



# **Annual Disclosure**

**ANNUAL FINANCIAL INFORMATION  
For the Fiscal Year Ending  
June 30, 2018**

**THE METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY  
DEPARTMENT OF WATER AND SEWERAGE SERVICES**

**HISTORICAL STATEMENT OF REVENUES, EXPENSES, DEBT, AND DEBT  
SERVICE COVERAGE**

For the Fiscal Year Ending June 30

	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
<b>Operating Revenues</b>	211,035,704	214,336,054	217,358,507	218,400,715	223,840,989
<b>Non-Operating Revenues</b>	2,019,225	1,184,697	1,664,320	1,563,447	2,963,497
<b>Total Revenues</b>	<u>\$213,054,929</u>	<u>\$215,520,751</u>	<u>219,022,827</u>	<u>219,964,162</u>	<u>226,804,486</u>
<b>Total Debt Service</b>	\$67,530,811	55,114,036	62,487,385	70,787,061	79,024,582.41
<b>Operating Expenses:</b>					
<b>Less Depreciation and Amortization</b>	\$101,703,327	\$100,824,504	112,207,776	112,654,492	113,857,693.81
<b>Debt Service on SRF Loans</b>	-	-			
<b>Undesignated Fund Balance</b>	\$42,665,652	\$50,293,536	46,344,242	42,627,873	53,674,825.00
<b>Coverage Ratio</b>	1.65	2.08	1.57	1.52	1.43

All information taken from CAFR

**FORECAST STATEMENT OF REVENUES, EXPENSES, DEBT, AND DEBT SERVICE  
COVERAGE**  
For Fiscal Year Ending June 30

	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
<b>Operating Revenues</b>					
<i>Charges for Service</i>					
Water Revenues	\$ 66,526,100	\$ 67,191,400	\$ 67,527,357	\$ 67,864,994	\$ 68,204,319
Sewer Revenues	133,021,700	134,351,900	135,023,660	135,698,778	136,377,272
Customer Service Fees	3,248,200	3,280,700	3,297,104	3,313,589	3,330,157
Misc. Water & Sewer Revenue	12,909,400	12,864,470	12,928,792	12,993,436	13,058,403
<i>Subtotal: Charges for Service</i>	<u>215,705,400</u>	<u>217,688,470</u>	<u>218,776,912</u>	<u>219,870,797</u>	<u>220,970,151</u>
<b>Non-Operating Revenues</b>					
Interest Income on Fund Balances	\$ 304,500	\$ 307,500	\$ 309,038	\$ 310,583	\$ 312,136
Other Revenues	333,000	304,530	306,053	307,583	309,121
<i>Subtotal: Non-Operating Revenues</i>	<u>637,500</u>	<u>612,030</u>	<u>615,090</u>	<u>618,166</u>	<u>621,256</u>
<b>Total Revenues</b>	<b>\$ 216,342,900</b>	<b>\$ 218,300,500</b>	<b>\$ 219,392,003</b>	<b>\$ 220,488,963</b>	<b>\$ 221,591,407</b>
<b>Operating Expenses</b>	<b>(129,576,200)</b>	<b>(130,400,200)</b>	<b>(130,400,200)</b>	<b>(132,356,203)</b>	<b>(132,356,203)</b>
<b>Net Revenues Available for Debt Service</b>	<b>\$ 86,766,700</b>	<b>\$ 87,900,300</b>	<b>\$ 88,991,803</b>	<b>\$ 88,132,760</b>	<b>\$ 89,235,204</b>
<b>Debt Service Funding</b>					
<i>Revenue Bonds</i>					
Series 2008A Revenue Refunding Bonds	(15,095,013)	(15,024,438)	-	-	-
Series 2010A Revenue Refunding Bonds	(9,412,350)	(10,456,625)	(10,443,300)	(10,400,700)	(10,392,825)
Series 2010B Revenue Bonds Taxable (BAB) <sup>1</sup>	(5,715,423)	(5,715,423)	(5,715,423)	(5,715,423)	(5,715,423)
Series 2010C Revenue Bonds Taxable (RZEDB) <sup>1</sup>	(2,760,863)	(2,760,863)	(2,760,863)	(2,760,863)	(2,760,863)
Series 2010D Revenue Refunding Bonds Taxable	(1,013,715)	-	-	-	-
Series 2012 Subordinate Lein Water & Sewer Refunding	(21,742,375)	(20,766,500)	(19,844,125)	(18,768,000)	(17,953,250)
Series 2013 Revenue Bonds	(11,180,850)	(11,180,850)	(11,180,850)	(11,180,850)	(17,284,725)
Series 2017A Revenue Bonds	(4,343,494)	(4,343,494)	(4,343,494)	(6,111,569)	(6,112,444)
Series 2017B Revenue Bonds	(7,760,500)	(7,760,500)	(7,760,500)	(10,666,000)	(10,668,125)
<b>Total Existing Bonds</b>	<b>(79,024,582)</b>	<b>(78,008,692)</b>	<b>(62,048,554)</b>	<b>(65,603,404)</b>	<b>(70,887,654)</b>
Proposed Short-Term Financing	(3,375,000)	(875,000)	(2,925,000)	(1,537,500)	(3,675,000)
<i>Subtotal: Revenue Bonds</i>	<u>(82,399,582)</u>	<u>(78,883,692)</u>	<u>(64,973,554)</u>	<u>(67,140,904)</u>	<u>(74,562,654)</u>
<b>Total Debt Service</b>	<b>\$ (82,399,582)</b>	<b>\$ (78,883,692)</b>	<b>\$ (64,973,554)</b>	<b>\$ (67,140,904)</b>	<b>\$ (74,562,654)</b>
<b>Total Revenues Available for Capital Projects</b>	<b>\$ 4,367,118</b>	<b>\$ 9,016,608</b>	<b>\$ 24,018,248</b>	<b>\$ 20,991,855</b>	<b>\$ 14,672,550</b>
(transferred to E&R Fund)					
<b>Other Budgeted Expenditures</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
Total Consent Decree Program	6,500,000	336,500,000	39,000,000	52,000,000	272,000,000
Total Other Capital Projects	89,732,000	45,104,250	43,287,000	175,755,000	157,910,000
<i>Subtotal: Other Budgeted Expenditures</i>	<u>96,232,000</u>	<u>381,604,250</u>	<u>82,287,000</u>	<u>227,755,000</u>	<u>429,910,000</u>
<b>Other Transfers In</b>					
Transfer from Extension and Replacement Fund	11,940,523	12,298,739	12,667,701	13,047,732	13,439,164
Proposed Proceeds From Long-Term Debt	-	250,000,000	-	200,000,000	-
Proposed Proceeds from Short Term Financing	100,000,000	75,000,000	100,000,000	125,000,000	100,000,000
<i>Subtotal: Other Transfers In</i>	<u>\$ 111,940,523</u>	<u>\$ 337,298,739</u>	<u>\$ 112,667,701</u>	<u>\$ 338,047,732</u>	<u>\$ 113,439,164</u>
<b>Remaining Available Funds (Revenue Surplus/Deficit)</b>	<b>\$ 4,367,118</b>	<b>\$ 9,016,608</b>	<b>\$ 24,018,248</b>	<b>\$ 20,991,855</b>	<b>\$ 14,672,550</b>
<b>Total Beginning Extension and Replacement Fund</b>	<b>\$ 110,330,640</b>	<b>\$ 104,757,235</b>	<b>\$ 103,475,104</b>	<b>\$ 116,825,651</b>	<b>\$ 126,769,774</b>
Remaining Available Funds (Revenue Surplus/Deficit)	4,367,118	9,016,608	24,018,248	20,991,855	14,672,550
Water Impact Fees	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Sewer Impact Fees	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Net Transfers	(11,940,523)	(12,298,739)	(12,667,701)	(13,047,732)	(13,439,164)
<b>Total Ending Extension and Replacement Fund</b>	<b>\$ 104,757,234.62</b>	<b>\$ 103,475,104.01</b>	<b>\$ 116,825,651.24</b>	<b>\$ 126,769,774.45</b>	<b>\$ 130,003,160.52</b>
<b>Note:</b>					
1. Debt Services are without the effect of sequestration					

<b>Calculation for Rate Covenant Requirement</b>					
	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021</b>	<b>FY 2022</b>	<b>FY 2023</b>
<b>Operating Revenues</b>	\$ 216,342,900	\$ 218,300,500	\$ 219,392,003	\$ 220,488,963	\$ 221,591,407
<b>Operating Expenses (Excluding PILOT)</b>	129,576,200	130,400,200	130,400,200	132,356,203	132,356,203
<b>Net Revenue (Excluding PILOT)</b>	86,766,700	87,900,300	88,991,803	88,132,760	89,235,204
<b>Payment in Lieu of Taxes (PILOT)</b>	4,000,000	4,000,000	4,000,000	4,000,000	4,000,000
<b>Debt Service - Parity Debt</b>					
Revenue Bonds 1988 - 2008	15,095,013	15,024,438	-	-	-
Bond Series 2010	18,902,351	18,932,911	18,919,586	18,876,986	18,869,111
Revenue Bonds 2012	21,742,375	20,766,500	19,844,125	18,768,000	17,953,250
Revenue Bonds 2013	11,180,850	11,180,850	11,180,850	11,180,850	17,284,725
New Revenue Bonds 2017	12,103,994	12,103,994	12,103,994	16,777,569	16,780,569
Short-Term Financing	3,375,000	875,000	2,925,000	1,537,500	3,675,000
<b>Net Debt Service - Parity Debt</b>	82,399,582	78,883,692	64,973,554	67,140,904	74,562,654
<b>Total Operating Expenses and Net Debt Service</b>	<b>\$ 211,975,782</b>	<b>\$ 209,283,892</b>	<b>\$ 195,373,754</b>	<b>\$ 199,497,107</b>	<b>\$ 206,918,857</b>
<b>Rate Covenant Ratios</b>					
<b>Sr. Subordinate (1.20 Required)</b>	<b>1.30</b>	<b>1.33</b>	<b>1.78</b>	<b>1.81</b>	<b>1.65</b>
<b>Senior Debt (1.10 Required)</b>	<b>1.46</b>	<b>1.46</b>	<b>1.63</b>	<b>1.62</b>	<b>1.63</b>

### **Rate Covenant**

The Bond Resolution requires the Metropolitan Government to set and maintain rates sufficient to produce Net Revenues (Revenues minus Operation and Maintenance Expenses) in each Fiscal Year at least equal to the greater of (i) 120% of the Debt Service Requirement on the Prior Bonds and the Outstanding Bonds in such Fiscal Year; or (ii) 100% of the sum of (A) the Debt Service Requirement on the Prior First Lien Bonds, the Second Lien Bonds and Subordinated indebtedness in such Fiscal Year, (B) the amounts required to be paid during such Fiscal Year into the debt service reserve fund and the operating reserve fund established by the Prior First Lien Resolution and to the Debt Service Reserve Fund established pursuant to the Bond Resolution, and (C) the amount of all other charges and liens whatsoever payable out of Revenues during such Fiscal Year, including, but not limited to, payments in lieu of taxes.

So long as the Prior Bonds remain outstanding, the Metropolitan Government must also remain in compliance with the rate covenant established by the Prior Resolution. The Prior First Lien Resolution requires that System rates be set so as to cause System revenues in each Fiscal Year to exceed 110% of the sum of System operating expenses and Prior First Lien Bond debt service for such Fiscal Year.

### **THE WATER AND SEWER SYSTEM**

#### General

The formation of the Metropolitan Government of Nashville and Davidson County (“Metropolitan Government”) effective on April 1, 1963 resulted in the combination and consolidation of (1) the water and sewage system formerly maintained by the City of Nashville, and (2) the sewage system formerly maintained by the Davidson County Improvement District No. 1 into the Department of Water and Sewerage Services (the “Department”). The Department, established under Section 8.501 of the Charter of the Metropolitan Government, is charged with the responsibility for construction, operation and maintenance of all water and sanitary sewer facilities for the Metropolitan Government as well as the collection of all charges for the services of such utilities.

In addition to the facilities thus combined and consolidated, the Water System (as defined herein) and the Sewer System (as defined herein) have gradually been expanded and include: improvements financed by revenues; improvements resulting from capital contributions in aid of construction by private developers; all improvements, additions and extensions financed with the proceeds of outstanding bonds and governmental grants; and facilities acquired from the Nashville Suburban Utility District, the First

Suburban Water Utility District of Davidson County, Tennessee, the sewerage service of the Parkwood Service Company, the Joelton Water Utility District, the City of Lakewood water and sewerage system, Rayon City Water Company, the Cumberland Utility District, the sewerage service of the Nolensville/College Grove Utility District in Williamson County, and the Old Hickory Utility District of Davidson County.

Under the Charter and Tennessee Code Annotated §7-3-302, the Metropolitan Government can assume and take over any water and/or sewer utility district located within its boundaries through ordinances adopted by the Metropolitan Council. Several such systems currently operate inside Davidson County and if a decision is made to consolidate these operations into the Department, the Metropolitan Government will take subject to or retire all debts and liabilities of the systems. The economic impact of such an assumption or takeover would be evaluated prior to the submission of any legislation to the Metropolitan Council. By contract dated February 1996, the Metropolitan Government has agreed not to take over the Harpeth Valley Utility District before February 2026.

Historically, the Department managed and partially funded the Stormwater operations of the Metropolitan Government. In 2009, the Metropolitan Government established a Stormwater Division of the Department as a stand-alone enterprise fund with its own set of service fees, which are now an itemized part of the water bill. Further funding of Stormwater operations will not be required of the Department.

### **The Water System**

The water provided by the Department's water system (the "Water System") currently meets all physical, chemical, and bacteriological water quality standards established by the United States Environmental Protection Agency (the "EPA") under the Safe Drinking Water Act, as amended, by the Tennessee Department of Environment and Conservation ("TDEC") and under the Tennessee Safe Drinking Water Act of 1983, as amended.

The Water System draws water from the Cumberland River and processes it through modern filtration plants for delivery into the distribution system. Raw water is treated by chemical coagulation, flocculation, clarification, filtration, and disinfection. The existing water treatment plants and pumping facilities have a total delivery capacity of 180 million gallons per day. In Fiscal Year 2017, net sales to retail customers were 22.7 billion gallons. The peak demand for water from the system during Fiscal Year 2018 was 111.14 million gallons on August 7, 2017.

The Robert L. Lawrence, Jr. Filtration Plant, originally placed in service in 1929, was extensively modernized and expanded in 1953 and 1963 to a capacity of 72 million gallons per day. An upgrade of this plant was completed in 2001 and it now has a treatment capacity of 90 million gallons per day. A central control room located at this plant provides constant monitoring of the status of all water pumping stations and reservoirs.

The K. R. Harrington Water Treatment Plant was completed and placed into operation in 1977. This facility provided an additional capacity of 60 million gallons per day to the Metropolitan Government's water treatment capabilities. Expansion of this plant to 90 million gallons per day was completed in 1992 and will ensure an adequate supply of potable water through the coming years. In 1999, as a precaution against prolonged power outages caused by ice storms, tornadoes, or other disasters, the Harrington Plant was equipped with four emergency generators with a capacity of 1,750 kW each. These generators allow the Department to operate the plant at a capacity of 72 million gallons per day.

The water from the existing treatment plants is delivered into the water distribution system via six major transmission mains. The distribution system contains approximately 3,045 miles of mains ranging in diameter from 2 inches to 60 inches. Storage is provided by the 51 million gallon capacity Eighth Avenue Reservoir and various other reservoirs with a combined additional capacity of 37.3 million

gallons and by tanks and stand pipes, many of which are utilized to provide water service in areas of higher elevation than the central urbanized area. At this time only half of the Eighth Avenue Reservoir is in service, thus reducing its capacity to 25.5 million gallons. The Water System has 56 booster-pumping stations to deliver water to these higher regions.

Although recent growth has been relatively flat, the Water System has experienced continuous growth over the past decade, and as of Fiscal Year 2018, has provided direct service to 204,976 customers. In Fiscal Year 2018, 61% of the water provided by the Water System was consumed by commercial and industrial customers (including residential apartment complexes), and 39% by residential customers. The following table illustrates growth of the Water System over the past 10 years.

<u>Water System Facts in Brief</u>			
<u>Fiscal Year Ended June 30</u>			
<u>Use of Water</u>	<u>2018</u>	<u>2008</u>	<u>(2008-2018) Ten Year History</u>
Water Customers - End of Period <sup>(1)</sup> (thousands)	204,976	174,286	17.6%
Average Daily Finished (millions of gallons)	91.4	97.0	(5.8)%
Water Sales for Fiscal Year (billions of gallons)	22.7	25.2	(10.0)%
Maximum Daily Demand (millions of Gallons)	111.1	137.3	(19.0)%
<b>Growth of System</b>			
Utility Plant Value <sup>(2)</sup> (millions)	\$2,084	\$1,528	36.4%
Reservoirs	37	44	(15.9)%
Storage Capacity (millions of gallons)	62.8	93.5	(32.8)%
Auxiliary Pump Stations	56	57	(1.8)%
Total Miles, Distribution Lines	3,045	2,944	3.4%
Fire Hydrants	21,285	19,820	7.4%

(1) As per billing records

(2) Property, Plant & Equipment of the Combined Water and Sewer System, net of depreciation

The Department has a contract with Water Systems Optimization to perform an independent water audit annually. The audit for Fiscal Year 2018 is complete. During the audit, the system input volume is categorized as revenue water and non-revenue water. Non-revenue water is further broken down into real losses (leakage) and apparent losses (meter error). For Fiscal Year 2018, the real losses were 28% of system input volume and the apparent losses were 1.6% of system input volume.

### **The Sewer System**

The existing sewerage system (the “Sewer System”) comprises 2,986 miles of gravity sewers, 117 pumping stations, 164 miles of force main and four treatment plants, the three most important of which are the Central Wastewater Treatment Plant, the Dry Creek Wastewater Treatment Plant, and the Whites Creek Wastewater Treatment Plant. The Central Wastewater Treatment Plant has a capacity of 250 million gallons per day plus an additional 80 million gallons per day stormwater treatment for a total capacity of 330 million gallons per day. The Dry Creek Wastewater Treatment Plant has a design capacity of 24 million gallons per day of secondary treatment while the Whites Creek Wastewater Treatment Plant has a capacity of 37.5 million gallons per day of secondary treatment.

The Department properly treats and disposes of sludge produced at its treatment plants consistent with State and Federal law, and has constructed a \$132 million biosolids facility to stabilize and further treat sludge, including sludge thickening, anaerobic digestion and heat drying. The methane gas produced from the digesters is used to heat dry the sludge into pellets, which are considered a Class A material by the USEPA and are a marketable product. The facility has significantly reduced the need to landfill the residuals.

The following table provides data on the use and facilities of the Sewer System over the last ten years. The average number of customers served increased 11.5% since Fiscal Year 2008. Over the last ten years, there has been a 8.7% increase in the number of sewerage pumping stations and a concurrent 2.6% increase in the miles of sewer lines. Wastewater treatment has increased by approximately 16.0%.

Sewer System Facts in Brief

	Fiscal Year Ended June 30		
	<u>2018</u>	<u>2008</u>	<u>(2008 - 2018)</u> <u>Ten Year</u> <u>History</u>
Sewer Customers - End of Period	210,157	188,490	11.5%
Annual Sewage Treatment (billions of gallons)	61.5	53.0	16.0%
Average Daily Treatment (millions of gallons)	168.4	144.7	16.4%
Growth of System			
Utility Plant Value <sup>(1)</sup> (millions)	\$2,084	\$1,528	36.4%
Total Miles of Sewer Lines	3,150	3,069	2.6%
Number of Treatment Plants	4	4	0.0%
Number of Pumping Stations	112	103	8.7%

(1) Property, Plant & Equipment of the Combined Water and Sewer System, net of depreciation

Major Customers

The following list shows the largest customers of the Department for water and sewer services for the indicated recent one-year period, ranked according to billings.

WATER SERVICES LARGEST CUSTOMERS  
One Year Period Ending June 30, 2018  
(In 1,000's)

Vanderbilt	\$1,910
City of Brentwood	774
MB-Metro Schools	767
MB-Metro Water Services	656
Opryland	527
Metro District Energy Systems	371
NCG Utility District	307
Tennessee State University	301
Wometco Coca Cola	278
Bridgestone Tire	277

**SEWER SERVICES LARGEST CUSTOMERS**  
**One Year Period Ending June 30, 2018**  
(In 1,000's)

Hendersonville Utility District	\$ 3,753
Brentwood Lift Station	3,098
Vanderbilt	2,860
City of Mt. Juliet	2,847
City of Goodlettsville	2,833
City of Lavergne	1,753
MB-Metro Schools	1,310
Opryland	1,052
MB-Metro Water Services	946
Tennessee State University	564

**Management and Personnel**

SCOTT A. POTTER, P.E., Director, graduated from Vanderbilt University with a Bachelor of Engineering Degree in Electrical Engineering in 1986 and was commissioned as an Ensign in the United States Navy. While serving in the Navy Mr. Potter received a Master's Degree in Mechanical Engineering from the Naval Postgraduate School in Monterey, California, in 1991. Mr. Potter served on two destroyers: USS COCHRANE (DDG 21) and USS CALLAGHAN (DDG 994). While stationed at the United States Naval Academy, he earned the academic rank of Master Instructor, teaching courses in Statics, Materials Science, Applied Fluid Mechanics, Thermodynamics, and Applied Thermodynamics. The Louisville Water Company, in Louisville, Kentucky, employed Mr. Potter as Manager of Distribution Operations from 1998 to 2001. He was also an adjunct member of the faculty of the Mechanical Engineering Department in the Speed Scientific School at the University of Louisville, and an instructor at Vanderbilt University, where he taught a course in water and wastewater policy. Mr. Potter is currently an adjunct member of the faculty of Belmont University in the Department of Mathematics.

DAVID M. TUCKER, Assistant Director (Wastewater Operations), graduated from Tennessee State University with a Bachelor of Science Degree in Biological Sciences. He has thirty years of experience in water and wastewater treatment plant operations and maintenance. Mr. Tucker holds a State of Tennessee Grade IV Operator's Certification in both water and wastewater treatment. The Wastewater Operations division is responsible for the operation and maintenance of all wastewater treatment facilities; all associated pumping stations, Laboratory Services and Security. He joined the Department in 1987 as an Assistant Plant Manager and has progressed to his present position. He is a member of the Water Environmental Federation and the American Water Works Association.

CYRUS Q. TOOSI, P.E., Assistant Director (Engineering), graduated from the University of Texas at Austin, in 1988, with a Bachelor of Science Degree in Civil Engineering. Mr. Toosi held a position with the City of Houston for two years prior to coming to Nashville. In 1990 he joined the Department as a hydraulic modeler, and as a flow monitoring, and planning specialist. He has since advanced to his present position. He has thirty years of experience in the engineering of water and wastewater system. He has created MWS' Master Water Growth Plan, Asset Management Program, and Water Infrastructure Rehabilitation Program. He also currently serves as the Chief Engineer for the Department and oversees the Clean Water Nashville program. He holds a Professional Engineering License in the State of Tennessee and is a member of the American Water Works Association and Water Environment Federation

GILBERT NAVE, Assistant Director (Water Operations), is a forty year career employee with Metro Water Services Nashville and Davidson County, TN. Gilbert has a Bachelor of Science degree from Middle Tennessee State University majoring in Chemistry. He is responsible for all water production from the Omohundro and K. R. Harrington water treatment plants and for managing Water Reservoir operation and maintenance. He holds a Grade IV Water Filtration Certificate from the State of



Tennessee. And is the licensed Operator of Record for the Department. He is a twenty-six year member of the American Waterworks Association and KY-TN Section of the AWWA. He also maintains a Grade IV Wastewater Operator License for the State of Tennessee.

HAL BALTHROP, P.E., Assistant Director (Development Services), holds a Bachelor of Science Degree in Civil Engineering from Tennessee Technological University. He is a licensed Professional Engineer and holds TN Collection System Operator and Water Distribution Operator licenses. Mr. Balthrop also serves as Advisor of the Tennessee Water and Wastewater Agency Response Network, serves as Chair of the KY/TN AWWA Water Utility Committee on Legislative Issues and is a member of WEF, AWWA, TWWA, ASCE and TAUD.

LEANNE B. SCOTT, P.E., Assistant Director (Repair and Maintenance of Distribution and Collection Systems), holds a Bachelor of Science Degree in Chemical Engineering from Tennessee Technological University and a Master's Degree in Engineering Management from the University of Tennessee. She is a licensed Professional Engineer and the Department's State Licensed Collection System Manager and Water Distribution Manager. Ms. Scott serves as the Tennessee Delegate for the KY-TN Water Environment Association and serves on the Water Loss Committee for the KY-TN American Water Works Association.

MARTHA SEGAL, Assistant Director (Customer Services & Information Services), graduated from Old Dominion University with a Bachelor of Science in Business Administration Degree and a Master of Business Administration Degree. She worked with the Department of Utilities in Norfolk, Virginia for 14 years prior to being recruited to Metro Water Services in 2000. She served for many years on the American Water Works Association (AWWA) Virginia Section Customer Service Committee. She is currently a member of the AWWA Water Equation Committee, a former member of the Board of Directors and a former Vice President. She is a past chair of the DMIC (Diversity & Member Inclusion Committee) for AWWA. For the KY/TN Section AWWA she is a past Section Chair, and currently serves as a member of the section Philanthropic Committee and Water for People Committee.

AMANDA K. DEATON-MOYER, Assistant Director (Business & Finance), holds a Bachelors of Arts Degree in Political Science and a Master of Public Administration degree from the University of Georgia. She is a Certified Municipal Financial Officer for the State of Tennessee and is a member of the Tennessee City Managers Association and International City Managers Association. Prior to joining the Department in spring of 2017, she served as the City Manager for the City of Forest Hills, Tennessee and the Assistance Chief Administrative Officer for Budget (including capital assets) and Strategic Planning for the City of Macon, Georgia. She has over 10 years of professional experience in financial management in the government sector.

At the end of Fiscal Year 2018, the Department employed 681 persons. Employees of the Department are members of one of these pension plans:

#### Metropolitan Employees' Benefit Trust Fund

Established in 1963, the Metropolitan Employees' Benefit Trust Fund covers substantially all employees who are not members of any other plan and is used to account for Divisions A and B of the Metro Plan. Division B of the Metro Plan is the only plan open to new members. This fund receives contributions from both employees and from the Government. Under the administrative responsibility of the Employee Benefit Board, this fund provides for the accumulation of assets for the payment of disability and retirement benefits for employees covered under this plan.

#### Davidson County Employees' Retirement Fund

The Davidson County Employees' Retirement Fund covers certain employees of the former Davidson County and was closed to new members in 1963. Benefits are funded by contributions from the Government.

#### Closed City Plan Fund

The Civil Service Employees' Pension Fund covers certain employees of the former City of Nashville and was closed to new members in 1963. Benefits are funded by contributions from the Government.

### **Rate Setting Process**

The Charter of the Metropolitan Government provides that the Metropolitan Mayor and the Metropolitan Council have the authority and are directed to establish the rates for water and sewerage services and to provide methods of changes in such rates. Acting in accordance with this authority, the Council adopted Ordinance BL 2009-407, which beginning May 1, 2009, implemented a three-year plan of increases for both water and wastewater rates. The water rate increases were 5%, each beginning on the following dates, May 1, 2009, May 1, 2010, and May 1, 2011, and the wastewater rate increases were 9%, 8%, and 7% on those same dates.

On December 7, 2010, the Metropolitan Council adopted Ordinance BL 2010-790 imposing a 10% sewer surcharge in lieu of the surcharge that had previously been imposed to secure the payment of the TLDA Loans. Heretofore, the sewer surcharge had not been included as part of Revenues, and such funds were not available to pay System operating expenses or System debt service (other than the TLDA Loans). From the date of issuance of the Series 2010 Bonds and the prepayment of the TLDA Loans, the sewer surcharge will be included in Revenues and will be available for the payment of System operating expenses and debt service, including the Series 2010 Bonds.

Any change in the water and sewerage service rates established under the above ordinances must be adopted by the Metropolitan Council by ordinance. As stated in Section 3.05 of the Charter of the Metropolitan Government of Nashville and Davidson County "No ordinance shall become effective unless it shall have passed by a majority vote on 3 different days, on the final passage of which it shall have received a majority vote of all the members to which the council is entitled and until it shall have been signed by the Metropolitan County Mayor or become a law without his signature..."

An ordinance will become law without the signature of the Metropolitan Mayor if the Mayor fails to approve or disapprove the ordinance and does not return it to the Council at or prior to the next regular meeting of the Council occurring 10 days or more after the ordinance is delivered to the Mayor. If the Mayor vetoes the ordinance, it will become law if subsequently adopted by a two-thirds vote of all the members of the Council to which it is entitled.

Under the Charter of the Metropolitan Government, the Mayor is obligated to submit an operating budget to the Council no later than May 1<sup>st</sup> of each year. Before the beginning of each Fiscal Year, and in no event later than June 30<sup>th</sup>, the Metropolitan Council is obligated to adopt a budget, which must provide for all expenditures required by law or the Charter and for the payment of all debt service requirements for the ensuing year and a tax rate to fully fund the budget. If the Council fails to adopt a budget, the budget submitted by the Mayor becomes law and the Council must adopt a tax rate to fund that budget.

Pursuant to the Resolution, before the beginning of each Fiscal Year, the Metropolitan Government is obligated to fix or maintain rates for water and sewerage service so as to produce Revenues at least equal to 110% of the Operating Expenses for the Department budgeted for the ensuing Fiscal Year plus the aggregate of the Debt Service (being the amount of payments due during such ensuing year on the Bonds issued and outstanding pursuant to the Resolution).

### **Current Rates and Charges**

Monthly service charges for water and sewerage services are generally based, in each case, upon a rate schedule consisting of a minimum charge and a quantity charge. The minimum charges vary

according to meter size and account class, i.e. residential, small commercial, intermediate commercial and large commercial/industrial. The quantity charge is dependent on account class.

Current Water Rates

Water revenues from the Department’s customers include a fixed minimum charge per customer connection and a quantity charge per 100 cubic feet (cf) based upon the meter size and number of connections. The quantity charge is applied to all consumption in excess of 200 cf per month.

**WATER AND SEWERAGE RATE SCHEDULE BY CUSTOMER CLASS**

Monthly rates for water sold are based on meter measurement.

Monthly sewerage service charges for the use of the public sanitary sewerage system are set by water consumption as determined by meter measurement.

Minimum charges per month are based on size of meter and customer class.

**CLASS DETERMINATION**

<u>CLASS</u>	<u>ANTICIPATED OR HISTORICAL USAGE</u>
Residential	Up to two housing units on a common meter
Small Commercial and Industrial	Up to 1,600 cubic feet per month
Intermediate Commercial and Industrial	1,600 to 200,000 cubic feet per month
Large Commercial and Industrial	Over 200,000 cubic feet per month

**WATER AND SEWER CHARGES AND RATES**

Minimum Charges per Month (Including 200 Cubic Feet Usage)

In addition to the above rates, an additional charge of 10% of the sewerage charge is authorized to fund water and sewerage system operations, capital improvements and debt obligations. A 9.25% state and local sales tax is added to all water charges.

As a result of the passage of Ordinance BL 2009-407, beginning on May 1, 2011 the following rates came into effect.

Meter Size	<u>WATER</u>				<u>SEWER</u>			
	Small		Intermediate	Large	Small		Intermediate	Large
	<u>Residential</u>	<u>Commercial</u>	<u>Commercial</u>	<u>Commercial</u>	<u>Residential</u>	<u>Commercial</u>	<u>Commercial</u>	<u>Commercial</u>
5/8"	\$ 3.13	\$ 3.98	\$ 13.85	\$ 597.23	\$ 7.62	\$ 8.51	\$ 27.89	\$ 1,076.37
3/4"	10.62	11.32	19.64	603.69	21.63	24.22	39.55	1,088.01
1"	12.77	13.63	21.51	605.80	26.05	29.17	43.33	1,091.79
1 1/2"	18.77	20.03	26.71	611.60	38.29	42.89	53.81	1,102.25
2"	25.29	26.97	32.63	618.22	51.57	57.75	65.73	1,114.18
3"	33.38	35.61	40.84	624.04	68.04	76.21	82.26	1,124.65
4"	54.41	58.03	64.65	650.65	110.88	124.18	130.22	1,172.65
6"	85.42	91.12	99.81	689.96	174.12	195.01	201.05	1,243.48
8"	133.59	142.50	155.38	755.41	272.29	304.96	312.96	1,361.43
10"	133.59	142.50	155.38	755.41	272.29	304.96	312.96	1,361.43
	Water usage charges per 100 Cubic Feet (For usage over 200 Cubic Feet)				Sewer usage charges per 100 Cubic Feet (For usage over 200 Cubic Feet)			
Rates	\$ 2.33	\$ 2.48	\$ 2.14	\$ 1.81	\$ 4.74	\$ 5.30	\$ 4.32	\$ 3.26

**Billing and Collection Procedures**

With certain limited exceptions, the Department is required to charge for all water and sewerage services provided by it and consumed by, or, in the case of sewerage services, made available to each customer. Charges for water and sewerage services are generally based on metered measurement of water consumption. The Department read meters and rendered bills to customers monthly. The charges for water and sewerage services are included in a single, combined bill in terms of a “net billing,” which is

the charge calculated at established rates, and a “gross billing,” which is the current net billing increased by 5% or by \$2.50, whichever is greater. This addition to the net billing is a form of penalty for the customer’s failure to promptly pay the monthly bill for services. The gross billing amount becomes applicable 20 days after the billing is mailed to the customer. If a customer fails to pay a bill, a delinquency notice is included in the subsequent month’s bill. If the customer fails to pay the bill for a second time, a representative of the department notifies the customer, pursuant to Tennessee Code Annotated § 65-32-104, that service will be discontinued if payment is not received in 5 days. If the customer does not pay the delinquent account within 5 days following the visit, the account is subject to immediate discontinuation of water and sewer service. To have service restored the customer must then pay the total delinquent amount plus a reconnection fee. If the Department is unable to collect the amount owed, the account is then turned over to a commercial collection agency.

The foregoing billing and collection procedures have resulted in the collection of approximately 99.71% of all amounts billed during the past five Fiscal Years.

### **Wholesale Customers**

The Department provides sewage treatment services for the Cities of Brentwood, Goodlettsville, Millersville, Belle Meade, Lavergne, Ridgeway, Mount Juliet, Hendersonville Utility District, and White House Utility District (the “Wholesale Sewer Customers”), pursuant to contracts between the Department and each of the Wholesale Sewer Customers. Under the wholesale contracts, the Department is obligated to treat sewage (subject to volume limitations) from the Wholesale Sewer Customers, and the Wholesale Sewer Customers are required to pay a volumetric rate for sewage delivered to the Department. Capital costs incurred by the Department to maintain capacity for the Wholesale Sewer Customers are recoverable under the contracts. Rates are reviewed annually and adjusted based on consumer price indexing. Rates are recalculated by an independent consultant every five years according to contract. None of the Wholesale Sewer Customers has ready access to other sewage treatment facilities.

Wholesale Sewer Customer flows were approximately 13% of total treated flows for Fiscal Year 2018.

The following represents a summary of the effective dates and terms of the wholesale contracts:

<b>CUSTOMER</b>	<b>EFFECTIVE DATE</b>	<b>AMENDMENT DATE</b>	<b>TERM OF CONTRACT</b>
City of Belle Meade	October 1, 2014	NA	10 years
City of LaVergne	December 1, 2009	October 1, 2014	10 years
City of Millersville	February 16, 2010	October 1, 2014	10 years
City of Brentwood	November 19, 2009	October 1, 2014	10 years
City of Goodlettsville	September 27, 2010	October 1, 2014	10 years
Hendersonville Utility District	October 20, 2011	NA	20 years
City of Ridgeway	May 6, 2015	NA	9 years
City of Mount Juliet	June 22, 1999	NA	30 years
White House Utility	May 6, 2015	N/A	9 years

### **Operations and Maintenance**

The Department has implemented operation and maintenance procedures with respect to the System and has undertaken several programs to upgrade performance, including a water quality testing program. Water quality within the water treatment facilities is tested on site on an hourly basis. Additional testing is conducted at a central laboratory maintained by the Department and certified by the

State of Tennessee. Water discharged from the plants into the distribution system is monitored in accordance with the Federal Safe Drinking Water Act (42 U. S. C. 300f et seq.). Water discharged from the three wastewater treatment plants is tested to ensure compliance with the National Pollutant Discharge Elimination System as administered by the United States Environmental Protection Agency and the Tennessee Department of Environment and Conservation.

The Department performs regular maintenance and repair of equipment with outside contractors performing major repairs. To facilitate maintenance and repairs, the Department has established several inspection programs for the different areas of operation. Inspection programs include pumping station inspection, cross-connection protection testing, smoke-testing for collection system integrity, water leak detection, fire hydrant testing and valve testing programs. Vans are equipped with closed circuit television cameras that can be maneuvered through the sewer mains to inspect the sewer system.

Comprehensive training programs have been developed for employees, from unskilled to supervisory and management positions, covering many aspects of the operation and maintenance of the Systems. Although participation in the programs is not mandatory, employees who wish to be promoted to a higher job classification must demonstrate that they have the knowledge and skills that such programs provide.

### **Environmental Regulation**

The Federal Water Pollution Control Act of 1972 (“FWPCA”), as amended by the Clean Water Act of 1977, and the Water Quality Act of 1987 (collectively, the “CWA”), provides for the restoration and maintenance of the chemical, physical and biological integrity of the nation’s waters. To achieve that end, the FWPCA established the National Pollution Discharge Elimination System (“NPDES”), a permit system administered by the US Environmental Protection Agency (“EPA”) in conjunction with the states. The EPA has delegated the NPDES program for Tennessee to the Tennessee Department of Environment and Conservation (“TDEC”). The Tennessee General Assembly enacted the Tennessee Water Quality Control Act of 1977 to obtain the primary objectives of the CWA and to qualify for full participation in the NPDES program established under Section 402 of the CWA. Pursuant to the authority granted to it, the Tennessee Water Quality Control Board, now known as the Tennessee Board of Water Quality, Oil and Gas, has enacted regulations consistent with the CWA.

In 1990, TDEC issued Order 88-3364 (the “1990 Order”) as a result of violations by the Metropolitan government of the Tennessee WQCA from January 1987 through June 1989. The 1990 Order was, among other things, a result of the discharge of improperly treated wastewater into the waterways by the Metropolitan Government’s collection system and various wastewater treatment plants, leading to pollution in violation of the CWA. The 1990 Order also stated that the Metropolitan Government’s failure to comply with certain agreed upon orders entered by the Tennessee Water Quality Control Board in 1985 and 1987 was also a basis for the 1990 Order.

The 1990 Order identified specific problems regarding the Metropolitan Government’s collection system and wastewater treatment, and required the Metropolitan Government to correct them. In response, the Department developed a detailed program, referred to as the “Overflow Abatement Program” (“OAP”), for making system improvements to correct the problems identified in the 1990 Order. This program was approved by the TDEC. Although the Department substantially complied with the 1990 Order, it was not in full compliance with the CWA as of 1999.

On September 17, 1999, the TDEC issued Order 99-0390 (the “1999 Order”) replacing the 1990 Order and citing the Metropolitan Government in violation of state law. Effective July 1, 2001, the Metropolitan Government was immediately ordered not to permit or allow any overflows of bypasses from its combined sewer system (wastewater and storm water) during dry weather to any waters of the State, nor

was it to allow any discharge from the sanitary sewerage system to any tributary of the Cumberland River. The current flow limits at the tie-in points from all contributing satellite sewage systems were to be maintained.

The Metropolitan Government has substantially addressed the issues raised in the 1999 Order and continues to make capital improvements to its Sewer System in response thereto. TDEC has not assessed monetary penalties against the Metropolitan Government for failing to meet a schedule compliance date, and the Metropolitan Government is currently in compliance with the requirement of the 1999 Order.

### **EPA Consent Decree**

In December 2005, the Department received an inquiry from the U.S. Environmental Protection Agency's Region IV (USEPA) headquarters. This inquiry requested certain documents and records pertaining to the Department's Operations, Capital Plan, and Stormwater Management. The Department's response was submitted in January 2006. The Department, TDEC, US EPA and the US Department of Justice agreed on a recommended consent decree to address and correct deficiencies within the Department's sewer system that have caused violations of the CWA. The consent decree originally required that MWS fully develop, by March 12, 2011, a Corrective Action Plan/Engineering Report (CAP/ER) for its sanitary sewer system and a Long Term Control Plan (LTCP) for its combined sewer system to achieve the goals of the CWA. Upon submittal and approval of the plans, MWS was originally obligated to complete the work as developed by the plans in 9 years.

On May 14, 2010, The Metropolitan Government petitioned the USEPA and TDEC for a 6 month time extension for the delivery of both plans and the 2 years for the final compliance with the Consent Decree based on the flood of May 2010. The USEPA and TDEC granted the requested time extension to the Department. Both the CAP/ER and LTCP were submitted on time based on the time extension to EPA and TDEC in September of 2011. On August 10, 2017, EPA approved the CAP/ER. The deadline for compliance of the Consent Decree is eleven years after final formal approval of each plan, which will now be August 10, 2028 for the CAP/ER. MWS continued to negotiate details of the LTCP, and submitted an Addendum to the LTCP on June 18, 2018. EPA subsequently issued a letter on February 11, 2019 which provides an "approval in part" for the LTCP, subject to certain conditions. The EPA letter calls for Metro to submit a revised LTCP after an anticipated modification of the application water quality criteria for CSO discharges by TDEC. Metro remains in negotiation with EPA and TDEC regarding the deadline for work under the LTCP.

Among other requirements, the Consent Decree will require capital expenditures to the System in a total amount between \$1.0 billion and \$1.5 billion. See "The Water and Sewer Capital Improvement Plan," which follow. Failure to comply with the Consent Decree and meet future established deadlines could result in penalties up to \$3,000 per incident, and up to \$5,000 per day for failure to implement work in a timely manner.

The Department has thus far been successful in meeting all the deadlines established by the Consent Decree, and is currently in compliance with the Decree in all respects.

### **Payments in Lieu of Taxes, the Local Cost Allocation Plan, and Shared Government Services**

Tennessee law, Tennessee Code Annotated 7-34-115(a)(9), provides that a municipality may require a municipally owned utility to make payments in lieu of ad valorem property taxes, for which the utility is exempt as a governmental entity, in an amount not to exceed the taxes payable on privately owned property of a similar nature. This payment is intended to help reimburse the municipality for the municipal services and support provided to the public works. In 1996, the Metropolitan Council adopted

Substitute Resolution Number R96-177, which requires the Department to make an annual payment to the Metropolitan Government of \$4,000,000. This represents a payment in lieu of ad valorem taxes. This payment, made in monthly installments, is made after payments of debt service on the all System Revenue Bonds.

The Local Cost Allocation Plan (LOCAP) for the Metropolitan Government is a method by which central service costs are distributed across the Metro departments. In Fiscal Years 2017 and 2018, the Department was charged \$5,804,700 and \$5,452,900 respectively. In Fiscal Year 2019 this plan will cost the Department \$5,802,000. The Metropolitan Government charges the Department for additional Shared Government Services such as Fleet Management, Information Systems, Legal Fees, Insurance, and Property Services. These charges totaled \$6.96 million in Fiscal Year 2018, and in Fiscal Year 2019 Shared Government Services charges will be approximately the same.

Payments in Lieu of Taxes, the Local Cost Allocation Plan payments, as well as all Shared Services charges have been included in the historical and forecasted Expenses of the Department in the Forecast Statement.

## **THE WATER AND SEWER SYSTEM CAPITAL IMPROVEMENT PLAN**

### **The Water System**

Beginning in 2002, the Metropolitan Government updated its Master Water Improvement Plan which sets out the projected water needs due to growth for the service area through 2025. Population forecasting and computer modeling of the water distribution system has been completed, updating the Master Water Improvement Plan through the year 2030. The most recent update was 2016.

Improvements to the water distribution system have been identified to meet the changing demand as Nashville continues to grow. Although the City has experience significant population, overall system demand has stayed steady as a result of ongoing programs instituted by the Department including an aggressive leak detection program, meter exchange and maintenance program, and plant efficiency improvements. Additionally the Department continues to address redundancy and resiliency concerns through capital projects. The Cumberland City Low project, currently completed, provides both additional capacity and redundancy in the overall system. This project includes installation of new 24,000 feet of 36 inch to 60 inch water mains, at a cost of \$32.9 million, to support distribution of water in the event that one of the water treatment plants comes off line. The 38th Ave Water Storage Tank project that has not yet started (\$7 million) will replace an existing 1948 water storage tank with a 3 million gallon tank to meet the demands and water quality requirements in a neighborhood currently experiencing gentrification. The design is at 60%. There has been a pocket of area in the southeast of the county where requests for growth and availability far surpassed all local planning efforts and documents. Because of that water availability had to be denied until such time that MWS could plan capacity remedial projects. Legislation has been passed to recover the funds from the developers involved. Total project cost approximate \$23 million and is broken down into 5 phases. Developers will pay an additional \$1,000 per unit of flow (350 gpd).

The Water Infrastructure Rehabilitation (WIR) program provides for the rehabilitation and/or replacement of old water distribution infrastructure. Near horizon projects include continuing with the \$1.5 million leak detection program, the \$350,000 phase 4 of the Hogget and Brandau water main addition, the \$ 2.5 million Hillsboro water main replacement at Crestmoor being done in conjunction with Metro Public Works, the \$500,000 Treemont system fire enhancement, the \$1.2 million Dry Creek road water main replacement, and the \$1 million Hillwood water main replacement. The 12<sup>th</sup> Ave area WIR program will continue with at least phases 2 and 3 totaling between \$5 and \$8 million, and a \$2.5 million water line replacement from 2<sup>nd</sup> Avenue to Gay Street will also commence.

Improvements at the water plants are also critical to meeting the growing needs of the service area. Although plant expansion is not required, improvements to the Omohundro Water Treatment Plant are needed. The New Electrical Substation with Emergency Power Generation will allow the entire water treatment plant, adjacent lab, Barker Rd. sewer pump station/equalization basins, and the campus housing the distribution/collection crews to operate at full capacity in the event of an electrical outage. The project is anticipated to be complete in 2019, at a cost of \$39.5 million. Additional improvements to the filters and settling basins at both plants are also planned at a cost of \$1.8 million.

Design improvements are being planned for several water reservoirs to be compliant with TDEC regulation and the 8<sup>th</sup> Avenue reservoir tank in a tank project may be pushed out for construction if SRF funding is granted.

### The Sewer System

In September of 2011, the CAP/ER and the LTCP studies were submitted to EPA and TDEC. A schedule was developed to pursue those projects to meet the compliance date of the Consent Decree, which is eleven years following the approval of the plan. While waiting for approval of these plans, Water Services continued to implement projects related to the CAP/ER taking advantage of the additional time for completion. EPA approved the CAP/ER, setting a deadline for compliance of April 2028. The LTCP has also been recently conditionally approved setting a compliance data of 2030.

Projects included in the CAP/ER include equalization basins, new trunk sewers to increase capacity and rehabilitation of the collection system to reduce inflow and infiltration during wet weather. The overall Consent Decree program is anticipated to cost between \$1.0 billion and \$1.5 billion.

Sewer System Rehabilitation continues for the elimination of inflow and infiltration from the separated sanitary sewer system. Projects identified in the CAP/ER recently completed include Shelby Park/Cooper Lane \$5 million, Loves Branch Sewer Rehabilitation \$4.7 million, Hidden Acres Rehabilitation \$1.6 million, Vandiver Sewer Rehabilitation \$4 million, and Smith Springs Sewer Rehabilitation \$6.1 million.

Facility projects completed include the Ewing Creek-Brick Church Equalization Facility which will provide 6 MG of wet weather equalization storage at a bid cost of \$10.1 million and the West Park Sewer Equalization phase II at \$15.2 million at a capacity of 21 million gallons. The Davidson Branch Pump Station and Equalization Facility design should shortly begin and will provide a new duty pump station, wet weather pump station and 6 MG of equalization. The estimated cost for this project is \$22 million.

One of the largest projects to be completed to both reduce CSOs and make necessary process improvements is the Central Wastewater Treatment Capacity Improvements and CSO Reduction project. The scope of this estimated \$400 million project includes increasing capacity for peak flows by 40 percent, upgrading the aeration system and replacing chlorine disinfection with ultraviolet light. The project is using a construction manager-at-risk (CMAR) delivery method. Design engineers and the CMAR have been selected and projects identified, and design initiated for the first phase of the overall project.

The following table depicts the proposed spending for capital improvements by the Department during the Fiscal Years ending June 30, 2019 through 2023. Capital projects in the forecast period will be funded from the revenues of the Department, proceeds from Commercial Paper, issuance of new revenue bonds, or a combination of these. The plan as shown assumes additional funding will be available from an increase in water and sewer rates, thus increasing the amount of operating revenues available to the Department and/or issuance of new revenue bonds, with the resultant change to debt service requirements.



## Water and Sewer Capital Improvement Plan

	2019	2020	2021	2022	2023	TOTAL
<b>Consent Decree Program</b>						
Program Management and Water Quality	6,500,000.00	7,500,000.00	10,000,000.00	12,000,000.00	12,000,000.00	48,000,000
Combined Sewer Improvements	-	47,000,000.00	29,000,000.00	38,000,000.00	240,000,000.00	354,000,000
Sanitary Sewer Rehabilitation	-	282,000,000.00	-	2,000,000.00	20,000,000.00	304,000,000
<b>Total Consent Decree Program</b>	<b>\$ 6,500,000</b>	<b>\$ 336,500,000</b>	<b>\$ 39,000,000</b>	<b>\$ 52,000,000</b>	<b>\$ 272,000,000</b>	<b>\$ 706,000,000</b>
<b>Other:</b>						
Water Distribution System Improvements	39,890,000	10,410,000	10,460,000	53,285,000	46,745,000	160,790,000
Water Pump Station Improvements	2,064,000	2,174,000	2,134,000	3,288,000	3,963,000	13,623,000
Water Plant Improvements	1,780,000	1,250,000	1,550,000	18,400,000	18,200,000	41,180,000
Water Reservoir Improvements	9,480,000	1,625,000	1,625,000	3,750,000	4,300,000	20,780,000
Development Assistance	3,580,000	3,675,000	4,150,000	5,060,000	5,210,000	21,675,000
Customer Services / Information Services	4,886,000	4,420,000	3,520,000	8,170,000	7,620,000	28,616,000
Vehicles and Equipment	4,080,000	4,100,000	4,150,000	5,850,000	6,800,000	24,980,000
Wastewater Collection System Improvements	6,120,000	2,640,000	2,690,000	3,640,000	4,230,000	19,320,000
Wastewater Plant Improvements	12,616,000	9,494,250	7,702,000	67,870,000	53,900,000	151,582,250
Wastewater Pump Station Improvements	1,736,000	1,816,000	1,806,000	2,642,000	3,242,000	11,242,000
Other	3,500,000	3,500,000	3,500,000	3,800,000	3,700,000	18,000,000
<b>Total Other Capital Projects</b>	<b>\$ 89,732,000</b>	<b>\$ 45,104,250</b>	<b>\$ 43,287,000</b>	<b>\$ 175,755,000</b>	<b>\$ 157,910,000</b>	<b>\$ 511,788,250</b>
<b>TOTAL</b>	<b>\$ 96,232,000</b>	<b>\$ 381,604,250</b>	<b>\$ 82,287,000</b>	<b>\$ 227,755,000</b>	<b>\$ 429,910,000</b>	<b>1,217,788,250</b>
<b>Sources of Funds</b>						
Extension and Replacement Fund	11,940,523	12,298,739	12,667,701	13,047,732	13,439,164	63,393,858
Existing Bond Fund	-	-	-	-	-	-
Proposed Revenue Bond Proceeds	-	-	250,000,000	-	200,000,000	450,000,000
Commercial Paper Program	100,000,000	75,000,000	100,000,000	125,000,000	100,000,000	500,000,000
Water Impact Fees	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	5,000,000
Sewer Impact Fees	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	5,000,000
Others (Grants, Reserves, etc)	(17,708,523)	292,305,511	(282,380,701)	87,707,268	114,470,836	194,394,392
<b>TOTAL</b>	<b>\$ 96,232,000</b>	<b>\$ 381,604,250</b>	<b>\$ 82,287,000</b>	<b>\$ 227,755,000</b>	<b>\$ 429,910,000</b>	<b>\$ 1,217,788,250</b>