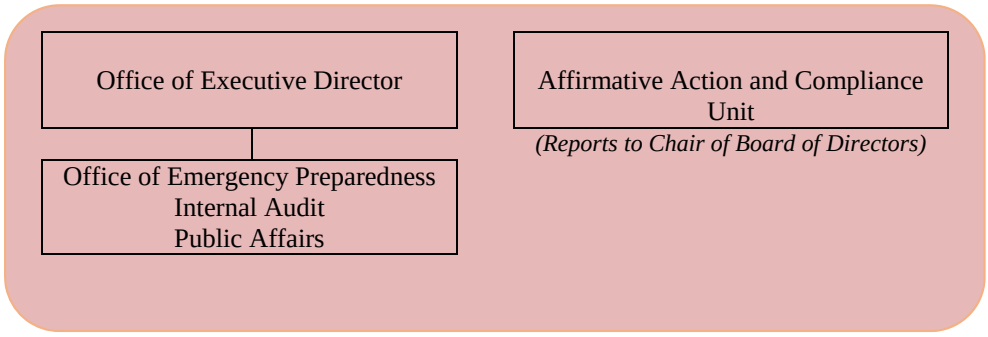
Executive Office
Budget

EXECUTIVE DIVISION



The **Executive Division** provides executive management and guides the implementation of MWRA policies established by the Board of Directors. It is responsible for developing and implementing specific goals and programs to achieve MWRA's primary mission of providing reliable and efficient water and sewer services, improving water quality, and for creating a framework within which all divisions can operate effectively. The Executive Division also oversees a centralized MWRA-wide security program to preserve and protect MWRA facilities, systems and employees.

The Executive Division includes the Office of Executive Director, Office of Emergency Preparedness, Internal Audit, Public Affairs, and the Affirmative Action and Compliance Unit (AACU). Each of these Departments is accounted for separately in the MWRA budget. In addition, the Director of the Tunnel Redundancy Program reports to the Executive Director. However, the Tunnel Redundancy Program is budgeted under the Operations Division budget.

The **Office of the Executive Director** includes the Board of Directors' cost center as well as the MWRA Advisory Board and Advisory Committees' cost centers. The Board of Directors formulates policies to guide MWRA actions and is responsible for major policy and fiscal decision-making. The MWRA Advisory Board was established by the Enabling Act to serve as "fiscal watchdog" for MWRA's customer communities. The Advisory Board makes recommendations to MWRA on annual expense budgets and capital improvement programs. In addition, the Advisory Board reviews and comments on MWRA reports, holds hearings on related matters, and makes recommendations to the Governor and the Legislature. The other advisory committees supported by this budget are the Water Supply Citizens' Advisory Committee (WSCAC) and the Wastewater Advisory Committee (WAC). (A description of the Advisory Board, WSCAC and WAC is set forth in Appendix E). The Executive Office budget accounts for less than 1% of the MWRA FY19 Direct Expense Budget.

FY19 Final Current Expense Budget
OFFICE OF THE EXECUTIVE DIRECTOR

DEPARTMENT	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
EXECUTIVE OFFICE	$ 537,059	$ 525,060	$ 536,635	$ 549,534	$ 12,899	2.4%
BOARD OF DIRECTORS	77,379	77,673	83,593	84,579	986	1.2%
ADVISORY BOARD / OTHER COMMITTEES	686,464	702,640	722,805	785,174	62,369	8.6%
TOTAL	**$ 1,300,902**	**$ 1,305,372**	**$ 1,343,033**	**$ 1,419,287**	**$ 76,254**	**5.7%**

FY19 Goals and 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. Five strategic priorities integral to MWRA's mission were identified for action in MWRA's Five-Year Strategic Business Plan FY 2016-2020:

I. Drinking Water Quality and System Performance;

II. Wastewater Management & System Performance;

III. Infrastructure Management & Resilience;

IV. Finance & Management;

V. Environmental Sustainability.

Under each of these priorities, MWRA identified goals and initiatives to guide the Authority's action. The Executive Department uses the Business Plan to provide the framework for MWRA staff to manage and measure performance. The Office of the Executive Director has also identified core initiatives that support MWRA's mission and strategic priorities.

- Ensure delivery of reliable and cost-effective water and sewer services to customer communities.
- Ensure that water supply and wastewater collection and treatment preserve public health and protect natural resources.
- Provide overall management of the agency and ensure adherence to all applicable policies and regulations.
- 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.
- Manage communication and garner support from key constituents for MWRA programs.

FY19 Final Current Expense Budget
OFFICE OF THE EXECUTIVE DIRECTOR

LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 608,188	$ 595,819	$ 612,480	$ 627,522	$ 15,042	2.5%
OVERTIME	61	-	-	-	-	-
TRAINING & MEETINGS	97	-	850	850	-	0.0%
PROFESSIONAL SERVICES	164,819	166,289	176,464	180,674	4,210	2.4%
OTHER MATERIALS	2,089	3,377	2,750	2,505	(245)	-8.9%
OTHER SERVICES	525,648	539,888	550,489	607,736	57,247	10.4%
TOTAL	**$ 1,300,902**	**$ 1,305,372**	**$ 1,343,033**	**$ 1,419,287**	**$ 76,254**	**5.7%**

Budget Highlights:

The FY19 Final Budget is $1.4 million, an increase of $76,000 or 5.7%, as compared to the FY18 Budget.

- $628,000 for **Wages and Salaries**, an increase of $15,000 or 2.5%, as compared to the FY18 Budget. The FY19 Final Budget includes funding for five FTEs, the same as the FY18 Budget.

OFFICE OF THE EXECUTIVE DIRECTOR	FY18 FTEs	FY19 FTEs
EXECUTIVE OFFICE	5.0	5.0
TOTAL	**5.0**	**5.0**

- $181,000 for **Professional Services**, an increase of $4,000 or 2.4%, as compared to the FY18 Budget, mainly due to increases in the Advisory Committees' operating expenses. This budget funds the Water Supply Citizens' Advisory Committee (WSCAC) and the Wastewater Advisory Committee (WAC) budgets and includes a 2.8% increase in salaries, level funding of miscellaneous operating expenses and small increases in health insurance.

- $608,000 for **Other Services**, an increase of $57,000 or 10.4%, as compared to the FY18 Budget. The primary component of this line item is MWRA Advisory Board operating expenses which increased 10.7% over the FY18 Budget, mainly for increases in wages and salaries following a staff compensation review.

Fells Reservoir

OFFICE OF EMERGENCY PREPAREDNESS

The **Office of Emergency Preparedness (OEP)** was created in November 2005 to consolidate Authority-wide security and emergency response functions. It is responsible for oversight of the MWRA's security and emergency response plans, policies, and procedures; implementation and training for the Emergency Response Plan; and management, training, and outfitting of the Emergency Service Unit (ESU), which will respond to any intentional or accidental contamination of the water supply. The Director of Emergency Planning and Preparedness reports directly to the Executive Director.

FY19 Final Current Expense Budget OFFICE OF EMERGENCY PREPAREDNESS						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 509,627	$ 650,894	$ 858,294	$ 913,777	$ 55,483	6.5%
OVERTIME	-	167			-	-
MAINTENANCE	598,220	493,085	651,900	654,900	3,000	0.5%
TRAINING & MEETINGS	6,808	10,934	15,500	14,500	(1,000)	-6.5%
PROFESSIONAL SERVICES	1,845,169	1,849,903	1,981,000	1,918,440	(62,560)	-3.2%
OTHER MATERIALS	44,999	24,050	19,042	18,042	(1,000)	-5.3%
OTHER SERVICES	111,395	109,920	121,772	115,272	(6,500)	-5.3%
TOTAL	**$ 3,116,218**	**$ 3,138,953**	**$ 3,647,508**	**$ 3,634,931**	**$ (12,577)**	**-0.3%**

FY19 Goals and Initiatives:

I. Drinking Water Quality and System Performance

- ***Goal#1 – Maintain drinking water quality to protect public health, and continue to ensure that MWRA water meets all applicable regulations***
  - Develop and implement policies and programs to provide security, critical infrastructure protection, and emergency planning for the MWRA's water systems.
    - Continue to enhance Emergency Response Plans for all water and wastewater facilities. Update Emergency Action Plans (EAPs) as needed, including the Western Section Dam EAPs and spill control EAPs.
    - Continue ensuring that new construction and rehabilitation of facilities include an integrated security and surveillance system improvement component. Continue task order security enhancement designs for selected water and wastewater critical sites, fencing installation, and other facility hardening initiatives.
    - Establish a backup security monitoring center and communications head end at Norumbega.
    - Complete facility security audits and implement the resulting enhancement and remedial work recommendations.
    - Improve the cyber security of the MWRA's physical Security System.

II. Wastewater Management & System Performance

- Develop and implement policies and programs to provide security, critical infrastructure protection, and emergency planning for the MWRA's wastewater systems. While this initiative is not specifically addressed under the goals of the Wastewater Management & System Performance Strategic Priority, security of the system is a key objective of the Office of Emergency Preparedness. All initiatives set forth in Section I above for MWRA's water systems apply to MWRA's wastewater systems as well unless they address a specific water system location.

III. Infrastructure Management & Resilience

- ***Goal #10 – Prepare for catastrophic events that could affect the water and wastewater delivery systems***
  - Expand, equip, train, and lead the Emergency Service Unit (ESU).
  - Develop and exercise emergency plans and procedures.
  - Manage and direct security guard, security monitoring, and security maintenance contracts.
  - Hold a major Inter-Agency Consequence Management drill.

V. Environmental Sustainability

- ***Goal #16 – Continue to monitor climate change research and move forward with plans to reduce impacts of projected sea level rise and storm surge events on MWRA infrastructure***
  - Plan and install flood protection barriers at water and wastewater sites which fall below expected elevations of flood waters under condition of a FEMA 100-year storm plus 2 ½ feet to minimize damage and still provide service.

FY18 Accomplishments:

- Established a relationship with the National Guard Civil Support Team, whose representatives attended and evaluated an MWRA Emergency Service Unit (ESU) drill and gave us a tour of their facility and equipment. A joint drill is planned for the fall.

- Completed physical security audits at 18 facilities.

- Held a cyber-security tabletop drill for technical and management staff.

- Initiated MWRA's participation in the Department of Homeland Security's Cyber Hygiene program.

- Extended the Security Guard Services contract to a fifth and final year under the existing contract.

- Completed the new Security Center in Chelsea.

- Integrated the Caruso Pump Station and the new Carroll Water Treatment Plant Guard House into the MWRA's security system.

- Completed a total of 116 training events or drills.

- Continued to provide an emergency response training program and a tabletop exercise series for MWRA staff and community water system staff. This year we brought in a FEMA funded Disaster Management for Water and Wastewater Utilities class. A total of 59 people attended from the MWRA and 79 Community operators attended from 19 community systems.

- Received a temporary FAA wide-area authorization for drone flights within Logan airspace.

- Completed Dam EAP updates for Quabbin, Wachusett, Weston, Sudbury and Foss reservoirs, and held ten awareness training sessions for affected communities.

- Arranged for the NCCIC, DHS, and Water-ISAC speakers for our 3rd semi-annual Water Sector OT/IT Cyber Security Meeting.

- Helped coordinate grant requests to the Massachusetts Homeland Security Division for physical and cyber security projects.

- Established new procedures for security sensitive SCADA procurement and other procurements with similarly sensitive information.

Budget Highlights:

The FY19 Final Budget is $3.6 million, a decrease of $13,000 or 0.3%, as compared to the FY18 Budget.

OFFICE OF EMERGENCY PREPAREDNESS	FY18 FTEs	FY19 FTEs
EMERGENCY PREPAREDNESS	7.8	8.0
TOTAL	**7.8**	**8.0**

- $914,000 for **Wages and Salaries**, an increase of $56,000 or 6.5% as compared to the FY18 Budget, mainly due wage increases associated with collective bargaining agreements and a part-time employee increasing to full-time. The FY19 Final Budget includes funding for eight FTEs, 0.2 FTE's higher than the FY18 Budget reflecting additional hours for a part-time employee.

- $655,000 for **Ongoing Maintenance**, an increase of $3,000 or 0.5%, essentially level funded with the FY18 Budget. This budget includes funding of $515,000 to cover the MWRA-wide security systems preventative maintenance and repair service, $110,000 for MWRA-wide security systems maintenance materials and equipment, including cameras, intrusion detection, card readers, and $30,000 for the intrusion alarm annual and semi-annual monitoring services contracts.

- $1.9 million for **Professional Services**, a decrease of $63,000 or 3.2% as compared to the FY18 Budget. The reduction is primarily due to the completion of the Emergency Action Plan for the Western Dam. The budget includes $675,000 for security services at the Deer Island Wastewater Treatment Plant facility, $628,000 for the Chelsea administrative facility, $430,000 for the Carroll Water Treatment Plant, $89,000 for the Account Manager, $49,000 for the Training Officer, $10,000 for vehicle maintenance and emergency allowance, and $23,000 for Charlestown Navy Yard (CNY) facility. Also included under Professional Services is $15,000 for maintaining the Western Dam Emergency Action Plans (EAPs) to keep the contact information current and distributed.

- $18,000 for **Other Materials,** a decrease of $1,000 or 5.3% from the FY18 Budget. This line item mainly funds purchase of Health and Safety materials for the ESU Team.

- $115,000 for **Other Services**, a decrease of $7,000 or 5.3% from the FY18 Budget. This budget includes funding for licensing cost for two-way radios with Department of Conservation and Recreation (DCR) and for mandatory monthly testing and inspection of the Self-Contained Breathing Apparatus (SCBA).

Nut Island Headworks

AFFIRMATIVE ACTION AND COMPLIANCE UNIT

Under section 7(g) of MWRA's enabling act, the **Affirmative Action and Compliance Unit (AACU)** is establish to "report directly to the chairman of the Authority and provide for the enforcement of affirmative action plans for employment, procurement and contracting activities of the Authority." The AACU 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 Business Enterprises (MBE), Women Business Enterprises (WBE), and Disadvantaged Business Enterprises (DBE) in Authority procurement activities.

FY19 Final Current Expense Budget AFFIRMATIVE ACTION & COMPLIANCE UNIT						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 520,186	$ 457,840	$ 544,514	$ 559,777	$ 15,263	2.8%
OVERTIME	-	-	-	-	-	-
TRAINING & MEETINGS	4,964	4,617	7,500	7,560	60	0.8%
OTHER MATERIALS	1,763	1,632	2,139	1,950	(189)	-8.8%
OTHER SERVICES	1,416	386	924	912	(12)	-1.3%
TOTAL	**$ 528,329**	**$ 464,475**	**$ 555,077**	**$ 570,199**	**$ 15,122**	**2.7%**

FY19 Goals and Initiatives:

In performing its core goals, the AACU undertakes the following initiatives on an on-going basis:

- Assist divisions and departments in the implementation of MWRA's affirmative action program and promote MWRA's policy of non-discrimination for all persons in or recruited into its workforce.

- Maintain adequate internal audit and reporting systems to monitor MWRA's accomplishments of goal attainment in identified underutilized job groups for female and minority representation.

- Communicate to managers and supervisors MWRA's commitment to its equal opportunity policies and affirmative action programs.

- Assist the Human Resources Department in the coordination and oversight of all external/internal recruitment and selection activities including interviewing, hiring, transfers, and promotions of all candidates, including those who are members of a protected class.

- Provide for the equitable participation of minority/women and disadvantaged-owned businesses in procurement opportunities, ensure that minorities and women are represented in the labor force on construction contracts, and coordinate with other public entities regarding state and federal requirements.

- Assist divisions and departments in the understanding and implementation of MBE/WBE/DBE program policies and practices as well as monitor and report on contractor compliance and expenditures.

FY 18 Accomplishments:

- Provided management assistance to the Human Resources Department in the overall recruitment and selection process for qualified candidates for seventy-seven (77) new hires and ninety-three (93) promotions.

- Conducted oversight of 116 construction and professional projects, including 11 site visits monitoring the minority and women workforce as well as MBE/WBE/DBE compliance. With the exception of MBE Professional Services, the other procurement targets remain.

Budget Highlights:

The FY19 Final Budget is $570,000, an increase of $15,000 or 2.7% over the FY18 Budget.

- $560,000 for **Wages and Salaries**, an increase of $15,000 or 2.8% over the FY18 Budget. The increase is primarily for wage increases associated with collective bargaining agreements. The FY19 Final Budget includes funding for six FTEs, the same as the FY18 Budget.

AFFIRMATIVE ACTION & COMPLIANCE UNIT	FY18 FTEs	FY19 FTEs
AACU	6.0	6.0
TOTAL	**6.0**	**6.0**

Baffle Dams Quabbin Reservoir

INTERNAL AUDIT

The **Internal Audit Department** is prescribed under section 7(h) of the MWRA's enabling act to "monitor the quality, efficiency and integrity of the Authority's operating and capital programs and make periodic recommends and reports to the executive director and the board of directors." **The Internal Audit Department** monitors the efficiency and integrity of MWRA operations by auditing financial and program operations; reviewing compliance with accounting and management control systems, laws and regulations; and coordinating the formulation and revisions to MWRA policies and procedures. Internal Audit also monitors MWRA contracts through its contract audit program, including approval of provisional consultant indirect cost rates and subsequent audit of consultant billings; performs labor burden reviews, construction change orders and claim audits, and vendor and other contract audits.

FY19 Final Current Expense Budget
INTERNAL AUDIT

LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 652,455	$ 616,599	$ 672,628	$ 686,402	$ 13,774	2.0%
MAINTENANCE	-	15	-	-	-	-
TRAINING & MEETINGS	3,069	4,211	6,650	6,683	33	0.5%
OTHER MATERIALS	2,258	1,613	2,150	2,159	9	0.4%
OTHER SERVICES	2,109	1,376	1,700	1,800	100	5.9%
TOTAL	**$ 659,891**	**$ 623,814**	**$ 683,128**	**$ 697,044**	**$ 13,916**	**2.0%**

FY19 Goals and Initiatives:

In addition to its statutory core functions, the Department has set the following goals for FY19:

- Encourage more economical and efficient operations, adhere to sound management procedures, and use controls designed to safeguard MWRA assets.

- Assure that automated and supporting manual management information systems have secure data control environments and provide accurate and useful management information.

- Assure that contractors, consultants and vendors doing business with MWRA have adequate accounting and billing systems to provide current, complete and accurate cost and price information and project invoicing.

FY 18 Accomplishments:

- Identified $1,012,064 in savings related to: internal audits, management advisory services, consultant audits, preliminary consultant reviews, construction labor burden reviews, change order review, vendor reviews, facility lease agreements, and on-going savings from the lease of the engine house by the Fore River Railroad Corporation.

- Issued final audit reports on facilities security contract, Chelsea lease and City of Boston and Cambridge financial assistance agreements. Issued five incurred cost audits, five preliminary consultant and six preliminary construction reviews.

- Provided management advisory analysis services dealing with MWRA overhead rates, unemployment compensation, HEEC tariff filings, DITP electrical WR rate and various contract and amendment negotiations.

- Provided support to the Law Division in the matter of preliminary HEEC filings of the tariff with the Department of Public Utilities on the proposed new cross-harbor electrical cable.

- Seventeen audit recommendations have been closed during the period.

Budget Highlights:

The FY19 Final Budget is $697,000, an increase of $14,000 or 2.0%, as compared to the FY18 Budget.

- $686,000 for **Wages and Salaries**, an increase of $14,000 or 2.0% as compared to the FY18 Budget, primarily for wage increases associated with collective bargaining agreements. The FY19 Final Budget includes funding for 6.7 FTEs, reflecting a small adjustment to the number of hours of a part-time employee.

INTERNAL AUDIT DEPARTMENT	FY18 FTEs	FY19 FTEs
INTERNAL AUDIT	6.8	6.7
TOTAL	**6.8**	**6.7**

Alewife Brook Wastewater Pump Station

PUBLIC AFFAIRS

The **Public Affairs Department** is the institutional link to the public and government. The Department's responsibilities are spread over five separate sections.

The **Legislative Section** of the Department works for passage of legislation necessary to carry out MWRA's mission, monitors legislation, responds to inquiries by elected and appointed officials, and pursues funding from the state legislature for MWRA projects. MWRA's highest legislative priority continues to focus on the need for a robust "Commonwealth Rate Relief Package" to help offset anticipated rate increases over the next several years.

The **Community Relations Section** deals directly with cities and towns in the MWRA service area, responds to inquiries about MWRA, proactively incorporates community concerns into MWRA project work, coordinates outreach and education initiatives to highlight MWRA programs, and provides technical expertise for specific projects and initiatives. Community Relations staff also work in conjunction with Planning Department staff to ensure compliance with state and local regulations and restrictions.

The **Environmental Review and Compliance Section** is responsible for directing Authority-wide MEPA environmental review to ensure that MWRA facilities are protected and private development projects do not negatively impact MWRA facilities. The section is the lead to implement the Public Access Aqueduct Program, a program approved by the Board in April 2012, that authorizes public access along MWRA emergency back-up Aqueducts located in 14 cities and towns in the MetroWest area.

The **Communications Section** manages media relations, issues press releases and responds to information requests, oversees the design and distribution of MWRA publications, manages the internal and external web sites and social media platforms, and provides design, editorial, and graphics services for other sections of MWRA.

The **Education Section** is responsible for curriculum development, teacher training workshops, as well as providing school education materials on water quality, water conservation, wastewater topics, and environmental issues.

The Communications and Education Sections are led by the Special Assistant to the Executive Director, located in the Executive Office.

FY19 Final Current Expense Budget
PUBLIC AFFAIRS

LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 1,089,986	$ 1,114,692	$ 1,170,903	$ 1,187,041	$ 16,138	1.4%
OVERTIME	767	14	923	500	(423)	-45.8%
TRAINING & MEETINGS	4,044	3,065	4,503	4,586	83	1.8%
PROFESSIONAL SERVICES	0	0	1,300	1,300	-	0.0%
OTHER MATERIALS	18,195	20,854	26,544	26,596	52	0.2%
OTHER SERVICES	30,140	35,016	48,816	48,816	-	0.0%
TOTAL	**$ 1,143,133**	**$ 1,173,640**	**$ 1,252,989**	**$ 1,268,839**	**$ 15,850**	**1.3%**

FY19 Goals and Initiatives:

The core function of the Public Affairs Department is to support the MWRA's achievement of all five key strategic priorities set forth in the FY16-FY20 Five-Year Strategic Business Plan. To that end, the Department has set the following initiatives:

- Work with the Massachusetts Legislature to advocate on behalf of member communities regarding issues that are crucial to the Authority's core mission. The Executive Director and Director of Intergovernmental Affairs routinely meet with House and Senate leaders to discuss issues that are crucial to the Authority and its customers. All newly filed legislation and regulations that could impact the Authority from an operational and administrative perspective are analyzed and monitored, and appropriate responses are formulated in concert with the Office of the Executive Director (OED).

- Enhance overall public understanding of MWRA's mission, goals, and benefits to the public through extensive outreach and effective communication.
  - Develop and implement proactive strategies for educating and informing key MWRA constituencies and the public at large about MWRA's mission, projects and progress, and promote understanding for associated costs.
  - Gain public support for MWRA programs and projects while responding to the needs and concerns of elected, appointed public officials, and the public.
  - Continue to grow the user population of MWRA's Everbridge communication platform in order to reach as many residents as possible, keeping them up to date on meetings, reports, and infrastructure projects.
  - Continue expand the presence of MWRA's portable water fountain at public events in service communities.

- Maintain and update MWRA's Community Contact Database. This Community Contacts tracking application is used to notify MWRA's communities of any operational issues or emergencies affecting them or surrounding communities.

- Continue to provide accurate and timely information to the public through the MWRA's website and social media accounts, e.g., Twitter, Flickr and Instagram.

- Continue to respond to media requests in a timely and accurate fashion.

- Continue to develop presentations and graphics for use in a wide range of MWRA programs.

- Continue to design and produce Annual Water Quality Report for every household within the MWRA service area.

- Continue to provide educational support through classroom visits, teacher training, educational material development, and facility tours.

- Provide technical support to 14 cities and towns that host MWRA's emergency back-up aqueducts as part of the Public Access Aqueduct Program.

- Continue to work with cities and towns to implement the Public Access Initiative on the Wachusett, Weston, Sudbury, and Cochituate Aqueducts.

- Provide support to MWRA staff to ensure that MWRA projects meet regulatory requirements, and provide input to regulatory agencies in order to ensure MWRA interests are recognized during the development of regulations.

FY18 Accomplishments:

- Successfully advocated for the funding of the Sewer Rate Relief Fund. The FY18 General Appropriations Act (GAA) included a statewide appropriation of $1,100,000. MWRA has historically received approximately 75% of the total appropriation.

- Oversaw the review of 90 projects filed with the Massachusetts Environmental Policy Act Office. MWRA in-house review resulted in the preparation and submittal of 36 comment letters to MEPA.

- Successfully grew the Everbridge communication platform to over 500 public opt-in subscription in an effort keep community members informed of construction project updates, service notices, and public meetings. Sent out daily traffic alerts related to Northern Intermediate High and Southern Extra High Construction projects as well as Monthly Water Quality Updates and Board Meeting notifications. Continued efforts will be made to increase public opt-in subscriptions and expand MWRA utilization of this platform.

- Conducted several public meetings to update public officials and residents of MWRA's upcoming and ongoing infrastructure investments and their potential impacts on local communities. These included, among others, several meetings with Stoneham residents and the Board of Selectman regarding the Northern Intermediate High Water Transmission Redundancy and Storage Project as well as meeting with Dedham officials and residents regarding the Southern Extra High Redundancy.

- Aqueduct Trails: To date, MWRA staff has issued Section 8 (m) Permits to most communities hosting the Wachusett, Wachusett Open Channel, Weston, Sudbury, and Cochituate Aqueducts as part of the Public Access Aqueducts Program. To date, MWRA has authorized approximately 27 miles of Aqueduct Trails. MWRA estimates that approximately 20 miles are currently open including new sections in the Town of Wayland, Northborough and small sections as part of the Bay Circuit Trail in Southborough and Framingham.

Wachusett Aqueduct and Open Channel

Northborough:	*4.7 miles permitted, of which 4.2 miles opened to the public*
Southborough:	*2.2 miles opened to the public along the Open Channel*

Bay Circuit Trail Connector

Framingham:	*0.1 miles open to the public*
Southborough:	*0.4 miles open to the public*

Weston Aqueduct

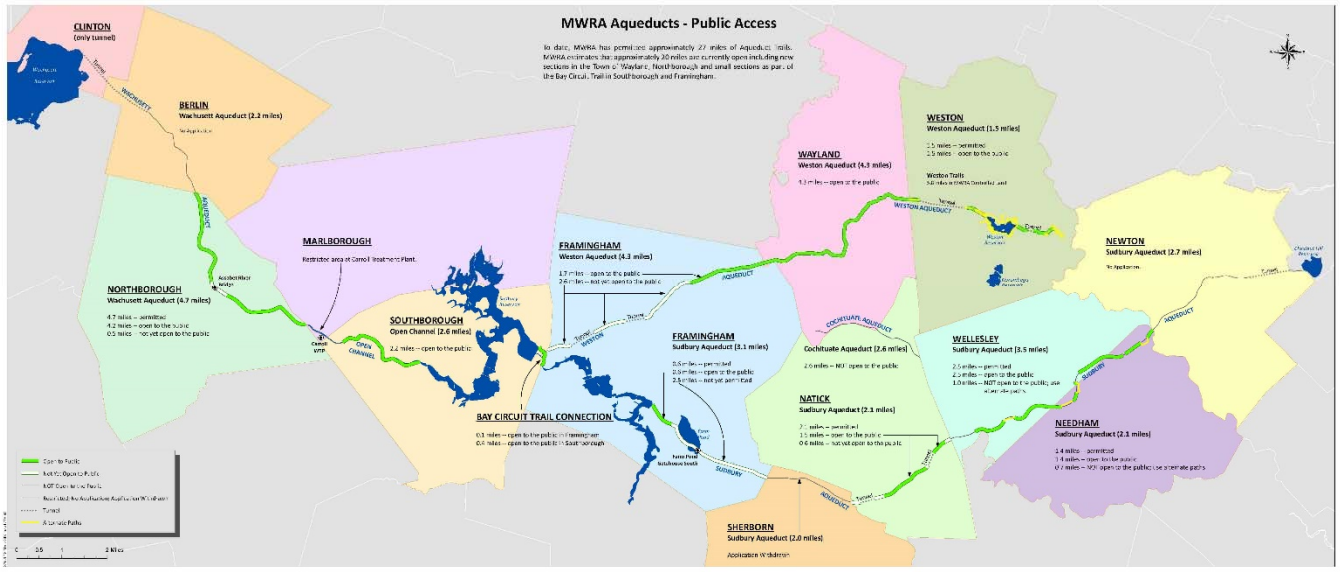
Framingham:	*4.3 miles permitted, of which 3.0 miles opened to the public*
Weston [1]:	*1.5 miles opened to the public and 500'alternative trail opened on private Pine Brook Country Club property to link public trail*
Wayland:	*4.3 miles opened to the public*

Sudbury Aqueduct

Framingham:	*.6 miles open to the public*
Natick:	*2.1 miles permitted, of which 1.5 miles opened to the public*
Wellesley:	*2.5 miles opened to the public*
Needham:	*1.4 opened to the public and an additional .5-mile trail opened on private Olin/Babson College property to link public trail*

Cochituate Aqueduct

Natick:	*2.6 miles permitted (0 miles opened to the public)*



- Continued to grow partnerships and expand public outreach in member communities at over 70 public events across the service area by providing educational materials as well as access to free drinking water with MWRA's Water Fountain.

- In FY2018, work continued on construction photo books to document projects that have been completed by the MWRA over the past 30 years to provide a physical record for the projects to compliment the digital photo collection. The following books are currently in production:
  - MetroWest Water Supply Tunnel and Hultman Aqueduct Rehabilitation
  - Braintree-Weymouth Relief Facilities
  - Brutsch Water Treatment Facility

[1] Approximately 3.3 miles of additional trails were authorized surrounding the Loring Road Storage Tank and Weston Reservoir as part of previous MWRA commitments included in Memorandum of Agreements with the Town of Weston.

- The Annual Water Quality Report was mailed out to all households in MWRA water service communities in June in accordance with the EPA mandate.

- In FY2018, at the request of the Board of Directors, staff have prepared an Environmental Water Quality brochure to be mailed to all households in the MWRA sewer service area in April to highlight the improvements to Boston Harbor and its tributary rivers from MWRA projects.

- Staff have continued to improve project reporting on MWRA's website through monthly updates.

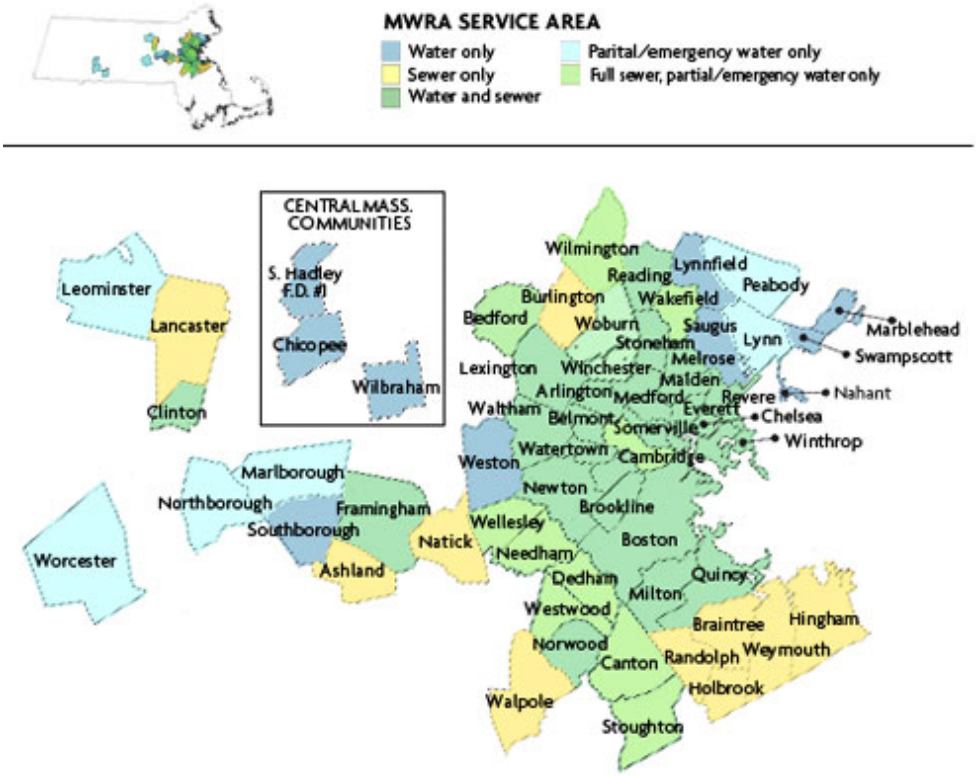
- The School Education staff continues to conduct daily classroom visits within the MWRA service area to educate elementary school children on the importance of water and sewer infrastructure on their daily lives. The annual poster and essay contest for FY2018 focused on the health of Boston Harbor and the how it benefits people, animals and plant life. This program provides an important opportunity for the students, teachers and parents to learn together about MWRA's mission.

Budget Highlights:

The FY19 Final Budget is $1.3 million, an increase of $16,000 or 1.4%, as compared to the FY18 Budget.

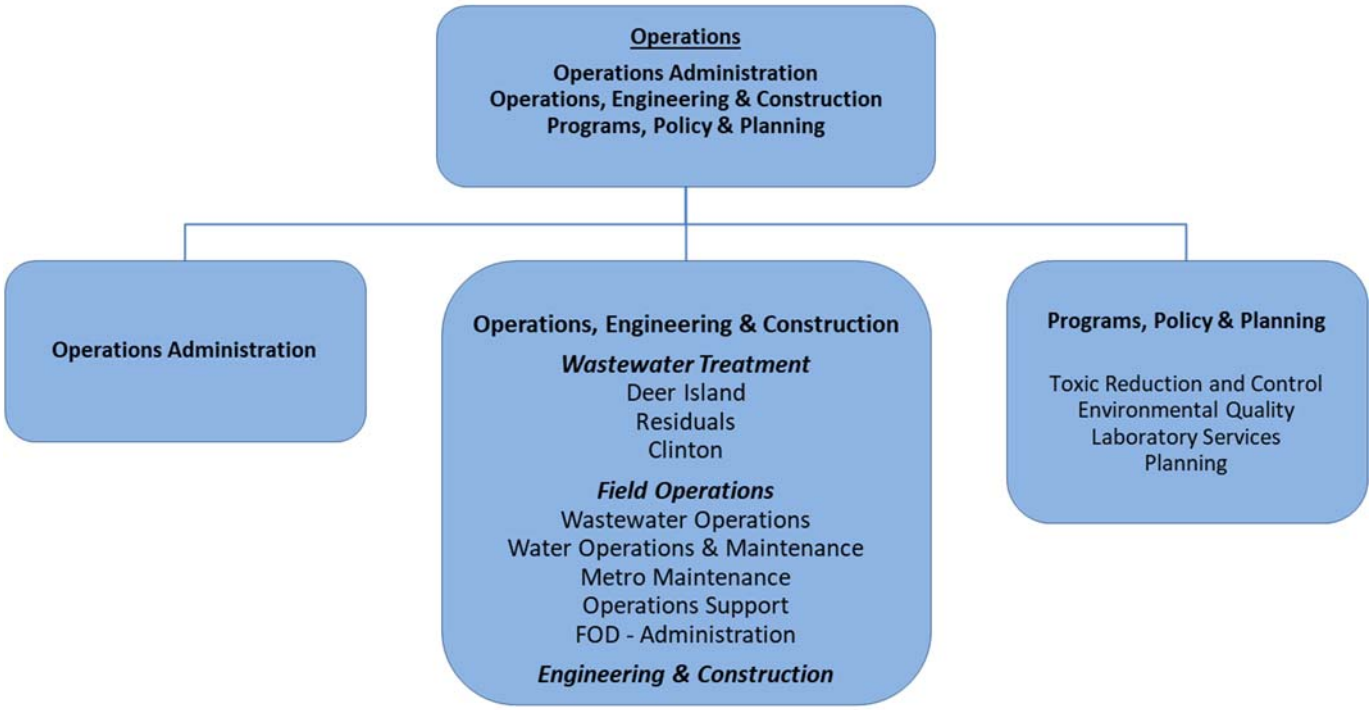
- $1.2 million for **Wages and Salaries**, an increase of $16,000 or 1.4%, as compared to the FY18 Budget. The FY19 Proposed Budget includes funding for 12.9 FTEs, due to one employee working fewer hours.

PUBLIC AFFAIRS DEPARTMENT	FY18 FTEs	FY19 FTEs
PUBLIC AFFAIRS	13.0	12.9
TOTAL	**13.0**	**12.9**



Operations Division
Budget

OPERATIONS DIVISION

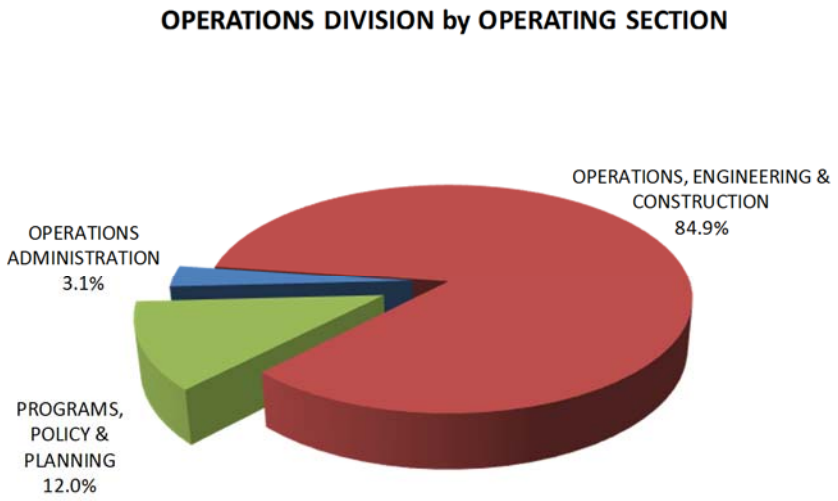


The **Operations Division** provides MWRA's wastewater and water system services including operations, maintenance, and treatment; environmental monitoring and laboratory testing and analyses; and engineering, construction, planning, and administration. MWRA's Chief Operating Officer (COO) leads this division.

FY19 Final Current Expense Budget OPERATIONS DIVISION						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 75,417,179	$ 77,413,243	$ 81,494,645	$ 83,817,644	$ 2,323,000	2.9%
OVERTIME	4,250,176	4,875,766	4,027,743	4,366,583	338,840	8.4%
FRINGE BENEFITS	83,741	106,053	78,815	89,597	10,782	13.7%
CHEMICALS	9,297,550	9,262,849	9,836,932	10,830,453	993,520	10.1%
UTILITIES	18,628,196	20,137,270	21,615,987	22,760,515	1,144,529	5.3%
ONGOING MAINTENANCE	26,256,252	25,405,009	26,842,989	27,141,795	298,806	1.1%
TRAINING & MEETINGS	165,127	182,597	200,725	245,600	44,875	22.4%
PROFESSIONAL SERVICES	2,240,903	2,583,296	2,662,645	3,092,472	429,827	16.1%
OTHER MATERIALS	5,012,352	5,049,293	4,970,649	5,084,607	113,958	2.3%
OTHER SERVICES	18,767,824	17,894,735	18,503,305	18,724,361	221,056	1.2%
TOTAL	**$ 160,119,301**	**$ 162,910,111**	**$ 170,234,435**	**$ 176,153,628**	**$ 5,919,192**	**3.5%**

The Operations Division is composed of the Operations Administration Department and four operating sections, led by Deputy Chief Operating Officer (DCOO), Chief Engineer, Director of Wastewater and Director of Water. In addition to managing the operating sections, the managers provide support to the

Chief Operating Officer on key MWRA operations, technical, policy, community coordination, permitting and public constituency matters.



The **Operations Administration Department** provides division-level oversight and general management support in the following areas: administration, personnel, finance, contract administration, comprehensive energy planning and management, regulatory affairs, and general management. The Operations Administration Department budget represents 3% of the Operations Division budget and includes funds for MWRA vehicle purchases and division-wide professional memberships.

The Department's budget also covers the new Tunnel Redundancy Program that will oversee and manage the upcoming multi-decade $1.4 billion water system Tunnel Redundancy Program, expected to be active from FY18 through FY42. Given the complexity of the project, the group is independent of existing engineering and construction departments and reports directly to the Executive Director. However, the department's CEB is included within the Operations Division budget to allow for sufficient administrative support.

The **Programs, Policy & Planning Section** is composed of the Toxic Reduction and Control, Environmental Quality, Laboratory Services, and Planning departments. In total, the budgets for these departments represent 12% of the Operations Division's budget. Brief descriptions of the departments in this section are as follows:

- The **Toxic Reduction and Control (TRAC) Department** operates a multi-faceted program to minimize and control the inflow of hazardous or toxic materials into the MWRA sewer system. TRAC operates MWRA's Environmental Protection Agency (EPA-approved) Industrial Pretreatment Program and also oversees implementation of MWRA's 8-M Permits processes.

- The **Environmental Quality Department (EnQual)** has two units: EnQual-Water and EnQual-Wastewater. EnQual-Water manages compliance with the reporting requirements of the MassDEP Drinking Water Regulations, as well as conducts and oversees the drinking water quality monitoring program. EnQual-Wastewater manages compliance with the reporting requirements of MWRA's National Pollutant Discharge Elimination System (NPDES) permits. This unit analyzes environmental data and prepares reports on the quality of sewage influent and effluent and the water quality of Boston

Harbor and its tributary rivers and Massachusetts Bay.

- The **Laboratory Services Department** supports various client groups in the Operations Division, the Massachusetts Department of Conservation and Recreation (DCR), and the MWRA member communities; providing field sampling, laboratory testing, and reporting services. Most of the testing is required to meet the strict guidelines of regulatory programs and permits including the Safe Drinking Water Act (SDWA) and MWRA's NPDES permits.

- The **Planning Department** provides planning, advocacy, and decision support services on policy, public health, regulatory, and operations matters regarding MWRA's potable water and wastewater systems.

The **Operations, Engineering & Construction Section** is composed of the Wastewater Treatment, Field Operations, and Engineering & Construction departments. In total, the budgets for these departments represent 85% of the Operations Division's budget. Brief descriptions of the departments in this section are as follows:

- The **Wastewater Treatment Department** operates and maintains the Deer Island Treatment Plant (DITP), Clinton Wastewater Treatment Plant, and Residuals Processing Facility (pelletization plant) in Quincy.

- The **Field Operations Department (FOD)** manages the wastewater pretreatment, water treatment, wastewater collection and water distribution functions, including the Carroll Water Treatment Plant (CWTP). This department is responsible for operating, maintaining, and metering both the water and wastewater systems.

- The **Engineering and Construction Department** supports the maintenance, repair, and rehabilitation of the wastewater and water systems by providing in-house engineering, drafting, surveying, consultant management, construction management, and other technical assistance. The department is also responsible for the implementation and monitoring of the Combined Sewer Overflow (CSO) plan.

FY19 Final Current Expense Budget OPERATIONS DIVISION by OPERATING SECTION						
OPERATING SECTION	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
OPERATIONS ADMINISTRATION	$ 4,561,932	$ 4,829,600	$ 4,909,440	$ 5,406,992	$ 497,552	10.1%
OPERATIONS, ENGINEERING & CONSTRUCTION	137,210,798	139,091,187	144,914,696	149,553,190	4,638,493	3.2%
PROGRAMS, POLICY & PLANNING	18,346,571	18,989,324	20,410,299	21,193,446	783,147	3.8%
TOTAL	**$ 160,119,301**	**$ 162,910,111**	**$ 170,234,435**	**$ 176,153,628**	**$ 5,919,192**	**3.5%**

FY19 Goals and Initiatives:

The Operations Division core function is to plan, develop, implement, and operate efficient, reliable, and economical water treatment/delivery and wastewater transport/treatment systems in an environmentally

sound manner. Accordingly, the Division takes the lead on the following MWRA goals included in the Board-approved FY16 - FY20 Five-Year Strategic Business Plan:

I. Drinking Water Quality and System Performance

- ***Goal #1- Compliance with Regulatory Requirements and Public Health Standards:*** Maintain drinking water quality to protect public health, and continue to ensure that MWRA water meets all applicable regulations. Continue to optimize ultraviolet disinfection treatment process for MWRA's potable water system at the Carroll Water Treatment Plant and Brutsch Treatment Facility while meeting or exceeding all water quality standards.
    - Continue to develop and implement contaminant monitoring plans in the water system.
    - Conduct invasive species removal and monitoring at water reservoirs.

- ***Goal #2 – Water Quality Public Communications***: Continue to effectively report and communicate water quality information to our customers and public officials.

- ***Goal #3 – Technical Assistance for Water Communities:*** Assist member communities to improve local water distribution systems through ongoing financial, technical and operational support programs to maximize long-term water quality benefits.
    - Continue to distribute interest-free loans to member water communities including under the Lead Service Line Replacement Loan Program.
    - Continue to provide technical assistance and laboratory analysis to help communities identify and reduce lead service lines, primarily in schools.

II. Wastewater Quality and System Performance

- ***Goal #4 – Compliance with Regulatory Requirements***: Meet or surpass environmental compliance standards at both MWRA treatment facilities and throughout the wastewater collection system.

    - Meet all NPDES and other regulatory effluent quality, treatment, monitoring, and pre-treatment requirements.
    - Successfully use new phosphorous treatment system and natural gas lines at the Clinton Wastewater Treatment Plant.
    - Implement new NPDES permit requirements for Clinton Wastewater Treatment Plant (permit issued March 2017).
    - Continue work on harbor and outfall monitoring initiatives including: calculating revised thresholds, continuing work with Department of Conservation and Recreation implementation of appropriate beach management practices in South Boston, and improving instrumentation on National Oceanic and Atmospheric Administration's (NOAA's) weather buoy.
    - Comply with I/I mapping and planning requirements in state environmental regulations and NPDES permits.

- ***Goal #5 – Regulatory Changes:*** Continue to initiate plans and studies to prepare for regulatory changes; identify opportunities to refine monitoring requirements; and improve effluent quality.
    - Plan for implementation of requirements of the new National Pollutant Discharge Elimination System (NPDES) Permits for DITP (assume will be issued after FY19).

- Plan for the new round of NPDES-required Local Limit testing in TRAC to reassess industrial discharge limits and commence the work after the Environmental Protection Agency (EPA) issues the new NPDES permits.

- ***Goal #6 – CSO Plan Compliance:*** Complete all CSO milestones by 2020 and demonstrate that the CSO Plan meets its performance objectives at all outfalls. Ensure compliance with CSO NPDES permit requirements.
  - Develop an intensified level of data analysis bringing together disparate datasets such as localized rainfall data, metered and modeled CSO discharges, and receiving water quality to meet future water quality assessments expected in the CSO variance areas of the Mystic and Charles Rivers.

- ***Goal #7 – Technical Assistance for Wastewater Communities:*** Assist member communities to improve their wastewater collection systems through ongoing technical, financial, and operational support programs.
  - Continue distribution of interest-free loans and grants to member sewer communities.

III. Infrastructure Management and Resilience

- ***Goal #8 – System Maintenance:*** Maintain and enhance water and wastewater system assets over the long term at the lowest possible life cycle cost and acceptable risk, consistent with customer, community, and regulatory support levels.
  - Optimize staff resources, overtime, service contracts, and as-needed design contracts to complete routine and major maintenance projects.
  - Work on numerous projects in Field Operations including meter inspection and repairs; manhole rehabilitation; pipeline repair and replacement; invasives control in the water reservoirs; dam inspections and tree clearing; and water tank inspections and cleaning.
  - Commence and complete periodic facility painting and coating projects at Deer Island and Clinton.
  - Continue work on numerous major projects at Deer Island including facility repainting and coating repairs; Zurn boiler maintenance and repairs; electrical system maintenance; motor overhauls; HVAC unit replacement; PLC replacements; and critical equipment maintenance.

- ***Goal #9 – Capital Improvements:*** Move forward with design and construction of major wastewater infrastructure rehabilitation and renewal projects.
  - The FY19 Capital Improvement Program forecasts $179.2 million in spending in FY19, of which $93.8 million supports Wastewater System Improvements and $77.1 million supports Waterworks System Improvements.
  - There are 170 active contracts in FY19 of which 58 are for design of Wastewater and Waterworks Systems Improvements and 44 are for construction, with projected spending of $26.9 million for design and $113.7 million for construction. In addition, there are 68 active other contracts with total spending of $38.5 million.

- ***Goal #10 – Emergency Preparedness:*** Prepare for catastrophic events that could affect the water and wastewater delivery systems.

IV. Environmental Sustainability

- ***Goal #15 – Energy Optimization***: Continue to examine energy efficiency of MWRA operations, renewable energy production, and revenue generation opportunities using MWRA's energy assets.

- Continue to identify, assess, and implement initiatives to reduce energy demand and increase energy self-generation in MWRA's facilities through grant-funding and cost-sharing if available.
- Self-generate ~ 29% of the Deer Island Treatment Plant's (DITP) required power through optimization of power generation assets, including the wind turbines, Steam Turbine Generation (STG) back pressure system, photovoltaic panels, and Combustion Turbine Generators (CTGs).
- Contribute ~ $2.7 million in energy revenue to MWRA's ratepayers through optimization of power generation assets and participation in energy revenue programs such as demand response, energy credits, power sales, and utility rebates. Also, avoid ~ $600,000 in capacity charges through operation of self-generation assets during peak load events.
- Implement multi-year Memorandums of Understanding with Eversource and NGrid including lists of eligible projects and rebates for energy savings.

- ***Goal #16 – Climate Change Adaptation***: Continue to monitor climate change research and move forward with plans to reduce impacts of projected sea level rise and storm surge events on MWRA infrastructure.

- ***Goal #17 – Water System Expansion:*** Advance reasonable water system expansion.

The strategic priorities and goals that apply to each department within the Operations Division are presented in each department's budget section.

FY18 Accomplishments:

I. Drinking Water Quality and System Performance

- Met all water quality and treatment standards in the drinking water system during FY18.
- Contaminant Monitoring System - Rolled out use of the Mobile Water Quality Trailer and made progress on upgrading two sites (CWTP raw tap and Shaft 9A).
- Continued invasive species removal work in the Stillwater Basin and Chestnut Hill Reservoir among others, as well as identified and responded to new colonizing invasive plants across the reservoir system.
- The Laboratory Services Department performed 127,516 tests (including data entry of field tests) related to drinking water quality including the annual Lead and Copper Rule testing.
- Distributed $33.9 million in interest-free loans to member water communities including $3 million for lead service line replacement.
- The Laboratory Services Department performed 35,000 tests since the beginning of 2016 in support of community efforts to identify and reduce lead service lines in schools.

II. Wastewater Quality and System Performance

- Deer Island qualified for the Platinum Peak Performance Award for calendar year 2017 from the National Association of Clean Water Agencies (NACWA) for 11 continuous years without a permit

violation. The award recognizes facilities for outstanding compliance of their National Pollutant Discharge Elimination System (NPDES) permit limits.

- DITP met secondary permit limits at all times, treating on average more than 99% of flows with full secondary treatment.
- Clinton Wastewater Treatment Plant continued to operate within framework of new NPDES Permit issued in March 2017 and had no permit violations during FY18.
- Processed 106.8 average tons per day of sludge at the Pelletization Plant and disposed of 5,808 tons of grit and screenings through a contracted vendor.
- The TRAC Department completed the following Environmental Protection Agency (EPA)-required work for significant industrial users: 204 inspections, 176 monitoring events, and 415 sampling of connections. This department also issued or renewed 345 permits to Significant Industrial Users (SIUs) and non-SIUs.
- During FY18, the Department of Laboratory Services performed 266,000 tests (including data entry of field tests) including the Massachusetts Bay water column testing for the Harbor and Outfall Monitoring program.
- EnQual carried out permit-required environmental monitoring of Boston Harbor and Massachusetts Bay water column, sediments, fish and shellfish and CSO receiving water quality. The department finalized nine technical reports, made monitoring results available on its website, and sent reports to government regulators, the Outfall Monitoring Science Advisory Panel and interested members of the public.
- Distributed $21.7 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 Résilience

Maintenance

- The Operations Division spent $24.4 million on maintenance of which $10.8 million was for materials and $13.6 million was for services.

- Procured and implemented numerous contracts for maintenance services, including the following:
    - Fuel storage tank maintenance
    - Fire protection sprinkler system maintenance
    - Fire alarm system services
    - Boiler and water heating services
    - Vibration analysis and support services for Water System western operations
    - Elevator maintenance
    - Air compressor system service
    - Trash removal services at DITP
    - Overhead door maintenance services at DITP
    - Trash removal services at DITP

- Procured and implemented numerous contracts for maintenance projects including:
    - Sewer manhole rehabilitation
    - Energy efficient interior and exterior LED lighting at Clinton Wastewater Treatment Plant
    - HVAC upgrades at Braintree/Weymouth IPS and Chelsea Administration building
    - Emergency repair to Section 80 water main in Newton MA
    - Replacement of DITP exterior doors

- Repair of electrical systems at the Carroll Water Treatment Plant and other locations in Water western operations
- Deer Island wind turbine removal

- Completed numerous maintenance projects including the following representative work:
  - DITP: Performed maintenance and replaced mixer on module # 2 digester #4.
  - DITP: Performed annual turnaround maintenance at DITP on train #1 at the Cryogenic Oxygen Facility in April. This turnaround maintenance is performed on roughly half of the components and systems in the Cryo Facility and allows the remaining half of the facility to continue to operate and produce oxygen uninterrupted. The same turnaround maintenance will be performed on Train #2 in the spring.
  - Clinton Wastewater Treatment Plant: Monthly maintenance including flushing soda ash line, lubricating and inspecting influent pump motors and lower bearings, exercising standby generators, rebuilding pumps in headworks building, and repairing cross collectors and wear strips in the primary clarifiers.
  - Wastewater Operations: Replaced carbon in odor control systems at the Braintree/Weymouth Replacement Pump Station and the Hough's Neck Pump Station.
  - Metro Equipment and Facility Maintenance: Mechanics conducted vibration monitoring in equipment at Nut Island, Quincy Pump Station, and South Boston. Plumbers repaired or replaced backflow preventers at Framingham Pump Station, Ward Street Headworks, Spring Street Pump Station, and the DCR Facility in Stoneham.
  - SCADA and Process Control: Worked on upgrading Loring Road Ventilation system to reduce electrical demand, added particle monitor at Carroll Water Treatment Plant, replaced microwave radio link from Cosgrove to Mt Wachusett in the water system, and worked on enabling sewer level interlock between Prison Point and BOS-019.
  - Carroll Water Treatment Plant: Staff coordinated the annual half plant shutdown of the treatment process on the A side. Drained and cleaned the primary contactors and well as the storage tank and completed maintenance tasks on offline equipment including replacing the rupture disks that prevent over/under pressurization of the primary contactors.
  - Aqueducts: Repaired drainage culvert on the Weston Aqueduct in Framingham, painted over graffiti at Echo Bridge in Newton, and completed annual easement clearing of aqueducts throughout the water system.
  - Dam Safety: Monitored dam seepage weirs at Weston Dam and Foss Dams.
- Procured and implemented HVAC insulation replacement in the pump and blower area at the Nut Island Headworks in the aftermath of a January 2016 fire in the lower part of the facility.
- In water system, exercised 844 and replaced 7 mainline valves; exercised 511 and replaced 12 blow-off valves.
- In the wastewater system, inspected 16.9 miles and cleaned 18.23 miles of MWRA pipeline. Inspected 392 structures and rehabilitated 134 manholes. Also inspected 17 and cleaned 29 inverted siphon barrels.

<u>Capital Improvements</u>

- FY18 spending totaled $151.5 million broken out by category as follows: $83.0 million for Water System projects, $65.3 million for Wastewater System projects, and $3.2 million for Business and Operations Support projects.
- Major contracts awarded by MWRA during FY18 include:
  - Deer Island Treatment Plant Gravity Thickener Rehabilitation - $19.6 million

- Southern Extra High Redundancy Pipeline Section 111 Construction 3 - $19.4 million
- Southern Extra High Redundancy Pipeline Section 111 Construction 2 - $17.2 million
- Northern Low Service Section 57 Water & Sections 21/20/19 Sewer Engineering Services - $6.0 million
- Northern Intermediate High Sections 89 & 29 Rehabilitation Design - $3.9 million
- Combined Sewer Overflow Performance Assessment - $2.9 million
- Low Service Pressure Reducing Valve Improvements Design/ESDC - $2.8 million
- Headworks Effluent Shaft Study - $1.4 million
- Section 14 Water Pipeline Relocation (Malden) - $1.4 million
- DeLauri Pump Station Screens Gates Valves & Security - $1.3 million
- As-Needed Design Contracts 16 and 17 - $2.5 million each
- Carroll Water Treatment Plant Technical Assistance 9 and 10 - $1 million each

- Projects that were completed or reached substantial completion during FY18 include:

  Wastewater System Improvements
  - Deer Island North Main Pump Station and Winthrop Terminal Facility Butterfly Valve Replacements - $17.6 million
  - Clinton Wastewater Treatment Plant Phosphorus Reduction Construction - $7.7 million
  - Deer Island Treatment Digester Sludge Pump Replacement Phase 2 - $2.7 million
  - Deer Island Treatment Plant Personnel Dock Rehabilitation - $1.5 million
  - Sections 4,5,6, 186 Study - $1.2 million
  - Cambridge Branch 23, 24, 26, 27 Study - $0.7 million
  - Prison Point Piping Rehabilitation - $0.5 million
  - Quincy/Hingham Pump Stations Fuel Storage Upgrades Construction - $0.5 million

  Waterworks System Improvements
  - Northern Intermediate High Section 89 & 29 Redundancy Phase 1B Construction - $12.5 million
  - Fish Hatchery Pipeline Construction - $3.6 million
  - Spot Pond Storage Facility Owners' Representative - $3.2 million
  - Section 80 Replacement Construction - $1.9 million
  - Section 14 Water Pipe Relocation (Malden) - $1.6 million
  - Chicopee Valley Aqueduct Screens Replacement Construction - $1.2 million
  - Chestnut Hill Gatehouse #1 Repair Construction $0.8 million
  - Carroll Water Treatment Plant – Technical Assistance 8 - $0.5 million

<u>Emergency Preparedness</u>

- Submitted a grant application to procure a radiological monitor to detect radiological contamination in drinking water. Awards are expected to be announced in the fall of 2018.
- Held a large-scale spill response night operations exercise with local fire department at Wachusett Reservoir.

V. Environmental Sustainability

- Received a total of $880,000 in revenue for energy generated at numerous facilities including the following: hydroelectric $391,000 from Oakdale Station and $147,000 from Cosgrove Station; wind of $270,000 from Charlestown Pump Station; and solar of $97,500 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 $3.3 million in revenue in FY18. 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 also self-generated 29.1% of the plant's total required power during that time period.
- Continued to operate new phosphorous treatment system and natural gas lines at the Clinton Wastewater Treatment Plant; both are in first year of operation.

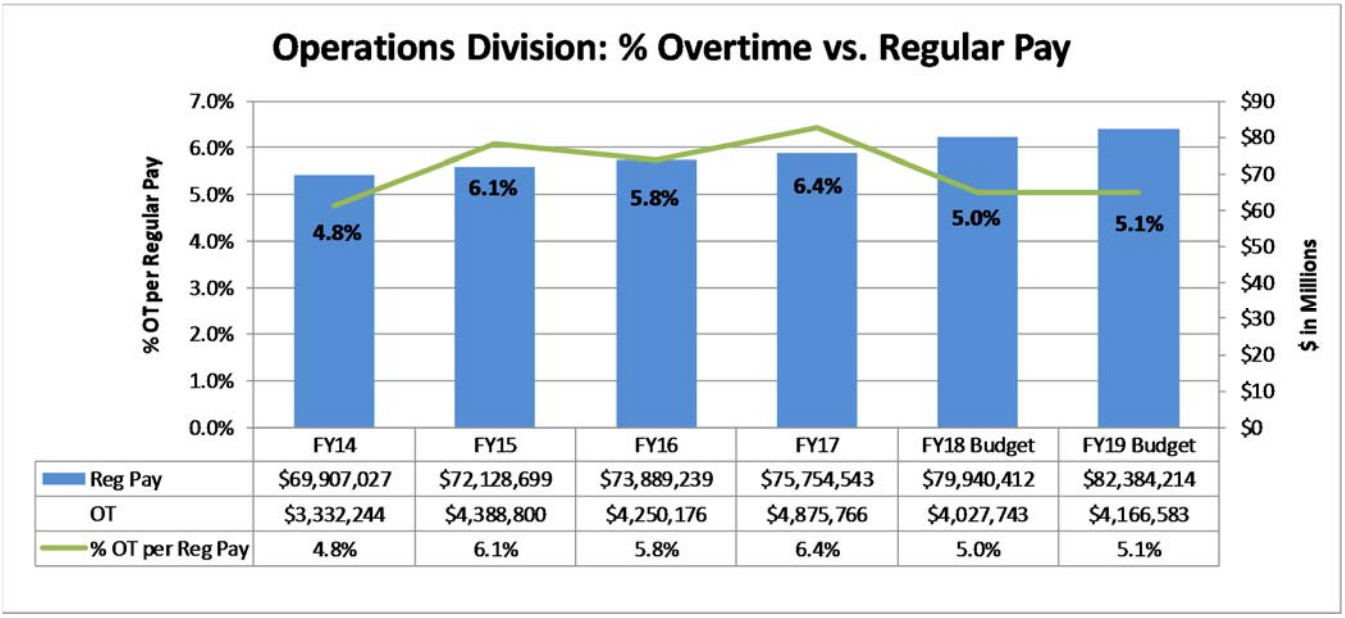
Budget Highlights:

The FY19 Final Budget is $176.2 million, which is $5.9 million or 3.5%, more than the FY18 Budget.

- The FY19 Budget of $83.8 million for **Wages and Salaries** is an increase of $2.3 million or 2.9% from the FY18 Budget primarily due to wage increases associated with collective bargaining agreements and additional staffing. The FY19 Final Budget funds 925.3 full-time equivalent positions. Five of the additional FTEs represent the first year of the hiring of an additional 15 FTEs to support the water system Tunnel Redundancy capital projects. The MWRA currently envisions that five FTEs will be added each year over the next three fiscal years to support this project. Another FTE was added to manage the newly created Energy Department within Programs, Policy & Planning. The Wages and Salaries line also includes $785,000 for Stand-by Pay to ensure staffing availability and response during emergencies, $207,000 for Interns, and $82,000 for Temporary Employees to assist lead testing in schools.

FTEs Operations by Department		
DEPARTMENT	FY18 FTEs	FY19 FTEs
OPERATIONS ADMINISTRATION	23.6	28.6
OPERATIONS, ENGINEERING & CONSTRUCTION	730.4	731.2
PROGRAMS, POLICY & PLANNING	164.8	165.5
TOTAL	**918.8**	**925.3**

- The FY19 Budget of $4.4 million for **Overtime** is a net increase of $339,000 or 8.4% from the FY18 Budget, approximately $100,000 of which is for wage increases. The remaining increase of $238,000 is due to additional funding based on historical trends for planned maintenance work required on off-shifts and emergency overtime associated with major storms. The budget includes $1.9 million for emergencies and storms; $1.2 million for planned work required on off-shifts and during periods of lower flows; $1.1 million for routine coverage of operations per prevailing collective bargaining agreements; and $20,000 for training.



	FY14	FY15	FY16	FY17	FY18 Budget	FY19 Budget
Reg Pay	$69,907,027	$72,128,699	$73,889,239	$75,754,543	$79,940,412	$82,384,214
OT	$3,332,244	$4,388,800	$4,250,176	$4,875,766	$4,027,743	$4,166,583
% OT per Reg Pay	4.8%	6.1%	5.8%	6.4%	5.0%	5.1%

- The FY19 Budget of $10.8 million for Chemicals, an increase of $994,000 or 10.1% over the FY18 Budget, due to the net effect of price and usage adjustments based on potential new programs, recent usage trends, contractual price changes, and market projections. Increased pricing for ferric chloride at the Deer Island Wastewater Treatment Plant totals $487,000. Increased use of hydrogen peroxide for odor control also at the Deer Island Treatment Plant totals $308,000. The increases are offset by a decrease of $125,000 for hydrofluosilicic acid and $80,000 for liquid oxygen in the water system primarily due to lower prices. The FY19 Budget includes $6.0 million for disinfection and treatment in the water system and $4.9 million for disinfection, treatment, and odor control in the wastewater system. The budget includes $3.6 million for soda ash, $2.7 million for sodium hypochlorite, $1.4 million for ferric chloride, $712,000 for hydrogen peroxide, $385,000 for polymer, $370,000 for liquid oxygen, $341,000 for activated carbon, $307,000 for carbon dioxide, $239,000 for sodium bisulfite, $236,000 for hydrofluosilicic acid, and $182,000 for aqua ammonia.

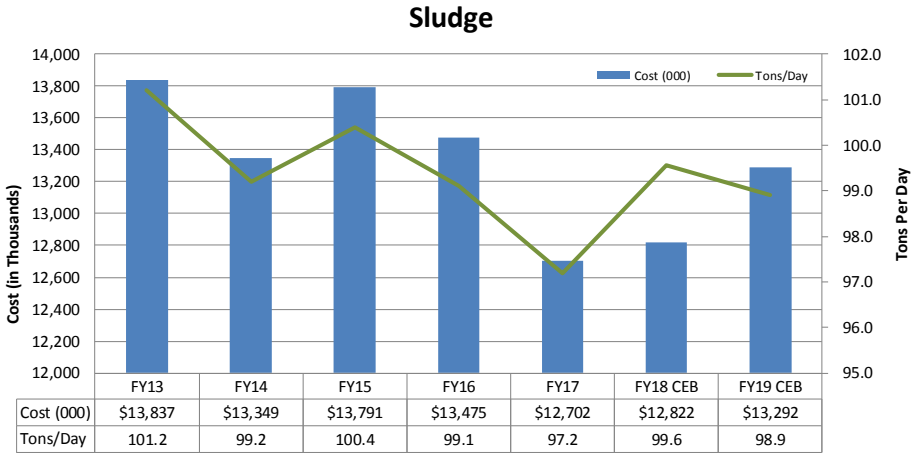
- The FY19 Budget of $22.8 million for **Utilities** includes $17.0 million for electricity, $2.7 million for diesel fuel, $2.3 million for water, $585,000 for natural gas, and $136,000 for propane and other utilities. The utility budget is $12.5 million for Deer Island Treatment Plant, $4.8 million for Wastewater Operations, $4.6 million for Water Operations, $500,000 for the Chelsea office and maintenance facilities, and $326,000 for the Clinton Wastewater Treatment Plant. The utilities budget is $1.1 million or 5.3% more than the FY18 budget, primarily due to increases in wholesale water rates for DITP and the net effect of price and quantity estimates for all utilities based on expected trends.

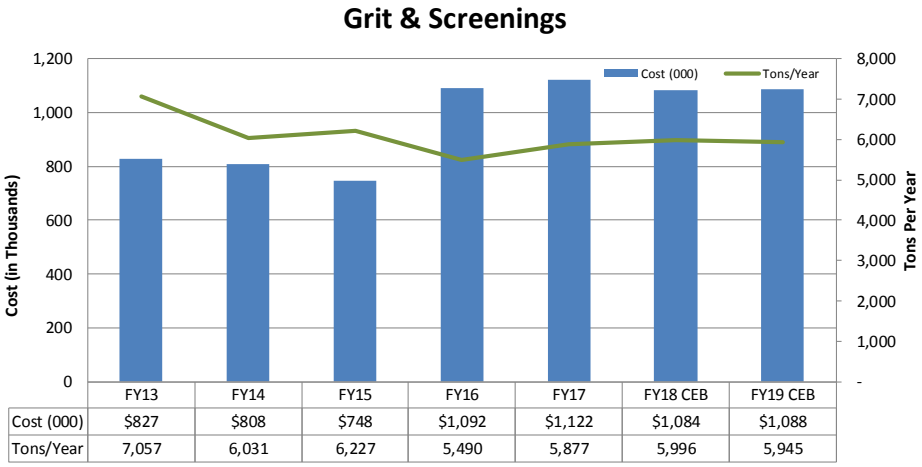
- The FY19 Budget of $246,000 for **Training and Meetings** covers specialized training, attendance at industry conferences, and site visits as required to vendors and other plants. It specifically funds training for topics such as spill response and boom deployment; spill control and prevention; trenchless technology; cyber security; and electrical voltage. The FY19 Budget is $45,000 or 22.4% more than the FY18 Budget primarily due to increased need for attendance at conferences and training for workforce development associated with succession planning, newer staff, and the impacts of expected retirements.

- The FY19 Budget of $5.1 million for **Other Materials** includes $1.9 million for Vehicle Replacements; $904,000 for Lab and Testing Supplies; $197,000 for Vehicle Expenses (gas, mileage reimbursement); $411,000 for Health and Safety Supplies; $743,000 for Equipment and Furniture; and $442,000 for Work Clothes. The increase of $114,000 or 2.3% from the FY18 Budget is primarily due to replacement of equipment for the reservoir contaminant monitoring program and furniture throughout DITP.

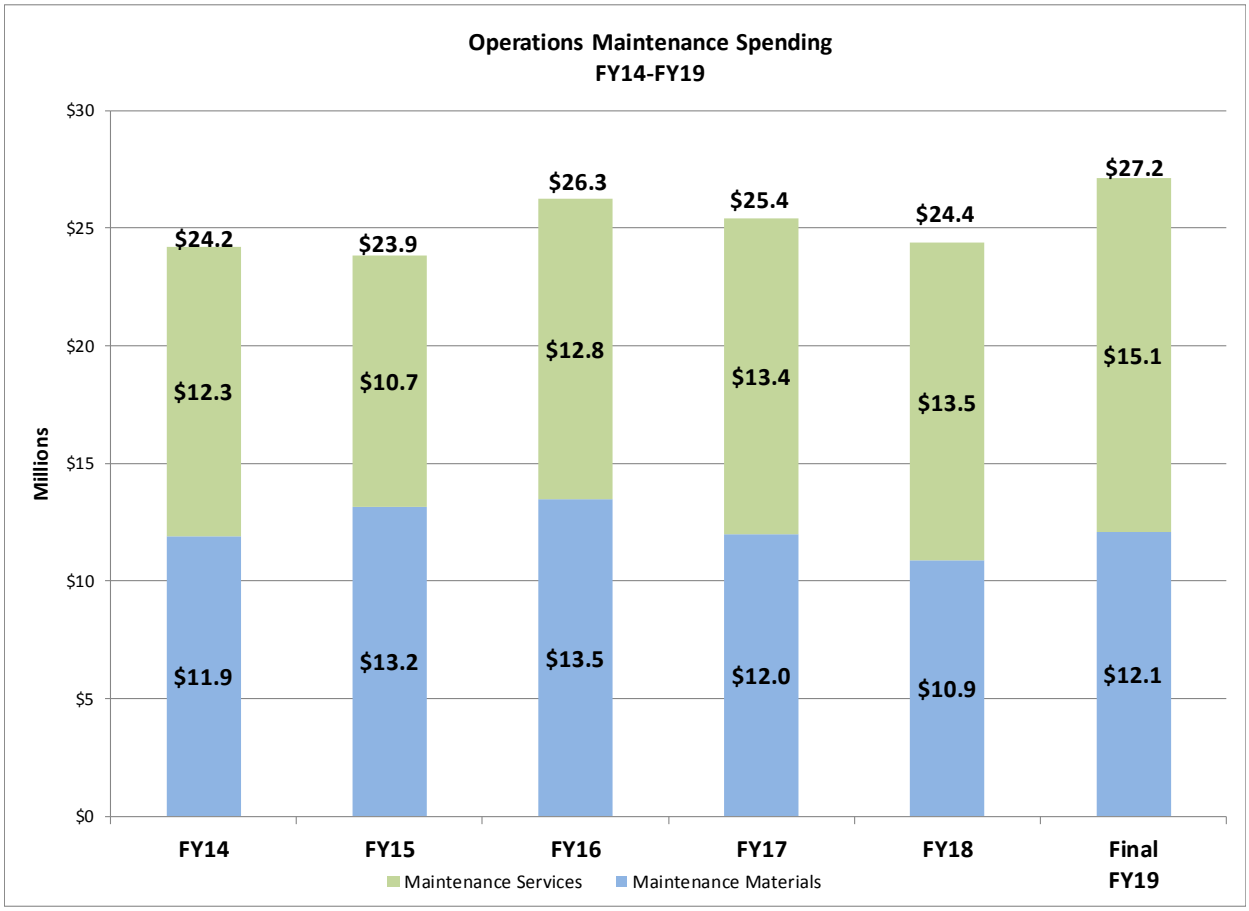
- The FY19 Budget for **Professional Services** is $3.1 million, including $1.7 million for lab and testing services; $967,000 for engineering services and $303,000 for other services. Major items in the budget include $1.4 million for Harbor and Outfall Monitoring; $354,000 for hardware and software security configuration services to protect information systems in the Operations Support Department); $315,000 for as-needed engineering services to support CEB-funded projects; $305,000 for outsourced testing by the Central Laboratory; $180,000 for Dam Asset Maintenance Plan development; $100,000 for a new study to provide research on MWRA pellets as they related to biosolids exemptions in MA regulations; $78,000 for a comprehensive reservoir-wide plant survey in the water system; $77,000 for invasive species control services in the reservoirs; $50,000 to commence development of the multi-year Emergency Reservoir Management Plan; $39,000 for bi-annual emissions testing of the sludge dryers at the Pelletization Plant; $30,000 for energy advisory services and audits; and $20,000 for MWRA's FY19 contribution to the Mystic River Modeling project. The FY19 Budget is $430,000 or 16% more than the FY18 Budget primarily due to increases associated with the addition of new projects including information systems security configuration, biosolids exemptions research, back-up reservoir management plan, and EPA's unregulated contaminant monitoring (UCMR4) rule in the water system.

- The FY19 Budget for **Other Services** is $18.7 million, including $13.3 million for sludge pelletization; $1.9 million for building space leases and rentals - including the Chelsea office facility - $1.1 million for grit and screenings removal and disposal, $703,000 for telecommunications services, $467,000 for police details, $251,000 for other services, and $478,000 for dues, memberships, and subscriptions. The FY19 Budget is $221,000 more than the FY18 Budget primarily for increased costs for sludge pelletization services of $470,000 due to contractual inflation, offset primarily by lower telecommunications expenses of $272,000.





- The FY19 Budget for **Maintenance** is $27.1 million, a net increase of $299,000 or 1.1% from the FY18 Budget primarily due to changes in project priorities from year to year. The FY19 Budget includes $15.1 million for services and $12.1 million for materials. By maintenance area, the largest categories of spending for materials and services include $11.5 million for plant and machinery; $5.8 million for building and grounds; $3.5 million for specialized equipment; $3.0 million for electrical; $1.6 million for pipeline; and $1.4 million for HVAC systems. The budget also funds special initiatives such as energy conservation projects at DITP and in the Field Operations Department facilities; invasive plant control in the water reservoirs; painting and coating upkeep at DITP and the Clinton Wastewater Treatment Plant; and easement clearing on MWRA's aqueducts. As shown below, Maintenance spending has been fairly consistent over the last few fiscal years.



Alewife Brook Wastewater Pump Station

OPERATIONS ADMINISTRATION

Operations Administration funds the CEBs for two departments including Operations Administration and Tunnel Redundancy Program Management.

The **Operations Administration Department** includes the Office of the Chief Operating Officer (COO); the Office of the Deputy Chief Operating Officer (DCOO); and division-level support staff. The department's primary goal is to oversee, manage, and implement MWRA policies and procedures pertaining to the following functions: administration, labor relations, finance, contract administration, comprehensive energy planning and management, regulatory affairs, and general management. During FY19, MWRA will continue to develop the capacity and roles of the Energy and Regulatory Affairs units. MWRA formed both of these units in FY18 to provide comprehensive and more effective management of those functions. The units include a combination of new positions, existing positions transferred into the groups, and functional support from positions in other departments.

The **Tunnel Redundancy Program Management Department** was created by MWRA's Board of Directors on February 15, 2017 to oversee the planning, design, and construction of a northern and a southern deep rock tunnel that will provide redundancy for the Metropolitan Tunnel system (waterworks). This $1.4 billion CIP-funded project will take more than a decade to complete. Also, given the complexity of the project, the group is independent of existing engineering and construction departments and reports directly to the Executive Director. However, the department's CEB is included within the Operations Division budget to allow for sufficient administrative support.

FY19 Final Current Expense Budget
OPERATIONS ADMINISTRATION

LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 2,388,095	$ 2,407,327	$ 2,463,659	$ 2,984,667	$ 521,008	21.1%
OVERTIME	508	1,188	-	-	-	-
TRAINING & MEETINGS	22,098	41,669	22,800	38,000	15,200	66.7%
PROFESSIONAL SERVICES	64,483	65,300	95,001	40,000	(55,001)	-57.9%
OTHER MATERIALS	1,741,007	1,977,472	1,932,400	1,934,050	1,650	0.1%
OTHER SERVICES	345,742	336,645	395,580	410,275	14,695	3.7%
TOTAL	**$ 4,561,932**	**$ 4,829,600**	**$ 4,909,440**	**$ 5,406,992**	**$ 497,552**	**10.1%**

FY19 Final Current Expense Budget
OPERATIONS ADMINSTRATION by Programs

PROGRAM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
OPERATIONS ADMINSTRATION	$ 4,561,932	$ 4,829,600	$ 4,909,440	$ 4,949,909	$ 40,469	0.8%
METRO TUNNEL REDUNDANCY PGR	-	-	-	457,083	457,083	-
TOTAL	**$ 4,561,932**	**$ 4,829,600**	**$ 4,909,440**	**$ 5,406,992**	**$ 497,552**	**10.1%**

FY19 Goals and Initiatives:

The Operations Administration Department's purview and function supports all the goals of the Operations Division set forth in the department budgets in the Operations, Engineering & Construction section and the Program, Policy and Planning section.

Key FY19 initiatives include:

- **Tunnel Redundancy Program** – Continue to develop the organizational structure and commence the intensive planning for implementation of this complex project. Plans for FY19 include refining the organizational model for overseeing this project, hiring additional staff, and developing a detailed plan for all phases of implementation including procurement, design, engineering, and construction.
- **Energy** – Continue to refine and implement MWRA's comprehensive energy management strategy, primarily with a FY19 focus on expanding solar energy sites and securing grant funding from relevant programs; increasing the use of electric vehicles in MWRA's fleet; optimizing energy generation assets for 'behind the meter' use and revenue from power sales and market-based incentive programs; and consolidating energy data management to support decision-making.
- **Organizational succession** – Continue to develop and implement succession plans to ensure efficient and effective organizational continuity as a significant portion of MWRA's workforce retires in the next few years. Key aspects of this initiative include documenting institutional policies and practices; identifying and developing employees qualified for promotion into key positions; hiring additional qualified employees to ensure 'depth of bench' in staffing in critical functions; and in general, providing programs to the overall MWRA workforce for learning and development.

Budget Highlights:

The FY19 Budget is $5.4 million, an increase of $497,000 or 10.1%, compared to the FY18 Budget.

- $3.0 million for **Wages and Salaries**, an increase of $521,000 or 21.1%, as compared to the FY18 Budget. The FY19 Budget supports 28.6 full-time equivalents (FTEs), an increase of five FTEs as compared to 23.6 FTEs in the FY18 Budget. The increase is due to the addition of five FTEs for the new Tunnel Redundancy Management Program. The FY19 Budget also includes the net effects of position changes and wage increases associated with collective bargaining agreements.

- $38,000 for **Training & Meetings**, an increase of $15,000 or 66.7% based on anticipated actual spending. This line item funds attendance at conferences for the COO, DCOO, departmental staff as well as division-wide attendance at major industry professional conferences held annually. The increase is primarily associated with meeting travel, conference attendance, and training for the five new positions in the tunnel redundancy program as well as recently filled professional positions in the areas of energy and regulatory oversight.

- $40,000 for **Professional Services,** a decrease of $55,000 or 57.9% as compared to FY18 Budget. The decrease is primarily due to reduced funding for the Mystic River Modeling Project/USGS program to reflect anticipated levels of spending. This budget line also includes $20,000 for Energy Advisory Services to support staff with energy procurements, pricing analyses and other energy projects.

- $1.9 million for **Other Materials**, which is essentially level funded with the FY18 Budget. The major item in this budget line is $1.9 million for fleet vehicle replacements. Each of these vehicles are valued at less than $100,000, the minimum value to be included in the Capital Improvement Program (CIP). At an average cost of $30k to $35k per vehicle, the FY 19 budget supports replacement of 54-63 vehicles which is approximately 11%-12% of the active fleet. This line item also includes division-wide funding for safety glasses and rain gear budgeted at $30,000.

- $410,000 for **Other Services**, an increase of $15,000 or 3.7% as compared to FY18 Budget. The change is primarily due to increases in annual membership costs for industry organizations and the inclusion of additional funds for professional memberships for new staff in the tunnel redundancy, energy, and regulatory oversight programs. This department's budget continues to fund annual memberships in organizations such as the National Association of Clean Water Agencies (NACWA), Association of Metropolitan Water Agencies (AMWA), American Water Works Association (AWWA), and Boston NOW (focused on Boston Harbor).

aerial view of Boston Harbor

OPERATIONS, ENGINEERING & CONSTRUCTION

The work of this section is directed by a team of three senior managers including the Director of Wastewater, Director of Waterworks, and Chief Engineer; each of whom report to the Chief Operating Officer (COO). The purview of this section is as follows:

- operations and maintenance of MWRA's wastewater treatment facilities including Deer Island Wastewater Treatment Plant, Clinton Wastewater Treatment Plant, Residuals Pelletizing Facility, Combined Sewer Overflow facilities, and screenhouses;
- operations and maintenance of MWRA's wastewater distribution system including pipelines, pump stations, and other appurtenances;
- operations and maintenance of MWRA's water treatment facilities including the Carroll Water Treatment Plant serving communities in the Boston metropolitan area and the Brutsch Water Treatment Plant serving communities in the Chicopee Valley Aqueduct (CVA) Water System communities;
- operations and maintenance of the water distribution system including pipelines, pump stations, and valves;
- operations and maintenance of the wastewater and water metering system, Operations Control Centers, and Supervisory Control and Data Acquisition (SCADA) system;
- engineering and construction functions for the Operations Division; and
- energy conservation, capacity, and efficiency maintenance and capital projects.

FY19 Final Current Expense Budget OPERATIONS, ENGINEERING & CONSTRUCTION						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 59,064,518	$ 60,488,143	$ 63,547,546	$ 64,824,294	$ 1,276,748	2.0%
OVERTIME	4,061,318	4,707,838	3,826,794	4,156,368	329,574	8.6%
FRINGE BENEFITS	81,089	104,115	76,269	87,047	10,778	14.1%
CHEMICALS	9,297,550	9,262,849	9,836,932	10,830,453	993,520	10.1%
UTILITIES	18,604,355	20,105,722	21,591,487	22,730,515	1,139,029	5.3%
ONGOING MAINTENANCE	25,825,070	24,739,757	26,036,883	26,265,390	228,507	0.9%
TRAINING & MEETINGS	112,363	121,576	137,925	163,100	25,175	18.3%
PROFESSIONAL SERVICES	577,363	850,247	804,076	1,200,760	396,684	49.3%
OTHER MATERIALS	1,584,675	1,555,389	1,451,207	1,484,570	33,363	2.3%
OTHER SERVICES	18,002,497	17,155,550	17,605,577	17,810,693	205,116	1.2%
TOTAL	**$ 137,210,798**	**$ 139,091,187**	**$ 144,914,696**	**$ 149,553,190**	**$ 4,638,493**	**3.2%**

The Operations, Engineering & Construction Section is composed of the Wastewater Treatment, Field Operations, and Engineering and Construction departments, which report directly to the Chief Operating Officer. In total, the budgets for these programs represent 85% of the Operations Division's FY19 Budget.

FY19 Final Current Expense Budget OPERATIONS, ENGINEERING & CONSTRUCTION by Programs						
PROGRAM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WASTEWATER TREATMENT	$ 62,673,573	$ 63,506,600	$ 66,165,406	$ 69,139,371	$ 2,973,965	4.5%
FIELD OPERATIONS	67,189,014	67,931,137	70,577,279	72,024,449	1,447,170	2.1%
ENGINEERING & CONSTRUCTION	7,348,211	7,653,451	8,172,012	8,389,370	217,358	2.7%
TOTAL	**$ 137,210,798**	**$ 139,091,187**	**$ 144,914,696**	**$ 149,553,190**	**$ 4,638,493**	**3.2%**

Cosgrove Intake

WASTEWATER TREATMENT

The primary function of the Wastewater Treatment Department is to collect and treat community wastewater so that it can be discharged either into the Massachusetts Bay or the South Nashua River in compliance with federal and state environmental standards. The second function of the Department is to recycle sludge to produce fertilizer and provide for the proper disposal of any materials not suitable for treatment or fertilizer.

FY19 Final Current Expense Budget WASTEWATER TREATMENT						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 19,445,011	$ 19,690,098	$ 20,611,057	$ 21,048,871	$ 437,814	2.1%
OVERTIME	1,096,446	1,471,218	1,232,667	1,194,034	(38,633)	-3.1%
FRINGE BENEFITS	24,511	34,719	25,795	27,636	1,841	7.1%
CHEMICALS	3,582,519	3,425,381	3,778,312	4,544,879	766,567	20.3%
UTILITIES	10,227,294	11,167,904	11,635,650	12,816,526	1,180,876	10.1%
ONGOING MAINTENANCE	12,729,618	12,930,197	13,887,884	13,877,784	(10,100)	-0.1%
TRAINING & MEETINGS	14,470	19,109	41,100	46,100	5,000	12.2%
PROFESSIONAL SERVICES	105,470	78,467	171,701	260,401	88,700	51.7%
OTHER MATERIALS	666,760	600,133	647,525	723,125	75,600	11.7%
OTHER SERVICES	14,781,473	14,089,373	14,133,715	14,600,015	466,300	3.3%
TOTAL	**$ 62,673,573**	**$ 63,506,600**	**$ 66,165,406**	**$ 69,139,371**	**$ 2,973,965**	**4.5%**

The **Deer Island Treatment Plant**, the **Residuals Management Program**, and the **Clinton Treatment Plant** comprise the Wastewater Treatment Department. Together, the budgets for these programs represent 39.2% of the Operations Division's FY19 Budget.

FY19 Final Current Expense Budget WASTEWATER TREATMENT by Program						
PROGRAM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
DEER ISLAND	$ 45,563,018	$ 47,789,762	$ 50,010,450	$ 52,147,052	$ 2,136,602	4.3%
RESIDUALS	15,158,205	14,021,204	14,079,640	14,609,710	530,070	3.8%
CLINTON	1,952,350	1,695,634	2,075,315	2,382,609	307,293	14.8%
TOTAL	**$ 62,673,573**	**$ 63,506,600**	**$ 66,165,406**	**$ 69,139,371**	**$ 2,973,965**	**4.5%**

DEER ISLAND WASTEWATER TREATMENT PLANT

The **Deer Island Wastewater Treatment Plant** (Deer Island or DITP) budget accounts for 29.6% of the Operations Division's FY19 Budget. DITP has a peak capacity of 1.27 billion gallons per day (bgd) and peak secondary treatment capacity of 700 million gallons per day (mgd).

Wastewater influent from MWRA customer communities arrives at the plant through four underground tunnels. Pumps then lift the influent 80 to 150 feet, depending on the tunnel, to the head of the plant.

North system flows pass through grit channels and bar screens at the headworks that remove grit and screenings for disposal in an off-island landfill. South system flows are pre-treated for grit at Nut Island and the Braintree-Weymouth Intermediate Pump Station. Flow is routed to primary treatment clarifiers, which remove about half of the pollutants brought to the plant in typical wastewater (removes 50% of total suspended solids and up to 50% of pathogens and toxic contaminants). In the clarifiers, gravity separates sludge and scum from the wastewater.

In secondary treatment, reactors and clarifiers remove non-settleable solids through biological and gravity treatment. The biological process is a pure oxygen-activated sludge system, using aerobic microorganisms to consume organic matter that remain in the primary effluent flow. Secondary treatment raises the level of pollution removal to over 85%. More than 100 tons of pure oxygen is manufactured each day at Deer Island's cryogenic oxygen facility to support the aerobic biological treatment process.

Sludge from primary and scum from both primary and secondary treatment is thickened in gravity thickeners. Sludge from secondary treatment is thickened in centrifuges. Polymer is used in the secondary sludge thickening process to increase its efficiency. Digestion occurs in the egg-shaped anaerobic digesters at the Deer Island Treatment Plant. There are a total of 12 digesters, each 90 feet in diameter at their widest point and approximately 140 feet tall (128 ft. liquid level). Microorganisms naturally present in the sludge work to break sludge and scum down into methane gas, carbon dioxide, solid organic byproducts, and water. Digestion significantly reduces sludge quantity for later recycling. The methane gas produced in the digesters is used in the plant's on-site power generating facility to save operating costs by reducing consumption of fuel oil for heating and purchased electricity. The remaining digested sludge is pumped through pipes the side wall of the Nut Island inter-island tunnel and Braintree-Weymouth extension tunnel directly to the MWRA's Pelletizing Facility at Fore River, where it is further processed into a fertilizer product.

FY19 Final Current Expense Budget DEER ISLAND TREATMENT PLANT						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 18,646,944	$ 18,871,339	$ 19,752,873	$ 20,025,785	$ 272,912	1.4%
OVERTIME	1,038,987	1,433,754	1,176,017	1,174,034	(1,983)	-0.2%
FRINGE BENEFITS	23,620	34,063	24,795	27,036	2,241	9.0%
CHEMICALS	3,244,071	3,188,443	3,443,309	4,133,970	690,661	20.1%
UTILITIES	10,043,480	10,977,595	11,406,647	12,490,357	1,083,710	9.5%
ONGOING MAINTENANCE	11,787,238	12,575,450	13,363,665	13,339,665	(24,000)	-0.2%
TRAINING & MEETINGS	14,470	18,518	37,600	42,600	5,000	13.3%
PROFESSIONAL SERVICES	65,149	15,169	130,000	180,000	50,000	38.5%
OTHER MATERIALS	518,679	443,326	484,900	548,000	63,100	13.0%
OTHER SERVICES	180,380	232,105	190,645	185,605	(5,040)	-2.6%
TOTAL	**$ 45,563,018**	**$ 47,789,762**	**$ 50,010,450**	**$ 52,147,052**	**$ 2,136,602**	**4.3%**

Organizational Structure:

The Deer Island Treatment Plant has six major functional areas: Operations, Thermal Power Plant, Process Control, Maintenance, Capital Engineering, and Operations and Maintenance (O&M) Support.

- Operations manages the day-to-day treatment operation of plant processing units, performs minor preventative maintenance activities, and oversees plant functions 24 hours per day, seven days per week.

- Thermal Power Plant manages and operates the Deer Island generation and thermal systems. Power Plant personnel provide 24-hour operation of the high-pressure, high temperature steam power plant. This facility is capable of producing up to 75 megawatts of electrical power including green energy assets with hydro-electric power, wind and solar.

- Process Control manages and maintains the following programs in support of plant operations; real-time process instrumentation and control system (PICS), operational data system (OMS), plant performance monitoring and reporting programs, and regulatory compliance programs including all plant permits, water quality, and air quality. Process Control provides the technical expertise for plant unit operations and routinely performs process optimization studies to help increase performance and reduce operating costs.

- Maintenance performs preventive, predictive, and corrective maintenance repairs on all equipment, utilizing a computerized maintenance management system (CMMS) to coordinate scheduling and document all work completed. Staff has developed the Reliability Centered Maintenance (RCM) program, which has improved plant performance by applying maintenance resources where they are most effective. RCM analyzes the operating systems with the objective of ensuring critical functions perform as required. Implementation of a preventive maintenance program using RCM helps reduce the cost of maintaining the plant and improves the efficiency by anticipating when maintenance will be required. An on-island warehouse, managed by Procurement Department staff, ensures there is adequate stock for maintenance repairs and plant operations.

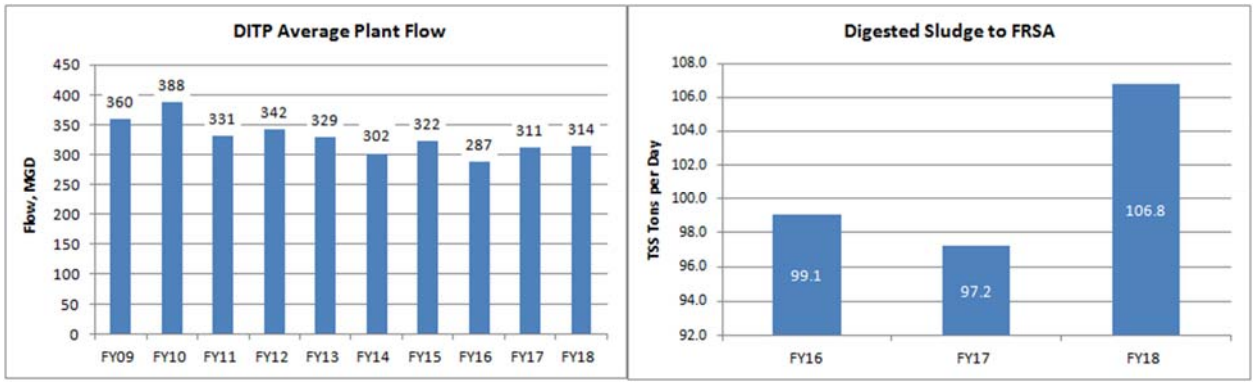
- Capital Engineering provides technical support services for both Operations and Maintenance. Staff is responsible for all aspects of plant engineering including developing, procuring, and implementing all service contracts, consultant designs, and capital improvement projects at Deer Island. This group also manages the on-island Technical Information Center, which provides services to the DITP community and external clients, and ensures quick access to plant drawings and technical information for operational and maintenance needs.

- O&M Support is responsible for supporting the business needs of the plant. The Administration and Finance Unit provides financial and administrative support to meet daily operational needs of the plant. The Safety/Security Unit is responsible for ensuring a safe and healthful work environment for employees and minimizing MWRA's exposure to liability and property loss or damage.

The Deer Island Director's Office provides overall management for the plant plus policy direction and support in the areas of public access and community agreements.

Operating Assumptions:

Deer Island's FY19 Final Budget assumes treatment of an average flow of 331 mgd based on ten years of historical data. The projected quantity of digested sludge to be pumped to FRSA (TSS basis) is 98.9 TPD. This is based on 3-years of recent operating data.



Deer Island's FY19 Final Budget accounts for the impact of self-generation of electricity from the steam turbine generators (STG), combustion turbine generators (CTG), hydroelectric generators, wind turbine generators, and photovoltaic panels. These assets will provide approximately 30% of the total energy requirements.

Deer Island continues to comply with the conditions of the current National Pollutant Discharge Elimination System (NPDES) Permit, which has administratively continued since expiring in FY05. Given the uncertainty regarding the timing of the permit renewal from the Environmental Protection Agency (EPA), Deer Island's FY19 Final Budget assumes that no new permit will go into effect during FY19. When the new permit is issued, it is anticipated that Deer Island's treatment process will be required to kill enterococcus in addition to fecal coliform to comply with the new regulations at a substantial increase in chemical quantities and cost.

FY19 Goals and Initiatives:

I. Wastewater Quality and System Performance

- ***Goal #4 – Compliance with Regulatory Requirements***: Meet or surpass environmental compliance standards at both MWRA treatment facilities and throughout the wastewater collection system. Deer Island has met all of its compliance goals through FY18.

  - **Key Regulatory Performance Measurements:**

NPDES Permit Compliance					
Effluent Characteristic	**Permit Limits**	**FY16 Actual**	**FY17 Actual**	**FY18 Actual**	**FY19 Goal**
Dry Day Flow (mgd)	436	261.1	270.6	272.7	100%
cBOD (mg/L)	25	5.6	6.3	6.5	100%
TSS (mg/L)	45	8.0	13.4	11.3	100%
TCR (ug/L)	631	<40	<40	<40	100%
Fecal Coliform	14,000	6	6	6	100%
pH (S.U.)	6 to 9	6.7	6.7	6.7	100%
Acute Toxicity	Pass	Pass	Pass	Pass	100%
Chronic Toxicity	Pass	Pass	Pass	Pass	100%

II. Infrastructure Management and Resilience

- ***Goal #8 – System Maintenance:*** Maintain and enhance water and wastewater system assets over the long term at the lowest possible life cycle cost and acceptable risk, consistent with customer, community, and regulatory support levels. Deer Island has met all of its compliance goals through FY18.

  - **Key Maintenance Measurements:**

Indicator	FY16 Actual	FY17 Actual	FY18 Actual	FY19 Goal
Critical Equipment Availability	99.7%	99.8%	99.7%	100%
Predictive Maintenance Completion	99.9%	99.9%	99.9%	100%
Predictive Maintenance - % of work orders	22%	22%	25%	24%
Maintenance Backlog	11,119 Industry	16,666 Standard	16,052 Standard	Within industry standard
Preventive Maintenance Completion	99.9%	99.9%	99.9%	100%
Maintenance Kitting - % of work orders	51%	51%	55%	55%

- ***Goal #9 – Capital Improvements:*** Move forward with design and construction of major wastewater infrastructure rehabilitation and renewal projects. In 2018 Deer Island has meet all of its compliance goals.
    - Issue Notice to Proceed for numerous contracts including the following major asset protection projects:
        - Gravity Thickener Rehabilitation – Construction
        - Miscellaneous Variable Frequency Drive Replacement – Construction
    - Substantially complete CIP construction phases for asset protection including the following:
        - Digested Sludge Pump Replacement – Phase 2
        - Butterfly valve & plug valve replacement
        - Personnel Dock Rehabilitation
        - Thermal Power Plant Fuel Oïl Pump System
    - Make substantial progress according to FY18 CIP schedule for other near-term major projects including Fire Alarm System Replacement – Design; MCC and Switchback Replacement Construction; Winthrop Terminal VFD & Motor Replacements; and Clarifier Rehabilitation Phase 2.

V. Environmental Sustainability

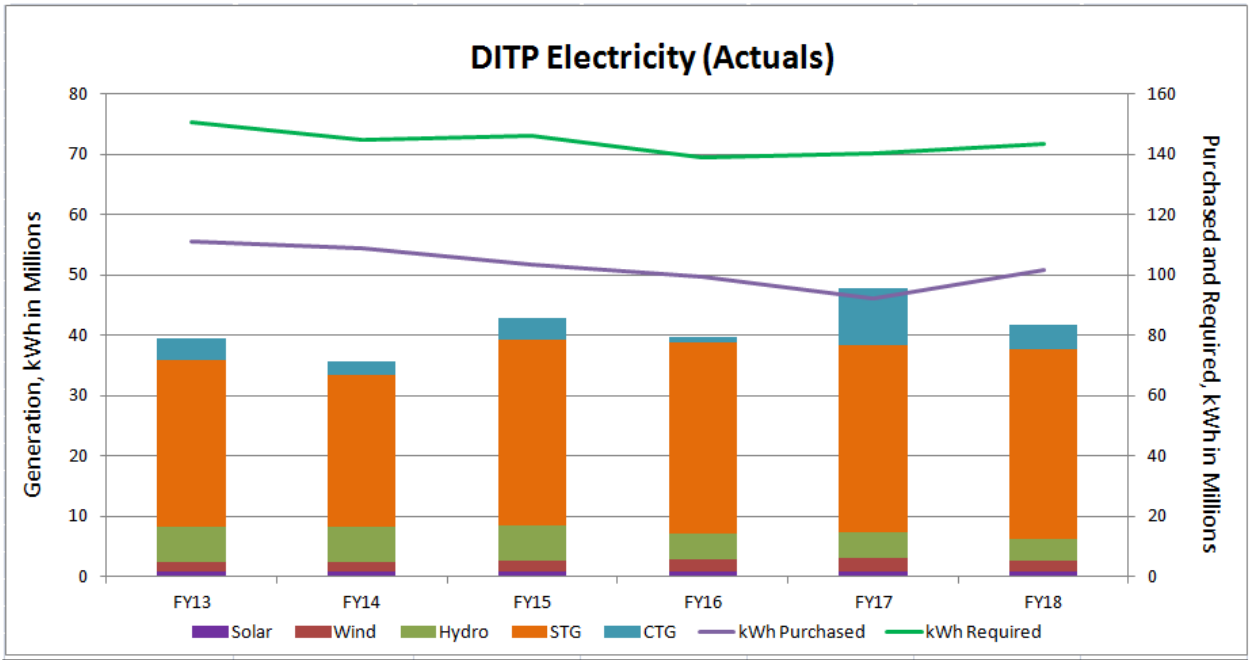
- ***Goal #15 – Energy Optimization***: Continue to examine energy efficiency of MWRA operations, renewable energy production, and revenue generation opportunities using MWRA's energy assets. In 2018 Deer Island has meet all of its compliance goals.

    - **Key Performance Measurements and Accomplishments:**

Indicator	FY16 Actual	FY17 Actual	FY18 Actual	FY19 Goal
% Required Power Self-Generated - Total	28.6%	34.1%	29.1%	28.7%
% Required Power Self-Generated - Renewables	28.0%	27.3%	26.1%	27.0%
Thermal/Power Plant Digester Gas Utilization	98.8%	97.5%	98.7%	98.0%
Avoided capacity costs	$475,000	$872,500	$2,000,000	$1,300,000
Generate revenue from energy programs (RPS credits, demand response)	$1,674,534	$1,763,606	$2,938,776	$1,840,550

The decrease of $1.1 million is attributable to a decrease in the price for demand response and for Renewable Portfolio Credits.

- Continue to implement projects to reduce energy use, increase energy revenue, decrease greenhouse gas emissions, and increase self-generation capacity, particularly via renewable energy.



	FY13 kWh	FY14 kWh	FY15 kWh	FY16 kWh	FY17 kWh	FY18 kWh
Solar	890,605	861,728	805,141	891,686	846,202	824,098
Wind	1,378,458	1,510,253	1,758,988	1,952,399	2,122,195	1,808,846
Hydro	5,916,591	5,920,820	5,861,251	4,243,726	4,449,487	3,455,255
STG	27,745,202	25,128,581	30,814,576	31,760,260	30,863,195	31,449,305
CTG	3,583,438	2,185,637	3,500,847	721,782	9,478,139	4,254,104
Total Self Generated	39,514,294	35,536,358	42,740,803	39,569,852	47,759,217	41,791,608
kWh Purchased	111,036,037	108,988,158	103,218,514	99,132,147	92,351,290	101,756,215
kWh Required	150,546,813	144,579,218	146,002,277	138,786,262	140,166,338	143,592,755

FY 18 Accomplishments:

- Deer Island received the Platinum Peak Performance Award for 2017 from the National Association of Clean Water Agencies (NACWA) for the 11th 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 11 years.

- Deer Island met secondary permit limits at all times, treating on average more than 99% of flows with full secondary treatment.

- More detailed information about DITP's NPDES Permit compliance is available on the Transparency/Performance Indicator section of MWRA's website.

- Completed numerous major maintenance projects including replacement of all ten variable frequency drives (VFD) in North Main Pump Station, replacement of scum pumps and motors,

and the overhaul of four disinfection gearboxes in Liquid Train, and overhauled large odor control fans in Residuals.

- Issued Notice to Proceeds for six Asset Protection Program contracts with a total value of $8.2 million, including the following:
  - Motor Control Center Switchgear Replacement- Design
  - As-Needed Design (three contracts)
  - Substantially completed six Asset Protection Program design and construction phases totaling $39.5 million including the following:

Budget Highlights:

The FY19 Budget is $52.1 million, an increase of $2.1 million or 4.3% compared to the FY18 Budget.

- $20.0 million for **Wages and Salaries**, an increase of $273,000 or 1.4%, compared to the FY18 Budget primarily due to wage increases associated with collective bargaining agreements. The FY19 Budget also includes $191,000 for stand-by pay to support operational and maintenance needs primarily during storms and emergencies.

- $1.2 million for **Overtime**, which is virtually level funded with the FY18 Budget. The FY19 Budget is based on multi-year historical trends and supports overtime required for operational coverage, critical maintenance projects, and regulatory requirements (i.e. inspections).

- $4.1 million for **Chemicals**, an increase of $691,000 or 20.1% compared to the FY18 Budget. The increase is due to the net effect of usage and price adjustments. The FY19 Budget, which is based on multi-year historical usage trends and projected market prices, includes $1.3 million for ferrous chloride, an increase of $464,000 primarily due to an increase in price, $1.1 million for sodium hypochlorite, a decrease of $156,000, $704,000 for hydrogen peroxide, an increase of $308,000 primarily due to increase use for odor control resulting in part from lower flows, $341,000 for activated carbon, $341,000 for polymer, and $108,000 for sodium hydroxide.

- $12.5 million for **Utilities**, an increase of $1.1 million primarily due to a $647,000 increase in electricity due to higher pricing, $262,000 increase in diesel fuel due to higher amount of fuel purchased and an increase in water of $175,000 resulting for a higher rate.

- $13.3 million for **Maintenance**, which is virtually level funded with the FY18 Budget. The FY19 Budget includes $5.7 million for materials and $7.6 million for services. Of the total, $8.5 million or 64% is for plant and machinery services and materials, $2.0 million is for electrical system maintenance, and $1.6 million is for building and grounds work. The budget reflects project priorities with a particular emphasis on maintenance of critical equipment.

- $180,000 for **Professional Services**, an increase of $50,000 over the FY18 Budget. The budget includes $155,000 for as-needed engineering services, an increase of $50,000 from FY18 funds a research study land applications of bio-solids due to phosphorous runoff, and $25,000 for environmental testing required as part of MWRA's air quality permit.

- $548,000 for **Other Materials**, an increase of $63,000 or 13.0% from the FY18 Budget primarily due to increases in work clothes and office furniture and equipment replacements. The FY19 Budget includes $170,000 for health and safety materials, $111,000 for work clothes, $58,000 for vehicles expenses (mileage and gas), and $37,000 for office supplies.

- $186,000 for **Other Services**, a decrease of $5,000 or 2.64%, from the FY18 Budget. The FY19 Budget includes $54,000 for health and safety services, $36,000 for telephones, $33,000 for permit fees, $20,000 for membership dues and subscriptions, $15,000 for freight charges, and $15,000 for printing services. The budget is based on historical averages for most items in this category.

Whale breaching in waters off of Deer Island Wastewater Treatment Plant

RESIDUALS

The **Residuals Management Program** manages the processing and disposal of approximately 99-102 dry tons per day (on average per year) total suspended solids (TSS) of sludge from the anaerobic digestion process at the Deer Island Wastewater Treatment Plant, as well as the disposal of grit and screenings from all MWRA facilities. MWRA pumps liquid sludge from Deer Island through the Braintree-Weymouth cross-harbor tunnel to the Fore River processing facility where the sludge is dewatered, dried, and shipped by either rail or truck for use as fertilizer or to other appropriate disposal. MWRA is committed to the beneficial use of biosolids to the greatest extent practicable. MWRA seeks to dispose of all sludge and grit and screenings in a reliable, economical, and environmentally sensitive manner.

- MWRA contracts with the New England Fertilizer Company (NEFCo) to operate the sludge pelletizing facility, and to market and distribute biosolids products. A 15-year contract with NEFCo became effective March 1, 2001 and continued to December 31, 2015. After negotiations with NEFCo, MWRA approved a revised, five-year contract extension that commenced in January 2016.

- The FY19 Budget is based on the assumption of 98.9 average tons per day (TPD; TSS basis), consistent with historical averages from recent years.

- Grit and screenings (minor residuals) from MWRA's headworks and certain pump stations are collected and disposed of in landfills. MWRA contracts with a third party operator for this service. Minor residuals are by-products of wastewater pre-treatment and primary/secondary treatment processes and include grit, screenings, and scum screenings.

FY19 Final Current Expense Budget RESIDUALS MANAGEMENT PROGRAM						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 137,835	$ 142,831	$ 144,699	$ 148,729	$ 4,030	2.8%
ONGOING MAINTENANCE	444,885	4,000	-	-	-	-
TRAINING & MEETINGS	-	591	3,200	3,200	-	0.0%
PROFESSIONAL SERVICES	(2,775)	26,181	1	38,701	38,700	N/A
OTHER MATERIALS	2,390	15,203	15,125	30,125	15,000	99.2%
OTHER SERVICES	14,575,870	13,832,397	13,916,615	14,388,955	472,340	3.4%
TOTAL	**$ 15,158,205**	**$ 14,021,204**	**$ 14,079,640**	**$ 14,609,710**	**$ 530,070**	**3.8%**

FY19 Goals and Initiatives:

II. Wastewater Quality and System Performance

- ***Goal #4 – Compliance with Regulatory Requirements***: Meet or surpass environmental compliance standards at both MWRA treatment facilities and throughout the wastewater collection system.
  - Continue marketing efforts for Bay State Fertilizer.
  - Maintain and expand local (within Massachusetts) beneficial use of MWRA's processed pellets.

- **Key Performance Measurements:**

Indicator	FY16 Actual	FY17 Actual	FY18 Actual	FY19 Goal
Pelletize all sludge received from DITP	100%	100%	100%	100%
Average Tons Per Day Sludge (TSS basis)	99.1	97.2	106.8	98.9
Monthly Ave % Capture – Processed Sludge (goal per contract with NEFCo)	92%	92%	91.3%	90%
Properly dispose of grit & screenings	100%	100%	100%	100%
Annual grit and screenings tonnage	5,490	5,877	5,808	5,964

Note: FY18 actual sludge tonnage was greater than budgeted primarily due to unexpected maintenance projects and capital work that temporarily limited digestion capacity.

III. Infrastructure Management and Resilience

- ***Goal #9 – Capital Improvements:*** Move forward with design and construction of major wastewater infrastructure rehabilitation and renewal projects.
  - Continue work on the following Residuals Asset Protection Program contracts planned for FY19:
    - Pellet Piping and Relocation
    - Electrical Improvements
    - Mechanical Improvements
    - Dryer Drum Replacement
  - Continue work on the following Residuals Asset Protection Program contract, expected to be substantially complete in early FY19:
    - Sludge Tank and Silo Coating

FY18 Accomplishments:

- With support from DITP engineering staff, developed biddable specifications for all four Residual Asset Protection Program renovation projects in the FY18 Capital Improvement Program.
- Issued Notice to Proceed and commenced work for Sludge Tank and Silo Coating capital project.
- Granted substantial completion for expedited mechanical contract.
- Bay State Fertilizer sales expanded at record pace.

Budget Highlights:

The FY19 Budget is $14.6 million, an increase of $530,000 or 3.8%, from the FY18 Budget.

- $149,000 for **Wages and Salaries**, an increase of $4,000 or 2.8%, funds one permanent position and stand-by pay to provide coverage for emergencies during off-shifts. This department also receives on-going management oversight and staff support from other departments of the MWRA including Deer Island, Treasury, and Operations Administration.

- $39,000 for **Professional Services** in FY19 which is an increase of $39,000 from the FY18 Budget due to the inclusion of funding for bi-annual stack testing that will be required in FY19 per regulation.

- $14.4 million for **Other Services**, an increase of $472,000 or 3.4% from the FY18 Budget primarily due to inflation rates for components of the sludge processing contract based on market indices. The two major items funded in the FY19 Budget include $1.1 million for grit and screenings disposal and $13.3 million for sludge pelletization services, both provided through contracts with private vendors. Projected FY19 budget quantities, which are based on multi-year historical averages, include sludge tonnage of 98.9 average tons per day (TPD) and 5,964 tons for grit and screenings.

MWRA Sludge Pelletizing Facility

CLINTON

The Clinton Wastewater Treatment Plant provides advanced wastewater treatment services to the Town of Clinton and the Lancaster Sewer District. MWRA assumed formal operational responsibility for the Clinton plant in 1987. Since then MWRA has designed and constructed new primary, secondary, and advanced treatment facilities which incorporated rehabilitated portions of the existing plant with new construction. The new facilities, designed to meet all current and projected National Pollutant Discharge Elimination System (NPDES) discharge standards, were completed in 1992.

A new NPDES permit issued March 1, 2017 imposes additional requirements on phosphorus removal. As such, MWRA commenced operations of a new Phosphorous building as of May 2018 to meet more stringent phosphorus removal requirements and lower discharge limits. At the time of this reporting, MWRA Clinton staff are optimizing and trying to resolve any construction related issues (punch list items). Upon completion, the Clinton Plant will be in compliance with the new phosphorous limits established under the NPDES permit prior to the target date of April 2019.

The plant provides secondary treatment using an activated sludge process in combination with advanced nutrient removal and dechlorination. The major facilities include headworks, primary settling tanks, digesters, sludge processes, trickling filters, aeration tanks, secondary tanks, and a chemical addition building. The plant discharges its effluent into the South Nashua River in accordance with the discharge limits of the facility's NPDES permit which limits effluent flow to 3.01 mgd. The plant has a potential peak flow rate of 12 mgd. Residual materials are pressed and transported to an MWRA-owned landfill for disposal. Staff also performs regular monitoring of the landfill site.

FY19 Final Current Expense Budget
CLINTON WASTEWATER TREATMENT PROGRAM

LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 660,232	$ 675,928	$ 713,485	$ 874,357	$ 160,872	22.5%
OVERTIME	57,460	37,464	56,650	20,000	(36,650)	-64.7%
FRINGE BENEFITS	891	656	1,000	600	(400)	-40.0%
CHEMICALS	338,448	236,938	335,004	410,909	75,906	22.7%
UTILITIES	183,814	190,309	229,003	326,169	97,166	42.4%
ONGOING MAINTENANCE	497,495	350,747	524,219	538,119	13,900	2.7%
TRAINING & MEETINGS	-	-	300	300	-	0.0%
PROFESSIONAL SERVICES	43,096	37,116	41,700	41,700	-	0.0%
OTHER MATERIALS	145,692	141,604	147,500	145,000	(2,500)	-1.7%
OTHER SERVICES	25,223	24,871	26,455	25,455	(1,000)	-3.8%
TOTAL	**$ 1,952,350**	**$ 1,695,634**	**$ 2,075,315**	**$ 2,382,609**	**$ 307,293**	**14.8%**

FY19 Goals and Initiatives:

II. Wastewater Quality and System Performance

- ***Goal #4 – Compliance with Regulatory Requirements***: Meet or surpass environmental compliance standards at both MWRA treatment facilities and throughout the wastewater collection system.
    - Fully comply with new phosphorous removal requirements by April 2019.

    - **Key Regulatory Performance Measurements:**

Effluent Characteristic	Permit Limit	FY16 Actual	FY17 Actual	FY18 Actual	FY19 Goal
Dry Day Flow (mgd)	3.01 mgd	2.54 mgd	2.38 mgd	2.50 mgd	100%
cBOD (mg/L)	20 mg/L	2.82 mg/l	3.39 mg/l	2.14 mg/l	100%
TSS (mg/L)	20 mg/L	4.20 mg/l	4.29 mg/l	4.97 mg/l	100%
TCR (mg/L)	17.6 mg/L	<0.02	<0.02	<0.02	100%
Fecal Coliform (#/100mL) *E.Coli 3/1/ 17	126/100mL	4.31/100ml	5.96/100mL *4.07/100mL	N/A *5.38/100mL	100%
pH (S.U.)	6.5-8.3	7.4	7.32	7.37	100%
Acute Toxicity	>100%	>100%	>100%	>100%	100%
Chronic Toxicity	62.5%	>62.5%	25%	>62.5%	100%
Phosphorus (mg/L)	150 ug/L 1,000 ug/L	0.26	0.29	0.33	100%
Nitrogen (mg/L)	10 mg/L	0.626	0.663	0.101	100%

(*) New NPDES Permit went into effect switching measurement from Fecal Coliform to E. Coli on (3/1/17)

III. Infrastructure Management and Resilience

- ***Goal #8 – System Maintenance:*** Maintain and enhance water and wastewater system assets over the long term at the lowest possible life cycle cost and acceptable risk, consistent with customer, community, and regulatory support levels.
    - Make substantial progress or complete major maintenance projects including:
        - Phase 1 of painting and coating will take place in FY19.

- ***Goal #9 – Capital Improvements:*** Move forward with design and construction of major wastewater infrastructure rehabilitation and renewal projects. DITP Capital Engineering, per Rick Adams, will provide engineering and construction oversight for the Clinton CIP Projects identified for FY19.
    - Issue Notices to Proceed for two CIP contracts:
        - Valves and Screw Pumps Replacement
        - Roofing Rehabilitation

V. Environmental Sustainability

- ***Goal #15 – Energy Optimization***: Continue to examine energy efficiency of MWRA operations, renewable energy production, and revenue generation opportunities using MWRA's energy assets.
    - Continue operations of recently installed natural gas line to replace use of fuel oil in the facility.

FY18 Accomplishments:

- Clinton received the Silver Peak Performance Award in 2017 from the National Association of Clean Water Agencies (NACWA). The award recognizes facilities for outstanding compliance of their National Pollutant Discharge Elimination System (NPDES) permit limits.

- Completed numerous projects which include the following:
    - Rebuild of the trickling filter distributor column.
    - Painted the column and distributor arms.
    - Rebuild of the isolation gates.
    - Replaced wear strips and shoes on primary clarifier.
    - Replaced broken skimmer and structural support in gravity thickener.
    - Replaced support brackets for skimmer box and replaced a section of weir overflow baffle on final clarifier.
    - Installed a new final effluent sampling shed and samplers.

- Substantially completed Digester Cleaning and Rehabilitation project.

Budget Highlights:

The FY19 Budget for Clinton is $2.4 million, an increase of $306,000 or 14.8% from the FY18 Budget.

- $873,000 for **Wages and Salaries**, an increase of $160,000 or 22.4%, from the FY18 Budget due to wage increases associated with collective bargaining agreements and the addition of two FTEs. One FTE was added to address both a union and license issue relative to the operation of the Clinton landfill and to directly address a new license requirement by the Department of Public Safety. The second FTE was added to address the backlog in facilities general repair needs.

- $20,000 for **Overtime,** a reduction of $37,000 or 64.7% compared to FY18. Overtime is used for critical maintenance work and to meet the 24 hour, 7 days per week emergency coverage requirement. The replacement of a vacant operator position with a Supervisor position, coupled with a shift change to allow for weekend coverage by implementing, have contributed to the significant cut in overtime in FY19.

- $411,000 for **Chemicals**, an increase of $76,000 or 22.7% from the FY18 Budget. The FY19 Final Budget assumes the requirements of the new NPDES permit will be in effect for the entire year. The new permit requires year around limits for phosphorus discharge, which impacts primarily the use of

Ferric Chloride and Polymer. Ferric Chloride and Polymer will be utilized along with a disc filter operation as part of the new phosphorus reduction facility currently under construction.

- $326,000 for **Utilities**, an increase of $97,000 or 42.4% from the FY18 Budget. The budget includes $280,000 for electricity, $34,000 for natural gas, and $6,000 for water. The budget assumes that the plant will phase in use of the new natural gas line and phase out fuel use for the boilers. In addition, the new phosphorus reduction resulting in an increase of 33.4% in electricity for the fiscal year.

- $538,000 for **Maintenance**, an increase of $14,000 or 2.7% from the FY18 Budget due to project priorities. The increase is mainly due to the addition of new HVAC and Electrical Service contracts.

- $42,000 for **Professional Services**, level funded with the FY18 Budget. This line item includes consultant engineering and resident inspection services.

- $145,000 for **Other Materials**, a decrease of $3,000, or essentially level funded with the FY18 Budget. This line item includes $135,000 for clean fill for the landfill operation.

- $25,000 for **Other Services**, a decrease of $1,000 from the FY18 Budget, which includes $13,000 for permit fees, $5,000 for telephones, and $3,300 for railroad easement expenses.

FIELD OPERATIONS

The primary function of the **Field Operations Department (FOD)** is to provide high quality, uninterrupted water delivery and wastewater collection services to MWRA communities. The Department is responsible for the treatment, transmission, and distribution of water from the Quabbin and Wachusett reservoirs to community water systems. It also manages the collection, transport, and screening of wastewater flow from MWRA communities to the Deer Island Wastewater Treatment Plant.

FY19 Final Current Expense Budget FIELD OPERATIONS						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 32,407,304	$ 33,297,171	$ 34,899,189	$ 35,520,754	$ 621,565	1.8%
OVERTIME	2,900,372	3,166,725	2,528,165	2,894,384	366,219	14.5%
FRINGE BENEFITS	56,426	69,216	50,224	59,161	8,937	17.8%
CHEMICALS	5,715,031	5,837,468	6,058,620	6,285,573	226,953	3.7%
UTILITIES	8,377,061	8,937,818	9,955,837	9,913,990	(41,847)	-0.4%
ONGOING MAINTENANCE	13,094,776	11,809,325	12,149,000	12,387,606	238,607	2.0%
TRAINING & MEETINGS	86,282	85,048	87,025	104,000	16,975	19.5%
PROFESSIONAL SERVICES	471,893	771,780	632,375	940,359	307,984	48.7%
OTHER MATERIALS	892,777	919,149	780,397	735,510	(44,887)	-5.8%
OTHER SERVICES	3,187,092	3,037,436	3,436,447	3,183,112	(253,335)	-7.4%
TOTAL	**$ 67,189,014**	**$ 67,931,137**	**$ 70,577,279**	**$ 72,024,449**	**$ 1,447,170**	**2.1%**

FOD consists of five operating units: Wastewater Operations, Metropolitan Maintenance, Water Operations and Maintenance, Operations Support, and Administration.

FY19 Final Current Expense Budget FIELD OPERATIONS by Programs						
Program	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WASTEWATER OPERATIONS	$ 13,823,886	$ 11,950,274	$ 12,451,202	$ 12,527,015	$ 75,813	0.6%
WATER OPERATIONS & MAINT	26,896,291	29,310,282	29,937,967	30,672,133	734,166	2.5%
METRO MAINTENANCE	16,763,160	16,714,930	17,546,244	17,209,115	(337,130)	-1.9%
OPERATIONS SUPPORT	4,924,451	4,902,943	5,480,729	5,753,477	272,748	5.0%
FOD ADMIN	4,781,225	5,052,709	5,161,137	5,862,710	701,573	13.6%
TOTAL	**$ 67,189,014**	**$ 67,931,137**	**$ 70,577,279**	**$ 72,024,449**	**$ 1,447,170**	**2.1%**

Wastewater Operations operates MWRA's wastewater transport facilities, including four continuously staffed headworks facilities; twelve fully automated pumping stations; and six Combined Sewer Overflow (CSO) facilities which are similarly unstaffed. The wastewater system is monitored and controlled from the operations control center (OCC) in MWRA's Chelsea facility. Wastewater Operations aims to meets all operational and regulatory performance standards and requirements efficiently and cost-effectively.

FY19 Final Current Expense Budget WASTEWATER OPERATIONS						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 5,926,369	$ 5,974,824	$ 6,199,220	$ 6,325,814	$ 126,594	2.0%
OVERTIME	863,997	1,064,762	821,515	924,482	102,967	12.5%
FRINGE BENEFITS	14,840	23,196	13,000	16,847	3,847	29.6%
CHEMICALS	209,671	255,031	295,608	319,657	24,049	8.1%
UTILITIES	3,970,430	4,209,927	4,935,114	4,755,758	(179,357)	-3.6%
ONGOING MAINTENANCE	2,586,587	250,595	-	-	-	-
PROFESSIONAL SERVICES	38,510	-	-	-	-	-
OTHER MATERIALS	70,482	42,412	53,499	53,499	-	0.0%
OTHER SERVICES	142,999	129,526	133,245	130,958	(2,287)	-1.7%
TOTAL	**$ 13,823,886**	**$ 11,950,274**	**$ 12,451,202**	**$ 12,527,015**	**$ 75,813**	**0.6%**

Water Operations and Maintenance operates and maintains the water supply and treatment facilities to provide an adequate supply of properly treated drinking water to meet all operational and regulatory performance requirements. The Unit is responsible for the treatment and delivery of approximately 196.3 million gallons per day (FY15-FY17 three-year average mgd) of water from the Quabbin and Wachusett reservoirs to the community water systems. Water must be supplied to customer communities at the expected pressure. The water system encompasses a service area from Chicopee in the western part of the state to Lynnfield, Wakefield, Marblehead, Norwood and Canton in the metropolitan area. This unit operates and maintains MWRA's western waterworks facilities, including the Carroll Water Treatment Plant, the Metro West Tunnel, the Brutsch Water Treatment Plant, the Cosgrove Intake Facility, the Norumbega Reservoir, and the covered storage facilities. There are two operations centers that provide for monitoring and control of the water system on a 24-hour per day basis. The Metropolitan Operations and Control Center (OCC) is located at MWRA's Chelsea office Facility and the Western Operations Center is located at the Carroll Water Treatment Plant.

FY19 Final Current Expense Budget WATER OPERATIONS & MAINTENANCE						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 12,274,313	$ 12,700,855	$ 13,226,922	$ 13,276,650	$ 49,728	0.4%
OVERTIME	1,173,244	1,137,233	1,035,333	1,068,605	33,272	3.2%
FRINGE BENEFITS	24,875	25,256	22,524	24,521	1,997	8.9%
CHEMICALS	5,505,361	5,581,956	5,763,012	5,965,916	202,904	3.5%
UTILITIES	3,909,903	4,191,782	4,461,934	4,609,945	148,011	3.3%
ONGOING MAINTENANCE	3,095,252	4,574,417	4,279,792	4,689,090	409,298	9.6%
PROFESSIONAL SERVICES	267,474	384,279	518,500	413,359	(105,141)	-20.3%
OTHER MATERIALS	223,490	229,030	208,170	209,877	1,707	0.8%
OTHER SERVICES	422,381	485,474	421,780	414,170	(7,610)	-1.8%
TOTAL	**$ 26,896,291**	**$ 29,310,282**	**$ 29,937,967**	**$ 30,672,133**	**$ 734,166**	**2.5%**

Metro Maintenance is responsible for the maintenance of MWRA's wastewater facilities within the Route 128 area. Staff maintains pipelines, valves, interceptors, pumps, facility equipment, buildings, and grounds, as well as meters, and monitoring sites.

FY19 Final Current Expense Budget METRO MAINTENANCE						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 9,047,558	$ 9,329,839	$ 10,001,991	$ 10,090,544	$ 88,553	0.9%
OVERTIME	736,601	821,477	541,781	766,472	224,691	41.5%
FRINGE BENEFITS	15,602	19,408	13,698	16,717	3,019	22.0%
CHEMICALS	-	(3)	-	-	-	-
UTILITIES	40,475	39,769	38,503	38,503	-	0.0%
ONGOING MAINTENANCE	6,153,042	5,724,884	6,326,781	5,633,068	(693,714)	-11.0%
PROFESSIONAL SERVICES	165,909	239,401	90,875	150,000	59,125	65.1%
OTHER MATERIALS	316,423	322,870	290,672	288,938	(1,734)	-0.6%
OTHER SERVICES	287,550	217,285	241,943	224,873	(17,070)	-7.1%
TOTAL	**$ 16,763,160**	**$ 16,714,930**	**$ 17,546,244**	**$ 17,209,115**	**$ (337,130)**	**-1.9%**

Operations Support provides technical support to the FOD in two key areas. Engineering staff coordinate all engineering issues related to the operation of the water and wastewater systems. The SCADA unit is responsible for the maintenance of the water and wastewater Supervisory Control and Data Acquisition (SCADA) systems.

FY19 Final Current Expense Budget OPERATIONS SUPPORT						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 3,489,418	$ 3,559,816	$ 3,627,991	$ 3,848,522	$ 220,531	6.1%
OVERTIME	79,316	79,161	82,339	86,448	4,109	5.0%
FRINGE BENEFITS	1,085	1,282	1,002	1,076	74	7.4%
CHEMICALS	-	484	-	-	-	-
UTILITIES	11,208	9,252	10,281	10,281	-	0.0%
ONGOING MAINTENANCE	830,262	608,250	919,200	931,330	12,130	1.3%
PROFESSIONAL SERVICES	-	148,101	-	354,000	354,000	-
OTHER MATERIALS	86,114	107,457	153,919	108,060	(45,859)	-29.8%
OTHER SERVICES	427,049	389,141	685,997	413,760	(272,237)	-39.7%
TOTAL	**$ 4,924,451**	**$ 4,902,943**	**$ 5,480,729**	**$ 5,753,477**	**$ 272,748**	**5.0%**

FOD Administration provides financial, administrative, planning, and policy oversight functions for the entire Department.

FY19 Final Current Expense Budget FOD ADMIN						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 1,669,647	$ 1,731,837	$ 1,843,065	$ 1,979,224	$ 136,159	7.4%
OVERTIME	47,212	64,093	47,197	48,377	1,180	2.5%
FRINGE BENEFITS	24	74	-	-	-	-
UTILITIES	445,045	487,088	510,004	499,503	(10,501)	-2.1%
ONGOING MAINTENANCE	429,633	651,178	623,227	1,134,119	510,892	82.0%
TRAINING & MEETINGS	86,282	85,048	87,025	104,000	16,975	19.5%
PROFESSIONAL SERVICES	-	-	23,000	23,000	-	0.0%
OTHER MATERIALS	196,268	217,381	74,137	75,136	999	1.3%
OTHER SERVICES	1,907,114	1,816,010	1,953,482	1,999,351	45,869	2.3%
TOTAL	**$ 4,781,225**	**$ 5,052,709**	**$ 5,161,137**	**$ 5,862,710**	**$ 701,573**	**13.6%**

FY19 Goals and Initiatives:

I. Drinking Water Quality and System Performance

- ***Goal #1 – Compliance with Regulatory Requirement and Public Health Standards***: Maintain drinking water quality to protect public health, and continue to ensure that MWRA water meets all applicable regulations.
    - Operate and maintain the water supply and treatment facilities to provide an adequate supply of properly treated drinking water to meet all operational and regulatory performance requirements.
    - Supply water to customer communities at the expected pressure.

- **Key Regulatory Performance Measurements:**

Compliance with Source and Treated Water Parameters				
Indicator	**FY16 Actual**	**FY17 Actual**	**FY18 Actual**	**FY19 Goal**
Turbidity < 5NTU	100%	100%	100%	100%
pH >9.1 & Alkalinity >37 mg/l	100%	100%	100%	100%
Disinfection Effectiveness	100%	100%	100%	100%

II. Wastewater Quality and System Performance

- ***Goal #4 – Compliance with Regulatory Requirements***: Meet or surpass environmental compliance standards at both MWRA treatment facilities and throughout the wastewater collection system.
  - **Key Regulatory Performance Measurements:**

Regulatory Compliance and Operational Capacity				
Indicator	**FY16 Actual**	**FY17 Actual**	**FY18 Actual**	**FY19 Goal**
Total annual flow (billion gallons based on DITP mgd) – Process all flow at headworks within system parameters	105,861	116,681	114.66k	122.5k
Minimize choking at headworks (# of hours/highly dependent on weather):				
Nut Island	0	0	0	0
Columbus Park	36.3	28.3	60.61	0
Ward Street	20.4	17	37.11	0
Chelsea Creek	10.0	12.9	10.53	0

III. Infrastructure Management and Resilience

- ***Goal #8 – System Maintenance:*** Maintain and enhance water and wastewater system assets over the long term at the lowest possible life cycle cost and acceptable risk, consistent with customer, community, and regulatory support levels.
  - Complete numerous major maintenance projects including:
    - Overhaul Rotating Assemblies @ Quincy, Hayes, Hingham, IPS
    - Replace Washdown System @ Prison Point Phase 3
    - Replace Boiler at DeLauri
    - Install Wet Well Flushing Line (Stainless) @ Framingham
    - Replace Rooftop ACU at Framingham Chemical Room
    - Replace 1 Supply Fan and 2 Exhaust Fans at Lexington Street
    - Replace 3 Motor Base Pump Motors @ Hyde Park
    - Install Wet Well Flushing Line (Stainless) @ Framingham

- **Key Maintenance Measurements:**

Indicator	FY16 Actual	FY17 Actual	FY18 Actual	FY19 Goal
% Total Revenue Calculated Using Meters				
Water	99.95%	97.87	100%	100%
Wastewater	97.9%	98.73	95%	95%
Water System:				
Leak Detection – miles surveyed)	175	140	126	210
Main Line Valves – # exercised	524	811	844	1,100
Main Line Valves – # replaced	11	17	7	20
Blow-off Valves – # exercised	318	473	511	500
Blow-off Valves – # maintained	10	7	12	10
Wastewater System:				
Pipeline Inspections – miles	36	33	32.81	32
Pipeline Cleaning – miles	39	36	36.35	36
Structure Inspections – # structures	818	719	750	650
Manhole Rehabilitation – # manholes	105	115	175	105
Inverted Siphon Inspections – # siphons	48	49	50	48
Inverted Siphon Cleaning – # siphons	72	81	72	36
Metro Maintenance – Equipment and Facilities:				
Ops Light Preventive Maint (PM) - % maint hours	14%	15%	14	10%-15%
Preventive Maintenance Completion	100%	100%	100%	100%
Maint Kitting – % work orders kitted	234	267	24	50
Ops Light Maint % PM Completion	100%	100%	100%	100%
Maintenance Backlog – crew hours	19,003	10,815	12,586	Within industry standard 6.5k to12.9k hours

*Maint Kitting: FY16–17 based on items kitted, FY18–FY19 based on % of work orders kitted

V. Environmental Sustainability

- ***Goal #15 – Energy Optimization***: Continue to examine energy efficiency of MWRA operations, renewable energy production, and revenue generation opportunities using MWRA's energy assets.
  - Continue to implement projects to reduce energy use, increase energy revenue, decrease greenhouse gas emissions, and increase self-generation capacity, particularly via renewable energy.
    - A review of previously audited facilities will also be undertaken to identify potential energy efficiency projects.

- **Key Performance Measurements:**

Indicator	FY16 Actual	FY17 Actual	FY18 Actual	FY19 Goal
Energy programs - Generate revenue from FOD-managed facilities:				
Power Sales	$287,000	$254,000	$557,000	$677,000
Demand Response	$46,000	$46,000	$34,216	$105,000
Renewable Portfolio Standard Credits	$515,000	$263,000	$155,997	$352,000

FY18 Accomplishments:

Water System

- Identified and repaired over 30 leaks, many while the pipelines remained in service.
- Performed reservoir level management control at all Metropolitan reservoirs to maintain normal operating levels, including winter drawdown of the Chestnut Hill reservoir for invasive plant control.
- Overall valve operability is 94% to 98% (depending upon valve type), a result of continued valve exercising, repair, and replacement.
- Replaced 8 main line valves and retrofitted 15 blow off valve sites during the fiscal year.
- Assisted many of the customer communities with both routine and emergency assistance.
- Provided leak detection assistance to Arlington, Chelsea, Chicopee, Lexington, Lynn, Malden, Medford, Milton, Newton, Revere, Somerville, Stoneham, Wakefield, Watertown, Wellesley, Weston, Winchester, and Woburn.
- Worked with Burlington and Lexington to support flow and hydraulic testing activities in support of Burlington becoming an MWRA water customer.
- Continued the rehabilitation of the impressed current cathodic protection system on Section 57 in Everett and Chelsea.
- Successfully operated the Chestnut Hill Emergency pump station during scheduled testing.
- Repaired one leaking coupling on the Watertown Section pipeline in Waltham.
- Supported warranty inspection and testing of the Spot Pond water storage tanks and the Beacon Street pipeline.

Wastewater Facilities

- Replaced #1 pump at the Quincy Pump Station.
- Replaced #1 grit screw at the IPS.
- Replaced # 2 Grit Cyclone Separator at IPS.
- Replaced Motor RWW Pump # 3 at IPS.
- Fuel Oil underground storage sank (UST) replaced with an aboveground storage tank (AST) at Hingham Pump Station.
- Fuel Oil AST installed at Quincy Pump Station.

- Installed a new eye wash/shower with associated control valves in the stations pump room at Braintree Weymouth Pump Station.
- Replaced Pump # 1 at Wiggins Terminal.

CSO

- Replaced Pump # 1 Soft Starter at BOS 019.
- Replaced Head Shaft Screen # 2 Somerville CSO.
- Repaired Sodium Bisulfite line # 2 at Cottage Farm CSO.
- Cleared Sodium Bisulfite line at Somerville CSO.

Headworks

- Replaced electrical conduit and concrete curbing at Nut Island Pier.
- Cleaned duct work at Ward Street, Columbus Park and Nut Island.
- Replaced wet well dewatering pump at Nut Island.
- Replaced grit gates 4 & 5 at Nut Island.
- Repaired sanitary pump discharge piping at Spot Pond Pump Station.

Water Facilities

- Installed generator at Turkey Hill Water Tank.
- Replaced and repaired the VFD's for Pumps 2 & 3 at Spring Street Pump Station.
- Tested chemical piping for leaks and successfully test chemical pumps at Chestnut Hill Underground Pump Station.
- Posted signs at Chestnut Hill Reservoir.

Grounds/Facilities

- Facilities Staff replaced over 140 manhole frames and covers in FY18.
- Paint Staff painted exterior and interior of the Hyde Park Pump Station.
- Paint Staff painted interior of Spring Street, Belmont Pump Stations.
- Paint Staff painted all exterior doors and interior of Chelsea Maintenance Facility.

Energy Conservation

- Completed energy efficient LED lighting replacements at three facilities, Caruso, Nut Island, and Clinton WWTP for a total savings of approximately 206,000 kWh annually.

Budget Highlights:

The FY19 Budget is $72.0 million, an increase of $1.5 million or 2.1% from the FY18 Budget.

- $35.5 million for **Wages and Salaries**, an increase of $622,000 million or 1.8%, from the FY18 Budget, mainly due to wage increases associated with collective bargaining agreements. The FY19 Final Budget also includes $447,000 for stand-by pay to ensure support for operational and maintenance needs during wet weather and emergencies and $53,000 for interns to provide support in several areas including Operations Engineering and SCADA.

- $2.9 million for **Overtime**, an increase of $366,000 or 14.5% from the FY18 Budget. The FY19 Budget for overtime, which incorporates collective bargaining increases, includes $1.5 million for emergency related overtime; $716,000 for planned overtime; and $617,000 for operational coverage needs. The budget for emergency overtime is increasing to reflect an increased mobilization for wet weather, and a significant increase in water line repair work.

- The FY19 Budget includes $6.3 million for **Chemicals**, and increase of $227,000 or 3.8% from the FY18 Budget. The budget includes $6.0 million for water treatment chemicals and $320,000 for wastewater treatment chemicals and is based on multi-year historical usage trends and projected market prices. The budget includes $3.4 million for soda ash, $1.5 million for sodium hypochlorite, $370,000 for liquid oxygen, $307,000 for carbon dioxide, $236,000 for hydrofluosilicic acid, $182,000 for aqua ammonia, $103,000 for sodium bisulfite, $90,000 for other oxidizers, and $41,000 for sodium hydroxide.

- $9.9 million is included for **Utilities**, which is $42,000 or 0.4% lower than the FY18 Budget. The FY19 Budget includes $7.5 million for electricity, $1.3 million for diesel fuel, $550,000 for natural gas, $494,000 for water and $59,000 for propane. The largest change is in electricity which decreased by $95,000 due to price increases offset by volume decreases at various facilities, and in diesel fuel which decreased due to an increase in the assumption for the per gallon price for FY19 relative to FY18 from $2.35 per gallon to $2.50 per gallon.

- $12.4 million for **Maintenance**, a decrease of $239,000 or 2.0% from the FY18 Budget due to project priorities and projected needs. The FY19 Final Budget includes $4.9 million in day-to-day needs, $4.1 million for services, $2.8 million in major projects, and $450,000 for energy initiatives. Some of the major projects included for the FY19 Final Budget are:

MIS Data Center HVAC	$400,000
Manhole Rehabilitation	$329,000
Invasives Control – Stillwater Basin DASH	$185,000
Tank Cleaning at Norumbega	$150,000
Overhaul rotating assemblies at Quincy and Hayes	$ 90,000
Upgrade VFDs at Framingham	$ 85,000

- $104,000 for **Training and Meetings**, an increase of $17,000 or 19.5% from the FY18 Budget. The budget covers training required for work duties, health and safety compliance, job-related licensures and certifications, cyber-security and SCADA technical training. The increase in FY19 is attributable to the evolving realm of cyber security and the need for SCADA staff to maintain current skill sets.

- $940,000 for **Professional Services**, an increase of $308,000 or 48.7% from the FY18 Budget primarily due to consultant services for a SCADA project to configure new firewalls, newly acquired security software and data modules. The FY19 Final Budget includes $772,000 for engineering services, which is made up of $225,000 for as-needed engineering services to support CEB-funded maintenance projects; $180,000 for an asset maintenance plan for MWRA dams; $354,000 for a consultant to configure SCADA firewalls, software, data modules and microwave communications equipment; and $13,000 for evaluation of spill prevention, control and countermeasure plans. Additionally, the professional Services budget includes $88,000 for an annual Macrophyte survey at the reservoirs; $77,000 for quality assurance services for Macrophyte harvesting; and $10,000 for energy audits at various facilities.

- $736,000 for **Other Materials**, a decrease of $45,000 or 5.8% from the FY18 Budget primarily due to Costs for SCADA software maintenance service being moved to maintenance. The FY18 Final Budget includes $114,000 for vehicle expenses for gas, mileage reimbursements, and tolls; $268,000 for work clothes; and $210,000 for health and safety supplies.

- $3.2 million for **Other Services**, a decrease of $253,000 or 7.4%, from the FY18 Budget primarily due to a reduction in telephone services reflecting more recent actual spending levels, offset in part by an increase of $44,000 to the Chelsea office building. The FY19 Budget includes $1.9 million for annual lease payments for the Chelsea office building; $587,000 for telephones, and $458,000 for police details.

Wachusett Aqueduct Water Pump Station Forebay

ENGINEERING AND CONSTRUCTION

The **Engineering and Construction Department (ECD)** manages and coordinates the planning, design, and construction of system improvements that ensure a safe and adequate water supply and a reliable wastewater collection and treatment. Staff is organized into three units: Wastewater Engineering, Water Engineering, and Construction.

The Department provides in-house engineering, consultant management (during the facilities planning, environmental review, design, and engineering services during construction stages of capital projects), drafting, surveying, construction management, and other technical assistance required for the maintenance, repair, and rehabilitation of wastewater and waterworks systems. In accordance with the CIP, the Department plans and implements the rehabilitation of existing facilities and construction of new facilities including pipelines, pump stations, storage facilities, and treatment facilities on schedules that allow for sufficient system capacity and performance.

The **Wastewater Engineering Unit** manages all wastewater design and engineering projects including Combined Sewer Overflow (CSO) engineering activities as well as specialized technical services in electrical, structural, mechanical, and civil engineering disciplines.

The **Water Engineering Unit** manages all water design and engineering projects. The unit also maintains the Design Information Services Center (DISC), which provides computer-aided design and drafting (CADD) services.

The **Construction Unit** provides contract management and resident inspection on all MWRA water and wastewater construction and rehabilitation projects, with the exception of Deer Island Treatment Plant.

FY19 Final Current Expense Budget
ENGINEERING AND CONSTRUCTION

LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 7,212,203	$ 7,500,875	$ 8,037,300	$ 8,254,669	$ 217,369	2.7%
OVERTIME	64,500	69,895	65,962	67,950	1,988	3.0%
FRINGE BENEFITS	152	180	250	250	-	0.0%
ONGOING MAINTENANCE	676	235	-	-	-	-
TRAINING & MEETINGS	11,610	17,418	9,800	13,000	3,200	32.7%
OTHER MATERIALS	25,138	36,107	23,285	25,935	2,650	11.4%
OTHER SERVICES	33,932	28,741	35,415	27,566	(7,849)	-22.2%
TOTAL	**$ 7,348,211**	**$ 7,653,451**	**$ 8,172,012**	**$ 8,389,370**	**$ 217,358**	**2.7%**

FY19 Goals and Intiatives:

The Engineering and Construction Department has significant responsibility for the following MWRA goals included in the Board-approved FY16 - FY20 Five-Year Strategic Business Plan.

I. Wastewater Quality and System Performance

- ***Goal #6 – CSO Plan Compliance:***
  - Complete all CSO milestones by 2020 and demonstrate that the CSO Plan meets its performance objectives. Ensure compliance with CSO NPDES permit requirements.
  - Finalize scope, procure consultant contract and issue notice to proceed for court-ordered CSO post-construction monitoring and performance assessment (January 2018 and December 2020 milestones).

III. Infrastructure Management and Resilience

- ***Goal #9 – Capital Improvements:*** Move forward with design and construction of major water and wastewater infrastructure rehabilitation and renewal projects.
  - Issue Notices to Proceed for numerous contracts including the following major projects (contract value =/> $3 million):
    - Interception & Pumping Corrosion & Odor Control: Nut Island Odor Control HVAC Construction Phase 2
    - Interception & Pumping Facility Asset Protection: Prison Point Rehabilitation Construction
    - Water Distribution: Peabody Pipeline Project – Construction
    - Water Distribution: New Connection Mains – Shaft 7: CP3 Section 23, 24 & 47 Rehabilitation
    - Water Transmission: Metropolitan Redundancy Interim Improvements: Commonwealth Avenue Pump Station Improvements – Construction
    - Water Transmission: Metropolitan Redundancy Interim Improvements: Chestnut Hill Emergency Pump Station Design/CA/RI
    - Water Facility Asset: Paint Bellevue II and Turkey Hill Tanks
    - Interception & Pumping Facility Asset Protection: Interceptor Renewal 3, Dorchester Interceptor Sewer – Construction
    - Water Distribution: Northern High Service Revere & Malden Pipe – Section 53 & 99 - Connections Design/CA/RI
    - Water Transmission: Metropolitan Redundancy Interim Improvements: Wachusetts Aqueduct Supply Mains/Spot Pond Supply Main Pressure Reducing Valve - Design/CA/RI
    - Central Monitoring System: Carroll Water Treatment Plant SCADA Upgrade Design/RE
    - Water Facility Asset: Steel Tank Improvements – Design/CA/RI

- ***Goal #10 – Emergency Preparedness:*** Prepare for catastrophic events that could affect the water and wastewater delivery systems.
  - Continue to improve and incorporate redundancy in the water system to ensure uninterrupted service by developing and implementing plans to eliminate or mitigate single points of failure within MWRA's water transmission and distribution system, including the Northern Intermediate High and the Southern Extra High System.
  - Make substantial progress on interim work on Wachusett Aqueduct Pump Station, Northern Intermediate High Section 110, and Southern Extra High Section 111 Boston pipeline project.

FY18 Accomplishments

- Issued Notices to Proceed for numerous contracts including the following major contracts (contract value =/> $3 million):
  - Water Distribution Northern Intermediate High Redundancy and Storage: Section 89 & 29 Redundancy Construction Phase 2
  - Water Distribution Southern Extra High Redundancy & Storage: Redundancy Pipeline Section III Phase 2 Construction
  - Water Distribution Southern Extra High Redundancy & Storage: Redundancy Pipeline Section III Phase 3 Construction
  - Water Distribution Northern Low Service Rehabilitation Section 8: Sec 50 & 57 Water & Section 21, 20 & 19 Sewer Design/ESD
  - Water Distribution Northern Intermediate High Redundancy & Storage: Section 89 & 29 Replacement Design/ESDC
  - Interception & Pumping Wastewater Central Monitoring: Design and Programming Services

- Substantially completed numerous design and construction phases including the following (contract value =/> $3 million):
  - CSO Community Managed: Cambridge Sewer Separation –Design/CS/RI
  - Water Distribution Northern Intermediate High Redundancy and Storage: Sections 89 & 29 Phase 1B Construction
  - Drinking Water Quality Improvements: Spot Pond Storage Facility Owners' Representative

For an in-depth update of the progress of projects in the Capital Improvement Program, please refer to the Fiscal Year 2018 Capital Improvement Program Spending Report located on the Budget page of the MWRA's website at mwra.com.

Budget Highlights:

The FY19 Budget is $8.4 million, an increase of $217,000 or 2.4%, as compared to the FY18 Budget.

- $8.3 million for **Wages and Salaries**, an increase of $217,000 or 2.7% compared to the FY18 Budget primarily for wage increases associated with collective bargaining agreements.

- $68,000 for **Overtime**, which is based on anticipated overtime for FY19, and is essentially level funded with FY18 once salary increases are taken into consideration. Overtime covers resident inspection at construction sites after regular work hours to ensure monitoring of construction projects. Overtime is also used for unplanned design or survey needs, attendance at evening public meetings, and meeting deadlines.

- $13,000 for **Training & Meetings** to cover attendance at conferences and technical seminars, an increase of $3,200 or 32.7% over FY18 based on actual historical expenditures**.**

- $26,000 for **Other Materials**, an increase of $3,000 or 11.4% compared to the FY18 Budget. The FY19 Budget is based on historical spending with the increase primarily in office supplies due to the

replacement of the OCE copier which uses more expensive color ink and a higher quality paper. The budget also covers work clothes, health and safety supplies, and survey equipment.

- $28,000 for **Other Services**, a decrease of $8,000 or 22.2% compared to the FY18 Budget. The FY19 Budget decrease is based on MIS picking up the annual maintenance cost for the new OCE copier. The remaining of the funding is based on historical spending and supports printing/duplicating, telephone expenses, memberships and dues, and police details.

Bellevue Storage Tanks

PROGRAMS, POLICY AND PLANNING

Programs, Policy & Planning

Toxic Reduction and Control
Environmental Quality
Laboratory Services
Planning

The Deputy Chief Operating Officer oversees this section, which focuses on the following:

- Master planning, business planning, and strategic initiatives (such as system expansion);
- Environmental programs and regulatory coordination;
- Water and wastewater quality testing and reporting;
- Divisional budget preparation and monitoring;
- Financial planning and analysis;
- Accounts payable and contract administration;
- Human resources management functions; and
- Energy program planning, evaluation, analysis, reporting and audits.

FY19 Final Current Expense Budget
PROGRAMS, POLICY & PLANNING

LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 13,964,566	$ 14,517,773	$ 15,483,440	$ 16,008,684	$ 525,244	3.4%
OVERTIME	188,350	166,740	200,949	210,215	9,266	4.6%
FRINGE BENEFITS	2,652	1,938	2,546	2,550	4	0.2%
UTILITIES	23,842	31,547	24,500	30,000	5,500	22.4%
ONGOING MAINTENANCE	431,182	665,252	806,106	876,405	70,299	8.7%
TRAINING & MEETINGS	30,666	19,353	40,000	44,500	4,500	11.3%
PROFESSIONAL SERVICES	1,599,057	1,667,749	1,763,568	1,851,712	88,144	5.0%
OTHER MATERIALS	1,686,670	1,516,432	1,587,042	1,665,987	78,945	5.0%
OTHER SERVICES	419,585	402,540	502,148	503,393	1,245	0.2%
TOTAL	**$ 18,346,571**	**$ 18,989,324**	**$ 20,410,299**	**$ 21,193,446**	**$ 783,147**	**3.8%**

The Programs, Policy & Planning Section is composed of the Toxic Reduction and Control, Environmental Quality (EnQual), Laboratory Services, and Planning departments. The Environmental Quality Department has two units; EnQual-Wastewater and EnQual-Water Quality Assurance. The Planning Department also has two units; Planning and Meter Data. In total, the budgets for these programs represent 12.0% of the Operations Division's FY19 Budget.

FY19 Final Current Expense Budget PROGRAMS, POLICY & PLANNING by Program						
PROGRAM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
TOXIC REDUCTION & CONTROL	$ 3,929,956	$ 4,082,703	$ 4,588,633	$ 4,681,407	$ 92,774	2.0%
ENVIRONMENTAL QUALITY	4,837,375	4,985,180	5,122,514	5,546,892	424,378	8.3%
LABORATORY SERVICES	6,264,136	6,386,856	6,988,758	6,966,910	(21,848)	-0.3%
PLANNING	3,315,104	3,534,585	3,710,394	3,998,237	287,843	7.8%
TOTAL	**$ 18,346,571**	**$ 18,989,324**	**$ 20,410,299**	**$ 21,193,446**	**$ 783,147**	**3.8%**

The Deputy Chief Operating also provides support to the Chief Operating Officer on key MWRA operations, technical, policy, community coordination, permitting, and public constituency matters.

Nut Island Headworks

TOXIC REDUCTION AND CONTROL

The Toxic Reduction and Control (TRAC) Department operates a multi-faceted program to minimize and control the inflow of hazardous or toxic materials into the MWRA sewer system. TRAC operates MWRA's Environmental Protection Agency (EPA) approved Industrial Pretreatment Program and is responsible for all associated activities which include conducting inspections (approximately 1,400 annually), issuing permits (approximately 300 annually), conducting sampling (more than 2,000 events annually), and carrying out enforcement activities (approximately 400 annually). The program tracks more than 1,200 permitted facilities and 4,000 gas/oil separators. TRAC uses a software application to manage an extensive amount of industrial data on analytical test results, compliance status, and facility sampling and permitting requirements.

FY19 Final Current Expense Budget TOXIC REDUCTION AND CONTROL						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 3,719,990	$ 3,873,404	$ 4,372,270	$ 4,462,714	$ 90,444	2.1%
OVERTIME	69,228	57,646	73,185	75,015	1,830	2.5%
FRINGE BENEFITS	1,419	914	1,200	1,200	-	0.0%
ONGOING MAINTENANCE	16,438	9,899	11,500	12,000	500	4.3%
TRAINING & MEETINGS	-	600	1,500	1,500	-	0.0%
OTHER MATERIALS	114,810	126,000	115,978	115,978	-	0.0%
OTHER SERVICES	8,070	14,240	13,000	13,000	-	0.0%
TOTAL	**$ 3,929,956**	**$ 4,082,703**	**$ 4,588,633**	**$ 4,681,407**	**$ 92,774**	**2.0%**

FY19 Goals and Initiatives:

II. Wastewater Quality and System Performance

- ***Goal #4 – Compliance with Regulatory Requirements***: Meet or surpass environmental compliance standards at both MWRA treatment facilities and throughout the wastewater collection system.
  - Continue to carry out the Pretreatment Program to protect receiving water quality, maximize the beneficial reuse of wastewater residuals, and protect workers and MWRA's wastewater treatment plants.
  - Ensure compliance with MWRA and Federal regulations by issuing appropriate enforcement actions as outlined in the Enforcement Response Plan.
  - Staff will begin the transition the 8M permitting process into TRAC's Pre-treatment Information Management System (PIMS) software.
  - Staff will implement the approved local limits applicable to the industrial users in the Clinton service area under the requirements of the new National Pollution Discharge Elimination System (NPDES) permit for the Clinton Wastewater Treatment Plant.
  - TRAC staff will utilize the Pre-treatment Information Management System (PIMS) software to schedule and track work, as well as to draft permits and track permit requirements. Sampling required by permits is entered into the PIMS system by permittees' contract laboratories. This electronic reporting system is subject to EPA's Cross Media Electronic Reporting Rule (CROMERR) and as such, needs to be upgraded to meet the requirements of the rule. TRAC staff are working with MWRA's MIS staff to ensure that the PIMS system meets these requirements. TRAC and MIS are on schedule to complete this requirement for FY18FY19.

- TRAC staff will begin implementing the new EPA mandated final rule regarding dental amalgam.

- ***Goal #5 – Regulatory Changes***: Continue to initiate plans and studies to prepare for regulatory changes; identify opportunities to refine monitoring requirements; and improve effluent quality.
  - **Revise Sewer Use Regulations:**
    - TRAC staff will revise the Sewer Use regulations (360 CMR 10.000) to incorporate the new local limits for the Clinton Wastewater Treatment Plant and the new federal dental amalgam regulations, among other changes.
  - **Local Limits:**
    - Prepare updated Local Limits Studies for Clinton and Deer Island in accordance with EPA guidelines to confirm appropriate discharge limits from industries.
    - Continue to collect samples for use in update of DITP local limits when new DITP NPDES permit is issued in future.

FY18 Accomplishments:

- MWRA submitted the Annual Industrial Waste report detailing its pretreatment program activities to US EPA and Mass DEP as required by our NPDES Permits for the Clinton and Deer Island Wastewater Treatment Plants by its October 31, 2017 due date.

- In November 2017, TRAC Staff sent letters to its Significant Industrial Users (SIUs) to transmit their FY17 compliance status and preliminary annual charges. The letters provide an opportunity for each SIU to review the data upon which the charges are based and submit any changes. They also inform the SIUs if they are in Significant Noncompliance with MWRA/EPA standards or requirements.

- In June 2018, EPA Region 1 conducted an industrial pretreatment audit of MWRA's program. EPA staff reviewed nine permits; during the informal debrief at the end of the second day, EPA reviewed their limited findings. EPA has not provided MWRA with a written summary of the audit.

- Local Limits: Began implementing the new Clinton Wastewater Treatment Plant local limits through the issuance of new and renewed industrial permits in the Clinton service area, following the promulgation of revised Sewer User regulations.

Indicators	FY16 Actual	FY17 Actual	FY18 Actual	FY19 Goal
EPA Required SIU Monitoring Events	179	181	176	174
Non-SIU Monitoring Events	139	96	114	80
SIU Connections to be Sampled	381	403	415	398
EPA Required SIU Inspections	204	202	204	194
SIU Permits due to Expire	92	56	88	70
Non-SIU Permits due to Expire	235	231	257	
Issue Annual Industrial Pretreatment Program Report	Oct 2015	Oct 2016	Oct 2017	Oct 2018

Budget Highlights:

The FY19 Budget is $4.7 million, an increase of $93,000 or 2.02%, from the FY18 Budget.

- $4.5 million for **Wages & Salaries**, an increase of $90,000 or 2.07% from the FY18 Budget primarily for wage increases associated with collective bargaining agreements. The budget also includes $40,000 for stand-by pay for wet weather sampling events.

- $75,000 for **Overtime,** an increase of $2,000 or 2.5% from the FY18 Budget primarily for wage increases associated with collective bargaining agreements. Overtime covers sampling and monitoring during off-hours, emergencies, and wet weather events.

- $12,000 for **Ongoing Maintenance**, level funded with the FY18 Budget. This funds sampling equipment, materials, and maintenance of equipment used in sampling industrial discharges at permitted industries.

- $116,000 for **Other Materials**, level funded with the FY18 Budget. Funding in this line item mainly supports lab and testing supplies, health and safety materials, and work clothes.

- $13,000 for **Other Services**, level funded with the FY18 Budget. This line item also funds printing costs for regulations, public advertising of industrial users in Significant Noncompliance, and police details for sampling work done in public streets.

Samplng of Clinton Efluent Channel

ENVIRONMENTAL QUALITY

The core functions of the Environmental Quality Department are to monitor and report on the quality of drinking water and to ensure compliance with regulatory reporting requirements governing drinking water; to monitor wastewater and the receiving water environment as laid out in the Ambient Monitoring Plan; and to ensure compliance with regulatory reporting requirements governing wastewater treatment and discharges.

FY19 Final Current Expense Budget ENVIRONMENTAL QUALITY						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 2,865,105	$ 3,007,637	$ 3,126,582	$ 3,407,141	$ 280,559	9.0%
OVERTIME	9,780	16,938	8,564	16,000	7,436	86.8%
FRINGE BENEFITS	129	120	196	200	4	2.0%
ONGOING MAINTENANCE	81,982	170,133	130,000	142,200	12,200	9.4%
TRAINING & MEETINGS	16,202	6,463	22,000	22,000	-	0.0%
PROFESSIONAL SERVICES	1,432,258	1,509,225	1,509,768	1,545,727	35,959	2.4%
OTHER MATERIALS	311,952	155,409	211,330	290,550	79,220	37.5%
OTHER SERVICES	119,966	119,255	114,074	123,074	9,000	7.9%
TOTAL	**$ 4,837,375**	**$ 4,985,180**	**$ 5,122,514**	**$ 5,546,892**	**$ 424,378**	**8.3%**

The **Environmental Quality Department** (EnQual) has two units: EnQual-Water and EnQual-Wastewater. EnQual-Water manages compliance with the reporting requirements of the Massachusetts Department of Environmental Protection Drinking Water Regulations, as well as conducts and oversees the drinking water quality monitoring program. Activities include maintaining the Contaminant Monitoring System (CMS) and a mobile (S::CAN) unit for as-needed sampling and monitoring in customer communities and quick deployment where needed to obtain real-time water quality data, including emergency response situations. The group also conducts an algae monitoring program, responds to customer complaints, and reviews system water quality data. EnQual-Wastewater manages compliance with the reporting requirements of MWRA's National Pollutant Discharge Elimination System (NPDES) permits. The group must submit permit reports to state and federal regulators, the science advisory panel and its subcommittees, and post many of these reports on its Harbor and Bay web pages. EnQual-Wastewater manages environmental data and monitors and reports on the quality of sewage influent and effluent; Boston Harbor and its tributary rivers, and Massachusetts Bay. EnQual-Wastewater also keeps current with upcoming and draft regulations, providing comments and evaluating potential impacts on MWRA operations.

FY19 Final Current Expense Budget ENVIRONMENTAL QUALITY by Program						
PROGRAM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
ENQUAL	$ 2,770,877	$ 2,918,265	$ 2,990,576	$ 3,053,612	$ 63,036	2.1%
WATER QUALITY ASSURANCE	2,066,498	2,066,915	2,131,938	2,493,280	361,342	16.9%
TOTAL	**$ 4,837,375**	**$ 4,985,180**	**$ 5,122,514**	**$ 5,546,892**	**$ 424,378**	**8.3%**

The Environmental Quality Department has significant responsibility for the following MWRA goals included in the Board-approved FY16-FY20 Five-Year Strategic Business Plan.

FY19 Goals and Initiatives:

I. Drinking Water Quality and System Performance

- ***Goal #1 – Compliance with Regulatory Requirement and Public Health Standards***: Maintain drinking water quality to protect public health, and continue to ensure that MWRA water meets all applicable regulations.
- ***Goal #2 –Effective Public Communications:*** Continue to report on and communicate water quality information to our customers and public officials.
    - As part of an Authority Consequence Management Plan, operate a comprehensive CMS, a network of water quality monitoring stations; maintain a mobile water quality trailer to provide field monitoring capabilities; and oversee a quality monitoring program for emergency standby reservoirs, including a plan to ensure readiness of emergency supplies.
        - Develop and train staff on emergency response procedures and contaminant response procedures for reservoir or distribution system events. Also train staff in Incident Command System protocols, procedures, and practices in the case of an emergency event.
        - Collect samples and evaluate data to develop a program for the emergency standby reservoirs, including management goals to ensure these are ready, from a water quality perspective, in the event of an emergency.
    - Respond to the Massachusetts Department of Environmental Protection (MADEP) and the U.S. Environmental Protection Agency (EPA) regarding regulatory changes for drinking water quality monitoring.
        - Monitor algal toxins in drinking water and adapt the program to the rapidly changing regulatory landscape of this issue.
        - Develop and train staff in preparation for EPA's Unregulated Contaminant Monitoring Rule 4 program which commences in 2018 and continues into 2020.
    - Continue to work with UMass Amherst, under an Interdepartmental Service Agreement, to assess potential impacts from a chemical spill, and how treatment can mitigate those effects.
    - Participate in training programs with communities to support response to drinking water quality complaints, improve compliance with regulations, and support overall coordination.

II. Wastewater Quality and System Performance

- ***Goal #4 – Compliance with Regulatory Requirements***: Meet or surpass environmental compliance standards at both MWRA treatment facilities and throughout the wastewater collection system.
    - In FY18, EnQual-Wastewater will procure services for the next three years of permit-required Massachusetts Bay water quality modeling.
    - To respond to public interest and improve timeliness of accurate reporting, finish development of a system to more quickly gather accurate sanitary sewer overflow location and volume data.
    - Continue to implement the reporting requirements of DITP and Clinton NPDES permits. Respond to EPA and MADEP NPDES regulatory changes and program initiatives, including electronic reporting requirements and any new permits.
    - Continue to produce scientific reports and manage environmental monitoring data; make data and analysis available in-house, in public presentations, online, and in designed print

products; keep up-to-date data available for presentations to regulators, environmental groups and other interested parties.

- ***Goal #5 – Regulatory Changes:*** Continue to initiate plans and studies to prepare for regulatory changes; identify opportunities to refine monitoring requirements; and improve effluent quality.
  - Prepare materials and meet with EPA and MADEP staff regarding an updated DITP NPDES Permit.
  - Report against the new, stricter limits in the 2017 Clinton NPDES Permit.
  - Explore modification of the Ambient Monitoring Plan to better address issues of emerging concern involving potential impacts of the outfall. This involves working with regulators and the Outfall Monitoring Science Advisory Panel (OMSAP) to review the goals and monitoring questions underlying the Ambient Monitoring Plan, which is required by DITP's NPDES permit.
  - Continue to develop and manage a monitoring program for Boston Harbor and its tributary rivers, and Massachusetts Bay, reflecting permit and variance requirements, relevant current concerns, and long-term interests of the area.
  - Provide on-call staffing for off-hour required regulatory notifications and public right-to-know reporting on sanitary sewer overflows and Combined Sewer Overflow (CSO) facility activations.
- ***Goal # 6 – CSO Plan Compliance:*** Complete all Combined Sewer Overflow milestones by 2020 and demonstrate that the CSO Plan meets its performance objectives at all outfalls. Ensure compliance with CSO NPDES permit requirements.
  - Provide technical and scientific support for the development of the EPA-required CSO Program performance assessment.
  - Working with staff from Planning, Engineering and Construction, and Operations, continue work on the CSO performance assessment, including ongoing water quality monitoring. This is the next phase of the Long-Term CSO Control Plan, which calls for three years of assessment before 2020 to ensure that the goals of the plan are met.
  - To meet future water quality assessments expected in the CSO variance areas of the Mystic and Charles Rivers, develop an intensified level of data analysis bringing together disparate datasets such as localized rainfall data, metered and modeled CSO discharges, and receiving water quality.

EnQual Water / Wastewater FY19 Initiatives

EnQual-Water

- Continue to develop an improved database for monitoring CMS maintenance activities.
- Continue to more fully utilize Maximo and complete individual component tracking

EnQual-Wastewater

- Continued support for CSO Assessment project, working with consultant to analyze water quality data.
- Continue to review regulatory changes e.g. water quality standards and criteria. Work will continue with senior management, regulators, and other stakeholders to review and revise permit-required Ambient Monitoring.
- Implement the next permit-required modeling contract.
- Produce another pamphlet on one of several important topics including but not limited to DITP plant performance, nutrients in MWRA effluent and Massachusetts Bay.

FY18 Accomplishments:

EnQual-Water

- In February EnQual–Water submitted a Mass. Homeland Security grant application for $62,000 to procure a monitor to detect radiological contamination in drinking water. Awards are expected to be announced by fall 2018.
- Continued to upgrade and expand contaminant monitoring and detection capabilities to provide both routine water quality information and contaminant detection.
- Continued to participate in the Unregulated Contaminant Rule 4 sampling program. This three-year program will continue into FY20.
- Continued to develop and refine equipment maintenance plans and life cycle projection for newly expanded monitoring equipment inventory with a total estimated value of over $2 million.
- Completed all MADEP-required drinking water sampling and reporting Assistance Events:
  Community Support: 10
  In-House Support: 15
  Complaint Investigations: 3
- Coordinated with Reservoir Operations group regarding actions to control cyanobacteria growth in Chestnut Hill Reservoir. SOLitude was hired to perform two low dose alum treatments (in May and June).

EnQual-Wastewater

- EnQual-Wastewater published 9 technical reports during FY18.
- Applied for a new permit for the Carroll Water Treatment Plant maintenance discharges, before the permit application deadline of October 2017. A separate Notice of Intent/NPDES permit application for the Wachusett Aqueduct Pump Station geothermal system was applied for and received (non contact cooling water system).
- Met all NPDES reporting requirements including routine monthly, quarterly, and annual reports, and required notifications under Part II of permits, Contingency Plan, DITP blending order.
- Conducted all ambient monitoring sampling required under the DITP NPDES permit, collecting and analyzing seawater, sediment and flounder samples and analyzing them for evidence of outfall-related environmental degradation (no degradation was observed).
- Reviewed and analyzed impacts on MWRA of several new DEP and EPA regulations; these included legislation relating to reporting CSO discharges and regulations relating to the definition of Waters of the United States, water quality criteria for aluminum, and proposed label changes for copper algaecide. Reviewed and commented on Springfield draft permit, on issues that relate to possible future Deer Island permit.
- Began working with AECOM on the CSO Water Quality Assessment under Contract 7572. Also met with DEP to discuss the general plan for the assessment.

Budget Highlights:

The FY19 Budget is $5.5 million, an increase of $424,000 or 8.3%, from the FY18 Budget.

- $3.4 million for **Wages and Salaries**, and increase of $281,000 or 9.0%, due to wage increases associated with collective bargaining agreements and the addition of two more FTE than in FY18, from 31.6 FTEs to 33.8 FTEs. The budget will fund a Lab Supervisor which will allow the Department to reduce contract lab staff, and a Data Management Coordinator. The budget also includes $63,000 for interns to assist with data analysis, water quality sampling, and technical support and $40,000 for stand-by pay associated with wet weather and water quality monitoring programs.

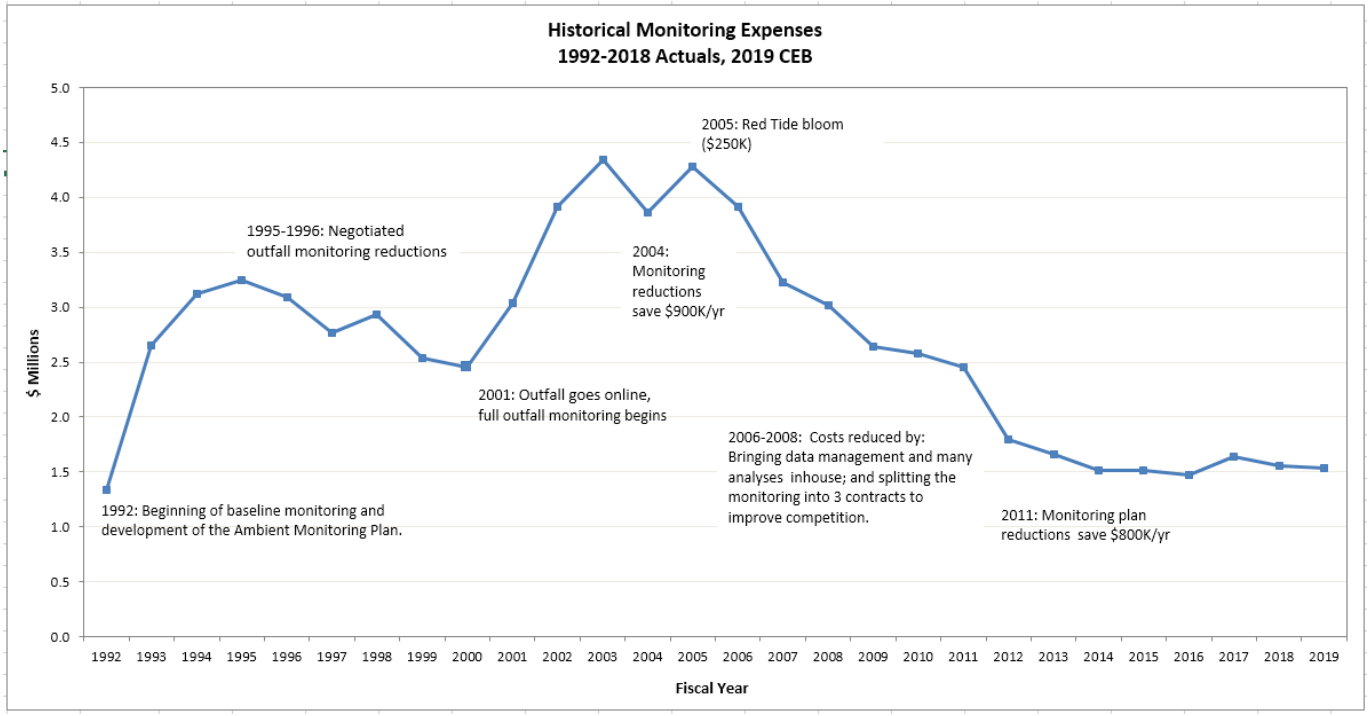
- $16,000 for **Overtime** to support wet weather and water quality monitoring programs, an increase of $7,000 or 86.8%. The increase in overtime is based on actual expenditures in FY17.

- $142,200 for **Maintenance**, an increase of $12,000 or 9.4% from the FY18 Budget primarily due to the addition of equipment at MWRA's reservoirs for water quality contamination monitoring. MWRA is establishing maintenance schedules for this relatively new equipment inventory valued at over $2 million. This is lower than the actual of $170,100 spent in FY17, because of the refurbishing of Wachusett Buoy #2 in FY17.

- $22,000 for **Training and Meetings** to cover staff participation in professional conferences and technical and software training, which is level funded with the FY18 Budget.

- $1.5 million for **Professional Services**, an increase of $36,000 or 2.4% over the FY18 Budget. The budget supports laboratory testing for MWRA's Harbor and Outfall Monitoring (HOM) Program, including Cape Cod Bay monitoring and $300,000 for contracts for the following activities which are co-funded through cost-sharing or cost-reduction agreements:
  - UMass Amherst special study on railroad contaminants in the Wachusett Reservoir;
  - University of Maine's buoy off Cape Ann; instruments measuring algae and other water-quality indicators;
  - Bays Eutrophication Model maintenance;
  - UMass Boston study of satellite imaging to measure water quality.

  The FY19 Final Budget continues to reflect approximately $840,000 in annual savings due to the reduction in scope of HOM monitoring that took place in 2011 through 2013 based on favorable findings of many years of monitoring data and regulatory approval (see figure below).



- $291,000 for **Other Materials** which is a $79,000 or 37.5% increase from the FY18 Budget primarily to support the Contaminant Monitoring System and reservoir monitoring. The budget includes $55,000 for lab and testing supplies for reservoir water quality monitoring. It also includes $227,000 for equipment to continue funding parts and replacements for the drinking water CMS and S::CAN drinking water analysis equipment. The equipment budget also funds two pilot projects: monitoring for radiological contamination in water ($50,000) and using a Telog system as backup to the CMS system ($10,000).

- $123,000 for **Other Services,** an increase of $9,000 or 7.9% from the FY18 Budget. The major items in the budget include $90,000 for Verizon fees associated with operating the CMS at the reservoirs and $11,000 for memberships in EnQual–Wastewater, primarily for MWRA's sustaining membership in the Northeastern Regional Association of Coastal Ocean Observing Systems (**NERACOOS**) which operates coastal monitoring buoys including the one in the Gulf of Maine used for MWRA monitoring.

Norumbega Covered Storage Tank

LABORATORY SERVICES

The core function of the **Department of Laboratory Services** is to provide high quality and responsive laboratory services to MWRA's water and wastewater treatment programs, including the Watershed Division of the Department of Conservation and Recreation (DCR) and the MWRA member water and wastewater communities. This involves timely and cost-effective laboratory tests to meet the strict testing guidelines required by all regulatory programs and permits, including the Safe Drinking Water Act (SDWA), Clean Water Act, and National Pollutant Discharge Elimination System (NPDES) permits. The Department supports these functions at five locations: Chelsea, Southborough, Quabbin, the Central Laboratory at the Deer Island, and Clinton. Testing supports drinking water transmission and treatment processes, wastewater operations and process control at Deer Island and Clinton, NPDES compliance, Massachusetts Bay outfall monitoring, Toxic Reduction and Control, and wastewater residuals. The Department also conducts the Boston Harbor monitoring program that involves regular sampling for nutrients, bacteria, and water quality parameters throughout Boston Harbor. Laboratory staff track and analyze results for submission to the Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP).

Most MWRA laboratory testing is done in-house. Certain highly specialized or low volume tests are outsourced, such as tests for cryptosporidium, giardia and radioactivity.

FY19 Final Current Expense Budget
LABORATORY SERVICES

LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 4,483,094	$ 4,648,580	$ 4,904,294	$ 4,964,816	$ 60,522	1.2%
OVERTIME	107,890	92,156	119,200	119,200	-	0.0%
FRINGE BENEFITS	1,099	904	1,100	1,100	-	0.0%
UTILITIES	23,842	31,547	24,500	30,000	5,500	22.4%
ONGOING MAINTENANCE	291,458	295,010	491,405	349,005	(142,400)	-29.0%
TRAINING & MEETINGS	2,909	2,835	7,000	7,000	-	0.0%
PROFESSIONAL SERVICES	162,123	156,424	253,000	305,185	52,185	20.6%
OTHER MATERIALS	1,104,836	1,075,985	1,096,109	1,096,209	100	0.0%
OTHER SERVICES	86,886	83,416	92,150	94,395	2,245	2.4%
TOTAL	**$ 6,264,136**	**$ 6,386,856**	**$ 6,988,758**	**$ 6,966,910**	**$ (21,848)**	**-0.3%**

FY19 Goals and Initiatives:

The Laboratory Services Department has significant responsibility for the following MWRA goals included in the Board-approved FY16 - FY20 Five-Year Strategic Business Plan.

I. Drinking Water Quality and System Performance

- ***Goal #1 – Compliance with Regulatory Requirement and Public Health Standards***: Maintain drinking water quality to protect public health, and continue to ensure that MWRA water meets all applicable regulations.
- ***Goal #3 – Technical Assistance for Water Communities:*** Assist member communities to improve local water distribution systems through ongoing financial, technical, and operational support programs to maximize long-term water quality benefits.

II. Wastewater Quality and System Performance

- ***Goal #4 – Compliance with Regulatory Requirements***: Meet or surpass environmental compliance standards at both MWRA treatment facilities and throughout the wastewater collection system.
    - CSO Assessment: Continue to perform weekend CSO receiving water sampling during/after significant wet weather events.
    - UCMR4: Provide EPA-required testing and analysis via contract laboratories to comply with the Unregulated Contaminant Monitoring Rule 4 (UCMR4).
    - Decision support: Provide as-needed laboratory services to support assessment of regulatory and operational issues.

In addition, the Laboratory Services Department provides support functions for other MWRA Departments. FY19 Major Initiatives in support of those functions include:

- **Ethics Training** – Continue laboratory ethics and data integrity training to meet MassDEP laboratory certification requirements.

- **NPDES Permits** – Provide laboratory data and consulting to wastewater operations and EnQual on Deer Island draft or final NPDES permits.

- **Electronic Laboratory Notebook (ELN)** – Implement ELN software on wireless tablet computers at three of the water quality laboratory locations.

- **Laboratory Renovation Projects** – One major project is expected to start in FY19. Replacement of the HVAC system and fume hoods at the Central Lab is in the final design phase with construction expected to commence in FY19.

- **School Lead Testing Initiative** – This special project began in FY16 and is continuing into FY19. Thousands of samples have been tested.

    - **Key Department Performance Measurements and Accomplishments:**

Indicator	FY15 Actual	FY16 Actual	FY17 Actual	FY18 Actual	FY19 Goal
Total # of Tests Performed	256,284	265,346	314,270	265,877	270,000
Percent On-Time Results	97.0	97.0	91.3	94.7%	95%
Average Turnaround Time (days)	5.91	5.72	6.58	5.95 days	9 days
Percent Quality Control Within Specifications	98.1	98.2	97.6	97.7%	97%
Special Project: School Lead Project # Samples	N/A	N/A	12,390	3,219	As-needed

FY18 Accomplishments:

- CSO Assessment: Performed CSO receiving water sampling in the Charles and Mystic Rivers during/after significant wet weather events to document the recovery of the rivers after rain events. MWRA will use this information as part of the court-ordered CSO Assessment.

- Decision support: Provided testing and analytical services to support assessment of numerous issues including School Lead testing, the next DITP NPDES Permit, the new Clinton NPDES Permit, testing for an algae bloom in the Chestnut Hills Emergency Distribution Reservoir, and red tide testing in Massachusetts Bay.

- DLS continued to provide high-quality, responsive, timely, and cost-effective laboratory services to our clients in compliance with strict testing guidelines required by all regulatory programs and permits, including the Safe Drinking Water Act and NPDES permits. DLS's performance versus key goals in FY18 was as follows:

- 94.7% of lab results were completed on time versus goal of > 95%.

- Turnaround time averaged 6.0 days versus goal of < 9 days

- 97.7% of quality control tests were within specifications versus goal > 97%

- School Lead Testing Initiative – In FY18, this project was on-going, but has been at a lower level than in FY17. We completed 3,219 samples in FY18, down from 12,390 in FY17.

Budget Highlights:

The FY19 Budget is $7.0 million, a decrease of $21,000 or 0.3% compared to the FY18 Budget.

- $5.0 million for **Wages and Salaries**, an increase of $61,000 or 1.2% compared to the FY18 Budget primarily for wage increases associated with collective bargaining agreements.

- $119,000 for **Overtime**, level funded with FY18, to cover work associated with peak periods, emergencies, and special initiatives.

- $30,000 for **Utilities**, an increase of $6,000 or 22.5%, which covers the purchase of gases and cryogenic liquids used for various laboratory instruments. The increase is due to adding a second ICP-MS instrument. The budget for FY19 in based on historical spending levels.

- $349,000 for **Ongoing Maintenance**, a decrease of $142,000 or 29.0% from the FY18 Budget. The decrease is due to a decision to pursue Central Lab bench replacements as a CIP project with assistance from DITP Engineering. This budget includes Lab equipment maintenance, repairs, and calibration for major lab instruments and once a year preventive maintenance for all ovens, water baths, incubators, refrigerators, freezers, chillers, meters, sensors, microscopes, thermometers, and balances.

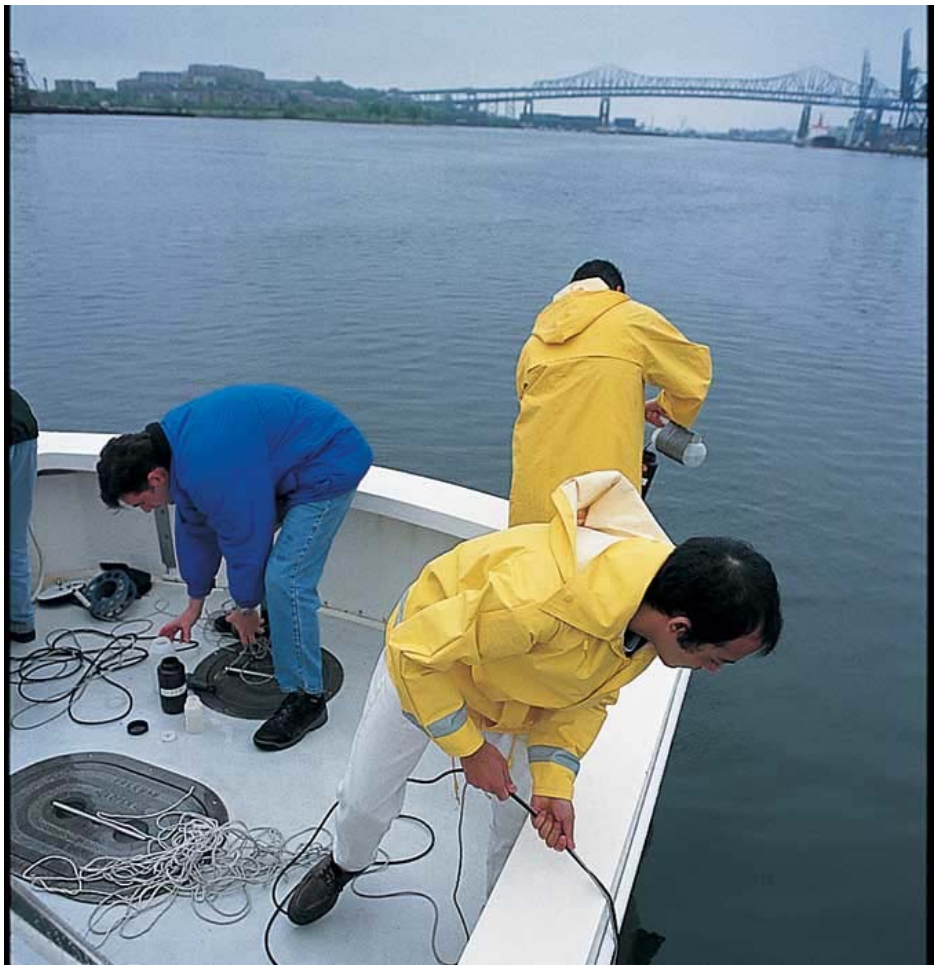
- $7,000 for **Training and Meetings**, level funded with the FY18 Budget. This line funds attendance at the EPA Environmental Laboratory Advisory Board (ELAB) Forum on Lab Accreditation/National Environmental Monitoring Conference and the Association of Public Health Laboratories (APHL)

annual meeting. Also included are several new conferences and seminars to keep staff technically knowledgeable.

- $305,000 for **Professional Services**, an increase of $52,000 or 20.6% compared to the FY18 Budget. The increase is due to the second year of the UCMR4 water quality project, which began in FY18. The cost of UCMR4 is based on actual contract lab bid prices. Funding in this line item supports laboratory and testing analysis services the department uses to contract out a variety of complex and/or low volume tests. Outside laboratories are used for emergencies, second opinions, capacity constraints, and unavailability of specialized equipment or economic justification.

- $1.1 million for **Other Materials**, level funded with the FY18 Budget. This budget line includes funding for laboratory supplies and laboratory instrument replacements.

- $94,000 for **Other Services**, an increase of $2,000 or 2.4% compared to FY18. This covers boat rental service on an as-needed basis, boat dockage for two boats, removal of hazardous waste, and courier service for shipping samples between laboratories. The increase reflects actual costs for permit fees, including new DEP certification for Clinton Lab.



Boston Harbor Sampling

PLANNING

The **Planning Department** provides regulatory, public policy, and public health advocacy for MWRA's drinking water and wastewater programs. It provides decision support on planning, policy and operations matters, using a range of technical and analytical tools. Staff administers financial assistance programs to improve the infrastructure of member communities and to promote water conservation, and manages the wholesale meter data necessary for water and sewer billing. The Department integrates staff efforts and coordinates MWRA activities related to system and capital planning, infrastructure renewal, and watershed management (in conjunction with the Commonwealth's Department of Conservation and Recreation; DCR); strategic business planning; agency-wide performance measurement; and industry research.

FY19 Final Current Expense Budget PLANNING						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 2,896,378	$ 2,988,153	$ 3,080,294	$ 3,174,013	$ 93,719	3.0%
OVERTIME	1,451	-	-	-	-	-
FRINGE BENEFITS	5	-	50	50	-	0.0%
ONGOING MAINTENANCE	41,304	190,211	173,201	373,200	199,999	115.5%
TRAINING & MEETINGS	11,555	9,454	9,500	14,000	4,500	47.4%
PROFESSIONAL SERVICES	4,677	2,100	800	800	-	0.0%
OTHER MATERIALS	155,073	159,039	163,625	163,250	(375)	-0.2%
OTHER SERVICES	204,662	185,628	282,924	272,924	(10,000)	-3.5%
TOTAL	**$ 3,315,104**	**$ 3,534,585**	**$ 3,710,394**	**$ 3,998,237**	**$ 287,843**	**7.8%**

The Department has two units, the **Planning Unit** and the **Meter Data Unit**.

FY19 Final Current Expense Budget PLANNING by Program						
PROGRAM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
PLANNING	$ 2,404,530	$ 2,495,290	$ 2,644,307	$ 2,737,887	$ 93,580	3.5%
METER DATA	910,574	1,039,295	1,066,087	1,260,350	194,263	18.2%
TOTAL	**$ 3,315,104**	**$ 3,534,585**	**$ 3,710,394**	**$ 3,998,237**	**$ 287,843**	**7.8%**

The functions of the **Planning Unit** are:

- **Mapping, Modeling, and Data Analysis** – Technical staff develops and maintains the Geographic Information Systems (GIS) for the water and wastewater systems, including integration of field and engineering records into GIS for access by planning, engineering, and operations staff. Provides demand analysis and forecasting of water and wastewater flows for master planning and system operations; models reservoir operations and performs drought forecasting and planning; evaluates system expansion requests; and develops and maintains water and wastewater system models in support of master planning, system operations, and optimization. Staff assists in developing agency wide summaries of energy and greenhouse gas emission efficiency improvements.

- **System Planning and Renewal** – Staff with expertise in engineering and planning are responsible for water and wastewater system master planning, infrastructure needs assessment, and capital

project development. This work is done in coordination with staff across MWRA. Key work includes:

- Reviews water and wastewater system expansion requests, water supply agreements, and emergency water withdrawal requests;
- Assists with project siting decisions, environmental reviews, and permitting, including assessing impacts on MWRA facilities from other agencies' projects;
- Develops strategies for reducing long-term emergency risks; and
- Prepares plans for mitigating the risk of a range of hazards (i.e. climate change and sea level rise) on MWRA facilities and systems.

- **Regulatory and Policy Matters** – Staff work with various regulatory entities to advocate for cost-effective rule setting that protects the environment and promotes public health. Senior staff members also actively work with industry associations and other groups with agendas consistent with MWRA's to advance regulations that make environmental and economic sense. Senior staff conduct strategic policy research on a broad range of topics. Staff also conduct public health research and reports on potable water quality through production of the annual regulatory-required Consumer Confidence Report (CCR). Staff also coordinates with DCR on watershed protection initiatives. In conjunction with the Office of the Executive Director and Public Affairs, this unit serves as the Operations Division's lead on regulatory and policy matters potentially affecting MWRA's water and wastewater systems.

- **Community Support Program** – This unit oversees and manages MWRA's financial assistance and technical community support programs. Staff are responsible for the development, implementation, and reporting on Inflow/Infiltration (I/I) reduction policy; oversight of and reporting on MWRA leak detection and demand management programs; and reporting on the portions of MWRA's NPDES permit related to demand management and flow limitation activities. Staff administers community assistance programs including sewer Inflow/Infiltration financial and technical assistance, water pipeline rehabilitation financial assistance, lead service line replacement funding, water distribution systems technical assistance, water leak detection technical assistance, and water conservation programs. The functions of the **Meter Data Unit** are:

- **Meter Data** – This unit collects meter data for operational and revenue generating purposes from the water and wastewater systems. Staff maintains 179 revenue water meters, 26 master water meters, 187 revenue wastewater meters and 35 other wastewater monitoring sites. The water metering data collection and analysis supports Rates and Budget Department's allocation of MWRA rate revenue requirements.

FY19 Goals and Initiatives:

I. **Drinking Water Quality and System Performance** – The Planning Department's purview and function supports all the goals associated with this strategic priority. FY19 priorities include:
- Provide cost-effective and timely mapping, modeling, data analysis, and regulatory review services to support decision-making on operational, planning, environmental, and regulatory issues.
- Continue coordination with member communities for distribution of grants and loans for local sewer, water, and lead service line removal projects.
- Continue outreach and coordination to schools and child care facilities on lead testing and remediation. Evaluate and revise as necessary the joint MWRA/MDPH lead testing project for homes with children with elevated blood lead levels.
- Continue to advocate for responsible and reasonable revised drinking water regulations.
- Distribute the federally-required annual water quality report, the Consumer Confidence Report (CCR), to all households.

II. **Wastewater Quality and System Performance** – The Planning Department's purview and function supports all the goals associated with this strategic priority. FY19 priorities include:
- Provide cost-effective and timely mapping, modeling, data analysis, and regulatory review services to support decision-making on operational, planning, environmental, and regulatory issues
- Oversee implementation of the wastewater meter upgrade project.
- Update the MWRA wastewater maps, and produce an updated atlas. Participate in efforts to update selected water record plans and real estate records.
- Comply with I/I mapping and planning requirements in state environmental regulations and NPDES permits; submit full I/I control plan for MWRA collection system by 3/1/19.
- Continue coordination with member communities for distribution of grants and loans for local sewer, water, and lead service line removal projects.

III. **Infrastructure Management and Resilience**
- Maintain and enhance water and wastewater system assets over the long term at the lowest possible life cycle cost and acceptable risk, consistent with customer, community, and regulatory support service levels. FY19 priorities include:
    - Update the wastewater metering system and evaluate new technologies to ensure continued accurate flow accounting and to enhance its usefulness for operational and evaluation purposes by adding additional monitoring locations.
    - Complete the update of the Water and Wastewater Master Plan with extensive coordination across all MWRA Departments. Present to advisory committees and the Board of Directors
    - Provide cost-effective and timely mapping, modeling, data analysis, and regulatory review services to support decision-making on planning, regulatory, and infrastructure issues.

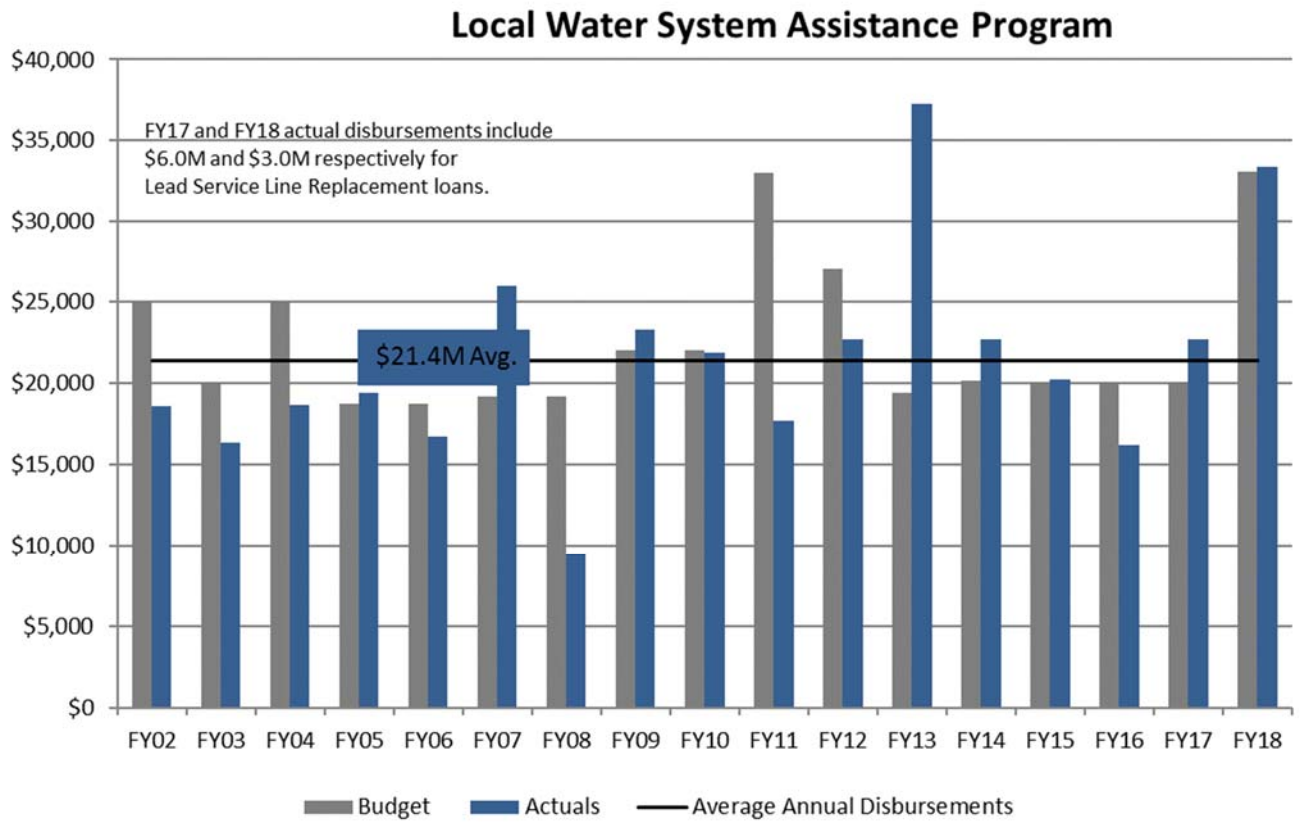
V. **Environmental Sustainability** – The Planning Department's purview and function supports all the goals associated with this strategic priority by directing and managing MWRA's planning processes including water system expansion planning, and climate change adaptation and mitigation efforts. FY19 priorities include:

- Provide cost-effective and timely mapping, modeling, data analysis, and regulatory review services to support decision-making on sustainability issues.
- Update reports on greenhouse gas tracking and energy efficiency efforts and maintain a sustainability section on MWRA's web page.

- Work with state and regional organizations and academic institutions to identify how MWRA's existing long-term environmental data sets can be used to help assess and project impacts of climate change.
- Continue to provide assistance to communities seeking admission to the MWRA's water system or seeking emergency withdrawals.

FY18 Accomplishments:

- Distributed $33.9 million in Local Water System Assistance Program interest-free loans including $3 million under the Lead Service Line Replacement Loan Program. In total, MWRA has distributed $375 million in loans to fund 407 local projects with participation from 42 of the 45 eligible water communities. Since 1998, 530 miles of local water main have been replaced or cleaned and lined (about 8% of the regional system) via projects funded by MWRA's financial assistance.

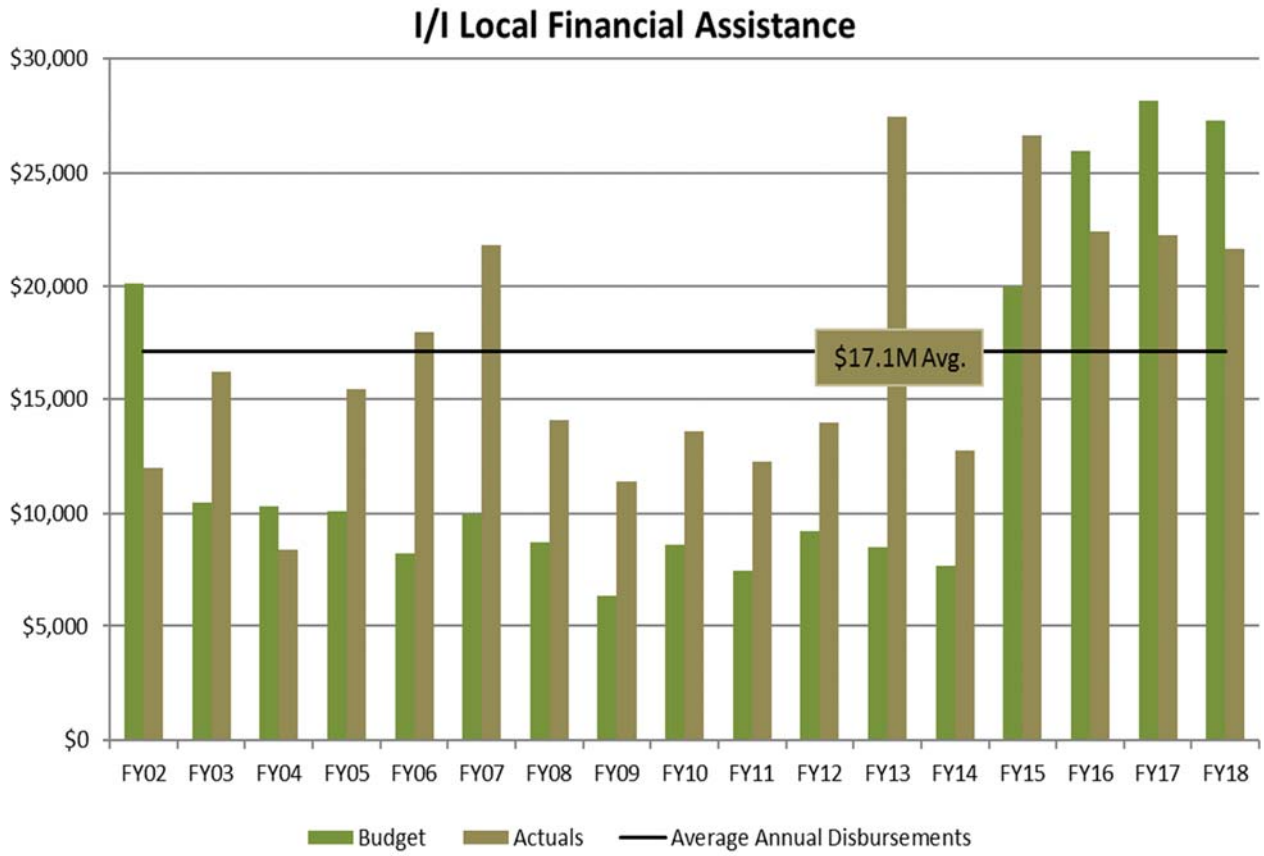


- Assisted six municipalities in the MWRA's service area with leak detection (via task-order contracts) in their systems in FY18 and worked with Procurement on RFQ/P the for next three-year community leak detection services task-order contracts (spring 2018 – spring 2021).

- Conducted additional outreach to communities on sampling in schools for lead in conjunction with second round of DEP's Technical Assistance program. Continued laboratory assistance to MDPH for water sampling for families with children with elevated blood lead levels.

- Planning Department staff have continued to be active in state and federal review of the Lead and Copper Rule as well as other proposed rule changes.

- Distributed $21.7 million in grants and interest-free loans to member sewer communities for Inflow and Infiltration reduction. In total, MWRA has distributed a total of $354 million in grants and loans to fund 545 local projects with participation from all 43 municipalities.



- Provided computer modeling support for major capital programs including WASM3 rehabilitation and multiple pipelines, operational planning for pipeline shutdowns, and metro tunnels emergency planning on the water side; and ongoing support for wastewater projects including the CSO evaluation.

- Updated MWRA's Greenhouse Gas Inventory, and initiated tracking of vehicle greenhouse gas production. Continued coordination with local and regional climate change adaptation planning efforts.

- Staff continued to represent MWRA on the Mystic River Steering Committee (facilitated by EPA and Mystic River Watershed Association staff). This group brings together representatives from many varied interests including regulators, state and regional government entities, academics, local environmental and planning organizations, municipalities, businesses, environmental justice advocates and others to share information and to help facilitate communication and project coordination on watershed wide concerns. Improved water quality and access to the River and improved open space opportunities are key objectives.

- Staff participated in the Technical Advisory Committee for the Mystic River Watershed TMDL alternative which hopes to develop strategies to mitigate phosphorous loadings in the Mystic River.

- Continued to coordinate with Water and Wastewater staff to develop the 2018 Master Plans for completion later this year.

- Provided information regarding the Water System Admission process to the following communities: Ashland, North Reading, Walpole, Brockton, Sharon, Burlington, Union Point, Peabody.

- Developed an updated MWRA Wastewater Collection System Operation and Maintenance Plan (including required I/I Control Plan) for submittal to EPA and MassDEP under DITP and Clinton NPDES permit and other state requirements.

- Commenced and made progress on the Wastewater Meter Upgrade project. Completed work plan, safety plan and other start up activities. Performed field investigations for unmetered areas.

Budget Highlights:

- The FY19 Budget is $4.0 million, an increase of $288,000 or 7.8% as compared to the FY18 Budget.

- $3.2 million for **Wages and Salaries**, an increase of $94,000 or 3.0% as compared to the FY18 Budget primarily for wage increases associated with collective bargaining agreements. The FY19 Budget also includes $23,000 for summer interns to assist with analyses in the areas of climate change, benchmarking, and other projects.

- $373,000 for **Ongoing Maintenance**, an increase of $200,000 or 115.5% from the FY18 Budget for costs associated with upgrading the Telog modems to 5G technology. Ongoing Maintenance also funds maintenance required to repair and calibrate water and wastewater meters.

- $14,000 for **Training and Meetings**, an increase of $5,000 or 47.4% as compared to the FY18 Budget. The budget covers participation in training and conferences primarily focused on water quality regulations and geographic information systems. The increase is due to efforts to develop staff by having them attend national conferences and other trainings.

- $800 for **Professional Services** costs associated with the translation of the Consumer Confidence Report (CCR) and also programming of the GIS user interface. This is level funded with the FY18 Budget.

- $163,000 for **Other Materials** which includes funding of $140,000 for postage and mailing of the CCR, $15,000 for water conservation kits, $5,000 for mapping supplies, $2,000 for office supplies, $1,000 for vehicle expenses, and $750 for work clothes for employees in the Meter Data section. This budget is level funded with the FY18 Budget.

- $273,000 for **Other Services**, a decrease of $10,000 or 3.5% as compared to the FY18 Budget. This reduction is primarily due to the transitioning to one service for all telephone lines for meters in the Meter Data Unit. The FY19 Budget is based on actual expenditures for FY17. Other Services also includes $100,000 for printing of the CCR, $10,000 for printing water conservation and other informational brochures, and $2,000 for Memberships and Dues for department employees.

Law Division
Budget

LAW DIVISION

Law

Legal Reviews
Litigation
Court Order Compliance
Environmental Regulation

The Law Division provides legal counsel to the Board of Directors, the Executive Director, and staff on compliance with federal and state laws, regulations, court cases, and administrative orders. Staff also handle and provide assistance with respect to litigation matters, real estate matters, labor/employment issues, procurement, and construction issues. The General Counsel interprets the MWRA Enabling Act and provides advice on conflict of interest and Code of Conduct issues. Division attorneys monitor the work of outside counsel when it is necessary to retain such services.

Law Division staff, though usually representing MWRA in a defensive posture, also work with Operations Division staff to effectuate cost recovery claims for design errors and omissions. In addition, the Law Division assists in the early resolution of contractor and vendor claims prior to litigation so as to resolve them as favorably and early as possible thereby reducing or eliminating litigation costs and interest payable.

FY19 Final Current Expense Budget LAW DIVISION						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 1,647,085	$ 1,605,405	$ 1,763,935	$ 1,612,751	$ (151,184)	-8.6%
OVERTIME	4,945	381	-	-	-	-
TRAINING & MEETINGS	1,622	1,360	1,000	4,000	3,000	300.0%
PROFESSIONAL SERVICES	366,643	647,904	508,000	408,000	(100,000)	-19.7%
OTHER MATERIALS	4,160	3,402	5,984	5,984	-	0.0%
OTHER SERVICES	20,479	26,740	27,947	29,059	1,112	4.0%
TOTAL	**$ 2,044,933**	**$ 2,285,192**	**$ 2,306,866**	**$ 2,059,794**	**$ (247,072)**	**-10.7%**

FY19 Goals and Initiatives:

The Law Division supports the MWRA's achievement of all five key strategic priorities set forth in the FY16-FY20 Five-Year Strategic Business Plan. For FY19, the Division has identified the following goals and initiatives:

- Provide timely and cost effective resolution of legal disputes involving MWRA, through litigation or alternative means of dispute resolution.
- Provide high quality legal services to support the business and operational needs of MWRA in the areas of real estate, labor and employment, regulatory compliance, litigation, construction, and business law.
- Advocate for MWRA interests in new and developing regulatory issues.

- Provide legal support, and retain outside counsel as necessary to address co-permittee concerns with the anticipated new Deer Island NPDES permit.
- Exhaust all opportunities to shift costs of legal representation to insurers and indemnitors and to litigate insurance coverage disputes as they arise, all in the interest of cost savings.

FY18 Year-End Accomplishments:

- Successfully defended against party defendant's attempt to obtain court approval for issuance of subpoena to non-party MWRA in pending criminal proceeding arising out of deaths caused by unprotected trench excavation incident in Boston (Atlantic Drain) dating back to October 2016.

- United States v. NSTAR Electric Company, MWRA, et al., U.S.D.Ct. C.A. No. 16-11470-RGS. On July 17, 2018 a stipulation, previously signed by all parties to the Army Corps of Engineers lawsuit re: enforcement of a 1989 Corps permit allowing for the installation of the existing cross harbor cable, was entered by Judge Stearns as an Order of the court staying all proceedings and claims pending compliance by NSTAR and its subsidiary Harbor Electric Energy Company with their obligations to acquire and install a new cross harbor cable connection to Deer Island by December 31, 2019.

Budget Highlights:

The FY19 Final Budget is $2.1 million, a decrease of $248,000 or 10.8%, as compared to the FY18 Budget. The decrease to the Law budget occurs in two line items:

- $1.6 million for **Wages and Salaries**, a decrease of $152,000 or 8.6%, as compared to the FY18 Budget, mainly due to two fewer FTEs. The FY19 Final Budget includes funding for 13.5 FTEs.

LAW DEPARTMENT	FY18 FTEs	FY19 FTEs
LAW	15.5	13.5
TOTAL	**15.5**	**13.5**

- $408,000 for **Professional Services**, a decrease of $100,000 or 19.7%, as compared to the FY18 Budget, mainly as a result of a revaluation of the cost and likelihood of services associated with potential Deer Island NPDES permit issues.

Brutsch Water Treatment Facility

CVA System Map

Administration Division
Budget

ADMINISTRATION DIVISION

Administration

Director's Office
Facilities Management
Fleet Services
Human Resources
Management Information Systems
Procurement
Real Property and Environmental Management

The **Administration Division** is responsible for managing the support service functions of the Authority. Its departments support daily operations and maintenance and ensure the implementation of the Authority's long-term goals and strategies.

FY19 Final Current Expense Budget ADMINISTRATION						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 12,346,277	$ 12,683,592	$ 13,653,153	$ 13,938,517	$ 285,364	2.1%
OVERTIME	99,637	75,293	81,971	80,471	(1,500)	-1.8%
FRINGE BENEFITS	19,047,398	19,517,582	20,919,160	21,083,974	164,814	0.8%
WORKERS' COMPENSATION	2,350,369	2,565,336	2,322,980	2,422,609	99,629	4.3%
UTILITIES	116,670	112,324	119,237	108,116	(11,121)	-9.3%
ONGOING MAINTENANCE	4,123,573	4,900,600	4,705,896	4,462,031	(243,865)	-5.2%
TRAINING & MEETINGS	183,744	151,419	166,541	168,991	2,450	1.5%
PROFESSIONAL SERVICES	696,524	965,687	1,302,153	1,459,827	157,674	12.1%
OTHER MATERIALS	1,089,384	742,494	1,652,301	2,228,156	575,855	34.9%
OTHER SERVICES	3,163,677	3,252,899	3,503,208	3,531,281	28,073	0.8%
TOTAL	**$ 43,217,254**	**$ 44,967,226**	**$ 48,426,600**	**$ 49,483,974**	**$ 1,057,374**	**2.2%**

The Administration Division is comprised of seven departments: Director's Office; Facilities Management; Fleet Services; Human Resources; Management Information Systems (MIS); Procurement; and Real Property and Environmental Management.

FY19 Final Current Expense Budget ADMINISTRATION by Department						
DEPARTMENT	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
ADMIN DIRECTOR'S OFFICE	153,254	221,367	234,148	241,915	7,767	3.3%
HUMAN RESOURCES	23,638,247	24,193,801	25,597,088	25,986,061	388,973	1.5%
MIS	10,345,574	11,991,006	13,015,038	13,538,622	523,584	4.0%
FACILITIES MANAGEMENT	2,321,285	2,254,449	2,511,723	2,504,877	(6,846)	-0.3%
FLEET SERVICES	1,620,246	1,623,341	2,171,000	2,194,595	23,595	1.1%
PROCUREMENT	4,470,678	4,066,779	4,097,546	4,267,629	170,083	4.2%
REAL PROPERTY / ENVIR MGMT	667,971	616,484	800,058	750,275	(49,783)	-6.2%
TOTAL	**$ 43,217,254**	**$ 44,967,226**	**$ 48,426,600**	**$ 49,483,974**	**$ 1,057,374**	**2.2%**

FY19 Goals and Initiatives:

Consistent with MWRA's Board approved FY16-FY20 Five-Year Strategic Business Plan, the Administration Division's FY19 goals are as follows:

IV. Finance and Management

- ***Goal #13 – Maintain an Excellent Workforce:***
  - Continue to expand on MWRA's in-house job shadowing and career development training programs in anticipation of critical retirements over the next several years.
  - Continue to provide programs and procedures to ensure employee safety.
  - Provide effective training necessary for employees to obtain and maintain required licenses and certifications to ensure a highly skilled workforce.
  - Continue MWRA's efforts to develop new recruitment and retention strategies to foster diversity, including traditionally underrepresented categories, people with disabilities and veterans.
- ***Goal #14 – Leverage Information Technology to Improve Organizational Effectiveness:***
  - Deliver Information Technology (IT) services and solutions efficiently and effectively.
  - Provide IT solutions to streamline work processes while ensuring the security and integrity of MWRA data by leveraging the use of existing or emerging technologies.
  - Maintain current technology hardware, software, and network infrastructure.
  - Maintain a secure technology environment.
- ***Goal # 12 – Ensure Cost-Effective Operational and Resource Management:***
  - Maintain and expand MWRA-wide recycling efforts.
  - Work with staff MWRA-wide to improve specifications development and documentation.

V. Environmental Sustainability

- ***Goal #15 – Continue to maximize energy efficiency of MWRA operations, renewable energy production, and revenue generation opportunities using MWRA's energy assets:***
  - Look for opportunities to incorporate energy efficiency measures into specifications for new construction, rehabilitation, and equipment replacement.

In addition to these initiatives, the Administrative Division will begin procurement of the first phase of design services for the Tunnels Redundancy Project.

FY18 Year-End Accomplishments:

- Upgraded and standardized the version of Microsoft Office Applications to Office 2016. This initiative started in March 2017 and was completed in December 2017.

- Once again, earned rating as one of the largest bio-fuel users by the Massachusetts Alternative Fuel Coalition (MAFC) for its use of bio-diesel to fuel diesel powered vehicles/equipment with bio-diesel.

- Reduced potential future MWRA exposure on Workers Compensation cases by 295k through claim management and continued utilization of light duty work.

- Competitively sold Class I, Class II and Solar Renewable Energy Portfolio Standard (RPS) certificates resulting in FY18 revenues of $771,000.

- Awarded major Capital Improvement Program Contracts including engineering services for the design of the Northern Intermediate High Water Pipeline Section 89 Replacement, one of the interim water redundancy improvements, construction of the Chestnut Hill Gatehouse Repair, construction of the DITP Gravity Thickener Rehabilitation, and construction of the Southern Extra High Pipeline Section 111.

Budget Highlights:

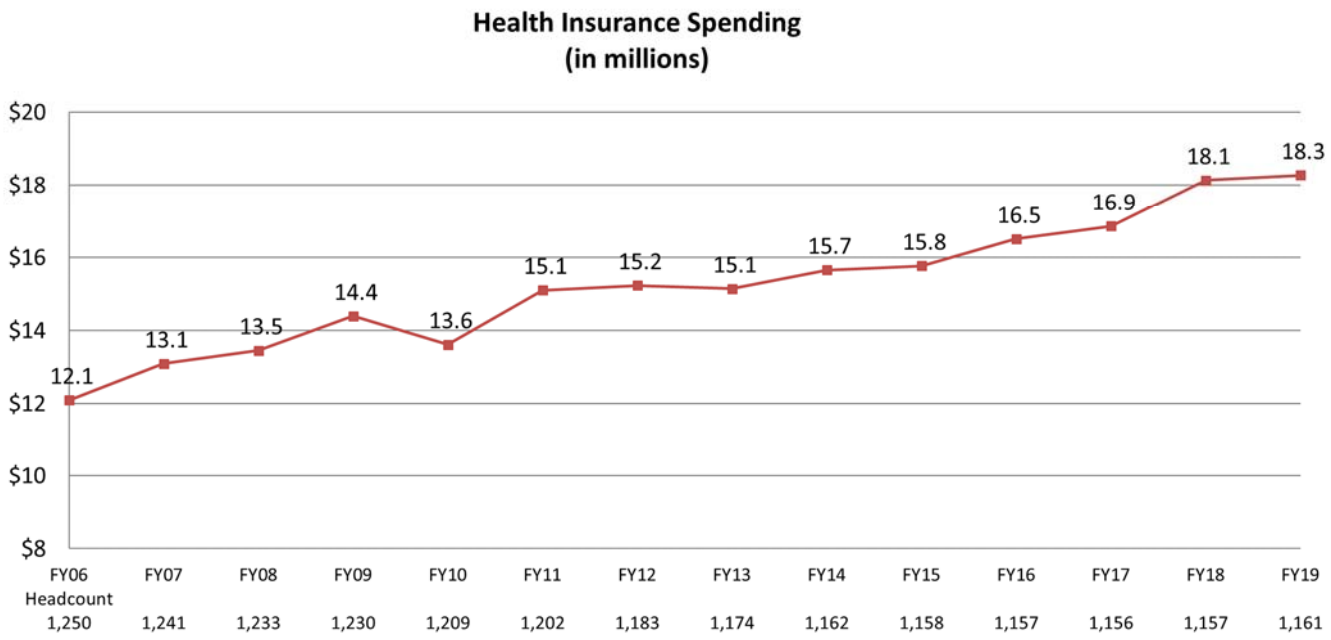
The FY19 Final Budget is $49.5 million, an increase of $1.1 million or 2.2% as compared to the FY18 Budget.

- $13.9 million for **Wages and Salaries**, an increase of $285,000 or 2.1% as compared to the FY18 Budget. The increase is primarily for wage increases associated with collective bargaining agreements. The FY19 Final Budget funds 140.6 FTEs, 1.4 FTEs less than the FY18 Budget. The net decrease of 1.4 FTEs is the result of 2.4 positions in MIS not being funded in FY19, offset by funding one additional position in Procurement.

- $80,000 for **Overtime,** a decrease of $2,000 or 1.8% as compared to the FY18 Budget. The decrease is in Procurement based on recent actual overtime costs.

FTEs ADMINISTRATION by Department		
DEPARTMENT	FY18 FTEs	FY19 FTEs
ADMIN DIR OFFICE	2	2
HUMAN RESOURCES	16.9	16.9
MIS	57.4	55
FACILITIES MGMT	7	7
FLEET SERVICES	12	12
PROCUREMENT	42.8	43.8
REAL PROP/ENVIR MGMT	4	4
TOTAL	**142.0**	**140.6**

- $21.1 million for **Fringe Benefits,** an increase of $165,000 or 0.8% as compared to the FY18 Budget, reflecting the continuing rise in health insurance costs.



- $2.4 million for **Workers' Compensation**, $100,000 higher than the FY18 Budget. Actual spending for Worker's Compensation can vary he Workers' Compensation budget is based on the average of the last three years of actual spending.

Worker's Compensation	FY11 Actuals	FY12 Actuals	FY13 Actuals	FY14 Actuals	FY15 Actuals	FY16 Actuals	FY17 Actual	FY18 Budget	3 Year Average *
Compensation Payments	1,547,206	730,690	1,075,548	1,233,115	1,285,809	1,257,703	1,771,557	1,258,876	1,438,356
Medical Payments	605,252	787,449	940,096	863,294	851,280	850,170	470,072	854,915	723,841
Other	75,717	82,587	99,058	215,038	170,034	242,496	323,706	209,189	245,412
Total Worker's Comp.	**2,228,175**	**1,600,726**	**2,114,702**	**2,311,447**	**2,307,123**	**2,350,369**	**2,565,335**	**2,322,980**	**2,407,609**

* Three year average of FY15 Actuals, FY16 Actuals, FY17 Actuals

- $108,000 for **Utilities,** a decrease of $11,000 or 9.3%, as compared to the FY18 Budget, to reflect removal of the erroneous double billing of an electrical meter that was combined with another existing electrical meter at the Charlestown Navy Yard Headquarters.

- $4.5 million for **Maintenance**, a decrease of $244,000 or 5.2% as compared to the FY18 Budget, due to decreased computer software licenses and upgrades and computer hardware from the completion of the Microsoft Office 2016 upgrade, offset by an increase in maintenance costs for computer software and equipment coming off warranty.

- $169,000 for **Training and Meetings,** an increase of $2,000 or 1.5% as compared to the FY18 Budget.

- $1.5 million for **Professional Services,** an increase of $158,000 or 12.1% as compared to the FY18 Budget, primarily for inclusion of funding for a study associated with a recent change to the Massachusetts Equal Pay Act (MEPA) and contractual increases for MIS services.

- $2.2 million for **Other Materials**, an increase of $576,000 or 34.9% as compared to the FY18 Budget, primarily for computer hardware replacement in FY19.

- $3.5 million for **Other Services**, an increase of $28,000 or 0.8% as compared to the FY18 Budget. Included in the Other Services funding is $1.9 million for Space/Lease Rentals for the Charlestown Navy Yard Headquarters and Marlborough warehouse, $1.2 million for Telecommunications expenses for all facilities, and MIS and security data lines.

Wachusett Aqueduct Pump Station Surge Structure

Calendar Year 2017 Water Quality Results

COMPOUND	UNITS	(MCL) HIGHEST LEVEL ALLOWED	(WE FOUND) DETECTED LEVEL-AVERAGE	RANGE OF DETECTIONS	(MCLG) IDEAL GOAL	VIOLATION	HOW IT GETS IN THE WATER
Barium	ppm	2	0.009	0.007-0.01	2	No	Common mineral in nature
Mono-Chloramine	ppm	4-MRDL	2.14	0-3.85	4-MRDLG	No	Water disinfectant
Fluoride	ppm	4	0.70	0.31-0.78	4	No	Additive for dental health
Nitrate^	ppm	10	0.05	0.04-0.05	10	No	Atmospheric deposition
Nitrite^	ppm	1	0.006	ND-0.006	1	No	Byproduct of water disinfection
Total Trihalomethanes	ppb	80	15	4.2-25.2	ns	No	Byproduct of water disinfection
Haloacetic Acids-5	ppb	60	12.8	1.5-24	ns	No	Byproduct of water disinfection
Total Coliform	%	5%	0.8% (Aug)	ND-0.8%	0	No	Naturally present in environment
Combined Radium*	pCi/L	5	1.76	ND-1.76	0	No	Erosion of natural mineral deposits

DIRECTOR'S OFFICE

The **Administration Division Director's Office** is responsible for the centralized support functions of procurement, human resources, management information systems, fleet services, facilities management, and real property and environmental management. Additionally, the Director's Office ensures compliance with applicable statutes, regulations, Authority policies and procedures, and contract terms.

FY19 Final Current Expense Budget ADMINISTRATION DIVISION DIRECTOR'S OFFICE						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 152,939	$ 221,053	$ 233,824	$ 241,591	$ 7,767	3.3%
OTHER MATERIALS	-	28			-	0.0%
OTHER SERVICES	315	286	324	324	-	0.0%
TOTAL	**$ 153,254**	**$ 221,367**	**$ 234,148**	**$ 241,915**	**$ 7,767**	**3.3%**

The Director's Office core functions are to:

- Manage and coordinate the Authority's support service functions.
- Guide and coordinate division activities to support MWRA's goals and objectives.
- Continuously improve processes and performance for greater efficiency.

Budget Highlights:

The FY19 Final Budget is $242,000, an increase of $8,000 or 3.3% as compared to the FY18 Budget.

- $234,000 for **Wages and Salaries**, an increase of $8,000 or 3.3% as compared to the FY18 Budget, primarily for wage increases associated with collective bargaining agreements. The FY19 Final Budget supports two FTEs, the same as the FY18 Budget.

FACILITIES MANAGEMENT

The **Facilities Management Department** provides a range of support services to MWRA staff located at the MWRA Headquarters in the Charlestown Navy Yard (CNY).

Facilities Management is responsible for coordinating site management activities at CNY. Staff institute maintenance procedures, respond to facilities requests from MWRA staff, coordinate workspace planning, provide office furnishings, and develop and implement appropriate measures to ensure the safety of MWRA staff and protect and preserve MWRA assets.

In addition, staff provides administrative and office support services that facilitate the efficient use of MWRA resources. These responsibilities include providing and managing the motor pools at both the Chelsea Facility and CNY, general office equipment repairs, transportation, mail, and courier services. Staff coordinates MWRA parking programs and corporate Massachusetts Bay Transportation Authority (MBTA) pass programs.

FY19 Final Current Expense Budget FACILITIES MANAGEMENT						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 442,395	$ 443,092	$ 461,311	$ 465,143	$ 3,832	0.8%
OVERTIME	37,842	26,136	40,000	40,000	$ -	0.0%
FRINGE BENEFITS	-	-	-	-	$ -	-
UTILITIES	113,608	110,684	116,737	105,616	$ (11,121)	-9.5%
ONGOING MAINTENANCE	15,242	9,513	18,600	18,600	$ -	0.0%
PROFESSIONAL SERVICES	-	-	4,000	4,000	$ -	0.0%
OTHER MATERIALS	65,810	4,064	67,250	67,250	$ -	0.0%
OTHER SERVICES	1,646,387	1,660,959	1,803,825	1,804,268	$ 443	0.0%
TOTAL	**$ 2,321,285**	**$ 2,254,449**	**$ 2,511,723**	**$ 2,504,877**	**$ (6,846)**	**-0.3%**

FY19 Goals and Initiatives:

IV. Finance and Management

- ***Goal #12 – Ensure Cost-Effective Operational and Resource Management:***
  - Assure a safe and well-maintained working environment for all MWRA staff at CNY and appropriate space for staff by coordinating workspace planning, design, and furniture acquisitions.
  - Continue to coordinate with the CNY landlord on building improvements.

FY18 Year-End Accomplishments:

- Implemented facility improvements as provided in our lease agreement for CNY headquarters. FY17 included the replacement of half the windows in MWRA leased space. The remaining half was completed in FY18.

- In conjunction with MIS, continued to look at ways to maximize efficiency of day-to-day office equipment such as printers, copiers, and facsimile machines.

Budget Highlights:

The FY19 Final Budget is $2.5 million, a decrease of $7,000 or 0.3% as compared to the FY18 Budget.

- $465,000 for **Wages and Salaries**, an increase of $4,000 or 0.8% as compared to the FY18 Budget, primarily for wage increases associated with collective bargaining agreements, offset by salary savings as a result of staff retiring and positions being filled at a lower salary. The FY19 Final Budget funds seven FTEs, the same as the FY18 Budget.

- $106,000 for **Utilities**, a decrease of $11,000 or 9.5% as compared to the FY18 Budget. After review of electricity bills, MWRA determined that one meter for which it was being charged had been combined with another meter and should be removed. The result is a lower budget for electricity usage at the CNY headquarters.

- $1.8 million for **Other Services**, level funded with the FY18 Budget. The main item under this line item is the lease for CNY Headquarters building. The lease includes base rent for the facility, real estate taxes, common area maintenance and operating costs.

FLEET SERVICES

The **Fleet Services Department** manages and maintains MWRA's motor vehicle and equipment fleet. The goal of the Fleet Services Department is to maintain MWRA's vehicle and equipment fleet to minimize downtime and extend the life of the assets. Fleet Services also manages the Chelsea fuel facility, the gas card program and the development and processing of specifications for new vehicles and equipment.

FY19 Final Current Expense Budget FLEET SERVICES						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 768,510	$ 816,824	$ 900,492	$ 931,260	$ 30,768	3.4%
OVERTIME	3,918	8,294	11,000	11,000	-	0.0%
FRINGE BENEFITS	28	158	250	250	-	0.0%
UTILITIES	3,062	1,640	2,500	2,500	-	0.0%
ONGOING MAINTENANCE	552,102	509,727	701,500	682,500	(19,000)	-2.7%
TRAINING & MEETINGS	17,500	670	-	-	-	-
OTHER MATERIALS	273,609	284,519	553,659	565,402	11,743	2.1%
OTHER SERVICES	1,516	1,508	1,600	1,684	84	5.3%
TOTAL	**$ 1,620,246**	**$ 1,623,341**	**$ 2,171,000**	**$ 2,194,595**	**$ 23,595**	**1.1%**

FY19 Goals and Initiatives:

IV. Finance and Management

- ***Goal #12 – Ensure Cost-Effective Operational and Resource Management:***
  - Continue to cost effectively maintain the Authority's fleet of vehicles and equipment.
- ***Goal #13 – Maintain a Safe Workforce:***
  - Purchase vehicles with additional safety lighting to enhance driver/vehicle visibility.

V. Environmental Sustainability

- ***Goal #15 – Continue to maximize energy efficiency of MWRA operations, renewable energy production, and revenue generation opportunities using MWRA's energy assets:***
  - Integrate more alternative fueled vehicles into the Authority's fleet. Continue to install idle reduction devices in all Authority vehicles to comply with state and federal regulations.

FY18 Year-End Accomplishments:

- Developed specifications for new replacement vehicles and equipment the majority of which will utilize alternative fuel, consistent with the Authority's goal of purchasing environmentally friendly products.

- MWRA was once again rated as one of the largest bio-fuel users by the Massachusetts Alternative Fuel Coalition (MAFC) for its use of bio-diesel to fuel diesel powered vehicles/equipment with bio-diesel.

- Prepared documentation for the surplus sale of vehicles and equipment and worked with the Procurement Department for the auction and disposal of the vehicles/equipment.

- Installed rear reflective tape (Chevrons) on all Authority vehicles.

- Purchased two electric vehicles in FY18.

- Continued to work with MIS and Operations staff on the implementation of the Maximo asset management software system upgrade which includes a transportation module specifically designed for a fleet environment.

Budget Highlights:

The FY19 Final Budget is $2.2 million, an increase of $24,000 or 1.1% as compared to the FY18 Budget.

- $931,000 for **Wages & Salaries**, an increase of $31,000 or 3.4% as compared to the FY18 Budget, primarily for wage increases associated with collective bargaining agreements. The FY19 Final Budget funds 12 FTEs, the same as the FY18 Budget.

- $682,000 for **Ongoing** Maintenance, a decrease of $19,000 or 2.7% as compared to the FY18 Budget, based on historical spending.

- $565,000 for **Other Materials**, an increase of $12,000 or 2.1% as compared to the FY18 Budget, for vehicle fuel. As a reminder, the increase in the Other Materials budget in FY18 reflected the consolidation of the EZ Pass transponders under Fleet Services. The FY19 Final Budget includes funds for vehicle/equipment fueling which is based on historical fuel usage and current pricing. Fleet Services procures bulk fuels from state contracts while continuing to meet all governmental alternative fuel directives. It should be noted that the volatility of fuel pricing could impact this line item.

Gillis Water Pump Station

HUMAN RESOURCES

The **Human Resources Department** is responsible for the overall management of MWRA employees. The Department enables employees to contribute successfully to MWRA's goals and objectives through effective recruitment, labor management, training, and employee benefits management.

FY19 Final Current Expense Budget HUMAN RESOURCES						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 1,686,914	$ 1,575,520	$ 1,668,055	$ 1,695,129	$ 27,074	1.6%
OVERTIME	17	-	-	-	-	-
FRINGE BENEFITS	19,046,856	19,516,579	20,918,610	21,083,424	164,814	0.8%
WORKERS' COMPENSATION	2,350,369	2,565,336	2,322,980	2,422,609	99,629	4.3%
TRAINING & MEETINGS	9,583	7,723	3,263	3,713	450	13.8%
PROFESSIONAL SERVICES	516,642	502,008	642,153	745,827	103,674	16.1%
OTHER MATERIALS	18,264	17,846	25,820	24,225	(1,595)	-6.2%
OTHER SERVICES	9,603	8,789	16,207	11,133	(5,074)	-31.3%
TOTAL	**$ 23,638,247**	**$ 24,193,801**	**$ 25,597,088**	**$ 25,986,061**	**$ 388,973**	**1.5%**

The Human Resources Department is comprised of 3 units:

- The **Employment, Compensation, Benefits and HRIS Unit** coordinates and oversees all external recruitment and selection activities including hiring, lateral transfers, and promotions to meet the business needs of MWRA; develops and coordinates MWRA compensation and benefits strategies and programs; and ensures the proper processing and recording of personnel actions. The compensation unit also ensures that all MWRA employees possess the necessary licenses and certifications required for their positions.

- The **Labor Relations Unit** is responsible for fulfilling MWRA's collective bargaining and contract administration obligations under Massachusetts' public sector collective bargaining law, and its workers' compensation responsibilities.

- The **Training Unit** develops, coordinates, delivers, and evaluates MWRA technical and professional development training programs and other programs designed to improve employee knowledge, skills, productivity, and the quality of workplace interaction and safety.

In addition, the Human Resources Department includes the Centralized Fringe Benefits cost center, which carries the budget for fringe benefits for all MWRA employees as well as for mandatory payments for unemployment expenses and Medicare.

FY19 Final Current Expense Budget HUMAN RESOURCES by Unit						
UNIT	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
EMPLOYEE/COMP/BEN	$ 733,798	$ 774,787	$ 1,061,018	$ 1,174,096	$ 113,078	10.7%
LABOR RELATIONS	878,031	646,701	543,432	538,255	(5,177)	-1.0%
TRAINING	567,779	641,054	705,785	712,676	6,891	1.0%
CENTRALIZED FRINGE BENEFITS	21,458,638	22,131,260	23,286,853	23,561,033	274,180	1.2%
TOTAL	**$ 23,638,247**	**$ 24,193,801**	**$ 25,597,088**	**$ 25,986,061**	**$ 388,973**	**1.5%**

FY19 Goals & Initiatives:

IV. Finance & Management

- ***Goal #13 - Maintain an Excellent Workforce:***
  - Attract and retain a qualified high-performance workforce, hire and promote qualified minority, female, and veteran employees, and offer a competitive total compensation package (salary and benefits) to all employees.
  - Maintain effective relationships with the unions representing the MWRA workforce while protecting and enhancing management flexibility. Ensure that collective bargaining objectives are met, support MWRA initiatives by designing and implementing appropriate labor relations strategies, and create an environment that fosters safety consciousness and productive work.
  - Provide effective training necessary for employees to obtain and maintain required licenses and certification to ensure a highly skilled workforce.
  - Continue to expand on MWRA's in-house job shadowing and career development training programs.
  - Continue to provide training programs with a focus on professional and leadership development.
  - Continue to aggressively manage MWRA Workers Comp claims to mitigate future exposure.

FY18 Accomplishments:

- Continue to support the agency's efforts in implementing succession planning activities in of an increase in retirements over the next several years.

- Continue to offer supervisory, professional, and career development training programs necessary to support succession planning initiatives.

- Continue to offer additional Leadership Development Programs.

- Implemented online onboarding program to continue to streamline the hiring process.

- Developed additional specialized recruitment sources to attract women, minorities, and veterans for difficult to fill positions including expanding social network recruiting capabilities.

- Provided training and guidance to MWRA managers in the areas of leave management, sick time use, time and attendance issues, and matters of employee conduct issues.

- Reduced future MWRA exposure on Workers Comp cases by 295k through claim management and continued utilization of light duty work.

- Investigated complaints of violations of MWRA policies and Code of Conduct as necessary.

- Negotiated a new 3-year contract for Workers Compensation Legal Services starting April 1, 2018.

- Completed negotiations with the outstanding Collective Bargaining Agreement.

- Completed a variety of professional and technical training to MWRA employees including Confined Space Entry, Hoisting License Mandatory Refresher Training, Wastewater & Water Operator Exam Prep, Wastewater OJT, OSHA 10-Hour Construction Safety, OSHA 8-Hour Annual Refresher, Supervisory Development, Business Writing, Vehicle Maintenance, Workzone Safety, Lockout/Tagout, Electrical Safety, CPR First Aid, Advance First Aid, Underground Storage Tanks, Chemistry for Water & Wastewater, Harassment Prevention, Keolis & MBTA Track Safety, and Sampling for NPDES Permits & Process Control. Recertified 60 employees as Flaggers.

- Completed the procurement process for Occupational Health / Medical services and implement a 3-year contract.

Budget Highlights:

The FY19 Final Budget is $26.0 million, an increase of $389,000 or 1.5% as compared to the FY18 Budget.

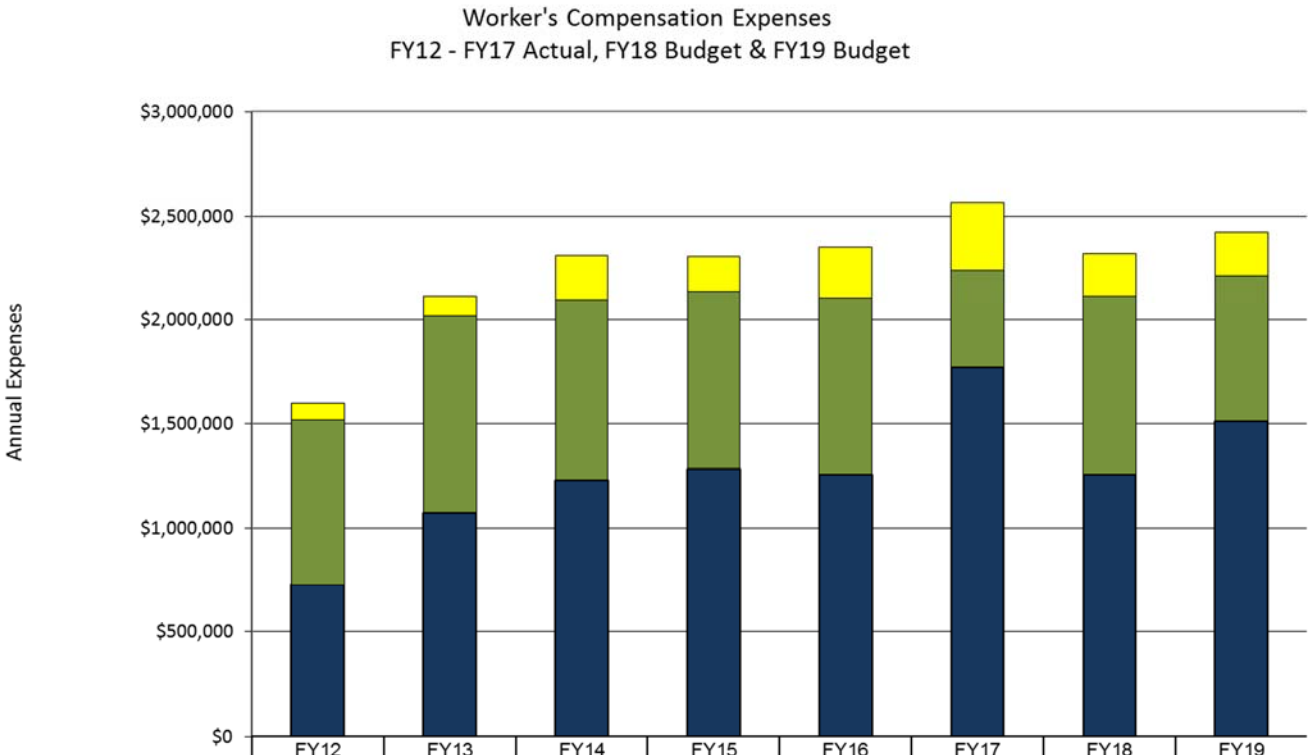
- $1.7 million for **Wages and Salaries**, an increase of $27,000 or 1.6%, as compared to the FY18 Budget, primarily for wage increases associated with collective bargaining agreements. The FY19 Final Budget includes funding for 17 FTEs, the same as the FY18 Budget.

- $21.1 million for **Fringe Benefits**, an increase of $165,000 or 0.8%, as compared to the FY18 Budget, mainly for increases in health insurance costs. The FY19 Final Budget includes $18.3 million for health insurance, $1.4 million for Medicare, $1.2 million for dental insurance, $150,000 for unemployment insurance, and $70,000 for tuition reimbursement.

MWRA Fringe Benefits			
Line Item	**FY18 Budget**	**FY19 Budget**	**Difference**
Overtime Meals	$ 79,365	$ 90,147	$ 10,782
Health Insurance	18,139,271	18,278,017	138,746
Dental Insurance	1,160,985	1,160,145	(840)
Unemployment Insurance	160,744	150,000	(10,744)
Medicare	1,387,610	1,425,262	37,652
Tuition Reimbursement	70,000	70,000	-
Total Fringe Benefits	**$ 20,997,975**	**$ 21,173,571**	**$ 175,596**

- $2.4 million for **Workers' Compensation**, an increase of $100,000 or 4.3%, as compared to the FY18 Budget, based on historical spending. The Workers' Compensation expenses can be difficult to predict and the budget is based on an average of the prior three years of expenditures. Below is a graph showing

actual expenditures beginning in FY12 and budgeted amount FY19. The Human Resources Department is responsible for the management of this program and the coordination with the third-party administrator and legal counsel.



	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Actual	FY17 Actual	FY18 Budget	FY19 Budget
Other	82,587	99,058	215,038	170,034	242,496	323,706	209,189	210,412
Medical Payments	787,449	940,096	863,294	851,280	850,170	470,072	854,915	698,841
Compensation Payments	730,690	1,075,548	1,233,115	1,285,809	1,257,703	1,771,557	1,258,876	1,513,356
Total Worker's Comp.	$1,600,726	$2,114,702	$2,311,447	$2,307,123	$2,350,369	$2,565,335	$2,322,980	$2,422,609

- $746,000 for **Professional Services**, an increase of $104,000 or 16.1% as compared to the FY18 Budget. The increase is for inclusion of funding for a study associated with a recent change to the Massachusetts Equal Pay Act (MEPA). The FY19 Proposed Budget includes $358,000 for Professional Development and Technical Training, $145,000 for Workers' Compensation Claims Administration and Legal Services, $95,000 $56,000 for Arbitrators and Arbitration Expenses, $55,000 for Medical Evaluation Services, $24,000 for the Employee Assistance Program, and $13,000 for Specialized Investigation Services.

MANAGEMENT INFORMATION SYSTEMS

The **MIS Department** provides MWRA with the secure information processing services necessary to carry out the Authority's mission. Applications in use range from financial to operational, and enhance MWRA's ability to access data and improve internal controls, reporting, and management performance. In addition to computing and telephone systems, the department also provides library and records management services. The MIS department supports the 1,155 MWRA users, including those at the Charlestown Navy Yard (CNY), Chelsea Facility, Deer Island Wastewater Treatment Plant, Southborough Facility, Carroll Water Treatment Plant, and other remote sites.

FY19 Final Current Expense Budget MANAGEMENT INFORMATION SYSTEM						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 5,210,551	$ 5,603,390	$ 6,049,426	$ 6,078,870	$ 29,444	0.5%
OVERTIME	46,020	20,371	6,000	6,000	-	0.0%
FRINGE BENEFITS	200	344	-	-	-	-
ONGOING MAINTENANCE	2,918,266	4,087,070	3,985,797	3,760,932	(224,865)	-5.6%
TRAINING & MEETINGS	152,823	132,826	146,528	146,528	-	0.0%
PROFESSIONAL SERVICES	164,162	463,713	650,000	700,000	50,000	7.7%
OTHER MATERIALS	594,297	299,222	868,222	1,431,154	562,932	64.8%
OTHER SERVICES	1,259,255	1,384,070	1,309,065	1,415,138	106,073	8.1%
TOTAL	**$ 10,345,574**	**$ 11,991,006**	**$ 13,015,038**	**$ 13,538,622**	**$ 523,584**	**4.0%**

FY19 Goals and Initiatives:

IV. Finance and Management

- ***Goal #14 – Leverage Information Technology to Improve Organizational Effectiveness:***
  - Deliver Information Technology (IT) services and solutions efficiently and effectively.
  - Provide IT solutions to streamline work processes by leveraging the use of existing or emerging technologies.
  - Maintain current technology hardware, software, and network infrastructures.
  - Maintain a secure technological environment by ensuring the confidentiality, availability, and integrity of MWRA data.

The MIS Department divides the IT services that it provides into 4 programs. A description of each program and the specific initiatives in each are detailed below:

<u>Information Technology Management Program</u>

This program is intended to improve the Information Technology (IT) organization and the oversight processes for selecting, implementing and operating IT solutions throughout the MWRA.

- Complete the transition of application responsibilities to the appropriate team, which matches the new organizational structure for the department.

Application Improvement Program Initiatives

This program, along with associated projects, continue MWRA's efforts to update and enhance a wide range of applications to improve efficiencies of business processes and effectiveness of the staff while ensuring the availability and integrity of the MWRA's data resources.

Administration and Finance Initiatives

- ***Electronic Document Management***: A component of ECM with a "proof of concept" being conducted with the Chelsea Creek Headworks Rehabilitation Project for e-Construction. e-Construction is a paperless engineering and construction administration delivery process. This process includes electronic submission of all engineering and construction documentation by all stakeholders, electronic document routing/approvals (e-signature), and digital management of all construction documentation in a secure environment allowing distribution to all project stakeholders through mobile devices. Based on this proof of concept, the MWRA is pursuing the identification of a Content Management System that will support e-Construction processes as well as design (e-Engineering) processes including corresponding Procurement and Contract Management processes (e-Procurement) and corresponding Document and Records Management processes. The identified content management system will improve communication and make design and construction management practices more efficient, replace the legacy document/records management system and provide the infrastructure for expansion and integrations with other systems.

- ***e-Discovery:*** A component of Enterprise Content Management (ECM) is underway with the pilot design and implementation of both the Enterprise Vault system archiving application and the Clearwell identification and collection electronic discovery application. The Enterprise Vault system is being evaluated for archiving and related deduplication processes allowing for more efficient data storage and backups. The Clearwell application is being evaluated for supporting public records requests and litigation document/discovery for documents across the Authority. This is underway and will be completed in FY19.

- ***Enterprise Resource Planning (ERP) System Upgrades:*** Upgrades are scheduled for the e-procurement applications infrastructure, Mobile Supply Chain Management (MSCM), and the Business Software, Inc. Tax Factory application. In addition, a comprehensive ERP version upgrade will be undertaken. Upgrades include selecting new Time Entry system, planning and replacement of the existing hardware platform to support future upgrade of ERP version, and choosing a replacement for the Budgeting Application to ensure vendor support.

Compliance Management Initiatives

- ***Electronic Laboratory Notebook (ELN)****:* Complete any remaining tasks for the ELN Improvement Project. Then begin ELN - Phase II Wastewater. Phase II will replace paper logbooks used the Department of Lab Services Wastewater Labs. Phase II is a significantly larger project than Phase I. This project will begin in FY19 and span multiple years.

- ***PIMS CROMERR Compliance**:* CROMERR provides the legal framework for electronic reporting under EPA's regulatory programs. MWRA must modify its Pretreatment Information Management System (PIMS) to transition to electronic reporting. Efforts are underway to modify code to implement PIMS CromERR compliance in the development environment. The efforts will require changes to be implemented by IPS as well as EPA on their respective applications.

- ***HOML Upgrade:*** Re-platform the Harbor Outfall Monitoring and Loading database.

- ***Oracle Discoverer Migration to SAP Business Objects (BO):*** Oracle is planning to end support of the Oracle Discoverer product and MWRA wants to switch to SAP BO technology. SAP BO has technical/functional capabilities similar to Oracle Discoverer. There are approximately 500-600 Oracle Discoverer Workbooks that need to be migrated to SAP BO. The upgrade of Oracle Discoverer was started in March 2018. A consultant specialized in Oracle discoverer has been hired to work with MIS Staff. Migration to SAP BO will happen after this effort to upgrade is completed.

- ***Contaminate Warning System (CWS) Upgrades:*** Upgrade the CWS operating systems, add new data storage and visualization capabilities and provide a more reliable collection and storage system. After stabilization work is completed, discussions for upgrade of existing DHI/CWS will be taken up or will transition to a different product, based on user decision.

System Integration and Data Warehousing Initiatives

- ***ESRI GIS Infrastructure:*** MIS will invite ESRI for a study of the existing GIS environment to get recommendations on best practices. This will include establishment of state of the art Development, Test and Production environments not limited to ArcServer and Portal components of GIS application system.

Operations Management Initiatives

- ***PI:*** Multiple PI related projects are planned for FY19. Data Archiver server upgrade: An upgrade is required to the server to PI Data Archive 2017 R2 to fix a security issue. Access 2003 with old PI ODBC driver upgrade to 2016 with new ODBC driver: Upgrading to Access 2016 with the latest ODBC drivers causes older queries written to get PI data no longer work. Access changes the field data types as compared to the old connection. This change causes the PI queries to fail. Aside from re-writing the queries, other solutions will be investigated.

- ***Telog***: The Enterprise Telog system currently communicates over the internet. The communication infrastructure will be moved to a private wireless network as is done with the Contaminate Warning System in FY19.

- ***Computerized Maintenance Management System (CMMS) Enhancements:*** The ICD service portion will be implemented and completed (earliest) by FY19 Q2.

Information Security Program Initiatives

This program focuses on the strength, resiliency, and sustainability of MWRA's cyber security practices for its data and computing-related assets. The program also monitors for and protects against penetrations, intrusions, and malicious actions from both internal and external threats. The projects associated with this program continue to assess, implement, and improve MWRA's information security protections, including recommendations to improve each IT system's security profile. The following are the FY19 projects under this program:

- ***Phase 2 of the Information Security Program Implementation:*** Phase 2 of this program focuses on the review and formalization of draft information security policies, standards and procedures into daily operations. Work will continue in FY19 to complete the remaining eleven policies.

- ***Malware Detection and Prevention Appliance Replacement:*** The current appliance (FireEye) used for malware detection and intrusion prevention is reaching End of Life (EOL). A replacement must be procured and implemented to ensure the MWRA has continued protection.

- ***Managed Security Services (MSSP) Contract Renewal:*** NWN Corporation in conjunction with Symantec currently provides monitoring services for the aforementioned technologies through FY19. Work will begin in FY19 to prepare for the end of this contract and initiation of a new contract.

Technology Infrastructure Improvement Program

The MWRA currently owns and operates 1,368 desktops, 208 laptops, 112 servers, 162 tablets and 220 iPhones. This program will assess and implement consolidated and optimized versions of these core IT infrastructure elements as utility-like services and commodities. Furthermore, it will look to improve and optimize data management practices including: storage, backup, and archive and purge processes and technologies. The following projects are currently under way:

- ***Server Consolidation and Virtualization***: Continuation of "Green Data Center" initiatives, including virtualizing more physical servers and reducing the variety of application infrastructure component versions and manufacturers (like web servers, application servers, and database servers). This will be an ongoing effort as new technologies are introduced and business tools are developed.

- ***Disaster Recovery:*** Build out of the Deer Island data center enabling the ability to restore business data and applications there should the Chelsea data center, servers or infrastructure get damaged or destroyed.

- ***Network Storage Improvements***: Plan for the migration and implementation for consolidation of new storage requirements for archiving, and implement e-discovery services.

- ***Telephone System Replacement:*** The current telephone system, Mitel PBXs, has exceeded end of life and is unsupported by the vendor. Much of the current hardware cannot be replaced unless using refurbished equipment, as it is no longer being manufactured. MWRA is not able to upgrade the software or purchase new features because the software is no longer supported. A Telephone System Replacement should be implemented for continued and reliable service.

- ***Network Convergence:*** Explore new technologies for future implementation considerations including new networking technologies for upcoming network upgrade, web and mobile platforms for business and information services.

- ***Office Automation Refresh Program***: Desktop, mobile, printers, MFD etc. FY19 is targeted for a complete hardware and operating system upgrade for PCs.

- ***Workforce Mobilization*****:** Continue to explore new technologies and hardware platforms to improve efficiencies in business process.

- ***Central Data Repository:*** Begin to develop a comprehensive approach to Data Management that can act as a single central data repository for all MWRA applications.

- ***Enterprise Application Integration (EAI):*** Establish a dynamically scaling Enterprise Service Bus (ESB) technology product, implemented as an Integration Platform for select MWRA applications. This will standardize data flow/data exchange format and integrate disparate MWRA applications to the ESB and hence to the Central Data Repository.

FY18 Accomplishments:

Information Technology Management Program

- ***MIS Reorganization:*** MIS has completed the organizational transformation recommended in the 5-year Strategic Plan. The transition of responsibilities for all applications will continue during FY19.

- ***Established a MWRA Software Development Life Cycle (SDLC):*** An SDLC Methodology was developed and implemented along with associated project related document templates for project descriptions and schedules, requirements development, system/design documentation, test plans, training materials, and production operations and maintenance manuals. The templates are being used on all new software development projects to help ensure the projects are understood by all parties involved and the transition from design/development to production/operations is successful.

Application Improvement Program

- ***Miscellaneous Lawson Support:*** In FY18, the Lawson-Portia Interface (namely 'MW433') was developed and promoted to production. The interface was developed to process (i) Variable Interest, (ii) Change in Market Value and (iii) Long Term interest (MWRA) Investments. 'MW433' will allow Finance/Treasury users to post (apply) Variable Interest (VAR), Change in Market Value (CHG) and Long Term Interest (LTI) from PORTIA to Lawson GL accrual system.

- ***Talent Acquisition Application:*** Completed implementing the final phase of Applicant Pro, OnBoarding. The OnBoarding module of ApplicantPro gives the MWRA the ability to collect securely all completed new hire forms (W-4, I-9, GIC, Retirement, etc.) from the selected candidate prior to the scheduled orientation. Additionally, new hires have the ability to review all pertinent information such

as Policies, Procedures, Code of Conduct, etc. that all MWRA employees need to familiarize themselves with electronically.

- ***Computerized Maintenance Management System (CMMS) Enhancements:*** ICD went live the end of Q4 FY18 for problem/bug fixing. The (ICD) service portion will be implemented and completed (earliest) by FY19 Q2 or later. The Maximo Upgrade from 5.2 to 7.6 was completed in Q2 of FY18.

- ***Electronic Laboratory Notebook (ELN):*** Phase I of ELN was completed Q1 FY18, 23 logs that were determined to be a good fit for ELN were put into production. A new project, ELN Improvements, kicked off to utilize opportunities to increase efficiency and productivity using ELN. The Improvement project began Q2 of FY18 and is underway. It will be completed in Q1 of FY19.

- ***LIMS:*** A refresh of the Development and Test environments was completed Q3 FY18. This will help improve efficiency and testing of new development by making the development and test environments match the current production environment. TRAC QC project was completed Q1 FY18. LIMS Control Chart Part I – Data Load project was completed Q2 FY18.

- ***PIMS CROMERR Compliance:*** The first step of the PIMS CromERR upgrade was to upgrade the WebSMR application system. The WebSMR application system is now hosted on a new virtual machine with latest version of hardware and software components in both the production and development environments.

- ***Buoy Data Collection and Visualization Project*:** The effort to upgrade buoy data collection application system and visualization was successfully completed. A new application system leveraging OSISoft's PI technology has been put in place. This application will read, store and visualize data received from the buoys. This effort will stream line the buoy data collection and management processes, to better meet MWRA needs related to data manipulation and export the data in a format matching DCR expectations. Efforts are on to upgrade DCR website per new requirements from users.

- ***Geographic Information System (GIS) Integration:*** Integrate the GIS spatial technology into business and operational applications and determine an overall strategy for delivering spatial real-time dashboards for managing the MWRA infrastructure. This was completed with the new Maximo 7.6 production environment set up in FY18 Q2.

- ***Contaminate Warning System (CWS) Upgrades:*** The stabilization of present DHI CWS is in progress. The effort will be completed in FY18.

- ***Telog:*** The Telog Enterprise Application System was successfully upgraded in both the development and production environments in FY18. The new application system resides in virtual environment with latest version of software Components.

- ***TV truck software Upgrade from GraniteXP to GraniteNet:*** Currently, Operations uses the software GraniteXP from Cues, Inc. to collect wastewater pipe inspection data. The data consists of video and sonar data collected from the inside of the wastewater pipes. The pipe condition is assessed and recorded for maintenance scheduling purposes. Cues is phasing out GraniteXP and replacing it with GraniteNet. This project will upgrade the Oracle database to the new GraniteNet format as well as

upgrade the software on the two TV Trucks and two desktops. All users, even those who currently just view the inspection data at their desktop computers will also have to upgrade to the GraniteNet viewer. This started in FY18 and will be completed in FY19.

- ***Water Quality Reporting System (WQRS)/AQUARIUS Upgrade:*** WQRS/Aquarius application system was upgraded in FY18. Three new environments, Development, Test and Production are in place. The software was upgraded from v3.3 to v3.10.

- ***Computerized Maintenance Management System (CMMS) Enhancements:*** The Maximo Upgrade from 5.2 to 7.6 was completed in Q2 of FY18. This includes testing of Crystal reports, ad hoc reports and interfaces to Lawson. ICD went live in end of June in FY18 for problem/bug fixing.

- ***Custom Development:*** A number of small initiatives in the Custom Development arena were started and some of them were completed in FY18:
  1. 27 .NET applications were recompiled in the latest version i.e. 4.7 .NET
  2. New Production environment was built on Windows 2012 R2 for the deployment of all custom developed .NET applications
  3. New Continuous Integration environment was put in place leveraging TeamCity tool from Jetbrains and TFS from Microsoft
  4. AVL (Auto Vehicle Locator) .NET solution was developed to download requisite data from Networkfleet SaaS solution to MIS database tables using WebAPI provided by Networkfleet in FY18.
  5. Water Conservation .NET web application was developed using MVC (Model View Control ver. 5) .NET architecture. This will go to production in FY19 Q1.
  6. OMMS is another application in development using same architecture as Water Conservation. The DCR portion of the project is likely to be delivered in FY18 and the remainder FY19.

- ***Management Dashboards & Reporting:*** The Management Dashboard web application was implemented in FY18 with the objective to display employee benefit data graphically in charts for ease of review and reporting. An initial rollout was done with the Operations Department. Expanded use of the web application is available upon request.

<u>Information Security Program</u>

- ***Phase 2 of the Information Security Program Implementation***: Phase 2 of this program focuses on the review and formalization of draft information security policies, standards and procedures into daily operations. The first of the new policies is being routed for signature by the Executive Office.

- ***Secure Media Destruction Program:*** With changes in technology and business processes, there has been a decrease in the volume of requests for digital media destruction. This internal IT policy was documented and will be published for future secure media destruction to be utilized as the need arises.

- ***End User Security Awareness:*** Additional mandatory employee training was scheduled for FY18, that included an overview of the most common cyber threats faced by organizations, also addressed employee responsibilities and prohibited activities and will provide managers with practical direction on the protection of confidential information.

- ***Branch Office VPN Replacement:*** The hardware appliance providing network connectivity from the smaller branch offices is approaching end of support and product life. This initiative will explore VPN technologies to replace the existing solution. Design work is complete for this project. Hardware has not been received yet. This work was completed during FY18.

Technology Infrastructure Improvement Program

- ***Workforce Mobilization*:** To date a total of 332 mobile devices have been deployed to MWRA staff. Leveraging the Mobile Device Management and Application Delivery platform, staff are able to access business applications while in the field.

- ***Office Automation Refresh Program***: Desktop, mobile, printers, MFD etc. In FY18, 34 Multi-function devices at multiple location where replaced. The engineering and planning for the Desktop Refresh project was completed in FY18.

- ***Desktop Microsoft Office Application Suite Upgrade:*** This project upgraded and standardized the version of Microsoft Office Applications to Office 2016. This initiative started in March 2017 was completed in FY18 Q2.

- ***Server Backup Software Replacement:*** Implemented a new server backup solution, COMMVault. The new solution is designed for highly virtualized environments, all current server platforms, and is intuitive. A cost savings of more than $300,000 is estimated over five years.

Budget Highlights:

The FY19 Final Budget is $13.5 million, an increase of $524,000 or 4.0% as compared to the FY18 Budget.

- $6.1 million for Wages and Salaries, an increase of $29,000 or 0.5% as compared to the FY18 Budget. The FY19 Final Budget includes funding for 55 FTEs, 2.4 FTEs fewer than the FY18 Budget, offset by wage increases associated with collective bargaining agreements.

- $3.8 million for **Ongoing Maintenance**, a decrease of $225,000 or 5.6%, as compared to the FY18 Budget, due to a $424,000 decrease for computer software licenses and upgrades and computer hardware from the completion of the Microsoft Office 2016 upgrade. However, a number of software licenses and equipment are coming off warranty and will be requiring maintenance contracts offsetting $200,000 of the budget reduction.

- $700,000 for **Professional Services**, an increase of $50,000 or 7.7% as compared to the FY18 Budget. Planned projects for FY19 include Audit Report Tracking, Employee Acknowledgment Tracking, Geosample Storage Tracking, Complaints Database, Tiscor upgrade, Aquarius Contact and Intensity Time Calculators, Autocad modules, PGP Upgrade, Data Warehousing Study, Enterprise Application Integration.

- $1.4 million for **Other Materials**, an increase of $563,000 or 64.8%, as compared to the FY18 Budget. The increase is for the purchase of new desktops and laptops. The upgrade to Microsoft Windows 10 operating system requires that most of the MWRA's PC's be replaced.

- $1.4 million for **Other Services**, an increase of $106,000 or 8.1%, as compared to the FY18 Budget. Funding of $1.2 million for facility and security data lines and network upgrades. Remaining funds are for the lease of Automatic Vehicle Locator (AVL) services.

Fog creeping in over Sudbury Dam

PROCUREMENT

The **Procurement Department** provides timely and high quality services to all MWRA Divisions to enable MWRA programs to meet their public, production and schedule responsibilities. The Procurement Department is responsible for procuring materials, equipment, supplies, construction, professional, and non-professional services in a timely, efficient, and openly competitive process in accordance with MWRA applicable law and policies and procedures, including those related to meeting affirmative action goals. The Department also maintains a centralized, efficient, and cost-effective management of spare parts and operating supplies inventory.

FY19 Final Current Expense Budget PROCUREMENT						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 3,624,579	$ 3,556,164	$ 3,857,675	$ 4,025,847	$ 168,172	4.4%
OVERTIME	11,841	20,492	24,971	23,471	(1,500)	-6.0%
FRINGE BENEFITS	314	501	300	300	-	0.0%
ONGOING MAINTENANCE	637,962	294,290	-	-	-	-
TRAINING & MEETINGS	2,830	4,502	10,750	10,750	-	0.0%
OTHER MATERIALS	137,126	136,628	136,700	139,475	2,775	2.0%
OTHER SERVICES	56,026	54,202	67,150	67,786	636	0.9%
TOTAL	**$ 4,470,678**	**$ 4,066,779**	**$ 4,097,546**	**$ 4,267,629**	**$ 170,083**	**4.2%**

The **Procurement Department** includes three operational units. The **Purchasing Unit** operates a competitive purchasing system for the procurement of materials, goods, and non-professional services in accordance with MWRA policies and procedures. The **Contract Management Unit** reviews, drafts, and negotiates contracts, amendments, and change orders for all professional, non-professional, and construction services contracts. Staff directs the bid, review, and selection process, and maintains a contracts database. The **Materials Management Unit** manages an Authority-wide inventory control and management system for better control, storage, distribution, and accounting of MWRA's inventory. The unit manages three regional warehouses/distribution centers that support all MWRA activities.

FY19 Goals & Initiatives:

IV. Finance & Management

- ***Goal #11 - Ensure Financial Sustainability, Integrity, and Transparency:***
  - Continue to conduct strategic energy procurements for both the purchase of energy and sale of energy credits generated from MWRA energy production.
- ***Goal #12 – Ensure Cost-Effective Operational and Resource Management:***
  - Maintain a recycling program in order to contain MWRA operating costs by removing recyclable materials from the waste stream.
  - Continue implementing electronic procurement for contract bids, with a focus on electronic bidding for professional services contracts and Massachusetts General Laws Chapter 149 construction projects with filed sub-bids.
  - Review and update policies and procedures for procurement of professional services, non-professional services and goods and materials.

- Provide training to MWRA staff on various procurement policies and procedures including purchasing of goods and materials and consultant selection committee service.
- Update construction contract documents.

FY18 Accomplishments:

- Competitively sold Class I, Class II and Solar Renewable Energy Portfolio Standard (RPS) certificates resulting in FY18 revenues of $607,260.

- Awarded major Capital Improvement Program Contracts including:
    - CSO Post-Construction Monitoring and Performance Assessment
    - Northern Intermediate High Section 89 Replacement (Design/ESDC)
    - Southern Extra High, Section 111 (Dedham North) (Design/ESDC)
    - DeLauri Pumping Station Bar Screen Replacement (Construction)
    - Sludge Tank and Silo Coating (Construction)
    - Liquid Oxygen Storage Yard Canopy, JJCWTP (Construction)
    - Chestnut Hill Gatehouse Repair (Construction)
    - Section 14 Water Pipeline Relocation, Malden (Construction)
    - Agency-Wide Technical Assistance Consulting Services
    - Gravity Thickener Rehabilitation, DITP (Construction)
    - Technical Assistance Consulting Services, JJCWTP
    - Low Service Pressure Reducing Valve Improvements – Boston/Medford (Design/ESDC)
    - Southern Extra High Pipeline – Section 111 (Dedham South) (Construction)
    - Remote Headworks and Deer Island Shafts Study

- Awarded Other Contracts Necessary for Operations and Maintenance, including:

    - Supply and Delivery of Sodium Hypochlorite, DITP
    - Insurance Consultant Services
    - Supply and Delivery of Ferrous Chloride, DITP
    - Financial & Swap Advisory Services
    - Dental Insurance
    - HVAC Systems Maintenance, Western Ops
    - Supply and Delivery of Hydrogen Peroxide, DITP
    - Community Leak Detection Survey Services
    - Workers Compensation Legal Services
    - Groundskeeping Services, Metro Boston
    - 69Kv Electrical System Maintenance
    - Industrial Noise Measurement & Monitoring
    - Overhead Door Maintenance
    - Fire Protection Sprinkler System Maintenance
    - Fuel Storage Tank Maintenance
    - Boiler and Water Heater Service Elevator Maintenance, Various Facilities
    - Elevator Maintenance, DITP
    - Braintree/Weymouth/Chelsea HVAC Upgrades
    - Nut Island HVAC Insulation

- Exterior Door Replacement, DITP
- Air Compressor System Service
- Wind Turbine Removal, DITP
- Diesel Generator Maintenance
- Metropolitan Operations Paving
- Occupational and Medical Services
- Insurance Program Renewal
- Technical Assistance Consulting Services – Hazardous Materials
- Renewable and Alternative Energy Portfolio Services
- Main Line Adjustment Project, Fore River Railroad
- Supply and Delivery of Sodium Hypochlorite, JJCWTP

- Continued to work with Deer Island Treatment Plant (DITP), Field Operations (FOD), and utility companies to establish energy conservation programs at DITP and FOD facilities utilizing various programs including the Green Communities Act. Continued to dispose of surplus scrap metal materials in an environmentally responsible manner.

- Work on improvements to the electronic procurement bidding process.

- Processed 7,988 purchase orders in FY18 for a total of $38,234,962.

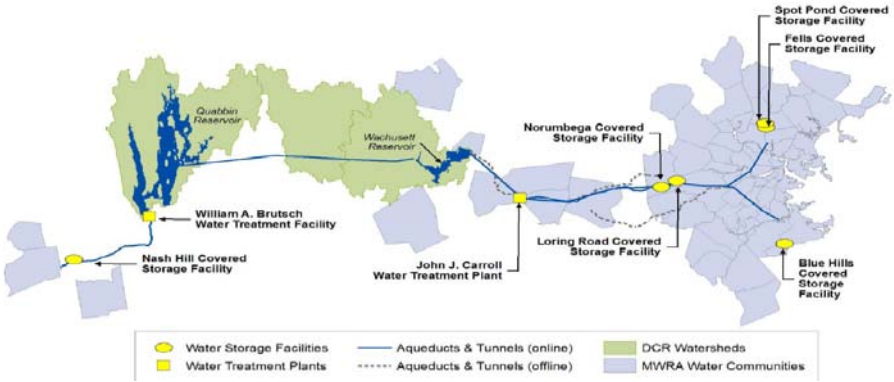
- Online vehicle and equipment auction process resulted in revenue of $301,245.

- Recycled 32.87 tons of batteries, 7.82 tons of paper, 269.83 tons of scrap metal, and 5,706 pounds of stainless steel, aluminum, brass, and copper, generating $75,564 in revenue.

Budget Highlights:

The FY19 Final Budget is $4.3 million, an increase of $170,000 or 4.2% as compared to the FY18 Budget.

- $4.0 million for **Wages and Salaries**, an increase of $168,000 or 4.4% as compared to the FY18 Budget, including wage increases associated with collective bargaining agreements as well as one additional staff. The FY19 Final Budget funds 43.8 FTEs. This is an increase of 1 from the FY18 budget, which represents a materials handler hired for the Chelsea warehouse to support shipping/receiving activities including handling, kitting, issuing and counting of materials and maintenance of inventory records.



REAL PROPERTY AND ENVIRONMENTAL MANAGEMENT

The **Real Property and Environmental Management Department** negotiates the purchase or lease of real estate and land necessary to support MWRA's operations and capital projects in a timely and cost-effective manner, provides staff and others with current information regarding MWRA's real property rights, and manages the disposition of surplus real property in an efficient manner. Staff participates in site selection and negotiates acquisitions or easements. In addition, staff has developed and is maintaining the Real Property database, the compilation of more than 100 years of easements and land rights for the water and sewer systems. Department staff manages environmental regulatory compliance at MWRA facilities and provide special expertise and assistance to MWRA staff regarding air quality and hazardous material issues. Assistance includes management of oil and hazardous materials site assessment and remediation, air emission permit negotiations, and preparation and submittal of quarterly/annual monitoring reports.

FY19 Final Current Expense Budget REAL PROPERTY / ENVIRONMENTAL MANAGEMENT						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 460,389	$ 467,549	$ 482,371	$ 500,677	$ 18,306	3.8%
TRAINING & MEETINGS	1,008	5,698	6,000	8,000	2,000	33.3%
PROFESSIONAL SERVICES	15,720	(34)	6,000	10,000	4,000	66.7%
OTHER MATERIALS	279	186	650	650	-	0.0%
OTHER SERVICES	190,575	143,085	305,037	230,948	(74,089)	-24.3%
TOTAL	**$ 667,971**	**$ 616,484**	**$ 800,058**	**$ 750,275**	**$ (49,783)**	**-6.2%**

FY19 Goals:

The Real Property and Environmental Management Department supports the MWRA's achievement of all five key strategic priorities set forth in the FY16-FY20 Five-Year Strategic Business Plan.

FY19 Major Initiatives:

- Implement anticipated changes to the MassDEP underground fuel tank (310 CMR 80) regulations, and implementation of the new EPA electronic hazardous waste manifest system for all of MWRA's operations.

- Implement MassDEP's new electronic reporting system for air pollutant emissions including greenhouse gases. Emissions will be quantified and reported for MWRA's facilities that meet set regulatory thresholds for both calendar years 2016 and 2017.

- Work with MassDEP to finalize the air quality operating permit renewal for the Deer Island Wastewater Treatment Plant, and coordinate with staff to implement it.

FY18 Accomplishments:

Real Estate

- Provided real estate services for 1) transfer of Commercial Point Chemical Building to MassDOT, as facility was surplus to MWRA needs due to completion of sewer separation projects. 2) the execution of an option to extend a lease between the MWRA and the Springfield Water and Sewer Commission for 10 years to allow MWRA's use of Commission land for MWRA's water monitoring station

- Managed seven (7) permit agreements (five at Turkey Hill and two at Walnut Hill), including the renewal of 5 permits and termination of 1 agreement. MWRA current has 6 permit agreements. Issued RFP for vendor space at Fells Tower. Award to T-Mobile will occur after completion of FCC permitting by MWRA. Coordinated with Operations for plans to paint the Turkey Hill tank which will require removal and of all equipment at the tank and relocation and installation to temporary scaffolding. Coordinated approval of the general equipment changes at both tanks. Total revenue for FY18 for the agreements is $420,000 of which MWRA and the host community each receive half.

- Provided real estate support to Operations and Public Affairs for issuance of 8M permits to 1) private entities requesting use of MWRA controlled land and 2) cities and towns applying to the Aqueduct Trails Program. Annual revenue from long term 8m permit totals $73,000.

- Provided real estate services (appraisal, negotiation, survey review and/or planning) for: Southern Extra High Service Pipeline, Dedham (executed construction license with MBTA for land at Dedham Corporate Station); Reading Extension Sewer, Stoneham, (easement needs assessment), Peabody Pipeline Project, Lynnfield (permanent easement) for meter installation, General Edwards Bridge Waterline Removal, Lynn and Revere (construction permitting assistance).

- Provided deed and title research, legislative review, document review with Law Division. Responded to in-house and public inquiries regarding MWRA real estate rights.

- Procured GIS contractor for a pilot project to convert 215 of MWRA's real property takings to a user friendly GIS-map based interface. Continued updating records and adding to database on as-needed basis.

Environmental Management

- Continued with remediation and assessment of oil contamination at the Fore River Staging Area (FRSA) facility.

- Continued with the remediation and assessment of the oil contamination resulting from the February 2010 spill at the Cottage Farm Combined Sewer Overflow (CSO) facility. Began preparing the MassDEP submittals including the Activity and Use Limitation to permanently close out this site from the MassDEP Massachusetts Contingency Plan site cleanup process.

- Continued to provide technical support during the PCB abatement at the Chelsea Creek Headworks. In addition, provided regulatory support and coordination during the removal of the underground fuel tank and installation of the new underground fuel tank. Provided regulatory support during the excavation and disposal of Massachusetts Contingency Plan-regulated soil at this facility during construction activities.

- Continued to provide technical and regulatory coordination of the fuel tank maintenance contract. Installed new piping at the New Neponset Pump Station, provided support to the General Contractor of Contract 7411 during the removal of two underground fuel storage tanks at the Clinton Wastewater Treatment Plant, and general monitoring system repair and upgrades at other facilities. Continued with the MassDEP-required monthly inspection requirement for all underground fuel storage tank systems as well as voluntary monthly inspections at all above ground fuel storage tank systems.

- Continued to work with the MassDEP and the responsible parties as site assessment and cleanup design continues at two hazardous material waste disposal sites that have impacts on the Sudbury Aqueduct. At the General Chemical site in Framingham the responsible party walked away from their responsibility for site cleanup and responsibility for future activities was assumed by the MassDEP. As a result of this MWRA re-initiated long term semiannual sampling and testing of aqueduct and surface water quality. This work is being performed by MWRA staff.

- Completed the 5-year updates to the Spill Prevention, Control, and Countermeasure (SPCC) Plan for the Southborough Biosolids Processing Facility, and the Carroll Water Treatment Plant. Completed new plans for the Hingham and Quincy Pump Stations. Incorporated these new and revised plans into the MWRA-wide SPCC annual training program. Completed annual inspections at eleven (11) MWRA facilities where oil is used and stored in accordance with the SPCC regulations.

- Continued to prepare, coordinate and oversee the completion of annual SPCC Plan training of over 200 MWRA oil handling staff and managers.

- Provided technical and environmental regulatory support regarding environmental regulatory compliance, contaminated soil and groundwater management, as well as geotechnical issues on various design and construction projects, including:

    - Northern Intermediate High project
    - Southern Extra High Pipeline
    - Section 50 and 57 Water Line rehabilitation
    - Section 23, 24, and 47 Water Line rehabilitation
    - General Edwards Bridge water main replacement
    - North Metropolitan Sewer rehabilitation
    - Peabody Pipeline extension
    - WASM 3 rehabilitation
    - Metro Water Transmission System redundancy
    - Fuel storage tank installation design and construction at the Quincy and Hingham Pump Stations
    - Alewife Brook Pump Station facility upgrades
    - Clinton Wastewater Treatment Plant phosphorus removal upgrades
    - Prison Point CSO Facility upgrades

- Cosgrove Power Station roof replacement
- Nut Island Headworks Odor Control and HVAC improvements
- Commonwealth Avenue Pump Station Improvements
- Hazardous building material assessments to support building upgrade and demolition at the Wachusett Dam Lower Gatehouse and the Southborough Oren Nichols buildings respectively

- Continued to provide ongoing regulatory technical support to Operations staff for the diesel oxidation catalyst-equipped engines at Cottage Farm, Prison Point, and CWTP including annual accuracy audits for each engine's monitoring systems, quarterly review of data to identify any non-compliant periods of operation and timely submission of semi-annual compliance reports to EPA.

- Completed air emissions compliance testing at the DITP's Residuals Odor Control facility including submission of an official test report to MassDEP in accordance with the monitoring and testing requirements of the DITP's operating permit.

- Review of final regulation 310 CMR 7.74 *Reducing CO_2 Emissions from Electricity Generating Facilities* published on August 11, 2017 noting successful exemption of the Deer Island facility accomplished via negotiation and submittal of official comment to MassDEP's online portal.

- Continued to prepare and submit quarterly, semi-annual and annual air monitoring and emissions compliance reports to EPA and DEP for DITP, Biosolids Processing Facility, Nut Island Treatment Plant, CWTP, Prison Point CSO and Cottage Farm CSO.

Budget Highlights:

The FY19 Final Budget is $752,000, a decrease of $49,000 or 6.1% as compared to the FY18 Budget.

- $502,000 for **Wages and Salaries**, an increase of $20,000 or 4.1% as compared to the FY18 Budget, primarily for wage increases associated with collective bargaining agreements. The FY19 Final Budget includes funding for four FTEs, the same as the FY18 Budget.

- $10,000 for **Professional Services**, an increase of $4,000 or 66.7% as compared to the FY18 Budget based on an anticipated need for appraisal services for FY19.

- $231,000 for **Other Services**, a decrease of $74,000 or 24.3% as compared to the FY18 Budget. This budget category includes the Fuel Storage Tank Maintenance Services contract, OP335. The decrease is due to the actual contract pricing for this three-year maintenance contract which was awarded in August 2017.

Finance Division
Budget

FINANCE DIVISION

Finance

Director's Office
Rates and Budget
Treasury
Controller
Risk Management

The **Finance Division** is responsible for managing the finance functions of the Authority. It 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 also 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).

FY19 Final Current Expense Budget FINANCE DIVISION						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 3,327,444	$ 3,356,207	$ 3,515,819	$ 3,686,118	$ 170,299	4.8%
TRAINING & MEETINGS	1,276	1,912	3,000	3,000	-	0.0%
PROFESSIONAL SERVICES	572,658	485,783	590,060	615,263	25,203	4.3%
OTHER MATERIALS	11,016	4,734	11,100	11,100	-	0.0%
OTHER SERVICES	5,696	4,486	6,365	6,175	(190)	-3.0%
TOTAL	**$ 3,918,090**	**$ 3,853,121**	**$ 4,126,344**	**$ 4,321,656**	**$ 195,312**	**4.7%**

The Finance Division is comprised of five departments: Director's Office; Rates and Budget; Treasury; Controller; and Risk Management.

FY19 Final Current Expense Budget FINANCE by Department						
DEPARTMENT	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
DIR OFFICE (FINANCE)	$ 250,203	$ 226,092	$ 271,722	$ 246,709	$ (25,013)	-9.2%
CONTROLLER	1,366,086	1,411,844	1,491,952	1,590,063	98,110	6.6%
RATES AND BUDGET	820,478	875,443	902,959	929,944	26,985	3.0%
TREASURY	1,034,017	835,584	973,132	1,053,039	79,907	8.2%
RISK MANAGEMENT	447,307	504,159	486,579	501,901	15,322	3.1%
TOTAL	**$ 3,918,090**	**$ 3,853,121**	**$ 4,126,344**	**$ 4,321,656**	**$ 195,312**	**4.7%**

FY19 Goals & Initiatives:

The Finance Division supports the fourth key strategic priority set forth in the Authority's FY 2016-2020 Strategic Business Plan.

IV. Finance & Management

- **Goal #11- Ensure Financial Sustainability, Integrity, and Transparency:**
  - Develop and implement long-term strategies to ensure assessment increases to MWRA's communities are sustainable and predictable, both at the combined and at the water and wastewater utility level.
  - Continue to fund the pension at appropriate levels and address the Other Post-Employment Benefits.
  - Manage MWRA's debt portfolio to contribute to the achievement of sustainable and predictable utility assessment increases.
  - Manage diversification strategy to insulate against overexposure and promote resiliency to changing market conditions.
  - Continue assessment and evaluation of sustainable cost savings opportunities throughout the organization.

FY18 Accomplishments:

- Developed the FY19 Final Budget consistent with the FY18 planning estimates, for both the Current Expense Budget and the Capital Improvement Program.

- 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.

- Continued the Authority's practice of using surplus funds to defease debt in future years as part of the long-term rate control strategy.

Budget Highlights:

The FY19 Final Budget for the Finance Division is $4.3 million, an increase of $195,000 or 4.7% as compared to the FY18 Budget.

- $3.7 million for **Wages and Salaries**, an increase of $170,000 or 4.8% as compared to the FY18 Budget, mainly due to the planned hiring of a vacant position and return of a part-time employee to full-time in the Treasury Department and wage increases associated with collective bargaining agreements. The FY19 Final Budget funds 37 FTEs, 1.5 FTE more that the FY18 Budget.

FTEs FINANCE by Department		
DEPARTMENT	FY18 FTEs	FY19 FTEs
DIR OFFICE (FINANCE)	2.0	2.0
CONTROLLER	15.0	16.0
RATES AND BUDGET	8.0	8.0
TREASURY	6.5	7.0
RISK MANAGEMENT	4.0	4.0
TOTAL	**35.5**	**37.0**

DIRECTOR'S OFFICE

The **Finance Division Director's Office** oversees a multitude of functions that support the daily operations and ensure the implementation of the Authority's long-term goals and strategies.

The Director's Office is responsible for the centralized financial functions of rates development, revenue collection, budgeting, capital financing, debt and investment management, accounting, payroll processing, and risk management. Additionally, the Director's Office ensures that transactions comply with all rules, regulations, Authority policies and procedures, and contract terms. The Director's Office manages the development and implementation of policies to uphold the efficient utilization of resources and control of all monies. The Director's Office provides advice and analysis to the Executive Director and the Board of Directors on all financial issues.

The Division's continuing challenge in FY19 will be maintaining an agency-wide focus on balancing competing needs to minimize assessment increases while ensuring the provision of critical MWRA services.

FY19 Final Current Expense Budget FINANCE DIVISION DIRECTOR'S OFFICE						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 241,578	$ 219,632	$ 256,832	$ 231,857	$ (24,975)	-9.7%
TRAINING & MEETINGS	635	1,852	3,000	3,000	-	0.0%
OTHER MATERIALS	7,442	3,622	10,100	10,100	-	0.0%
OTHER SERVICES	547	986	1,790	1,752	(38)	-2.1%
TOTAL	**$ 250,203**	**$ 226,092**	**$ 271,722**	**$ 246,709**	**$ (25,013)**	**-9.2%**

FY19 Goals and Initiatives:

IV. Finance & Management

- **Goal #11- Ensure Financial Sustainability, Integrity, and Transparency:**
  - Manage and coordinate the Authority's finance functions.
  - Identify and pursue optimization in all aspects of MWRA's financial operations.
  - Continue to fund the Pension Fund at the annual required contribution level and to develop strategies to address the growing Other Post-Employment Benefits.
  - Guide and coordinate division activities to support MWRA's goals and objectives.
  - Continuously improve processes and performance for greater efficiency.
  - Develop and implement long-term strategies to ensure sustainable and predictable assessments and charges to our communities at both the water and wastewater utility level.

Budget Highlights:

The FY19 Final Budget is $247,000, a decrease of $25,000 or 9.2% as compared to the FY18 Budget.

- $232,000 for **Wages and Salaries**, a decrease of $25,000 or 9.7% as compared to the FY18 Budget, reflecting personnel change. The FY19 Final Budget funds two FTEs, the same as in FY18.

RATES AND BUDGET

The **Rates & Budget Department** provides the financial analysis that allows MWRA to translate its goals, and legal and financial commitments into cost-effective annual and multi-year programs and budgets. Department staff works closely with divisional staff to coordinate development of the long-term Capital Improvement Program (CIP) and monitor the progress of capital projects compared to projected schedules and budgeted spending. Staff also coordinates the development of MWRA's annual Current Expense Budget (CEB) and monitors spending compared to the budget throughout the year. The Budget Department also manages the annual process of establishing water and sewer assessments to be paid by MWRA's member communities and develops planning estimates of rate projections.

FY19 Final Current Expense Budget RATES AND BUDGET						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 818,871	$ 874,207	$ 901,534	$ 928,595	$ 27,061	3.0%
TRAINING & MEETINGS	588	60	-	-	-	-
OTHER MATERIALS	305	447	500	500	-	0.0%
OTHER SERVICES	713	728	925	849	(76)	-8.2%
TOTAL	**$ 820,478**	**$ 875,443**	**$ 902,959**	**$ 929,944**	**$ 26,985**	**3.0%**

FY19 Goals and Initiatives:

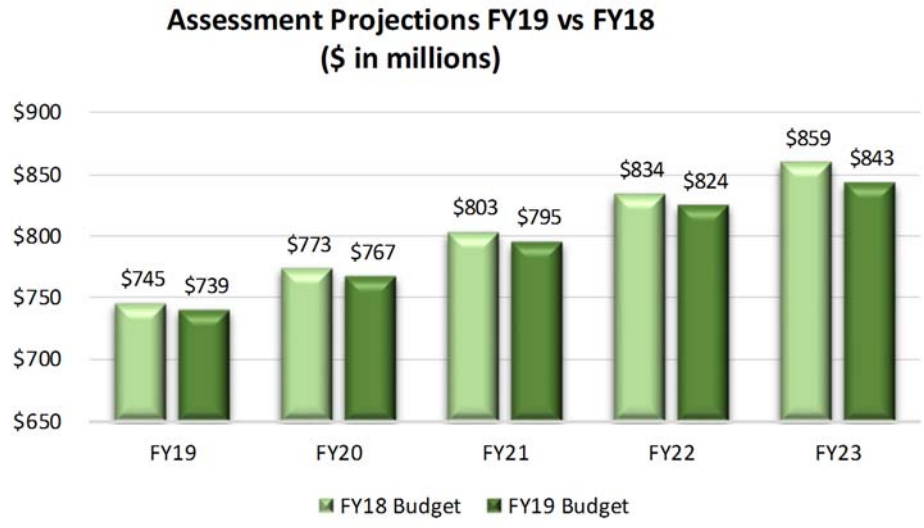
I. Finance & Management

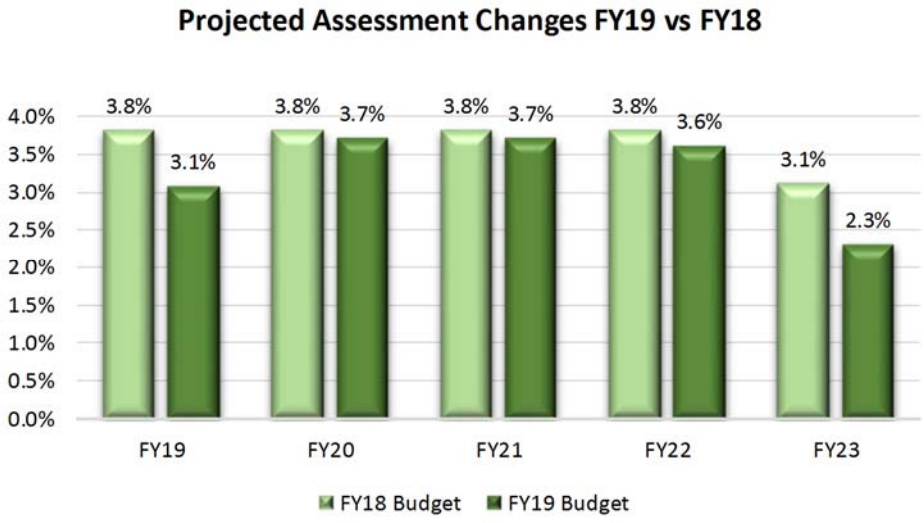
- **Goal #11- Ensure Financial Sustainability, Integrity, and Transparency:**
  - Continue long-term strategic budgeting practices to ensure predictable and sustainable sewer and water assessments and charges to our member communities at both the combined and the water and wastewater utility level.
  - Continue to employ budget and expense control practices to manage expenses.
  - Continue to enhance processes and the management of resources to deliver the final CIP and CEB timely and accurately.
  - Adhere to all MWRA policies, procedures, and administrative practices as well as all relevant statutory and regulatory authority, accounting, and budgeting principles.
  - Provide financial analysis as required, including system expansion opportunities.
  - Start the process of evaluating and selecting software applications to replace the CIP program.
  - Improve the quality and presentation of budget documents and regularly required reports while working to develop new reports that will aid the Authority's Board of Directors, Management, and the MWRA Advisory Board.

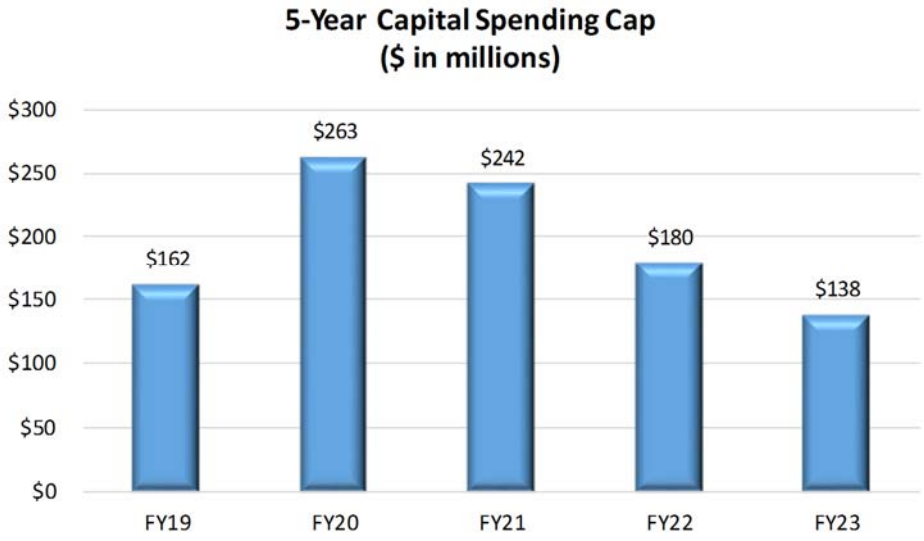
FY18 Accomplishments:

- Developed the FY19 Current Expense Budget below the FY18 planning estimates for combined water and sewer assessment increases.

- Developed the FY19 Capital Improvement Budget and the next five-year Spending Cap for the FY19-23 period.


Assessment Projections FY19 vs FY18
($ in millions)
$900
$850
$800
$750
$700
$650
$745
$739
$773
$767
$803
$795
$834
$824
$859
$843
FY19
FY20
FY21
FY22
FY23
FY18 Budget
FY19 Budget


Projected Assessment Changes FY19 vs FY18
4.0%
3.5%
3.0%
2.5%
2.0%
1.5%
1.0%
0.5%
0.0%
3.8%
3.1%
3.8%
3.7%
3.8%
3.7%
3.8%
3.6%
3.1%
2.3%
FY19
FY20
FY21
FY22
FY23
FY18 Budget
FY19 Budget


5-Year Capital Spending Cap
($ in millions)
$300
$250
$200
$150
$100
$50
$0
$162
$263
$242
$180
$138
FY19
FY20
FY21
FY22
FY23

Budget Highlights:

The FY19 Final Budget is $930,000, an increase of $27,000 or 3.0% as compared to the FY18 Budget.

- $929,000 for **Wages and Salaries**, an increase of $27,000 or 3.0% as compared to the FY18 Budget, for wage increases associated with collective bargaining agreements. The FY19 Final Budget funds eight FTEs, the same as in the FY18 Budget.

Ware River Diversion

TREASURY

The **Treasury Department** secures funds for ongoing operations and capital programs in addition to processing cash disbursements. Department staff collects revenue, disburses funds, and manages grant and loan programs in addition to debt issuance and investments.

FY19 Final Current Expense Budget TREASURY						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 609,604	$ 553,610	$ 577,422	$ 632,164	$ 54,742	9.5%
TRAINING & MEETINGS	52		-	-	-	-
PROFESSIONAL SERVICES	418,966	280,437	394,060	419,263	25,203	6.4%
OTHER MATERIALS	2,050	324	300	300	-	0.0%
OTHER SERVICES	3,345	1,214	1,350	1,312	(38)	-2.8%
TOTAL	**$ 1,034,017**	**$ 835,584**	**$ 973,132**	**$ 1,053,039**	**$ 79,907**	**8.2%**

FY19 Goals and Initiatives:

IV. Finance & Management

- **Goal #11- Ensure Financial Sustainability, Integrity, and Transparency:**
  - Manage debt and investment portfolio to maximize savings/returns in compliance with all applicable rules and regulations while maintaining compliance with the General Revenue Bond Resolution requirements regarding security and liquidity and contributing to the achievement of sustainable and predictable assessment increases.
  - Continue diversification strategy to insulate against overexposure and promote resiliency to changing market conditions.

FY18 Accomplishments:

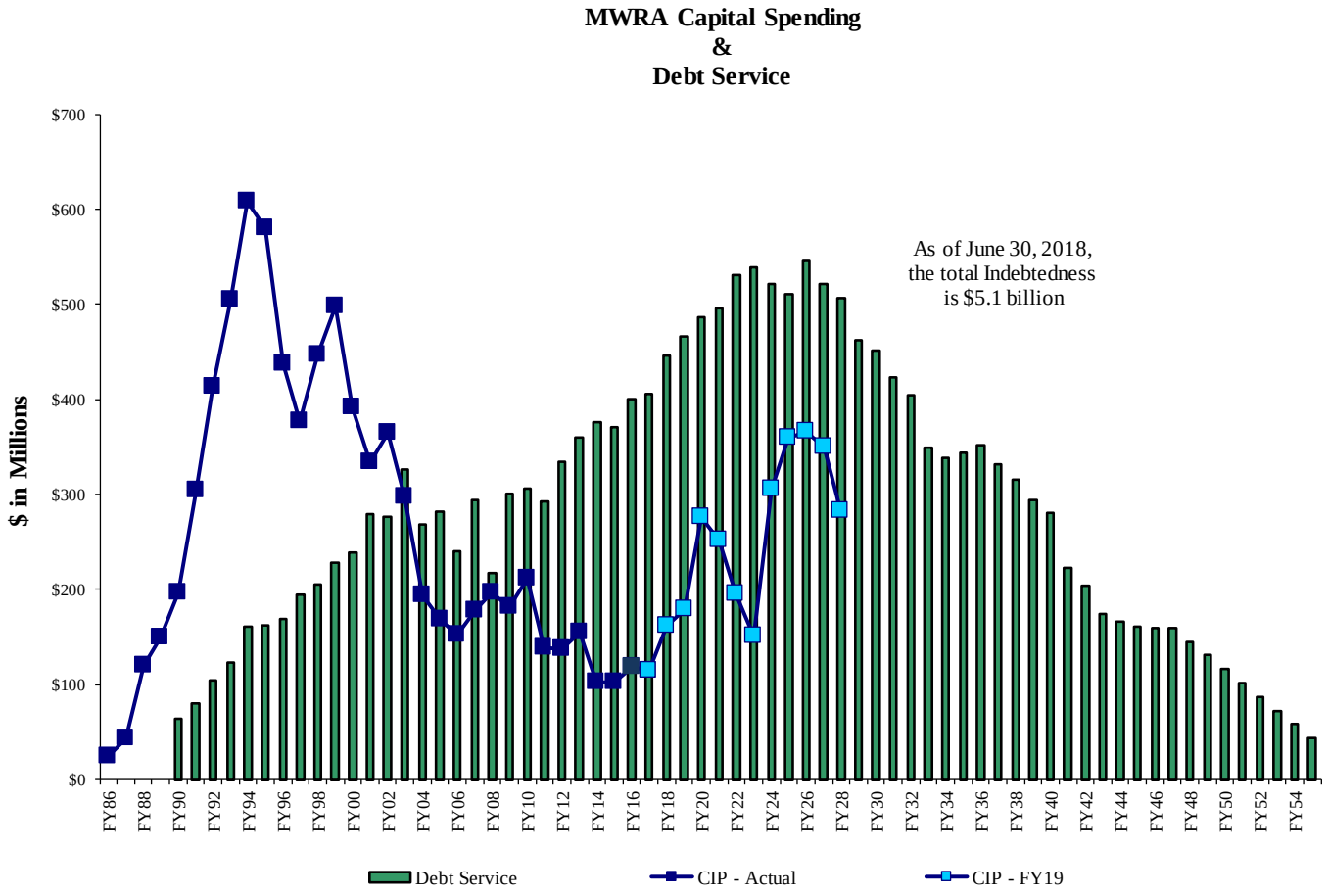
- Completed a $129.5 million refunding and new money bond transaction on May 16, 2018. The $107.6 million new money portion consisted of $69.2 million which were deposited into the Construction Fund to pay for capital projects and $51 million to permanently finance outstanding commercial paper and a portion of the revolving loan. The refunding for interest rates savings transaction totaled $21.9 million. The refunded resulted in $3.8 million or 15.3% present value savings and $4.4 million in gross debt service savings over the life of the bonds.

- Executed a $9.6 million and a $29.4 million defeasance of outstanding senior principal in October 2017 and June 2018 respectively. These defeasances decreased the debt service requirement between FY19 and FY22 by a total of $44.6 million reducing the Rate Revenue Requirement in those years.

- Conducted a procurement for $100.6 million in variable rate direct purchases to replace the 2008 Series F and 2012 Series F bonds. MWRA received a number of strong proposals and issued two new series of Direct Purchase Bonds with TD Bank N.A. ($50.6 million) and U.S. Bank N.A. ($50 million).

- 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 which helps minimize debt service expenses.



Budget Highlights:

The FY19 Final Budget is $1.1 million, an increase of $80,000 or 8.2% as compared to the FY18 Budget.

- $632,000 for **Wages and Salaries**, an increase of $55,000 or 9.5% as compared to the FY18 Budget, due to the return of a part-time employee to full-time and wage increases associated with collective bargaining agreements. The FY19 Final Budget includes funding for seven FTEs, an increase of 0.5 FTE over the FY18 Budget.

- $419,000 for **Professional Services**, an increase of $25,000 or 6.4% as compared to the FY18 Budget. These funds are used for financial and bond council services. The increase is due to increases in contracted services for bank custodial services and financial advisory services.

CONTROLLER

The **Controller Department** consists of the Accounting, Accounts Payable, Accounts Receivable, and Payroll units. The department has the responsibility for ensuring integrity within the financial accounting system and integration among the four functions. The department is also responsible for the appropriate treatment, classification, and reporting of the MWRA's assets, liabilities, revenues and expenditures in accordance with accounting principles generally accepted in the United States of America.

FY19 Final Current Expense Budget CONTROLLER						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 1,246,698	$ 1,274,415	$ 1,333,452	$ 1,431,601	$ 98,148	7.4%
PROFESSIONAL SERVICES	117,615	135,881	156,000	156,000	-	0.0%
OTHER MATERIALS	982	338	200	200	-	0.0%
OTHER SERVICES	791	1,210	2,300	2,262	(38)	-1.7%
TOTAL	**$ 1,366,086**	**$ 1,411,844**	**$ 1,491,952**	**$ 1,590,063**	**$ 98,110**	**6.6%**

FY19 Goals and Initiatives:

IV. Finance & Management

- **Goal #11- Ensure Financial Sustainability, Integrity, and Transparency:**
  - Implement process efficiencies in all department units.
  - Enhance controls to safeguard Authority assets and ensure accurate and timely reporting.
  - Implement new cash management tool for recording cash transactions to General Ledger.
  - Continue to support management initiatives with underlying documentation and detail.
  - Implement any new or changed GASB standards as appropriate.
  - Manage the certification of Financial Statements by Independent Auditors.

FY18 Accomplishments:

- Successfully completed certified financial statement audit with no audit findings.
- Completed automation of multiple Payroll Department documents.

Budget Highlights:

The FY19 Final Budget is $1.6 million, an increase $98,000 or 6.6% as compared to the FY18 Budget.

- $1.4 million for **Wages and Salaries**, an increase of $98,000 or 7.4%, as compared to the FY18 Budget, due to the planned filling of a vacant position and wage increases associated with collective bargaining agreements. The FY19 Final Budget funds 16 FTEs, one more than the FY18 Budget.

RISK MANAGEMENT

The **Risk Management Department** is responsible for all MWRA insurance programs and risk management functions. Department staff manages all administrative functions relating to the initial reporting, processing, and resolution of construction contract claims and self-insured auto, general liability, and property damage claims. Department staff members are responsible for the annual procurement, renewals, and maintenance of all Authority-wide insurance policies and programs and for managing all aspects of MWRA's contractor/vendor insurance certificate program. Department staff serves as liaisons to insurance industry participants including brokers, insurers, insurance consultants, and attorneys as well as providing support to all MWRA departments.

FY19 Final Current Expense Budget RISK MANAGEMENT						
LINE ITEM	FY16 Actuals	FY17 Actuals	FY18 Final Budget	FY19 Final Budget	Change FY19 to FY18	
WAGES & SALARIES	$ 410,693	$ 434,343	$ 446,579	$ 461,901	$ 15,322	3.4%
PROFESSIONAL SERVICES	36,077	69,466	40,000	40,000	-	0.0%
OTHER MATERIALS	237	3	-	-	-	-
OTHER SERVICES	300	347	-	-	-	-
TOTAL	**$ 447,307**	**$ 504,159**	**$ 486,579**	**$ 501,901**	**$ 15,322**	**3.1%**

FY19 Goals and Initiatives:

IV. Finance & Management

- **Goal #11- Ensure Financial Sustainability, Integrity, and Transparency:**
  - Secure the timely, cost effective renewal of Authority-wide insurance policies and contracts.
  - Minimize MWRA's exposure to financial loss stemming from contractor and vendor activities by reviewing risk exposures and establishing contract insurance requirements and monitoring contractors/vendors for compliance.
  - Process self-insured automobile, general liability, property damage, and construction contract claims in an efficient and timely manner.
  - Provide support to all MWRA Departments on all insurance, claims, litigation and risk management issues.

FY18 Accomplishments:

- Successfully procured MWRA's Insurance Program through a competitive bid process for all lines of coverage at a 6.0% increase in program cost compared to the FY18 program.

- Staff renewed MWRA's license to operate as a self-insured entity for workers' compensation claims by completing the annual application process with the Division of Insurance.

- Received, investigated and processed more than 120 self-insured Automobile, General Liability and Property damage claims.

- Provided timely support to MWRA managers on all insurance, claims, litigation and risk management issues.

Budget Highlights:

The FY19 Final Budget is $502,000, an increase $15,000 or 3.2% as compared to the FY18 Budget.

- $462,000 for **Wages & Salaries**, an increase of $15,000 or 3.4% as compared to the FY18 Budget, due to wage increases associated with collective bargaining agreements. The FY19 Final Budget funds four FTEs, the same as the FY18 Budget.

Quabbin Reservoir