

Section V
Sewer Fund

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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

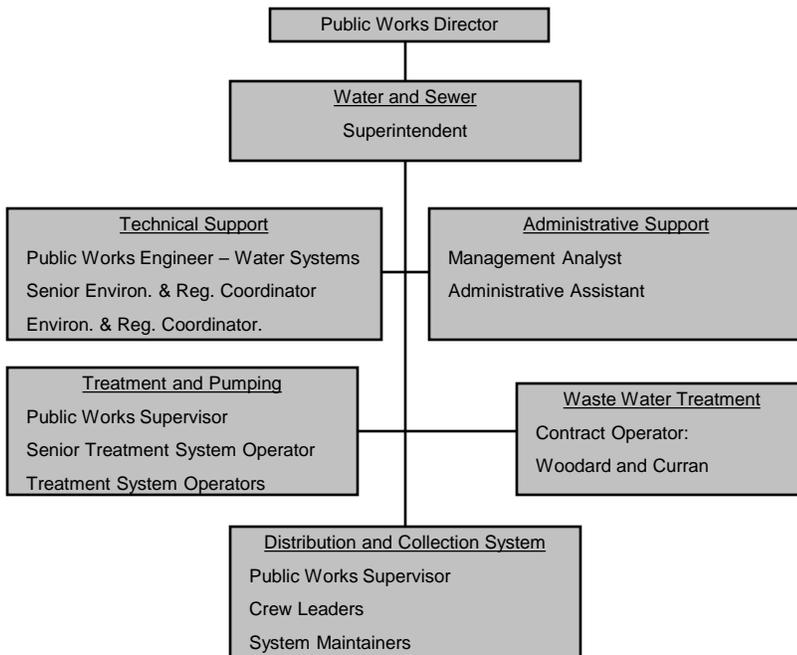
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Sewer Fund Highlights

- The proposed FY19 sewer rate of \$0.1153 per cubic foot represents a 1% increase over the FY18 rate of \$0.1141 per cubic foot. For the average residential customer, the annual increase in the sewer bill will be \$7.20.
- The proposed FY19 capital improvement plan is \$2,347,970 which includes \$1,685,000 for design and complete rehabilitation of the two main sewer pumping stations at Lowell Road and Main Street in W. Concord.
- The proposed FY19 operating budget is \$3,501,678, an increase of 8.5% from FY18. Much of the increase is attributable to increased depreciation and a revision in cost-sharing allocation assumptions between Water and Sewer to better reflect actual operational costs.
- The Wastewater Treatment Plant NPDES Permit is to be renewed in FY19. A budget allowance is provided for modest changes in discharge limits.

Expenditure Summary				
	FY16 Actual	FY17 Actual	FY18 Budget	FY19 Proposed
Operating Income	\$ (49,652)	\$ (317,902)	\$ (121,158)	\$ (299,280)
Net Income	\$ 1,021,904	\$ (10,777)	\$ 27,277	\$ (122,448)
Undesignated Fund Balance	\$ 9,094,762	\$10,029,067	\$ 9,981,092	\$ 8,485,097

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 34 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 2017 the total value of collection system and treatment plant infrastructure assets was approximately 16.8 million dollars.

The municipal sewer system serves 1,869 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 an average of 1.3 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.

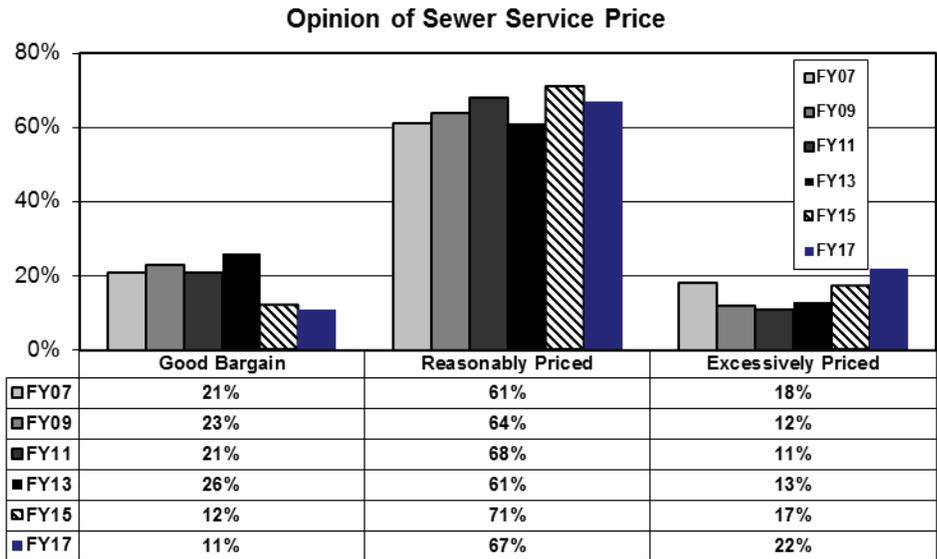
Since the sewer enterprise fund was formally established in 1976, there have been no property tax contributions to subsidize pre-existing operations or infrastructure improvements. Taxpayer support has been sought through Town Meeting for projects which have been designed to expand the sewer collection 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 FY19 is **\$3,068,000**.

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).

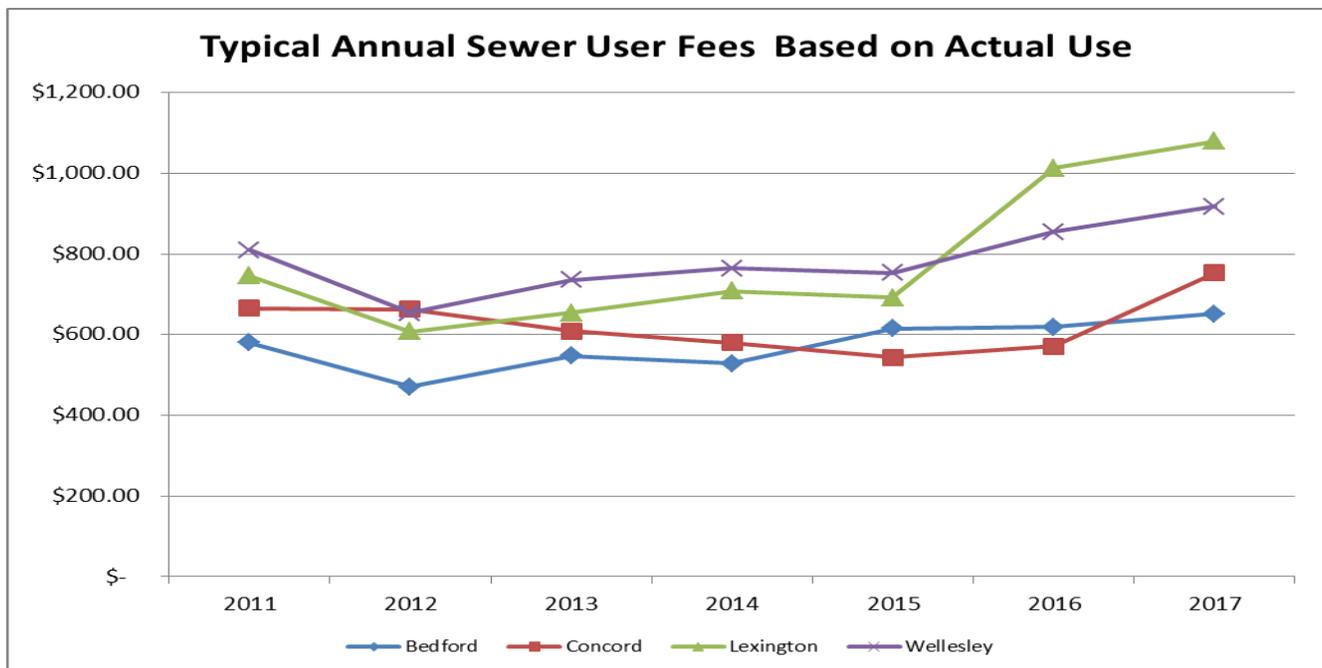
Sewer Fund Highlights

The FY19 proposed sewer rate is \$0.1153 per cubic foot of water use (1 cubic foot = 7.48 gallons).

- The proposed FY19 sewer rate of \$0.1153 per cubic foot represents a 1% increase over the FY18 rate of \$0.1141 per cubic foot. Since FY 2008 sewer rates have increased by an average annual rate of 3.9%.
- In FY19, the average residential customer is expected to pay a total of \$692 in sewer user fees over the course of the year. The typical residential sewer customer uses 500 cubic feet of water per month.
- 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.



WWTP Septage Receiving Tank Cleaning

Regulatory Update:

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 (NPDES) Permit Program. Under a service contract with the Town, Woodard & Curran, Inc., continued to perform the day-to-day operation of Concord's Wastewater Treatment Plant (WWTP) in accordance with our NPDES permit. Concord's 5-year permit will be renewed on November 30, 2018, introducing a potential for new flow and pollutant limits.

NPDES – State Primacy Initiative: Governor Baker re-filed legislation that would delegate authority for the National Pollutant Discharge Elimination System (NPDES) to the Massachusetts Department of Environmental Protection (MassDEP). The legislation sets aside \$4.7 million annually to help fund the program, in addition to the \$1.4 million in the FY18 annual budget proposal for initial staffing. Many water and wastewater organizations have long advocated for this transition from EPA in the belief that MassDEP has a deeper and more balanced understanding of local needs and interests and will be more reasonable in its permitting program. Massachusetts represents one of three states in the nation that have not yet assumed primacy.

Collection System Operation and Maintenance Plan: 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 WWTP was calculated to be 1.0 million gallons per day.

Sewer Pump Station Upgrades: The Lowell Road and Assabet Sewer pumping stations were last upgraded in the mid 1980's. As most of the mechanical, electrical, plumbing and instrumentation and control systems associated with these two facilities have served well beyond their useful lives, planning efforts have been initiated to replace or recondition these facilities. Kleinfelder, a water and wastewater engineering firm, was retained to perform an evaluation of the existing conditions at each facility. This assessment will lead to the development of a 25% (preliminary) design for each facility. The Division will review the 25% design along with the quality of service rendered before authorizing final design, bidding and construction phases. In addition to these design efforts, Kleinfelder will also develop specifications for the replacement of an intermediate pump located at the WWTP.

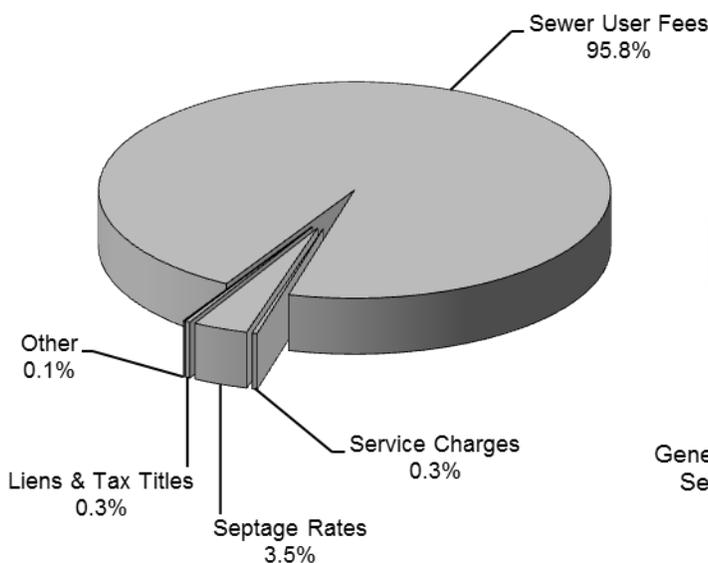
Program Implementation:

The proposed FY19 operating budget is \$3,501,678. This represents an 8.5% increase as compared to the Sewer Fund’s revised FY18 operating budget. Depreciation expense reflects the cost of the annual use, or wear-and-tear, of the Sewer Division’s approximately \$16.8 million worth of infrastructure (recorded as of the end of FY17). The FY19 budgeted depreciation expense of \$1,593,254 is 9% of these capital assets. Personnel Services are budgeted at \$467,659 in FY19, a 13.5% increase from the revised FY18 total of \$411,795.

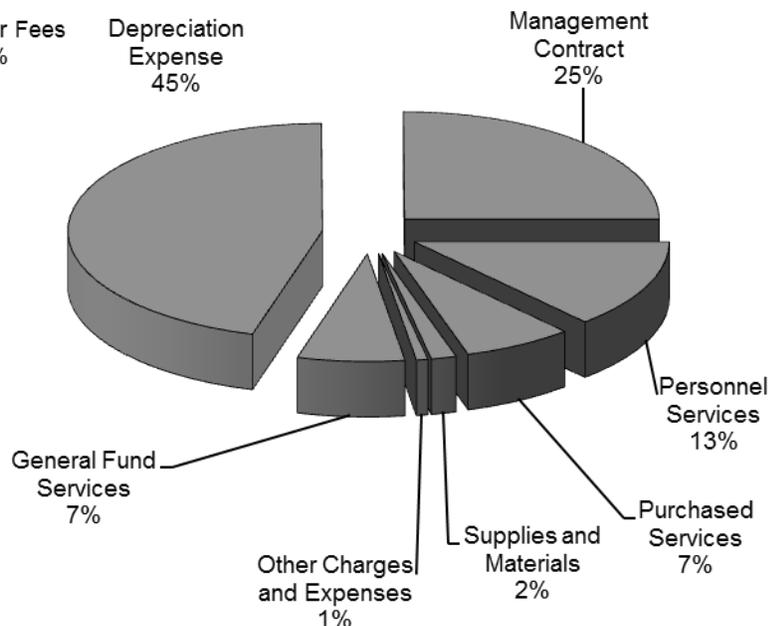
Excluding depreciation and General Fund services, the FY19 budget proposes a 7.7% increase in funding overall with a 17% increase for wastewater collection and a 2% increase in wastewater treatment. The costs associated with the operation of the Wastewater Treatment facility are directly related to meeting 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.

During the development of the FY19 budget, the Division reviewed long-standing cost sharing allocation assumptions between water and sewer operating expenses assigned for each enterprise. The results indicate the historical split of 80% water and 20% sewer no longer accurately reflected where resources are spent. Following this review, the split of labor, and shared goods and services has been adjusted from 80% water and 20% sewer to 75% and 25%, respectively. The sewer budget is readily able to absorb this cost shift. The additional time spent on the sewer system reflects expanded preventative maintenance, and the upkeep of pumping stations added since the last cost allocation review. The shift makes costs increases in the operations and maintenance portions of the sewer budget a little larger than usual with a corresponding lowering of the usual cost increases anticipated within the water portion of the budget.

FY19 Operating Revenues
Totaling \$3,202,398



FY19 Operating Expenses
Totaling \$3,501,678



Operating Income:

This FY19 Budget calls for Operating Expenditures that are \$299,280 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 45% of all operating expenses in FY19, begins to decline and revenues increase (see page V-14, Sewer Fund: Plan and Projection).

OPERATING REVENUES

	FY16 Actual	FY17 Actual	Rev. FY18 Budget	FY19 Budget
Sewer User Fees	\$ 2,671,065	\$ 2,527,489	\$ 2,934,000	\$ 3,068,000
Service Charges	31,825	19,775	20,000	10,000
Septage Rates	158,476	124,726	137,600	111,360
Liens & Tax Titles	14,189	10,038	10,038	10,038
Other Revenue	3,449	2,514	3,000	3,000
Other		34,068		
Total Operating Revenues	\$ 2,879,004	\$ 2,718,609	\$ 3,104,638	\$ 3,202,398

OPERATING EXPENSES

Sewer Divisions	FY16	FY17	Rev. FY18	FY19
<u>Collection</u>	Actual	Actual	Budget	Budget
Personnel Services	\$ 315,923	\$ 404,766	\$ 352,586	\$ 408,620
Purchased Services	95,030	116,464	175,807	208,829
Supplies & Materials	42,931	31,917	46,083	55,640
Other Charges & Expenses	13,232	20,300	21,369	25,546
General Fund Services	105,549	110,227	113,157	118,888
Subtotal	\$ 572,665	\$ 683,674	\$ 709,002	\$ 817,523
<u>Treatment</u>				
Personnel Expenses	\$ 35,234	\$ 47,696	\$ 59,209	\$ 59,039
Purchased Services	14,120		35,000	35,000
Management Contract	776,234	778,055	860,397	877,974
Supplies & Materials	-	-	-	-
Other Charges & Expenses	3,470	3,467	-	-
General Fund Services	105,549	110,227	113,157	118,888
Subtotal	\$ 934,607	\$ 939,445	\$ 1,067,763	\$ 1,090,901
Depreciation Expense	1,421,384	1,413,392	1,449,032	1,593,254
Total Operating Expense	\$ 2,928,656	\$ 3,036,511	\$ 3,225,796	\$ 3,501,678

RETIREMENT AND OPEB ASSESSMENT

<i>For Informational Purpose Only</i>				
	FY16 Actual	FY17 Actual	Rev. FY18 Budget	FY19 Budget
Retirement Assessment	\$ 18,070	\$ 21,545	\$ 20,529	\$ 24,541
OPEB Assessment	5,031	5,433	6,000	6,000
Total Assessment	\$ 23,101	\$ 26,978	\$ 26,529	\$ 30,541

AUTHORIZED POSITIONS

Collection Personnel Costs	Rev. FY18		FY19 Budget	
	Positions/Hours	\$ Amount	Positions/Hours	\$ Amount
Regular Staff				
Water and Sewer Superintendent	0.20 FTEs	\$ 23,010	0.25 FTEs	\$ 28,762
Assistant to Superintendent	0.20	12,226		-
Management Analyst	0.20	8,747	0.25	19,719
Senior Env. & Reg. Coordinator	0.20	17,825	0.25	22,281
Env. & Reg. Coordinator	0.20	11,781	0.25	14,726
Administrative Assistant	0.20	13,479	0.25	17,260
Public Works Supervisor	0.40	36,456	0.50	46,114
Crew Leader	0.40	29,954	0.50	37,542
Senior Treatment System Operator	0.20	15,408	0.25	15,729
Treatment System Operator	0.40	26,479	0.50	27,029
System Maintainer	1.00	52,701	1.00	53,941
Standby Pay (5111)	365 hrs	15,546	365 hrs	16,122
Charges to Snow Account	0	-	0	-
Charges to Projects	N/A	(7,593)	N/A	(7,593)
Salary and Wage Adjustments	N/A	-	N/A	7,849
Subtotal	3.60 FTEs	\$ 256,019	4.00 FTEs	\$ 299,481
Employee Benefits				
Health Insurance	N/A	\$ 14,500	N/A	\$ 23,000
Life Insurance	N/A	-	N/A	-
Dental Insurance	N/A	-	N/A	-
OPEB	N/A	6,000	N/A	6,000
Retirement Contribution	N/A	20,529	N/A	24,541
Subtotal	N/A	\$ 41,029	N/A	\$ 53,541
Payroll Taxes				
Medicare Tax	N/A	\$ 4,000	N/A	\$ 3,140
Social Security Contribution	N/A	-	N/A	-
Subtotal	N/A	\$ 4,000	N/A	\$ 3,140
Other Personnel Costs				
Overtime (5130)	800 hrs.	\$ 43,115	800 hrs.	\$ 43,115
Police Overtime (5131)	100	4,000	100	4,000
IT Salary (5111)	N/A	3,813	N/A	4,482
Salary Adjustments OT (5130)	N/A	862	N/A	862
Subtotal	N/A	\$ 51,538	N/A	\$ 52,459
Total Collections	3.60 FTEs	\$ 352,586	4.00 FTEs	\$ 408,621
Treatment Personnel Costs				
Public Works Engineer	0.80 FTEs	\$ 66,918	0.75 FTEs	\$ 62,736
Charge to Capital Projects	N/A	(11,209)	N/A	(11,209)
Salary Adjustments (2%)	N/A	-	N/A	2,823
Health	N/A	2,500	N/A	3,889
Medicare Tax	N/A	1,000	N/A	800
Total Treatment	0.80 FTEs	\$ 59,209	0.75 FTEs	\$ 59,039
Total Sewer Personnel	4.40 FTEs	\$ 411,795	4.75 FTEs	\$ 467,660

NET INCOME

	FY16 Actual	FY17 Actual	Rev. FY18 Budget	FY19 Budget
Operating Income				
Operating Revenues	\$ 2,879,004	\$ 2,718,609	\$ 3,104,638	\$ 3,202,398
Less Operating Expenses	(2,928,656)	(3,036,511)	(3,225,796)	(3,501,678)
Operating Income	\$ (49,652)	\$ (317,902)	\$ (121,158)	\$ (299,280)
Non-operating Income				
Add Investment Income	\$ 34,717	\$ 70,640	\$ 97,381	\$ 112,061
Add Bond Premium	1,065			
Add Sewer Improvement Revenues	1,187,623	372,581	181,000	181,000
Less Int. Exp. and Admin. Fees	(151,849)	(136,096)	(129,946)	(116,229)
Non-operating Income	\$ 1,071,556	\$ 307,125	\$ 148,435	\$ 176,832
Net Income	\$ 1,021,904	\$ (10,777)	\$ 27,277	\$ (122,448)
Reconciliation with Financials				
Add Betterment Revenues	\$ 14,948	\$ 109,644	\$ -	\$ -
WPAT Loan Int. Exp. And Fees	(31,643)	(28,908)	-	-
WPAT Transfer from General Fund	80,895	82,529	-	-
Change in Net Position	\$ 1,086,104	\$ 152,488	\$ 27,277	\$ (122,448)

AVAILABLE RESOURCES

Resources Available from Current Operations for Replacement & Renewal of Facility:				
	FY16 Actual	FY17 Actual	Rev. FY18 Budget	FY19 Budget
Capital Purposes				
Add Depreciation Expense	\$ 1,421,384	\$ 1,413,392	\$ 1,449,032	\$ 1,593,254
Add Net Income	1,021,904	(10,777)	27,277	(122,448)
Add Sewer Improvement Allocation	-	-	239,000	130,000
Add Bond Proceeds	12,500		-	-
Less Bonds Payable	(686,432)	(609,516)	(607,814)	(618,831)
Net Available for Capital	\$ 1,769,356	\$ 793,099	\$ 1,107,495	\$ 981,975

CASH POSITION AND FUND BALANCE FORECAST

	FY18		FY19	
	Operating Fund	Depreciation Fund	Operating Fund	Depreciation Fund
Cash at Year Opening				
Cash on July 1st		\$ 9,762,282		\$ 9,714,307
Add Non-Cash Assets		567,693		567,693
Less Liabilities and Deferred Inflows		(300,908)		(300,908)
Fund Balance on July 1st		\$ 10,029,067		\$ 9,981,092
Fund Balance Details (projected)				
Fund Balance on July 1st	\$ (1,155,025)	\$ 11,184,092	\$ (1,974,562)	\$ 11,955,654
Net Income	27,277	-	(122,448)	-
Bond Principal Repayment	(607,814)	-	(618,831)	-
Capital Borrowing	-	-	-	-
Capital Outlay (non-borrowing)	-	(677,470)	-	(2,217,970)
Capital Sewer Improvement Fund	(239,000)		(130,000)	
Add Depreciation Expense	-	1,449,032	-	1,593,254
Balance Projected at June 30th	(1,974,562)	11,955,654	(2,845,841)	11,330,938
Fund Balance on June 30th		\$ 9,981,092	\$	8,485,097
Cash at Year End (projected)				
Fund Balance on June 30th		\$ 9,981,092	\$	8,485,097
Less Receivables		(567,693)		(567,693)
Add Cash Held for Liabilities		300,908		300,908
Projected Cash at June 30th	\$ -	\$ 9,714,307	\$	8,218,312
Sewer Improvement Fund Cash		\$ 4,296,998	\$	4,347,998
Unrestricted Cash		\$ 5,417,309	\$	3,870,314

SEWER IMPROVEMENT FUND

	FY16		FY17		Rev. FY18		FY19	
	Actual		Actual		Budget		Budget	
Cash on July 1st	\$	2,795,608	\$	3,982,417	\$	4,354,998	\$	4,296,998
Revenues		1,187,623		372,581		181,000		181,000
Expenditures		(814)				(239,000)		(130,000)
Adjustment		-		-		-		-
Cash on June 30th	\$	3,982,417	\$	4,354,998	\$	4,296,998	\$	4,347,998
Net Activity	\$	1,186,809	\$	372,581	\$	(58,000)	\$	51,000

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

	FY16		FY17		Rev. FY18		FY19	
	Actual		Actual		Budget		Budget	
Activity								
Cash at July 1st	\$	626,938	\$	591,835	\$	543,540	\$	555,147
Cash Received		122,538		(205,745)		169,057		167,857
Debt Service and Admin. Cost		(157,641)		157,450		(157,450)		(157,256)
Cash at June 30th	\$	591,835	\$	543,540	\$	555,147	\$	565,748
Net Activity	\$	(35,103)	\$	(48,295)	\$	11,607	\$	10,601
Net Assets (as of June 30th)								
Cash	\$	591,835	\$	543,540	\$	555,147	\$	565,748
Betterment Receivables		655,814		558,859		416,607		272,967
Net Assets	\$	1,247,649	\$	1,102,399	\$	971,754	\$	838,715
Less Remaining Debt Service		(1,563,230)		(1,407,799)		(1,250,543)		(1,094,995)
Surplus / Deficit	\$	(315,581)	\$	(305,400)	\$	(278,789)	\$	(256,280)

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

	FY16 Actual	FY17 Actual	Rev. FY18 Budget	FY19 Budget
Long Term Debt Repayment:				
Principal	\$ 686,432	\$ 609,516	\$ 607,814	\$ 618,831
Interest	149,323	134,224	121,390	108,499
Issuance Expense	-	-	-	-
Administration Fee (WPAT)	10,160	9,366	8,556	7,730
Totals	\$ 845,915	\$ 753,106	\$ 737,760	\$ 735,060

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

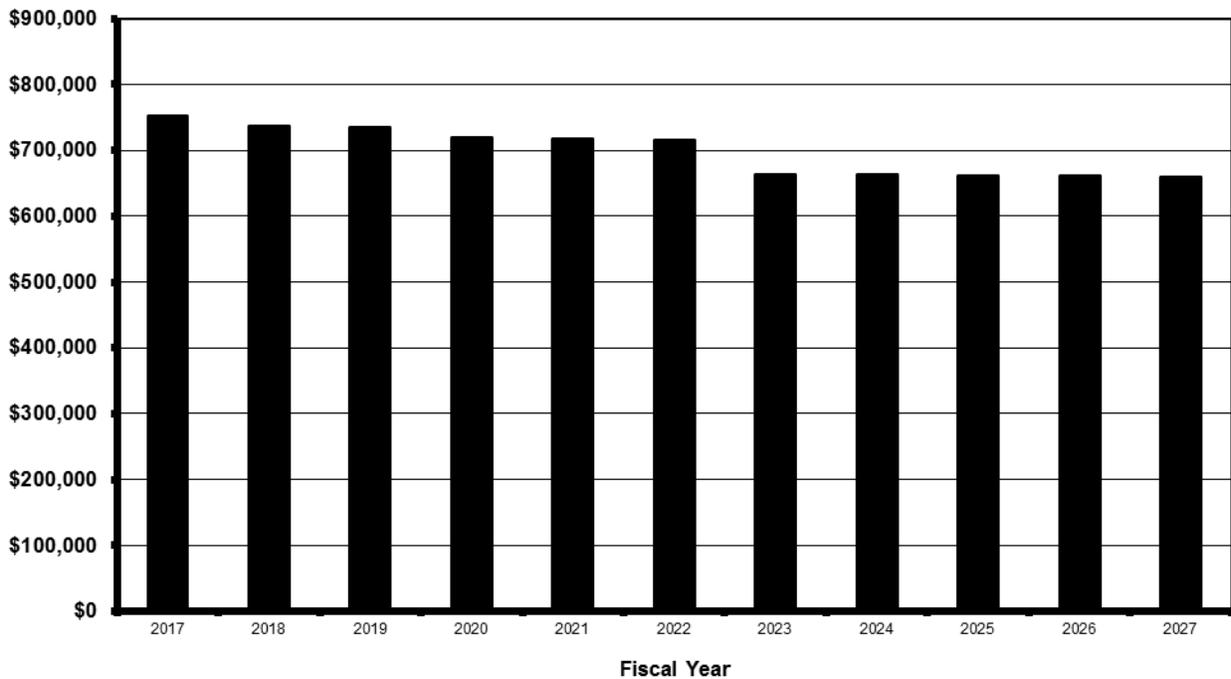
	FY16 Actual	Rev. FY17 Budget	Rev. FY18 Budget	FY19 Budget
Management & Engineering:				
Public Works Administration	\$ 35,202	\$ 37,173	\$ 38,172	\$ 38,296
Public Works Engineering	22,459	22,786	23,203	22,878
Highway Maintenance	4,806	4,937	4,941	4,941
133/135 Keyes Road	12,039	12,200	12,853	13,151
Subtotals	\$ 74,506	\$ 77,096	\$ 79,169	\$ 79,266
Financial & Administrative:				
Town Manager	\$ 29,488	\$ 31,111	\$ 31,798	\$ 31,979
Human Resources	5,823	6,069	6,632	6,850
Finance Administration	18,764	20,283	19,541	22,488
Treasurer-Collector	13,122	13,556	13,846	13,339
Town Accountant:				
General Services	13,224	14,598	15,449	16,569
Audit Services	6,000	6,000	6,000	6,000
Town House Facilities	3,380	3,508	3,758	3,754
Subtotals	\$ 89,801	\$ 95,125	\$ 97,024	\$ 100,979
Natural Resource:				
Planning	\$ 7,437	\$ 7,643	\$ 8,018	\$ 7,949
Natural Resources	6,514	6,631	7,095	6,770
Health	32,840	33,959	35,007	35,137
Subtotals	\$ 46,791	\$ 48,233	\$ 50,120	\$ 49,856
Salary Reserve	\$ -	\$ -	\$ -	\$ 7,675
Totals	\$ 211,098	\$ 220,454	\$ 226,313	\$ 237,776

Sewer Debt Service Schedule

Exclusive of betterment financing

Fiscal Year	Principal	Interest	Admin. Fees	Total
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
Totals	\$7,547,510	\$920,411	\$65,829	\$8,533,750

Sewer Debt Service Chart



FY19 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: \$1,685,000

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 including replacement of major mechanical, electrical, and instrumentation systems as well as upgrades for odor control and solids handling.

Mains (Sewer Collectors): \$21,000

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 operations (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 targeted TV inspections, metering and spot repair of sewer mains, as well as full rehabilitation of manholes.

Meter Replacement Program: \$43,000

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: \$105,000**

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 secondary clarifier unit #1.

Equipment: \$202,000

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 sampling equipment, major SCADA system upgrade, and addition of improved security technology

Wastewater Planning/Capacity: \$25,000

Capacity needs assessment and wastewater NPDES permitting support services. Concord expects to seek regulatory relief from NPDES permitting capacity constraints. Since the completion several years ago of the integrated wastewater and land-use planning efforts, the Town continues to require additional treatment capacity of 320,000 gpd (short-term) to 600,000 gpd (long-term).

GENERAL PLANT**Keyes Road Facility: \$128,000**

Capital outlay for improvements to Water/Sewer administrative office and garage facilities. Budget includes allowance for new emergency generator, electrical system upgrade and design of a covered storage facility for rolling stock presently exposed to the elements.

Vehicles/Construction Equipment: \$5,000

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 one engineering/administration vehicle, two service vehicles, and a small skid steer/loader.

CAPITAL SPENDING PLAN								
	FY17	FY18	FY19	FY20	FY21	FY22	FY23	Total FY19-23
Collection System								
Pumping Plant								
Station Structures	0	12,000	12,000	13,000	14,000	15,000	16,000	70,000
Station Equipment	23,540	180,000	1,685,000	26,000	27,000	28,000	29,000	1,795,000
Subtotal	23,540	192,000	1,697,000	39,000	41,000	43,000	45,000	1,865,000
Collection Plant								
Sewer Mains/Laterals	0	16,000	21,000	22,000	23,000	24,000	25,000	115,000
Inflow/Infiltration (Note 1)	0	105,000	105,000	109,000	113,000	117,000	121,000	565,000
Meter Replacements	10,523	25,000	43,000	29,000	31,000	30,000	31,000	164,000
Subtotal	10,523	146,000	169,000	160,000	167,000	171,000	177,000	844,000
Wastewater Treatment Plant								
Structures	0	255,000	105,000	200,000	206,000	30,000	31,000	572,000
Plant Equipment	10,085	115,000	202,000	25,000	26,000	27,000	28,000	308,000
Capacity/Treatment Optimization	0	0	0	0	0	0	0	
Depreciable Personal Services	15,986	16,470	16,970	17,480	18,010	18,560	19,120	90,140
Subtotal	26,071	386,470	323,970	242,480	250,010	75,560	78,120	970,140
General Plant								
Keyes Road CPW Facility	34,067	28,000	128,000	132,000	100,000	31,000	32,000	423,000
Vehicle Replacements	10,135	30,000	5,000	11,000	20,800	17,400	33,000	87,200
Miscellaneous Equipment & Billing Software	13,061							
Subtotal	57,263	58,000	133,000	143,000	120,800	48,400	65,000	510,200
Wastewater Management Project								
Wastewater Planning (Note 1)	0	134,000	25,000	483,000	1,900,000	1,900,000	0	4,308,000
W.R. Grace land acquisition (funded through borrowing)								
Subtotal	0	134,000	25,000	483,000	1,900,000	1,900,000	0	4,308,000
Total Capital Uses	117,397	916,470	2,347,970	1,067,480	2,478,810	2,237,960	365,120	8,497,340
Funding the Capital Plan								
Total - User Fees	117,397	677,470	2,217,970	475,480	365,810	220,960	244,120	3,524,340
Total - Sewer Improvement Fees	0	239,000	130,000	592,000	2,013,000	2,017,000	121,000	4,873,000
Total - Borrowing					100,000			100,000
Total Capital Sources	117,397	916,470	2,347,970	1,067,480	2,478,810	2,237,960	365,120	8,497,340
Note 1: Charged to Sewer Improvement Fund								

Sewer Fund

Revenues and Expenditures

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	10 years FY19-28
Sewer Fund: Plan and Projection													
Operating Revenue													
User Fees	2,527,489	2,934,000	3,068,000	3,099,000	3,131,000	3,163,000	3,195,000	3,228,000	3,261,000	3,293,000	3,328,000	3,361,000	32,127,000
Other	191,120	170,638	134,398	135,038	137,038	138,038	139,038	140,038	141,038	142,038	144,038	145,038	1,395,740
Subtotal	2,718,609	3,104,638	3,202,398	3,234,038	3,268,038	3,301,038	3,334,038	3,368,038	3,402,038	3,435,038	3,472,038	3,506,038	33,522,740
Operating Expense													
O & M	1,623,119	1,776,764	1,908,424	1,965,917	2,025,151	2,086,180	2,149,060	2,213,846	2,280,598	2,349,376	2,420,243	2,493,263	21,892,058
Depreciation	1,413,392	1,449,032	1,593,254	1,090,267	1,154,112	1,181,074	1,154,112	1,132,580	1,092,981	1,085,868	1,066,164	1,089,676	11,640,088
Subtotal	3,036,511	3,225,796	3,501,678	3,056,184	3,179,263	3,267,254	3,303,172	3,346,426	3,373,579	3,435,244	3,486,407	3,582,939	33,532,145
Operating Income	-317,902	-121,158	-299,280	177,854	88,775	33,784	30,866	21,612	28,459	-206	-14,369	-76,901	-9,405
ADD: Interest Income	70,640	97,381	112,061	121,583	107,387	84,484	77,054	82,404	87,134	91,730	95,881	104,214	963,932
Bond Premium	-	-	-	-	-	-	-	-	-	-	-	-	0
Co-Mag Incentive Payments	-	-	-	-	-	-	-	-	-	-	-	-	0
Sewer Improvement Fees	372,581	181,000	181,000	181,000	181,000	181,000	181,000	181,000	181,000	181,000	181,000	181,000	1,810,000
LESS: Interest Expense													
Existing Debt	136,096	129,946	116,229	102,459	88,633	74,558	60,979	47,891	34,538	20,916	7,018	0	553,221
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
Net Income	-10,777	27,277	-122,448	377,978	288,429	222,709	223,941	233,525	258,855	248,808	253,095	206,313	2,191,205
Available Resources from:													
Net income	-10,777	27,277	-122,448	377,978	288,429	222,709	223,941	233,525	258,855	248,808	253,095	206,313	2,191,205
Depreciation expense	1,413,392	1,449,032	1,593,254	1,090,267	1,154,112	1,181,074	1,154,112	1,132,580	1,092,981	1,085,868	1,066,164	1,089,676	11,640,088
subtotal	1,402,615	1,476,309	1,470,806	1,468,245	1,442,541	1,403,793	1,378,053	1,366,105	1,351,836	1,334,675	1,319,258	1,295,989	13,831,293
Bond proceeds													100,000
Loan proceeds													100,000
LESS: Principal repayments													
Existing Debt	609,516	607,814	618,831	617,570	629,036	640,734	602,668	614,843	627,265	639,936	652,865	0	5,643,748
New Debt	0	0	0	0	0	0	10,000	10,000	10,000	10,000	10,000	10,000	60,000
BAN Repayment	793,099	868,495	851,975	850,675	813,505	863,049	765,385	741,262	714,571	684,739	656,393	1,285,989	8,227,545
Net Available for Capital Purposes													
Capital Plan: User Fee Supported	117,397	677,470	2,217,970	475,480	365,810	220,960	244,120	283,900	265,900	234,910	256,540	267,190	10,471,780
Improvement Fee Supported	-	239,000	130,000	592,000	2,013,000	2,017,000	121,000	125,000	129,000	133,000	137,000	142,000	
Borrowing Supported	-	-	-	-	100,000	-	-	-	-	-	-	-	
Cash Position													
Beginning balance	9,053,897	9,762,282	9,714,307	8,218,312	8,001,507	6,336,203	4,961,292	5,361,557	5,693,919	6,013,590	6,330,419	6,593,272	
ADD: Net available	793,099	868,495	851,975	850,675	813,505	863,049	765,385	741,262	714,571	684,739	656,393	1,285,989	
LESS: Planned Capital	117,397	916,470	2,347,970	1,067,480	2,478,810	2,237,960	365,120	408,900	394,900	367,910	393,540	409,190	
Changes in assets & liabilities													
Ending balance (does not include Betterment balance)	9,762,282	9,714,307	8,218,312	8,001,507	6,336,203	4,961,292	5,361,557	5,693,919	6,013,590	6,330,419	6,593,272	7,470,072	
Sewer Improvement Fund Balance (Included in Ending Balance)	4,354,998	4,296,998	4,347,998	3,936,998	2,104,998	268,998	328,998	384,998	436,998	484,998	528,998	567,998	
Ending balance w/o Sewer Improvement	5,407,284	5,417,309	3,870,314	4,064,509	4,231,204	4,692,294	5,032,559	5,308,921	5,576,591	5,845,421	6,064,274	6,902,073	

SEWER RATES

(Per Cubic Foot)

	Class of Customer	Current FY18	Effective 6/1/18			%Chg.
S-18		(1 cubic foot = 7.48 gallons)				
1	Residential Service Rate billed year around but uses wintertime average consumption for non-wintertime months.	\$ 0.1141	\$ 0.1153			1%
2	Non-Residential Service Rate billed year around using actual readings for each billing period.	\$ 0.1141	\$ 0.1153			1%
3	Chiller/Cooling System Discharge Sewer Service For large non-residential sewer customers with dedicated cooling-system water supply	\$ 0.0228	\$ 0.0231			1%

	Sample Impacts	Current Annual	New Annual	Annual Change	Monthly Change	% Chg.
1	Average Residential Customer (500 cu ft/mo wintertime use)	\$ 685	\$ 692	\$ 7.20	\$ 0.60	1%
2	Typical Non-Residential Customer (900 cu ft/mo)	\$ 1,232	\$ 1,245	\$ 12.96	\$ 1.08	1%

