

2786

October 11, 2022

Katie Phelps, Town Administrator  
Town of Boscawen  
116 North Main Street  
Boscawen, NH 03303

Re: *Sewer Rate Study Update 2022*  
*Town of Boscawen, New Hampshire*

Dear Ms. Phelps:

In accordance with our contract (ESR #61) with the Town of Boscawen, we have completed the sewer rate study update (copy attached). This study supersedes the previous sewer rate study updated by Underwood Engineers in 2017.

The goals of this study included:

- Review and update the existing rate model to incorporate updated consumption and financial data, as well as Boscawen's share of upcoming Concord WWTF CIP projects and Town sewer CIP projects.
- Provide rate increase and funding recommendations to support the O&M budget and CIP.

### ***Rate History***

A summary of recent rate history and information is as follows:

- Boscawen currently applies a consumption charge based on the water used, **\$8.64/100 CF**, with a minimum charge of \$51.84 per quarter for 600 CF/qtr.
- Historically, rates have changed eight times since 2005 as shown below.

	<b>Consumption Charge \$/100 CF</b>	<b>Minimum Charge per quarter</b>
2005, 1 <sup>st</sup> quarter	\$5.00	\$50.00
2005, 2 <sup>nd</sup> quarter	\$5.10	\$30.60
2007, 1 <sup>st</sup> quarter	\$5.00	\$30.00
2007, 3 <sup>rd</sup> quarter	\$4.90	\$29.40
2008, 3 <sup>rd</sup> quarter	\$4.80	\$29.40
2009, 2 <sup>nd</sup> quarter	\$4.70	\$29.40
2014, 1 <sup>st</sup> quarter	\$5.88	\$36.75
2015, 1 <sup>st</sup> quarter	\$7.20	\$43.20
2019, 3 <sup>rd</sup> quarter <sup>1</sup>	\$8.64	\$51.84

<sup>1</sup>Current rates per Select Board minutes dated 4/18/2019

User Summary (As of 2021)

- 417 customers are on the sewer system.
- 118 users used the minimum consumption (600 CF/qr.) or less in 2021. This is an increase from 82 users in 2019 and 75 users in 2020, but a decrease from 124 users in 2018.

***Inflow and Infiltration***

Average consumption and sewer metering of the Boscawen Metering Station (BMS) from 2019 to 2021 is summarized in Table 1. Consumption has decreased slightly from approximately 20,000,000 gal/year in previous years (2010-2016) to approximately 17,500,000 gal/year (2017-2021). Infiltration and inflow (I/I) is estimated by subtracting sanitary consumption records from total sanitary flows recorded at the Boscawen metering station. Actual I/I may be slightly higher since not all the consumed water ends up in the sewer system. For comparison purposes, we continue to assume 100% of the water consumption becomes sewer flow.

**Table 1. Historical Consumption and Sewer Metering**

Year	Consumption (gal.)	Boscawen Metering Station (gal.)	I/I (%)
2019	17,164,147	68,952,800	75%
2020	17,216,937	55,989,146	69%
2021	17,634,422	40,990,270	57%
<b>3 year avg.</b>	<b>17,338,502 (47,503 gpd)</b>	<b>55,310,739 (151,536 gpd)</b>	<b>69%</b>

Estimated I/I has fluctuated between 50% and 71% between 1999 and 2004, between 60% and 68% between 2013 and 2016, and between 57 and 75% between 2019 and 2021. I/I has been a prominent issue for the Town, as the Town is responsible for paying for all the flow measured at the Boscawen Metering Station, including I/I.

From 2019 to 2021, I/I made up approximately 69% of the water sent to the Penacook Wastewater Treatment Plant. This infiltration is considered excessive. Lowering the I/I would likely help lower the Town's costs for the treatment of wastewater. A 25% reduction in I/I (~9,500,000 gal/yr.) could result in a yearly savings up to approximately \$35,000. This is based on current Concord charges of approximately \$2.82 per 100 CF.

***Past Revenues and Expenses 2019 to 2021***

Recent operating expenses are summarized in Table 2. Revenues exceeded expenses in 2019 and 2020, and there was an apparent shortfall in 2021. However, UE notes that the last payment for 2020 was pushed over 2021, making 2020 look artificially low and 2021 artificially high. There was an overall positive net revenue for 2019-2021.





**Table 2. Past Revenues and Expenses**

<b>Year</b>	<b>Revenues</b>	<b>Operating Expenses</b>	<b>Net Revenue</b>
2019	\$247,509	\$186,452	\$63,057
2020	\$270,491	\$181,241	\$89,250
2021	\$262,599	\$344,350	(\$81,751)
<b>3-year avg.</b>	<b>\$260,200</b>	<b>\$237,348</b>	<b>\$22,852</b>

Currently, the General Fund contributes \$48,000 annually to the Sewer Fund for inflow. This was originally determined assuming 41% of BMS flow as inflow (consistent with the 2001 Sewer System Study Report). The average inflow transmitted to Concord was approximately 62,500 gpd (2011 - 2013) and the average Concord charge (2011 - 2013) was \$1.57/100 CF, resulting in an annual cost of \$48,000 to treat the water. In UE's 2017 report, UE recalculated this contribution using the original flow estimate of 41% and the 2014 - 2016 average Concord charge of \$2.33 per 100 CF. This resulted in a cost of \$75,000 per year to treat inflow. This contribution cost increase was recommended in the previous report, but never implemented. Using the 2019-2021 Concord charge of \$2.82 per 100 CF results in a cost of \$86,000 per year to treat inflow. The General Fund contribution for inflow is because inflow is due to storm events and treating stormwater can be considered the responsibility of the Town, not the sewer users only.

Additionally, the General Fund contributes to the debt service for the Gage Street and Penacook WWTF improvements, completed around 2005. The General Fund contribution is based on a percentage of the debt service (44% for Gage Street and 50% for the WWTF). In 2021, this resulted in a General Fund contribution of \$44,106.

### ***Projected Expenses***

Future revenue needs include ongoing O&M and continued debt service payments for Boscawen's share of the Penacook Wastewater Treatment Plant and the Gage Street sewer projects (2005). Needs also include Boscawen's share of anticipated Wastewater Treatment Facility Improvements, as well as Boscawen's planned Sewer Project 3&4. The assumptions used for projected revenues and expenses are summarized in Table 3.



**Table 3. Water Rate Model Assumptions**

Consumption	<ul style="list-style-type: none"> <li>• 49,000 gpd average based on avg. 2019-2021 billing</li> <li>• Minimum consumption = 600 CF/Qtr</li> </ul>
Inflow/Infiltration	<ul style="list-style-type: none"> <li>• I/I makes up a large portion of Boscawën's flow to the PWWTF. Approximately <b>69%</b> of the wastewater is from I/I</li> </ul>
Reserve Fund Balance	<ul style="list-style-type: none"> <li>• Fund Balance = \$637,922 as of December, 2021.</li> <li>• Ending reserve fund balance as of December 2027 is \$450k (50% of O&amp;M budget)</li> </ul>
Operating budget	<ul style="list-style-type: none"> <li>• Concord charges projected to be \$238,218 in 2022 based on the estimated budget provided by the City of Concord (40% increase since 2016). Concord O&amp;M estimated to increase 3% annually.</li> <li>• 0.21% interest rate on account balance</li> <li>• Sewer abatements were included in the operating budget</li> <li>• Boscawën system budget operating items increasing 3% annually</li> </ul>
General Fund (inflow)	<ul style="list-style-type: none"> <li>• General Fund contribution is currently \$48,000. An increase up to \$86,000 may be appropriate, increasing 3% annually. This is shown in rate Scenario 2.</li> </ul>
Debt Payments - Existing	<ul style="list-style-type: none"> <li>• <b>Penacook WWTF</b> improvements debt ends in 2032</li> <li>• 30% grant reimbursement from State</li> <li>• 50% of yearly payment comes from General Fund</li> <li>• <b>Gage St. Area Improvements</b> debt ends in 2031</li> <li>• 30% grant reimbursement from State</li> <li>• 44% of yearly payment comes from General Fund</li> </ul>
Debt Payments - Proposed	<ul style="list-style-type: none"> <li>• <b>\$8.2M Sewer Project #3&amp;4</b> debt estimated to begin in 2026 and end in 2055. A 30-year amortized loan with a 3.5% interest rate was assumed.</li> <li>• 15% estimated grant reimbursement from the State</li> <li>• General Fund Contributions may be appropriate and were assumed in rate Scenario 2.</li> </ul>
Capital Improvements Plan (CIP)	<ul style="list-style-type: none"> <li>• Concord: The Penacook WWTF is planning several improvements to the WWTF over the next few years, totaling ~\$4.9M between 2023-2027. Boscawën would be responsible for approximately \$1.8M (36.7%) of this amount.</li> <li>• Boscawën: Project 3&amp;4 was included. No other contributions were assumed.</li> </ul>





Boscawen's reserved capacity per day at the Penacook WWTF is 386,500 gallons, 968 pounds of TSS, and 726 pounds of BOD. Flow being the limiting factor, Boscawen is currently using 152,000 gpd (2019-2021 avg), or 39% of its available capacity. Therefore, Boscawen could charge up to 61% of the Concord CIP to the General Fund as was done for the Gage St. and Penacook WWTF bonds. This is because this portion is not currently being utilized by the existing users. Based on the average residential user, the available unused capacity at the Penacook WWTF would serve almost 2,000 additional residential units assuming no additional I/I.

### ***Concord Billing***

Concord billing is currently based on Boscawen's allocation at the Penacook WWTF per the 2005 Memorandum of Understanding with the City of Concord. The Concord charge has increased 80%, from the 2011 - 2013 estimate of \$1.57/100 CF to \$2.82/100 CF for the 2019-2021 estimate. UE noted significant increases in 2020 and 2021. Per the City, these increases are because the City is now sending residuals to Quebec for disposal, and due to wage and benefit increases for WWTF staff. While Boscawen Profit and Loss sheets show a 100% increase from 2020 to 2021, UE reviewed actual charges, and the last payment for 2020 was pushed over into 2021, making 2020 look artificially low and 2021 artificially high. Overall expenditures have still increased, however.

Similar to the 2019 Rate Review Technical Memo, UE reviewed Concord billing for 2019, 2020, and 2021, and projected Boscawen's share of Concord CIP items through 2032. UE utilized the Concord 'Long-Term Penacook Wastewater Plant Debt Outstanding Projected as of June 30, 2022' document (Attachment A) to calculate Boscawen's portion of existing debt. The '2023-2032 Capital Improvement Project Detail' (Attachment B) document for the Penacook WWTF was utilized to estimate Boscawen's share of proposed upcoming CIP projects. Boscawen's share was estimated at 36.7%, consistent with the 2005 Memorandum of Understanding. UE notes that upcoming CIP projects are only estimates for cost and year, so costs may or may not materialize exactly as shown in the model. Table 4 shows estimated debt payments including existing and proposed debt through June 30, 2032.



**Table 4. Projected Concord CIP P&I**

<b>Concord Fiscal Year</b>	<b>Dates</b>	<b>Total Concord P&amp;I</b>	<b>Estimated Boscawen Share of P&amp;I<sup>1,2</sup></b>
22	7/1/22 - 6/30/23	\$84,556	\$31,032
23	7/1/23 - 6/30/24	\$81,169	\$29,789
24	7/1/24 - 6/30/25	\$117,459	\$43,108
25	7/1/25 - 6/30/26	\$142,071	\$52,140
26	7/1/26 - 6/30/27	\$251,781	\$92,403
27	7/1/27 - 6/30/28	\$257,300	\$94,429
28	7/1/28 - 6/30/29	\$496,753	\$182,308
29	7/1/29 - 6/30/30	\$475,340	\$174,450
30	7/1/30 - 6/30/31	\$512,855	\$188,218
31	7/1/31 - 6/30/32	\$542,095	\$198,949

<sup>1</sup>Boscawen's share estimated at 36.7% ratio as described in the MOU

<sup>2</sup>FY22 P&I from PWWTP Estimated Budget & Debt Schedule

### ***Rate Evaluation***

Using the assumptions described previously in this report, UE reviewed 2022-2027 revenues, expenditures, and the fund balance while keeping user rates and other funding sources at their current level. This would result in a shortfall annually, and likely deplete the reserve fund balance before the end of 2026.

To help fund upcoming Concord CIP projects, as well as increases in O&M due to treatment changes and inflation, UE reviewed the following funding scenarios. UE notes that if or when Project 3&4 debt payments begin, this will have significant rate impacts. These should be reviewed once Project 3&4 is better defined, so needs through 2025 only are shown below.

- Scenario 1: Funding from Rate Increases Only
  - Assume the General Fund contribution remains steady at \$48,000 annually.
  - The following rate increases would fund the budget through 2025:
    - 2023: 30% increase
    - 2024: 5% increase
    - 2025: 5% increase
    - 2026 & 2027: increases TBD once project 3&4 is better defined
- Scenario 2: Funding from Rate Increases and Increased General Fund Contribution
  - Assume the General Fund contribution is increased to \$86,000 (proportionally to the increased Concord Charge), and increases 3% annually to keep pace with inflation.
  - The following rate increases would fund the budget through 2025:
    - 2023: 10% increase





- 2024: 5% increase
- 2025: 5% increase
- 2026 & 2027: increases TBD once project 3&4 is better defined
- Scenario 3: Funding from Rate Increases and Increased General Fund Contribution
  - Scenario 3 was requested by the Town
  - Assume the General Fund contribution is increased to \$65,000 annually
  - The following rate increases would fund the budget through 2025:
    - 2023: 20% increase
    - 2024: 5% increase
    - 2025: 5% increase
    - 2026 & 2027: increases TBD once project 3&4 is better defined

Tables 5, 6, and 7 show necessary changes in rates and General Fund contributions for each scenario.

**Table 5. Scenario 1**

	2022	2023	2024	2025
Rate increase (%)		30%	5%	5%
Consumption Charge (\$/100 CF)	\$8.64	\$11.23	\$11.79	\$12.38
Minimum Charge (\$/qtr.)	\$52	\$67	\$71	\$74
General Fund Contribution	\$48,000	\$48,000	\$48,000	\$48,000
Annual Res. Bill (Bos. EDU 118 GPD)	\$495	\$644	\$676	\$710
Annual Res. Bill (State Avg. 197 GPD) <sup>1</sup>	\$831	\$1,080	\$1,134	\$1,190
Reserve Fund Balance	\$598,000	\$616,000	\$628,000	\$638,000

<sup>1</sup>197 gpd per NHDES Water and Wastewater Rates Dashboard, last updated January 2021. The state average bill was \$766 as of January 2021.

**Table 6. Scenario 2**

	2022	2023	2024	2025
Rate increase (%)		10%	5%	5%
Consumption Charge (\$/100 CF)	\$8.64	\$9.50	\$9.98	\$10.48
Minimum Charge (\$/qtr.)	\$52	\$57	\$60	\$63
General Fund Contribution	\$48,000	\$85,920	\$88,498	\$91,153
Annual Res. Bill (Bos. EDU 118 GPD)	\$495	\$545	\$572	\$601
Annual Res. Bill (State Avg. 197 GPD) <sup>1</sup>	\$831	\$914	\$959	\$1,007
Reserve Fund Balance	\$598,000	\$613,000	\$622,000	\$629,000

<sup>1</sup>197 gpd per NHDES Water and Wastewater Rates Dashboard, last updated January 2021. The state average bill was \$766 as of January 2021.



**Table 7. Scenario 3**

	2022	2023	2024	2025
Rate increase (%)		20%	5%	5%
Consumption Charge (\$/100 CF)	\$8.64	\$10.37	\$10.89	\$11.43
Minimum Charge (\$/qtr.)	\$52	\$62	\$65	\$69
General Fund Contribution	\$48,000	\$65,000	\$65,000	\$65,000
Annual Res. Bill (Bos. EDU 118 GPD)	\$495	\$595	\$624	\$656
Annual Res. Bill (State Avg. 197 GPD) <sup>1</sup>	\$831	\$997	\$1,047	\$1,099
Reserve Fund Balance	\$598,000	\$612,000	\$619,000	\$623,000

<sup>1</sup>197 gpd per NHDES Water and Wastewater Rates Dashboard, last updated January 2021. The state average bill was \$766 as of January 2021.

### ***Conclusions and Recommendations***

- Coordinate with the City of Concord to obtain annual “Capital Improvement Project Detail” and “Long-Term Penacook Wastewater Debt Outstanding Projected” documents and update estimated 10-year debt schedule annually. Debt schedule estimates are more accurate in the short term, so it is important to update annually to better anticipate Concord debt charges. The Town should submit a written request to Concord for these documents.
- Rate increases as shown in Tables 5, 6 or 7 will be needed to support the budget and upcoming Concord CIP projects. A minimum rate increase of 10-30% is needed in 2023 to support the budget. Increases less than 30% require a General Fund contribution increase.
- UE recommends Scenario 2: 10% rate increase in 2023 with the General Fund contribution increased proportionally to the Concord Charge. 5% Rate increases are recommended for 2024 and 2025.
- UE notes that Boscawen rates are already slightly above the current state average.
- Consider including capital reserve contributions in the budget to maintain Boscawen assets and plan for future CIP projects.
- Keep enough funds in reserve to be able to cover 50% of the O&M budget for emergencies. This is separate from reserves designated for CIP.
- The Sewer Project 3&4 is in planning phases only, and actual bond costs will depend on the interest rate, whether additional grant money is available, and the actual construction cost. UE recommends reviewing the rate model at least every two years to make sure model assumptions are tracking, but especially once Project 3&4 costs are better defined, as this will impact rates. Note that as Penacook WWTP and Gage Street debt falls off, available funds could be used to help soften impacts of Project 3&4 debt. Additionally, a General Fund contribution of up to 61% to offset debt allocated to unused WWTF capacity could also be justified. This option can be explored further with regards to Project 3&4 once it is better defined.





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October 11, 2022

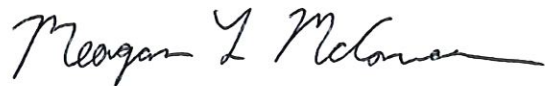
Please call if you have any questions.

Very truly yours,  
UNDERWOOD ENGINEERS, INC.



Keith A. Pratt, P.E.  
President

KAP/mlm



Meagan L. McCowan, P.E.  
Senior Project Engineer



## **Attachment A**



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## City of Concord, New Hampshire

*Long-Term Penacook Wastewater Plant Debt Outstanding Projected as of June 30, 2022*

### Aggregate Debt Service

Date	Principal	Interest	Total P+I
06/30/2022	-	-	-
06/30/2023	65,000.00	19,555.65	84,555.65
06/30/2024	64,000.00	17,169.26	81,169.26
06/30/2025	64,000.00	14,759.26	78,759.26
06/30/2026	64,000.00	12,330.51	76,330.51
06/30/2027	59,000.00	9,945.51	68,945.51
06/30/2028	57,650.00	7,655.26	65,305.26
06/30/2029	59,000.00	5,368.13	64,368.13
06/30/2030	29,000.00	3,555.00	32,555.00
06/30/2031	24,000.00	2,370.00	26,370.00
06/30/2032	19,000.00	1,310.00	20,310.00
06/30/2033	5,000.00	550.00	5,550.00
06/30/2034	5,000.00	400.00	5,400.00
06/30/2035	5,000.00	300.00	5,300.00
06/30/2036	5,000.00	200.00	5,200.00
06/30/2037	5,000.00	100.00	5,100.00
Total	\$529,650.00	\$95,568.58	\$625,218.58

### Par Amounts Of Selected Issues

December 18 2013 -Penacook Wastewater Treatment Renovations.....	195,000.00
August 11 2016 -Adv Ref Aug 15 08- Penacook WWTP I.....	33,650.00
January 25 2017 -Penacook WWTP- Structural /equipment improvements.....	140,000.00
October 28 2020 Tax-Exempt -Penacook Waste Water Treatment Plant.....	40,000.00
January 20 2022 -0466 Penacook Waste Water Treatment Plant FY22.....	121,000.00
<b>TOTAL.....</b>	<b>529,650.00</b>

## **Attachment B**



**2023-2032  
CAPITAL IMPROVEMENT  
PROJECT DETAIL**

PROJECT: GS-SEWER #466-Penacook Waste Water Treatment Plant Improvements

I. PROJECT TYPE: Sewer Treatment

II. LOCATION: 7 Penacook Street, Penacook

III. PROJECT OBJECTIVES AND BACKGROUND

NEED	<input checked="" type="checkbox"/> New	M	Safety	H	Facility Cond.	L	Productivity	
SERVED:	<input checked="" type="checkbox"/> Replace	L	Mandates	M	Service Def.	N/A	Tax Base Exp.	N/A City Master Pl.
	<input checked="" type="checkbox"/> Rebuild	L	O + M Costs	N/A	Council Goals	M	Timeliness	Sewer
	<input checked="" type="checkbox"/> Total-Cost-of-Ownership (TCO) or Life-cycle Cost (LCC) analysis							

DESCRIPTION: This project provides for the routine repair and maintenance of the Penacook Waste Water Treatment Plant.

The plant has been in operation since 1974. Major upgrades were completed in 2005.

The projects described herein are a series of improvements, upgrades and refurbishments of existing infrastructure.

SERVICE IMPACT: Routine repair and replacement of the plant's infrastructure provides short-term and long-term reliability, as well as ensures the facility is in compliance with various codes and regulations.

IMPACT IF NOT FUNDED: Potential for increased operating and maintenance costs over time; increased potential for costly emergency repairs; potential liabilities for failing to maintain the facility in accordance with applicable codes and regulations.

IV PREVIOUS FISCAL YEAR AUTHORIZED:

PREVIOUS AMOUNT: 0

V. PROJECT USEFUL LIFE (In Years): 15

Expected Bond Term (in Years)

VI. PROJECT FUND SUMMARY

Fund	Type	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Ten Years
Sewer	G.O. Bonds	430,000	310,000	1,317,500	147,500	2,720,000	225,000	600,000	520,000	300,000	0	6,570,000
Sewer	Capital Close-out	80,953	0	0	0	0	0	0	0	0	0	80,953
Sewer	Capital Transfer	0	0	0	0	0	20,000	0	0	0	0	20,000
	Total	510,953	310,000	1,317,500	147,500	2,720,000	245,000	600,000	520,000	300,000	0	6,670,953

**CITY OF CONCORD, NEW HAMPSHIRE**

# **SEWER RATE STUDY**

**FOR**

## **TOWN OF BOSCAWEN**

## **NEW HAMPSHIRE**

PREPARED BY:

UNDERWOOD ENGINEERS, INC.  
25 Vaughan Mall  
Portsmouth, NH 03801  
603-436-6192

**October 11, 2022**



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# 1. Notes

## Town of Boscawen, NH

Notes

## 2. REVISION INFORMATION

### Town of Boscawen, NH

Description of Revision		Made By:	Date:
1	Original rate model	KAP	January 31, 2005
2	Revised debt schedules	KAP	January 17, 2006
3	Updated rate model	KAP/JVF	December 30, 2014
4	Updated rate model	KAP/MLM	March 5, 2019
5	Updated rate model	MLM/KJC	October 6, 2022
6			
7			
8			
9			
10			



### 3. INSTRUCTIONS

#### Town of Boscawen, NH

The following are directions for use of this rate setting program.

- 1 Values should only be entered in cells that contain numbers... they are indicated as follows:

**12 Blue Text**



Yellow shading is critical to the rate setting

Information important to the table (i.e., the basis of a calculation) are highlighted as follows:



Blue shading

- 2 Confirm that the cell does not contain a formula before entering text or numbers.
- 3 The rate study is set up to enter baseline (existing) information first.
- 4 The second step is to enter projected information such as expenditures.
- 5 The last step is entering the proposed rates such that it meets proposed budgets (expenditures).  
Rates are sufficiently high if total of account balances is maintained.

## 4. SEWER ACCOUNT DATA

Town of Boscawen, NH

### 4.4 Account Data<sup>1</sup>

	2019	2020	2021
Charged by usage	315	323	299
Minimum charge	82	75	118
Total	397	398	417

**Notes:**

<sup>1</sup>Sewer account data per 5/10/22 email from Town

## 5A. WATER CONSUMPTION RECORDS

Town of Boscawen, NH

### Water Billing, Penacook-Boscawen Water Precinct (gallons)

	2017	2018	2019	2020	2021	3 YR AVG
Qtr 1, gallons <sup>1</sup>	4,109,624	3,367,212	4,169,277	4,182,001	4,177,700	4,176,326
Qtr 2, gallons <sup>1</sup>	4,516,895	3,252,282	3,959,314	3,773,361	4,269,554	4,000,743
Qtr 3, gallons <sup>1</sup>	5,071,605	5,925,454	4,069,943	4,697,732	4,452,807	4,406,827
Qtr 4, gallons <sup>1</sup>	5,198,869	5,025,004	4,559,808	5,022,439	4,693,251	4,758,499
<b>Total (estim), gal</b>	<b>18,896,993</b>	<b>17,569,952</b>	<b>16,758,342</b>	<b>17,675,532</b>	<b>17,593,312</b>	<b>17,342,395</b>
Total (estim), CF	2,526,336	2,348,924	2,240,420	2,363,039	2,352,047	2,318,502
<b>No. of Accounts, Total<sup>2</sup></b>	<b>389</b>	<b>410</b>	<b>397</b>	<b>398</b>	<b>417</b>	
No. of Accounts @ Minimum Usage <sup>2</sup>	79	124	82	75	118	
Est. annual consumption from minimum users (CF) <sup>3</sup>	189,600	297,600	196,800	180,000	283,200	
<b>Daily Avg, gpd</b>	<b>51,773</b>	<b>48,137</b>	<b>45,913</b>	<b>48,294</b>	<b>48,201</b>	<b>47,469</b>
<b>Daily Avg, gpd/EDU</b>	<b>133</b>	<b>117</b>	<b>116</b>	<b>121</b>	<b>116</b>	<b>118</b>
<b>Avg Consumption (gal)<sup>4</sup></b>	<b>20,148,035</b>	<b>18,233,472</b>	<b>17,164,147</b>	<b>17,216,937</b>	<b>17,634,422</b>	<b>17,338,502</b>
<b>Sewer Metering (gal)<sup>4,5</sup></b>			<b>68,952,800</b>	<b>55,989,146</b>	<b>40,990,270</b>	<b>55,310,739</b>
<b>I &amp; I (gal) (difference)</b>	<b>-</b>	<b>-</b>	<b>51,788,653</b>	<b>38,772,209</b>	<b>23,355,848</b>	<b>37,972,237</b>
<b>I &amp; I % of Wastewater Flow</b>	<b>-</b>	<b>-</b>	<b>75%</b>	<b>69%</b>	<b>57%</b>	<b>69%</b>

**Notes:**

<sup>1</sup> Water Consumption based on Calendar Year. Updated consumption per email from Nicole Hoyt dated 5/20/22.

<sup>2</sup> Updated accounts and accounts at minimum consumption per email from Nicole Hoyt dated 5/11/22.

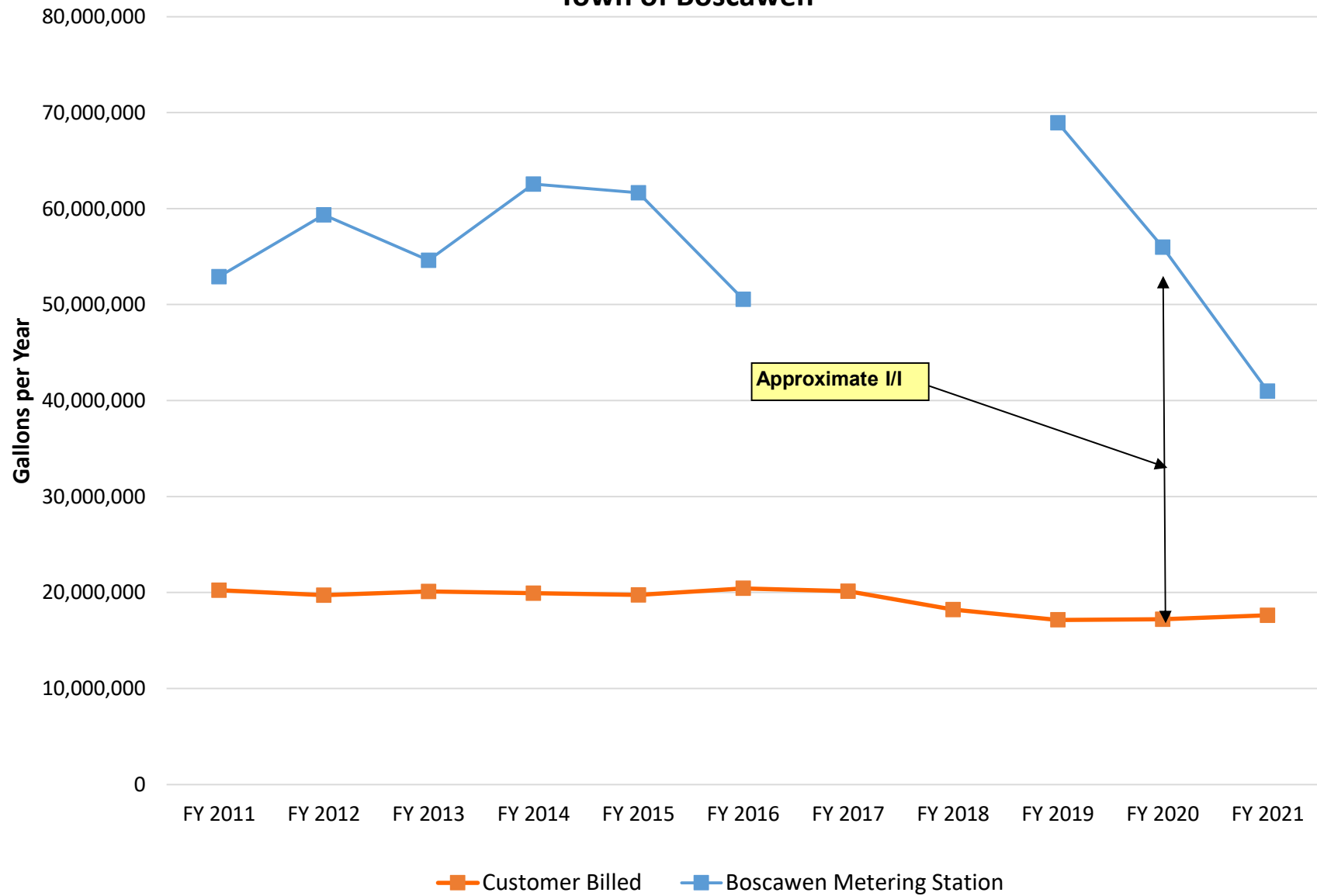
<sup>3</sup> Minimum consumption is 600 CF/Qtr./Account

<sup>4</sup> Consumption and Boscawen Meter Records adjusted to match Concord Fiscal Year (July 1 - Jun 31)

<sup>5</sup> Boscawen Metering Station flows corrected for Elm Street contribution (17,200 gpd x 365 days in accordance with the inter-municipal agreement).



## 5B. Wastewater Metered Flow and Billed Consumption Town of Boscawen



## 6. CURRENT SEWER RATE STRUCTURE

Town of Boscawen, NH

Charge	Description	Unit	Current Rates	Ratio	Notes
CONSUMPTION/USAGE CHARGES <sup>1</sup>					
	All services	\$/100 CF	<b>\$8.64</b>	Per 100 CF	
FIXED CHARGES <sup>1</sup>					
	Minimum charge	\$/Qtr.	<b>\$51.84</b>	per Qtr.	minimum is 600 CF
TYPICAL USER CHARGE					
<b>Typical Boscawen Consumer (average)</b> 118 gpd \$495.50 Total charge/year					
Rate comparison to Other Communities (annual) <sup>2,3</sup>					
	Boscawen	118	GPD/EDU	<b>\$495</b>	
	Concord	118	GPD/EDU	<b>\$383</b>	-29%
	Pembroke	118	GPD/EDU	<b>\$522</b>	5%
	Belmont	118	GPD/EDU	<b>\$229</b>	-116%
	Tilton	118	GPD/EDU	<b>\$342</b>	-45%
<b>Notes:</b> <sup>1</sup> Current rates per email from Nicole Hoyt dated 5/11/22. <sup>2</sup> Rate comparisons do not include costs that are covered by general taxation <sup>3</sup> Rate comparison last updated May 2022					

## 6A. RATE COMPARISON TO SIMILAR & SURROUNDING COMMUNITIES

Town of Boscawen, NH

Municipality	Annual Fixed Charge \$	Consumption Charge (\$/100 CF)	EDU (gpd)	Variable \$	Total Annual \$ <sup>1</sup>
<b>Boscawen</b>		\$8.64	118	\$497	<b>\$497</b>
Concord	\$104	\$4.85	118	\$279	<b>\$383</b>
Pembroke	\$180	\$5.93	118	\$342	<b>\$522</b>
Belmont	\$229		118	\$0	<b>\$229</b>
Tilton	\$140	\$3.50	118	\$202	<b>\$342</b>

**Notes:**

<sup>1</sup>Total Annual Charge is calculated based on the annual average Boscawen user (118 GPD)



## 7. PRIOR SEWER DEPT. REVENUES & ACCOUNT BALANCES

Town of Boscawen, NH

Description <sup>1</sup>	2017	2018	2019	2020	2021	3 YR AVG
Avg Sewer Rate (\$/100 CF)	\$7.20	\$7.20	\$7.92	\$8.64	\$8.64	\$8.40
Sewer Receipts <sup>2</sup>	\$168,182	\$186,962	\$188,784	\$212,814	\$210,902	\$204,166
General Fund - Income	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
User Connection Fees	\$0	\$1,500	\$0	\$3,000	\$2,250	\$1,750
Interest Earned	\$829	\$2,175	\$10,725	\$6,678	\$1,447	\$6,283
Other	\$0	\$1,202	\$0	\$0	\$0	\$0
Concord Refund						
<b>TOTAL</b>	<b>\$217,011</b>	<b>\$239,840</b>	<b>\$247,509</b>	<b>\$270,491</b>	<b>\$262,599</b>	<b>\$260,200</b>
Number of Accounts (from Table 2)	389	410	397	398	417	
End of Year Account Balance			\$593,515	\$684,994	\$637,922	

Notes:

<sup>1</sup> Revenues from Town of Boscawen Profit & Loss spreadsheets, account balances from Town of Boscawen, NH Annual Reports.

<sup>2</sup> Sewer Receipts include consumption fees, late fees and sewer abatements. Connection fees were separated out and shown separately.

## 8. PRIOR SEWER DEPT. EXPENDITURES

Town of Boscawen, NH

Item	Description <sup>1</sup>	2016	2017	2018	2019	2020	2021	3 YR AVG
	Total Concord Charges <sup>2</sup>	\$191,221	\$191,468	\$159,112	\$160,889	\$153,509	\$310,976	\$208,458
	Concord Refund <sup>3</sup>		(\$35,392)	(\$56,305)				
A	O&M Charge from Concord	\$170,313	\$136,728	\$81,641	\$134,020	\$126,640	\$281,754	\$180,805
B	Debt Charge from Concord	\$20,908	\$19,347	\$21,166	\$26,869	\$26,869	\$29,223	\$27,653
C	Electricity	\$1,032	\$1,066	\$1,643	\$1,161	\$1,985	\$1,575	\$1,574
D	Supplies / Maint.	\$0	\$145	\$0	\$435	\$111	\$140	\$229
E	Admin / Fees	\$210	\$0	\$0	\$0	\$0	\$0	\$0
F	Other / Misc.	\$1,797	\$0	\$0	\$0	\$0	\$0	\$0
G	Long Term Debt Principal	\$14,920	\$14,460	\$14,460	\$14,460	\$14,000	\$14,000	\$14,153
H	Long Term Debt Interest	\$9,254	\$8,806	\$8,228	\$7,794	\$7,505	\$6,945	\$7,415
I	Abatements	\$908	\$0	\$4,141	\$1,713	\$4,130	\$10,714	\$5,519
J	Bank Fees	\$0	\$0	\$34	\$0	\$0	\$0	\$0
K	Sewer Ordinance Fees	\$0	\$0	\$2,950	\$0	\$0	\$0	\$0
L	Contracted Services	\$0	\$7,554	\$1,046	\$0	\$0	\$0	\$0
	<b>TOTAL</b>	<b>\$219,341</b>	<b>\$188,108</b>	<b>\$135,309</b>	<b>\$186,452</b>	<b>\$181,241</b>	<b>\$344,350</b>	<b>\$237,348</b>
	General Fund - Income	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	
	<b>Expenses- Sewer Users<sup>4</sup></b>	<b>\$171,341</b>	<b>\$140,108</b>	<b>\$87,309</b>	<b>\$138,452</b>	<b>\$133,241</b>	<b>\$296,350</b>	

Notes:

<sup>1</sup> Expenditures and abatements from Town of Boscawen Profit & Loss spreadsheets

<sup>2</sup> The last payment to Concord for 2020 was pushed into 2021, making the 2020 Concord charge look low and the 2021 Concord charge look high. The three year average is correct, however.

<sup>3</sup> Total O&M charge from concord subtracts concord refund and separates out the debt portion, which is shown on line B.

<sup>4</sup> Expenditures for user paid portion only

## 9. Long Term Debt - Sewer Dept.

### Town of Boscawen, NH

General Obligation Bonds		2022	2023	2024	2025	2026	2027	2028
<u>Existing Debt</u>								
WWTF	P&I	\$46,510	\$45,270	\$43,030	\$41,530	\$41,030	\$39,480	\$37,930
Gage Street	P&I	\$44,780	\$42,580	\$41,420	\$39,970	\$38,520	\$37,070	\$35,620
<u>Upcoming Debt</u>								
Sewer Projects 3+4 (Amortized)	P&I					\$404,845	\$404,845	\$404,845
<b>TOTAL PRINCIPAL AND INTEREST</b>		<b>\$91,290</b>	<b>\$87,850</b>	<b>\$84,450</b>	<b>\$81,500</b>	<b>\$484,395</b>	<b>\$481,395</b>	<b>\$478,395</b>



10. CAPITAL IMPROVEMENT PROGRAM									
SEWER RATE STUDY, TOWN OF BOSCAWEN, NH									
Capital Project	Possible Funding Source	Staff Priority	Year						
			2022	2023	2024	2025	2026	2027	
Boscawen									
Sewer Projects #3 and 4							\$8,200,000		
Concord <sup>1</sup>									
Penacook Waste Water Treatment Plant Improvements				\$430,000	\$310,000	\$1,317,500	\$147,500	\$2,720,000	
Boscawen Subtotal (Collection System)			\$0	\$0	\$0	\$0	\$8,200,000	\$0	
Concord Subtotal (WWTF)			\$0	\$430,000	\$310,000	\$1,317,500	\$147,500	\$2,720,000	
TOTAL CIP (10-year)			\$13,125,000	\$0	\$430,000	\$310,000	\$1,317,500	\$8,347,500	\$2,720,000

Notes:

<sup>1</sup> Full Concord Project cost shown. Boscawen is only responsible for their portion of the costs based on the Memorandum of Understanding dated July 2005

# 11A. ESTIMATED DEBT SCHEDULE

Town of Boscawen, NH

Project: **Sewer Project #3&4**

Loan Origination Date (Est.):

**7/17/2025**

Project Cost:

**\$8,200,000**

Term (years):

**30**

No. of Payments:

**30**

Interest Rate:

**3.500%**

Amortization Calculation

Princ.	\$8,200,000
No. Payments	30
Interest	3.500%
Payment	\$445,845

Semiannual Payment Due	Principle Remaining	Payment			Grant Reimburse <sup>1</sup> <b>1,230,000</b>	Net Due
		Principal	Interest	Total		
<b>07/15/26</b>	\$8,200,000	\$273,333	\$287,000	\$560,333	\$41,000	\$519,333
07/15/27	\$7,926,667	\$273,333	\$277,433	\$550,767	\$41,000	\$509,767
07/15/28	\$7,653,333	\$273,333	\$267,867	\$541,200	\$41,000	\$500,200
07/15/29	\$7,380,000	\$273,333	\$258,300	\$531,633	\$41,000	\$490,633
07/15/30	\$7,106,667	\$273,333	\$248,733	\$522,067	\$41,000	\$481,067
07/15/31	\$6,833,333	\$273,333	\$239,167	\$512,500	\$41,000	\$471,500
07/15/32	\$6,560,000	\$273,333	\$229,600	\$502,933	\$41,000	\$461,933
07/15/33	\$6,286,667	\$273,333	\$220,033	\$493,367	\$41,000	\$452,367
07/15/34	\$6,013,333	\$273,333	\$210,467	\$483,800	\$41,000	\$442,800
07/15/35	\$5,740,000	\$273,333	\$200,900	\$474,233	\$41,000	\$433,233
07/15/36	\$5,466,667	\$273,333	\$191,333	\$464,667	\$41,000	\$423,667
07/15/37	\$5,193,333	\$273,333	\$181,767	\$455,100	\$41,000	\$414,100
07/15/38	\$4,920,000	\$273,333	\$172,200	\$445,533	\$41,000	\$404,533
07/15/39	\$4,646,667	\$273,333	\$162,633	\$435,967	\$41,000	\$394,967
07/15/40	\$4,373,333	\$273,333	\$153,067	\$426,400	\$41,000	\$385,400
07/15/41	\$4,100,000	\$273,333	\$143,500	\$416,833	\$41,000	\$375,833
07/15/42	\$3,826,667	\$273,333	\$133,933	\$407,267	\$41,000	\$366,267
07/15/43	\$3,553,333	\$273,333	\$124,367	\$397,700	\$41,000	\$356,700
07/15/44	\$3,280,000	\$273,333	\$114,800	\$388,133	\$41,000	\$347,133
07/15/45	\$3,006,667	\$273,333	\$105,233	\$378,567	\$41,000	\$337,567
07/15/46	\$2,733,333	\$273,333	\$95,667	\$369,000	\$41,000	\$328,000
07/15/47	\$2,460,000	\$273,333	\$86,100	\$359,433	\$41,000	\$318,433
07/15/48	\$2,186,667	\$273,333	\$76,533	\$349,867	\$41,000	\$308,867
07/15/49	\$1,913,333	\$273,333	\$66,967	\$340,300	\$41,000	\$299,300
07/15/50	\$1,640,000	\$273,333	\$57,400	\$330,733	\$41,000	\$289,733
07/15/51	\$1,366,667	\$273,333	\$47,833	\$321,167	\$41,000	\$280,167
07/15/52	\$1,093,333	\$273,333	\$38,267	\$311,600	\$41,000	\$270,600
07/15/53	\$820,000	\$273,333	\$28,700	\$302,033	\$41,000	\$261,033
07/15/54	\$546,667	\$273,333	\$19,133	\$292,467	\$41,000	\$251,467
07/15/55	\$273,333	\$273,333	\$9,567	\$282,900	\$41,000	\$241,900
		<b>\$8,200,000</b>	<b>\$4,448,500</b>	<b>\$12,648,500</b>	<b>\$1,230,000</b>	<b>\$11,418,500</b>

<sup>1</sup>\$1.23M grant reimbursement per 2022 NHDES Clean Water SRF Priority List

# 11B. ESTIMATED CONCORD DEBT SCHEDULE

Town of Boscawen, NH

## Total Estimated Debt Schedule

<b>FY</b>	<b>Date</b>	<b>Total P&amp;I</b>	<b>Estimated Boscawen P&amp;I<sup>1,2</sup></b>	<b>Increase from FY22</b>
22	7/1/22 - 6/30/23	\$84,556	\$31,032	
23	7/1/23 - 6/30/24	\$81,169	\$29,789	-\$1,243
24	7/1/24 - 6/30/25	\$117,459	\$43,108	\$12,076
25	7/1/25 - 6/30/26	\$142,071	\$52,140	\$21,108
26	7/1/26 - 6/30/27	\$251,781	\$92,403	\$61,372
27	7/1/27 - 6/30/28	\$257,300	\$94,429	\$63,397
28	7/1/28 - 6/30/29	\$496,753	\$182,308	\$151,276
29	7/1/29 - 6/30/30	\$475,340	\$174,450	\$143,418
30	7/1/30 - 6/30/31	\$512,855	\$188,218	\$157,186
31	7/1/31 - 6/30/32	\$542,095	\$198,949	\$167,917

<sup>1</sup>Used a 36.7% ratio as described in the MOU

<sup>2</sup>FY22 P&I from PWWTP Estimated Budget & Debt Schedule

## 12. PROJECTED SEWER DEPT. EXPENDITURES

### Town of Boscawen, NH

#### APPROXIMATE ANNUAL OPERATING BUDGET

Item	Description	3 YR AVG	Projected Increase	2022	2023	2024	2025	2026	2027
A	O&M Charge from Concord <sup>1</sup>	\$180,805	3%	\$238,218	\$243,642	\$250,951	\$258,480	\$266,234	\$274,221
B	Debt Charge from Concord	\$27,653	See 11b Concord Debt	\$31,032	\$29,789	\$43,108	\$52,140	\$92,403	\$94,429
C	Electricity	\$1,574	3%	\$1,574	\$1,621	\$1,669	\$1,720	\$1,771	\$1,824
D	Supplies / Maint.	\$229	3%	\$229	\$236	\$243	\$250	\$258	\$265
E	Admin / Fees	\$0	3%	\$0	\$0	\$0	\$0	\$0	\$0
F	Other / Misc.	\$0	3%	\$0	\$0	\$0	\$0	\$0	\$0
G	Long Term Debt Principal <sup>2</sup>	\$14,153	See 9. Debt schedule	\$91,290	\$87,850	\$84,450	\$81,500	\$484,395	\$481,395
H	Long Term Debt Interest <sup>2</sup>	\$7,415	See 9. Debt schedule	-	-	-	-	-	-
I	Abatements	\$5,519	0%	\$5,519	\$5,519	\$5,519	\$5,519	\$5,519	\$5,519
J	Bank Fees	\$0	0%	\$0	\$0	\$0	\$0	\$0	\$0
K	Sewer Ordinance Fees	\$0	0%	\$0	\$0	\$0	\$0	\$0	\$0
L	Contracted Services	\$0	0%	\$0	\$0	\$0	\$0	\$0	\$0
<b>TOTAL<sup>3</sup></b>			---	<b>\$367,862</b>	<b>\$368,657</b>	<b>\$385,940</b>	<b>\$399,609</b>	<b>\$850,581</b>	<b>\$857,654</b>
	Debt - Tax & Grant Contribution			\$69,979	\$67,365	\$64,633	\$62,360	\$60,880	\$58,567
	GF Contribution	\$48,000		\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
	Expenses - Sewer Users <sup>4</sup>	\$189,348		\$249,882	\$253,292	\$273,308	\$289,249	\$741,701	\$751,087

Notes:

<sup>1</sup> Used O&M Estimate from Concord's Penacook WWTP FY22 Estimated Budget

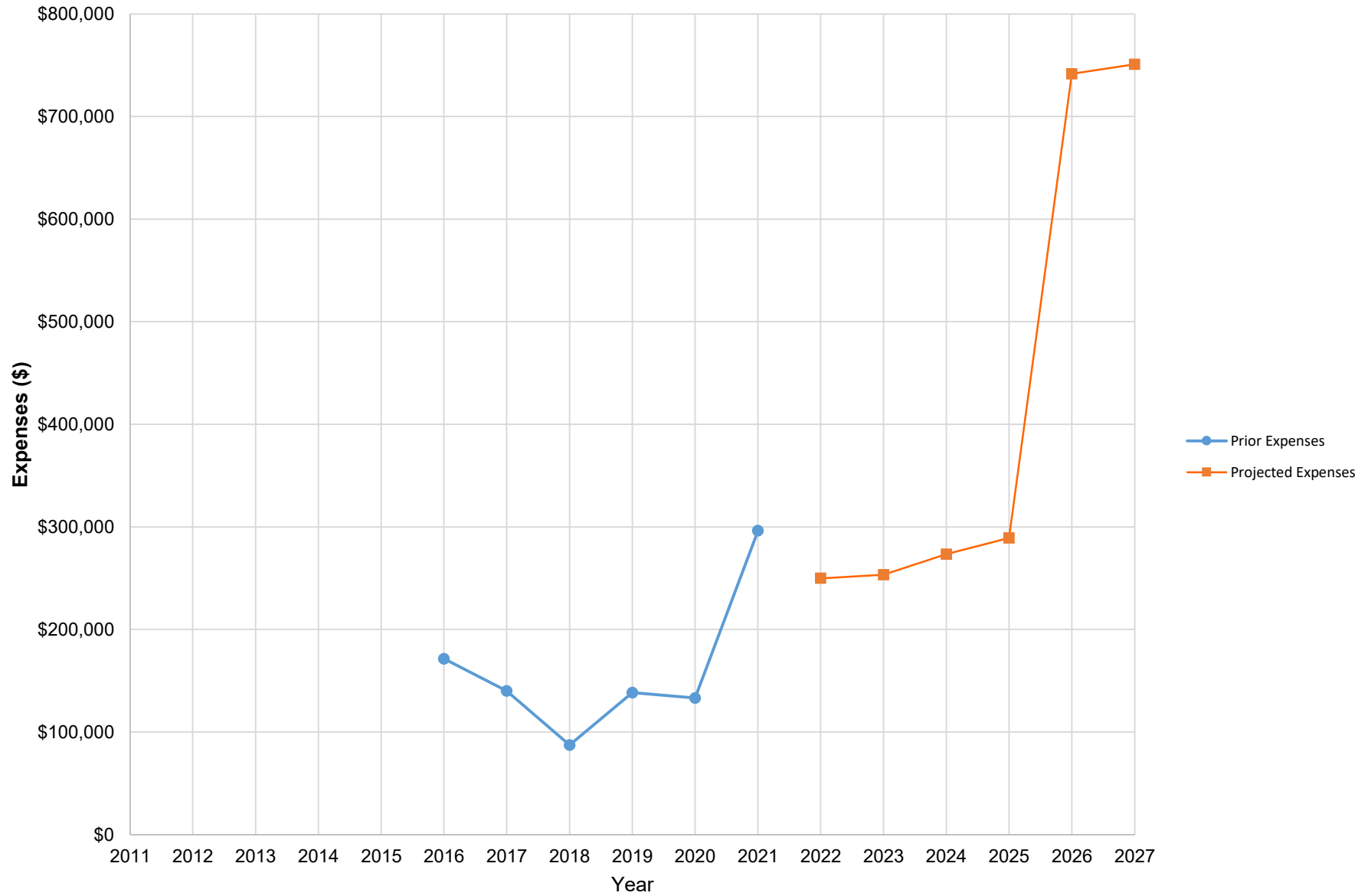
<sup>2</sup> Total WWTF and Gage Street debt payments are shown starting 2022 (see 9. Debt Schedule) which include grants and general fund contributions

<sup>3</sup> Budgets for 2026 and 2027 are shown using a projection for Sewer Project 3&4. These should not be considered until Project 3&4 is better defined.

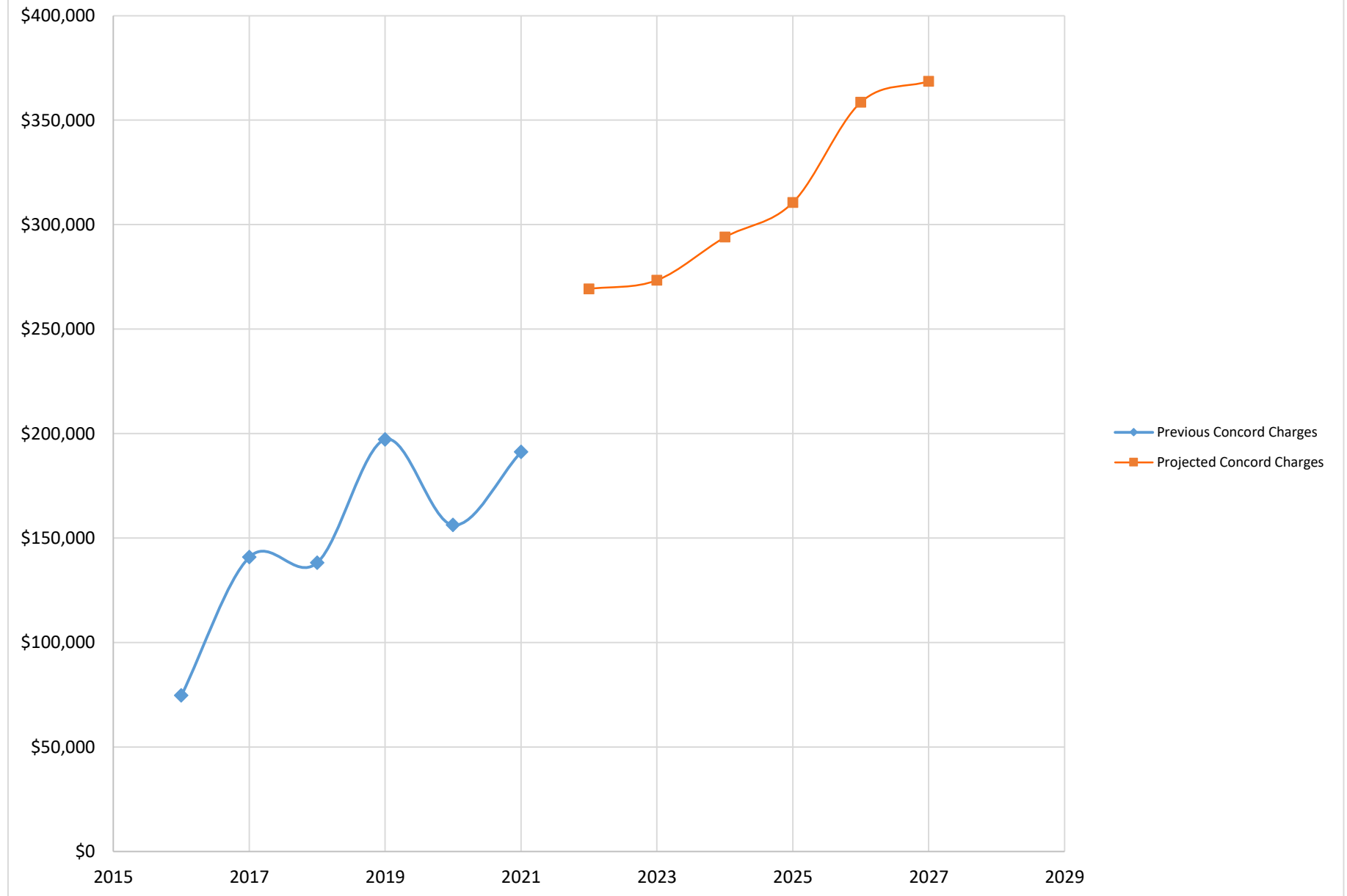
<sup>4</sup> Expenditures for user paid portion only



### 12A. Sewer Department Expenditures (User Paid Portion Only) Town of Boscawen



## 12B. Concord Charges 2017-2027



### 13. CURRENT RATES AND PROJECTED REVENUES

Town of Boscawen, NH

Description	Actual 2021	Projected 2022	2023	2024	2025	2026	2027
1 Rate (\$/100 CF)	\$8.64	\$8.64	\$8.64	\$8.64	\$8.64	\$8.64	\$8.64
2 No. of Accounts	417	417	417	417	417	417	417
3 Minimum Usage (CF / Qtr / Account)	600	600	600	600	600	600	600
4 No. of Accounts, Minimum Usage	118	118	118	118	118	118	118
5 Minimum Consumption (estimated), CF/yr	283,200	283,200	283,200	283,200	283,200	283,200	283,200
6 Other Consumption, CF	2,068,847	2,108,272	2,108,272	2,108,272	2,108,272	2,108,272	2,108,272
7 Total Consumption, CF	2,352,047	2,391,472	2,391,472	2,391,472	2,391,472	2,391,472	2,391,472
<b>Water Rents / Usage Fees</b>							
8 Minimum Account Charge, \$/yr <sup>1</sup>	\$207	\$207	\$207	\$207	\$207	\$207	\$207
9 Projected Revenue, Min Use Accts	\$24,468	\$24,468	\$24,468	\$24,468	\$24,468	\$24,468	\$24,468
10 Projected Revenue, Other Accts	\$186,433	\$182,155	\$182,155	\$182,155	\$182,155	\$182,155	\$182,155
11 Projected Revenues, Water Rents	\$210,902	\$206,623	\$206,623	\$206,623	\$206,623	\$206,623	\$206,623
<b>Interest on Sewer Fund Deposit:</b>							
12 Reserve Account Balance on Jan 1 <sup>2</sup>	\$684,994	\$637,922	\$597,760	\$554,105	\$490,341	\$410,501	(\$121,959)
13 Interest Rate	0.21%	0.21%	0.21%	0.21%	0.21%	0.21%	0.21%
Projected Revenue, Interest	\$1,447	\$1,348	\$1,263	\$1,171	\$1,036	\$867	\$0
<b>Other Income:</b>							
14 General Fund Contribution	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
15 Capital Reserve Fund Contribution							
16 User Connection Fees	\$1,750	\$1,750	\$1,750	\$1,750	\$1,750	\$1,750	\$1,750
17 General Fund WWTF (Tax rate) - 50%	\$23,875	\$23,255	\$22,635	\$21,515	\$20,765	\$20,515	\$19,740
18 General Fund Gage (Tax rate) - 44%	\$20,231	\$19,703	\$18,735	\$18,225	\$17,587	\$16,949	\$16,311
19 NHDES SAG - WWTF	\$14,139	\$13,767	\$13,395	\$12,684	\$12,234	\$12,077	\$11,612
20 NHDES SAG - Gage	\$13,614	\$13,254	\$12,600	\$12,209	\$11,774	\$11,339	\$10,904
21 Projected Revenue, other income	\$121,609	\$119,729	\$117,115	\$114,383	\$112,110	\$110,630	\$108,317
22 Total Projected Revenues	\$333,958	\$327,700	\$325,001	\$322,177	\$319,769	\$318,120	\$314,940
<b>Expenses</b>							
23 I/I Project - Planning Project (Eng.)							
24 Concord Debt Service	\$29,222.53	\$31,031.92	\$29,789.12	\$43,107.55	\$52,139.88	\$92,403.45	\$94,429.20
25 Debt A							
26 Total Projected Expenses (Sheets 8 & 12)	\$344,350	\$367,862	\$368,657	\$385,940	\$399,609	\$850,581	\$857,654
27 Difference, \$	(\$10,392)	(\$40,161)	(\$43,656)	(\$63,764)	(\$79,840)	(\$532,460)	(\$542,714)
<i>Positive difference means that funds can be added to reserves. Negative means that funds will be drained from reserves.</i>							
28 Projected Reserve Fund Balance (Jan 1)	\$684,994	\$637,922	\$597,760	\$554,105	\$490,341	\$410,501	(\$121,959)
29 Projected Reserve Fund Balance (Dec 31)	\$674,602	\$597,760	\$554,105	\$490,341	\$410,501	(\$121,959)	(\$664,674)

Notes:

<sup>1</sup>Rates for 2026 and 2027 are shown using a projection for Sewer Project 3&4. These should not be considered until Project 3&4 is better defined.

<sup>2</sup>2021 Minimum account charge = \$51.84/Qtr

<sup>3</sup>2021 and 2022 Fund Balance is actual, not projected

14A. RATE SETTING A - SCENARIO 1								
Town of Boscawen, NH								
Scenario 1: 450K in Reserve Fund at end of 2027, no additional General Fund contributions								
Description	Actual 2021	Projected 2022	2023	2024	2025	2026	2027	
% Increase/Decrease - Rate (\$/100CF) <sup>1</sup>			30%	5%	5%	65%	65%	
1 Rate (\$/100 CF)	\$8.64	\$8.64	\$11.23	\$11.79	\$12.38	\$20.43	\$33.71	
2 No. of Accounts	417	417	417	417	417	417	417	
3 Minimum Usage (CF / Qtr / Account)	600	600	600	600	600	600	600	
4 No. of Accounts, Minimum Usage	118	118	118	118	118	118	118	
5 Minimum Consumption (estimated), CF/yr	283,200	283,200	283,200	283,200	283,200	283,200	283,200	
6 Other Consumption, CF	2,068,847	2,108,272	2,108,272	2,108,272	2,108,272	2,108,272	2,108,272	
7 Total Consumption, CF	2,352,047	2,391,472	2,391,472	2,391,472	2,391,472	2,391,472	2,391,472	
<b>Water Rents / Usage Fees</b>								
8 Minimum Account Charge, \$/yr <sup>2</sup>	\$207	\$207	\$270	\$283	\$297	\$490	\$809	
9 Projected Revenue, Min Use Accts	\$24,468	\$24,468	\$31,809	\$33,399	\$35,069	\$57,865	\$95,477	
10 Projected Revenue, Other Accts	\$186,433	\$182,155	\$236,801	\$248,641	\$261,073	\$430,771	\$710,772	
11 Projected Revenues, Water Rents	\$210,902	\$206,623	\$268,610	\$282,041	\$296,143	\$488,635	\$806,249	
<b>Interest on Sewer Fund Deposit:</b>								
12 Reserve Account Balance on Jan 1 <sup>3</sup>	\$684,994	\$637,922	\$597,760	\$616,091	\$627,876	\$637,846	\$387,879	
13 Interest Rate	0.21%	0.21%	0.21%	0.21%	0.21%	0.21%	0.21%	
Projected Revenue, Interest	\$1,447	\$1,348	\$1,263	\$1,302	\$1,326	\$1,347	\$819	
<b>Other Income:</b>								
% Increase/Decrease - General Fund Cont.			0%	0%	0%	0%	0%	
14 General Fund Contribution	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	
15 Capital Reserve Fund Contribution								
16 User Connection Fees	\$1,750	\$1,750	\$1,750	\$1,750	\$1,750	\$1,750	\$1,750	
17 General Fund WWTF (Tax rate) - 50%	\$23,875	\$23,255	\$22,635	\$21,515	\$20,765	\$20,515	\$19,740	
18 General Fund Gage (Tax rate) - 44%	\$20,231	\$19,703	\$18,735	\$18,225	\$17,587	\$16,949	\$16,311	
19 NHDES SAG - WWTF	\$14,139	\$13,767	\$13,395	\$12,684	\$12,234	\$12,077	\$11,612	
20 NHDES SAG - Gage	\$13,614	\$13,254	\$12,600	\$12,209	\$11,774	\$11,339	\$10,904	
21 Projected Revenue, other income	\$121,609	\$119,729	\$117,115	\$114,383	\$112,110	\$110,630	\$108,317	
22 Total Projected Revenues	\$333,958	\$327,700	\$386,988	\$397,725	\$409,579	\$600,613	\$915,385	
<b>Expenses</b>								
23 I/I Project - Planning Project (Eng.)								
24 Concord Debt Service	\$29,222.53	\$31,031.92	\$29,789.12	\$43,107.55	\$52,139.88	\$92,403.45	\$94,429.20	
25 Debt A								
26 Total Projected Expenses (Sheets 8 & 12)	\$344,350	\$367,862	\$368,657	\$385,940	\$399,609	\$850,581	\$857,654	
27 Difference, \$	(\$10,392)	(\$40,161)	\$18,331	\$11,785	\$9,970	(\$249,968)	\$57,731	
Positive difference means that funds can be added to reserves. Negative means that funds will be drained from reserves.								
28 Projected Reserve Fund Balance (Jan 1)	\$684,994	\$637,922	\$597,760	\$616,091	\$627,876	\$637,846	\$387,879	
29 Projected Reserve Fund Balance (Dec 31)	\$674,602	\$597,760	\$616,091	\$627,876	\$637,846	\$387,879	\$445,609	

Notes:

<sup>1</sup>Rates for 2026 and 2027 are shown using a projection for Sewer Project 3&4. These should not be considered until Project 3&4 is better defined.<sup>2</sup> 2021 Minimum account charge = \$51.84/Qtr<sup>3</sup>2021 and 2022 Fund Balance is actual, not projected

14B. RATE SETTING B - SCENARIO 2								
Town of Boscawen, NH								
Scenario 2: 450K in Reserve Fund at end of 2027, increased General Fund contributions								
Description	Actual 2021	Projected 2022	2023	2024	2025	2026	2027	
% Increase/Decrease - Rate (\$/100CF) <sup>1</sup>			10%	5%	5%	35%	35%	
1 Rate (\$/100 CF)	\$8.64	\$8.64	\$9.50	\$9.98	\$10.48	\$14.15	\$19.10	
2 No. of Accounts	417	417	417	417	417	417	417	
3 Minimum Usage (CF / Qtr / Account)	600	600	600	600	600	600	600	
4 No. of Accounts, Minimum Usage	118	118	118	118	118	118	118	
5 Minimum Consumption (estimated), CF/yr	283,200	283,200	283,200	283,200	283,200	283,200	283,200	
6 Other Consumption, CF	2,068,847	2,108,272	2,108,272	2,108,272	2,108,272	2,108,272	2,108,272	
7 Total Consumption, CF	2,352,047	2,391,472	2,391,472	2,391,472	2,391,472	2,391,472	2,391,472	
<b>Water Rents / Usage Fees</b>								
8 Minimum Account Charge, \$/yr <sup>2</sup>	\$207	\$207	\$228	\$240	\$251	\$339	\$458	
9 Projected Revenue, Min Use Accts	\$24,468	\$24,468	\$26,915	\$28,261	\$29,674	\$40,060	\$54,081	
10 Projected Revenue, Other Accts	\$186,433	\$182,155	\$200,370	\$210,389	\$220,908	\$298,226	\$402,605	
11 Projected Revenues, Water Rents	\$210,902	\$206,623	\$227,286	\$238,650	\$250,582	\$338,286	\$456,686	
<b>Interest on Sewer Fund Deposit:</b>								
12 Reserve Account Balance on Jan 1 <sup>3</sup>	\$684,994	\$637,922	\$597,760	\$612,687	\$621,571	\$629,120	\$477,094	
13 Interest Rate	0.21%	0.21%	0.21%	0.21%	0.21%	0.21%	0.21%	
Projected Revenue, Interest	\$1,447	\$1,348	\$1,263	\$1,294	\$1,313	\$1,329	\$1,008	
<b>Other Income:</b>								
% Increase/Decrease - General Fund Cont.			79%	3%	3%	3%	3%	
14 General Fund Contribution	\$48,000	\$48,000	\$85,920	\$88,498	\$91,153	\$93,887	\$96,704	
15 Capital Reserve Fund Contribution								
16 User Connection Fees	\$1,750	\$1,750	\$1,750	\$1,750	\$1,750	\$1,750	\$1,750	
17 General Fund WWTF (Tax rate) - 50%	\$23,875	\$23,255	\$22,635	\$21,515	\$20,765	\$20,515	\$19,740	
18 General Fund Gage (Tax rate) - 44%	\$20,231	\$19,703	\$18,735	\$18,225	\$17,587	\$16,949	\$16,311	
19 General Fund 3&4 (Tax rate) - 50%						\$202,422	\$202,422	
20 NHDES SAG - WWTF	\$14,139	\$13,767	\$13,395	\$12,684	\$12,234	\$12,077	\$11,612	
21 NHDES SAG - Gage	\$13,614	\$13,254	\$12,600	\$12,209	\$11,774	\$11,339	\$10,904	
22 Projected Revenue, other income	\$121,609	\$119,729	\$155,035	\$154,880	\$155,262	\$358,939	\$359,443	
23 Total Projected Revenues	\$333,958	\$327,700	\$383,584	\$394,825	\$407,158	\$698,555	\$817,137	
<b>Expenses</b>								
24 I/I Project - Planning Project (Eng.)								
25 Concord Debt Service	\$29,222.53	\$31,031.92	\$29,789.12	\$43,107.55	\$52,139.88	\$92,403.45	\$94,429.20	
26 Debt A								
27 Total Projected Expenses (Sheets 8 & 12)	\$344,350	\$367,862	\$368,657	\$385,940	\$399,609	\$850,581	\$857,654	
28 Difference, \$	(\$10,392)	(\$40,161)	\$14,927	\$8,884	\$7,549	(\$152,026)	(\$40,517)	
Positive difference means that funds can be added to reserves. Negative means that funds will be drained from reserves.								
29 Projected Reserve Fund Balance (Jan 1)	\$684,994	\$637,922	\$597,760	\$612,687	\$621,571	\$629,120	\$477,094	
30 Projected Reserve Fund Balance (Dec 31)	\$674,602	\$597,760	\$612,687	\$621,571	\$629,120	\$477,094	\$436,577	

Notes:

<sup>1</sup>Rates for 2026 and 2027 are shown using a projection for Sewer Project 3&4. These should not be considered until Project 3&4 is better defined.<sup>2</sup>2021 Minimum account charge = \$51.84/Qtr<sup>3</sup>2021 and 2022 Fund Balance is actual, not projected



15. SAMPLE SEWER BILLS (Existing Rates compared to Alternatives)																																		
Town of Boscawen, NH																																		
			Current Rates					Proposed Rates																										
			FY 2021 / 2022					FY 2023					FY 2024					FY 2025					FY 2026 <sup>1</sup>					FY 2027 <sup>1</sup>						
Description	Average gpd	Consum. CF/Qtr	Qtly Min.	Cons. Rate	Cons. Charge	Annual Total		Qtly Min.	Cons. Rate	Cons. Charge	Annual Total	% Change	Qtly Min.	Cons. Rate	Cons. Charge	Annual Total	% Change	Qtly Min.	Cons. Rate	Cons. Charge	Annual Total	% Change	Qtly Min.	Cons. Rate	Cons. Charge	Annual Total	% Change	Qtly Min.	Cons. Rate	Cons. Charge	Annual Total	% Change		
Residential Single Unit (Minimum user)																																		
Existing rates			49	598	\$52	\$8.64	\$0	\$207		\$52	\$8.64	\$0	\$207	0%	\$52	\$8.64	\$0	\$207	0%	\$52	\$8.64	\$0	\$207	0%	\$52	\$8.64	\$0	\$207	0%	\$52	\$8.64	\$0	\$207	0%
Proposed rates (scenario 1)			49	598	\$52	\$8.64	\$0	\$207		\$67	\$11.23	\$0	\$270	30%	\$71	\$11.79	\$0	\$283	5%	\$74	\$12.38	\$0	\$297	5%	\$123	\$20.43	\$0	\$490	65%	\$202	\$33.71	\$0	\$809	65%
Proposed rates (scenario 2)			49	598	\$52	\$8.64	\$0	\$207		\$57	\$9.50	\$0	\$228	10%	\$60	\$9.98	\$0	\$240	5%	\$63	\$10.48	\$0	\$251	5%	\$85	\$14.15	\$0	\$339	35%	\$115	\$19.10	\$0	\$458	35%
Residential Single Unit (Average Residential in Town)																																		
Existing rates			118	1434	\$52	\$8.64	\$72	\$495		\$52	\$8.64	\$72	\$495	0%	\$52	\$8.64	\$72	\$495	0%	\$52	\$8.64	\$72	\$495	0%	\$52	\$8.64	\$72	\$495	0%	\$52	\$8.64	\$72	\$495	0%
Proposed rates (scenario 1)			118	1434	\$52	\$8.64	\$72	\$495		\$67	\$11.23	\$94	\$644	30%	\$71	\$11.79	\$98	\$676	5%	\$74	\$12.38	\$103	\$710	5%	\$123	\$20.43	\$170	\$1,172	65%	\$202	\$33.71	\$281	\$1,933	65%
Proposed rates (scenario 2)			118	1434	\$52	\$8.64	\$72	\$495		\$57	\$9.50	\$79	\$545	10%	\$60	\$9.98	\$83	\$572	5%	\$63	\$10.48	\$87	\$601	5%	\$85	\$14.15	\$118	\$811	35%	\$115	\$19.10	\$159	\$1,095	35%
Residential Single Unit (Basis of NHDES Statewide Averages)																																		
Existing rates			197	2403	\$52	\$8.64	\$156	\$831		\$52	\$8.64	\$156	\$831	0%	\$52	\$8.64	\$156	\$831	0%	\$52	\$8.64	\$156	\$831	0%	\$52	\$8.64	\$156	\$831	0%	\$52	\$8.64	\$156	\$831	0%
Proposed rates (scenario 1)			197	2403	\$52	\$8.64	\$156	\$831		\$67	\$11.23	\$203	\$1,080	30%	\$71	\$11.79	\$213	\$1,134	5%	\$74	\$12.38	\$223	\$1,190	5%	\$123	\$20.43	\$368	\$1,964	65%	\$202	\$33.71	\$608	\$3,241	65%
Proposed rates (scenario 2)			197	2403	\$52	\$8.64	\$156	\$831		\$57	\$9.50	\$171	\$914	10%	\$60	\$9.98	\$180	\$959	5%	\$63	\$10.48	\$189	\$1,007	5%	\$85	\$14.15	\$255	\$1,360	35%	\$115	\$19.10	\$344	\$1,836	35%
2021 Statewide Average			197	2403								\$766																					\$766	
Residential Single Unit (Higher user)																																		
Existing rates			400	4880	\$52	\$8.64	\$370	\$1,686		\$52	\$8.64	\$370	\$1,686	0%	\$52	\$8.64	\$370	\$1,686	0%	\$52	\$8.64	\$370	\$1,686	0%	\$52	\$8.64	\$370	\$1,686	0%	\$52	\$8.64	\$370	\$1,686	0%
Proposed rates (scenario 1)			400	4880	\$52	\$8.64	\$370	\$1,686		\$67	\$11.23	\$481	\$2,192	30%	\$71	\$11.79	\$505	\$2,302	5%	\$74	\$12.38	\$530	\$2,417	5%	\$123	\$20.43	\$874	\$3,988	65%	\$202	\$33.71	\$1,443	\$6,580	65%
Proposed rates (scenario 2)			400	4880	\$52	\$8.64	\$370	\$1,686		\$57	\$9.50	\$407	\$1,855	10%	\$60	\$9.98	\$427	\$1,948	5%	\$63	\$10.48	\$448	\$2,045	5%	\$85	\$14.15	\$605	\$2,761	35%	\$115	\$19.10	\$817	\$3,727	35%
Commercial (High User)																																		
Existing rates			1000	12199	\$52	\$8.64	\$1,002	\$4,216		\$52	\$8.64	\$1,002	\$4,216	0%	\$52	\$8.64	\$1,002	\$4,216	0%	\$52	\$8.64	\$1,002	\$4,216	0%	\$52	\$8.64	\$1,002	\$4,216	0%	\$52	\$8.64	\$1,002	\$4,216	0%
Proposed rates (scenario 1)			1000	12199	\$52	\$8.64	\$1,002	\$4,216		\$67	\$11.23	\$1,303	\$5,481	30%	\$71	\$11.79	\$1,368	\$5,755	5%	\$74	\$12.38	\$1,436	\$6,043	5%	\$123	\$20.43	\$2,370	\$9,970	65%	\$202	\$33.71	\$3,910	\$16,451	65%
Proposed rates (scenario 2)			1000	12199	\$52	\$8.64	\$1,002	\$4,216		\$57	\$9.50	\$1,102	\$4,638	10%	\$60	\$9.98	\$1,158	\$4,870	5%	\$63	\$10.48	\$1,215	\$5,113	5%	\$85	\$14.15	\$1,641	\$6,903	35%	\$115	\$19.10	\$2,215	\$9,318	35%
Commercial (Higher User)																																		
Existing rates			5000	60996	\$52	\$8.64	\$5,218	\$21,080		\$52	\$8.64	\$5,218	\$21,080	0%	\$52	\$8.64	\$5,218	\$21,080	0%	\$52	\$8.64	\$5,218	\$21,080	0%	\$52	\$8.64	\$5,218	\$21,080	0%	\$52	\$8.64	\$5,218	\$21,080	0%
Proposed rates (scenario 1)			5000	60996	\$52	\$8.64	\$5,218	\$21,080		\$67	\$11.23	\$6,784	\$27,404	30%	\$71	\$11.79	\$7,123	\$28,774	5%	\$74	\$12.38	\$7,479	\$30,213	5%	\$123	\$20.43	\$12,340	\$49,852	65%	\$202	\$33.71	\$20,362	\$82,255	65%
Proposed rates (scenario 2)			5000	60996	\$52	\$8.64	\$5,218	\$21,080		\$57	\$9.50	\$5,740	\$23,188	10%	\$60	\$9.98	\$6,027	\$24,348	5%	\$63	\$10.48	\$6,328	\$25,565	5%	\$85	\$14.15	\$8,543	\$34,513	35%	\$115	\$19.10	\$11,533	\$46,592	35%

<sup>1</sup>Sample Bills for 2026 and 2027 are shown using a projection for Sewer Project 3&4. These should not be considered until Project 3&4 is better defined.