



# Executive Summary

## **Executive Summary**

### **MISSION**

The Massachusetts Water Resources Authority (MWRA) is an independent public authority of the Commonwealth of Massachusetts that provides wholesale water and sewer services to its member communities and funds its operations primarily through member community assessments and charges. MWRA's mission is to provide reliable, cost-effective, high-quality water and sewer services that protect public health, promote environmental stewardship, maintain customer confidence, and support a prosperous economy.

### **HISTORY**

Created by the Massachusetts legislature in 1985 (Chapter 372 of the Acts of 1984), MWRA assumed possession and control of the water and sewer systems, including facilities, properties, and the right to utilize water withdrawn from system reservoirs that had formerly been the Sewerage and Waterworks Divisions of the Commonwealth of Massachusetts Metropolitan District Commission (MDC). The Commonwealth, under the management of the MDC Watershed Management Division (now the Department of Conservation and Recreation – Division of Watershed Management), retained ownership of real property, including the reservoirs and watersheds, the maintenance of which are included in MWRA's operating budget.

In 1985, responsibility for water distribution for 46 municipalities and sewage collection and treatment for 43 municipalities was transferred to the MWRA. In 1987, the legislature also transferred responsibility to operate and maintain the Clinton Wastewater Treatment Plant from the Commonwealth to the MWRA. New communities have the opportunity to join the MWRA water and sewer systems, and, over the years, the number of member communities has increased. Since 1985, the MWRA has invested over \$8.4 billion to modernize and improve the wastewater and waterworks systems serving its 61 member communities. MWRA's facilities span from the Quabbin Reservoir in western Massachusetts to the Deer Island Treatment Plant in Boston Harbor. In Fiscal Year 2019, the system served approximately 3.0 million people and more than 5,500 businesses.

The Enabling Act also established the MWRA Advisory Board to represent the cities and towns in the service area. The Advisory Board appoints three members of the MWRA Board of Directors, approves the extension of water and sewer services to additional communities, and reviews and makes recommendations on MWRA's annual Current Expense Budget and Capital Improvement Program.

### **MWRA ORGANIZATION**

The MWRA has five separate divisions and the Affirmative Action and Compliance Unit Department (AACU). Each division provides operations or support services to carry out MWRA's activities under the direction of the Executive Office. MWRA's organizational structure is included in the document immediately preceding this page.

The **Executive Office** provides centralized MWRA management, direction, and policy development. The budget includes funds for the Office of the Executive Director, the Board of Directors, the Advisory Board, and other advisory committees. It includes the following departments: Office of Emergency Preparedness; Public Affairs; and Internal Audit.

The **Operations Division** operates the water and wastewater treatment systems; the water transmission and distribution system; the wastewater collection, transport, and combined sewer overflow (CSO) systems; and the residuals processing facility. It also provides laboratory and engineering and construction services; enforces sewer use regulations and seeks to limit the discharges of toxic materials; manages environmental studies of Boston Harbor and Massachusetts Bay; monitors water quality; and includes the Planning and Coordination Department.

The **Administration Division** is responsible for managing the support services functions of the Authority. The Administration is comprised of seven departments: Director's Office; Facilities; Fleet Services; Human Resources; Management Information Systems (MIS); Procurement; and Occupational Health and Safety (OHS). The Administration Division performs a multitude of functions that support the daily operations and ensure the implementation of the Authority's long-term goals and strategies.

The **Finance Division** is responsible for managing the finance functions of the Authority. Finance Division is comprised of five departments: Director's Office; Rates and Budget; Treasury; Controller; and Risk Management. The Finance Division ensures that a variety of fiscal management systems are in place to monitor and control the Current Expense Budget (CEB) and Capital Improvement Program (CIP).

The **Law Division** provides legal counsel to all divisions on compliance with federal and state law, real estate matters, labor and employment law, litigation, and construction issues. Division attorneys provide or supervise through outside counsel the representation of MWRA in all litigation.

The **Affirmative Action and Compliance Unit (AACU) Department** develops, administers and monitors compliance of Affirmative Action Plan programs and policies by ensuring equal opportunity and non-discrimination in employment and equitable access of Minority/Women Business Enterprises (MBE/WBE) in Authority procurement activities.

## **GOALS AND PERFORMANCE MEASURES**

The MWRA Business Plan was first implemented in 1997 as a strategic road map to present specific steps for the organization to undertake to improve customer service, upgrade operations and maintenance and pursue aggressive rates management. In 2000, MWRA adopted a five-year Strategic Business Plan. Since then, some of the goals have been completed, and new ones have been added. MWRA's five-year Strategic Business Plan FY2016-2020 emphasizes improvements in service and systems and includes performance targets for operating the water and wastewater systems and maintaining new and existing facilities. MWRA's Water System Master Plan and Wastewater System Master Plan present a long-term vision of the capital development needs of the water and wastewater systems and the actions planned to meet those needs. Parallel to MWRA's goal of carrying out its operating programs and capital projects is its goal of providing sustainable, predictable and reasonable assessments to its customer communities. To that end, the MWRA applies a multi-year rates management strategy to provide sustainable and predictable assessment increases to its member communities. The need to achieve and maintain a balance

between these two goals is a critical issue in the development of both MWRA's operating and capital budgets.

During the year, MWRA measures actual performance on a monthly basis using various reporting tools. The monthly Financial Staff Summary reports on actual spending versus both the operating and capital budgets and provides summary explanations of the variances at the line item level. At least twice a year staff prepares projections for the fiscal year-end with a similar level of explanations. The performance indicator reports (published by MWRA as the Orange and Yellow Notebooks) capture a variety of parameters regarding performance of each major functional area of the Authority, on a monthly and quarterly basis.

## **BUDGET PROCESS OVERVIEW**

Each year, MWRA prepares a Current Expense Budget (CEB) that reflects the best available information for anticipated expenditures and revenues. In parallel, MWRA prepares a Capital Improvement Program (CIP) Budget.

The MWRA operates on a fiscal year that runs from July 1 through June 30. The budget process for both budgets begins in the fall with formal kick-off meetings in September where MWRA staff are given guidelines and targets for their budget requests. After review by the Budget Department and MWRA senior staff, a Proposed CIP Budget is presented to the Board of Directors in December. The Capital Financing portion of the Current Expense Budget is determined based on existing debt service and projected borrowing needs. In February, after further review with MWRA senior staff, the Budget Department presents the Proposed CEB to the Board of Directors, after which the Proposed CEB is then transmitted to the Advisory Board, with the projected assessment increase Authority-wide and for each customer community. The Advisory Board then has sixty days to review, comment, and provide recommendations on both budgets. MWRA also hosts a public hearing to solicit comments on the budgets and community assessments from citizens in its service area. In May, the Advisory Board transmits its comments to the MWRA to which written responses are provided.

At its May meeting, MWRA's Board of Directors holds hearings on the budget to review recommendations by the Advisory Board and new information available since the budget was developed. Staff incorporates Board decisions from the hearings and presents a final budget and final assessments for approval at the June Board of Directors meeting.

## FY20 BUDGET SUMMARY

Total Expenses in the Final FY20 Current Expense Budget (Budget) are \$792.2 million, an increase of \$24.3 million or 3.2% over the FY19 Budget. The Final FY20 Budget assumes an offset of \$890,239 for the Debt Service Assistance (DSA) awarded in FY19.

Total expenses include \$493.1 million for Capital Financing costs and \$299.2 million for operating expenses, of which \$248.3 million is for Direct Expenses and \$50.9 million is for Indirect Expenses. Total expenses increased mainly due to higher Capital Financing costs of \$10.7 million and higher Direct and Indirect Expenses of \$8.7 million and \$4.9 million, respectively. Higher Direct Expenses reflect higher Wages & Salaries with the addition of three positions for the Tunnel Redundancy Department, Other Services due to increased Sludge Pelletization, Utilities due to higher contracted electricity prices at Deer Island and other facilities, and Chemicals due to increases in Sodium Hypochlorite and Activated Carbon prices within Wastewater Operations. Higher Indirect Expenses are due to the new cross-harbor electrical cable (HEEC), pension contribution, higher Watershed Management operating expenses, higher OPEB contribution, and higher additions to reserves.

### Approved FY20 Budget



MWRA continues to pursue a rate management strategy which promotes sustainable and predictable assessments. The Final FY20 Budget has a combined utilities assessment increase of 3.07% with Rate Revenues totaling \$761.8 million. Rate Revenues account for 96.2% of projected FY20 revenues.

Measures taken by the Authority to achieve the 3.07% rate increase include:

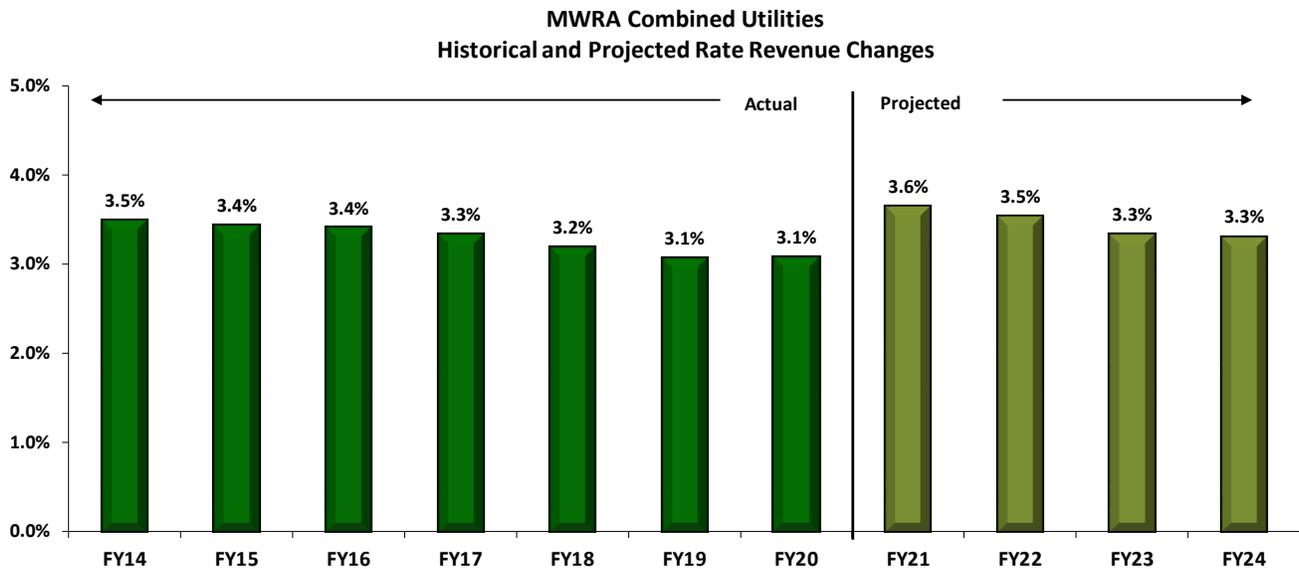
- Continued practice of targeted defeasances;
- Budgeted 1,150 Full-Time Equivalent (FTE's) positions, plus 8 FTE's for supporting the water redundancy program;
- Budgeted a \$5.0 million Debt Prepayment;
- Direct Expenses increased 3.6% versus FY19 budget;
- Capital Financing increased 2.2% versus FY19 budget.

The table below shows MWRA's Final FY20 Budget for revenue and expenses compared with the FY19 Budget and FY18 Actuals. Changes from FY19 to FY20 are described in the Revenue and Expense section of the Executive Summary.

### FY20 Final vs. FY19 Final

TOTAL MWRA	FY18 Actuals	FY19 Approved Budget	FY20 Approved Budget	Change FY20 Approved Budget vs FY19 Approved Budget	
				\$	%
<b>EXPENSES</b>					
WAGES AND SALARIES	\$ 100,875,415	\$ 107,032,021	\$ 109,953,483	\$ 2,921,462	2.7%
OVERTIME	4,571,567	4,447,554	4,898,965	451,411	10.1%
FRINGE BENEFITS	20,068,927	21,173,571	21,717,533	543,962	2.6%
WORKERS' COMPENSATION	2,147,063	2,422,609	2,354,256	(68,353)	-2.8%
CHEMICALS	9,659,734	10,830,452	11,811,222	980,770	9.1%
ENERGY AND UTILITIES	21,997,423	22,868,633	24,454,796	1,586,163	6.9%
MAINTENANCE	29,067,175	32,258,727	32,726,954	468,227	1.5%
TRAINING AND MEETINGS	314,745	455,770	504,394	48,624	10.7%
PROFESSIONAL SERVICES	6,955,638	7,675,976	8,295,315	619,339	8.1%
OTHER MATERIALS	6,293,935	7,381,098	6,867,239	(513,859)	-7.0%
OTHER SERVICES	22,794,735	23,065,410	24,683,370	1,617,960	7.0%
<b>TOTAL DIRECT EXPENSES</b>	<b>\$ 224,746,357</b>	<b>\$ 239,611,821</b>	<b>\$ 248,267,527</b>	<b>\$ 8,655,706</b>	<b>3.6%</b>
INSURANCE	\$ 3,231,510	\$ 2,099,064	\$ 2,611,222	\$ 512,158	24.4%
WATERSHED/PILOT/DEBT	23,756,756	26,406,427	26,833,600	427,173	1.6%
HEEC PAYMENT	782,135	1,386,832	4,429,316	3,042,484	219.4%
MITIGATION	1,574,890	1,614,262	1,654,618	40,356	2.5%
ADDITIONS TO RESERVES	821,116	1,881,797	2,094,284	212,487	11.3%
RETIREMENT FUND	3,277,369	7,000,000	7,315,000	315,000	4.5%
POSTEMPLOYMENT BENEFITS	5,035,422	5,574,152	5,962,457	388,305	7.0%
<b>TOTAL INDIRECT EXPENSES</b>	<b>\$ 38,479,198</b>	<b>\$ 45,962,534</b>	<b>\$ 50,900,497</b>	<b>\$ 4,937,963</b>	<b>10.7%</b>
STATE REVOLVING FUND	\$ 80,637,870	\$ 89,380,358	\$ 92,797,295	\$ 3,416,937	3.8%
SENIOR DEBT	280,901,707	272,633,979	202,299,609	(70,334,370)	-25.8%
SUBORDINATE DEBT	85,443,447	92,032,294	169,609,844	77,577,550	84.3%
LOCAL WATER PIPELINE CP	1,482,833	4,750,393	5,846,827	1,096,434	23.1%
CURRENT REVENUE/CAPITAL	13,200,000	14,200,000	15,200,000	1,000,000	7.0%
CAPITAL LEASE	3,217,060	3,217,060	3,217,060	-	0.0%
DEBT PREPAYMENT	10,900,000	7,100,000	5,000,000	(2,100,000)	-29.6%
VARIABLE RATE SAVINGS	(7,595,896)				
DEBT SERVICE ASSISTANCE	(1,336,306)	(944,726)	(890,239)	54,487	-5.8%
HEEC CABLE CAPACITY RESERVE FUND	6,532,146	-	-	-	0.0%
<b>TOTAL DEBT SERVICE</b>	<b>\$ 473,382,861</b>	<b>\$ 482,369,358</b>	<b>\$ 493,080,396</b>	<b>\$ 10,711,038</b>	<b>2.2%</b>
<b>TOTAL EXPENSES</b>	<b>\$ 736,608,418</b>	<b>\$ 767,943,713</b>	<b>\$ 792,248,420</b>	<b>\$ 24,304,708</b>	<b>3.2%</b>
<b>REVENUE &amp; INCOME</b>					
RATE REVENUE	\$ 717,054,000	\$ 739,042,200	\$ 761,767,000	\$ 22,724,800	3.1%
OTHER USER CHARGES	9,019,144	9,328,768	9,216,425	(112,343)	-1.2%
OTHER REVENUE	12,230,488	6,013,635	5,761,022	(252,613)	-4.2%
RATE STABILIZATION		-	-	-	0.0%
INVESTMENT INCOME	12,755,559	13,559,110	15,503,973	1,944,863	14.3%
<b>TOTAL REVENUE &amp; INCOME</b>	<b>\$ 751,059,191</b>	<b>\$ 767,943,713</b>	<b>\$ 792,248,420</b>	<b>\$ 24,304,707</b>	<b>3.2%</b>

The graph below represents historical and projected assessment changes based on the Final FY20 Budget. The planning estimates project assessment increases at 3.1% in FY20, 3.6% in FY21, 3.5% in FY22, and 3.3% in FY23 and FY24. Rates at the combined utilities level are projected to increase at a slower pace beginning in FY25.



The Final FY20 Budget revenues, excluding rate revenue, total \$30.5 million, an increase of \$1.6 million or 5.6% above the FY19 budget. The Final FY20 Budget non-rate revenue budget includes \$15.0 million in Other User Charges and Other Revenue and \$15.5 million for Investment Income.

## **FY20 GOALS AND MAJOR INITIATIVES**

Ensuring a safe and reliable source of drinking water to MWRA customers, and wastewater discharges that meet all applicable regulations drives both capital and current expense budget costs. The MWRA has identified Authority-wide major initiatives to support the five strategic priorities integral to MWRA’s mission that were identified for action in MWRA’s Five-Year Strategic Business Plan FY2016-2020. The Five-Year Strategic Business Plan FY2016-2020 can be found at <http://www.mwra.com/publications/businessplan/2016-2020mwrabp.pdf>. At the Division and Department-level, additional and more specific goals and initiatives are identified.

### **I. Drinking Water Quality and System Performance**

- Begin Metro Tunnels Redundancy project to ensure delivery of reliable and cost-effective water services to customer communities.
- Continue to support core operations to ensure compliance with regulatory requirements.

### **II. Wastewater Management and System Performance**

- Implement new National Pollutant Discharge Elimination System (NPDES) Permits for the Clinton Wastewater Treatment Plant.

- Continue to meet or surpass environmental compliance standards for the Deer Island Treatment Plant as required by the National Pollutant Discharge Elimination System (NPDES) permit and air quality permits.

### **III. Infrastructure Management and Resilience**

- Continue to invest in asset protection to ensure adequate availability of equipment and facilities to support core operations.
- Continue to prepare for severe weather and other critical events that could affect the water and wastewater delivery systems.

### **IV. Finance and Management**

- Continue to plan and develop long-term strategies to ensure sustainable and predictable assessments to MWRA communities at the combined and the utility level.
- Secure favorable financing terms to support both the capital and current expense budgets and preserve the Authority's credit rating.
- Invest in cyber security protection.
- Continue to focus on succession planning with emphasis on training for current employees.

### **V. Environmental Sustainability**

- Continue to aggressively pursue renewable and sustainable energy resources to reduce the environmental impacts of daily operations, increase energy efficiencies, and reduce overall operating costs.
- Continue to identify, assess, and implement initiatives to reduce energy demand and increase energy self-generation in MWRA's system.
- Enter into a new Memorandum of Understanding with Eversource for payment of energy reduction incentives.
- Pursue grant-funding and cost-sharing arrangements to defray costs of implementing new energy reduction and energy self-generation projects.
- Continue to monitor climate change, research and move forward with plans to reduce impacts of sea level rise and storm surge events on MWRA infrastructure.

## **FY19 ACCOMPLISHMENTS**

### **I. Drinking Water Quality and System Performance**

- Met water quality and treatment standards in the drinking water system during FY19.
- Developed and trained community staff in preparation for EPA's Unregulated Contaminant Monitoring Rule 4 program which commenced in 2018 and continues into 2020. Also continued to participate in the Unregulated Contaminant Rule 4 sampling program.
- Distributed \$35.9 million in interest-free loans to member water communities plus an additional \$2.6 million for lead service line replacement.

## **II. Wastewater Management and System Performance**

- Deer Island received the Platinum Peak Performance Award for 2018 from the National Association of Clean Water Agencies (NACWA) for the 12<sup>th</sup> continuous year. The award recognizes facilities for outstanding compliance of their National Pollutant Discharge Elimination System (NPDES) permit limits. DITP has had no permit violations for over 12 years.
- Processed 109 average tons per day of sludge at the Pelletization Plant and disposed of 6,043 tons of grit and screenings through a contracted vendor.
- Distributed \$46.4 million in grants and interest-free loans to member sewer communities to rehabilitate their collection systems with the goal of structurally reducing infiltration and inflow.

## **III. Infrastructure Management and Resilience**

### Maintenance

- The Operations Division spent \$25.7 million on maintenance of which \$11 million was for materials and \$14.7 million was for services.
- In the water system, exercised 1,433 and replaced 20 mainline valves; exercised 938 and replaced 14 blow-off valves.
- In the wastewater system, inspected 35 miles and cleaned 36 miles of MWRA pipeline. Inspected 665 structures and rehabilitated 109 manholes. Also inspected 48 and cleaned 123 inverted siphon barrels.

### Capital Improvements

- FY19 spending totaled \$142.9 million broken out by category as follows: \$65.6 million for Water System projects, \$74.8 million for Wastewater System projects, and \$2.4 million for Business and Operations Support projects.

## **IV. Finance and Management**

- Maintained MWRA's strong credit ratings, Aa1, AA+, AA+ from Moody's, Standard & Poor's and Fitch respectively. MWRA's credit ratings from all three major agencies are only one ratings step below the highest rating of AAA. These high credit ratings enable MWRA to borrow at very advantageous interest rates helping to minimize debt service expenses.
- Prepared first submission of MWRA's Comprehensive Annual Financial Report (CAFR) to the Government Finance Officers Association
- Executed a \$13.9 million and a \$24.2 million defeasance of outstanding senior principal in September 2018 and June 2019 respectively. These defeasances reduced the debt service requirement between FY20 and FY22 by a total of \$42.4 million reducing the rate of increase to the Rate Revenue Requirement in those years. The transactions also resulted in \$4.0 million in interest savings by paying bonds on their call dates.
- Completed a \$144.2 million refunding and new money bond transaction on May 22, 2019. The transaction carried an All-in True Interest Cost of 2.82% with an average life of 12 years. This is the second lowest All-in True Interest Cost MWRA has observed and the lowest cost for a transaction with an average life over 10 years.

## V. Environmental Sustainability

- Received a total of \$1 million in revenue for energy generated at numerous facilities including hydroelectric from Oakdale Station and Cosgrove Station; wind from Charlestown Pump Station; and solar from Carroll Water Treatment Plant.
- Continue to leverage MWRA’s self-generation assets and participation in the competitive energy market to offset operating costs. The combined impact of participation in the Independent System Operators of New England (ISO-NE) load response program, non-rate revenue from the sale of Renewable Portfolio Standards Program (RPS) credits, and receipt of utility rebates for CEB-funded efficiency projects resulted in \$2.3 million in revenue for FY19. MWRA also avoided approximately \$600,000 in capacity charges through operation of self-generation assets during peak load events as called by the regional transmission organization (ISO New England).
- Deer Island self-generated 30% of the plant’s total required power during FY19.

## SOURCES AND USES OF FUNDS

Funds supporting the Current Expense Budget are not subject to appropriation (with the exception of State debt service assistance). The table to the right shows MWRA's sources and uses of funds for the Final FY20 Budget.

### Revenue

MWRA is required by its enabling act to balance its budget each year by establishing user assessments for water and sewer services that provide funds sufficient to, among other things, recover the cost of operations (excluding depreciation), maintenance and improvements, and debt service, as well as meeting required reserve levels.

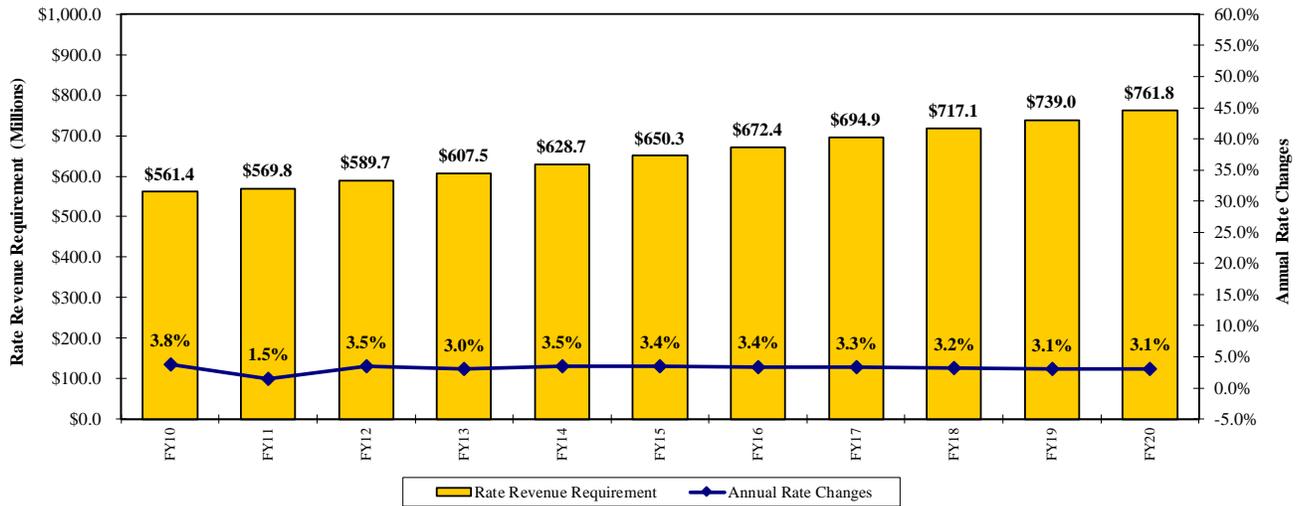
In the Final FY20 Budget, 96.2% of revenue is raised from rate revenue. The remaining 3.8% of revenue will come from interest on investments, charges to other water and sewer customers (including Chicopee Valley Aqueduct (CVA) communities), non-recurring revenue, annual charges to sewer system users with permits issued by MWRA's Toxic Reduction and Control Department (TRAC), penalties assessed to holders of sewer use permits, and other miscellaneous sources.

### Rate Revenue

Under the Final FY20 Budget, the MWRA will raise \$761.7 million of its total revenue requirements from water and sewer assessments to member communities. Of the \$761.7 million, \$503.0 million will fund the sewerage system, an increase of 2.8% as compared to FY19; and \$258.8 million will fund the water system, an increase of 3.6% as compared to FY19. The charts below show the historical rate revenue requirements at the combined utility level for the past ten years.

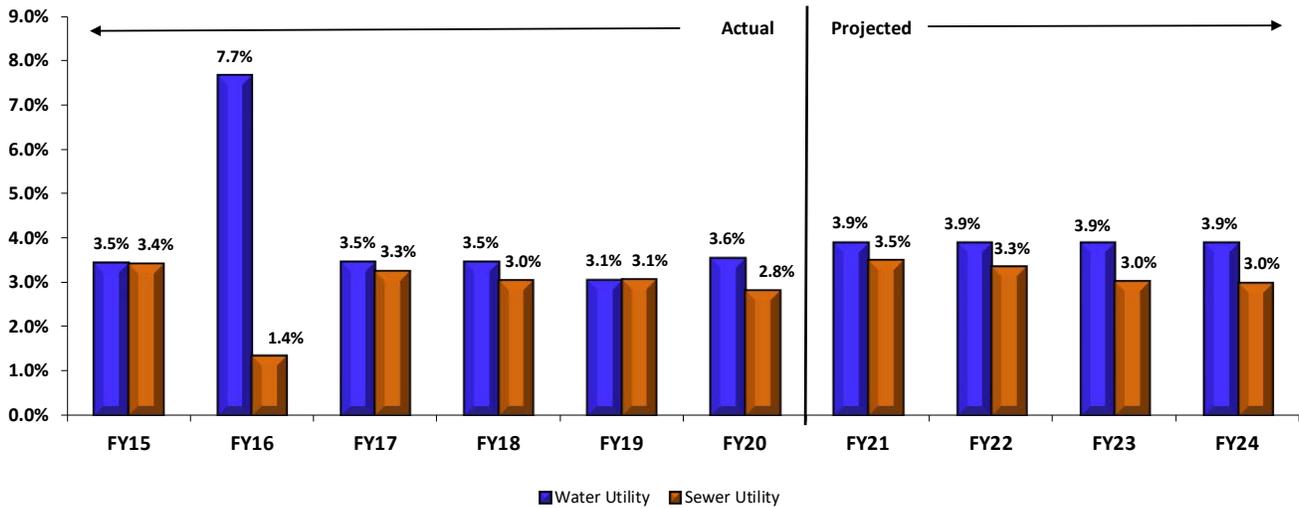
SOURCES & USES OF FUNDS*		
\$s in Millions		
<i>Sources of Funds</i>		
Other User Charges	\$9.2	1.2%
Other Revenue	5.8	0.7%
Investment Income	15.5	2.0%
Rate Revenue	761.7	96.1%
Rate Stabilization	0	0.0%
<b>TOTAL REVENUE</b>	<b>\$792.2</b>	<b>100.0%</b>
<i>Uses of Funds</i>		
Total Expenses before Debt		
Service Offsets	\$494.0	
Less:		
Debt Service Assistance	(0.89)	
Bond Redemption	-	
Sub-Total Net Expenses	\$493.1	
Capital Financing	\$493.1	62.2%
Direct Expenses	248.3	31.3%
Indirect Expenses	50.9	6.4%
<b>TOTAL EXPENSES</b>	<b>\$792.2</b>	<b>100.0%</b>
<b>TOTAL EXPENSES Less Offsets</b>	<b>\$792.2</b>	
<i>*may not add up due to rounding</i>		

MWRA: Combined Water & Sewer Assessments



Beginning in FY17, the MWRA successfully implemented a rate smoothing methodology that allows the rate revenue requirement to be smoothed at the utility level, eliminating annual volatility mostly driven by debt service payments for capital projects. The charts below show the historical percent increase for the last five years and the projected increases for the next four years.

MWRA Water & Sewer Utilities  
Historical and Projected Rate Revenue Changes



## **Non-Rate Revenue**

### **Other User Charges**

Other User Charges include revenues derived from the provision of water and sewer services to communities and other entities under special agreements. Other User Charges in the Final FY20 Budget total \$9.2 million, a decrease of \$112,000 or 1.2% from the FY19 budget and includes \$5.1 million for the Chicopee Valley Aqueduct (CVA) communities, \$1.8 million for Deer Island water usage, \$615,000 for entrance fees from member communities, and \$500,000 for the Commonwealth's partial reimbursement for Clinton Wastewater Treatment Plant expenses.

### **Other Revenue**

Other Revenue is budgeted at \$5.8 million, a decrease of \$253,000 or 4.2% from the FY19 Budget. Other Revenue includes \$2.4 million in TRAC permits and fees as well as \$2.2 million from the sale of the Authority's Renewable Portfolio Credits, revenue from participating in load response program and sale of generated power to the grid. The balance of the Other Revenue is made up of various rebates and fees.

### **Investment Income**

MWRA earns interest income by investing funds in both long and short-term investments vehicles governed by Section 522 and 523 of the General Bond Resolution. The FY20 Budget includes \$15.5 million in investment income, an increase of \$1.9 million or 14.3% over the FY19 budget reflecting higher interest rate assumptions. The short-term interest rate assumption is at 2.25% for FY20, 50 basis points above the FY19 Budget level.

### **Non-Recurring Revenue**

Non-Recurring Revenue is one-time revenue used in a given fiscal year to reduce assessments to member communities. In any fiscal year when annual revenues exceed expenses, MWRA may transfer the unexpended amount to the Rate Stabilization Reserve. Within certain limits, MWRA may use this money to reduce the Rate Revenue Requirement in any subsequent year. Consistent with the requirements of its enabling act and its general bond resolution, MWRA treats transfers from the Rate Stabilization Reserve as revenue in that fiscal year. For the Final FY20 Budget, no Rate Stabilization Reserve usage is projected.

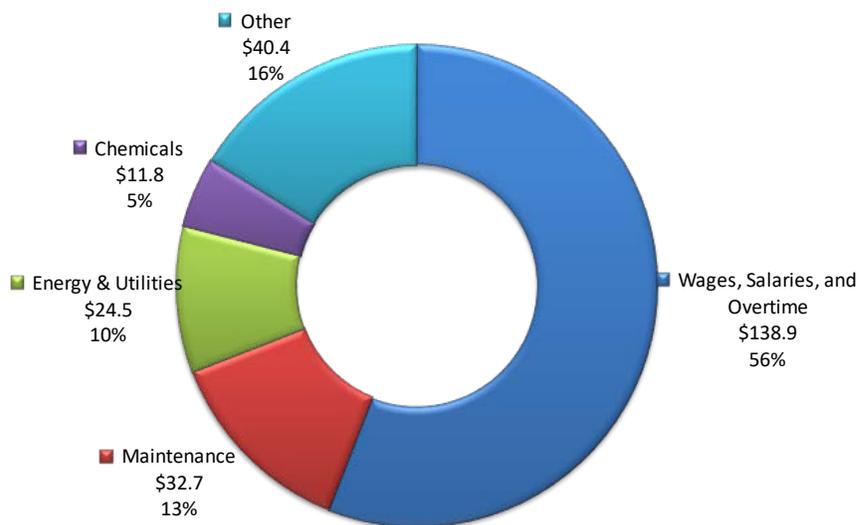
## **DIRECT EXPENSES**

The Final FY20 Direct Expense Budget totals \$248.3 million, an increase of \$8.7 million, or 3.6%, over the FY19 Budget. The primary drivers of the Direct Expenses increases are Wages & Salary increases associated with collective bargaining contracts and cost of living adjustments (COLAs) and includes three additional positions for the Tunnel Redundancy Department; fringe benefits for projected healthcare cost increases, Chemicals due to increases in Sodium Hypochlorite and Activated Carbon prices within Wastewater Operations, Utilities due to increased Electricity costs at Deer Island and other facilities, and Other Services due to increased Sludge Pelletization.

The chart below combines related direct expense line items into general cost categories. Personnel costs (wages and salaries, overtime, fringe benefits, workers' compensation, and training) are the largest

component of the direct expense budget accounting for 56%, followed by other expenses (professional services, other materials, and other services) at 16%, maintenance at 13%, energy & utilities at 10%, and chemicals at 5%.

### Direct Expenses by Category (*\$s in millions*)

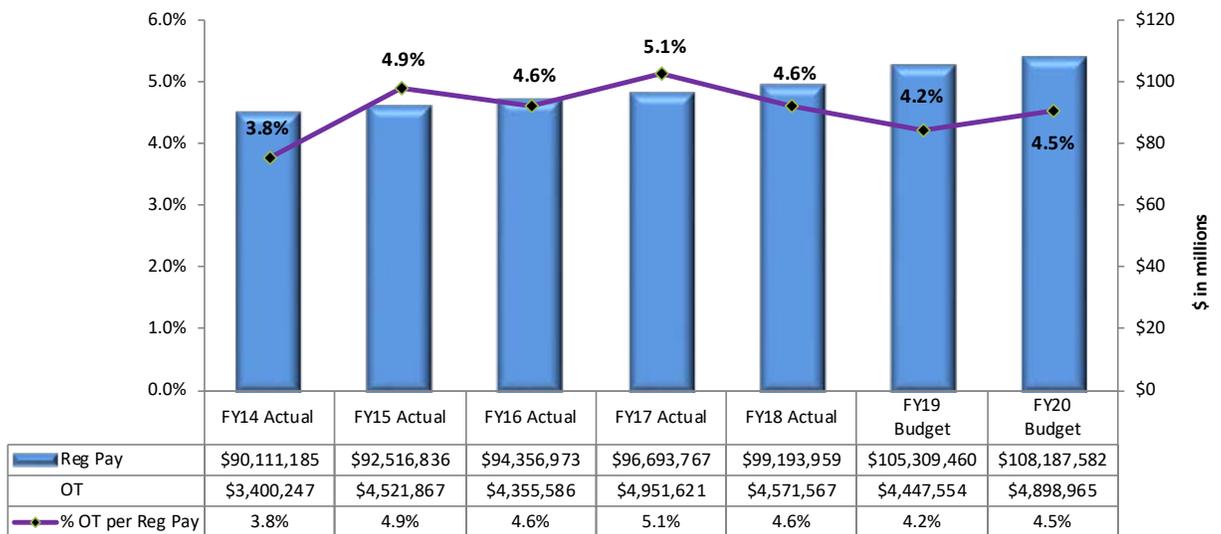


<b>FY20 APPROVED CURRENT EXPENSE BUDGET</b>				
<b>MWRA DIRECT EXPENSES BY LINE ITEM</b>				
LINE ITEM	FY19 Approved Budget	FY20 Approved Budget	Change FY20 vs FY19	
WAGES AND SALARIES	\$ 107,032,021	\$ 109,953,483	\$ 2,921,462	2.7%
OVERTIME	4,447,554	4,898,965	451,411	10.1%
FRINGE BENEFITS	21,173,571	21,717,533	543,962	2.6%
WORKERS' COMPENSATION	2,422,609	2,354,256	(68,353)	-2.8%
CHEMICALS	10,830,452	11,811,222	980,770	9.1%
ENERGY AND UTILITIES	22,868,633	24,454,796	1,586,163	6.9%
MAINTENANCE	32,258,727	32,726,954	468,227	1.5%
TRAINING AND MEETINGS	455,770	504,394	48,624	10.7%
PROFESSIONAL SERVICES	7,675,976	8,295,315	619,339	8.1%
OTHER MATERIALS	7,381,098	6,867,239	(513,859)	-7.0%
OTHER SERVICES	23,065,410	24,683,370	1,617,960	7.0%
<b>TOTAL</b>	<b>\$ 239,611,821</b>	<b>\$ 248,267,527</b>	<b>\$ 8,655,706</b>	<b>3.6%</b>

**Wages and Salaries** – The budget includes \$110.0 million for Wages and Salaries as compared to \$107.0 million in the FY19 Budget, an increase of \$2.9 million or 2.7%. Regular Pay which is 98.0% of total Wages and Salaries, increased \$2.9 million primarily for wage increases associated with collective bargaining agreements and additional staff, offset by lower salaries for new hires compared to retirees. The FY20 Budget funds 1,158 FTEs, three more than the FY19 Budget. The three additional FTEs will support the Metropolitan Tunnel Redundancy Program. As always, new hires and backfilling of vacant positions will be managed at the agency level and addressed on a case-by-case basis by senior management.

Division	FY17	FY18	FY19	FY20
Executive	5.0	5.0	5.0	5.0
Emergency Preparedness	5.8	7.8	8.0	7.0
Affirmative Action	6.0	6.0	6.0	7.0
Internal Audit	6.7	6.8	6.7	6.7
Public Affairs	12.9	13.0	12.9	11.9
Tunnel Redundancy	-	-	5.0	8.0
Operations	918.8	918.8	920.3	916.0
Law	15.5	15.5	13.5	13.6
Administration	141.0	142.0	140.6	145.7
Finance	38.3	35.5	37.0	37.0
<b>Authority Total</b>	<b>1,150.0</b>	<b>1,150.4</b>	<b>1,155.0</b>	<b>1,158.0</b>

**MWRA: % Overtime vs. Regular Pay**



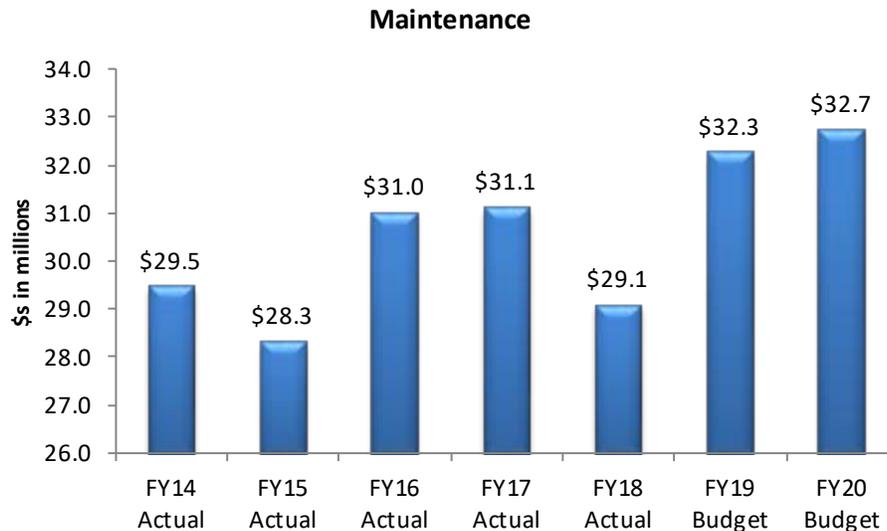
**Overtime** – The overtime line item is comprised of both emergency overtime and budgeted overtime for maintenance and capital projects. The budget includes \$4.9 million for Overtime, an increase of \$451,000 or 10.1% from the FY19 Budget mostly for COLA increases. Overtime was increased in the Field Operations Department in the Operations Division to reflect recent trends in planned overtime for off-hours maintenance.

**Fringe Benefits** – The budget includes \$21.7 million for Fringe Benefits, an increase of \$544,000 or 2.6% from the FY19 Budget. Health Insurance premiums total \$18.3 million, an increase of \$53,000 or 0.3% from the FY19 Budget largely due to an increase in the rates for the structure of the health plans offset by a change to the number and mix of plans based on FY19 enrollment changes. The FY20 Final Budget also includes \$357,000 for the new Paid Family Medical Leave Act (PFML), which represents the minimum employer share as required by law.

### Fringe Benefits

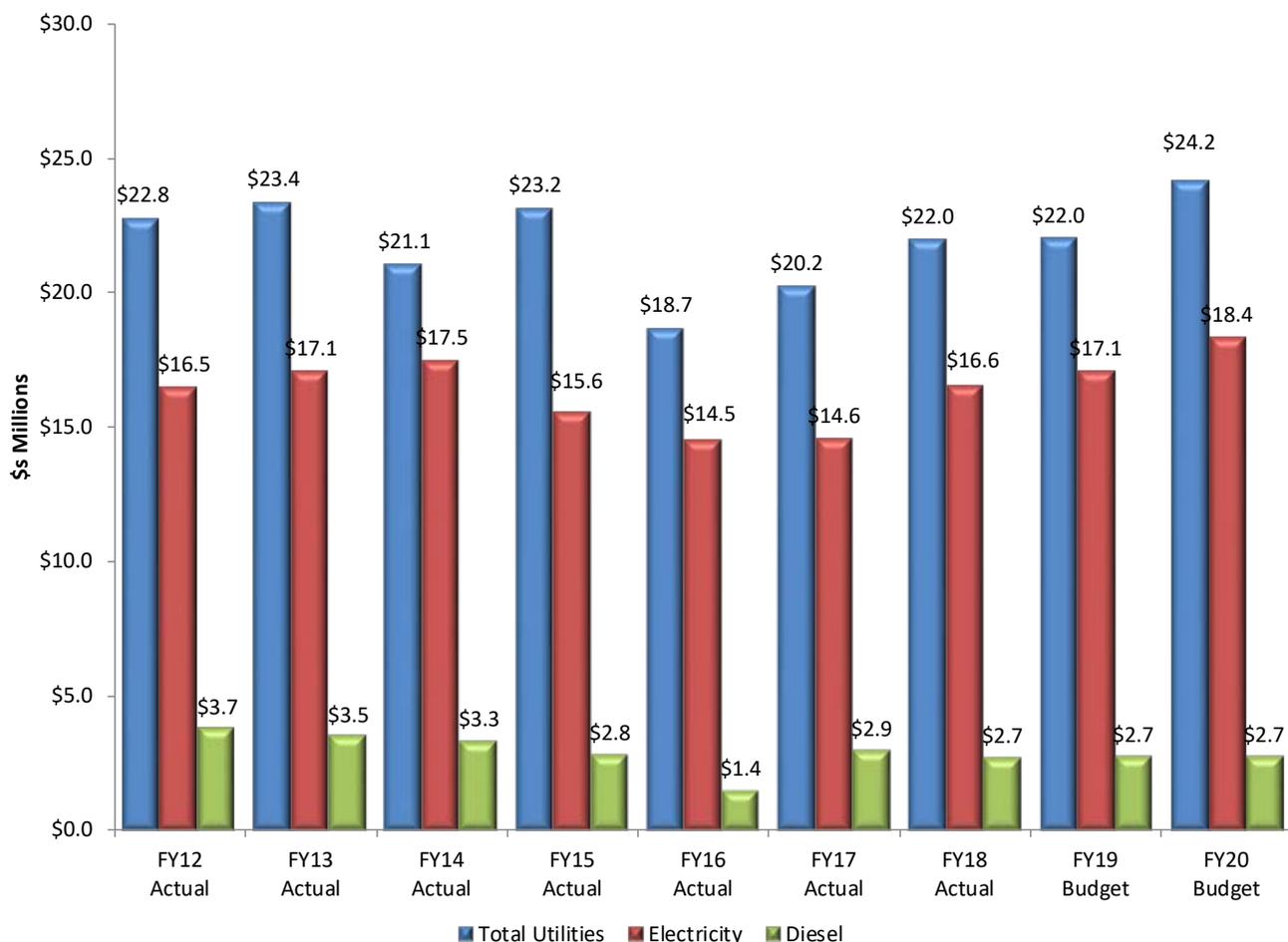
Line Item	FY18 Actual	FY19 Budget	FY20 Budget
Overtime Meals	\$ 109,914	\$ 90,147	\$ 115,361
Health Insurance	17,315,432	18,278,017	18,331,265
Dental Insurance	1,105,881	1,160,145	1,202,354
Unemployment Insurance	121,693	150,000	150,000
PFML	-	-	356,542
Medicare	1,374,311	1,425,262	1,492,011
Tuition Reimbursement	41,696	70,000	70,000
<b>Total Fringe Benefits</b>	<b>\$ 20,068,927</b>	<b>\$ 21,173,571</b>	<b>\$ 21,717,533</b>

**Maintenance** – The budget includes \$32.7 million for Maintenance projects, an increase of \$468,000 or 1.5% from the FY19 Budget. The increase is largely driven by software maintenance in MIS. The largest drivers are the software maintenance component of the Managed Security Service Provider contract for \$392,000 and for Management Consoles (infrastructure monitoring) in MIS for \$148,000.



**Utilities** – The budget includes \$24.5 million for Utilities, which is an increase of \$1.6 million or 6.9% over the FY19 Budget. The budget funds \$18.4 million for Electricity, an increase of \$1.2 million or 7.2% over the FY19 budget. \$1.1 million of the increase is related to the Deer Island Treatment Plant, which saw an increase in usage by 1.3 million kWh and in pricing by \$0.01/kWh (per a new contract with Eversource effective October 2018). The major utilities that the budget funds are \$18.7 million for Electricity, \$2.6 million for Diesel Fuel, \$2.4 million for Water, and \$632,000 for Natural Gas.

## Utilities



**Chemicals** – The budget includes \$11.8 million for Chemicals, an increase of \$981,000 or 9.1% over the FY19 Budget mainly due to increased prices for Ferric Chloride at the Deer Island Wastewater Treatment Plant, increased prices for Sodium Hypochlorite, and higher quantities of Activated Carbon at several wastewater facilities. The FY20 Budget does not include funding for the potential new Deer Island National Pollutant Discharge Elimination System (NPDES) permit, which is projected to have more stringent requirements for enterococcus treatment compliance.

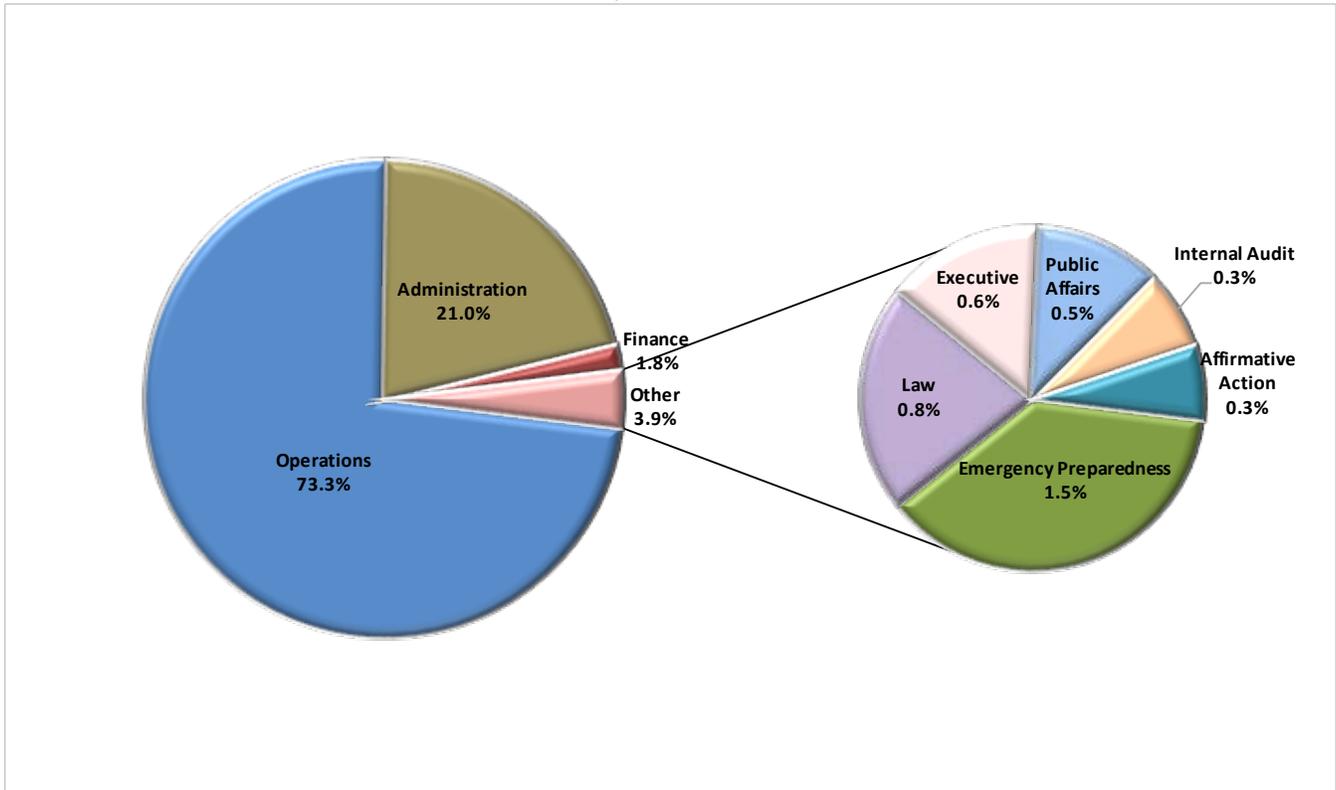
**Other Services** – The budget includes \$24.7 million for Other Services, an increase of \$1.6 million or 7.0% from the FY19 Budget. The budget includes funding of \$14.7 million for Sludge Pelletization, \$4.0 million for Space/Lease Rentals and related lease cost for the Charlestown Navy Yard, and Chelsea Facility, \$1.9 million for Voice and Data costs, \$1.3 million for Other Services, and \$1.1 million for Grit and Screenings removal. The increase to Other Services is driven by Sludge Pelletization, which has increased by \$1.4 million or 10.6% from the FY19 Budget, due to an increase of 8.5 dry tons per day.

## Functional Area Budget Summary

The chart below shows the breakdown of the MWRA’s direct expense budget by division.

FY20 Approved Current Expense Budget MWRA Direct Expense by Division						
DIVISION	FY16 Actuals	FY17 Actuals	FY18 Actuals	FY19 Approved Budget	FY20 Approved Budget	Change FY20 to FY19
EXECUTIVE	\$6,748,473	\$6,706,254	\$7,277,231	\$7,590,300	\$7,602,764	\$12,464 0.2%
OPERATIONS	160,119,301	162,910,111	165,682,000	176,153,628	181,938,410	5,784,782 3.3%
LAW	2,044,933	2,285,192	2,055,301	2,059,794	2,083,232	23,438 1.1%
ADMINISTRATION	43,217,254	44,967,226	45,760,273	49,486,446	52,222,113	2,735,667 5.5%
FINANCE	3,918,090	3,853,121	3,971,552	4,321,656	4,420,979	99,323 2.3%
<b>TOTAL</b>	<b>\$216,048,051</b>	<b>\$220,721,904</b>	<b>\$224,746,357</b>	<b>\$239,611,824</b>	<b>\$248,267,498</b>	<b>\$8,655,674 3.6%</b>

**MWRA Direct Expense Budget  
By Division**



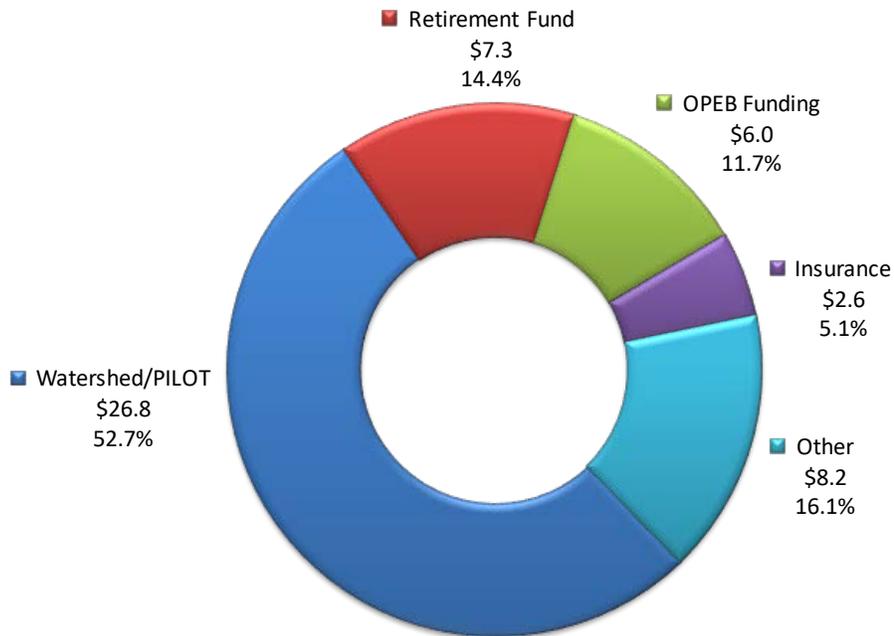
Detailed summaries for each Division budget are provided following the Executive Summary.

## INDIRECT EXPENSES

The FY20 Indirect Expense Budget is \$50.9 million, an increase of \$4.9 million or 10.7% over the FY19 Budget.

The following graph combines related indirect expense line items into the general cost categories and shows that Water Supply Protection Program expenses are the largest component of the indirect expense budget at 53% followed by Retirement Fund at 14%, OPEB at 12%, Other (for items such as HEEC, Mitigation, and Addition to Reserves) at 16%, and Insurance at 5%.

**Indirect Expenses by Category**  
**\$'s in Millions**



### Insurance

MWRA purchases property and casualty insurance from external insurance carriers with a self-insured retention of \$2.5 million dollars and Worker's Compensation Excess insurance with a self-insured retention of \$500,000 per claim. The budget includes \$2.6 million for Insurance, an increase of \$512,000 or 24.4% from the FY19 Budget. The FY20 Budget was based on actual average spending for claims for the past five years, FY14-18, and bids received for the insurance premiums. It should be noted that at the May 29<sup>th</sup> meeting, the Board of Directors approved the MWRA FY20 Insurance program with a not to exceed amount of \$2,249,851 for premiums. Premium Costs are estimated based on current costs adjusted for inflation and potential increases due to insurance market conditions. Self-insured Cost are estimated based on actual average spending over the past 5 years (FY14-18). MWRA mitigates the budgetary risk

of self-insurance by maintaining an Insurance Reserve. The reserve, which was established as part of the Bond Resolution, requires that an independent insurance consultant review the funding level every three years and provide recommendations as to its adequacy. The Insurance Reserve Fund is currently funded at \$14.0 million which was within the acceptable range as identified in the triennial insurance consultant review as of February 2017.

### **Watershed Reimbursement/PILOT**

The Enabling Act directs MWRA to pay the Commonwealth of Massachusetts for several statutory obligations: Payment in Lieu of Taxes (PILOT) for Commonwealth-owned land in the watersheds and operating expenses of the Division of Water Supply Protection. The budget includes \$26.8 million for the Watershed Management budget, an increase of \$427,000 or 1.6% over the FY19 Budget. The budget includes \$17.9 million for reimbursement of operating expenses net of revenues, and \$8.5 million for Payment in Lieu of Taxes (PILOT). The largest increases are for operating expenses net of revenues of \$472,000 mainly for contractual increases and healthcare costs. The FY20 operating capital budget includes the Clinton crew headquarters construction and several smaller projects.

	<b>FY19 Budget</b>	<b>FY20 Budget</b>	<b>FY20 vs. FY19</b>	<b>%</b>
Operating Expenses	17,321,420	17,853,600	532,180	3.1%
Major Projects	1,600,000	1,555,000	(45,000)	-2.8%
Revenue	(1,014,993)	(1,075,000)	(60,007)	5.9%
<b>Net</b>	<b>17,906,427</b>	<b>18,333,600</b>	<b>427,173</b>	<b>2.4%</b>
PILOT	8,500,000	8,500,000	-	0.0%
<b>Total</b>	<b>26,406,427</b>	<b>26,833,600</b>	<b>427,173</b>	<b>1.6%</b>

### **Harbor Electric Energy Company (HEEC)**

The budget includes \$4.4 million for the Harbor Energy Electric Company (HEEC), an increase of \$3.0 million or 219.4% over the FY19 Budget due to the new cable projected to be placed into service in December 2019. The budget reflects updated calculations for the Operations and Maintenance component of the HEEC payment obligations and capital improvements to the electrical substations providing electricity to the Deer Island Wastewater Treatment Plant. The \$4.4 million is level to the planning estimate. In FY18, \$6.5 million was set aside to mitigate the impact of the HEEC cost, and is projected to be used between FY21-25.

### **Mitigation**

MWRA disburses mitigation funds to communities affected by MWRA projects or facilities pursuant to MWRA's Statement of Mitigation Principles and/or specific agreements with communities. MWRA mitigation may include relieving the direct impacts of construction, meeting environmental and regulatory

requirements, long-term operating agreements, or community compensation for impacts over and above those addressed by other mitigation. In rare situations, where the extent and duration of the impact of a project or facility on a community is such that restoring the area to its pre-project state is insufficient to relieve the stress of MWRA's presence during the project, MWRA funds or contributes to improvements to affected areas.

Mitigation expenses are funded in the capital budget and in the current expense budget. The FY20 Final Budget includes funding of \$1.7 million in community compensation for the City of Quincy and the Town of Winthrop. Both mitigation agreements expire in FY25.

### **Operating Reserves**

Funding for the Operating Reserve for FY20 is \$2.1 million. The Operating Reserve balance is in compliance with MWRA's General Bond Resolution which requires a balance of one-sixth of annual operating expenses. Based on the FY20 Final Budget, the required balance is \$44.0 million versus the \$41.9 million required in FY19.

### **Retirement System Contribution**

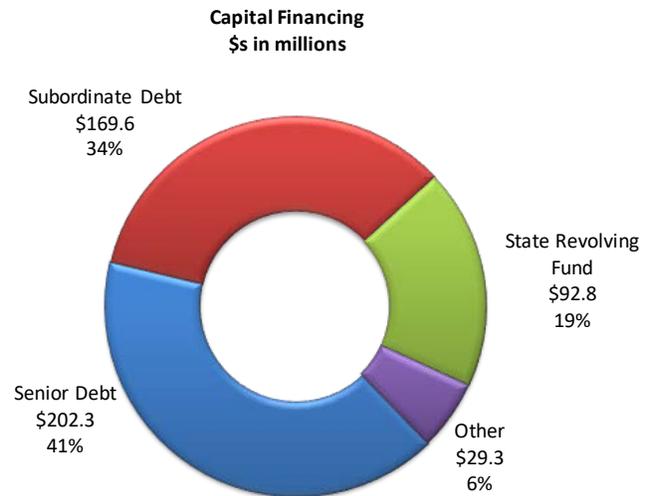
The budget includes \$7.3 million for the Retirement Fund, the minimum required contribution for FY20 based on the May 14, 2018 actuarial report. The FY20 required contribution is an increase of \$315,000 or 4.5% over the FY19 Budget. The planning estimates presented reflect the estimated funding requirements for FY21 (\$11.0 million) and beyond. These annual estimates include changes to the actuarial assumptions used in the recent draft valuation report as of January 1, 2019. The assumed rate of return has been reduced from 7.5% to 7.25% and the time to full amortization of the unfunded liability has been extended by four years, from 2026 to 2030. Based on the latest actuarial evaluation, MWRA's pension fund is at a 95.0% funding level.

### **GASB 45 – Accounting and Reporting by Employers for Postemployment Benefits Other than Pensions**

In the Final FY20 Budget the Authority funds its OPEB liability at \$6.0 million, continuing the Authority's long-term commitment to address its liabilities. The Authority has complied with GASB 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other than Pensions (OPEB)*, by disclosing this liability in the year-end Financial Statements. As part of the multi-year strategy to address its unfunded liabilities for OPEB and pension holistically, the Board approved a plan to pay down the pension liability and upon reaching full funding, moved to address the OPEB obligation. Based on the latest actuarial evaluation, MWRA's pension fund is at a 95.0% funding level. To maximize the benefits in terms of returns and accounting treatment, an irrevocable OPEB Trust was established with Board approval and funding started on April 23, 2015. As of June 30, 2018 the Trust balance was \$37.1 million. Starting in FY18, GASB 75 is the governing regulation for employer OPEB contributions. The \$6.0 million budget is based on 50% of the contribution determined in the January 1, 2018 actuarial report. The current Trust balance of \$37.1 million represents approximately a 23% funding level.

## CAPITAL FINANCING

The FY20 Final capital financing costs total \$493.1 million and remains the largest portion of the MWRA's budget. The FY20 Final Budget capital financing costs increased by \$10.7 million or 2.2% compared to the FY19 Budget. This increase is primarily the result of projected FY19 and FY20 borrowings and the structure of the existing debt, and increased current revenue for capital partially offset by the impact of the defeasance.



The FY20 capital financing budget includes:

- \$202.3 million in principal and interest payments on MWRA's senior fixed rate bonds. This amount includes \$5.1 million to support issuance of \$125 million in May 2020. Also it includes a reduction of \$5.4 million from the effect of the FY19 defeasance;
- \$169.6 million in principal and interest payments on subordinate bonds;
- \$92.8 million in principal and interest payments on SRF loans. This amount includes \$8.2 million to support issuances of \$52.5 million of loans during 2019 and \$55 million in 2020;
- \$15.2 million to fund ongoing capital projects with current revenue;
- \$5.0 million in debt prepayment.
- \$5.8 million to fund the interest expense related to the Local Water Pipeline Assistance Program; and
- \$3.2 million for the Chelsea Lease.

The budget also includes \$890,239 offset to Debt Service for the Debt Service Assistance received in FY19.

## Outstanding Debt and Debt Management

The \$8.4 billion spent on MWRA's modernization efforts since the Authority was established in 1986, has relied heavily on debt financing. Total debt as of June 30, 2019 was \$5.1 billion consisting of senior and subordinated debt, Tax-Exempt Commercial Paper, and a Revolving Loan. The total debt was \$37.7 million lower than the MWRA's total debt as of June 30, 2018. The MWRA enjoys strong unenhanced senior debt ratings of Aa1, AA+, and AA+ from Moody's, Standard & Poor, and Fitch, respectively.

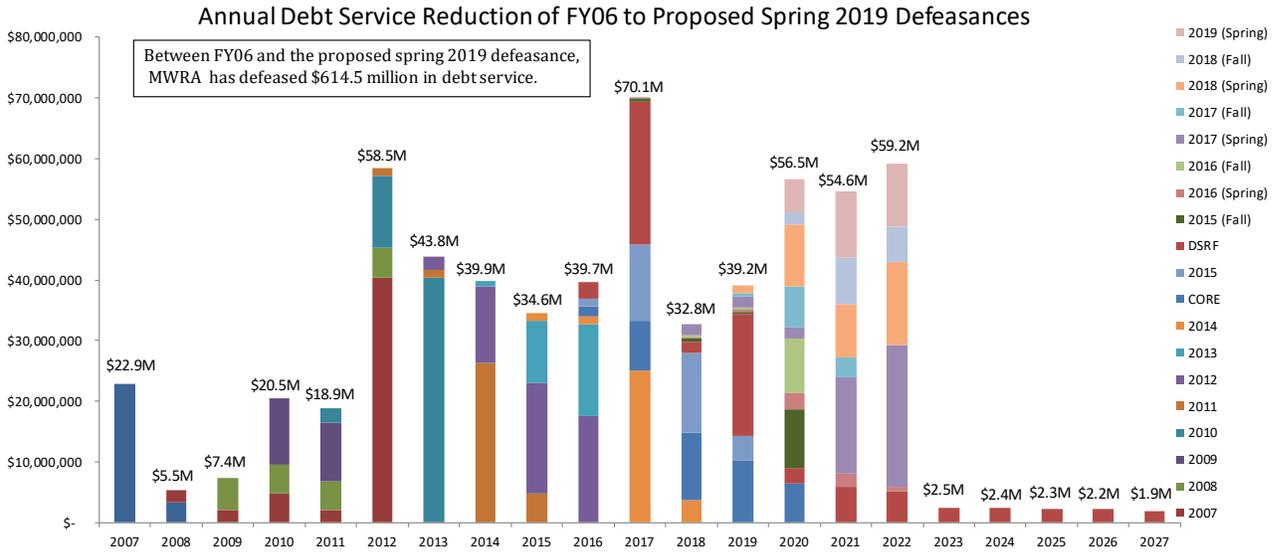
Type	Principal Outstanding June 30, 2019	% of Total
Senior General Revenue Bonds	\$ 3,136,950,000	61.8%
Massachusetts Clean Water Trust	\$ 979,883,519	19.3%
Subordinate General Revenue Bonds	\$ 782,225,000	15.4%
Tax Exempt Commercial Paper/Revolving Loan	\$ 175,000,000	3.5%
<b>Total</b>	<b>\$ 5,074,058,519</b>	

← 80.6% of MWRA's Debt is Fixed Rate

As a result of the Authority's Capital Improvement Program, capital financing as a percent of total expenses (before offsets) has increased steadily from 36% in 1990 to 62.4% in the FY20 Current Expense Budget. Much of this debt service is for completed projects, primarily the Boston Harbor Project and the Integrated Water Supply Improvement Program. The MWRA's capital spending, from its inception, had been dominated by projects mandated by court ordered or regulatory requirements, which in total have accounted for ~80% of capital spending to date. Going forward, and as the Combined Sewer Overflow (CSO) projects reached substantial completion in December 2015, the majority of spending will be focused on asset protection and water redundancy initiatives. The projected capital spending scheduled for FY19 is less than scheduled principal payments which will contribute to decrease MWRA's outstanding indebtedness.

The Authority has actively managed its debt structure to take advantage of favorable interest rates. Tools used by the MWRA to lower borrowing costs and manage rates include current and advanced refunding of outstanding debt, maximizing the use of the subsidized State Revolving Fund (SRF) debt, issuance of variable rate debt, swap agreements, and the use of surplus revenues to defease debt. The MWRA also uses tax exempt commercial paper to minimize the financing cost of construction in process.

The FY20 Final Budget includes the benefit of a planned defeasance of \$24.4 million which will reduce debt service by approximately \$5.4 million in FY20, and \$11.0 million in FY21, and \$10.5 million in FY22.



The FY20 Budget assumes a 3.5% interest rate for variable rate debt which is the same as the rate in FY19. The Authority's variable rate debt assumption is comprised of three separate elements: the interest rate for the daily and weekly series; liquidity fees for the Standby Bond Purchase Agreement, Letter of Credit, and Direct Purchase providers; and remarketing fees. While MWRA continues to experience low interest rates, and MWRA projects that rates will increase in the future.

## **Grant Revenues**

In the past, MWRA has been able to finance approximately 20 percent of its capital spending with grant receipts, totaling approximately \$1.1 billion through FY03. However, since FY03, the MWRA has only received \$4.9 million in capital grants. In addition to participating in federal and state grant programs, the MWRA benefitted from the American Recovery and Reinvestment Act of 2009 which forgave approximately \$33.0 million in State Revolving Fund loan principal. The Authority continues to pursue grant funding and take advantage of any possible program available to maximize grant funding opportunities.

MWRA expects to borrow the majority of funds necessary for future capital spending. Borrowing will include the issuance of fixed and variable rate revenue bonds; borrowing from the Massachusetts Clean Water Trust (also known as the State Revolving Loan Fund or SRF), and a Tax-Exempt Commercial Paper program. The table below details the FY20 budget capital financing line item. It also shows how upgrading the sewerage system has dominated the capital program to date. Current and future borrowings increasingly support improvements to the water system. A complete list of the Authority's indebtedness by series is presented in Appendix E.

<b>TABLE I-3</b>				
<b>FY20 Current Expense Budget - Capital Financing Detail (as of 6/30/19)</b>				
<b>\$ in Millions</b>				
	<b>Amount Outstanding</b>	<b>Total Capital Finance Costs</b>	<b>Sewer</b>	<b>Water</b>
Total SRF <sup>1</sup> Debt	\$979.9	\$92.8	\$70.5	\$22.3
Total Senior Debt	\$3,137.0	202.3	134.1	68.2
Total Subordinate Debt	\$782.2	169.6	114.4	55.2
<b>Total SRF and Debt Service<sup>2</sup></b>	<b>\$4,899.1</b>	<b>\$464.7</b>	<b>\$319.0</b>	<b>\$145.7</b>
Water Pipeline Commercial Paper	175.0	5.8	0.0	5.8
Current Revenue/Capital <sup>3</sup>		15.2	12.5	2.7
Capital Lease		3.2	1.9	1.3
Debt Prepayment <sup>4</sup>		5.0	3.0	2.0
	<b>175.0</b>	<b>\$29.3</b>	<b>\$17.4</b>	<b>\$11.9</b>
<b>Total Capital Financing (before Debt Service Offsets)</b>	<b>5,074.1</b>	<b>\$494.0</b>	<b>\$336.4</b>	<b>\$157.5</b>
Debt Service Offsets:				
Debt Service Assistance		(0.9)	(0.8)	(0.1)
Bond Redemption		0.0	0.0	0.0
<b>Total Capital Financing</b>	<b>5,074.1</b>	<b>\$493.1</b>	<b>\$335.6</b>	<b>\$157.4</b>

<sup>1</sup> SRF debt service payments reflect net MWRA obligations after state and federal subsidies.

<sup>2</sup> Numbers may not add due to rounding.

<sup>3</sup> Current Revenue/Capital is revenue used to fund ongoing capital projects.

<sup>4</sup> Debt Prepayment will be used defeasance of bonds at end of fiscal year.

## **CIP Impact on Current Expense Budget**

In addition to the annual financing costs included in the Current Expense Budget, the Capital Improvement Program affects the annual operating budget when capital facilities come on-line and require adjustments to operating budgets. In prior years, completion of the Deer Island Treatment Plant, the Carroll Water Treatment Plant, and the residuals processing facility in Quincy resulted in significant increases in operating expenses.

The South Boston CSO Tunnel inspection will be performed by in-house staff resulting in a reduction of operating costs of \$424,000 in FY22. This is the first year of a tunnel inspection program that will be conducted every five years.

The following table summarizes the projected CIP impact on the operating budget by project over the next ten years.

Fiscal Year	CEB Impacts (000)										
	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	Total
DI Treatment Plant Asset Protection (not including Co-Digestion or Combined Heat and Power Plant)	(\$31)	\$0	\$0	(\$56)	(\$174)	(\$72)	\$0	\$0	\$0	\$0	(\$333)
DI Treatment Plant Asset Protection - Hydroturbine Replacements	0	0	0	0	0	0	(123)	0	0	0	(123)
South Boston CSO Tunnel Inspection/Cleaning and Outfalls Inspection (previously named North Dorchester Bay project)	52	(424)	0	0	0	0	922	(950)	0	0	(401)
<b>Total Wastewater (inflated)</b>	<b>\$21</b>	<b>(\$424)</b>	<b>\$0</b>	<b>(\$56)</b>	<b>(\$174)</b>	<b>(\$72)</b>	<b>\$799</b>	<b>(\$950)</b>	<b>\$0</b>	<b>\$0</b>	<b>(\$856)</b>
Metro Tunnel Redundancy	\$1,028	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,028
Wachusett Algae Treatment Facility	0	0	0	0	0	0	0	0	130	0	130
<b>Total Water (inflated)</b>	<b>\$1,028</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$130</b>	<b>\$0</b>	<b>\$1,158</b>
<b>Total Business and Operations Support (inflated)</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>TOTAL MWRA</b>	<b>\$1,048</b>	<b>(\$424)</b>	<b>\$0</b>	<b>(\$56)</b>	<b>(\$174)</b>	<b>(\$72)</b>	<b>\$799</b>	<b>(\$950)</b>	<b>\$130</b>	<b>\$0</b>	<b>\$302</b>

Operating costs are projected to increase in FY21 by \$1.0 million primarily due additional staff for the Metropolitan Tunnel Redundancy project. This will be offset by Deer Island Treatment Plant Asset Protection initiatives resulting in a reduction of operating costs of \$456,000 through FY30.

The next South Boston CSO Tunnel inspection will be in FY27 and result in an increase to operating costs of approximately \$922,000.

Other increases to operating costs over the next ten years include charges to the Wachusett Algae Treatment Facility for \$130,000 in utilities in FY29.

## RATE ASSESSMENT AND METHODOLGY

### Community Profile and Assessments

MWRA provides wholesale water and sewer services to 61 communities or local bodies. Fifty-one local bodies purchase water supply services, and 45 local bodies purchase wastewater transport and treatment services. Thirty-five local bodies purchase both. Approximately 3.0 million people, or 45% of the population of Massachusetts, live and work in the communities that purchase water and/or wastewater services from MWRA.

MWRA's largest single customer is the Boston Water and Sewer Commission (BWSC), which provides retail services in the City of Boston. In the Final FY20 Budget, rate revenue from BWSC will account for 31% of MWRA's total rate revenue. The table on page I-26 lists MWRA communities, the services received, and the MWRA assessments for FY20.

Each year MWRA determines preliminary wholesale water and sewer assessments in February and final assessments in June before the beginning of the new fiscal year. These assessments must satisfy the statutory requirement that MWRA fully recover its budgeted water and sewer costs by apportioning net costs among its wholesale water and sewer customers.

The following table presents the calculation of MWRA's FY20 Rate Revenue Requirement. The table shows that most of MWRA's current expenses are directly attributable to either water or sewer service

costs, or to investment in the water or sewer systems. Expenses that support both systems are allocated to water or sewer assessments based on generally accepted cost allocation principles. Investment Income and Other Revenues offset water and sewer expenses. The resulting net cost of water and sewer services is the amount MWRA recovers through water and sewer assessments.

**Calculation of the FY20 Rate Revenue Requirement  
(000's)**

	Sewer	Water	Total
Allocated Direct Expenses	\$164,092	\$84,175	\$248,268
Allocated Indirect Expenses	\$17,708	\$33,192	\$50,900
<b>PLUS</b>			
Capital Expenses:			
Debt Service (less offsets)	\$318,235	\$145,582	\$463,817
Current Revenue for Capital	\$12,464	\$2,736	\$15,200
Other Capital Expenses	\$4,936	\$9,128	\$14,064
<b>PLUS</b>			
Non-Rate Revenue:			
Investment Income	-\$9,623	-\$5,881	-\$15,504
Fees and Other Revenue	-\$4,797	-\$10,180	-\$14,977
Rate Stabilization	\$0	\$0	\$0
<b>EQUALS</b>			
Rate Revenue Requirement	\$503,015	\$258,752	\$761,767

**Wholesale Assessment Methodology**

MWRA calculates separate user assessments for water and sewer services. Budgeted water operating and capital costs are allocated based on each community's share of total water use for the most recent calendar year. The sewer assessment methodology allocates budgeted operating and maintenance costs based on share of wastewater flow and strength parameters, and capital costs based on proportion of maximum flow, strength, and population. MWRA uses three-year averaging of wastewater flows to calculate the flow-related components of wholesale sewer assessments. Flow averaging moderates the short-term impact of year-to-year changes in community flow, but does not eliminate the long-term impact of changes in each community's relative contribution to the total flow.

MWRA Fully Served Water and Sewer Customers	Final FY19 Water Assessment	Final FY20 Water Assessment	Percent Change from FY19	Final FY19 Sewer Assessment	Final FY20 Sewer Assessment	Percent Change from FY19	Final FY19 Combined Assessment	Final FY20 Combined Assessment	Dollar Change from FY19	Percent Change from FY19
ARLINGTON	5,207,787	5,428,333	4.2%	8,649,531	8,921,155	3.1%	\$13,857,318	\$14,349,488	\$492,170	3.6%
BELMONT	2,845,415	3,001,852	5.5%	5,092,015	5,321,061	4.5%	7,937,430	8,322,913	385,483	4.9%
BOSTON (BWSC)	90,752,551	93,413,175	2.9%	141,531,379	145,875,583	3.1%	232,283,930	239,288,758	7,004,828	3.0%
BROOKLINE	7,037,965	7,300,560	3.7%	12,898,264	13,202,213	2.4%	19,936,229	20,502,773	566,544	2.8%
CHELSEA	4,830,322	4,939,423	2.3%	8,305,015	8,626,321	3.9%	13,135,337	13,565,744	430,407	3.3%
EVERETT	5,466,023	5,543,676	1.4%	8,876,844	9,310,473	4.9%	14,342,867	14,854,149	511,282	3.6%
FRAMINGHAM	8,205,353	8,448,119	3.0%	13,423,226	13,569,073	1.1%	21,628,579	22,017,192	388,613	1.8%
LEXINGTON	7,128,006	7,413,364	4.0%	7,572,486	7,851,947	3.7%	14,700,492	15,265,311	564,819	3.8%
MALDEN	7,119,028	7,552,824	6.1%	13,514,306	13,705,355	1.4%	20,633,334	21,258,179	624,845	3.0%
MEDFORD	6,462,326	6,542,736	1.2%	12,356,732	12,493,747	1.1%	18,819,058	19,036,483	217,425	1.2%
MELROSE	2,897,122	2,977,071	2.8%	6,520,195	6,723,984	3.1%	9,417,317	9,701,055	283,738	3.0%
MILTON	3,463,069	3,508,765	1.3%	5,556,575	5,736,340	3.2%	9,019,644	9,245,105	225,461	2.5%
NEWTON	12,080,214	12,721,936	5.3%	22,348,192	22,443,151	0.4%	34,428,406	35,165,087	736,681	2.1%
NORWOOD	4,064,489	3,963,726	-2.5%	7,628,062	8,171,535	7.1%	11,692,551	12,135,261	442,710	3.8%
QUINCY	11,998,387	11,714,243	-2.4%	20,708,161	21,091,455	1.9%	32,706,548	32,805,698	99,150	0.3%
READING	2,296,922	2,370,637	3.2%	5,090,525	5,377,793	5.6%	7,387,447	7,748,430	360,983	4.9%
REVERE	5,185,345	5,262,364	1.5%	10,761,283	10,896,609	1.3%	15,946,628	16,158,973	212,345	1.3%
SOMERVILLE	8,055,307	8,240,009	2.3%	17,094,747	17,492,310	2.3%	25,150,054	25,732,319	582,265	2.3%
STONEHAM	3,105,808	3,019,242	-2.8%	4,616,825	4,812,709	4.2%	7,722,633	7,831,951	109,318	1.4%
WALTHAM	9,311,252	9,621,955	3.3%	13,800,824	13,961,534	1.2%	23,112,076	23,583,489	471,413	2.0%
WATERTOWN	3,696,371	3,898,438	5.5%	6,357,733	6,729,234	5.8%	10,054,104	10,627,672	573,568	5.7%
WINTHROP	1,698,840	1,848,357	8.8%	3,565,533	3,718,688	4.3%	5,264,373	5,567,045	302,672	5.7%
<b>TOTAL</b>	<b>\$212,907,902</b>	<b>\$218,730,805</b>	<b>2.7%</b>	<b>\$356,268,453</b>	<b>\$366,032,270</b>	<b>2.7%</b>	<b>\$569,176,355</b>	<b>\$584,763,075</b>	<b>\$15,586,720</b>	<b>2.7%</b>

MWRA Sewer and Partial Water Customers	Final FY19 Water Assessment	Final FY20 Water Assessment	Percent Change from FY19	Final FY19 Sewer Assessment	Final FY20 Sewer Assessment	Percent Change from FY19	Final FY19 Combined Assessment	Final FY20 Combined Assessment	Dollar Change from FY19	Percent Change from FY19
CANTON	1,874,192	2,136,764	14.0%	4,383,915	4,620,738	5.4%	\$6,258,107	\$6,757,502	\$499,395	8.0%
NEDHAM	856,049	1,412,709	65.0%	6,173,219	6,399,114	3.7%	7,029,268	7,811,823	782,555	11.1%
STOUGHTON	161,431	146,695	-9.1%	5,072,227	5,240,340	3.3%	5,233,658	5,387,035	153,377	2.9%
WAKEFIELD	2,133,553	2,581,082	21.0%	6,290,285	6,585,727	4.7%	8,423,838	9,166,809	742,971	8.8%
WELLESLEY	1,485,700	1,476,827	-0.6%	5,745,909	5,933,569	3.3%	7,231,609	7,410,396	178,787	2.5%
WILMINGTON	503,145	732,142	45.5%	2,913,415	2,987,771	2.6%	3,416,560	3,719,913	303,353	8.9%
WINCHESTER	1,840,674	1,732,283	-5.9%	4,319,099	4,458,416	3.2%	6,159,773	6,190,699	30,926	0.5%
WOBBURN	3,177,148	4,119,106	29.6%	9,474,524	9,475,387	0.0%	12,651,672	13,594,493	942,821	7.5%
<b>TOTAL</b>	<b>\$12,031,892</b>	<b>\$14,337,608</b>	<b>19.2%</b>	<b>\$44,372,593</b>	<b>45,701,062</b>	<b>3.0%</b>	<b>\$56,404,485</b>	<b>\$60,038,670</b>	<b>\$3,634,185</b>	<b>6.4%</b>

MWRA Sewer-only Customers	Final FY19 Water Assessment	Final FY20 Water Assessment	Percent Change from FY19	Final FY19 Sewer Assessment	Final FY20 Sewer Assessment	Percent Change from FY19	Final FY19 Combined Assessment	Final FY20 Combined Assessment	Dollar Change from FY19	Percent Change from FY19
ASHLAND				2,693,503	2,747,924	2.0%	\$2,693,503	\$2,747,924	\$54,421	2.0%
BEDFORD				3,655,178	3,630,690	-0.7%	3,655,178	3,630,690	(24,488)	-0.7%
BRAINTREE				9,758,859	9,896,915	1.4%	9,758,859	9,896,915	138,056	1.4%
BURLINGTON				5,530,776	5,815,487	5.1%	5,530,776	5,815,487	284,711	5.1%
CAMBRIDGE				25,518,527	26,400,678	3.5%	25,518,527	26,400,678	882,151	3.5%
DEDHAM				5,597,434	5,860,551	4.7%	5,597,434	5,860,551	263,117	4.7%
HINGHAM SEWER DISTRICT				1,902,184	1,937,252	1.8%	1,902,184	1,937,252	35,068	1.8%
HOLBROOK				1,824,554	1,857,144	1.8%	1,824,554	1,857,144	32,590	1.8%
NATICK				5,972,626	6,044,147	1.2%	5,972,626	6,044,147	71,521	1.2%
RANDOLPH				6,530,979	6,747,779	3.3%	6,530,979	6,747,779	216,800	3.3%
WALPOLE				3,988,527	4,096,111	2.7%	3,988,527	4,096,111	107,584	2.7%
WESTWOOD				2,988,061	3,161,944	5.8%	2,988,061	3,161,944	173,883	5.8%
WEYMOUTH				12,584,755	13,085,354	4.0%	12,584,755	13,085,354	500,599	4.0%
<b>TOTAL</b>				<b>\$88,545,963</b>	<b>\$91,281,976</b>	<b>3.1%</b>	<b>\$88,545,963</b>	<b>\$91,281,976</b>	<b>\$2,736,013</b>	<b>3.1%</b>

MWRA Water-only Customers	Final FY19 Water Assessment	Final FY20 Water Assessment	Percent Change from FY19	Final FY19 Sewer Assessment	Final FY20 Sewer Assessment	Percent Change from FY19	Final FY19 Combined Assessment	Final FY20 Combined Assessment	Dollar Change from FY19	Percent Change from FY19
LYNNFIELD WATER DISTRICT	759,983	801,241	5.4%				\$759,983	\$801,241	\$41,258	5.4%
MARBLEHEAD	2,531,598	2,576,446	1.8%				2,531,598	2,576,446	44,848	1.8%
NAHANT	496,315	457,313	-7.9%				496,315	457,313	(39,002)	-7.9%
SAUGUS	4,016,971	4,221,536	5.1%				4,016,971	4,221,536	204,565	5.1%
SOUTHBOROUGH	866,571	927,672	7.1%				866,571	927,672	61,101	7.1%
SWAMPSCOTT	2,021,785	2,161,811	6.9%				2,021,785	2,161,811	140,026	6.9%
WESTON	2,493,163	2,413,951	-3.2%				2,493,163	2,413,951	(79,212)	-3.2%
<b>TOTAL</b>	<b>\$13,186,386</b>	<b>\$13,559,970</b>	<b>2.8%</b>				<b>\$13,186,386</b>	<b>\$13,559,970</b>	<b>\$373,584</b>	<b>2.8%</b>

MWRA Partial Water-only Customers	Final FY19 Water Assessment	Final FY20 Water Assessment	Percent Change from FY19	Final FY19 Sewer Assessment	Final FY20 Sewer Assessment	Percent Change from FY19	Final FY19 Combined Assessment	Final FY20 Combined Assessment	Dollar Change from FY19	Percent Change from FY19
DEDHAM-WESTWOOD WATER DISTRICT	154,204.00	181,946.00	18.0%				\$154,204	\$181,946	\$27,742	18.0%
LYNN (LWSC)	320,031	392,593	22.7%				320,031	392,593	72,562	22.7%
MARLBOROUGH	5,820,947	5,875,229	0.9%				5,820,947	5,875,229	54,282	0.9%
NORTHBOROUGH	1,271,058	1,312,711	3.3%				1,271,058	1,312,711	41,653	3.3%
PEABODY	4,162,771	4,360,830	4.8%				4,162,771	4,360,830	198,059	4.8%
<b>TOTAL</b>	<b>\$11,729,011</b>	<b>\$12,123,309</b>	<b>3.4%</b>				<b>\$11,729,011</b>	<b>\$12,123,309</b>	<b>\$394,298</b>	<b>3.4%</b>
<b>SYSTEMS TOTAL</b>	<b>\$249,855,191</b>	<b>\$258,751,692</b>	<b>3.6%</b>	<b>\$489,187,009</b>	<b>\$503,015,308</b>	<b>2.8%</b>	<b>\$739,042,200</b>	<b>\$761,767,000</b>	<b>\$22,724,800</b>	<b>3.1%</b>

## **Retail Charges**

As noted above, MWRA provides water and sewer services to communities on a wholesale basis. Each community then re-sells services on a retail basis. As a result, household water and sewer charges include each household's share of the community's MWRA water and sewer assessments, plus the community's own charges for the provision of local water and sewer services.

Each community independently establishes retail rates. When establishing local rates, community officials consider issues related to the pricing of services, level of cost recovery, and the local rate structure or methodology. Several factors contribute to a broad range of local rate structures in the MWRA service area:

- Differences in the extent to which water and sewer costs are supported through property taxes and other sources of revenue;
- Differences in the means by which communities finance investments in their own water and sewer systems; and
- Differences in communities' retail rate methodologies.

Some communities have flat unit rates, while others have inclining block rates. Local rates may also provide for differentials among classes of users, such as higher rates for commercial or industrial users, abatements to low-income or elderly residents, and adjusted sewer rates for customers with second meters used for lawn irrigation.

Additional information on rate structure within the member communities is available on the MWRA Advisory Board website as part of its annual retail rate survey.

## **Revenue and Expenditure Trends**

Because MWRA is required by its enabling act to balance its budget and to establish annual assessments to cover all expenses, revenue must change as expenses are changing each year. The Rate Revenue Requirement in any year is the difference between MWRA expenses and other revenue sources, most notably non-rate revenue, investment income, and debt service assistance from the Commonwealth (which directly reduces debt service expense). For FY20, community assessments are projected to represent 96.2% of total revenue.

MWRA's planning estimates are projections based on a series of assumptions about future spending (operating and capital), interest rates, inflation, and other factors. MWRA uses the planning estimates to model and project what future rates and assessments might be based upon these assumptions, as well as to test the impact of changes to assumptions on future rates and assessments. The planning estimates are not predictions of what rates and assessments will be but rather they provide the context and framework for guiding MWRA financial policy and management decision making that ultimately determine the level of actual rate change on an annual basis. Conservative projections of future rates and assessments benefit the MWRA by providing assurance to the rating agencies that MWRA anticipates to raise revenues sufficient to pay for its operations and outstanding debt obligations now and over the long-term. Additionally, conservative forecasts of rates and assessments enable member communities to adequately plan and budget for future payments to MWRA.

MWRA also updates its estimates of anticipated revenues and expenses over a multi-year planning horizon. These estimates provide a context for budget discussions and allow MWRA to consider multiple-year rates management implications and strategies as it evaluates alternative capital and operating budget options, the ultimate goal being sustainable and predictable rate changes.

The table below and Appendix D (in more detail) present the combined estimated future rate revenue requirements for FY20 through FY24. The planning estimates assume no Debt Service Assistance and no use of Rate Stabilization and Bond Redemption reserves through FY2024 to manage rate changes.

<b>Rates &amp; Budget Projections</b>						
<b>Final FY20 CEB</b>	<b>FY2019</b>	<b>FY2020</b>	<b>FY2021</b>	<b>FY2022</b>	<b>FY2023</b>	<b>FY2024</b>
Total Rate Revenue (\$000)	\$ 739,042	\$ 761,767	\$ 789,510	\$ 817,439	\$ 844,689	\$ 872,627
Rate Revenue Change from Prior Year (\$000)	\$ 21,988	\$ 22,725	\$ 27,743	\$ 27,928	\$ 27,250	\$ 27,938
Rate Revenue Increase	3.07%	3.07%	3.6%	3.5%	3.3%	3.3%
Use of Reserves (\$000)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

***Estimated Household Bill***

Based on annual water usage of 61,000 gallons	\$1,157	\$1,205	\$1,259	\$1,314	\$1,371	\$1,430
Based on annual water usage of 90,000 gallons	\$1,707	\$1,778	\$1,857	\$1,939	\$2,022	\$2,110

Increasing debt service to pay down and finance the capital improvement program is the most important factor driving estimates of future budget increases. Over the past several years MWRA’s Tax-Exempt Commercial Paper program, debt refinancing, federal grants, SRF loans, and Commonwealth debt service assistance have mitigated the impact on ratepayers of new capital spending. However, new water system improvements, for which there are fewer non-ratepayer sources of funding, and the impact of new financing will increase MWRA capital financing costs over the next several years.

MWRA employs rates management tools where available (e.g. refunding for savings, extended maturities on future borrowings, variable rate debt, and increased use of Tax-Exempt Commercial Paper) to help cushion and smooth the growth in capital financing expenses. Despite these initiatives, the size of the capital program will unavoidably continue to drive increases in community assessments.

The second largest budget factor is projected growth of base operating costs. The estimated \$30.0 million increase in direct expenses from FY20 to FY24 is primarily the result of an assumed annual inflation rate.

MWRA’s planning estimates are projections based on a series of assumptions about future spending (operating and capital), interest rates, inflation, and other factors. The assumptions include:

- Direct expense inflation rate of 2.7% for salaries and 3.0% for other direct expenses starting in FY21;
- CIP inflation rate of 2.5%;
- Capital spending based on the latest CIP expenditure forecast.
- Long-term fixed rate debt issues with a 25-year term and 5.25% interest rates in FY20, and 30 year terms 5.5% interest rates in FY21, 5.75% rates in FY22, and 6.0% rates from FY23 and beyond;
- Variable rate interest projected at 3.5% in FY20, and 4.0% starting in FY21.

The planning estimates generally use conservative assumptions to help communities plan for future payments to MWRA.

There are several areas where differences from planning estimate assumptions may alter projected increases:

- Changes in anticipated borrowing rates or expected investment income rates;
- The planning estimates do not factor in any positive year-end variances which may be used to defease debt or reserved to offset Rate Revenue Requirements in future years;
- Fewer opportunities for SRF borrowing than expected due to Federal Budget cuts; a dollar borrowed through the SRF at 2% replaces the need to borrow a dollar long-term at an assumed 5% rate;
- Overall inflationary pressures;
- Debt refinancing opportunities;
- Capital spending; and
- Growth in direct expenses, greater than current assumptions.

### **MWRA Rates Management**

Planning estimates for 2020 through 2024 forecast rate revenue requirement increases of 3.1% in FY20, 3.6% in FY21, 3.5% in FY22, and 3.3% in FY23 and FY24.

The FY20 Budget:

- Continues to refine planning estimates assumptions to provide greater predictability of future assessments;
- Judiciously uses reserves to lower rate increases, but maintain adequate balances;
- Continues the Authority's multi-year rates management strategy of providing sustainable and predictable assessment increases to our member communities; and
- For the second year, continues the smoothing strategy to even out the rate revenue requirement and rate changes caused by fluctuations in debt service at the utility level.

### **STATEMENT OF FINANCIAL POSITION**

In accordance with its enabling act, each year MWRA submits annual reports to the Governor, the President of the State Senate, the House of Representatives, the Advisory Board, and the Chairs of the State Senate and House Committees on Ways and Means containing financial statements relating to its operations maintained in accordance with Generally Accepted Accounting Principles in the United States of America (GAAP) and, commencing with the annual reports for 1986, audited by independent certified public accountants. MWRA's audited financial statements at June 30, 2019 are available online at [www.mwra.com](http://www.mwra.com).

