

**Mission Statement**

The mission of the Sewer Division is to enhance Concord's quality of life, and through sound management, innovation, teamwork and vision, provide dependable, high quality, responsive sewer utility services, consistent with values and at reasonable costs to Concord's citizens, businesses, institutions and visitors.

**Sewer Fund Budget Contents**

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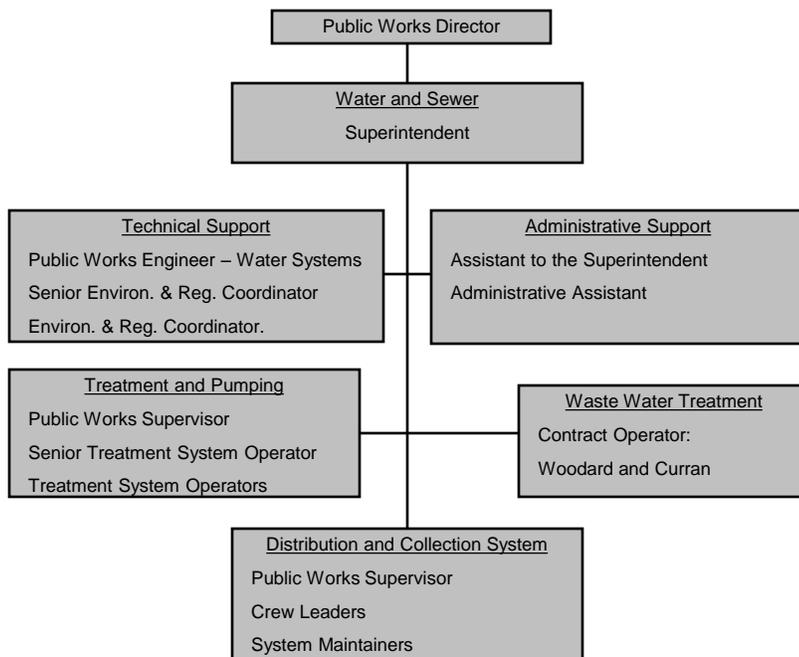
**Sewer Fund Highlights**

- The proposed FY18 sewer rate of \$0.1141 per cubic foot represents a 2% increase over the FY17 rate of \$0.1119 per cubic foot. For the average residential customer, the annual increase in the sewer bill will be \$14.00.
- The proposed FY18 capital improvement plan is \$2,132,950 which includes \$1,592,000 for design and complete rehabilitation of the two main sewer pumping stations at Lowell Road and Main Street in W. Concord.
- The proposed FY18 operating budget is \$3,417,390, an increase of 5% from FY17. Depreciation is increasing by over 7%; all other operating expenses excluding interfund transfers are increasing by 2%.
- Additional expenses of \$62,000 are budgeted for wastewater treatment in FY18 in order to meet new discharge permit requirements for pH and Aluminum.

**Expenditure Summary**

	FY15 Actual	FY16 Actual	FY17 Budget	FY18 Proposed
Operating Income	\$ (419,339)	\$ (49,652)	\$ (366,870)	\$ (420,190)
Net Income	\$ (203,464)	\$ 1,021,904	\$ (162,514)	\$ (266,801)
Undesignated Fund Balance	\$ 7,998,534	\$ 9,094,762	\$ 9,162,063	\$ 7,710,514

See page V-9 for greater detail on income and fund balance results.



**Description:**

In 1894, Concord received legislative authority to create a municipal sewer system. Today, the system consists of 33 miles of collection main, two pumping stations, six neighborhood lift stations, and an advanced wastewater treatment plant.

The 1976 Annual Town Meeting established a Sewer Fund to ensure that the operation, maintenance, and capital improvement of the sewer system would be a financially viable enterprise. Expenses for this system are covered entirely by user fees. As of 2016 the total value of collection system and treatment plant infrastructure assets was approximately 19.2 million dollars.

The municipal sewer system serves 1,866 residential and commercial customers representing approximately 34% of the community. Approximately 40% of the residential households in Concord are served by sewer. The wastewater treatment facility continues to process over 1.8 million gallons per year of septage pumped from residential and commercial establishments served by private septic systems within the Town of Concord.

Long-Term Financial Stability

Along with its core mission to operate and maintain the Town’s municipal sewer system in a reliable and efficient manner, the sewer enterprise must also be financially self-supporting. This means that the Sewer Division is expected to cover all costs associated with operations, capital maintenance and repairs by generating sufficient revenue through user fees and special service fees. The Sewer Division maintains a detailed 10-year financial proforma to facilitate long-range planning for all revenues and anticipated investments.

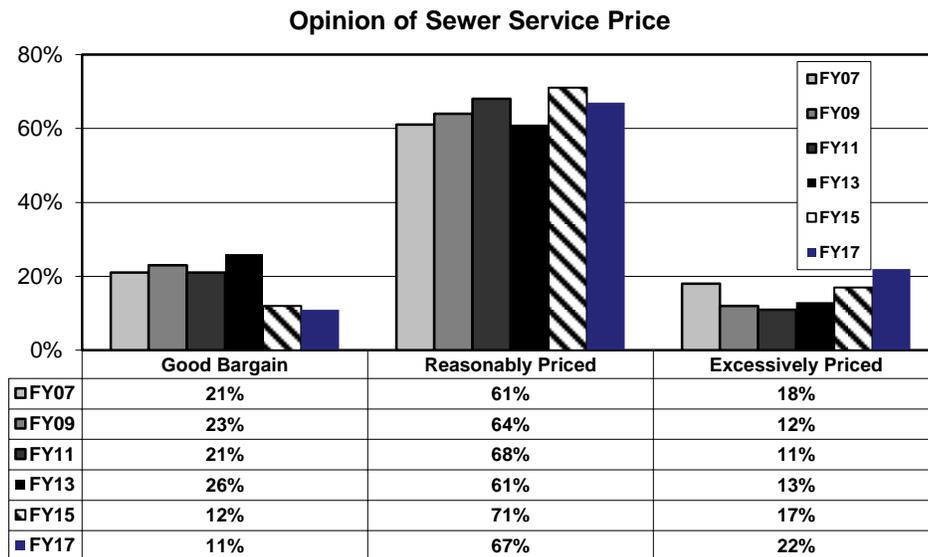
Since the sewer enterprise fund was formally established in 1976, there have been no property tax contributions to subsidize pre-existing operations or infrastructure improvements. Taxpayer support has been sought through Town Meeting for projects which have been designed to expand the sewer collection system and to support major upgrades to the Wastewater Treatment plant, as it also accepts septage from properties which are not directly connected to the sewer system.

Town Residential Survey

In the fall of 2006, 2008, 2010, and 2012, the Town conducted a telephone survey of 375 randomly selected Concord residents. In the fall of 2014 (FY15) and 2016 (FY16), the Town used a different polling methodology and a survey was sent out to all Concord households, In FY17, a total 1,022 responses were received. From those responses, 421 respondents said that they use the Town sewer system.

**1. What is your opinion of the price of Town Sewer Services?**

The vast majority of Concord households that are on Town sewer lines feel that the service is at least “reasonably priced,” while 11% of survey respondents even describe it as “a good bargain.”



Sewer Rates:

The total revenue projected to be raised through sewer rates in FY18 is **\$2,761,000**.

Rates are set each year by the Public Works Commission following a public hearing with the following goals:

1. To ensure that the Division has the resources to operate, maintain and improve the system;
2. To minimize rate “shock” so that sewer costs can be a relatively predictable expense; and
3. To accurately reflect sewer use (which may be different than seasonally skewed water use).

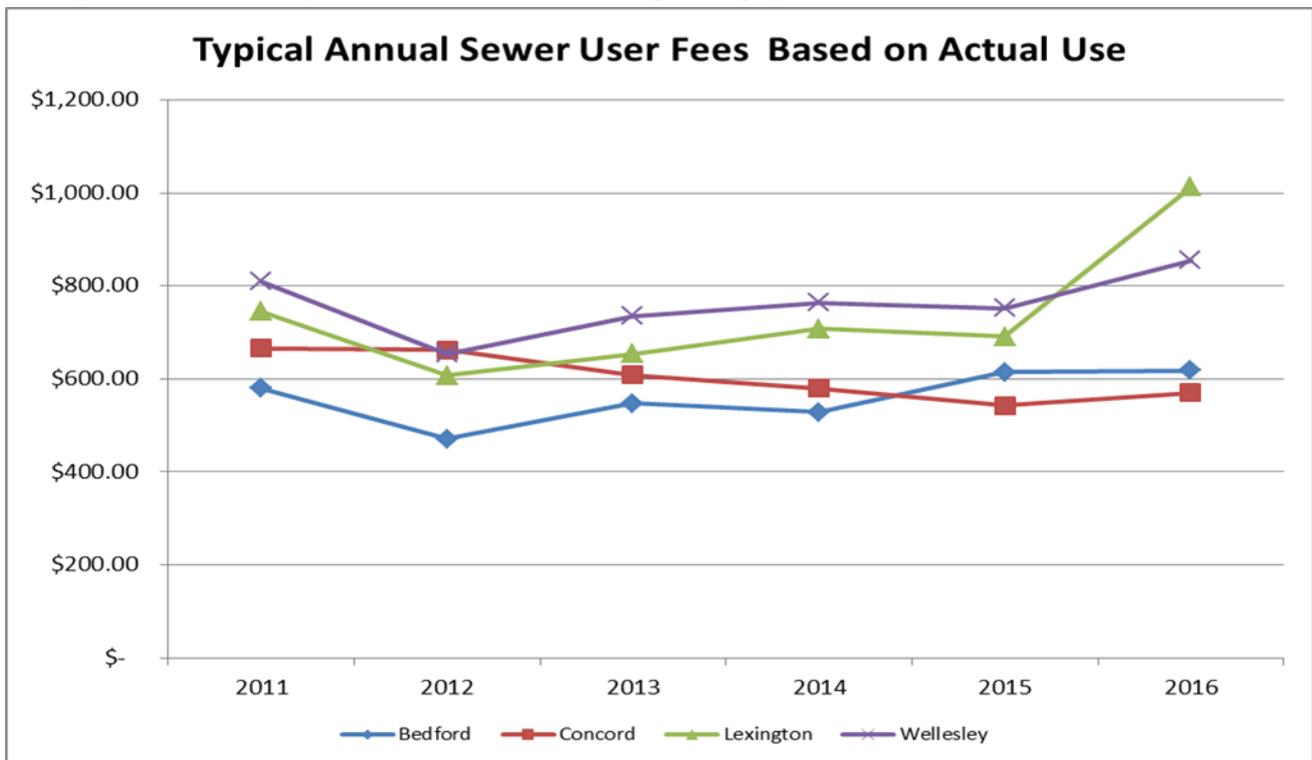
**Sewer Fund Highlights**

***The FY18 proposed sewer rate is \$0.1141 per cubic foot of water use (1 cubic foot = 7.48 gallons).***

- The proposed FY18 sewer rate of \$0.1141 per cubic foot represents a 2% increase over the FY17 rate of \$0.1119 per cubic foot. Since FY 2008 sewer rates have increased by an average annual rate of 3.3%.
- In FY18, the average residential customer is expected to pay a total of \$685 in sewer user fees over the course of the year. The typical residential sewer customer uses 1,000 cubic feet of water bimonthly.
- For Residential customers, who typically use significant amounts of water during the summer, sewer use during the summer is based on average water use during the previous winter.

**Benchmarking Sewer Rates**

The comparison of sewer rates between individual systems and communities can be particularly difficult, given the wide variation in management and financial structures and customer demographics. Some level of public sewerage service is provided by 57% of Massachusetts communities. Some systems, like Concord, adhere to strict enterprise principles (i.e., full cost accounting with consideration of long range investments and depreciation of fixed assets) while other systems are subsidized through a municipality's general fund. Statewide, 57% of communities have adopted a flat rate structure, 35% use an ascending rate structure and 8% assess a flat fee. More sophisticated and flexible rate designs, such as the winter/spring demand basis employed by Concord for residential customers, have been adopted by only 3% of systems across the state (from Tighe and Bond rate survey 2014). The table below demonstrates how rate adjustments (and cost of service) over time have impacted Concord and three neighboring systems based on actual water use.



### *Wastewater Program*

In addition to routine operations, maintenance and improvements to ensure reliable and quality service to all municipal customers, the programs and initiatives detailed below strike the delicate balance between essential needs and broader community and regulatory interests, particularly in the area of increasingly complex and sophisticated water resource management goals.

Wastewater treatment capacity limitations continue to pose the single most immediate and formidable wastewater challenge facing the community. The following summarizes some of the more important developments and recommendations made to date.



**NPDES Surface Water Discharge Permit:** Wastewater regulation falls under the provisions of the federal Clean Water Act (CWA), promulgated in 1972 and implemented and enforced by EPA. The CWA establishes the basic structure for regulating pollutants that can be discharged into the waters of the United States. EPA authority includes implementation of pollution control programs, such as setting water quality standards and regulating the pollutants that can be introduced into navigable waters through the National Pollutant Discharge Elimination System Permit (NPDES) program. Under a service contract with the Town, Woodard & Curran, Inc. continues to perform the day to day operation of Concord's Wastewater Treatment Plant (CWWTP) in accordance with our NPDES permit that was renewed in 2013.

**CoMag Magnetic Recovery Drum Rehabilitation:** One of two magnetic recovery drum units associated with the CoMag treatment process exhibited significant corrosion of its aluminum end caps. As these caps must be water tight, the unit was removed and shipped to Evoqua Water Technologies (EWT) where it was completely refurbished, including new end caps made of stainless steel.

**Hydrocyclone Magnetite Recovery Pilot:** Concord Public Works, always open to evaluating and adopting new and innovative treatment technologies, authorized EWT to pilot an experimental hydrocyclone magnetite recovery system at our facility. The work afforded EWT, the current owner of the CoMag technology patent, an opportunity to compare the performance of this new recovery system alongside the magnetic drum recovery system currently employed at the Concord WWTP. While the work provided EWT with valuable data as to recovery rates and energy efficiencies, the technology did not satisfy the recovery needs identified within Concord's plant.

**Energy Efficient Lighting Retrofit.** M-V Electrical Contractors, Inc. (Acushnet, MA) provided an energy-efficient retrofit of the fluorescent lighting fixtures that had been installed when the original treatment facility was constructed in the 1980's. The scope of work was limited to the first floor of the facility which included the lobby, offices, laboratory, break room, computer room, reaction tank room, clarifier room, men's and women's restrooms and the common corridor. This project received financial support through the Sawyer Trust Fund.

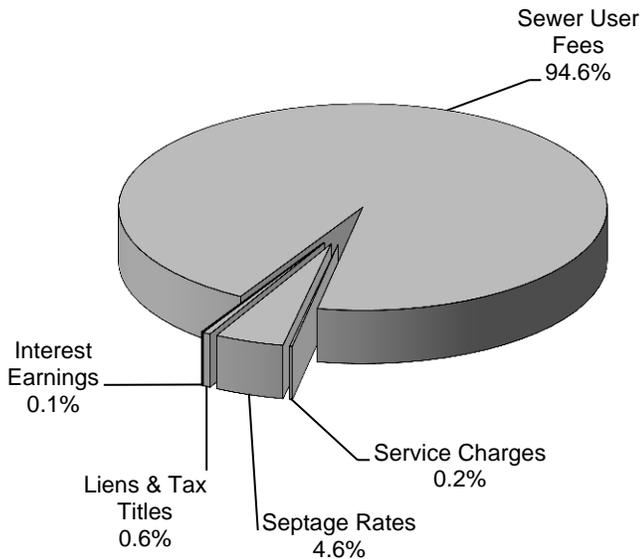
**Inflow/Infiltration:** While no notable improvements or expansions were made to the wastewater collection system, operations crews continued to manage wastewater flows by performing routine inflow and infiltration (I/I) inspections throughout the system. This past year, there were no reportable sanitary sewer overflows, and the 12-month rolling average of wastewater treated at the CWWTP was calculated to be 0.80 million gallons per day. This discharge represents a 10-year low-flow condition and is partially attributed to the unusually severe drought which has impacted the entire region.

Program Implementation:

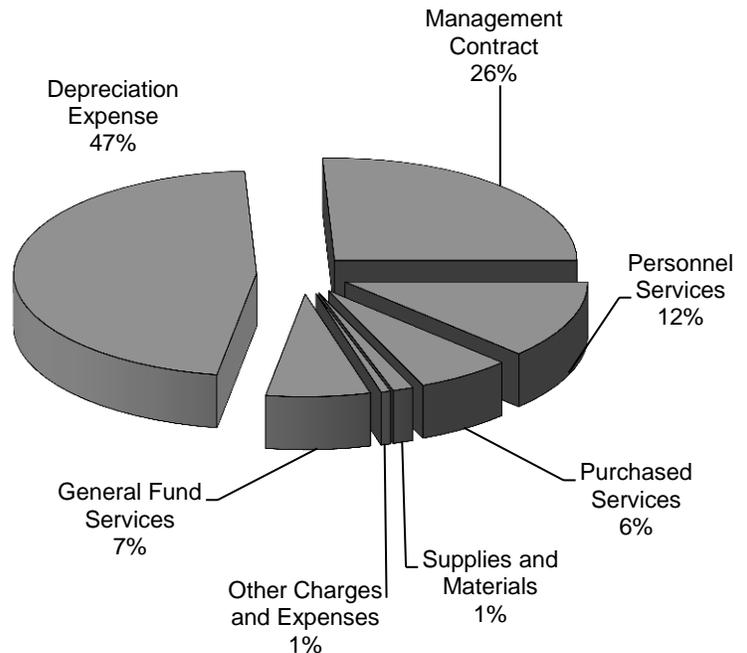
The proposed FY18 operating budget is \$3,337,390. This represents a 5% increase as compared to the Sewer Fund’s revised FY17 operating budget. Depreciation expense reflects the cost of the annual use, or wear-and-tear, of the Sewer Division’s approximately \$19.2 million worth of infrastructure (recorded as of the end of FY16). The FY18 budgeted depreciation expense of \$1,556,016 is 8.2% of these capital assets. Personnel Services are budgeted at \$411,739 in FY18, a 3.7% increase from the revised FY17 total of \$397,153.

Excluding depreciation and General Fund services, the FY18 budget proposes a 2.3% increase in funding overall with a 1% increase for wastewater collection and a 3% increase in wastewater treatment. The costs associated with the operation of the Wastewater Treatment facility are directly related to meeting state and federally mandated National Pollutant Discharge Elimination System (NPDES) permit requirements and funding contract operation services presently provided by Woodard & Curran. Concord’s 5-year NPDES permit is presently under review by EPA and DEP and will be re-issued in the near future. More restrictive water quality limits resulting in increased costs for chemicals, electricity and sludge management are anticipated in this budget .

**FY18 Operating Revenues**  
 Totaling \$2,917,200



**FY18 Operating Expenses**  
 Totaling \$3,337,390



Operating Income:

This FY18 Budget calls for Operating Expenditures that are \$420,190 above Operating Revenues. This results in an operating loss for the year. However, by FY20, Net Income turns positive as depreciation expense, which accounts for roughly 46% of all operating expenses in FY18, begins to decline and revenues increase (see page V-14, Sewer Fund: Plan and Projection).

**OPERATING REVENUES**

	FY15 Actual	FY16 Actual	Rev. FY17 Budget	FY18 Budget
Sewer User Fees	\$ 2,429,420	\$ 2,671,065	\$ 2,662,000	\$ 2,761,000
Service Charges	7,107	31,825	5,000	5,000
Septage Rates	125,677	158,476	131,000	134,000
Liens & Tax Titles	7,189	14,189	14,200	14,200
Other Revenue	3,232	3,449	3,000	3,000
Audit Adjustments				
<b>Total Operating Revenues</b>	<b>\$ 2,572,625</b>	<b>\$ 2,879,004</b>	<b>\$ 2,815,200</b>	<b>\$ 2,917,200</b>

**OPERATING EXPENSES**

<u>Sewer Divisions</u>	FY15 Actual	FY16 Actual	Rev. FY17 Budget	FY18 Budget
<b><u>Collection</u></b>				
Personnel Services	\$ 294,694	\$ 315,923	\$ 340,735	\$ 351,640
Purchased Services	168,918	95,030	179,038	175,807
Supplies & Materials	37,922	42,931	46,312	46,083
Other Charges & Expenses	14,292	13,232	20,858	21,369
General Fund Services	103,284	105,549	110,227	115,490
Audit Adjustments	1,933			
<b>Subtotal</b>	<b>\$ 621,042</b>	<b>\$ 572,665</b>	<b>\$ 697,170</b>	<b>\$ 710,389</b>
<b><u>Treatment</u></b>				
Personnel Expenses	\$ 52,701	\$ 35,234	\$ 56,418	\$ 60,098
Purchased Services	4,298	14,120	35,000	35,000
Management Contract	758,855	776,234	837,074	860,397
Supplies & Materials	72	-	-	-
Other Charges & Expenses	-	3,470	-	-
General Fund Services	103,284	105,549	110,227	115,490
Audit Adjustments				
<b>Subtotal</b>	<b>\$ 919,210</b>	<b>\$ 934,607</b>	<b>\$ 1,038,719</b>	<b>\$ 1,070,985</b>
Depreciation Expense	1,451,712	1,421,384	1,446,181	1,556,016
<b>Total Operating Expense</b>	<b>\$ 2,991,964</b>	<b>\$ 2,928,656</b>	<b>\$ 3,182,070</b>	<b>\$ 3,337,390</b>

**RETIREMENT AND OPEB ASSESSMENT**

<i>For Informational Purpose Only</i>	FY15 Actual	FY16 Actual	Rev. FY17 Budget	FY18 Budget
Retirement Assessment	\$ 12,832	\$ 18,070	\$ 21,545	\$ 20,529
OPEB Assessment	5,000	5,678	5,352	6,000
<b>Total Assessment</b>	<b>\$ 17,832</b>	<b>\$ 23,748</b>	<b>\$ 26,897</b>	<b>\$ 26,529</b>

**AUTHORIZED POSITIONS**

<b>Collection Personnel Costs</b>	Rev. FY17 Budget		FY18 Budget	
	Positions/Hours	\$ Amount	Positions/Hours	\$ Amount
<b>Regular Staff</b>				
Water and Sewer Superintendent	0.20 FTEs	\$ 22,000	0.20 FTEs	\$ 22,451
Assistant to Superintendent	0.20	17,396	0.20	17,742
Senior Env. & Reg. Coordinator	0.20	16,247	0.20	16,977
Env. & Reg. Coordinator	0.20	10,714	0.20	11,221
Administrative Assistant	0.20	12,883	0.20	13,137
Public Works Supervisor	0.40	34,594	0.40	35,572
Crew Leader	0.40	29,199	0.40	29,305
Senior Treatment System Operator	0.20	14,383	0.20	15,034
Treatment System Operator	0.40	24,772	0.40	25,550
System Maintainer	1.00	51,330	1.00	53,423
Standby Pay (5111)	365 hrs	15,118	365 hrs	15,547
Charges to Snow Account	0	-	0	-
Charges to Projects	N/A	(7,260)	N/A	(7,409)
Salary Adjustments	N/A	3,869	N/A	6,523
<b>Subtotal</b>	<b>3.40 FTEs</b>	<b>\$ 245,245</b>	<b>3.40 FTEs</b>	<b>\$ 255,073</b>
<b>Employee Benefits</b>				
Health Insurance	N/A	\$ 15,000	N/A	\$ 14,500
Life Insurance	N/A	-	N/A	-
Dental Insurance	N/A	-	N/A	-
OPEB	N/A	5,352	N/A	6,000
Retirement Contribution	N/A	21,545	N/A	20,529
<b>Subtotal</b>	<b>N/A</b>	<b>\$ 41,897</b>	<b>N/A</b>	<b>\$ 41,029</b>
<b>Payroll Taxes</b>				
Medicare Tax	N/A	\$ 3,500	N/A	\$ 4,000
Social Security Contribution	N/A	-	N/A	-
<b>Subtotal</b>	<b>N/A</b>	<b>\$ 3,500</b>	<b>N/A</b>	<b>\$ 4,000</b>
<b>Other Personnel Costs</b>				
Overtime (5130)	800 hrs.	\$ 41,904	800 hrs.	\$ 43,115
Police Overtime (5131)	100	4,000	100	4,000
IT Salary (5111)	N/A	3,560	N/A	3,561
Salary Adjustments OT (5130)	N/A	629	N/A	862
<b>Subtotal</b>	<b>N/A</b>	<b>\$ 50,093</b>	<b>N/A</b>	<b>\$ 51,538</b>
<b>Total Collections</b>	<b>3.40 FTEs</b>	<b>\$ 340,735</b>	<b>3.40 FTEs</b>	<b>\$ 351,640</b>
<b>Treatment Personnel Costs</b>				
Public Works Engineer	0.80 FTEs	\$ 62,965	0.80 FTEs	\$ 64,500
Charge to Capital Projects	N/A	(10,547)	N/A	(10,804)
Salary Adjustments (2%)	N/A	-	N/A	2,902
Health	N/A	3,000	N/A	2,500
Medicare Tax	N/A	1,000	N/A	1,000
<b>Total Treatment</b>	<b>0.80 FTEs</b>	<b>\$ 56,418</b>	<b>0.80 FTEs</b>	<b>\$ 60,098</b>
<b>Total Sewer Personnel</b>	<b>4.20 FTEs</b>	<b>\$ 397,153</b>	<b>4.20 FTEs</b>	<b>\$ 411,738</b>

**NET INCOME**

	FY15 Actual	FY16 Actual	Rev. FY17 Budget	FY18 Budget
<b>Statement of Net Income:</b>				
Operating Revenues	\$ 2,572,625	\$ 2,879,004	\$ 2,815,200	\$ 2,917,200
Less Operating Expenses	(2,991,964)	(2,928,656)	(3,182,070)	(3,337,390)
<b>Operating Income</b>	<b>\$ (419,339)</b>	<b>\$ (49,652)</b>	<b>\$ (366,870)</b>	<b>\$ (420,190)</b>
<b>Non-operating Revenues (Expenses)</b>				
Add Investment Income	\$ 16,807	\$ 34,717	\$ 66,947	\$ 82,335
Add Bond Premium	16,206	1,065		
Add Sewer Improvement Revenues	344,102	1,187,623	281,000	201,000
Less Int. Exp and Admin. Fees	(161,240)	(151,849)	(143,591)	(129,946)
<b>Non-operating Income</b>	<b>\$ 215,875</b>	<b>\$ 1,071,556</b>	<b>\$ 204,356</b>	<b>\$ 153,389</b>
<b>Net Income</b>	<b>\$ (203,464)</b>	<b>\$ 1,021,904</b>	<b>\$ (162,514)</b>	<b>\$ (266,801)</b>

Note: FY16 Net Income of \$1,021,904 plus Sewer Betterment revenue (Admins) of minus \$643,436, plus Unapportioned Betterments (Admins) of \$655,813, plus Deferred Taxes Betterments (Admins) of \$2,571, minus Betterment Interest (Admins) of \$29,436, minus Betterment Issuance Expense (Admins) of \$2,207, plus the transfer in of \$80,895 for the General Fund portion of the WPAT loan equals the change in net assets of minus \$1,086,105 seen in the FY16 Audited Financial Statements.

**AVAILABLE RESOURCES**

<b>Resources Available from Current Operations for Replacement &amp; Renewal of Facility:</b>				
	FY15 Actual	FY16 Actual	Rev. FY17 Budget	FY18 Budget
<b>Capital Purposes</b>				
Add Depreciation Expense	\$ 1,451,712	\$ 1,421,384	\$ 1,446,181	\$ 1,556,016
Add Net Income	(203,464)	1,021,904	(162,514)	(266,801)
Add Sewer Improvement Allocation	74,259	-	255,000	105,000
Add Bond Proceeds	400,000	12,500	-	-
Less Bonds Payable	(613,557)	(686,432)	(609,516)	(607,814)
<b>Net Available for Capital</b>	<b>\$ 1,108,950</b>	<b>\$ 1,769,356</b>	<b>\$ 929,151</b>	<b>\$ 786,401</b>

**CASH POSITION AND FUND BALANCE FORECAST**

	FY17		FY18	
	Operating Fund	Depreciation Fund	Operating Fund	Depreciation Fund
<b>Cash at Year Opening</b>				
<b>Cash on July 1st</b>	\$ 8,892,737		\$ 8,960,038	
Add Non-Cash Assets	589,683		589,683	
Less Liabilities and Deferred Inflows	(387,658)		(387,658)	
<b>Fund Balance on July 1st</b>	\$ 9,094,762		\$ 9,162,063	
<b>Fund Balance Details (projected)</b>				
Fund Balance on July 1st	\$ (793,335)	\$ 9,888,097	\$ (1,820,365)	\$ 10,982,428
Net Income	(162,514)	-	(266,801)	-
Bond Principal Repayment	(609,516)	-	(607,814)	-
Capital Borrowing	-	-	-	-
Capital Outlay (non-borrowing)	-	(351,850)	-	(2,027,950)
Capital Sewer Improvement Fund	(255,000)	-	(105,000)	-
Add Depreciation Expense	-	1,446,181	-	1,556,016
Balance Projected at June 30th	(1,820,365)	10,982,428	(2,799,980)	10,510,494
<b>Fund Balance on June 30th</b>	\$ 9,162,063		\$ 7,710,514	
<b>Cash at Year End (projected)</b>				
Fund Balance on June 30th	\$ 9,162,063		\$ 7,710,514	
Less Receivables	(589,683)		(589,683)	
Add Cash Held for Liabilities	387,658		387,658	
<b>Projected Cash at June 30th</b>	\$ 8,960,038		\$ 7,508,489	
<b>Sewer Improvement Fund Cash</b>	\$ 4,008,417		\$ 4,104,417	
<b>Unrestricted Cash</b>	\$ 4,951,621		\$ 3,404,072	

## SEWER IMPROVEMENT FUND

	FY15		FY16		Rev. FY17		FY18	
	Actual		Actual		Budget		Budget	
<b>Cash on July 1st</b>	\$	2,525,765	\$	2,795,608	\$	3,982,417	\$	4,008,417
Revenues		344,102		1,187,623		281,000		201,000
Expenditures		(74,259)		(814)		(255,000)		(105,000)
Adjustment		-		-		-		-
<b>Cash on June 30th</b>	\$	<b>2,795,608</b>	\$	<b>3,982,417</b>	\$	<b>4,008,417</b>	\$	<b>4,104,417</b>
<b>Net Activity</b>	\$	<b>269,843</b>	\$	<b>1,186,809</b>	\$	<b>26,000</b>	\$	<b>96,000</b>

Note: The Sewer Improvement Fund is included in the cash and fund analysis found on the preceding page (the Sewer Betterment Account, shown below, is not).

## SEWER BETTERMENT CASH FLOW ANALYSIS

	FY15		FY16		Rev. FY17		FY18	
	Actual		Actual		Budget		Budget	
<b>Activity</b>								
<b>Cash at July 1st</b>	\$	<b>747,596</b>	\$	<b>771,402</b>	\$	<b>752,995</b>	\$	<b>764,602</b>
Cash Received		181,635		139,234		169,057		167,857
Debt Service and Admin. Cost		(157,829)		(157,641)		(157,450)		(157,256)
<b>Cash at June 30th</b>	\$	<b>771,402</b>	\$	<b>752,995</b>	\$	<b>764,602</b>	\$	<b>775,203</b>
<b>Net Activity</b>	\$	<b>23,806</b>	\$	<b>(18,407)</b>	\$	<b>11,607</b>	\$	<b>10,601</b>
<b>Net Assets (as of June 30th)</b>								
Cash	\$	771,402	\$	752,995	\$	764,602	\$	775,203
Betterment Receivables		763,404		655,814		514,933		372,682
<b>Net Assets</b>	\$	<b>1,534,806</b>	\$	<b>1,408,809</b>	\$	<b>1,279,535</b>	\$	<b>1,147,884</b>
Less Remaining Debt Service		(1,722,892)		(1,565,250)		(1,407,800)		(1,094,995)
<b>Surplus / Deficit</b>	\$	<b>(188,086)</b>	\$	<b>(156,441)</b>	\$	<b>(128,265)</b>	\$	<b>52,889</b>

Note: The negative number shown as Surplus / Deficit will be offset by future collections from interest earned on the account's cash holdings, as well as by interest charged to property owners with outstanding balances (both of which accounting practices do not allow to be shown as an asset).

The **Sewer Improvement Fund** was established under a policy formulated by the Public Works Commission and authorized by Article 25 at Town Meeting in 1989 whereby new connections and uses outside the scope of the 1984 Sewer Facilities Plan pay a fee which is used to create new capacity in the sewer system for the additional flows, either through expansion of the existing sewer infrastructure or reduction in infiltration and inflow.

The **Sewer Betterment Fund** segregates costs and receipts related to expansion of the sewer system. When sewer service is extended into new neighborhoods by vote of Town Meeting, a portion of the cost for the sewer mains in the street and the pumping stations in the neighborhood is assessed as a betterment to the properties on those streets that directly benefit by having sewer available; the remainder of the cost is paid by the Sewer Fund and the Town property tax. The amount of the betterment is set by the Public Works Commission after the sewer extension project is finished and all costs have been paid. Betterments must be paid by property owners when sewer service becomes available whether they immediately tie into the sewer or not. Payments may be made at once or spread over a number of years.

## DEBT SERVICE

	FY15 Actual	FY16 Actual	Rev. FY17 Budget	FY18 Budget
Long Term Debt Repayment:				
Principal	\$ 613,557	\$ 686,432	\$ 609,516	\$ 607,814
Interest	154,460	149,323	134,224	121,390
Issuance Expense	-	-	-	-
Administration Fee (WPAT)	10,938	10,160	9,365	8,555
<b>Totals</b>	<b>\$ 778,955</b>	<b>\$ 845,915</b>	<b>\$ 753,105</b>	<b>\$ 737,759</b>

Note: The Debt Schedule above and on the facing page does not account for Accrual periods across fiscal years, and so differs from the Town's Audited Financial Statements.

## PAYMENTS TO THE GENERAL FUND

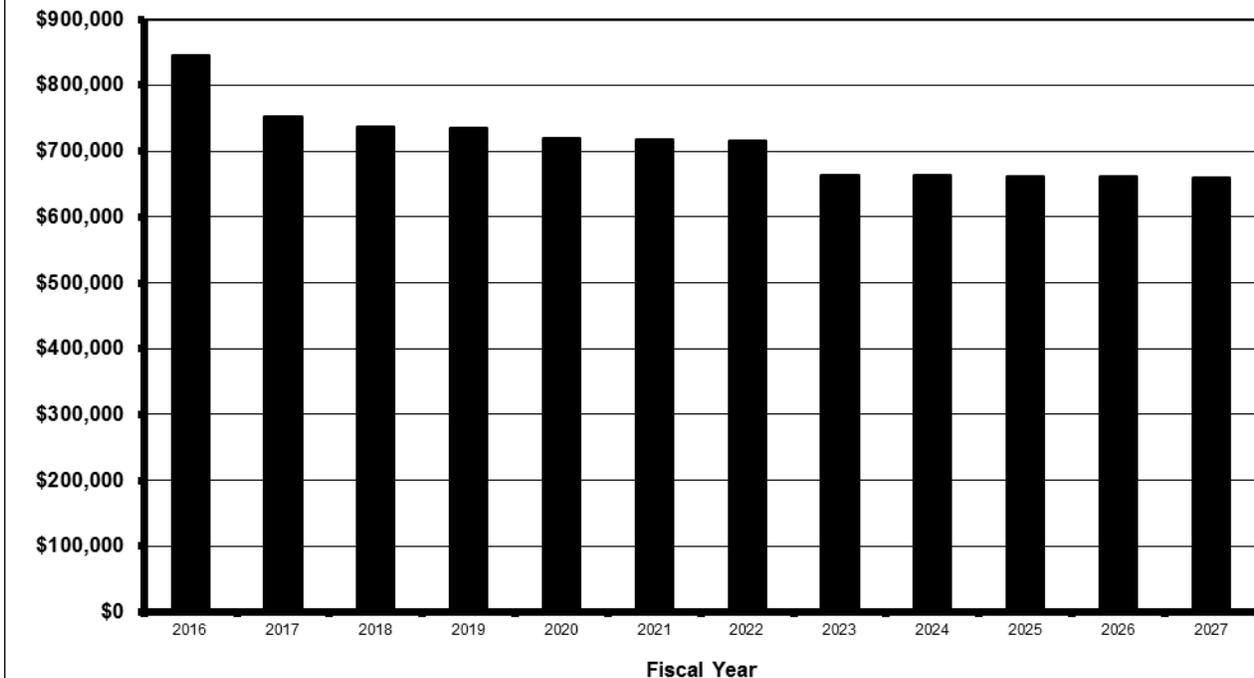
	FY16 Actual	Rev. FY17 Budget	Rev. FY17 Budget	FY18 Budget
<b>Management &amp; Engineering:</b>				
Public Works Administration	\$ 34,724	\$ 35,202	\$ 37,173	\$ 37,247
Public Works Engineering	22,027	22,459	22,786	22,704
Highway Maintenance	4,654	4,806	4,937	4,937
133/135 Keyes Road	11,801	12,039	12,200	12,853
<b>Subtotals</b>	<b>\$ 73,206</b>	<b>\$ 74,506</b>	<b>\$ 77,096</b>	<b>\$ 77,741</b>
<b>Financial &amp; Administrative:</b>				
Town Manager	\$ 30,464	\$ 29,488	\$ 31,111	\$ 31,040
Human Resources	5,337	5,823	6,069	6,235
Finance Administration	18,241	18,764	20,283	19,408
Treasurer-Collector	12,849	13,122	13,556	13,648
Town Accountant:				
General Services	12,197	13,224	14,598	14,945
Audit Services	6,000	6,000	6,000	6,000
Town House Facilities	3,368	3,380	3,508	3,528
<b>Subtotals</b>	<b>\$ 88,456</b>	<b>\$ 89,801</b>	<b>\$ 95,125</b>	<b>\$ 94,804</b>
<b>Natural Resource:</b>				
Planning	\$ 7,085	\$ 7,437	\$ 7,643	\$ 7,907
Natural Resources	6,270	6,514	6,631	6,839
Health	31,550	32,840	33,959	34,090
<b>Subtotals</b>	<b>\$ 44,905</b>	<b>\$ 46,791</b>	<b>\$ 48,233</b>	<b>\$ 48,836</b>
Salary Reserve	\$ -	\$ -	\$ -	\$ 9,599
<b>Totals</b>	<b>\$ 206,567</b>	<b>\$ 211,098</b>	<b>\$ 220,454</b>	<b>\$ 230,980</b>

### Sewer Debt Service Schedule

*Exclusive of betterment financing*

Fiscal Year	Principal	Interest	Admin. Fees	Total
2016	686,432	149,323	10,160	\$845,915
2017	609,516	134,224	9,366	\$753,106
2018	607,814	121,390	8,556	\$737,760
2019	618,831	108,499	7,730	\$735,060
2020	617,570	95,572	6,887	\$720,029
2021	629,036	82,606	6,027	\$717,669
2022	640,734	69,409	5,149	\$715,292
2023	602,668	56,725	4,254	\$663,647
2024	614,843	44,550	3,341	\$662,734
2025	627,265	32,128	2,410	\$661,803
2026	639,936	19,457	1,459	\$660,852
2027	652,865	6,528	490	\$659,883
<b>Totals</b>	<b>\$7,547,510</b>	<b>\$920,411</b>	<b>\$65,829</b>	<b>\$8,533,750</b>

**Sewer Debt Service Chart**



**FY18 Capital Plan:****COLLECTION SYSTEM****Station Structures: \$12,000**

Annual capital outlay for improvements and replacement of structures including six neighborhood lift stations and two main pump stations.

**Station Equipment: \$1,592,000**

Annual capital outlay for improvements and replacement of equipment housed within six neighborhood lift stations and two main pump stations. Equipment is required to control, monitor, pump, store, and treat wastewater enroute to WWTP including motors, pumps, motor control panels, and air compressors. Complete upgrades are planned for Lowell Road and Assabet Avenue pump stations (deferred from FY15 budget) including replacement of major mechanical, electrical, and instrumentation systems as well as upgrades for odor control and solids handling.

**Mains (Sewer Collectors): \$16,000**

Annual capital outlay for improvements to and extension of collection system. Program is intended to insure that aging and deteriorating main is repaired or replaced in a manner that will maximize service. The Water & Sewer Division will continue to coordinate system improvements with other Town departments to insure division activities are performed in concert with other public works initiatives (such as Roads Program and CMLP initiatives). Planned work includes routine casting replacements and adjustments.

**Inflow/Infiltration: \$105,000**

The wastewater treatment plant currently receives about one million gallons of sewer flow per day. In accordance with our WWTP NPDES permit, annual inflow and infiltration (I/I) activities are required to reduce groundwater and storm water which enters the collection system through deteriorating pipes, leaking manholes or illicit storm water connections. Planned work includes replacement of specialized camera and recording equipment, targeted TV inspections, metering and spot repair of sewer mains.

**Meter Replacement Program: \$37,000**

Sewer Fund portion of costs associated with system-wide meter maintenance and replacement efforts. Efforts will include advancement of smart water-meter technology to allow for increased customer awareness of individual water consumption patterns and water-saving opportunities.

**WASTE WATER TREATMENT PLANT****Structures: \$180,000**

Annual capital outlay for improvements and replacement of WWTP structures. Planned improvements include the cleaning of structures and rehabilitation of mechanical drive systems associated with primary clarifier unit #1. Budget also includes an allowance for the replacement of a portion of the zinc roof. .

**Equipment: \$115,000**

Annual cost to replace equipment presently used beyond recommended service life, including motors, pumps, motor control panels, chemical feed systems, and process instrumentation. Planned work includes replacement of an intermediate pump, sampling equipment and SCADA improvements.

**GENERAL PLANT****Keyes Road Facility: \$28,000**

Capital outlay for improvements to Water/Sewer administrative office and garage facilities.

**Vehicles: \$29,600**

Water/Sewer Fleet consists of 17 service vehicles and miscellaneous equipment such as compressor, vacuum, skid steer loader , and forklifts which are replaced in accordance with CPW criteria based on industry-accepted useful-life measures. Planned improvements include the replacement of two service vehicles, and a skid steer loader.

<b>CAPITAL SPENDING PLAN</b>								
	<b>FY16</b>	<b>FY17</b>	<b>FY18</b>	<b>FY19</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>Total</b>
								<b>FY18-22</b>
<b>Collection System</b>								
<u>Pumping Plant</u>								
Station Structures	6,782	12,000	12,000	13,000	14,000	15,000	16,000	70,000
Station Equipment	7,485	85,000	1,592,000	26,000	27,000	28,000	29,000	1,702,000
<b>Subtotal</b>	<b>14,267</b>	<b>97,000</b>	<b>1,604,000</b>	<b>39,000</b>	<b>41,000</b>	<b>43,000</b>	<b>45,000</b>	<b>1,772,000</b>
<u>Collection Plant</u>								
Sewer Mains/Laterals	0	16,000	16,000	17,000	18,000	19,000	20,000	90,000
Inflow/Infiltration (Note 1)	0	105,000	105,000	109,000	113,000	117,000	121,000	565,000
Meter Replacements	13,041	34,000	37,000	26,000	29,000	31,000	30,000	153,000
<b>Subtotal</b>	<b>13,041</b>	<b>155,000</b>	<b>158,000</b>	<b>152,000</b>	<b>160,000</b>	<b>167,000</b>	<b>171,000</b>	<b>808,000</b>
<b>Wastewater Treatment Plant</b>								
Structures	166,764	30,000	180,000	85,000	200,000	206,000	30,000	701,000
Plant Equipment	0	105,000	115,000	25,000	26,000	27,000	28,000	221,000
Capacity/Treatment Optimization	0	0	0	0	0	0	0	0
Depreciable Personal Services	11,777	17,807	18,350	18,910	19,480	20,070	20,680	97,490
<b>Subtotal</b>	<b>178,541</b>	<b>152,807</b>	<b>313,350</b>	<b>128,910</b>	<b>245,480</b>	<b>253,070</b>	<b>78,680</b>	<b>1,019,490</b>
<b>General Plant</b>								
Keyes Road CPW Facility	0	27,000	28,000	29,000	100,000	30,000	31,000	218,000
Vehicle Replacements	37,494	25,043	29,600	15,000	11,000	20,800	17,400	93,800
Miscellaneous Equipment & Billing Software	599							
<b>Subtotal</b>	<b>38,093</b>	<b>52,043</b>	<b>57,600</b>	<b>44,000</b>	<b>111,000</b>	<b>50,800</b>	<b>48,400</b>	<b>311,800</b>
<b>Wastewater Management Project</b>								
Wastewater Planning (Note 1)	0	150,000	0	483,000	1,900,000	1,900,000	0	4,283,000
W.R. Grace land acquisition (funded through borrowing)	412,492							0
<b>Subtotal</b>	<b>412,492</b>	<b>150,000</b>	<b>0</b>	<b>483,000</b>	<b>1,900,000</b>	<b>1,900,000</b>	<b>0</b>	<b>4,283,000</b>
<b>Total Capital Uses</b>								
	<b>656,433</b>	<b>606,850</b>	<b>2,132,950</b>	<b>846,910</b>	<b>2,457,480</b>	<b>2,413,870</b>	<b>343,080</b>	<b>8,194,290</b>
<b>Funding the Capital Plan</b>								
Total - User Fees	243,941	351,850	2,027,950	254,910	344,480	366,870	191,080	3,185,290
Total - Sewer Improvement Fees	0	255,000	105,000	592,000	2,013,000	2,017,000	121,000	4,848,000
Total - Borrowing	412,492				100,000	30,000	31,000	161,000
<b>Total Capital Sources</b>	<b>656,433</b>	<b>606,850</b>	<b>2,132,950</b>	<b>846,910</b>	<b>2,457,480</b>	<b>2,413,870</b>	<b>343,080</b>	<b>8,194,290</b>

# Sewer Fund

# Revenues and Expenditures

	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	10 years FY18-27
<b>Sewer Fund: Plan and Projection</b>													
<b>Operating Revenue</b>													
User Fees	2,671,065	2,662,000	2,761,000	2,850,000	2,949,000	3,054,000	3,160,000	3,270,000	3,384,000	3,499,000	3,618,000	3,740,000	32,285,000
Other	207,939	153,200	156,200	158,200	161,200	164,200	167,200	169,200	172,200	175,200	178,200	182,200	1,684,000
Subtotal	2,879,004	2,815,200	2,917,200	3,008,200	3,110,200	3,218,200	3,327,200	3,439,200	3,556,200	3,674,200	3,796,200	3,922,200	33,969,000
<b>Operating Expense</b>													
O & M	1,507,272	1,735,889	1,781,374	1,835,055	1,890,364	1,947,349	2,006,064	2,066,560	2,128,894	2,193,121	2,259,300	2,327,491	20,435,572
Depreciation	1,421,384	1,446,181	1,556,016	1,700,539	1,158,219	1,232,483	1,239,985	1,232,483	1,170,648	1,098,827	1,102,734	1,080,330	12,572,264
Subtotal	2,928,656	3,182,070	3,337,390	3,535,594	3,048,583	3,179,832	3,246,049	3,299,043	3,299,542	3,291,948	3,362,033	3,407,821	33,007,836
<b>Operating Income</b>	-49,652	-366,870	-420,190	-527,394	61,617	38,368	81,151	140,157	256,658	382,252	434,167	514,379	961,164
ADD: Interest Income	34,717	66,947	82,335	93,107	98,380	74,717	67,353	75,640	84,705	94,503	105,587	117,698	894,023
Bond Premium	1,065	-	-	-	-	-	-	-	-	-	-	-	-
Co-Mag Incentive Payments	0	-	-	-	-	-	-	-	-	-	-	-	-
Sewer Improvement Fees	1,187,623	281,000	201,000	201,000	201,000	201,000	201,000	201,000	201,000	201,000	201,000	201,000	2,010,000
LESS: Interest Expense													
Existing Debt	151,849	143,591	129,946	116,229	102,459	88,633	74,558	60,979	47,891	34,538	20,916	7,018	683,167
New Debt	0	0	0	0	0	0	4,000	3,600	3,200	2,800	2,400	2,000	18,000
Bond Anticipation Notes (BANs)	0	0	0	0	0	1,000	0	0	0	0	0	0	1,000
Issuance expense	0	0	0	0	100	1,000	0	0	0	0	0	0	1,100
<b>Net Income</b>	1,021,904	-162,514	-266,801	-349,515	258,439	223,451	270,946	352,217	491,271	640,417	717,437	824,059	3,161,921
<b>Available Resources from:</b>													
Net income	1,021,904	-162,514	-266,801	-349,515	258,439	223,451	270,946	352,217	491,271	640,417	717,437	824,059	3,161,921
Depreciation expense	1,421,384	1,446,181	1,556,016	1,700,539	1,158,219	1,232,483	1,239,985	1,232,483	1,170,648	1,098,827	1,102,734	1,080,330	12,572,264
subtotal	2,443,288	1,283,667	1,289,215	1,351,023	1,416,658	1,455,934	1,510,931	1,584,700	1,661,920	1,739,244	1,820,171	1,904,389	15,734,184
Funds Provided by Improvement Fees	0	255,000	105,000	592,000	2,013,000	2,017,000	121,000	125,000	129,000	133,000	137,000	142,000	<there should
Bond proceeds	12,500				100,000	100,000							100,000
Loan proceeds					100,000								100,000
LESS: Principal repayments													
Existing Debt	688,432	609,516	607,814	618,831	617,570	629,036	640,734	602,668	614,843	627,265	639,936	652,865	6,251,562
New Debt	0	0	0	0	0	0	10,000	10,000	10,000	10,000	10,000	10,000	60,000
BAN Repayment					100,000								100,000
<b>Net Available for Capital Purposes</b>	1,769,356	929,151	786,401	1,324,192	2,812,088	2,943,898	981,197	1,097,032	1,166,077	1,234,979	1,307,235	1,383,524	15,036,622
<b>Capital Plan</b>	656,433	606,850	2,132,950	846,910	2,457,480	2,413,870	343,080	370,310	414,150	400,210	373,290	399,990	10,152,240
<b>Cash Position</b>													
Beginning balance	8,036,804	8,892,737	8,960,038	7,508,489	7,393,772	5,735,379	4,248,408	4,765,525	5,367,247	5,990,174	6,691,942	7,488,887	
ADD: Net available	1,769,356	929,151	786,401	1,324,192	2,812,088	2,943,898	981,197	1,097,032	1,166,077	1,234,979	1,307,235	1,383,524	
LESS: Planned Capital	656,433	606,850	2,132,950	846,910	2,457,480	2,413,870	343,080	370,310	414,150	400,210	373,290	399,990	
Sewer Improvement Fee Support	0	255,000	105,000	592,000	2,013,000	2,017,000	121,000	125,000	129,000	133,000	137,000	142,000	
Changes in assets & liabilities	256,991												
Ending balance	8,892,737	8,960,038	7,508,489	7,393,772	5,735,379	4,248,408	4,765,525	5,367,247	5,990,174	6,691,942	7,488,887	8,330,421	
(does not include Bettemment balance)													
Sewer Improvement Fund Balance	3,982,417	4,008,417	4,104,417	3,713,417	1,901,417	85,417	165,417	241,417	313,417	381,417	445,417	504,417	
(included in Ending Balance)													
Ending balance w/o Sewer Improvement	4,910,319	4,951,621	3,404,072	3,680,354	3,833,962	4,162,990	4,600,107	5,125,830	5,676,756	6,310,525	7,043,470	7,826,004	

**SEWER RATES**

(Per Cubic Foot)

	<b>Class of Customer</b>	<b>Current FY17</b>	<b>Effective 6/1/17</b>				<b>%Chg.</b>
<b>S-17</b>				(1 cubic foot = 7.48 gallons)			
1	<b>Residential Service</b> Rate billed year around but uses wintertime average consumption for non-wintertime months.	\$ 0.1119	\$ 0.1141				2%
2	<b>Non-Residential Service</b> Rate billed year around using actual readings for each billing period.	\$ 0.1119	\$ 0.1141				2%
3	<b>Chiller/Cooling System Discharge Sewer Service</b> For large non-residential sewer customers with dedicated cooling-system water supply	\$ 0.0224	\$ 0.0228				2%
	<b>Sample Impacts</b>	<b>Current Annual</b>	<b>New Annual</b>	<b>Annual Change</b>	<b>Monthly Change</b>		<b>% Chg.</b>
1	<b>Average Residential Customer</b> (1,000 cu ft bimonthly wintertime use)	\$ 671	\$ 685	\$ 13.20	\$ 1.10		2%
2	<b>Typical Non-Residential Customer</b> (1,800 cu ft bimonthly)	\$ 1,209	\$ 1,232	\$ 23.76	\$ 1.98		2%

