fee. In terms of rational nexus between fees and costs, the only justification is the doubling of the existing betterment charge, which is not designed to equitably distribute treatment plant costs.

We recommend that Bourne review the existing fee structures, identify which administrative costs are to be recovered and adopt the ERU fee structure. The entire process including fees should be summarized in one document and referenced appropriately.

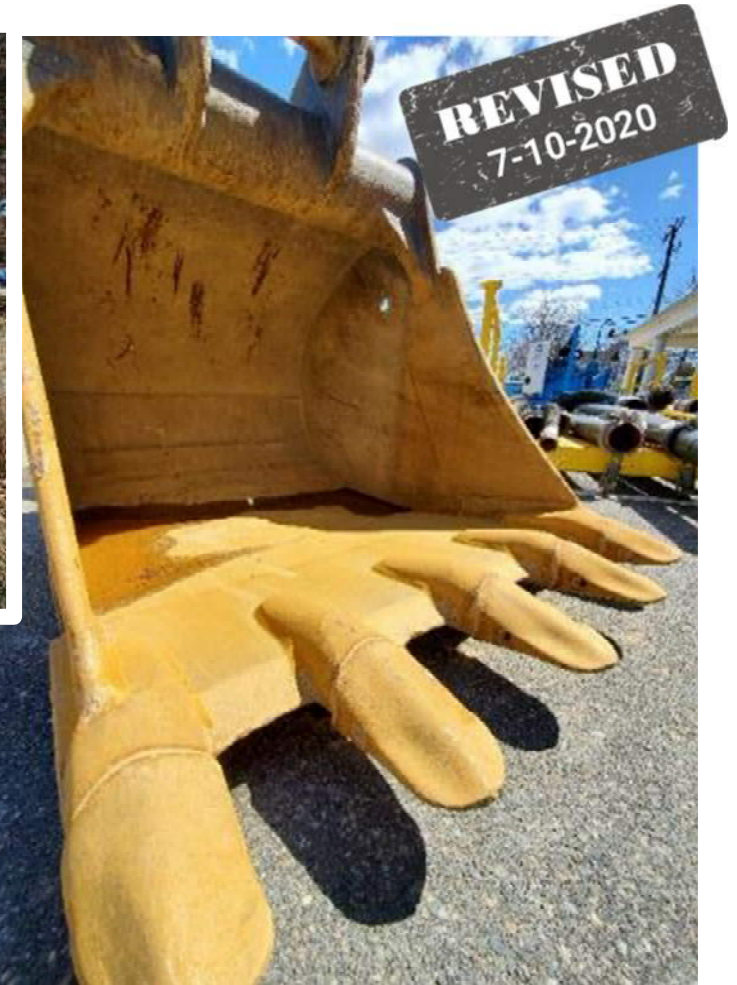
## 5.3 Sewer Rates

The existing rates consist of a base charge and an overage charge, the base charge is assessed to each billable unit, however, no definition of a billable unit could be found. In the supporting revenue projections for the WWTF for example the Hampton Inn was assumed to be billed for 100 units however while the system development fees were based upon one billable unit. The ERU based alternatives apply the base fee to the total number of ERU's which is suitable for use as it is defensible.



See handout page 19 for additional recommendations. At the July 28<sup>th</sup>, 2020 meeting of the Sewer Commission the FY21 sewer rates were set based upon maintaining the existing rate structure with a \$90 increase to the base fee. Given the amount of uncertainty at present, this is a prudent decision. The commission should continue to monitor water use, development activity and revisit this issue in late FY21.

J:\B\B0855 Bourne\03 - Sewer Rate and Capacity Management\Design\Deliverables\Bourne Revised Final Draft 2\_5\_20.docx



# BOURNE SEWER RATE EVALUATION

## Bourne Sewer Commission

### July 14, 2020 Workshop

# INTRODUCTION



*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.

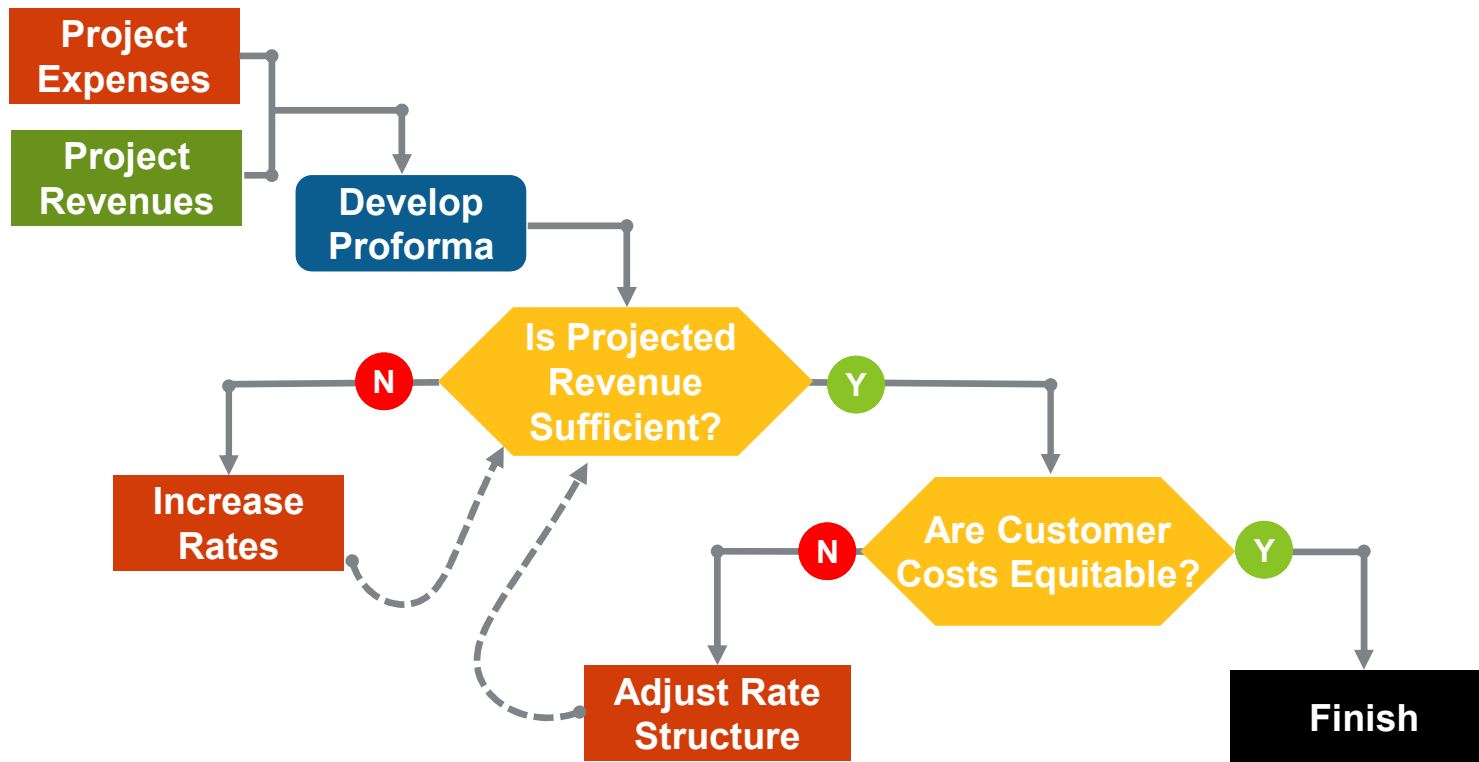
- Add costs of new plant to existing costs
- Estimate future revenue under existing connection fees and from future users
- Determine user cost impacts

### Connection Fee and Allocation Evaluation

- Review existing development fees
- Review capacity allocation policy

# RATE EVALUATION PROCESS

**REVISED**  
7-10-2020





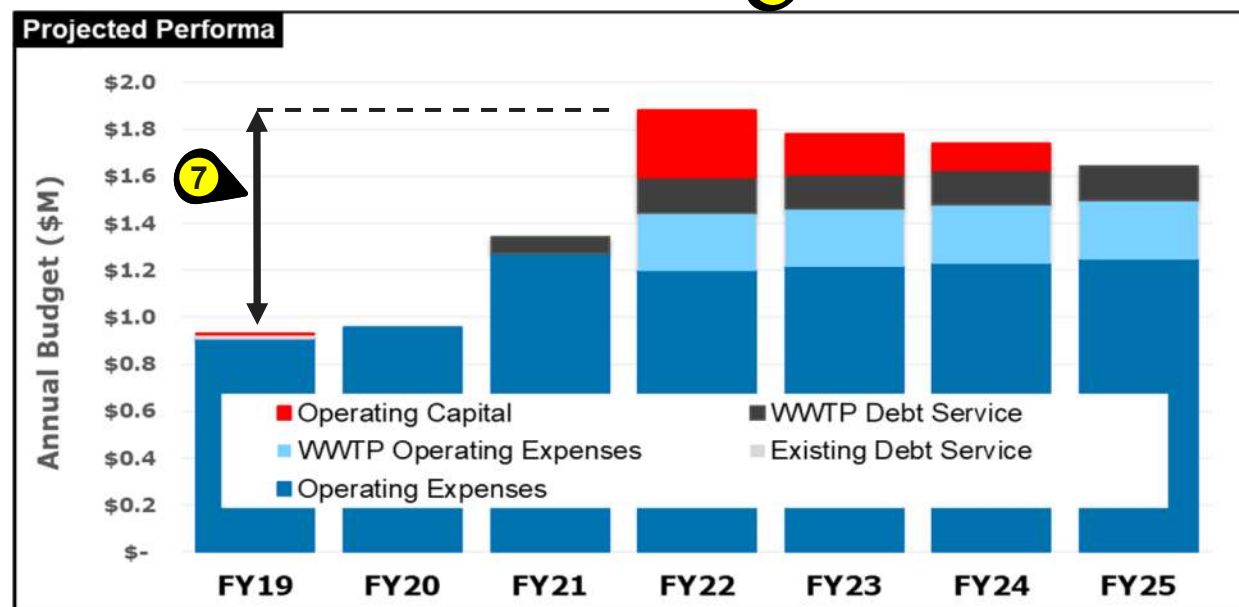
# PROJECTING EXPENSES

**REVISED**  
7-10-2020

## 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

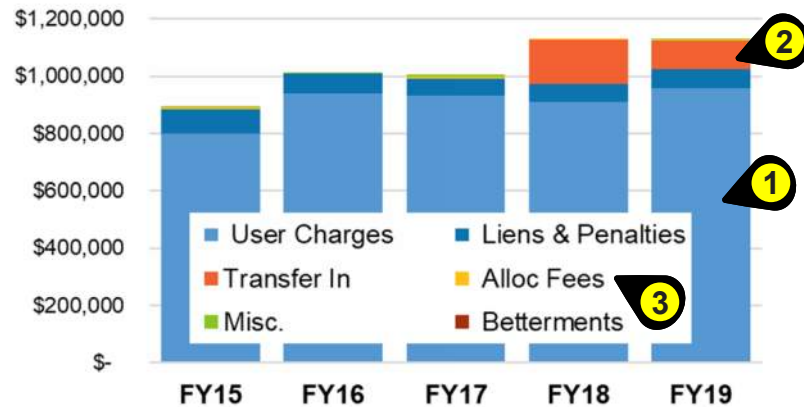
	Actual Values FY19	Actual Values FY20	Budget Values FY21	Projected Values FY22	Projected Values FY23	Projected Values FY24	Projected Values FY25
<b>Operating Expenses</b>							
Wareham - Operating	\$213,912	\$400,000	\$410,000	\$420,250	\$430,756	\$441,525	\$452,563
Personnel Services	\$170,024	\$106,494	\$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
<b>Subtotal</b>	<b>\$906,615</b>	<b>\$955,684</b>	<b>\$1,275,355</b>	<b>\$1,206,341</b>	<b>\$1,233,339</b>	<b>\$1,261,066</b>	<b>\$1,289,545</b>
Delta Previous	3.4%	0.0%	9.6%	-5.4%	2.2%	2.2%	2.3%
<b>Capital</b>							
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
<b>Subtotal</b>	<b>\$24,179</b>	<b>\$0</b>	<b>\$0</b>	<b>\$290,000</b>	<b>\$170,000</b>	<b>\$115,000</b>	<b>\$0</b>
<b>New WWTP</b>							
Operating Expenses	\$0	\$0	\$0	\$250,000	\$250,000	\$250,000	\$250,000
Debt Service	\$0	\$0	\$72,000	\$146,776	\$146,776	\$146,776	\$146,776
<b>Subtotal</b>	<b>\$0</b>	<b>\$0</b>	<b>\$72,000</b>	<b>\$396,776</b>	<b>\$396,776</b>	<b>\$396,776</b>	<b>\$396,776</b>
<b>TOTAL EXPENSES</b>	<b>\$930,794</b>	<b>\$955,684</b>	<b>\$1,347,355</b>	<b>\$1,893,117</b>	<b>\$1,800,115</b>	<b>\$1,772,843</b>	<b>\$1,686,321</b>



# PROJECTING REVENUE

**REVISED**  
7-10-2020

## 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.

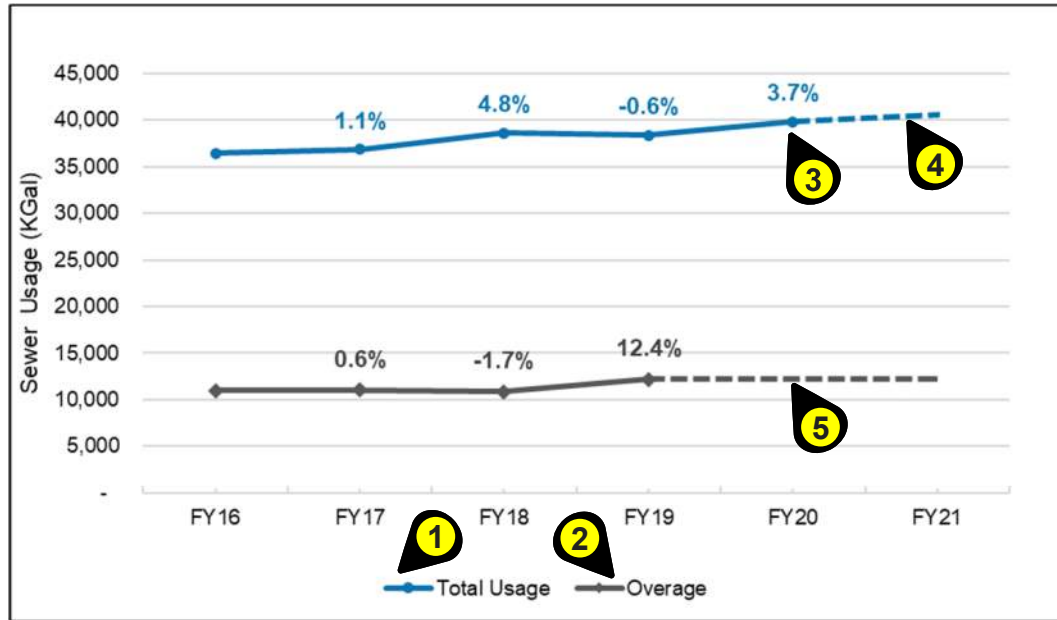
**Projected:** Based upon planning level data



# PROJECTING REVENUE FROM USER CHARGES

**REVISED**  
7-10-2020

## Usage Analysis – Existing Customers



### 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

## Usage Analysis – Known Development

Development	Flow Year	Units	Allocated (gpd)	Expected Flow (gpd)
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
<b>Total</b>				<b>78,490</b>

# PROJECTING REVENUE FROM DEVELOPMENT FEES

## FEE STRUCTURES

**REVISED**  
7-10-2020

### Existing Fee Structure

Fee	Amount and Basis
<b>Existing Fee Structure (as of 2006)</b>	
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.
<b>2017 Commercial Allocation Policy Fees</b>	
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
<b>Equals</b>	<b>667</b>	<b>ERU's</b>

##### 2. Determine ERU cost

Cost to be recovered	<u>\$2,400,000</u>	
Total ERU's	667	
<b>Equals</b>	<b>\$3,600</b>	<b>Per ERU</b>

# 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		2006 Fee Structure	Grand Total	Total Billed	Total Remaining
					Application Fee	Preliminary Allocation Fee (calc)	System Development Charge			
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
<b>Total</b>				<b>78,490</b>	<b>\$22,500</b>	<b>\$264,514</b>	<b>\$478,379</b>	<b>\$765,394</b>	<b>\$144,488</b>	<b>\$537,757</b>

### 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

### 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
<b>Total</b>	<b>48,831</b>	<b>24,415</b>	<b>402</b>	<b>\$21,000</b>	<b>\$139,831</b>	<b>\$298,116</b>	<b>\$458,947</b>



# PROJECTING REVENUE FROM DEVELOPMENT FEES

## Proposed Fee Structure

**REVISED**  
7-10-2020

### 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
<b>Total</b>		<b>78,490</b>	<b>527</b>	<b>\$1,897,200</b>

### 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
	<b>48,831</b>	<b>24,415</b>	<b>170</b>	<b>\$1,171,937</b>

# DEVELOPMENT FEE SUMMARY

**REVISED**  
7-10-2020

## Existing Fee Structure

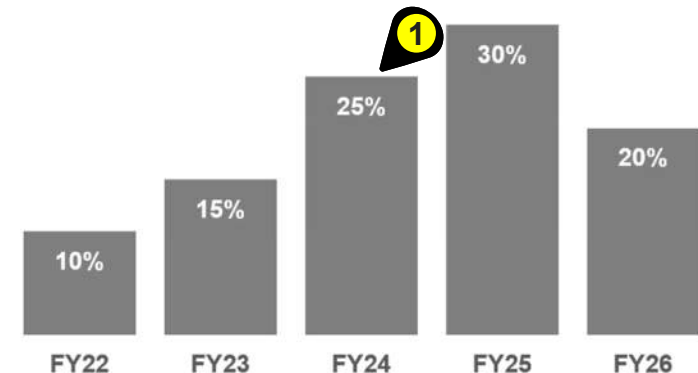
	Known	Projected	Total	Debt Service	Stabilization Balance
2020	\$ 144,488		\$ 144,488	\$ -	\$ 144,488
2021	\$ 211,408	\$ -	\$ 211,408	\$ 72,000	\$ 283,896
2022	\$ 133,767	\$ 45,895	\$ 179,662	\$ 148,981	\$ 314,577
2023	\$ 235,827	\$ 68,842	\$ 304,669	\$ 148,981	\$ 470,265
2024	\$ -	\$ 114,737	\$ 114,737	\$ 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)
<b>Total</b>	<b>\$ 725,490</b>	<b>\$ 458,947</b>	<b>\$ 1,184,437</b>		

## 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
<b>Total</b>	<b>\$ 2,041,688</b>	<b>\$ 612,000</b>	<b>\$ 2,653,688</b>		

### 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

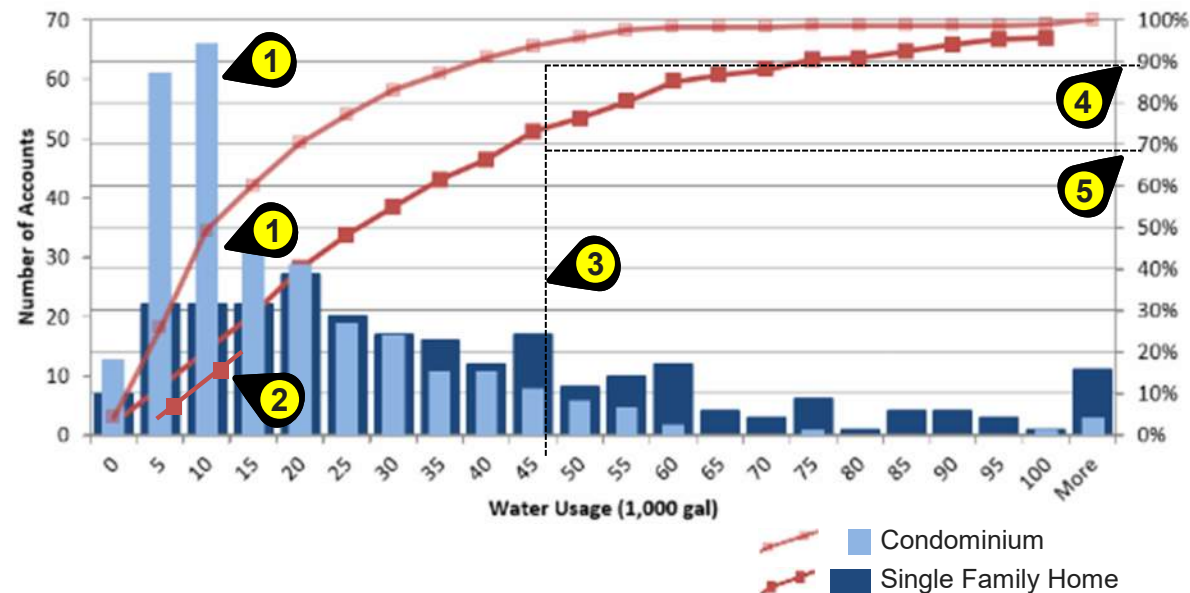


Assumed Projected Development Timeline

# PROJECTING REVENUES – USER FEES

## Evaluation of Existing Fee Structure

### Residential Condo and Single-Family Usage Evaluation



**REVISED**  
7-10-2020

#### 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 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

# PROJECTING REVENUES – USER FEES

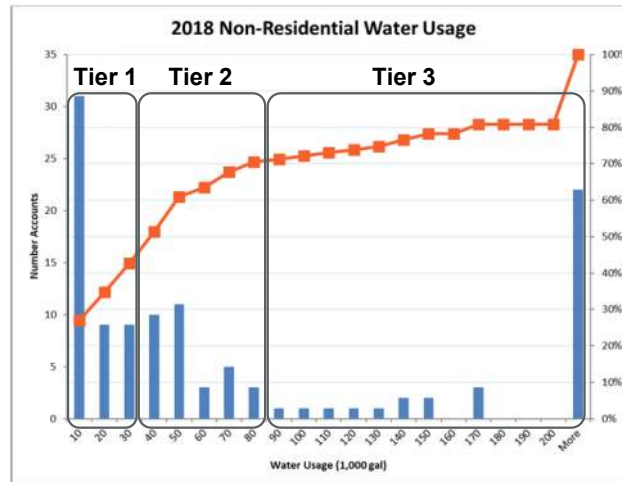
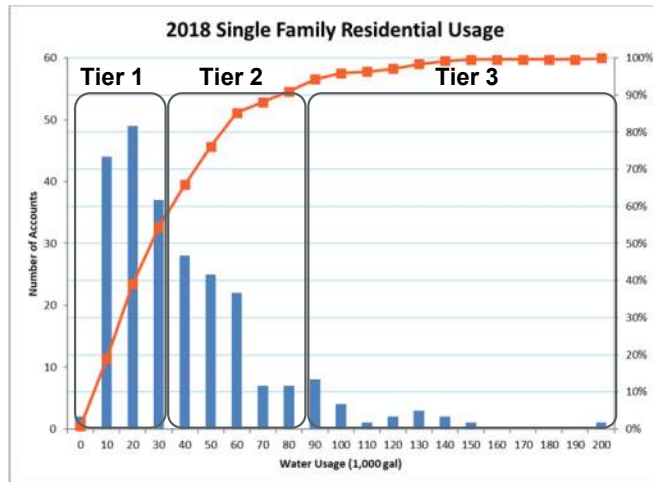
## Alternative Rate Structure Development

**REVISED**  
7-10-2020

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





# RATE ALTERNATIVE A – STATUS QUO

## Existing Rate and Fee Structure (usage and development fees)

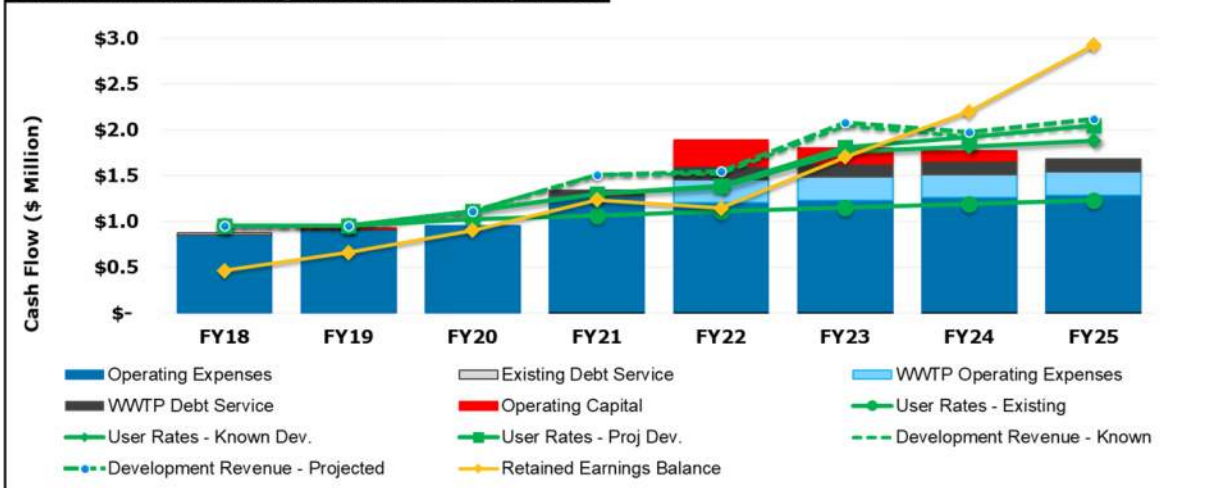
**REVISED**  
7-10-2020

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
<b>Total Revenue</b>	<b>\$ 1,129,280</b>	<b>\$ 1,197,187</b>	<b>\$ 1,609,337</b>	<b>\$ 1,651,983</b>	<b>\$ 2,215,367</b>	<b>\$ 2,212,814</b>	<b>\$ 2,121,814</b>	<b>\$ 2,267,688</b>
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%

### 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.

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



### 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	\$ 40



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

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

# RATE ALTERNATIVE B – NEW RATES & FEES

## ERU and Tiered Usage Rates with ERU Based Development Fees

**REVISED**  
7-10-2020

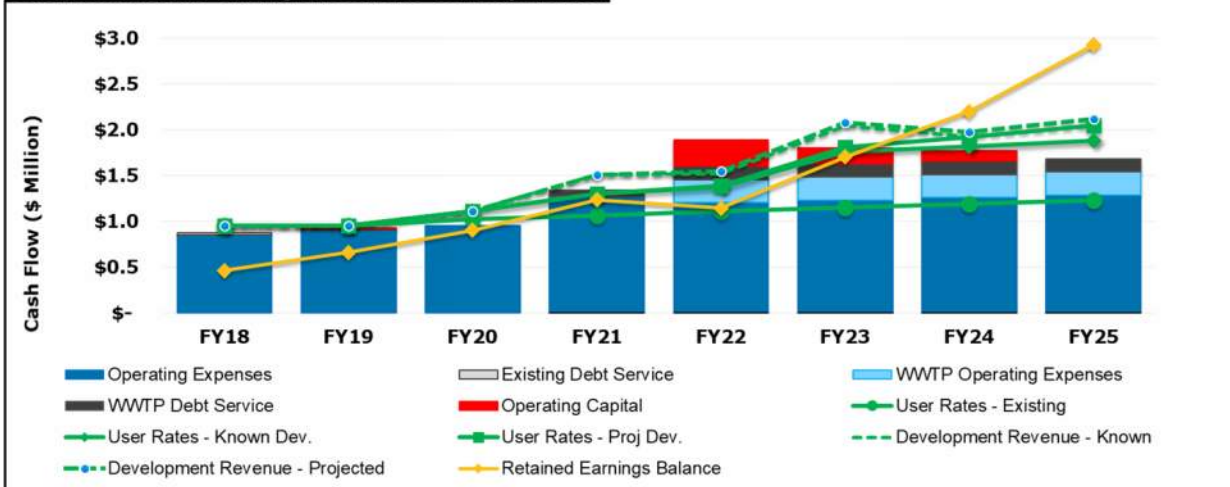
Schedule 1.2 Proforma - Tiered ERU Rates - 50% Projected Dev.

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	\$ 557,840	\$ 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
<b>TOTAL REVENUE</b>	<b>Total</b>	<b>\$ 1,129,280</b>	<b>\$ 1,184,202</b>	<b>\$ 1,911,131</b>	<b>\$ 1,674,888</b>	<b>\$ 3,100,002</b>	<b>\$ 1,915,883</b>	<b>\$ 1,963,048</b>
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%

### 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.

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



### User Rates

Category	Type	FY18	FY19	FY20	FY21	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

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	\$ -	\$ -	\$ -	\$ -	\$ -



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.

# 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

## 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



# RATE ALTERNATIVE A1 – STATUS QUO

## NO NEW DEVELOPMENT

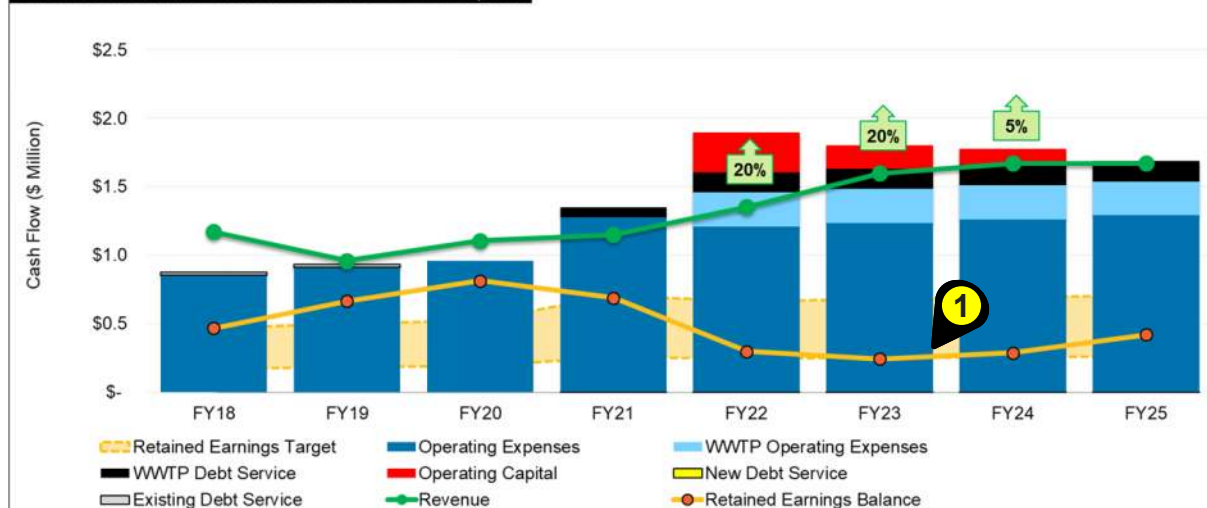
**REVISED**  
7-10-2020

### 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.**

	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
<b>Revenue</b>					20%	20%	5%	
Base Fee	\$ 804,285	\$ 958,947	\$ 911,875	\$ 958,947	\$ 1,144,045	\$ 1,372,854	\$ 1,441,496	\$ 1,441,496
Overage	\$ 367,052	\$ -	\$ 116,100	\$ 116,100	\$ 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
<b>Total Revenue</b>	<b>\$ 1,171,337</b>	<b>\$ 958,947</b>	<b>\$ 1,105,156</b>	<b>\$ 1,149,556</b>	<b>\$ 1,353,578</b>	<b>\$ 1,598,403</b>	<b>\$ 1,671,851</b>	<b>\$ 1,671,851</b>
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								
<b>Net Revenue (Revenue-Expense)</b>	<b>\$ 296,761</b>	<b>\$ 28,153</b>	<b>\$ 149,472</b>	<b>\$ (125,799)</b>	<b>\$ (392,764)</b>	<b>\$ (54,935)</b>	<b>\$ 45,785</b>	<b>\$ 132,306</b>
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 Expense	55%	73%	85%	54%	25%	20%	23%	32%

Schedule 1.5 Proforma - Exist Rate Structure - NO Development



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	\$ -

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

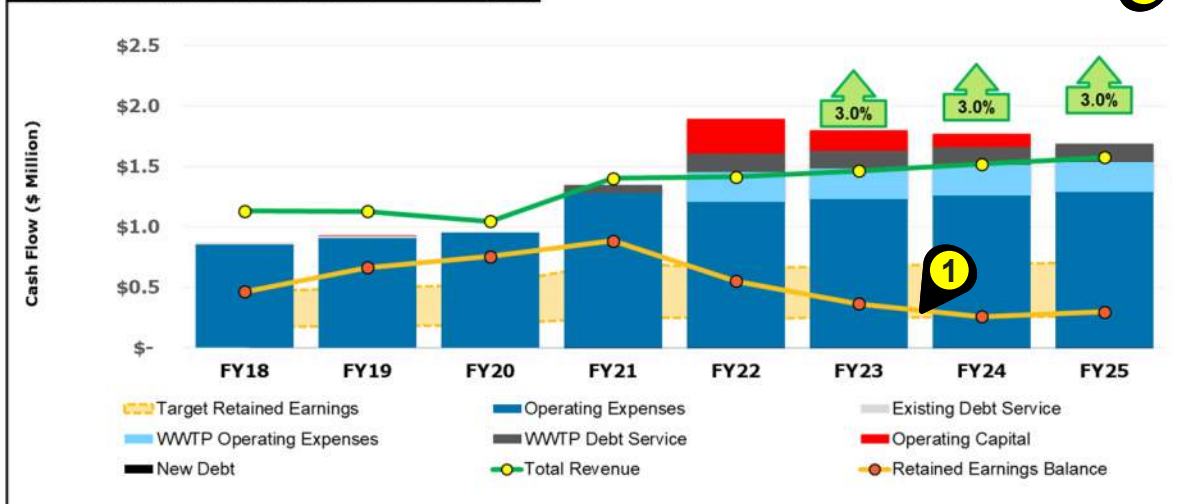
# RATE ALTERNATIVE B1 – NEW RATES

## NO NEW DEVELOPMENT

**REVISED**  
7-10-2020

Revenue	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
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			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total Revenue</b>	<b>\$ 1,131,860</b>	<b>\$ 1,129,758</b>	<b>\$ 1,047,174</b>	<b>\$ 1,403,814</b>	<b>\$ 1,413,586</b>	<b>\$ 1,466,105</b>	<b>\$ 1,520,718</b>	<b>\$ 1,577,515</b>
delta previous (Rate Revenue)		\$ 49,182	\$ 155,516	\$ (109,443)	\$ -	\$ 25,513	\$ 26,278	\$ 27,066
delta previous (Total Revenue)		\$ (2,102)	\$ (82,594)	\$ 356,639	\$ 9,773	\$ 52,518	\$ 54,613	\$ 56,797
<b>Net Revenue (Revenue-Expense)</b>	<b>\$ 257,284</b>	<b>\$ 198,964</b>	<b>\$ 91,491</b>	<b>\$ 128,459</b>	<b>\$ (332,755)</b>	<b>\$ (187,234)</b>	<b>\$ (105,349)</b>	<b>\$ 37,970</b>
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 Expense	55%	73%	79%	69%	46%	30%	21%	23%

Schedule 1.3: Proforma - Tiered ERU Rates - No Development



### 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	\$ -	\$ -

### 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.



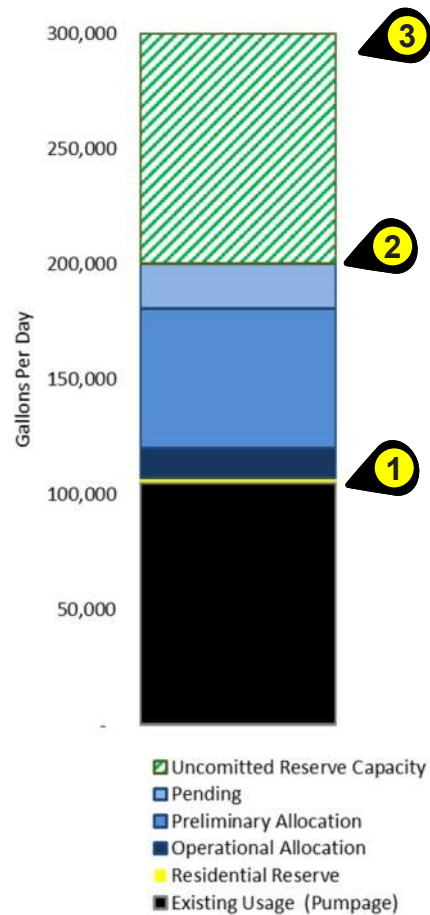
Alternative B without development revenue does not support enterprise without undue burden on existing rate payers\*.

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

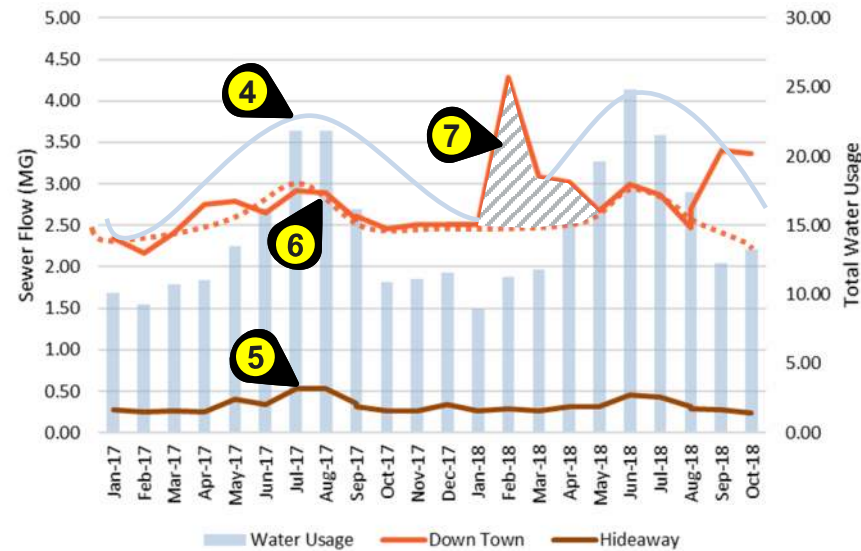
# CAPACITY MANAGEMENT AND FLOWS

**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

# FINDINGS, CONCLUSIONS & RECOMMENDATIONS

## 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

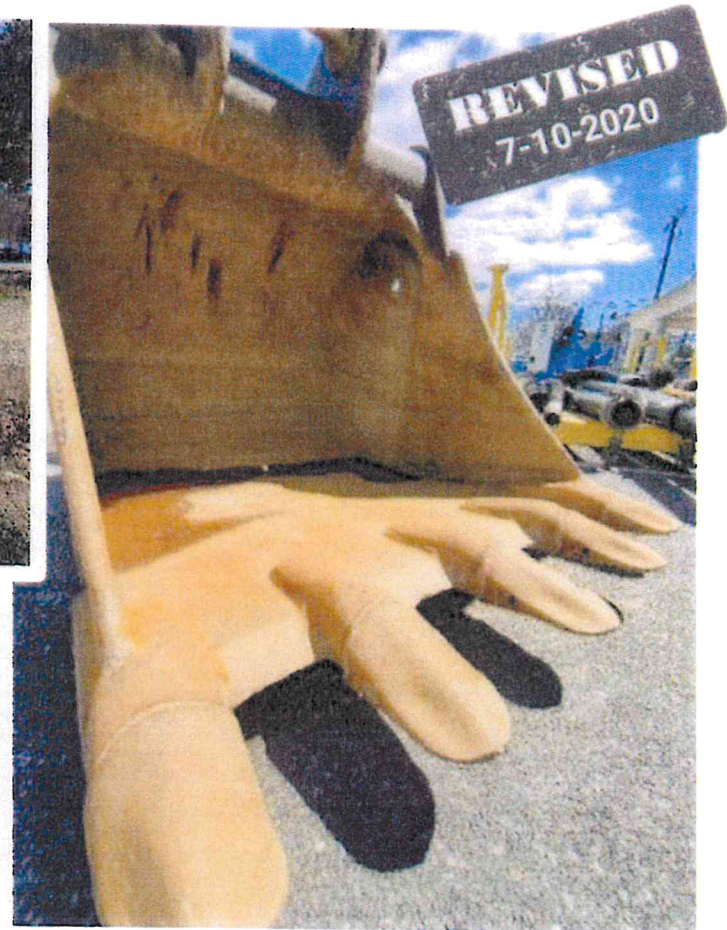
Town	Cost
Scituate	\$563
Wareham	\$596
<b>Statewide Average</b>	<b>\$862</b>
Plymouth	\$990
Bourne	\$1,224
Provincetown	\$1,243
Gloucester	\$1,302
Cohasset	\$1,313

*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





# BOURNE SEWER RATE EVALUATION

Bourne Sewer Commission  
July 14, 2020 Workshop



# INTRODUCTION

*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.

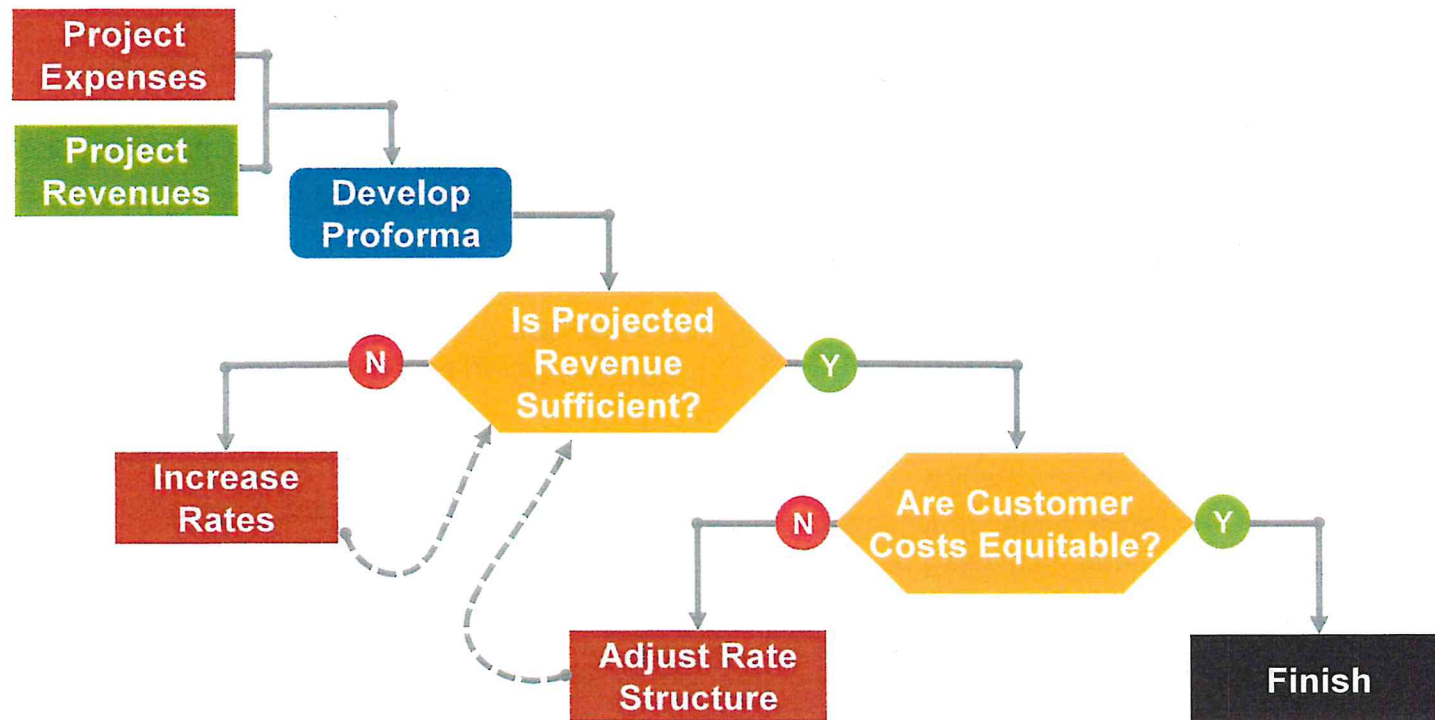
- Add costs of new plant to existing costs
- Estimate future revenue under existing connection fees and from future users
- Determine user cost impacts

### Connection Fee and Allocation Evaluation

- Review existing development fees
- Review capacity allocation policy

# RATE EVALUATION PROCESS

**REVISED**  
7-10-2020



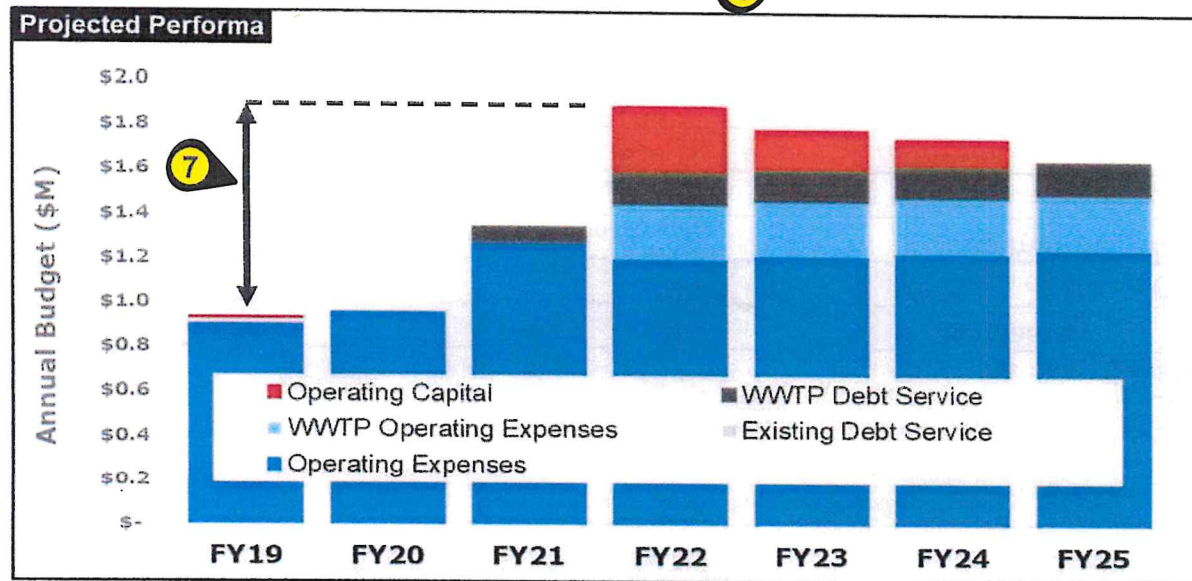
# PROJECTING EXPENSES

**REVISED**  
7-10-2020

## 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

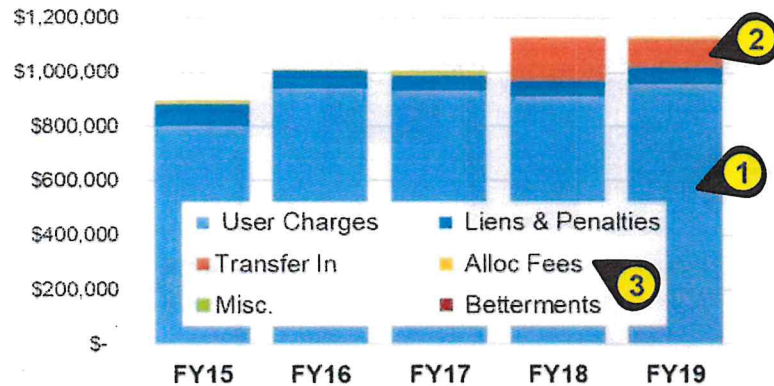
	Actual Values FY19	Actual Values FY20	Budget Values FY21	Projected Values FY22	Projected Values FY23	Projected Values FY24	Projected Values FY25
<b>Operating Expenses</b>							
Wareham - Operating	\$213,912	\$400,000	\$410,000	\$420,250	\$430,756	\$441,525	\$452,563
Personnel Services	\$170,024	\$108,494	\$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	\$32,814	\$105,375	\$108,009	\$110,710	\$113,477	\$116,314
Transfer Out (Reserve)	\$0	\$0	\$100,000	\$0	\$0	\$0	\$0
Supplies	\$12,661	\$8,715	\$20,028	\$20,616	\$21,223	\$21,851	\$22,498
<b>Subtotal</b>	<b>\$906,615</b>	<b>\$955,684</b>	<b>\$1,275,355</b>	<b>\$1,206,341</b>	<b>\$1,233,339</b>	<b>\$1,261,066</b>	<b>\$1,289,545</b>
Delta Previous	3.4%	0.0%	9.6%	-5.4%	2.2%	2.2%	2.3%
<b>Capital</b>							
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
<b>Subtotal</b>	<b>\$24,179</b>	<b>\$0</b>	<b>\$0</b>	<b>\$290,000</b>	<b>\$170,000</b>	<b>\$115,000</b>	<b>\$0</b>
<b>New WWTP</b>							
Operating Expenses	\$0	\$0	\$0	\$250,000	\$250,000	\$250,000	\$250,000
Debt Service	\$0	\$0	\$72,000	\$146,776	\$146,776	\$146,776	\$146,776
<b>Subtotal</b>	<b>\$0</b>	<b>\$0</b>	<b>\$72,000</b>	<b>\$396,776</b>	<b>\$396,776</b>	<b>\$396,776</b>	<b>\$396,776</b>
<b>TOTAL EXPENSES</b>	<b>\$930,794</b>	<b>\$955,684</b>	<b>\$1,347,355</b>	<b>\$1,893,117</b>	<b>\$1,800,115</b>	<b>\$1,772,843</b>	<b>\$1,686,321</b>





# PROJECTING REVENUE

## 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.

**REVISED**  
7-10-2020

## 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

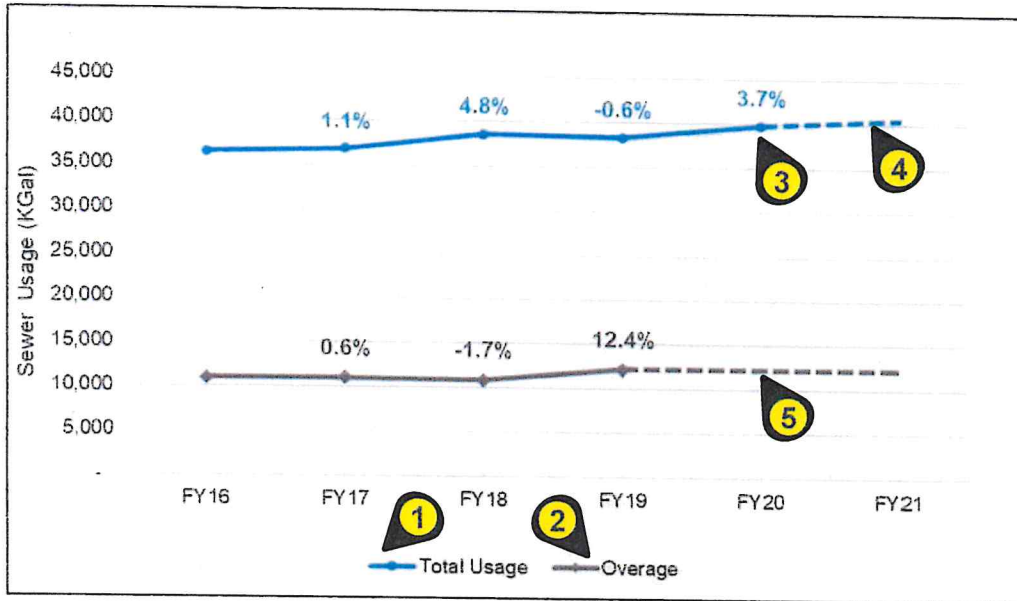
**Known:** Based upon data provided in application materials or estimated combined with estimated connection year.

**Projected:** Based upon planning level data

# PROJECTING REVENUE FROM USER CHARGES

## Usage Analysis – Existing Customers

**REVISED**  
7-10-2020



### 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

## Usage Analysis – Known Development

Development	Flow Year	Units	Allocated (gpd)	Expected Flow (gpd)
Hampton Inn	2020	108	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
<b>Total</b>				<b>78,490</b>

# PROJECTING REVENUE FROM DEVELOPMENT FEES

## FEE STRUCTURES

**REVISED**  
7-10-2020

### Existing Fee Structure

Fee	Amount and Basis
<b>Existing Fee Structure (as of 2006)</b>	
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.
<b>2017 Commercial Allocation Policy Fees</b>	
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
<b>Equals</b>	<b>667</b>	<b>ERU's</b>

##### 2. Determine ERU cost

Cost to be recovered	<u>\$2,400,000</u>		
Total ERU's	667		
<b>Equals</b>	<b>\$3,600</b>	<b>Per ERU</b>	



# 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		2006 Fee Structure	Grand Total	Total Billed	Total Remaining
					Application Fee	Preliminary Allocation Fee (calc)	System Development Charge			
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
<b>Total</b>				<b>78,490</b>	<b>\$22,500</b>	<b>\$264,514</b>	<b>\$478,379</b>	<b>\$765,394</b>	<b>\$144,488</b>	<b>\$537,757</b>

### 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

### 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
<b>Total</b>	<b>48,831</b>	<b>24,415</b>	<b>402</b>	<b>\$21,000</b>	<b>\$139,831</b>	<b>\$298,116</b>	<b>\$458,947</b>

# PROJECTING REVENUE FROM DEVELOPMENT FEES

## Proposed Fee Structure

**REVISED**  
7-10-2020

### 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/ 26 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
<b>Total</b>		<b>78,490</b>	<b>527</b>	<b>\$1,897,200</b>

### 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	\$ 561,408.00
	9,061	4,530	31	\$ 217,452.00
Undevelopable Commercial Land	684	342	3	\$ 16,413.60
	<b>48,831</b>	<b>24,415</b>	<b>170</b>	<b>\$1,171,937</b>



# DEVELOPMENT FEE SUMMARY

## Existing Fee Structure

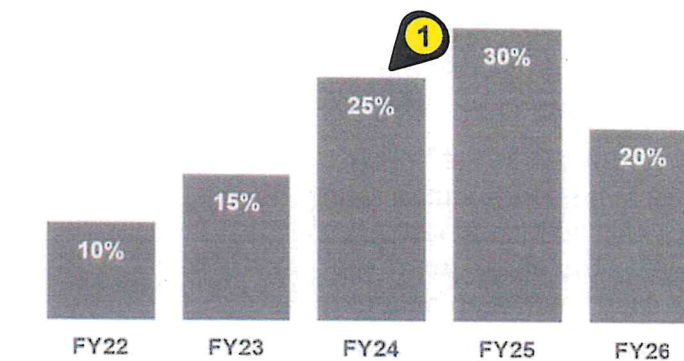
	Known	Projected	Total	Debt Service	Stabilization Balance
2020	\$ 144,488		\$ 144,488	\$ -	\$ 144,488
2021	\$ 211,408	\$ -	\$ 211,408	\$ 72,000	\$ 283,896
2022	\$ 133,767	\$ 45,895	\$ 179,662	\$ 148,981	\$ 314,577
2023	\$ 235,827	\$ 68,842	\$ 304,669	\$ 148,981	\$ 470,265
2024	\$ -	\$ 114,737	\$ 114,737	\$ 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)
<b>Total</b>	<b>\$ 725,490</b>	<b>\$ 458,947</b>	<b>\$ 1,184,437</b>		

## 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
<b>Total</b>	<b>\$ 2,041,688</b>	<b>\$ 612,000</b>	<b>\$ 2,653,688</b>		

### 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



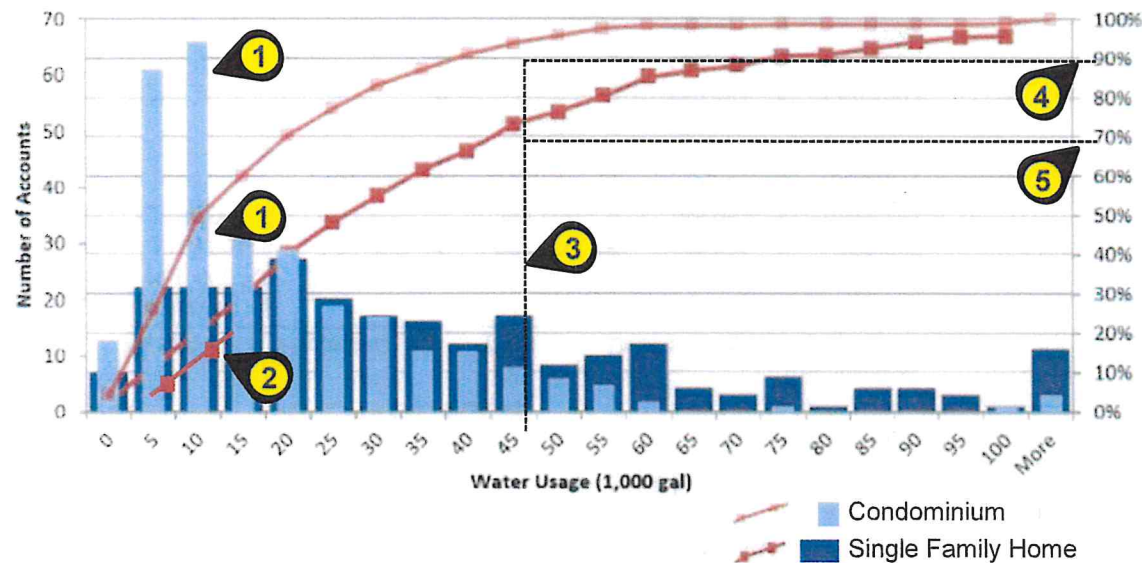
Assumed Projected Development Timeline

**REVISED**  
7-10-2020

# PROJECTING REVENUES – USER FEES

## Evaluation of Existing Fee Structure

### 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.

**REVISED**  
7-10-2020

### 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 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



# PROJECTING REVENUES – USER FEES

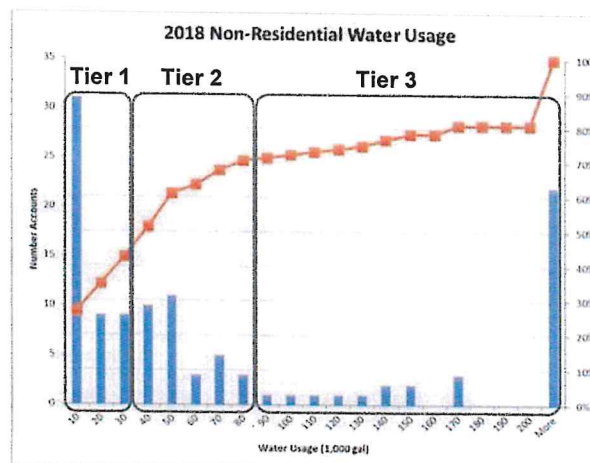
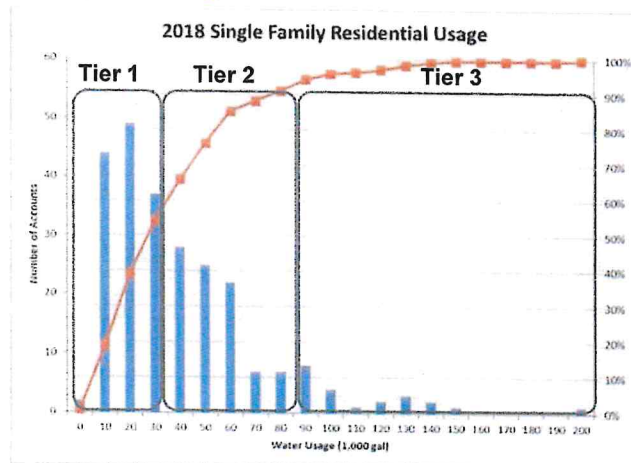
## Alternative Rate Structure Development

**REVISED**  
7-10-2020

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



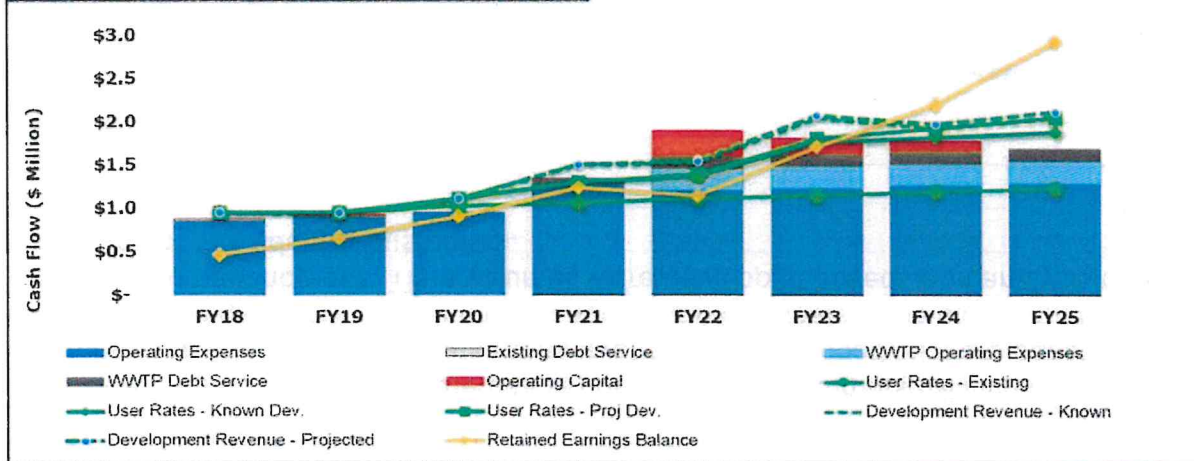
# RATE ALTERNATIVE A – STATUS QUO

## Existing Rate and Fee Structure (usage and development fees)

**REVISED**  
7-10-2020

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.	\$ -	\$ -	\$ 80,010	\$ 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	\$ 148,731
<b>Total Revenue</b>	<b>\$ 1,126,181</b>	<b>\$ 1,041,670</b>	<b>\$ 1,124,309</b>	<b>\$ 1,272,181</b>	<b>\$ 1,454,805</b>	<b>\$ 2,182,252</b>	<b>\$ 2,132,176</b>	<b>\$ 2,267,688</b>
Net Revenue (Revenue-Expenses)	\$ 35,189	\$ 198,486	\$ 241,503	\$ 333,992	\$ (94,358)	\$ 562,028	\$ 495,747	\$ 728,143
Retained Earnings Balance	\$486,478	\$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%

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



### 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.



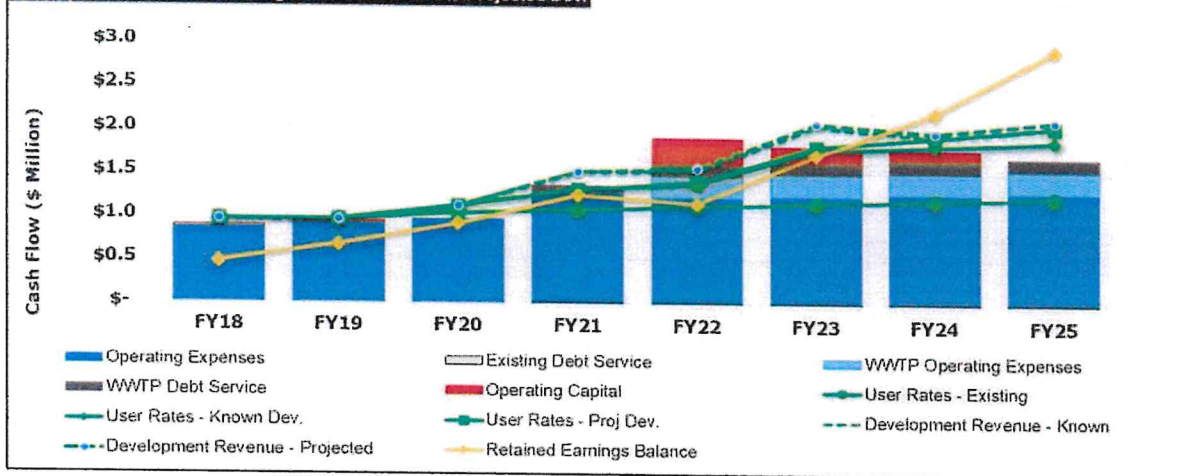
# RATE ALTERNATIVE B – NEW RATES & FEES

## ERU and Tiered Usage Rates with ERU Based Development Fees

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								
<b>TOTAL REVENUE</b>	<b>Total</b>	<b>\$ 1,129,280</b>	<b>\$ 1,184,202</b>	<b>\$ 1,911,131</b>	<b>\$ 1,674,888</b>	<b>\$ 3,100,002</b>	<b>\$ 1,815,883</b>	<b>\$ 1,963,048</b>
Net Revenue (Revenue-Expense)	\$ 257,284	\$ 190,486	\$ 228,510	\$ 635,776	\$ (71,453)	\$ 1,446,004	\$ 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	58%	73%	93%	120%	121%	235%	253%	281%

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



### User Rates

Category	Type	FY18	FY19	FY20	FY21	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

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	\$ -	\$ -	\$ -	\$ -

**REVISED**  
7-10-2020

### 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.

# 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

## 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



# RATE ALTERNATIVE A1 – STATUS QUO

## NO NEW DEVELOPMENT

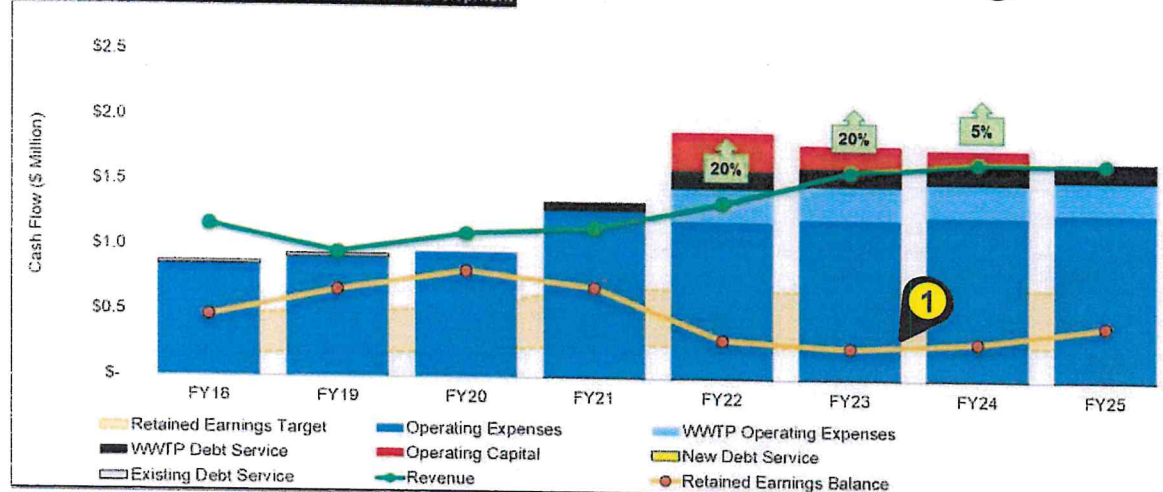
**REVISED**  
7-10-2020

	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
<b>Revenue</b>					20%	20%	5%	
Base Fee	\$ 804,285	\$ 958,947	\$ 911,875	\$ 953	1,144,045	1,372,654	1,441,496	1,441,496
Overage	\$ 367,052	\$ 116,100	\$ 116,100	\$ 116,100	\$ 116,100	\$ 116,100	\$ 116,100	\$ 116,100
Non-Rate Revenue	\$ 87,217	\$ -	\$ 77,182	\$ 80,066	\$ 93,433	\$ 109,450	\$ 114,255	\$ 114,255
<b>Total Revenue</b>	<b>\$ 1,171,337</b>	<b>\$ 958,947</b>	<b>\$ 1,105,156</b>	<b>\$ 1,149,556</b>	<b>\$ 1,353,578</b>	<b>\$ 1,598,403</b>	<b>\$ 1,671,851</b>	<b>\$ 1,671,851</b>
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								
<b>Net Revenue (Revenue-Expense)</b>	<b>\$ 299,761</b>	<b>\$ 28,153</b>	<b>\$ 149,472</b>	<b>\$ (125,799)</b>	<b>\$ (392,764)</b>	<b>\$ (54,935)</b>	<b>\$ 45,785</b>	<b>\$ 132,306</b>
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 Expense	55%	73%	85%	54%	25%	20%	23%	32%

### 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.

Schedule 1.5 Proforma - Exist Rate Structure - NO Development



### 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	\$ -



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

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



# RATE ALTERNATIVE B1 – NEW RATES

## NO NEW DEVELOPMENT

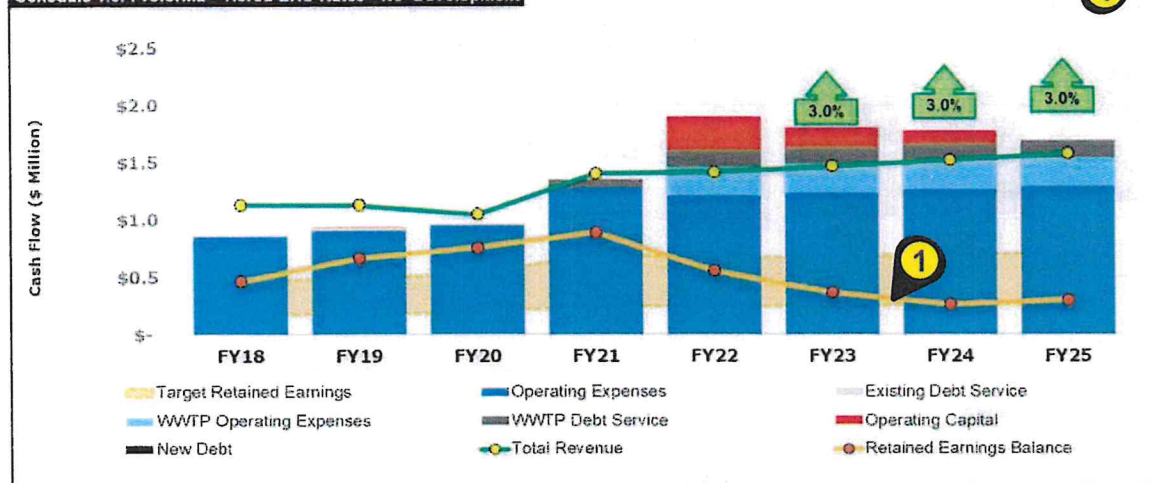
**REVISED**  
7-10-2020

Revenue	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
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	\$ 106,538	\$ 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								
<b>Total Revenue</b>	<b>\$ 1,131,860</b>	<b>\$ 1,129,758</b>	<b>\$ 1,047,174</b>	<b>\$ 1,403,814</b>	<b>\$ 1,413,586</b>	<b>\$ 1,466,105</b>	<b>\$ 1,520,718</b>	<b>\$ 1,577,515</b>
delta previous (Rate Revenue)		\$ 48,182	\$ 155,516	\$ (109,443)	\$ -	\$ 25,513	\$ 26,278	\$ 27,066
delta previous (Total Revenue)		\$ (2,102)	\$ (82,584)	\$ 356,639	\$ 8,773	\$ 62,518	\$ 54,613	\$ 56,797
<b>Net Revenue (Revenue-Expense)</b>	<b>\$ 257,284</b>	<b>\$ 198,964</b>	<b>\$ 91,491</b>	<b>\$ 128,459</b>	<b>\$ (332,755)</b>	<b>\$ (187,234)</b>	<b>\$ (105,349)</b>	<b>\$ 37,970</b>
Retained Earnings Balance	\$ 466,478	\$ 664,964	\$ 756,454	\$ 884,913	\$ 552,158	\$ 364,924	\$ 259,576	\$ 207,546
Retained Earnings as Percent of Operating Expense	55%	73%	79%	69%	46%	30%	21%	23%

### 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.

Schedule 1.3: Proforma - Tiered ERU Rates - No Development



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
Coverage	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

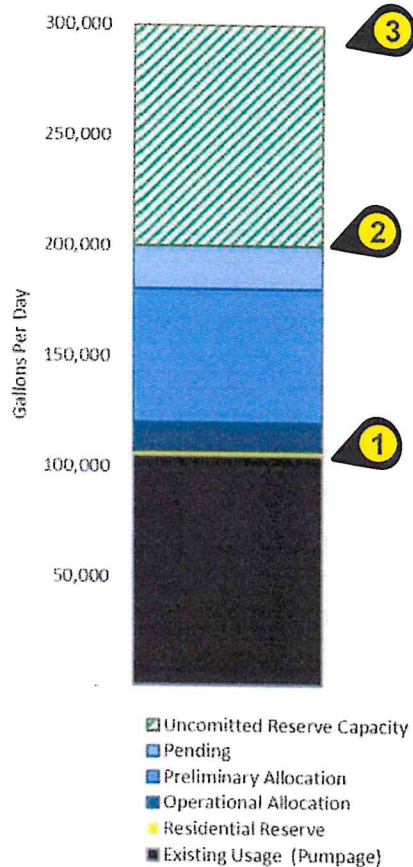
Scenario	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25
Alternative B1	\$ 776	\$ 826	\$ 1,060	\$ 1,212	\$ 1,334	\$ 1,574	\$ 1,605	\$ 1,605
Increase	\$ -	\$ 50	\$ 234	\$ 152	\$ 121	\$ 240	\$ 31	\$ -

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

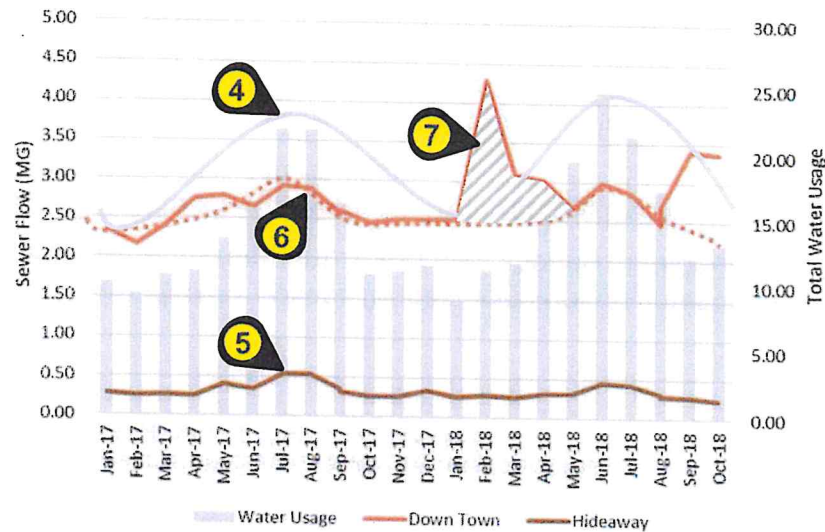
# CAPACITY MANAGEMENT AND FLOWS

**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 sewerage 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



# FINDINGS, CONCLUSIONS & RECOMMENDATIONS

## 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

**REVISED**  
7-10-2020

### Coastal Community Sewer Costs

Town	Cost
Scituate	\$563
Wareham	\$596
<b>Statewide Average</b>	<b>\$862</b>
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



Town of Bourne  
Board of Sewer Commissioners  
Commercial Wastewater Management Allocation Policy

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I. Purpose of these Policies and Procedures

The Town of Bourne (referred to herein as the Town), through an Inter-Municipal Agreement, may send up to 200,000 gallons per day (gpd) of wastewater for treatment and disposal to a plant owned by the Town of Wareham. Further, it is anticipated that another 100,000 gpd will be available for allocation when a new package treatment plant on the Town's Queen Sewell Park site becomes operational. The Board of Sewer Commissioners (referred to herein as the Board) controls the allocation of wastewater treatment capacity among parcels in the sewered areas of the Village of Buzzards Bay and assigns allocations on a parcel-by-parcel basis.

In order to follow an objective process for awarding wastewater allocations, the Board shall henceforth apply the following procedures for granting allocations from the Town's Uncommitted Reserve Capacity to development and re-development in Bourne's Downtown.

These policies and procedures are in effect primarily for commercial development; single-family residences and residential buildings with up to four units are exempt. The guideline for which properties/projects are required to follow these procedures is: if a development or a change of use requires review by the Bourne Planning Board, then it requires review by the Board of Sewer Commissioners using the policies and procedures described herein.

Further, in order to ensure that unused allocations will not prevent property owners and/or developers from coming forward with projects that may be in the long-term best interests of the Town, the Board hereby establishes a system of periodic reviews of allocations.

## II. Uncommitted Reserve Capacity

Annually, during the month of September, the Board shall determine the Uncommitted Reserve Capacity, as defined in Section VIII.

The Board shall grant allocations from the Uncommitted Reserve Capacity in a two-step process detailed below: Applicants shall obtain a Preliminary Allocation and, after meeting established Milestones, can request an Operational Allocation.

## III. Obtaining a Preliminary Allocation

A. The Applicant shall apply to the Board for a Preliminary Allocation on a form prescribed by the Board. A sample is appended to this policy statement. An Application Fee (Filing Fee) is due at the time the application is deemed complete and accepted (see Section VII).

B. If the application requests a flow amount that exceeds the Uncommitted Reserve Capacity (see draft application) but is otherwise complete, it will be dated and put on a waiting list. When allocation becomes available, the Board will consider requests on the waiting list in the order in which they were dated. If enough allocation is available and the application fee is paid, the project application will be deemed complete and accepted.

C. The Board shall review applications on a first come, first served basis within sixty days after the Application is deemed complete. If the requested allocation is available within the Uncommitted Reserve Capacity, the Board shall grant Preliminary Allocations to projects which:

- 1) Demonstrate evidence of adequate financing;
- 2) Demonstrate control of the project's parcels (*i.e.* Purchase and Sale agreement, evidence of ownership);
- 3) Have been presented to the Planning Board for preliminary project review;
- 4) Have Milestones established with the mutual agreement of the Board and the Applicant; and
- 5) Demonstrate that the requested allocation is based on state and local regulations.

D. If the Board grants a Preliminary Allocation, the Applicant shall have up to two years to initiate construction. A Preliminary Allocation Fee is due at the time the Board grants the Preliminary Allocation (see Section VII).

- 1) During the two years, the Applicant shall show substantial progress in regular six-month reports to the Board. The Board retains the right to revoke the Preliminary Allocation if the Applicant cannot demonstrate progress, although the Board may allow for the continuation or extension of a Preliminary Allocation in the case of delays not under the control of the Applicant. If the Preliminary Allocation is revoked, the allocation shall revert to the Town.

- 2) When the Board grants a Preliminary Allocation, the Applicant shall pay a Preliminary Allocation Fee as set forth in the Town's Schedule of Rates and Fees.
- 3) If the Board extends the Preliminary Allocation beyond the designated two-year period, the Applicant shall annually pay a Preliminary Allocation Extension Fee (see Section VII).

E. The Application Fee, the Preliminary Allocation Fee, and any Preliminary Allocation Extension Fees are non-refundable if the Preliminary Allocation is revoked by a majority vote of the Board.

F. After the Board's vote to grant a Preliminary Allocation, the Applicant shall be issued a letter signed by the Town Administrator certifying to the existence of a Preliminary Allocation for that specific project/parcel(s) and including any conditions imposed by the Board. Copies of the letter will be sent to the Town's Building Inspector, Health Agent and Planner.

#### IV. Obtaining an Operational Allocation

The Preliminary Allocation shall be converted to an Operational Allocation by vote of the Board when the project has been issued a Building Permit.

A. The Board may attach conditions and may reduce or increase the Allocation based on Massachusetts DEP regulations and final approved project design. Where capacity is reduced by Board action, the unused capacity shall revert to the Town.

B. After the Board's vote to convert the Preliminary Allocation to an Operational Allocation, the Applicant shall be issued a letter signed by the Town Administrator certifying to the existence of an Operational Allocation for that specific project/parcel(s) and including any conditions imposed by the Board. Copies of the letter will be sent to the Town's Building Inspector, Health Agent and Planner.

#### V. Managing Unused/Underused Allocations

A. Within six months of the adoption of this policy, the Board shall conduct a public hearing in order to review the Allocations made to parcels on which betterments have been paid but no development has occurred. At that hearing, parcel owners shall be invited to provide the Board with a report of their plans for development within the next two years.

- 1) If the parcel owner does not provide such a report, or if the parcel owner reports but has no acceptable plans for development in the next two years, the parcel will be considered as having no allocation.
- 2) If, at a future time, the parcel owner presents a development project, the owner shall go through the full application process as defined herein.

B. If a project with an Operational Allocation has no flow two (2) years after the date that the allocation was granted by the Board, it shall expire and revert to the



Town's Uncommitted Reserve Capacity. There shall be no refund of any fees paid on the reverted Allocation. The Board may grant extensions if it finds that the holder of the Allocation has been working diligently to implement the project and no relevant local or state approvals have expired.

C. When a project that has been granted its Operational Allocation is complete and has been online for three years, the Board shall compare actual flows against the amount granted in the Operational Allocation.

- 1) If the actual average daily flow exceeds the Allocation, the applicant shall apply for an Allocation equal to the difference, and shall pay the user fee assessed per gpd by the Town at that time.
- 2) If the actual average daily flow is less than the Allocation, the difference in gpd shall revert to the Town's Uncommitted Reserve Capacity unless the Applicant can demonstrate a continuing need. There shall be no refund of previously paid fees.

## **VI. Conversion of Existing Allocations**

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- A. At the time of the adoption of this policy, existing Allocations in functional facilities shall be considered Operational Allocations.
- B. Allocations that have been granted by vote of the Board to projects not complete at the time of the adoption of this policy shall be considered Preliminary Allocations. The developer or owner of such projects shall have six months to meet the requirements for a Preliminary Allocation as stated in Section III C. herein and to pay the Preliminary Allocation Fee described herein minus the amount of fees paid previously. When the requirements of Section III C. herein have been met, the procedures in Section III D-F herein shall apply.

## **VII. Fees**

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A. During the process of obtaining a Preliminary Allocation, the applicant shall be assessed fees as periodically established by the Board, which is hereby authorized to establish or amend wastewater allocation fees from time to time as follows:

- 1) Application Fee: due upon application for a Preliminary Allocation.
- 2) Preliminary Allocation Fee: due within 30 days of the Board's approval of the Preliminary Allocation. The fee shall be based upon the projected wastewater flow.
- 3) Preliminary Allocation Extension Fee: due within 30 days of the Board's vote to extend the Preliminary Allocation beyond the original two years and shall be paid annually for as long as the extension is continued.

B. When the allocation is converted to an Operational Allocation by vote of the Board, the applicant shall pay user fees as designated by the Board of Sewer Commissioners.



C. In cases where a Preliminary Allocation expires and a new person applies for capacity for the same project on the same site, the Board may consider previous fees paid by the original person when establishing fees for the new project.

## **VIII. Definitions**

The following words and phrases have the meanings below:

Actual Flow: the volume of wastewater from any individual unit (residential, commercial or institutional) connected to the sewers as measured by a certified water meter.

Allocation: a specified amount of wastewater treatment capacity measured in gallons per day (gpd) assigned to a specific project on a specific parcel or parcels upon a majority vote of the Board. All allocations to projects shall be based on state and local regulations. The transfer of all or part of an allocation is prohibited unless approved in writing by the Board.

Allocation Fee: a non-refundable fee established by the Board to be paid by the Applicant within 30 days of the time the Allocation, Preliminary or Operational, is voted.

Application: a form which shall be completed by the Applicant to request an allocation of wastewater management capacity from the Uncommitted Reserve Capacity. A sample form is attached to this policy statement. The Board may from time to time vote adjustments in the information requested on the form.

Application Fee (Filing Fee): a non-refundable one-time fee established by the Board to be paid at the time the Application is deemed complete and accepted. An application shall be deemed complete when it is date stamped and signed by the receiving Town official. Incomplete applications, including applications without the required fee, shall not be processed.

Board: the Bourne Board of Sewer Commissioners.

Development and re-development: the construction of improvements on a parcel or parcels of land for any purpose, including, but not limited to institutional, commercial and/or industrial activity.

Gpd: gallons per day

Milestones: goals set by mutual agreement between the Applicant and the Board to measure progress toward meeting the requirements to convert a Preliminary Allocation to an Operational Allocation. Some examples are: finalizing financing, demonstrating control of the parcel(s), receiving final order of conditions from the Planning Board, obtaining all required state and local permits.

Operational Allocation: an amount of wastewater treatment capacity in gallons per day assigned to a project by vote of the Board after the project has been issued a Building Permit. This may or may not be the same allocation amount as in the Preliminary Allocation depending on the parameters of the project, the availability of a different

amount of allocation, and the demonstration by the applicant that the project meets all state and local requirements for wastewater treatment. The Operational Allocation shall be reviewed after three years. Any excess of actual flows over the Operational Allocation shall not be available to the project, to another project, or to project expansion and shall be returned to the Town's Uncommitted Reserve Capacity.

Operational Allocation Fees: annual user fees as designated by Town regulations. The first Operational Allocation Fee shall be due within 30 days of the Board's vote to grant an Operational Allocation.

Preliminary Allocation: an amount of wastewater treatment capacity in gallons per day assigned for a period of two years to a project in its early stages of development. If all appropriate conditions to the project are met, this Preliminary Allocation assures the applicant that the required wastewater treatment capacity will be available when the project is ready for operations. As a condition for retaining the Preliminary Allocation, the Applicant must provide status reports to the Board every six months. The Preliminary Allocation shall be voided if the Applicant does not provide information for these periodic reviews or if the Board determines by majority vote that the mutually agreed upon Milestones are not met. The Board can extend a Preliminary Allocation beyond two years or convert a Preliminary Allocation to an Operational Allocation by majority vote.

Preliminary Allocation Fee: a non-refundable one-time fee based on the project's projected flow. This fee shall be due within 30 days of the Board's vote to grant a Preliminary Allocation.

Preliminary Allocation Extension Fee: a non-refundable fee paid at the time the Board votes to extend a Preliminary Allocation beyond the normal two-year period. This fee shall be due within 30 days of the Board's vote to extend and shall be paid annually for as long as the extension is continued.

Residential Reserve: two percent of the systems' designated treatment capacity held in reserve to allow expansion by existing single-family residences. This reserve is to be calculated annually as part of the determination of the Uncommitted Reserve Capacity.

Sewers: the wastewater treatment system.

Uncommitted Reserve Capacity: that portion of the wastewater systems' treatment capacity remaining after subtracting the Preliminary Allocations, the Operational Allocations, existing residential flow and the Residential Reserve from the systems' designated treatment capacity. This determination shall begin by comparing all allocations, Preliminary and Operational, with actual flows for the previous fiscal year, on a parcel or project basis. Parcel /project owners with significant differences between allocations and flows shall be requested to explain the difference and describe any changes expected in the next 12 months. The Board reserves the right to reduce the allocation for projects more than three years old demonstrating a significant excess of allocation over flow. In that case, the difference between the new and old allocations shall revert to the Town and be counted in the Uncommitted Reserve Capacity. (See page 3 for parcels with paid betterments and unused flow capacity.) The Board shall

determine the amount of the Uncommitted Reserve Capacity annually and designate such Uncommitted Reserve Capacity to be available for the next fiscal year.

User fees or sewer use fees: annual fees established by vote of the Board.

Waiting list: a list of applications where the requested allocation was not available but which are otherwise deemed complete. The list is stored with the dated applications.

Wastewater: used water discharged from buildings to the treatment plant and monitored on a continuing basis. Can be interchanged with "sewage."

**Attachments:**

Proposed Preliminary Commercial Allocation Application Form

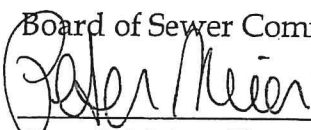
Flow chart

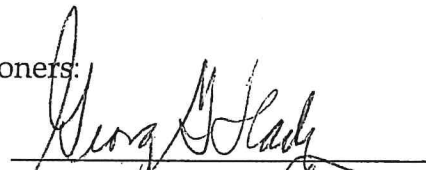
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**Certificate of Vote**

Adopted by vote of the Bourne Board of Sewer Commissioners Oct 4, 2017  
Date

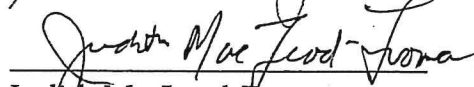
Board of Sewer Commissioners:

  
Peter J. Meier, Chair


  
George G. Slade, Jr. Vice Chair

  
Donald J. Pickard, Clerk

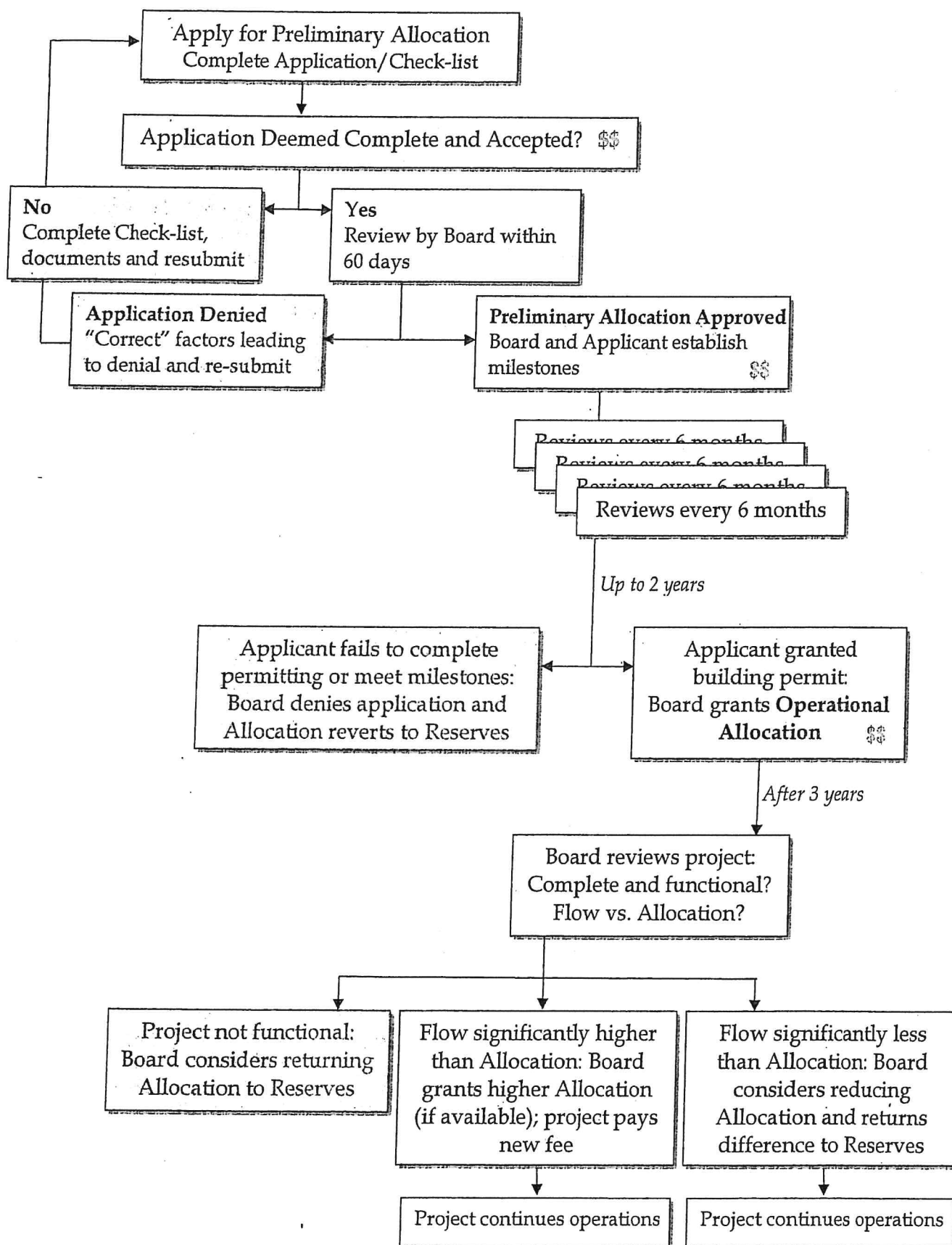
  
Michael A. Blanton

  
Judith MacLeod-Froman

A True Record

  
Barry Johnson, Town Clerk

## Flow Chart of Application Process for Wastewater Allocations





*Town of Bourne*

## Board of Sewer Commissioners



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### Allocation Process Fees

Application Fee (Filing Fee) (one-time): \$1,500

Preliminary Allocation Fee (one-time): \$5,000 plus \$1 per projected gallons per day flow

Preliminary Allocation Extension Fee (annual): \$2,500 plus \$1 per projected gallons per day flow

Operational Allocation Fees or sewer use fees: annual user fees defined by vote of the Board

### Certificate of Vote

Adopted by vote of the Bourne Board of Sewer Commissioners Sept 26, 2017 Date

Board of Sewer Commissioners:

Peter J. Meier  
Peter J. Meier, Chair

George G. Slade, Jr. Vice Chair

Donald J. Pickard, Clerk

Michael A. Blanton

Judith MacLeod-Froman

A True Record

Barry H. Johnson  
Barry Johnson, Town Clerk





**Town of Wareham  
Sewer Commissioners  
54 Marion Road Wareham Ma. 02571  
508-291-3100**

**POLICY NO:\_\_\_\_\_**

**SEWER CONNECTION FEES & APPLICATIONS**

All applications will be filed at the WPCF and all sewer connection fees will be collected at the WPCF.

The Board of Sewer Commissioners designate the WPCF as its agent for the purposes of issuing sewer connection permits & inspecting the completed work of the licensed drain layers who connect homes and businesses to the sewer laterals.

This policy shall take effect \_\_\_\_\_.

The design, review and construction fee for commercial sewer connections is **\$1500.00 effective April 1, 2007.**

The commercial/industrial sewer connection permit fee is **\$250.00 plus \$00.10 per sq. ft. of the base building effective April 1, 2007.**

For residential sewer connections there are no additional fees provided the Betterment Fees have been paid.

When Betterment Fees have not been paid a Development Fee will be assessed.

**CONNECTION FEES**

**BETTERMENT FEE:**

The cost per parcel/lot is based on the Total Cost of the project divided by the number of parcels/lots bettered. The fee can generally be added to the tax bill and spread over 20 years.

**DEVELOPMENT FEE:**

The cost per unbettered unit is equal to the amount of the most recent sewer betterment assessed. A development fee is due at the time of the connection.

3225 MAIN STREET • P.O. BOX 226  
BARNSTABLE, MASSACHUSETTS 02630

(508) 362-3828 • Fax (508) 362-3136 • [www.capecodcommission.org](http://www.capecodcommission.org)



CAPE COD  
COMMISSION

VIA ELECTRONIC MAIL

April 22, 2021

Anthony E. Schiavi, Town Administrator  
Town of Bourne  
24 Perry Avenue  
Buzzards Bay, MA 02532-3441

Re: Notice of Subsidy from the Cape Cod and Islands Water Protection Fund

Dear Mr. Schiavi:

The Cape Cod and Islands Water Protection Fund Management Board (Management Board), pursuant to its authority under M.G.L. c. 29C, §§ 19 and 20 and through the Cape Cod Commission, hereby notifies you that the Management Board, at its meeting on April 14, 2021, voted to approve final commitments for subsidies from the Cape Cod and Islands Water Protection Fund (CCIWPF) to fund Qualified Projects listed on the 2018 and 2019 Clean Water State Revolving Fund Intended Use Plans (IUP). These commitments represent a 25% subsidy for projects with a cost of greater than \$1,000,000 and a 50% subsidy for projects less than or equal to \$1,000,000. is commitment represents a 25% subsidy for projects with a cost of greater than \$1,000,000.

The Town of Bourne has a Qualified Project listed on the 2019 IUP, and has been awarded the following subsidy from the CCIWPF:

	IUP Year	Project Amount	Total Subsidy
Bourne (CWP-19-07)	2019	\$4,660,410	\$1,165,103

This subsidy is in addition to, not in place of, any financial assistance awarded under the Clean Water State Revolving Fund Program. Funds will be disbursed over a four-year period for projects on the 2018-2021 IUPs. The Cape Cod Commission will work with the MA Clean Water Trust on administration of subsidy awards and transfer of funds for disbursement to towns.

Please feel free to contact me with any questions.

Sincerely,

Kristy Senatori  
Executive Director



Cc:

Bud Dunham, Chair, Cape Cod and Islands Water Protection Fund Management Board

James Potter, Town of Bourne Selectman, Bourne Representative to the Cape Cod and Islands Water Protection Fund Management Board



## WAREHAM WATER POLLUTION CONTROL FACILITY

6 Tony's Lane  
Wareham, MA 02571  
Telephone (508) 295-6144  
Fax (508) 291-0155  
TTY (800)439-2370

February 16, 2021

Anthony E Schiavi,  
Town Administrator  
Town of Bourne  
24 Perry Street  
Buzzards Bay, MA 02532

Mr. Schiavi,

It was a pleasure speaking with you a couple of weeks ago. Enclosed please find the Fiscal Year 2022 proposed revenue and expense budget as well as a breakdown of the capital items that the Town of Bourne should be aware of. Also enclosed, is the map detailing the shared sewer infrastructure.

Should you have any questions or concerns, please don't hesitate to call.

Regards,

Guy Campinha, Director  
Wareham Water Pollution Control Facility

BOURNE BD OF SELECTMEN  
RCVD 2021 FEB 22 AM 10:42

WAREHAM SEWER ENTERPRISE FUND BUDGET					
REVENUE AND EXPENSE SUMMARY - FY 2022					
<b>REVENUE</b>				<b>2022</b>	
Rate Payer Revenue				5,963,382	
Septage/Grease				500,000	
Bourne IMA - Capital				188,478	
Bourne IMA - Operating				410,000	
Betterments Committed				996,382	
Betterment Reserves				285,498	
	<b>Total Revenue</b>			<b>8,343,740</b>	
<b>REVENUE REDUCTION</b>					
Direct/Indirect Costs				897,773	
Revenue Reduced by Direct/Indirect Costs				8,343,740	
	<b>Total Revenue After Internal Charges</b>			<b>7,445,967</b>	
<b>EXPENSES</b>					
Operations and Maintenance				3,744,638	
Capital Expenses				967,358	
Betterment Debt - Principal				1,089,523	
Betterment Debt - Long Term Interest				183,080	
Non-Betterment Debt - Principal				1,275,919	
Non-Betterment Debt - Long Term Interest				110,449	
Short Term Interest				75,000	
	<b>Total Expenses</b>			<b>7,445,967</b>	
	<b>Retained Earnings</b>			<b>0</b>	



## Capital Budget Purchases / Projects:

- Vacuum Unit- (Model 900Combination machine -\$430,000 State bid) with 72 miles of pipe to maintain and 3000 manholes, a combination unit is a critical piece of equipment for the sewer department. We are purchasing a unit that can be operated by one person with all the safety features that allows for single operation. This vehicle is able to run every day and earn its keep. A combination unit can jet rod (clean the line) and vacuum the debris at the same time. The sewer water will then be decanted back to the sewer line being cleaned, leaving the debris in the truck, allowing more productive time on the job site. Our previous unit has outlived its life span.
- Dump truck - (\$225,000 state bid) because we haul our grits and screenings to the Bourne landfill a dump truck is needed. Our 1991 dump no longer is in service. We have called DPW when they are available allowing the pile to collect on site. We will be able to haul in a timely manner thereby keeping the pile small and just as important, reduce potential odors at the plant.
- Pickup truck; (\$55,000 state bid) we have two pickup trucks that have rotten frames and can no longer be in service. We need to replace the units.
- SCADA repair – The Systems Control And Data Acquisition (\$200,000 hardware quotes) includes multiple (four) CPP units (CPU computers) throughout the plant. CPP 1 had a power surge (lightening) and caused damage to the CPP panel. We had it fixed using insurance funds. The technology and hardware is out dated and we will upgrade the system.
- Trash pump - (\$80,000 quotes) with the addition of three more basins at the plant it is economical to use trash pumps to move product around. We have one pump and we need a second pump. The pumps also move product to bypass pump stations if the pump station has pump failure. We have added bypass piping to 2 stations and doing our biggest and most essential now.

The funding for the above capital Items will come from the enterprise budget.



August 26, 2020

Mr. Derek Sullivan, Town Administrator  
Wareham Town Hall  
54 Marion Road  
Wareham, MA 02571

RE: Recommendation of Award for Equalization Basin 3 and 4  
Wareham WPCF  
GHD File No.: 11206142

Dear Mr. Sullivan,

The purpose of this letter is to provide a summary of the bids received for the above-referenced project. On August 25, 2020, general bids for this project were received and opened. Five (5) Bids were received for this project; the results of the bids are as follows:

Bidder	Total Bid Price
Robert B. Our Co.	\$1,698,025.77
Biszko Building Systems	\$1,944,000.00
WES Construction Corp.	\$2,180,000.00
Maverick Construction	\$2,274,200.00
C.C. Construction Inc.	\$2,379,000.00

Bidding documents were reviewed and no bid price discrepancies were found. GHD has significant experience working with Robert B. Our Co. and we therefore believe they have the experience and ability to perform the work. Therefore, as Robert B. Our Co. is the lowest responsive and responsible bidder, we have found no reason to not award the contract of the Equalization Basin No. 3 and 4 project to Robert B. Our Co.

Please call or email if you have any questions.

Sincerely,

**GHD Inc.**

Russell Kleekamp  
Sr. Project Manager  
RHK

Cc: Guy Campinha, Director, Wareham WCPF





**Town of Bourne / Town of Wareham shared sewer infrastructure (shaded area above):**

- 3 pump stations (Cohasset Narrows, Dick's Pond and Depot Street)
- Gravity and force mains from Cohasset Narrows to WPCF (approximately 4 miles of mains)
- Water Pollution Control Facility
- Cohasset Road to Rte 6 (From Hideaway Village)



# TOWN OF BOURNE

## Expenditure Budget Report

### 2022 Town Budget

442 - SEWERAGE COLLECTION & DISPOSAL								
Account	Description	2020 App	2020 Exp	2021 App	2021 Exp	Town Admin. Rec.	\$ Change	% Change
5100 - PERSONAL SERVICES								
5111	SALARIES - DEPT.HEADS	30,319.00	30,318.34	31,931.00	24,970.37		-31,931.00	-100.00%
5112	SALARIES - SUPERVISORS/ADM.SEC	55,843.00	59,834.69	61,632.00	30,713.51	55,108.00	-6,524.00	-10.58%
5116	SALARIES - LABORERS	68,893.00	68,992.66	70,959.00	33,219.87	127,029.00	56,070.00	79.01%
5117	WAGES - HOURLY EMP.(PERM)	0.00	549.76	0.00	1,319.65			0.00%
5130	OVERTIME - WAGES	30,000.00	20,168.55	30,000.00	21,512.62	30,000.00		0.00%
5141	LONGEVITY	2,787.00	2,748.10	2,858.00	2,918.11	1,583.00	-1,275.00	-44.61%
5190	INCENTIVE PAY	0.00	0.00	300.00		300.00		0.00%
	<b>Total</b>	187,842.00	182,612.10	197,680.00	114,654.13	214,020.00	16,340.00	8.26%
5200 - PURCHASE OF SERVICES								
5211	ENERGY - ELECTRICITY	7,500.00	7,845.36	8,500.00	5,942.23	8,500.00		0.00%
5213	ENERGY - OTHER FUELS	1,000.00	312.09	1,000.00	1,082.43	1,000.00		0.00%
5230	NON-ENERGY - WATER	600.00	616.95	750.00	367.50	750.00		0.00%
5240	R&M - BLDGS & GROUNDS	300.00	0.00	300.00		300.00		0.00%
5242	R&M - LIGHT TRUCKS	1,000.00	0.00	1,000.00		1,000.00		0.00%
5248	R&M - MACH.& EQUIP (BY OTHER)	80,000.00	50,301.49	30,000.00	24,117.35	27,500.00	-2,500.00	-8.33%
5273	RENTALS - HEAVY EQUIPMENT	1,500.00	0.00	2,500.00		2,200.00	-300.00	-12.00%
5274	RENTALS - UNIFORMS	1,100.00	309.77	550.00	213.27	550.00		0.00%
5304	SERVICES - CONSULTANTS	55,000.00	40,608.72	55,000.00	2,517.15	25,000.00	-30,000.00	-54.54%
5315	SERVICES-LEGAL,OUTSIDE COUNSEL	2,500.00	10,453.50	5,000.00		5,000.00		0.00%
5318	SERVICES-WASTE REMOVAL & DISPO	400,000.00	400,000.00	410,000.00	410,000.00	420,250.00	10,250.00	2.50%
5340	COMMUNICATIONS - TELEPHONE	2,000.00	1,321.34	2,000.00	793.68	2,000.00		0.00%
5341	COMMUNICATIONS - POSTAGE	1,000.00	372.50	900.00	745.22	900.00		0.00%
5342	COMMUNICATIONS - PRINTING	350.00	163.29	350.00		300.00	-50.00	-14.28%
5349	CONTRACTED SVCS-DECOMMISSION S	0.00	0.00	0.00				0.00%

# TOWN OF BOURNE

## Expenditure Budget Report

### 2022 Town Budget

442 - SEWERAGE COLLECTION & DISPOSAL								
Account	Description	2020 App	2020 Exp	2021 App	2021 Exp	Town Admin. Rec.	\$ Change	% Change
5200 - PURCHASE OF SERVICES								
5351	CONTRACTED SERVICES - O&M	0.00	0.00	0.00		256,000.00	256,000.00	100.00%
	<b>Total</b>	553,850.00	512,305.01	517,850.00	445,778.83	751,250.00	233,400.00	45.07%
5400 - SUPPLIES								
5420	OFFICE SUPPLIES - GENERAL	200.00	33.22	150.00	220.38	150.00		0.00%
5432	BLDG./EQUIP.SUPP.- TOOLS	4,500.00	3,704.11	5,000.00	751.63	5,000.00		0.00%
5450	CUSTODIAL SUPP. - CLEANING	25.00	0.00	25.00			-25.00	-100.00%
5451	HAZARDOUS MATERIAL EQUIP	5,000.00	0.00	4,000.00		4,000.00		0.00%
5481	VEH.SUPP.- DIESEL	2,500.00	2,496.46	3,500.00	1,449.50	3,500.00		0.00%
5482	VEH.SUPP.- OIL & LUBE	100.00	0.00	1.00			-1.00	-100.00%
5484	VEH.SUPP.- PARTS	2,500.00	320.71	2,500.00	12.47	2,500.00		0.00%
5485	VEH.SUPP.- REG,INSPECTIONS	350.00	95.00	350.00	110.00	350.00		0.00%
5584	OTHER SUPP.- PROTECTIVE CLOTH.	4,000.00	2,774.65	4,500.00	1,963.36	4,500.00		0.00%
	<b>Total</b>	19,175.00	9,424.15	20,026.00	4,507.34	20,000.00	-26.00	-0.12%
5700 - OTHER CHARGES AND EXPENDITURES								
5760	CAPITAL ASSESSMENT - TOWN OF W	188,478.00	188,477.53	188,478.00	188,477.53	188,478.00		0.00%
5781	LICENSE REIMBURSEMENT	375.00	0.00	375.00	239.00	375.00		0.00%
	<b>Total</b>	188,853.00	188,477.53	188,853.00	188,716.53	188,853.00		0.00%
5800 - CAPITAL OUTLAY								
5870	REPLACEMENT EQUIPMENT	105,000.00	42,249.71	105,000.00		90,000.00	-15,000.00	-14.28%
5871	NEW EQUIPMENT	5,000.00	0.00	5,000.00		5,000.00		0.00%
	<b>Total</b>	110,000.00	42,249.71	110,000.00		95,000.00	-15,000.00	-13.63%
5900 - PERMANENT DEBT SERVICE								
5910	PRINCIPAL LONG TERM DEBT	20,000.00	20,000.00	35,000.00		10,000.00	-25,000.00	-71.42%



# TOWN OF BOURNE

## Expenditure Budget Report

### 2022 Town Budget

442 - SEWERAGE COLLECTION & DISPOSAL								
Account	Description	2020 App	2020 Exp	2021 App	2021 Exp	Town Admin. Rec.	\$ Change	% Change
5900 - PERMANENT DEBT SERVICE								
5915	INTEREST-LONG-TERM DEBT	2,000.00	2,000.00	35,000.00	1,673.61	28,100.00	-6,900.00	-19.71%
5920	TEMPORARY INTEREST	2,000.00	0.00	2,000.00			-2,000.00	-100.00%
Total		24,000.00	22,000.00	72,000.00	1,673.61	38,100.00	-33,900.00	-47.08%
SEWERAGE COLLECTION &		1,083,720.00	957,068.50	1,106,409.00	755,330.44	1,307,223.00	200,814.00	18.15%

# TOWN OF BOURNE

## Expenditure Budget Report

### 2022 Town Budget

947 - MISCELLANEOUS								
Account	Description	2020 App	2020 Exp	2021 App	2021 Exp	Town Admin. Rec.	\$ Change	% Change
5700 - OTHER CHARGES AND EXPENDITURES								
5798	RESERVE FUND	50,000.00	0.00	100,000.00		50,000.00	-50,000.00	-50.00%
Total		50,000.00	0.00	100,000.00		50,000.00	-50,000.00	-50.00%
MISCELLANEOUS Total		50,000.00	0.00	100,000.00		50,000.00	-50,000.00	-50.00%

# TOWN OF BOURNE

## Expenditure Budget Report

### 2022 Town Budget

990 - TRANSFERS								
Account	Description	2020 App	2020 Exp	2021 App	2021 Exp	Town Admin. Rec.	\$ Change	% Change
<b>5961 - TRANSFER TO GENERAL FUND</b>								
9000	DIRECT EXPENSE	0.00	134,709.00	0.00	140,944.00			0.00%
	<b>Total</b>	0.00	134,709.00	0.00	140,944.00			0.00%
<b>5963 - TRANSFERS TO CAPITAL PROJECTS</b>								
9000	DIRECT EXPENSE	0.00	0.00	0.00				0.00%
	<b>Total</b>	0.00	0.00	0.00				0.00%
<b>5966 - TRANSFERS TO TRUST &amp; AGENCY</b>								
9000	DIRECT EXPENSE	0.00	30,000.00	0.00	30,000.00			0.00%
	<b>Total</b>	0.00	30,000.00	0.00	30,000.00			0.00%
<b>5967 - TRANS TO CAP PROJ GEN FD 30</b>								
9000	DIRECT EXPENSE	0.00	0.00	0.00				0.00%
	<b>Total</b>	0.00	0.00	0.00				0.00%
<b>5978 - TRANSFER FROM BOND PREMIUM</b>								
9000	DIRECT EXPENSE	0.00	0.00	0.00				0.00%
	<b>Total</b>	0.00	0.00	0.00				0.00%
<b>5980 - TRANSFERS OUT</b>								
9000	DIRECT EXPENSE	0.00	0.00	0.00				0.00%
	<b>Total</b>	0.00	0.00	0.00				0.00%
<b>5983 - TRANSFER FROM RET EARNINGS</b>								
9000	DIRECT EXPENSE	0.00	0.00	0.00				0.00%
	<b>Total</b>	0.00	0.00	0.00				0.00%
<b>5984 - TRANSFER FROM RESERVE FOR EXPE</b>								
9000	DIRECT EXPENSE	0.00	0.00	0.00				0.00%
	<b>Total</b>	0.00	0.00	0.00				0.00%

# TOWN OF BOURNE

## Expenditure Budget Report

### 2022 Town Budget

990 - TRANSFERS								
Account	Description	2020 App	2020 Exp	2021 App	2021 Exp	Town Admin. Rec.	\$ Change	% Change
TRANSFERS Total		0.00	164,709.00	0.00	170,944.00			0.00%

# TOWN OF BOURNE

## Expenditure Budget Report

### 2022 Town Budget

991 - TRANSFER TO GENERAL FUND								
Account	Description	2020 App	2020 Exp	2021 App	2021 Exp	Town Admin. Rec.	\$ Change	% Change
5920 - INTERFUND TRANSFERS								
5922	TRANSFER OF AVAILABLE FUNDS	0.00	0.00	0.00				0.00%
Total		0.00	0.00	0.00				0.00%
TRANSFER TO GENERAL FUND		0.00	0.00	0.00				0.00%
SEWER ENTERPRISE Total		1,133,720.00	1,121,777.50	1,206,409.00	926,274.44	1,357,223.00	150,814.00	12.50%



# Sewer Enterprise Fund

## Evaluating the Use of Retained Earning

Board of Selectman Meeting

April 6, 2021

# Current Status

- The overall FY22 SEF budget increased \$208k or 16.7% from FY21
- Largest contributor is the estimated/anticipated costs to pay for and operate/maintain the new WWTF
- NO new users being added to the system-costs increases fall to current users
- Factors are many-the pandemic, slowed economic growth, building cost increases
- Original FY22 SEF budget presented on 1/5/21 to the Board of Selectmen
- Our budgets should be structurally balanced-one time revenue use isn't sound fiscal management
- TA, Finance Team and BOS/BOSC constantly monitor the fiscal position of the SEF and make adjustments when solid information presents itself

# Current Status

- March 23, 2021 - the Board of Sewer Commissioners (BoSC) finalized and voted the SEF budget to be presented at Town meeting for approval
- The voted budget includes a budget increase of approximately \$158K or 11.7% over the prior year
- Retained earnings in the amount of \$50K will be used to supplement the budget (to offset the reserve fund)
- March 29, 2021 – the Finance Committee requested the BoSC consider using additional retained earnings (\$135K) to supplement the budget with the intent to reduce the cost to users

# Meeting Votes and Project Approval

- ATM 5/1/2017 Article #9-24 (\$335,000)
- STM 10/30/2017 Article #2 (\$6,558,000)
- STM 5/6/2019 Article #5 (\$2,800,000)

Total Project Cost  
Voted by Town Meeting

\$9,693,000

<u>Source</u>	<u>Amount</u>	<u>% of Total Project</u>
GF SRF Loan	\$ 2,260,409.75	
GF Borrow	<u>896,740.25</u>	
Subtotal GF	3,157,150.00	<b>32.57%</b>
Sewer Enterprise SRF	<u>2,400,000.00</u>	<b>24.76%</b>
Subtotal Town	5,557,150.00	
State Grant - Mass Works	1,800,000.00	
Federal Grant - EDA	<u>2,335,850.00</u>	
Subtotal Grants	<u>4,135,850.00</u>	<b>42.67%</b>
Total	<u><u>\$ 9,693,000.00</u></u>	



# What Are Retained Earnings?

Per the Municipal Finance Glossary issued by the MA Department of Revenue, retained earnings are an equity accounting reflecting the accumulated earnings of an enterprise fund that may be used to fund capital improvements, to reimburse the general fund for prior year subsidies, to reduce user charges and to provide for enterprise revenue deficits (operating loss).

Retained earnings are similar to General Fund Free Cash.

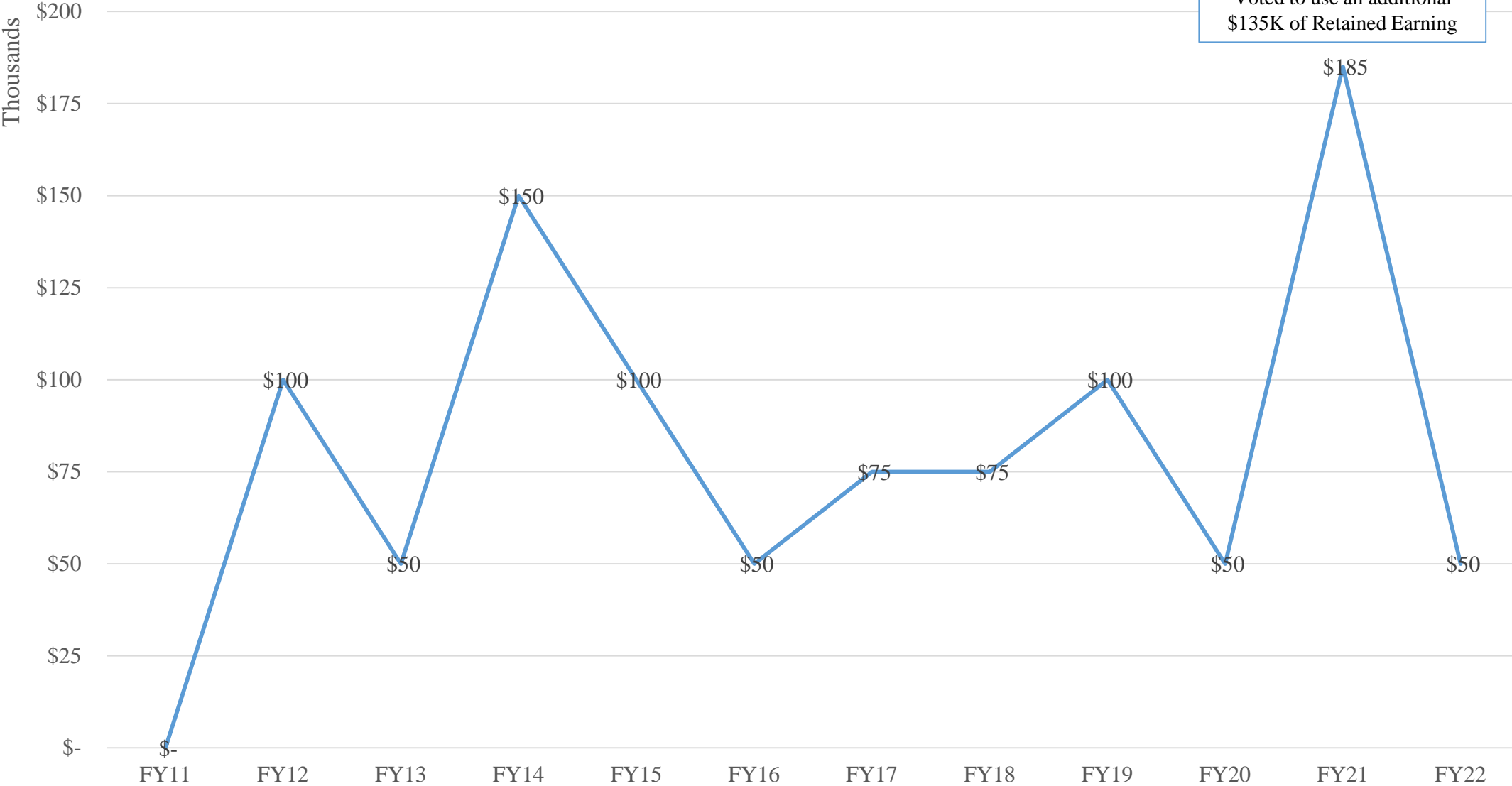
# Budget Use of Retained Earnings History

- RE have been used to supplement the operating budget and to discount the rates for many years
- These amounts have varied between \$50,000 and \$185,000 and represent significant portions of the budget
- The goal should be to eliminate the use of retained earnings to structurally balance the budget
- Reserves need to be maintained for future infrastructure improvements, and other one-time expenses

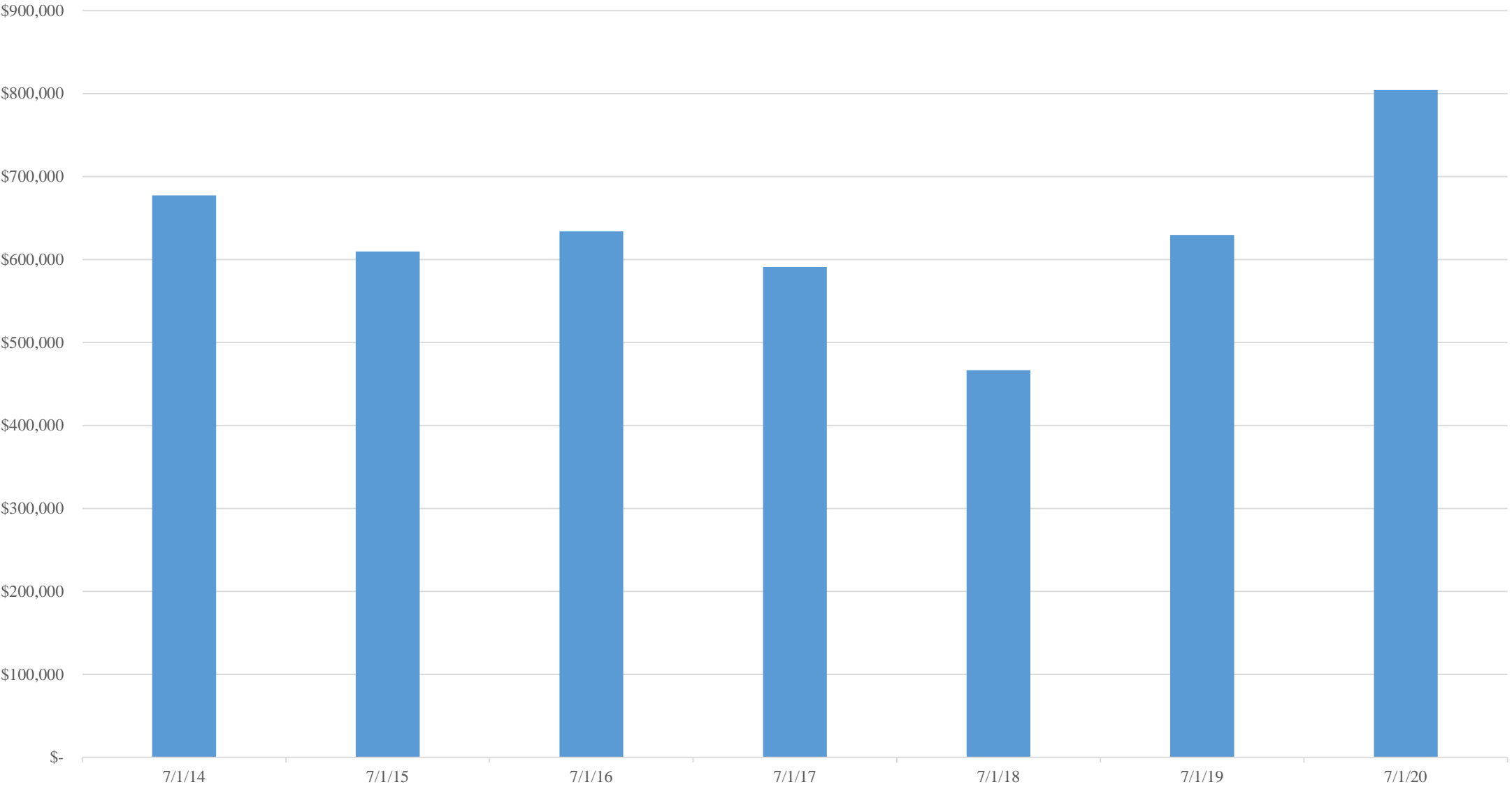
<b>Fiscal Year</b>	<b>Use of Retained Earnings</b>	<b>% of Budget</b>
FY22	\$ 50,000	3.32%
FY21	\$ 185,000	13.73%
FY20	\$ 50,000	3.94%
FY19	\$ 100,000	8.32%
FY18	\$ 75,000	6.78%
FY17	\$ 75,000	7.14%
FY16	\$ 50,000	4.89%
FY15	\$ 100,000	10.20%
FY14	\$ 150,000	14.97%
FY13	\$ 50,000	5.39%
FY12	\$ 100,000	10.27%
FY11	\$ -	-
	<u>\$ 985,000</u>	

# Budget Use of Retained Earnings

FTM 11/16/2020  
Voted to use an additional  
\$135K of Retained Earning



Certified Retained Earnings



# Current Fiscal Health

- Expenditures will continue to increase – plant operations plus debt service for project costs, Wareham plant improvements, etc.
- New committed overage will not generate enough revenue to cover the additional costs
- Significant revenue from system development fees is not expected (FY20 influx of \$140k+ was a one-time event)
- 35 Users left the system FY18-21 – new users are uncertain
- The fund is incurring costs for additional capacity without utilization



# Expense & Rate History

<b>Fiscal Year</b>	<b>Budgeted Expenses</b>	<b>Increase (Decrease) from PY</b>	<b>Annual User Rate</b>	<b>Increase (Decrease) from PY</b>
FY11	\$ 921,757		734.00	
FY12	\$ 973,543	5.62%	734.00	0.00%
FY13	\$ 927,233	-4.76%	734.00	0.00%
FY14	\$ 1,002,086	8.07%	734.00	0.00%
FY15	\$ 980,681	-2.14%	734.00	0.00%
FY16	\$ 1,021,660	4.18%	749.00	2.04%
FY17	\$ 1,050,101	2.78%	752.00	0.40%
FY18	\$ 1,106,279	5.35%	776.00	3.19%
FY19	\$ 1,202,255	8.68%	826.00	6.44%
FY20	\$ 1,269,079	5.56%	879.00	6.42%
FY21	\$ 1,347,355	6.17%	924.00	5.12%

Equal Rates from  
FY11 – FY15

\*\*\*Historically, expenses continue to increase more than the rate increase\*\*\*

# Transparent & Accurate Information is Essential in Making Sound Financial Decisions

- Finance Committee cautioned the use of RE at the FTM on 11/16/2020 – what has changed?
- Information presented to all committees needs to be the most accurate and up-to-date data available – revenue amounts and users were incorrectly stated in the Finance Committee's analysis
- It's not **common** practice for retained earnings to subsidize the operating budget – it's **allowable**
- Regional School District are governed by different laws & regulations – they are not really comparable to an enterprise fund – districts *must* use any E&D in excess of 5% of its operating budget for the succeeding fiscal years as a revenue source
- In most years, the increase in expenses has exceeded the increase in rates – rates were level from FY11-FY15
- Certified retained earnings have been greater than \$600K in most of the recent years-what's right number?
- C&I Water Protection Funds – Bourne's allotment has not been determined
- FY21 still has a quarter to go, we cannot assume the reserve fund or unspent budget lines will be available at 6/30
- Administration and DPW are tracking a number of forthcoming projects to address a neglected sys.
- Regardless of the amount of flow to Wareham – the fee is fixed, and increases 2.5%/Year

# What Happens if We Increase the Use of Retained Earnings to \$135K?

- The budget will continue the years long trend of structural imbalanced
- Rates will be artificially reduced by \$39.50/Bill (\$79 annually) vs. the current proposed budget – “If the BoSC considers this when adjusting the rates”
- Creates a dependency on retained earnings; eventually running out and the increase to the rates will spike
- \$135,000 is equal to 9% of the SEF FY22 Budget – this is significant
- It will take time to build this back

# Points to Consider Before Utilizing Retained Earnings to Supplement the Budget

- This is a one-time, non-recurring revenue source – future year rate increases will be drastic
- Expenses will continue to increase with the addition of debt authorized at town meeting (SRF will add approx. \$143K/year beginning in FY23)
- Current balances do not support future system improvements – our infrastructure is old; per the FY2020 audited financial statements, 75% of our assets are fully depreciated.
- There is no reserve policy in place - this needs to be established to avoid depletion
- How will the new plant affect the current system? Will costly fixes be needed?
- Sustainability of the fund – a deficit in retained earnings will put a burden on the general fund and effect other services – the general fund is already picking up a substantial portion of the cost of the new plant.
- Counting on General Fund Subsidies to the Sewer Enterprise Fund has real consequences for all of Bourne

# A Plan for the Future is Needed

- More time is needed to analyze actual and current information
- The Town should adopt a policy to govern the SEF. The policy should address the following:
  - Funding methodology (self-sufficient vs. requiring GF subsidy)
  - Retained earnings (desired levels, allowable uses)
  - Indirect Costs (defined and calculated according to indirect cost policy; reimbursed to GF)
- Utilization of retained earnings to reduce the rates is a short-term “feel-good” fix – it is not sustainable for rates to be offered at a perpetual discount



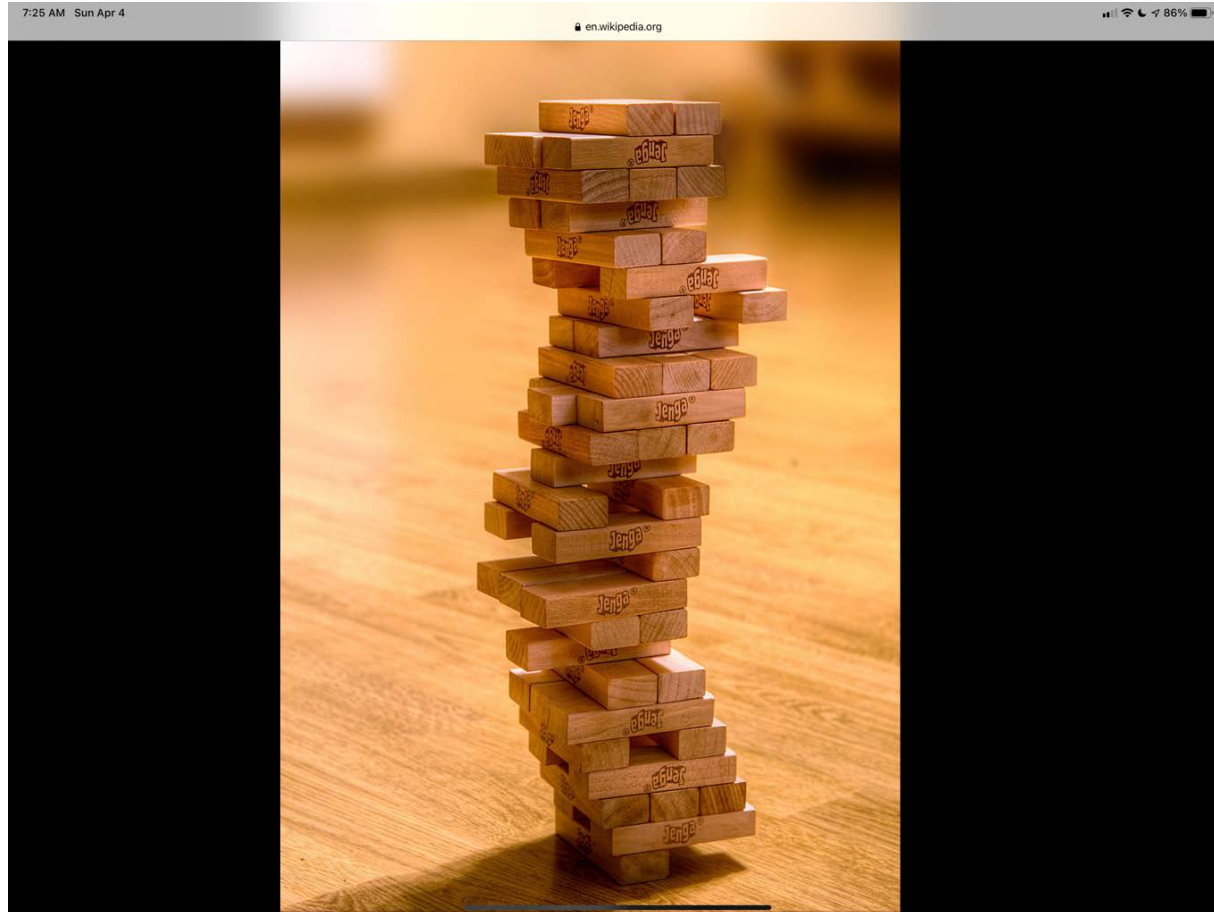
# Discounted Rates

Meeting	Rate	Discount From	
		Inc from PY	Retained Earnings
2021 Initial Rates (\$879/\$50K)	\$ 1,051	\$ 172	\$ 47
2021 Adjusted Rates (\$879/\$185K)	\$ 924	\$ 45	\$ 173
1/5/2021 TA Recommended Budget (\$924/\$50K)	\$ 1,423	\$ 499	\$ 47
3/23/2021 TA Revised Budget (\$924/\$50K)	\$ 1,207	\$ 283	\$ 47
3/29/2021 Finance Committee Budget Request (\$924/\$135K)	\$ 1,128	\$ 204	\$ 126

# Bottom Line

- Warning flags are front and center – ignoring them at our own peril is not a prudent course of action any longer
- Any plan built on speculation of outcomes, counting resources we don't have yet, maybes and HOPE that something may happen is a slippery slope

# Are we playing a game of Jenga with the Sewer Enterprise Fund?



# Recommendation

- The Board of Selectmen and Sewer Commissioners should adopt the Town Administrator's revised 3/23/21 revised Sewer Budget as the most prudent approach
- Continue to work on developing a long-term plan that will best serve not only the BB sewer district but the Town of Bourne

Questions?



**ARTICLE 2:** To see if the Town will vote to appropriate, transfer, or borrow a sum of money to continue the **future wastewater and treatment options** for the protection of human and environmental health and to enhance the economic development in Bourne, said funds to be used for administrative tasks, grant writing, environmental assistance, planning, constructing, originally equipping and furnishing of a Waste Water Facility and ancillary space on town-owned land, including the payments of all costs incidental and related thereto, or to take any action in relation thereto.

***Sponsor -Board of Sewer Commissioners***

**MOTION:** That the sum of Six Million Five Hundred Fifty-Eight Thousand Dollars (\$6,558,000.00) is appropriated to make various wastewater system and wastewater treatment improvements for the protection of human and environmental health and to enhance the economic development in Bourne, such funds to be used-for planning, constructing, originally equipping and furnishing a wastewater treatment facility and ancillary space on town-owned land, including the payment of all costs incidental and related thereto, and that to meet this appropriation, the Treasurer, with the approval of the Selectmen, is authorized to borrow said amount under and pursuant to Chapter 44, Section 8(14) of the General Laws, or pursuant to any other enabling authority, and to issue bonds or notes of the Town therefor; provided, however, that no sums shall be borrowed or expended pursuant to this motion unless and until the Selectmen shall have determined that sewer rates and charges have been established to pay all costs of operating and maintaining the Town's sewer enterprise, including the cost of any existing debt service currently payable from the sewer enterprise, and that sewer rates have been so established as to provide for the full payment in each year of debt service on Two Million Four Hundred Thousand Dollars (\$2,400,000) of bonds or notes issued pursuant to this vote. The amount authorized to be borrowed by this vote shall be reduced to the extent of any grants received by the Town on account of this project. Any premium received upon the sale of any bonds or notes approved by this vote, less any such premium applied to the payment of the costs of issuance of such bonds or notes, may be applied to the payment of costs approved by this vote in accordance with Chapter 44, Section 20 of the General Laws, thereby reducing the amount authorized to be borrowed to pay such costs by a like amount.

***VOTED: AYES 132; NAYS 24; declared a 2/3rds vote.***