

# **MASSACHUSETTS WATER RESOURCES AUTHORITY**



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## **Fiscal Year 2015 CURRENT EXPENSE BUDGET**

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**together with the participation of MWRA staff.**



# MASSACHUSETTS WATER RESOURCES AUTHORITY

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September 2014

Katherine Haynes Dunphy, Chairwoman  
MWRA Advisory Board  
100 First Avenue  
Boston, MA 02129

Dear Chairwoman Dunphy:

This letter transmits to the Advisory Board MWRA's Current Expense Budget (CEB) for Fiscal Year 2015. The CEB was approved by the MWRA's Board of Directors on June 25, 2014.

The Final FY2015 budget resulted in a 3.4% combined assessment increase, in agreement with the MWRA Advisory Board recommendation. MWRA was able to reduce the rate revenue requirement in the Final budget by \$853,660 recognizing the receipt of the FY2014 Debt Service Assistance, which was applied as a direct offset to the FY2015 debt service line item.

The Authority also identified \$2.4 million in additional savings by decreasing direct expenses and recognizing the larger than originally planned defeasance in FY2014. In agreement with the Advisory Board, the \$2.4 million savings were used to lower the use of reserves in FY2015 and preserve these important funds for use in future more challenging years.

The FY2015 total expenses are \$674.4 million, of which 60.8% or \$409.8 million is for capital financing costs, \$217.1 million for direct expenses, and \$47.5 million for indirect expenses. The overall expenses increased \$16.1 million or 2.4% from the FY2014 budget.

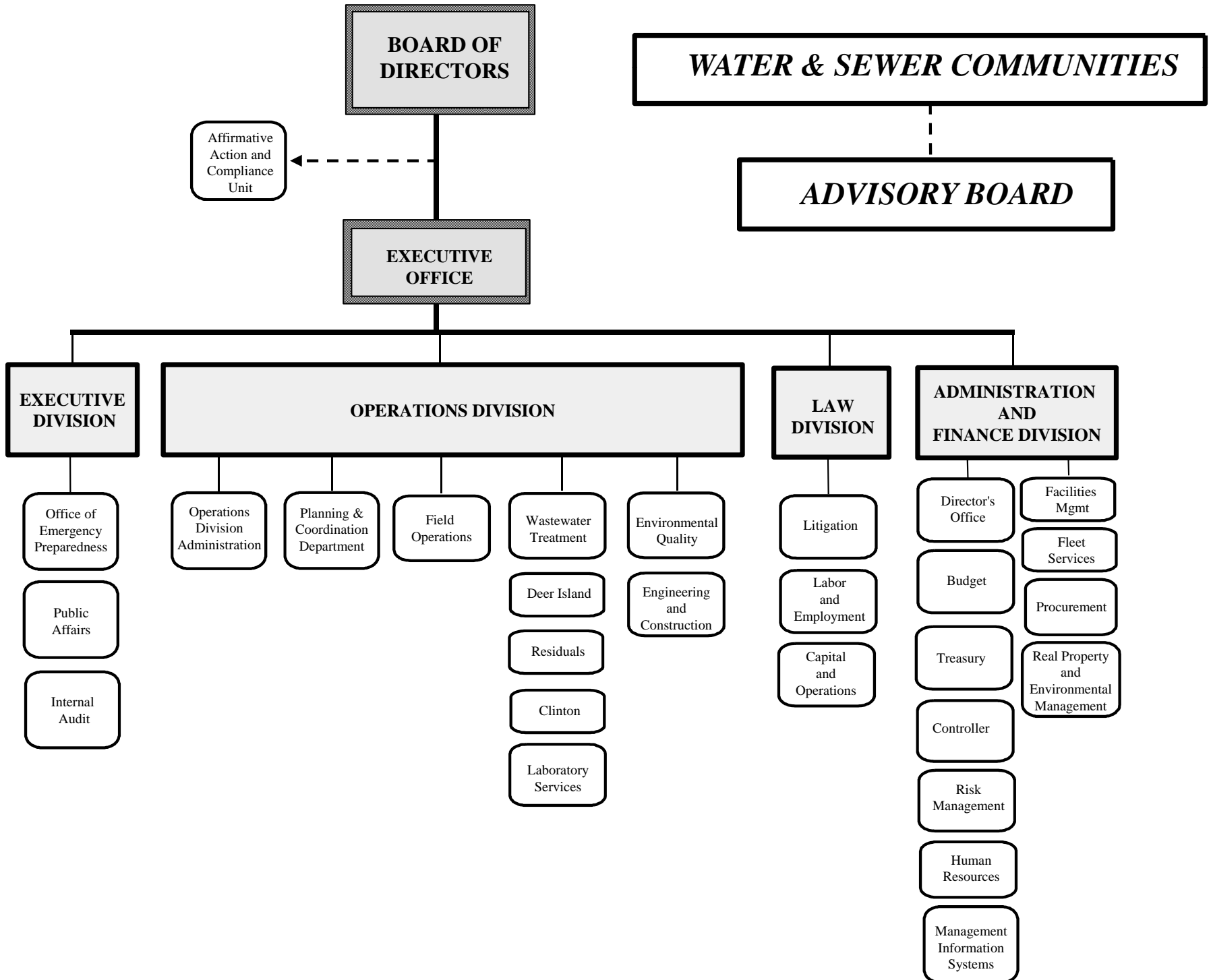
Going forward, the Authority, in line with MWRA's multi-year rates management strategy, plans to continue the practice of using available surplus funds from the prior fiscal year to defease debt for targeted rate relief in future years. Also, the Authority will continue to aggressively pursue cost savings initiatives to control spending wherever is possible.

Additional budget information and a copy of this document are available online at [www.mwra.com](http://www.mwra.com). Questions or comments on this document should be directed to the MWRA Budget Department at (617) 788-2268.

Thank you for your continued support.

Sincerely,

Frederick A. Laskey  
Executive Director



**BOARD OF DIRECTORS**

**WATER & SEWER COMMUNITIES**

Affirmative Action and Compliance Unit

**ADVISORY BOARD**

**EXECUTIVE OFFICE**

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Office of Emergency Preparedness

Public Affairs

Internal Audit

Operations Division Administration

Planning & Coordination Department

Field Operations

Wastewater Treatment

Environmental Quality

Deer Island

Residuals

Clinton

Laboratory Services

Engineering and Construction

Litigation

Labor and Employment

Capital and Operations

Director's Office

Budget

Treasury

Controller

Risk Management

Human Resources

Management Information Systems

Facilities Mgmt

Fleet Services

Procurement

Real Property and Environmental Management

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# Executive Summary

# Executive Summary

## MWRA Mission

The Massachusetts Water Resources Authority (MWRA) is an independent authority that provides wholesale water and sewer services to its member communities and funds its operations primarily through user assessments and charges. MWRA's mission is to provide reliable, cost-effective, high-quality water and sewer services that protect public health, promote environmental stewardship, maintain customer confidence, and support a prosperous economy. MWRA's long-term plan emphasizes improvements in service and systems and includes aggressive performance targets for operating the water and wastewater systems and maintaining new and existing facilities.

Parallel to MWRA's goal of carrying out its capital projects and operating programs is its goal of limiting rate increases by working in partnership with its member communities. The need to achieve and maintain a balance between these two goals continues to be the critical issue facing the MWRA.

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

## Overview

Each year, MWRA prepares a budget that reflects the best available information for anticipated expenditures and revenues. MWRA transmitted its FY15 Proposed Budget to the Advisory Board in February. The Advisory Board then has sixty days to review, comment, and provide recommendations. MWRA also hosts a public hearing to solicit comments on the budget and community assessments from citizens in its service area. In June, MWRA's Board of Directors holds hearings on the budget to review recommendations by the Advisory Board and new information available since the budget was developed. Staff incorporates Board decisions from the hearings and presents a final budget for approval in June.

## FY15 Final Budget Summary

The FY15 Proposed Current Expense Budget (CEB) submitted to the Advisory Board at the February 2014 Board meeting proposed a 3.6% combined assessment increase.

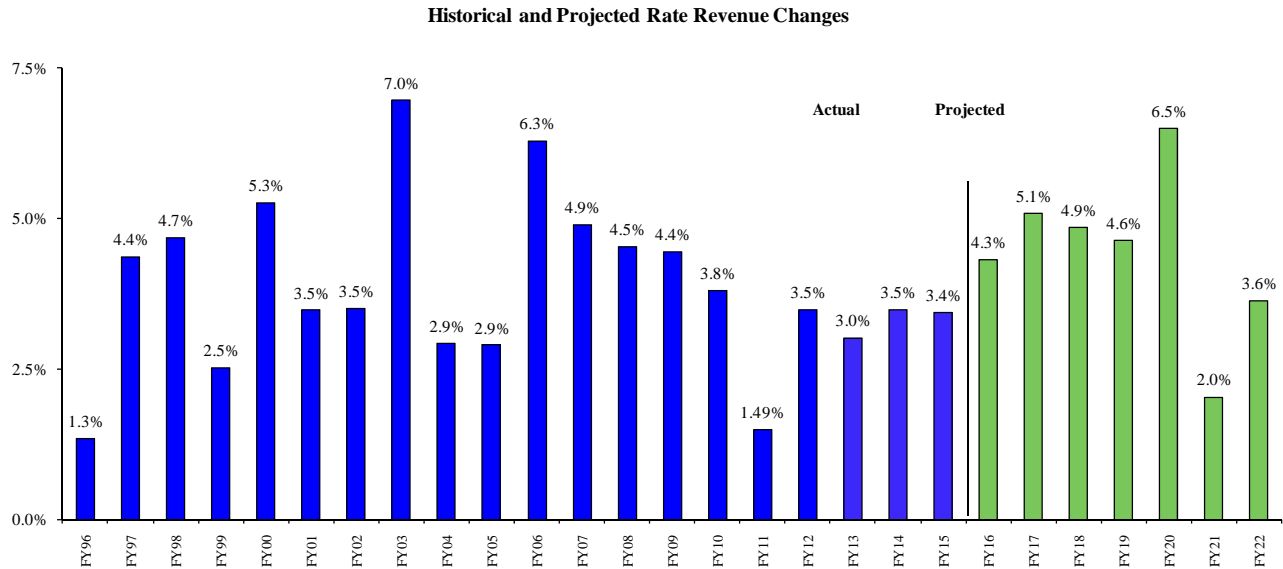
In the Draft Final CEB presented to the Board at the June 4<sup>th</sup> budget hearings, the Rate Revenue Requirement was reduced by \$853,660 recognizing the receipt of the FY14 Debt Service Assistance which was applied as a direct offset to the FY15 debt service line item. This reduction resulted in a lower combined assessment increase of 3.43%.

Besides the reduction of the Rate Revenue Requirement which resulted in lower than projected preliminary assessments, the Authority identified \$2.4 million in additional savings by decreasing direct expenses and recognizing the larger than originally planned defeasance in FY14. In agreement with the Advisory Board, the \$2.4 million savings were used to lower the use of reserves in FY15 and preserve these important funds for use in future more troublesome years.



As MWRA continues to pursue a rate management strategy which promotes predictable and reasonable assessments, many challenges remain, mostly related to Other Post Employment Benefits (OPEB) and Pension related liabilities, and the significant increases projected in FY17 and FY20, mostly driven by the current debt structure.

Based on the FY15 Final Budget, projected future rate changes are depicted in the following chart:



Total expenses of \$674.5 million, \$15.0 million or 2.3% above FY14 Actual Spending. Capital financing costs remain the largest component of the budget and account for 60.8% of total expenses. No Debt Service Assistance (DSA) is assumed for FY15.

Total expenses include \$409.8 million for capital financing costs, 60.8% of total costs, and \$264.7 million or 39.2% for operating expenses, of which \$217.1 million is for direct expenses and \$47.5 million is for indirect expenses. Total expenses increased \$15.0 million or 2.3% from FY14 Actual Spending, \$8.3 million which comes from increased capital financing expenses and \$6.7 million which comes from higher operating expenses.

The \$8.3 million or 2.1% increase in capital financing expenses before offsets reflects debt service to support issuances of \$100.0 million in September of 2014 and \$100 million of new money in May 2015 as well as new State Revolving Fund (SRF) debt of \$85.6 million to be issued in FY15. Offsetting these issuances, are the impacts of the FY14 defeasance of \$26.2 million, which is estimated to yield savings of approximately \$1.3 million in FY15, \$1.3 million in FY16, \$25.0 million in FY17, and \$3.7 million in FY18.

The \$6.7 million or 2.6% increase in operating expenses from FY14 Actual Spending is mainly due to wages and salaries of \$4.8 million for cost of living adjustments (COLA), the increase in Professional Services of \$1.1 million due to lower cost in FY14, Watershed of \$826,000 mainly for increased Payment in Lieu of Taxes (PILOT) expense and increased operating costs, as well as other services, addition to reserves, fringe benefits, and overtime.

Total Revenues of \$674.5 are budgeted for FY15. The FY15 Final Rate Revenue Requirement is \$650.3 million, an increase of \$21.6 million or 3.4% over the FY14 Rate Revenue Requirement. FY15 non-rate revenues total \$24.1 million, a decrease of \$10.8 million or 30.8% from FY14 Actual Spending mainly due to lower Other Revenue of \$5.1 million for the \$3.1 million received in exchange for the dismissal of all disputed claims of all parties to the 2010 water main break cost recovery lawsuit, \$609,000 in water sales for the Town of Hudson, and \$320,000 in higher energy revenue as well as lower Rate Stabilization funding of \$3.5 million and lower investment income of \$2.4 million

Table I-1 shows MWRA's FY15 Final Budget for revenue and expenses compared with the FY14 and FY13 Actual Spending. Changes from FY14 to FY15 are described in the Revenue and Expense section of the Executive Summary.

**Table I-1**

TOTAL MWRA	FY13 Actual	FY14 Actual	FY15 Final Budget	Change FY15 Final Budget vs FY14 Actual	
				\$	%
<b>EXPENSES</b>					
WAGES AND SALARIES	\$ 90,658,806	\$ 91,751,235	\$ 96,554,749	\$ 4,803,514	5.2%
OVERTIME	3,542,871	3,400,247	3,620,600	220,353	6.5%
FRINGE BENEFITS	17,536,480	18,074,366	18,299,405	225,039	1.2%
WORKERS' COMPENSATION	2,114,701	2,311,448	2,200,000	(111,448)	-4.8%
CHEMICALS	10,139,257	10,226,458	10,219,580	(6,878)	-0.1%
ENERGY AND UTILITIES	23,057,581	23,396,747	23,472,354	75,607	0.3%
MAINTENANCE	26,956,073	29,453,365	27,972,607	(1,480,758)	-5.0%
TRAINING AND MEETINGS	320,596	328,782	361,019	32,237	9.8%
PROFESSIONAL SERVICES	5,002,664	4,900,235	5,957,201	1,056,966	21.6%
OTHER MATERIALS	6,955,029	5,986,021	5,952,729	(33,292)	-0.6%
OTHER SERVICES	22,323,327	21,736,151	22,538,498	802,347	3.7%
<b>TOTAL DIRECT EXPENSES</b>	<b>\$ 208,607,384</b>	<b>\$ 211,565,055</b>	<b>\$ 217,148,742</b>	<b>\$ 5,583,687</b>	<b>2.6%</b>
INSURANCE	\$ 2,220,704	\$ 2,050,555	\$ 2,128,155	\$ 77,600	3.8%
WATERSHED/PILOT	26,004,694	26,640,877	27,466,790	825,913	3.1%
HEEC PAYMENT	3,492,064	3,525,799	3,198,174	(327,625)	-9.3%
MITIGATION	1,517,791	1,494,900	1,605,967	111,067	7.4%
ADDITIONS TO RESERVES *	1,398,329	169,304	482,953	313,649	185.3%
RETIREMENT FUND	5,765,956	7,470,927	7,808,155	337,228	4.5%
POSTEMPLOYMENT BENEFITS/ ADDITIONAL PENSION DEPOSIT	4,724,291	4,976,411	4,821,320	(155,091)	-3.1%
<b>TOTAL INDIRECT EXPENSES</b>	<b>\$ 45,123,829</b>	<b>\$ 46,328,773</b>	<b>\$ 47,511,514</b>	<b>\$ 1,182,741</b>	<b>2.6%</b>
STATE REVOLVING FUND	\$ 71,491,292	\$ 72,684,514	\$ 78,460,635	\$ 5,776,121	7.9%
SENIOR DEBT	209,826,104	229,505,983	220,835,626	(8,670,357)	-3.8%
CURRENT REVENUE/CAPITAL	8,200,000	9,200,000	10,200,000	1,000,000	10.9%
SUBORDINATE MWRA DEBT	100,371,993	100,117,241	99,686,105	(431,136)	-0.4%
LOCAL WATER PIPELINE CP	335,271	316,440	4,148,453	3,832,013	1211.0%
CAPITAL LEASE	3,217,060	3,217,060	3,217,060	-	0.0%
VARIABLE DEBT	(13,197,283)	(12,770,132)	-	12,770,132	
CORE FUND DEPOSIT	-	132,238	876,507	744,269	562.8%
VARAIAABLE RATE DEBT/OTHER	-	-	-	-	
DEFEASANCE ACCOUNT	-	-	-	-	
BOND REDEMPTION	-	-	(6,745,598)	(6,745,598)	
DEBT SERVICE ASSISTANCE	-	(853,660)	(853,660)	-	
<b>TOTAL DEBT SERVICE</b>	<b>\$ 380,244,437</b>	<b>\$ 401,549,684</b>	<b>\$ 409,825,128</b>	<b>\$ 8,275,445</b>	<b>2.1%</b>
<b>TOTAL EXPENSES</b>	<b>\$ 633,975,650</b>	<b>\$ 659,443,512</b>	<b>\$ 674,485,384</b>	<b>\$ 15,041,871</b>	<b>2.3%</b>
<b>REVENUE &amp; INCOME</b>					
RATE REVENUE	\$ 607,512,000	\$ 628,721,000	\$ 650,315,782	\$ 21,594,782	3.4%
OTHER USER CHARGES	7,707,031	8,030,020	8,259,693	229,673	2.9%
OTHER REVENUE	8,173,785	11,266,436	6,180,451	(5,085,985)	-45.1%
RATE STABILIZATION	-	3,500,000	-	(3,500,000)	-100.0%
INVESTMENT INCOME	13,590,492	12,129,653	9,729,458	(2,400,195)	-19.8%
<b>TOTAL REVENUE &amp; INCOME</b>	<b>\$ 636,983,311</b>	<b>\$ 663,647,109</b>	<b>\$ 674,485,384</b>	<b>\$ 10,838,275</b>	<b>1.6%</b>

\* Reserves estimated based on OPEB being deposited into the Pension fund

**FY15 Goals:**

- 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.
- Continue assessment and evaluation of sustainable cost savings opportunities throughout the organization.
- Continue the implementation of long-term strategies to ensure reasonable rate increases to MWRA's communities.
- Manage MWRA's debt portfolio to contribute to the achievement of sustainable and predictable rate increases.
- Plan, develop, implement, and operate efficient, reliable, and economical water treatment/delivery and wastewater transport/treatment systems.
- Ensure compliance with state and federal drinking water quality and wastewater discharge regulations including the Safe Drinking Water Act (SDWA), the Clean Water Act, and the National Pollutant Discharge Elimination System (NPDES) permits.
- Plan and implement 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.
- Manage MWRA's debt portfolio to contribute to the achievement of sustainable and predictable rate increases.
- Attract and retain a qualified high-performance workforce, hire and promote qualified minority and female employees, and offer a competitive total compensation package (salary and benefits) to all employees.

**FY15 Initiatives:**

- Implement and start to optimize new ultraviolet disinfection treatment process for MWRA's potable water system at the Carroll Water Treatment Plant and Quabbin Disinfection Facility.
- Plan for implementation of requirements of the new National Pollutant Discharge Elimination System (NPDES) Permits for DITP (assume new permit is issued as of January 2015) and Clinton Wastewater Treatment Plant (assume new permit in effect for all of FY15).
- 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.
- Continue to identify, assess, and implement initiatives to reduce energy demand and increase energy self-generation in MWRA's system, and pursue grant-funding and cost sharing arrangements with utilities.
- Self-generate ~28% of the Deer Island Treatment Plant's (DITP) required power through optimization of power generation assets, including the wind turbines and the Steam Turbine Generation (STG) back pressure system.
- Identify and implement strategies for workforce succession in preparation for expected retirement of many MWRA employees in the upcoming five to ten years.

- Evaluate pilot program to introduce commercial food waste co-digestion project at Deer Island Treatment Plant.
- MWRA's highest legislative priority continues to focus on the need for a more robust "Commonwealth Rate Relief Package" to help offset anticipated rate increases over the next several years.

**FY14 Accomplishments:**

- 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.
- Defeased \$27.2 of outstanding debt on June 19, 2014 for budgetary relief in fiscal years FY15 thru FY18 thereby reducing the rate of increase to the Rate Revenue Requirement in those years. The source of funding for this defeasance was primarily the Fiscal Year 2014 current expense budget surplus.
- Completed the 2014A&B transaction on May 20, 2014. This refunding was necessitated by the expiration of the Bank of Nova Scotia liquidity facility on the variable rate Series 2008F. Through a competitive procurement, MWRA awarded portions of the 2008F series to Bank of America in the form of Direct Purchase Bonds and to the Bank of New York Mellon in the form of a Standby Bond Purchase Agreement reducing the cost of these bonds and further diversifying the variable rate debt program across banks.
- Received revenue for energy generated at numerous facilities including the following: hydroelectric \$766,000 from Oakdale Station, \$214,000 from Cosgrove Station, and \$36,000 from the Loring Road Pump Station; wind of \$347,000 from Charlestown Pump Station; and solar of \$95,000 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 and the non-rate revenue from the sale of Renewable Portfolio Standards Program (RPS) credits resulted in \$2.9 million in revenue for FY14. Deer Island also self-generated ~25% of the plant's total required power during that period.
- At DITP, treated 99.5% of flow through secondary and met secondary permit limits at all times. Operated DITP without any NPDES Permit violations during FY14.
- Processed 99.2 average tons per day of sludge at the Pelletization Plant and disposed of 6,031 tons of grit and screenings through a contracted vendor.
- Successfully commenced the new ultraviolet (UV) disinfection treatment process for MWRA's potable water system at the Carroll Water Treatment Plant.
- In the water system, exercised and replaced 745 and 20 mainline valves and 458 and 11 blow-off valves.
- In the wastewater system, inspected 32.62 miles and cleaned 17.75 miles of MWRA pipeline. Also inspected 723 structures and rehabilitated 112 manholes.
- Identified \$1,633,000 in audit impact dollars related to: management advisory services, consultant audits, construction labor burden reviews, the early termination of two janitorial services contracts, a true-up of 2013 Boston Water and Sewer Company (BWSC) CSO financial assistance agreement activity, a true-up of 2013 Harbor Electric Energy Company (HEEC) billings for the harbor cable, a Charlestown Navy Yard lease operating cost adjustment, and a refund from an office supply vendor.

- Provided management advisory and data analysis services for management initiatives dealing with the HEEC cross-harbor cable and the New England Fertilizer Company contract for operating the Pellet Plant.
- Procured multi-year electricity supply contracts with two vendors for MWRA facilities.
- Developed and commenced a Memorandum of Understanding with NSTAR for energy efficiency undertakings. The agreement allows MWRA to achieve higher rebates from the utility for implementing energy efficiency projects and also supports the identification and implementation of energy efficiency opportunities throughout MWRA's day-to-day operations and construction programs.
- The TRAC Department completed the following Environmental Protection Agency (EPA)-required work for significant industrial users: 277 inspections, 185 monitoring events, and 373 sampling of connections. This department also issued or renewed 411 permits to Significant Industrial Users (SIUs) and non-SIUs.
- EnQuad 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 17 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.
- Met all water quality and treatment standards for giardia in the drinking water system during FY14. Also, maximum turbidity results at Quabbin and Wachusett were within DEP standards.
- Successfully negotiated successor collective bargaining agreements with two collective bargaining unions.
- Competitively bid CY13 Renewable Energy Portfolio Standard certificates which resulted in FY14 revenues of \$398,198 (Class II). In addition, received FY14 revenues of \$1,988,636 from forward marketing of CY13 (Class I and Solar) Renewable Portfolio Standards (RPS) certificates.
- Received proposals and supported DITP in award of pilot program contract for co-digestion of organic waste.
- Procured the Authority's vehicle purchases at the beginning of Fiscal Year 2014; including 40 vehicles procured through the use of a "Reverse Auction" format which resulted in savings to the Authority.
- Processed nine competitive bids in a compressed time frame for materials to be used in the Co-Digestion pilot project for an approximate total of \$450,000.
- Purchased 467,000 gallons of ultra-low-sulfur, #2 diesel fuel for the Deer Island Thermal/Power Plant at an average cost of \$3.08/gallon, lower than the FY14 budget price of \$3.50/gallon.
- Continued to seek out environmentally friendly products, among them recycled toners, batteries, copy paper, hybrid vehicles, and bio-fuels.
- Recycled 33.75 tons of paper, 374.27 tons of scrap metal (includes stainless steel and aluminum), 4,260 pounds of brass and copper, and 1,490 batteries in addition to scrapping 6 vehicles, generating \$94,768 in revenues.

## SOURCES AND USES OF FUNDS

MWRA funds its operations primarily through member community assessments. Funds supporting the current expense budget are not subject to appropriation with the exception of debt service assistance. Table I-2 shows MWRA's sources and uses of funds for the FY15 Final Budget.

SOURCES & USES OF FUNDS*		
\$ in Millions		
<i>Sources of Funds</i>		
Other User Charges	\$8.3	1.2%
Other Revenue	6.2	0.9%
Investment Income	9.7	1.4%
Rate Revenue	650.3	96.4%
Rate Stabilization	0.0	0.0%
<b>TOTAL REVENUE</b>	<b>\$674.5</b>	<b>100.0%</b>
<i>Uses of Funds</i>		
Total Expenses before Debt		
Service Offsets	\$417.4	
Less:		
Debt Service Assistance	(0.9)	
Bond Redemption	(6.7)	
Sub-Total Net Expenses	409.8	
Capital Financing	409.8	60.8%
Direct Expenses	217.1	32.2%
Indirect Expenses	47.5	7.0%
<b>TOTAL EXPENSES</b>	<b>\$682.1</b>	<b>100.0%</b>
<b>TOTAL EXPENSES Less Offsets</b>	<b>\$674.5</b>	
*May not add up due to rounding		

### Revenue

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

In the FY15 Final Budget, 96.4% of revenue is derived from rate revenue. The remaining 3.6% of revenue will come from interest on investments, charges to other water and sewer customers, non-recurring revenue, annual charges to sewer system users with permits issued by MWRA's Toxic Reduction and Control Department (TRAC), penalties assessed to holders of sewer use permits, and other miscellaneous sources.

### Rate Revenue

Under the FY15 Final Budget, the MWRA will raise \$650.3 million of its total revenue requirements from water and sewer assessments to member communities. Of the \$650.3 million, \$440.1 million will fund the sewerage system, an increase of 3.4% as compared to FY14; and \$210.2 million will fund the water system, an increase of 3.5% as compared to FY14.

### Non-Rate Revenue

#### **Other User Charges**

Other User Charges include revenues derived from the provision of water and sewer services to communities and other entities under special agreements. Other User Charges in the FY15 Final Budget total \$8.3 million, an increase of \$230,000 or 2.9% from FY14 Actual Spending and includes \$4.7 million paid by the Chicopee Valley Aqueduct communities, \$1.6 million for the transfer of the water used at Deer Island, \$642,000 in entrance fees paid by Stoughton and Wilmington, \$500,000 for

the Commonwealth's partial reimbursement for Clinton Wastewater Treatment Plant expenses, \$518,000 in water revenue, and \$372,000 in sewer revenue to contract communities.

## **Other Revenue**

Other Revenue is budgeted at \$6.2 million, a decrease of \$5.1 million or 45.1% from the FY14 Actual Spending mainly due to the \$3.1 million received in exchange for the dismissal of all disputed claims of all parties to the 2010 water main break cost recovery lawsuit, \$609,000 in water sales for the Town of Hudson, and \$320,000 in higher energy revenue. Other Revenue includes \$3.0 million for the sale of Renewable Portfolio Credits, sale of generated power, and revenues for demand response programs, in addition to \$2.1 million in permit fees and penalties.

### *Permit Fees and Penalties*

The FY15 Final Budget includes \$2.1 million in fees charged to industries that discharge toxic materials into the MWRA sewer system. These permit fees partially offset the annual costs of permitting, inspecting, and monitoring these industries.

### *Miscellaneous Revenue*

The FY15 Final Budget includes \$4.0 million in miscellaneous revenues of which \$3.0 million pertains to the Authority's energy programs for the sale of Renewable Portfolio Standard credits, participation in the demand response program, and the sale of power including hydro, wind, and solar generated at various MWRA's facilities in addition to over \$1.0 million in miscellaneous revenue items.

## **Investment Income**

MWRA earns income by investing reserves and fund balances in a variety of interest-yielding securities. The FY15 Budget includes \$9.7 million in investment income, a decrease of \$2.4 million or 19.8% from FY14 Actual Spending due lower average fund balances. The FY15 short-term interest rate is 0.20%, matching the FY14 CEB's budget assumption.

## ***Non-Recurring Revenue***

Non-Recurring Revenue is one-time revenue used in a given fiscal year to reduce assessments to member communities. In any fiscal year when annual revenues exceed expenses, MWRA may transfer the unexpended amount to the rate stabilization reserve. Within certain limits, MWRA may use this money to reduce the Rate Revenue Requirement in any subsequent year. Consistent with the requirements of its enabling act and its general bond resolution, MWRA treats transfers from the rate stabilization reserve as revenue in that fiscal year. For the FY15 Final Budget, no Rate Stabilization use is projected, preserving funds for future use.

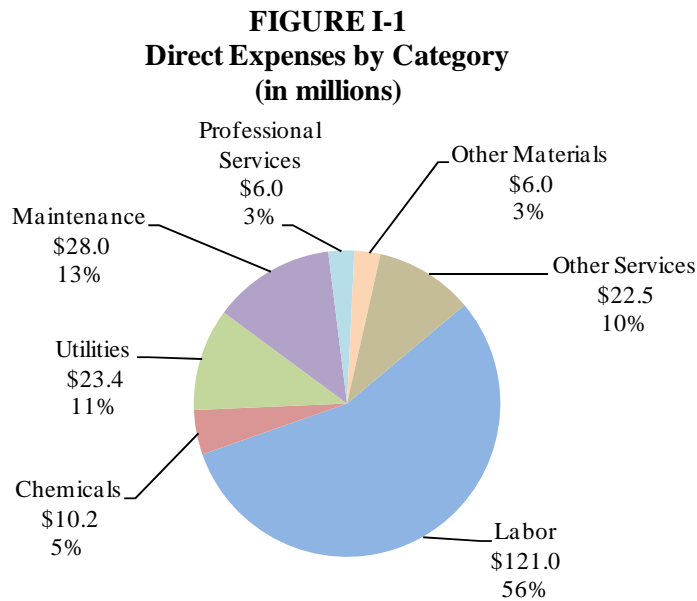
## **Direct Program Expenses**

The FY15 Final Direct Expense Budget is \$217.1 million, \$5.6 million or 2.6% above FY14 Actual Spending. The principal drivers for the increase are wages and salaries of \$4.8 million due to projected cost of living increases, professional services of \$1.1 million due to lower than projected need in FY14, and other services of \$802,000 mainly due to lower than budgeted spending in FY14 and increases for space/lease rental in FY15. These increases are partially offset by reductions in maintenance mainly due to higher than budgeted spending in FY14. MWRA continues to manage

direct expenses through implementing cost improvement initiatives, such as cross-training staff, competitive purchase of energy and chemicals, lease space reductions, and increased self-generation of electricity.

**Line Item Budget Summary**

Figure I-1 combines related direct expense line items into general cost categories and shows that labor costs (wages and salaries, overtime, fringe benefits, workers’ compensation and training and meetings) are the largest component of the direct expense budget 56%, followed then by maintenance 13%, utilities 11%, and other services 10%.



**Wages and Salaries**

The FY15 Final Budget includes \$96.6 million for wages and salaries as compared to \$91.8 million, an increase of \$4.8 million or 5.2% over FY14 Actual Spending largely due to cost of living increases in FY15, lower than budgeted headcount in FY14, and the mix effect of salaries of those retiring being generally higher than new hires. Of the \$96.6 million, \$94.7 million is for regular pay. The final budget assumes a headcount of 1,175 funded positions, level funded with the FY14 Budget. As always, new hires and backfills of vacant positions will be managed at the senior management level and addressed on a case-by-case basis.

**Overtime**

The FY15 Final Budget includes \$3.6 million for overtime, an increase of \$220,000 or 6.5% from FY14 Actual Spending mainly due to lower than budget overtime in FY14 due to lower than budgeted wet weather events. The FY15 Budget assumes overtime will be limited to coverage, emergencies, and critical maintenance projects.



## **Fringe Benefits**

The FY15 Final Budget includes \$18.3 million for fringe benefits, an increase of \$225,000 or 1.2% from FY14 Actual Spending mainly due to increased healthcare and dental costs.

## **Workers' Compensation**

The FY15 Final Budget includes \$2.2 million for workers' compensation, a decrease of \$111,000 or 4.8% from FY14 Actual Spending. The FY15 Final Budget is based on the average of three years of actual spending.

## **Chemicals**

The FY15 Final Budget includes \$10.2 million for chemicals, a decrease of \$7,000 or 0.1% from FY14 Actual Spending. The majority of the decrease in the budget is for new fluoride regulations, changed operating assumptions for liquid oxygen and nitrazyme, and lower chemical costs offset by the inclusion of three months of projected chemical usage for enterococcus compliance.

## **Utilities**

The FY15 Final Budget includes \$23.4 million for utilities, an increase of \$75,000 or 0.3% from FY14 Actual Spending. The budget assumes funding of \$17.0 million for electricity, \$3.7 million for diesel fuel, \$2.1 million for water and \$516,000 for natural gas. The FY15 Final energy and utilities budget reflects the most recent pricing outlook based on energy futures and the latest bids for contracts and updated assumptions for self-generation at Deer Island, green energy initiatives, along with efficiency improvements in Field Operations.

## **Maintenance**

The FY15 Final Budget includes \$28.0 million for maintenance projects, a decrease of \$1.5 million or 5.0% from FY14 Actual Spending. FY14 Actual Spending was greater than budgeted due to the timing of material receipt and costs of some of the budgeted initiatives.

## **Training and Meetings**

The FY15 Final Budget includes \$361,000 for training initiatives, and is primarily level funded with FY14 Actual Spending.

## **Professional Services**

The FY15 Final Budget \$6.0 million for professional services, an increase of \$1.1 million or 21.6% from FY14 Actual Spending mainly due to lower than projected use of as-needed engineering services in FY14. The budget reflects funding for Security of \$1.7 million, regulatory monitoring of \$1.5 million, and Other professional services funding of \$1.4 million to support items such as the Authority-wide MIS initiatives, Treasury outside consulting support services, and energy audits.

## Other Materials

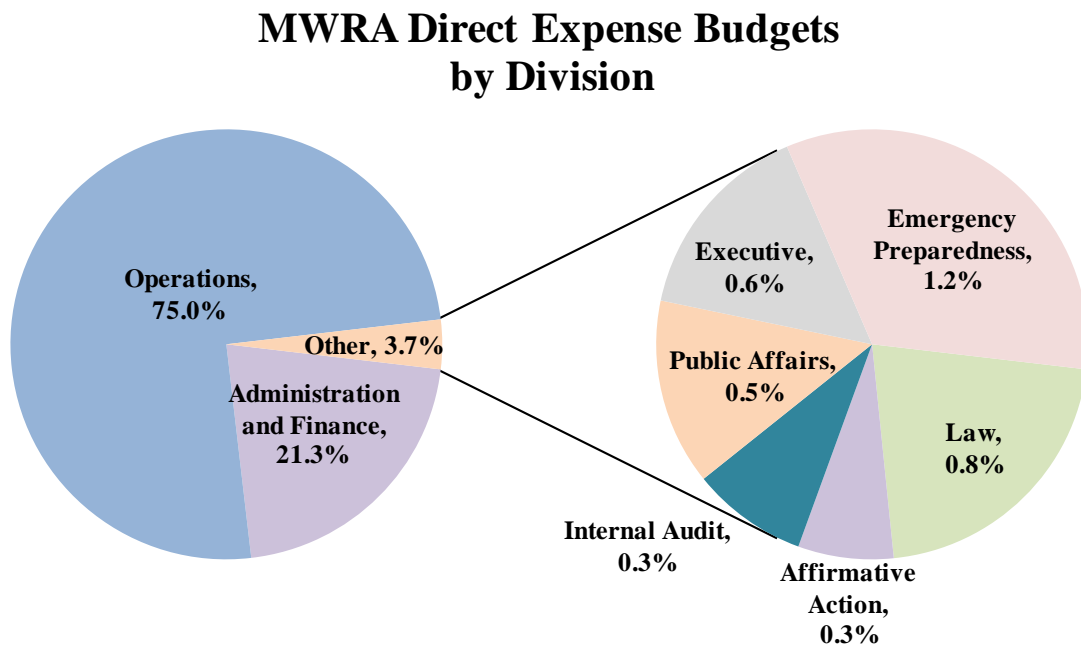
The FY15 Final Budget includes \$6.0 million for other materials, a decrease of \$33,000 or 0.6% from FY14 Actual Spending. The budget includes funding of \$1.7 million for vehicle purchases, \$1.1 million for vehicle expenses mostly for gasoline purchases, \$803,000 for lab and testing supplies, \$499,000 for computer hardware needs, and \$459,000 for equipment and furniture.

## Other Services

The FY15 Final Budget includes \$22.5 million for other services, an increase of \$802,000 or 3.7% from FY14 Actual Spending. The increase is largely due to lower than projected spending for sludge processing in FY14 and projected increase for space/lease rental and property taxes in FY15. The budget includes funding of \$13.9 million for sludge pelletization, \$3.5 million for space/lease rentals and related expenses for the CNY and Chelsea facilities, and \$1.4 million for voice and data costs.

## Functional Area Budget Summary

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



For a broader perspective on MWRA's direct expense budget, Figure I-2 presents direct expenses by MWRA functional area and shows that 46% of the FY15 direct expense budget is for Wastewater Transport and Treatment costs, compared to 15% for Water Transmission, Treatment, and Distribution.

**FIGURE I-2**  
**Direct Expenses by Functional Area**

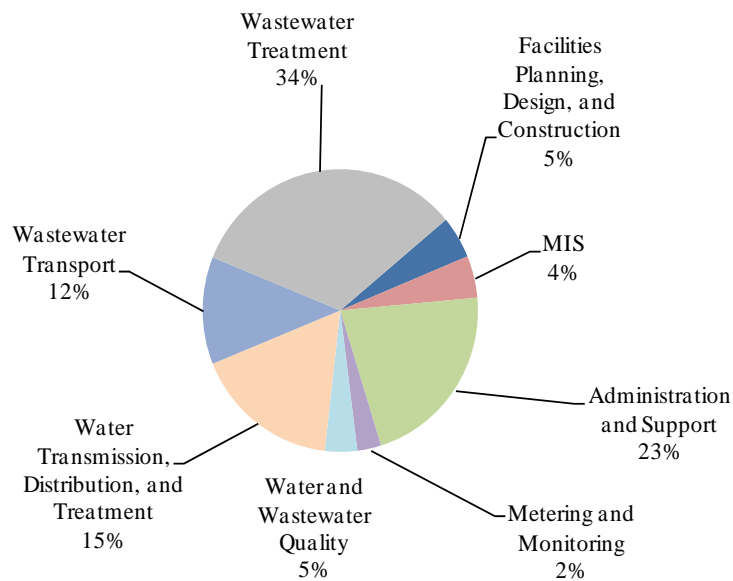
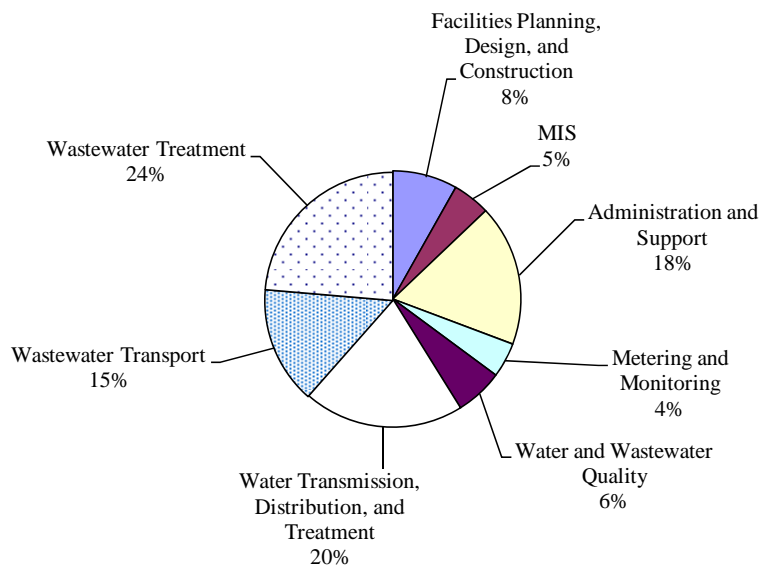


Figure I-3 on the following page illustrates staffing by Functional Area and shows the breakdown of the 1,162 filled positions as of June 2014. Of the 1,162 filled positions, 59% are devoted to operating and maintaining the water and wastewater treatment and transport systems; 23% to administration and support and MIS functions, and 8% to facilities planning, design, and construction. Water and Wastewater Quality functions and Meter and Monitoring account for the remaining 10% of staff.

**FIGURE I-3**  
**Staffing by Functional Area**



## **Indirect Expenses**

The FY15 Budget Indirect Expenses total \$47.5 million, an increase of \$1.2 million or 2.6% above FY14 Actual Spending. Below are the highlights of major changes:

### **Insurance**

The FY15 Final Budget includes \$2.1 million for Insurance, an increase of \$78,000 or 3.8% from FY14 Actual Spending primarily due to higher premiums offset by lower claims. The FY15 Final Budget was based on actual average spending for the past five years, FY09-13.

### **Watershed Reimbursement/PILOT**

The FY15 Final Budget includes \$27.5 million for the Department of Conservation and Recreation (DCR) Office of Watershed Management, an increase of \$826,000 or 3.1% over FY14 Actual Spending. The budget is comprised of \$13.8 million for reimbursement of operating expenses net of revenues, \$8.1 million for Payment in Lieu of Taxes (PILOT), and \$5.6 million for debt service expenses on prior land purchases financed by the Commonwealth. The largest increase is for operating expenses of \$352,000 mainly for contractual increases offset by a decrease for PILOT payments of \$100,000.

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

The FY15 Final Budget includes \$3.2 million for the Harbor Energy Electric Company (HEEC), a decrease of \$328,000 or 9.3% from FY14 Actual Spending primarily for lower capacity charges offset by increases for special maintenance projects. The majority of funding is for the contractual repayment of the capital investment of the Deer Island electric cable and substation which provides electric power to the treatment plant.

### **Mitigation**

The FY15 Final Budget includes \$1.6 million for Mitigation, an increase of \$111,000 or 7.4% from FY14 Actual Spending primarily for lower the anticipated costs in FY14 and projected increases in FY15.

### **Operating Reserve**

The FY15 Final Budget includes \$483,000 for funding of the Operating Reserve, an increase of \$314,000 than FY14 Actual Spending. The Operating Reserve balance is in compliance with MWRA General Bond Resolution which requires a balance of one-sixth of annual operating expenses. Based on the FY15 Final CEB, the required balance is \$39.5 million versus the \$39.0 million required in FY14.

### **Retirement System Contribution**

The FY15 Final Budget includes \$12.6 million for the Pension Fund, an increase of \$182,000 or 1.4% over the FY14 contribution. Of the \$12.6 million contribution, \$7.8 million represents the minimum required contribution for FY15 based on the most recent actuarial evaluation of January 1, 2013 and

\$4.8 million represents the redirection of Other Post Employment Benefit (OPEB) funding included in the FY15 Proposed Budget to the Pension Fund.

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

The Authority has complied with the GASB 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other than Pensions (OPEB)*, by disclosing this liability in the year-end Financial Statements. As part of the multi-year strategy to address its unfunded liabilities for OPEB and pension holistically, the Board approved a strategy to aggressively pay down our pension liability and upon reaching full funding, move to address the OPEB obligation. This strategy was employed in FY08-14 Budgets. It was temporarily suspended in FY11 to achieve a 1.5% rate increase. The \$4.8 million included for OPEB in the FY15 Final Budget, consistent with the planning estimates, has been redirected as an optional payment to the Pension Fund.

### **Capital Financing**

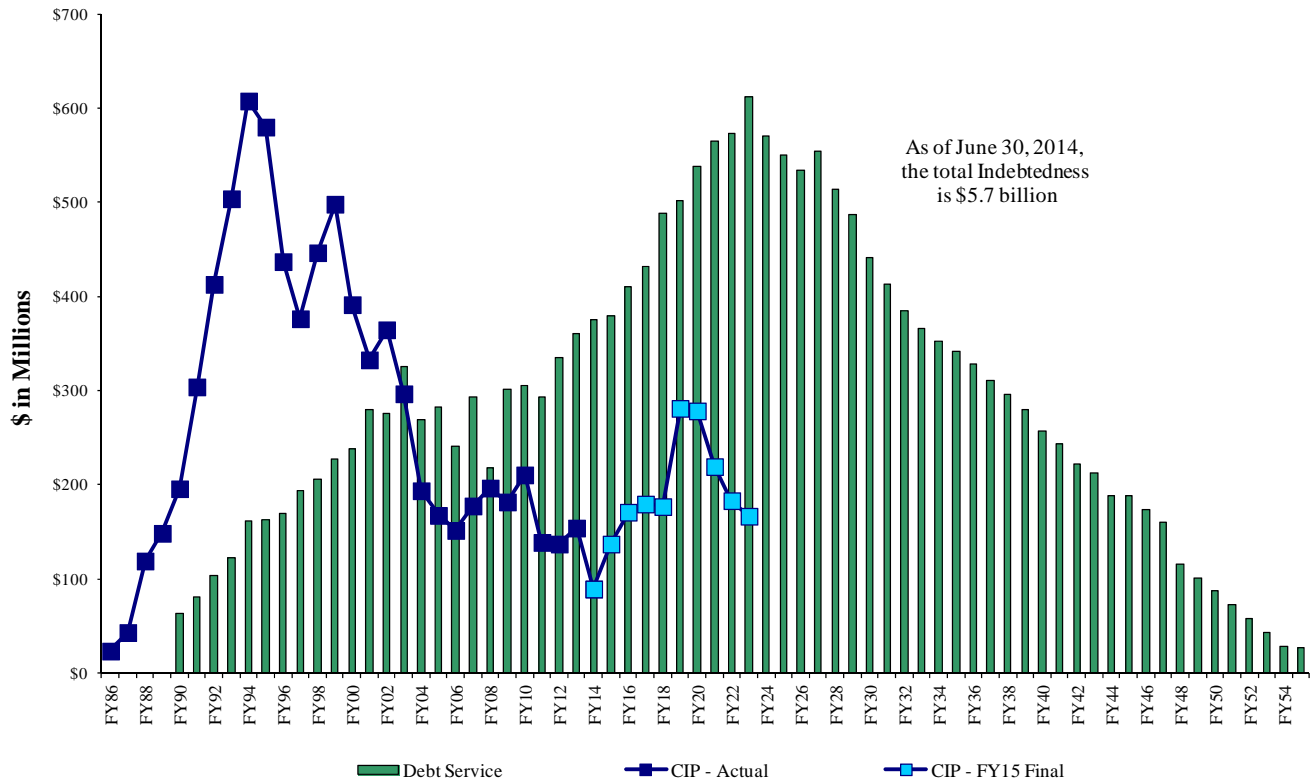
#### **Outstanding Debt and Debt Management**

The \$7.8 billion spent on MWRA's modernization efforts to date, has relied heavily on debt financing. Total debt as of June 30, 2014 was \$5.7 billion consisting of senior and subordinated debt, as well as Tax-Exempt Commercial Paper. The MWRA enjoys strong unenhanced senior debt ratings of Aa1, AA+, and AA+ from Moody's, Standard & Poor, and Fitch, respectively.

The following graph was updated with the FY15 Final CIP spending and debt service projections to illustrate the relationship between the MWRA's CIP and debt service.

Since its inception, MWRA has been focused on construction of new water and sewer facilities, many of which had been neglected for years, to bring the system into regulatory compliance. These efforts relied heavily on debt financing. Going forward, the majority of the capital spending will be geared towards asset protection and water redundancy initiatives. As indicated above, as of June 30, 2014 MWRA's total debt was \$5.7 billion which results in significant increases in debt service obligations in the coming years. The Authority's debt service obligation as a percent of total expenses has increased from 36% in 1990 to 61% in the FY15 Final Current Expense Budget, thus continuing to be the largest challenge for the Authority to management assessments in future years.

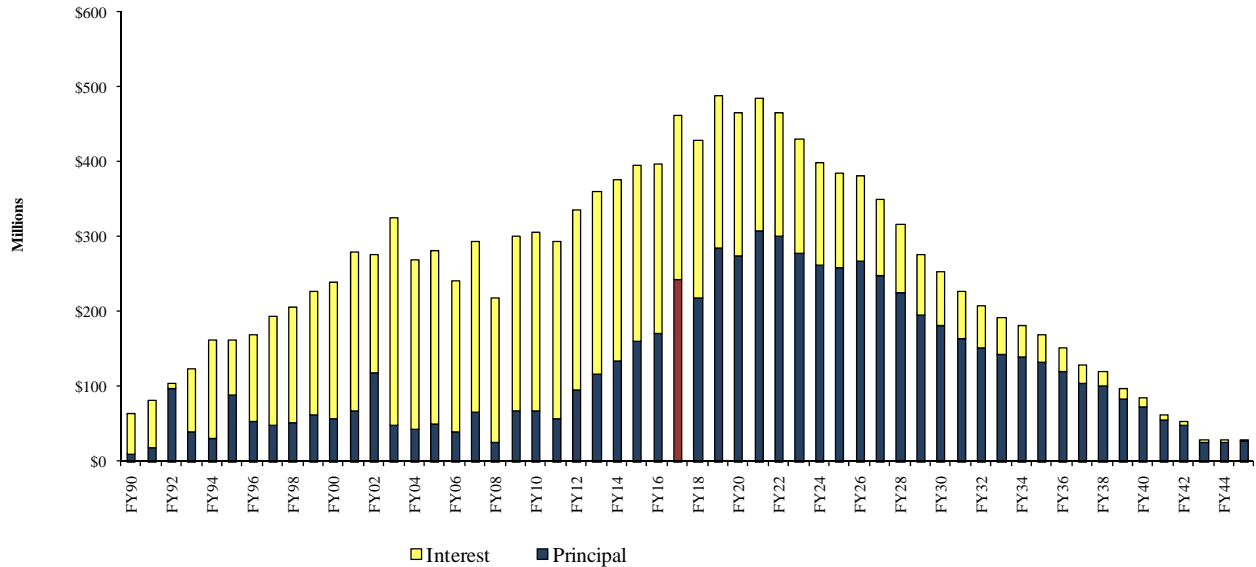
### MWRA Capital Improvement Spending & Debt Service



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

As presented in the FY14 Final CIP staff summary and reaffirmed in the FY15 process, the Authority has established the lowest five-year spending cap for FY14-18 period since 1990 which results in lower borrowing requirements in future years. The FY15 Final CIP confirms that MWRA will be reducing its total bonded indebtedness over the Cap period by paying off more principal than annual CIP spending. Also during this five-year cap period, MWRA will finally begin paying more principal than interest on its debt.

**MWRA Principal and Interest  
Payment History and Projections**



The FY15 Final capital financing costs total \$409.8 million and remain the largest portion of the MWRA’s budget, accounting for 61% of total expenses. Debt Service Assistance (DSA) of \$853,660 which was received in FY14 has been included as a direct offset in the FY15 Final Budget.

In June 2014, MWRA defeased \$27.2 million in outstanding principal to achieve debt service reductions through the use of FY13 and FY14 surplus funds of \$3.0 and \$26.2 million respectively. This defeasance resulted in debt service reductions of \$1.3 million in FY15 and FY16, \$25.0 million in FY17 and \$3.7 million in FY18.

The FY15 Budget assumes a 3.25% interest rate for variable rate debt which is the same level as in FY14. The Authority’s variable rate debt assumption is comprised of three separate elements: the interest rate for the daily and weekly series; liquidity fees for the Standby Bond Purchase Agreement, Letter of Credit, and Direct Purchase providers; and remarketing fees. While MWRA continues to experience unusually low interest rates, they are not reflective of historical averages and there is no guarantee that rates will stay low.

The FY15 Final capital financing costs after offsets increased by \$8.3 million or 2.1% compared to the FY14 Actual Spending.

The FY15 Final capital financing budget includes:

- \$220.8 million in principal and interest payments on MWRA’s senior fixed rate bonds. This amount includes \$6.3 million to support issuance of \$100 million in September 2014 and \$1.8 million to support issuances of \$100 million in May 2015. This also includes a reduction of \$1.3 million for the effect of the FY14 defeasance.
- \$99.7 million in principal and interest payments on subordinate bonds;

- \$78.5 million in principal and interest payments on SRF loans. This amount includes \$5.9 million to support issuances of \$53.8 million in Fall 2014 and \$42.5 million in 2015;
- \$10.2 million to fund ongoing capital projects with current revenue and to meet coverage requirements;
- \$4.1 million to fund the interest expense related to the Local Water Pipeline Assistance Program;
- \$3.2 million for the Chelsea Lease; and,
- \$876,507 for FY15 additional CORE deposit. The CORE Fund requirement is 10% of the Senior Debt Service after offsets for the fiscal year per the Bond Resolution.

The FY15 Final capital financing costs increased by \$15.0 million before offsets or 3.7% compared to the FY14 Actual Spending. After adjusting for use of \$6.7 million in Bond Redemption funding and \$853,660 for the Debt Service Assistance received in FY14 which is being applied as a direct offset to the Rate Revenue Requirement in FY15, the increase in the MWRA's debt service is \$8.3 million or 2.1%.

Table I-3 on the following page provides detail on the FY15 Final Budget capital financing line item. Table I-3 also illustrates how upgrading the sewerage system has dominated the capital program to date. Over 70% of the FY15 capital financing is for wastewater improvements. Current and future borrowings increasingly support improvements to the water system. A complete list of the Authority's indebtedness by series is presented in Appendix F.



**TABLE I-3**  
**FY15 Final Current Expense Budget - Capital Financing Detail (as of 6/30/14)**  
**\$ in Millions**

	<b>Amount Outstanding</b>	<b>Total FY15 Capital Costs</b>	<b>Sewer</b>	<b>Water</b>
Total SRF <sup>1</sup> Debt	\$1,064.2	\$78.5	\$62.4	\$16.1
Total Senior Debt	\$3,474.4	220.8	130.0	90.8
Total Subordinate Debt	\$1,018.7	99.7	81.2	18.5
<b>Total SRF and Debt Service<sup>2</sup></b>	<b>\$5,557.3</b>	<b>\$399.0</b>	<b>\$273.6</b>	<b>\$125.4</b>
Water Pipeline Commercial Paper	170.0	4.1	0.0	4.1
Current Revenue/Capital <sup>3</sup>		10.2	9.8	0.4
Capital Lease		3.2	2.0	1.3
CORE Fund Deposit		0.9	0.1	0.8
	<b>170.0</b>	<b>\$18.4</b>	<b>\$11.8</b>	<b>\$6.6</b>
<b>Total Capital Financing (before Debt Service Offsets)</b>	<b>5,727.3</b>	<b>\$417.4</b>	<b>\$285.4</b>	<b>\$132.0</b>
Debt Service Offsets:				
Debt Service Assistance		(0.9)	(0.8)	(0.1)
Bond Redemption		(6.7)	0.0	(6.7)
<b>Total Capital Financing</b>	<b>5,727.3</b>	<b>\$409.8</b>	<b>\$284.6</b>	<b>\$125.2</b>

## Community Profile and Assessments

MWRA provides wholesale water and sewer services to 61 communities or local bodies. Fifty-one local bodies purchase water supply services, and 45 local bodies purchase wastewater transport and treatment services. Thirty-five local bodies purchase both. Approximately 2.8 million people, or 43% of the population of Massachusetts, live and work in the communities that purchase water and/or wastewater services from MWRA.

MWRA's largest single customer is the Boston Water and Sewer Commission (BWSC), which provides retail services in the City of Boston. In the FY15 Final Budget, rate revenue from BWSC will account for 31% of MWRA's total rate revenue. Table I-4, on page I-20, lists MWRA communities, the services received, and the MWRA assessments for FY15.

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

Table I-5 on page I-21 presents the calculation of MWRA's FY15 Rate Revenue Requirement. The table shows that most of MWRA's current expenses are directly attributable to either water or sewer service costs, or to investment in the water or sewer systems. Expenses that support both systems are allocated to water or sewer assessments based on generally accepted cost allocation principles. The allocation methodology used in preparing the FY15 Final Budget was revised prior to FY02 to more accurately estimate the division of support costs between the water and sewer programs. Investment Income and Other Revenues offset water and sewer expenses. The resulting net cost of water and

sewer services is the amount MWRA recovers through water and sewer assessments.

### **Wholesale Assessment Methodology**

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

**Massachusetts Water Resources Authority**  
**Final FY15 Water and Sewer Assessments**

MWRA Fully Served Water and Sewer Customers	Final FY14 Water Assessment	Final FY15 Water Assessment	Percent Change from FY14	Final FY14 Sewer Assessment	Final FY15 Sewer Assessment	Percent Change from FY14	Final FY14 Combined Assessment	Final FY15 Combined Assessment	Dollar Change from FY14	Percent Change from FY14
ARLINGTON	\$4,553,819	\$4,555,760	0.0%	\$7,661,286	\$7,726,704	0.9%	\$12,215,105	\$12,282,464	\$67,359	0.6%
BELMONT	2,516,559	2,582,348	2.6%	4,652,803	4,664,723	0.3%	7,169,362	7,247,071	77,709	1.1%
BOSTON (BWSC)	73,408,095	75,628,730	3.0%	122,165,554	128,143,674	4.9%	195,573,649	203,772,404	8,198,755	4.2%
BROOKLINE	5,906,771	6,529,438	10.5%	12,675,295	12,542,458	-1.0%	18,582,066	19,071,896	489,830	2.6%
CHELSEA	3,524,702	3,782,023	7.3%	6,833,214	7,256,657	6.2%	10,357,916	11,038,680	680,764	6.6%
EVERETT	4,486,488	4,611,174	2.8%	7,612,435	7,816,187	2.7%	12,098,923	12,427,361	328,438	2.7%
FRAMINGHAM	7,645,878	7,583,720	-0.8%	10,691,353	11,278,349	5.5%	18,337,231	18,862,069	524,838	2.9%
LEXINGTON	5,555,065	6,035,866	8.7%	7,014,300	7,177,414	2.3%	12,569,365	13,213,280	643,915	5.1%
MALDEN	6,264,071	6,273,748	0.2%	11,761,795	12,260,112	4.2%	18,025,866	18,533,860	507,994	2.8%
MEDFORD	5,520,265	5,979,858	8.3%	10,943,641	11,075,116	1.2%	16,463,906	17,054,974	591,068	3.6%
MELROSE	2,519,249	2,650,477	5.2%	5,648,906	5,945,198	5.2%	8,168,155	8,595,675	427,520	5.2%
MILTON	2,834,490	2,854,051	0.7%	4,999,997	5,025,212	0.5%	7,834,487	7,879,263	44,776	0.6%
NEWTON	10,333,024	10,437,524	1.0%	20,152,363	20,176,404	0.1%	30,485,387	30,613,928	128,541	0.4%
NORWOOD	3,133,277	3,277,568	4.6%	6,147,982	6,492,751	5.6%	9,281,259	9,770,319	489,060	5.3%
QUINCY	10,147,276	10,605,214	4.5%	18,635,986	19,001,720	2.0%	28,783,262	29,606,934	823,672	2.9%
READING	1,854,203	1,931,410	4.2%	4,499,328	4,642,124	3.2%	6,353,531	6,573,534	220,003	3.5%
REVERE	4,353,201	4,484,031	3.0%	9,920,985	10,193,891	2.8%	14,274,186	14,677,922	403,736	2.8%
SOMERVILLE	6,440,071	6,896,106	7.1%	14,595,600	14,845,808	1.7%	21,035,671	21,741,914	706,243	3.4%
STONEHAM	3,262,031	3,490,972	7.0%	4,452,189	4,477,065	0.6%	7,714,220	7,968,037	253,817	3.3%
WALTHAM	7,809,194	8,061,502	3.2%	12,759,248	12,953,820	1.5%	20,568,442	21,015,322	446,880	2.2%
WATERTOWN	2,945,405	3,096,347	5.1%	5,654,172	5,774,673	2.1%	8,599,577	8,871,020	271,443	3.2%
WINTHROP	1,429,691	1,454,285	1.7%	3,161,934	3,221,355	1.9%	4,591,625	4,675,640	84,015	1.8%
<b>TOTAL</b>	<b>\$176,442,825</b>	<b>\$182,802,152</b>	<b>3.6%</b>	<b>\$312,640,366</b>	<b>\$322,691,415</b>	<b>3.2%</b>	<b>\$489,083,191</b>	<b>\$505,493,567</b>	<b>\$16,410,376</b>	<b>3.4%</b>

MWRA Sewer and Partial Water Customers	Final FY14 Water Assessment	Final FY15 Water Assessment	Percent Change from FY14	Final FY14 Sewer Assessment	Final FY15 Sewer Assessment	Percent Change from FY14	Final FY14 Combined Assessment	Final FY15 Combined Assessment	Dollar Change from FY14	Percent Change from FY14
CANTON	\$1,414,000	\$991,292	-29.9%	\$3,460,713	\$3,547,316	2.5%	\$4,874,713	\$4,538,608	(\$336,105)	-6.9%
NEEDHAM	1,271,018	1,193,697	-6.1%	5,423,810	5,466,144	0.8%	6,694,828	6,659,841	(\$34,987)	-0.5%
STOUGHTON	758,402	931,975	22.9%	4,364,713	4,391,426	0.6%	5,123,115	5,323,401	200,286	3.9%
WAKEFIELD	1,604,779	1,611,741	0.4%	5,549,601	5,594,367	0.8%	7,154,380	7,206,108	51,728	0.7%
WELLESLEY	1,423,735	1,379,407	-3.1%	5,246,821	5,333,992	1.7%	6,670,556	6,713,399	42,843	0.6%
WILMINGTON	125,176	363,646	190.5%	2,408,266	2,353,306	-2.3%	2,533,442	2,716,952	183,510	7.2%
WINCHESTER	1,127,860	1,253,400	11.1%	3,718,082	3,867,732	4.0%	4,845,942	5,121,132	275,190	5.7%
WOBBURN	3,549,339	3,032,534	-14.6%	9,134,120	9,535,730	4.4%	12,683,459	12,568,264	(\$115,195)	-0.9%
<b>TOTAL</b>	<b>\$11,274,309</b>	<b>\$10,757,692</b>	<b>-4.6%</b>	<b>\$39,306,126</b>	<b>\$40,090,013</b>	<b>2.0%</b>	<b>\$50,580,435</b>	<b>\$50,847,705</b>	<b>\$267,270</b>	<b>0.5%</b>

MWRA Sewer-only Customers	Final FY14 Water Assessment	Final FY15 Water Assessment	Percent Change from FY14	Final FY14 Sewer Assessment	Final FY15 Sewer Assessment	Percent Change from FY14	Final FY14 Combined Assessment	Final FY15 Combined Assessment	Dollar Change from FY14	Percent Change from FY14
ASHLAND				\$2,175,735	\$2,310,206	6.2%	\$2,175,735	\$2,310,206	\$134,471	6.2%
BEDFORD				2,968,529	3,085,246	3.9%	2,968,529	3,085,246	116,717	3.9%
BRAINTREE				7,759,278	8,363,839	7.8%	7,759,278	8,363,839	604,561	7.8%
BURLINGTON				4,846,498	4,943,181	2.0%	4,846,498	4,943,181	96,683	2.0%
CAMBRIDGE				21,224,419	22,157,757	4.4%	21,224,419	22,157,757	933,338	4.4%
DEDHAM				4,924,268	5,024,472	2.0%	4,924,268	5,024,472	100,204	2.0%
HINGHAM SEWER DISTRICT				1,562,020	1,651,545	5.7%	1,562,020	1,651,545	89,525	5.7%
HOLBROOK				1,495,280	1,594,287	6.6%	1,495,280	1,594,287	99,007	6.6%
NATICK				4,903,457	5,330,710	8.7%	4,903,457	5,330,710	427,253	8.7%
RANDOLPH				5,561,761	5,931,064	6.6%	5,561,761	5,931,064	369,303	6.6%
WALPOLE				3,373,364	3,509,806	4.0%	3,373,364	3,509,806	136,442	4.0%
WESTWOOD				2,362,136	2,426,073	2.7%	2,362,136	2,426,073	63,937	2.7%
WEYMOUTH				10,400,989	10,972,561	5.5%	10,400,989	10,972,561	571,572	5.5%
<b>TOTAL</b>				<b>\$73,557,734</b>	<b>\$77,300,747</b>	<b>5.1%</b>	<b>\$73,557,734</b>	<b>\$77,300,747</b>	<b>\$3,743,013</b>	<b>5.1%</b>

MWRA Water-only Customers	Final FY14 Water Assessment	Final FY15 Water Assessment	Percent Change from FY14	Final FY14 Sewer Assessment	Final FY15 Sewer Assessment	Percent Change from FY14	Final FY14 Combined Assessment	Final FY15 Combined Assessment	Dollar Change from FY14	Percent Change from FY14
LYNNFIELD WATER DISTRICT	\$467,594	\$490,333	4.9%				\$467,594	\$490,333	\$22,739	4.9%
MARBLEHEAD	1,990,555	2,101,639	5.6%				1,990,555	2,101,639	111,084	5.6%
NAHANT	349,194	382,274	9.5%				349,194	382,274	33,080	9.5%
SAUGUS	2,963,455	3,202,440	8.1%				2,963,455	3,202,440	238,985	8.1%
SOUTHBOROUGH	695,113	765,656	10.1%				695,113	765,656	70,543	10.1%
SWAMPSCOTT	1,781,628	1,782,932	0.1%				1,781,628	1,782,932	1,304	0.1%
WESTON	1,898,881	1,993,015	5.0%				1,898,881	1,993,015	94,134	5.0%
<b>TOTAL</b>	<b>\$10,146,420</b>	<b>\$10,718,289</b>	<b>5.6%</b>				<b>\$10,146,420</b>	<b>\$10,718,289</b>	<b>\$571,869</b>	<b>5.6%</b>

MWRA Partial Water-only Customers	Final FY14 Water Assessment	Final FY15 Water Assessment	Percent Change from FY14	Final FY14 Sewer Assessment	Final FY15 Sewer Assessment	Percent Change from FY14	Final FY14 Combined Assessment	Final FY15 Combined Assessment	Dollar Change from FY14	Percent Change from FY14
DEDHAM-WESTWOOD WATER DISTRICT	\$124,703	\$49,042	-60.7%				\$124,703	\$49,042	(\$75,661)	-60.7%
LYNN (LWSC)	242,626	209,723	-13.6%				242,626	209,723	(\$32,903)	-13.6%
MARLBOROUGH	3,184,761	3,433,407	7.8%				3,184,761	3,433,407	248,646	7.8%
NORTHBOROUGH	1,022,003	1,044,206	2.2%				1,022,003	1,044,206	22,203	2.2%
PEABODY	779,127	1,219,096	56.5%				779,127	1,219,096	439,969	56.5%
<b>TOTAL</b>	<b>\$5,353,220</b>	<b>\$5,955,474</b>	<b>11.3%</b>				<b>\$5,353,220</b>	<b>\$5,955,474</b>	<b>\$602,254</b>	<b>11.3%</b>
<b>SYSTEMS TOTAL</b>	<b>\$203,216,774</b>	<b>\$210,233,607</b>	<b>3.5%</b>	<b>\$425,504,226</b>	<b>\$440,082,175</b>	<b>3.4%</b>	<b>\$628,721,000</b>	<b>\$650,315,782</b>	<b>\$21,594,782</b>	<b>3.4%</b>

## Retail Charges

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

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

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

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

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

TABLE I-5  
Calculation of the FY15 Rate Revenue Requirement  
(000's)

	Sewer	Water	Total
Allocated Direct Expenses	\$148,145	\$69,004	\$217,149
Allocated Indirect Expenses	\$14,552	\$32,960	\$47,512
<b>PLUS</b>			
Capital Expenses:			
Debt Service (less offsets)	\$273,557	\$125,426	\$398,982
Current Revenue for Capital	\$9,792	\$408	\$10,200
Other Capital Expenses	\$1,269	-\$627	\$643
<b>PLUS</b>			
Non-Rate Revenue:			
Investment Income	-\$6,152	-\$3,578	-\$9,729
Fees and Other Revenue	-\$5,256	-\$9,184	-\$14,440
Prior Year Utility Surplus/Deficit Transfer	\$4,175	-\$4,175	\$0
Rate Stabilization	\$0	\$0	\$0
<b>EQUALS</b>			
Rate Revenue Requirement	\$440,082	\$210,234	\$650,316

## Revenue and Expenditure Trends

Because MWRA is required by its enabling act to balance its budget and to establish annual assessments to cover all expenses, revenue must change in concert with the changes in expenses each year. The Rate Revenue Requirement in any year is the difference between MWRA expenses and other revenue sources, most notably investment income and debt service assistance from the Commonwealth (which directly reduces debt service expense). For FY15, community assessments will represent 96.4% of total revenue.

MWRA's planning estimates are projections based on a series of assumptions about future spending (operating and capital), interest rates, inflation, and other factors. MWRA uses the planning estimates to model and project what future rate increases might be based upon these assumptions, as well as to test the impact of changes to assumptions on future rate increases. The planning estimates are not predictions of what rate increases will be but rather they provide the context and framework for guiding MWRA financial policy and management decision making that ultimately determine the level of actual rate increases on an annual basis. Conservative projections of future rate increases benefit the MWRA by providing assurance to the rating agencies that MWRA anticipates to raise revenues sufficient to pay for its operations and outstanding debt obligations now and over the long-term. Additionally, conservative forecasts of rate revenue increases enable member communities to adequately plan and budget for future payments to MWRA. However, in FY15 the Authority continued to tighten certain planning estimate assumptions for future years and limited annual capital spending to \$160 million from FY19 and beyond.

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

The table below and Appendix D (in more detail) present future rate revenue requirements for FY15 through FY24. The planning estimates shown below assume no Debt Service Assistance from the Commonwealth and use of Rate Stabilization and Bond Redemption reserves through FY2022 to manage the rate increases. For planning purposes, the yearly use of combined reserves is currently limited to a maximum of \$12 million. Over \$75 million of Debt Service Reserve release has been included in the planning estimates since FY14.

Rates & Budget Projections										
FY15 Final CEB	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024
Total Rate Revenue (\$000)	\$ 650,316	\$ 678,411	\$ 712,885	\$ 747,497	\$ 782,127	\$ 832,987	\$ 849,948	\$ 880,898	\$ 851,717	\$ 838,042
Rate Revenue Change from Prior Year (\$000)	\$ 21,595	\$ 28,095	\$ 34,474	\$ 34,612	\$ 34,630	\$ 50,860	\$ 16,961	\$ 30,950	\$ (29,181)	\$ (13,675)
Rate Revenue Increase	3.4%	4.3%	5.1%	4.9%	4.6%	6.5%	2.0%	3.6%	-3.3%	-1.6%
Use of Reserves (\$000)	\$ 6,746	\$ 12,000	\$ 12,000	\$ 12,000	\$ -	\$ 12,000	\$ 2,620	\$ 12,000	\$ -	\$ -

### Estimated Household Bill

Based on annual water usage of 61,000 gallons	\$ 1,010	\$ 1,062	\$ 1,116	\$ 1,174	\$ 1,229	\$ 1,294	\$ 1,348	\$ 1,411	\$ 1,445	\$ 1,479
Based on annual water usage of 90,000 gallons	\$ 1,490	\$ 1,567	\$ 1,646	\$ 1,732	\$ 1,813	\$ 1,910	\$ 1,989	\$ 2,082	\$ 2,132	\$ 2,183

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

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

The second largest budget factor is projected growth of base operating costs. The estimated \$59.7 million increase in direct expenses from FY15 to FY24 is primarily the result of an assumed annual inflation rate of 2.5% for salaries and 3.0% for all other direct expenses. Also, over the next ten years, there will be increases in direct expenses as a result of capital improvement projects.

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

- Direct expense inflation rate of 2.5% for salaries and 3.0% for other direct expenses starting in FY16;
- CIP inflation rate of 2.5%;
- Capital spending based on 85% of the CIP expenditure forecast with 10% (two-thirds of the 15% reduction) added back three years later with a \$160 million maximum cap per year from FY19 and onward;
- Long-term fixed rate debt issues with 30-year terms and 5.0% interest rates in FY15, 5.5% rates in FY16, 5.75% rates in FY17; and 6.00% from FY18 and beyond;
- Variable rate interest projected at 3.25% in FY15, 3.50% in FY16, 3.75% in FY17, and 4.0% thereafter.

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

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

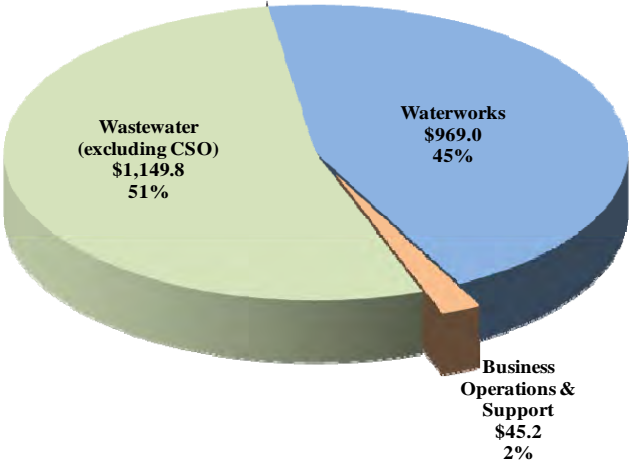
- Changes in anticipated borrowing rates or expected investment income rates;
- The planning estimates do not factor in any positive year-end variances which may be used to defease debt or reserved to offset Rate Revenue Requirements in future years;
- Fewer opportunities for SRF borrowing than expected due to Federal Budget cuts; a dollar borrowed through the SRF at 2% replaces the need to borrow a dollar long-term at an assumed 5% rate;
- Overall inflationary pressures;
- Debt refinancing opportunities;
- Capital spending; and
- Growth in direct expenses, greater than current assumptions is an area of increased concern. Many of the savings in prior years through staffing reductions, optimization of operations, and scope revisions to professional services are already reflected in the budget. More importantly, going forward the MWRA is faced with a growing need to maintain its facilities and ensure that adequate funding is available.

As in the past, there are peak years on the next ten-year horizon regarding rates, mostly driven by the current debt structure. FY17 and FY20 represent significant challenges for the Authority from a long-term rates management perspective.

**FY15 Final Capital Improvement Program**

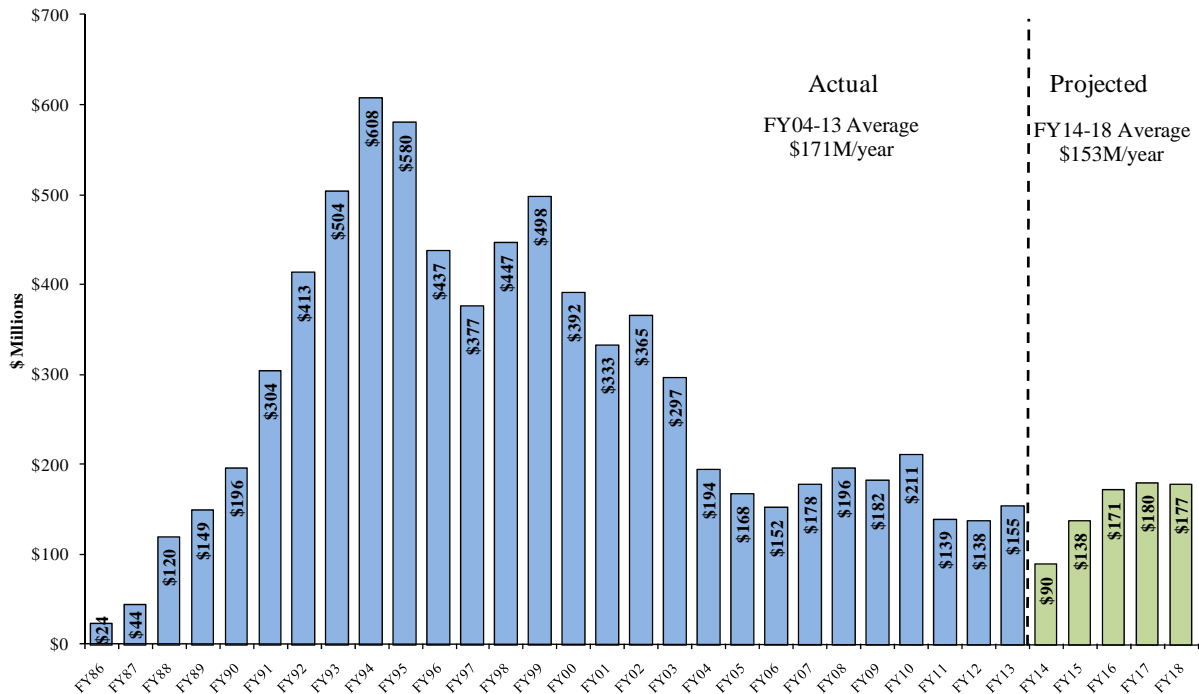
The FY15 Final Capital Improvement Program (CIP) budget totals \$5.9 billion, of which approximately \$3.7 billion has been expended through FY13 with a remaining balance of \$2.2 billion. It is important to note that the totals represented above do not include the Boston Harbor Project and some other smaller projects removed from the CIP upon completion. These projects totaled approximately \$4.1 billion dollars. As such, the overall Authority CIP budget since inception totals more than \$10.0 billion dollars of which \$7.8 billion has been spent through FY13.

Of the remaining spending, Wastewater System Improvements represent \$1.1 billion or 51%, Waterworks System Improvements represent \$969.0 million or 45%, and Business and Operations Support are \$45.2 million or 2%.



## Historical Spending

The chart below captures the historical CIP spending through FY13 and projects spending to FY18 based on the FY15 Final CIP.



The average spending for FY04-13 was \$171.0 million per year and based on the FY15 Final CIP, we are currently projecting average annual spending during the FY14-18 Cap period will be approximately \$153.0 million per year.

## FY14-18 Cap Spending

The FY15 Final CIP budget anticipates capital expenditures in the FY14-18 timeframe to total \$756.3 million. Including contingency of \$40.1 million and inflation of \$27.5 million offset by \$51.3 million for Community Financial Assistance Programs and Chicopee Valley Aqueduct projects of \$7.5 million, the FY15 Final FY14-18 Cap totals \$765.1 million which is \$26.5 million or 3.4% less than the FY14 Final FY14-18 Base-Line Cap.

## Changing Nature of the Capital Program - Shift from Mandated Projects

Since 1985, nearly 80% of the Authority's spending has been on court mandated and regulatory required projects. Based on the FY15 Final CIP, mandated or regulatory related projects account for ~ 30% of spending - the majority of which will support Asset Protection, Water System Redundancy, Pipeline Replacement and Rehabilitation, and continued support for Community Assistance programs.



The table below captures the changing nature of the program in the future:

	Total Contract	FY09-13	FY14-18	FY19-23	Beyond 23
Asset Protection	\$ 2,145.5	\$ 252.0	\$ 416.7	\$ 699.0	\$ 146.2
Carroll WTP	\$ 433.7	\$ 39.4	\$ 20.6	\$ 1.9	\$ -
Water Redundancy	\$ 1,865.7	\$ 138.4	\$ 203.2	\$ 460.1	\$ 205.1
CSO	\$ 867.8	\$ 316.5	\$ 53.5	\$ 1.3	\$ -
Other	\$ 539.5	\$ 80.1	\$ 62.3	\$ (31.2)	\$ (74.6)
<b>Total</b>	<b>\$5,852.2</b>	<b>\$ 826.4</b>	<b>\$ 756.3</b>	<b>\$1,131.1</b>	<b>\$ 276.7</b>
<b>Asset Protection</b>	<b>36.7%</b>	<b>30.5%</b>	<b>55.1%</b>	<b>61.8%</b>	<b>52.8%</b>
Carroll WTP	7.4%	4.8%	2.7%	0.2%	0.0%
<b>Water Redundancy</b>	<b>31.9%</b>	<b>16.7%</b>	<b>26.9%</b>	<b>40.7%</b>	<b>74.1%</b>
CSO	14.8%	38.3%	7.1%	0.1%	0.0%
Other	9.2%	9.7%	8.2%	-2.8%	-27.0%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

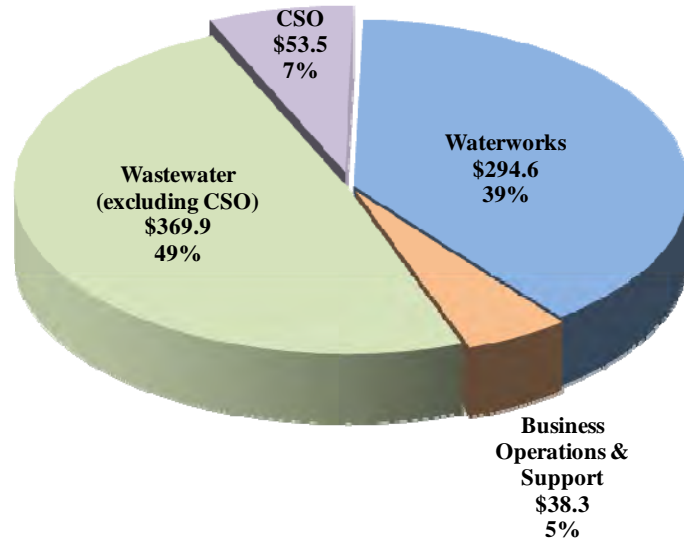
### FY15 Final CIP

The FY15 Final CIP contains future spending estimated at \$2.2 billion. The FY15 Final CIP (without contingency) includes planned expenditures of \$137.6 million for FY15 and total projected expenditures of \$756.3 million for the FY14-18 timeframe.

The table below represents the projected spending by major program categories:

	Total Contract Amount	Payments Thru FY13	Projected Spending	FY14	FY15	FY16	FY17	FY18	Total FY14-18
<b>Wastewater System Improvements</b>	<b>\$2,885.8</b>	<b>\$1,736.0</b>	<b>\$1,149.8</b>	<b>\$42.2</b>	<b>\$82.6</b>	<b>\$105.4</b>	<b>\$99.3</b>	<b>\$93.8</b>	<b>\$423.4</b>
Interception & Pumping	873.2	520.5	352.6	6.8	12.2	23.8	31.2	35.0	109.0
Treatment	709.4	184.7	524.7	15.1	39.4	51.3	47.1	38.6	191.5
Residuals	167.9	64.5	103.4	0.4	-	1.5	3.8	4.8	10.4
CSO	892.4	837.7	54.7	15.6	19.9	15.5	1.8	0.8	53.5
Other Wastewater	242.9	128.5	114.4	4.2	11.2	13.4	15.5	14.7	59.0
<b>Waterworks System Improvements</b>	<b>\$2,843.7</b>	<b>\$1,874.7</b>	<b>\$969.0</b>	<b>\$41.4</b>	<b>\$45.2</b>	<b>\$57.2</b>	<b>\$73.0</b>	<b>\$77.9</b>	<b>\$294.6</b>
Drinking Water Quality Improvements	659.9	595.2	64.7	28.9	23.0	6.8	3.3	0.8	62.8
Transmission	1,201.7	755.0	446.7	5.3	13.2	23.8	29.3	26.4	98.0
Distribution & Pumping	932.6	372.7	559.9	6.2	9.8	23.5	36.8	44.8	121.1
Other Waterworks	49.5	151.7	(102.2)	1.0	(0.8)	3.1	3.6	5.9	12.8
Business & Operations Support	122.7	77.4	45.2	6.2	9.8	8.8	7.8	5.7	\$38.3
<b>Total MWRA</b>	<b>\$5,852.2</b>	<b>\$3,688.1</b>	<b>\$2,164.1</b>	<b>\$89.8</b>	<b>\$137.6</b>	<b>\$171.4</b>	<b>\$180.1</b>	<b>\$177.4</b>	<b>\$756.3</b>

The graph below illustrates the breakdown of the major program spending for the FY14-18 timeframe.

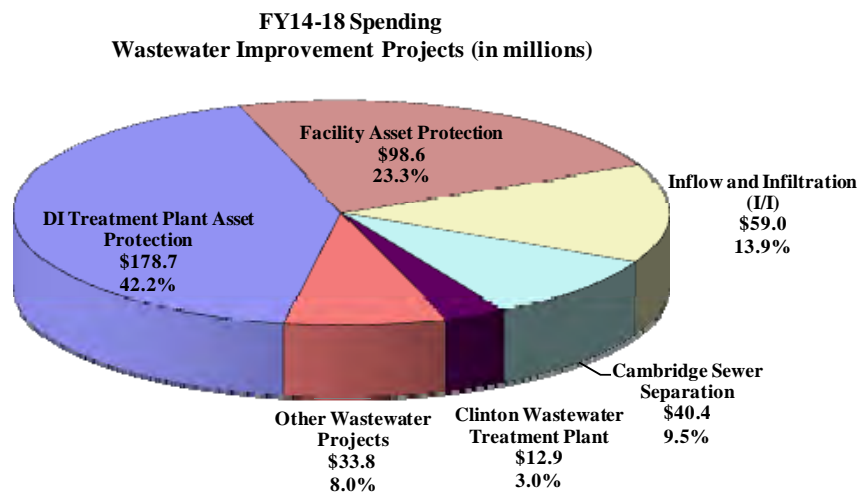


### Top 10 Projects – FY14-18 Cap Period

It is important to emphasize that the majority of spending within the Wastewater and Water Capital programs is concentrated in several larger projects with significant spending in the FY14-18 timeframe. These projects are either currently under construction or soon to be awarded. The top five projects for the Wastewater program total \$389.6 million for the FY14-18 period and represent 92.0% of the \$423.4 million total program.

The breakdown of the \$423.4 million program by the major projects is illustrated below:

The FY14-18 sub-phases of projects with spending greater than \$20 million along with a brief description of the scope of work are included below:

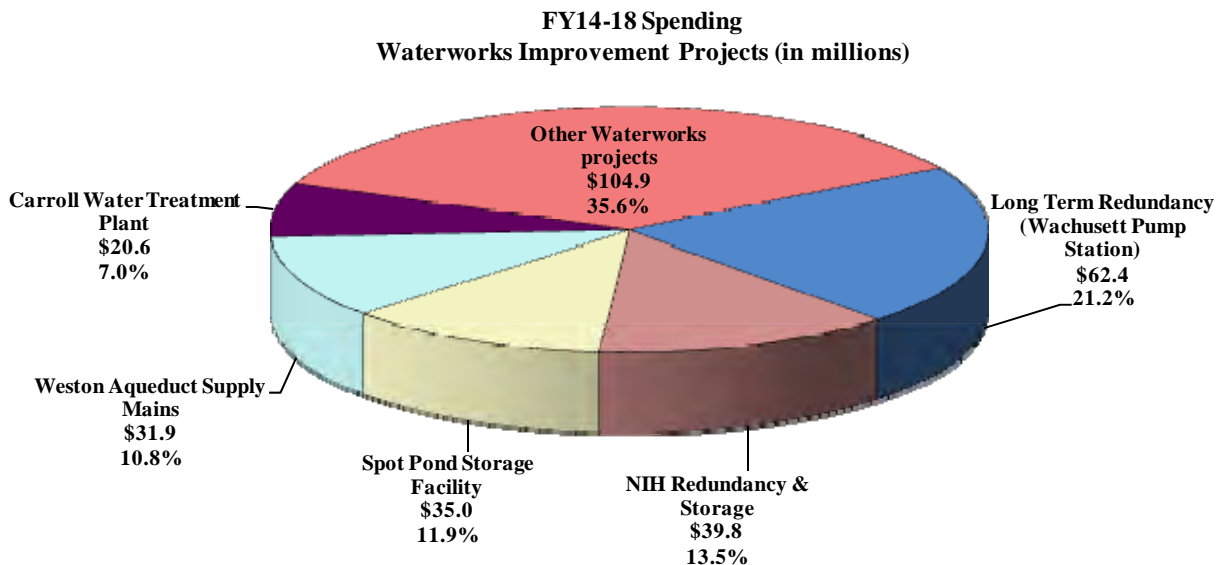


**Chelsea Headworks Construction** - \$40.9 million (\$53.7 million total construction cost). This major rehabilitation project includes replacement/upgrade to the screens, grit collection system, grit and handling systems, odor control systems, HVAC, mechanical, plumbing and instrumentation. Solids handling systems will be automated and the building's egress and fire suppressions systems will also be upgraded.

**Cambridge Sewer Separation CSO Control Program Design and Construction**- \$40.4 million (\$90.8 million total construction costs, \$50.5 already spent). This project encompasses the wastewater system improvements implemented by the City of Cambridge to control CSO discharges to the Alewife Brook. Completed work includes the CAM004 Stormwater Outfall and Wetland Basin, Interceptor Connection Relief and Floatables Controls, and Sewer Separation at Outfall CAM400. Remaining work involves three construction contracts to separate combined sewers in a 211-acre area upstream of Outfall CAM004 in the Huron Avenue and Concord Avenue neighborhoods, east of Fresh Pond Parkway. Cambridge's contracts 8A and 8B are well underway, and Contract 9 commenced in February 2014. The contracts will redirect stormwater removed from the system to the wetland basin and will culminate in the closing of Outfall CAM004. All work is scheduled to be complete by December 2015 in compliance with Schedule Seven of the Federal District Court Order.

**Deer Island Scum Skimmer Replacement** - \$20.2 million - This is an asset protection replacement project which proposes to replace degraded carbon steel tip tubes and drive mechanisms for 40 Primary Clarifier tanks and 54 Secondary Clarifier tanks with stainless steel components to improve the system reliability and overall maintenance.

The breakdown of the \$294.6 million program by the major projects is illustrated below:



**Wachusett Aqueduct Pump Station Construction** - \$50.6 million - This is a redundancy project for construction of a 240 mgd emergency pump station which will provide redundancy for the Cosgrove Tunnel by pumping raw water from the Wachusett Aqueduct to the Carroll Water Treatment Plant. This project, along with the completion of the Hultman Aqueduct rehabilitation and interconnections project, will provide fully treated water transmission redundancy from the Wachusett Reservoir to the

beginning of the metropolitan distribution system in Weston.

**Spot Pond Storage Facilities** - \$35.0 million (\$59.6 million total construction cost) - This project is for the construction of a 20 million gallon drinking water storage facility and redundant pump station in Stoneham. The two underground tanks with 10 million capacity each, will provide drinking water storage for MWRA’s Low Service area. Additionally, this project will provide system redundancy for 21 communities in the Northern Intermediate High and Northern High service areas currently served by the Gillis Pump Station.

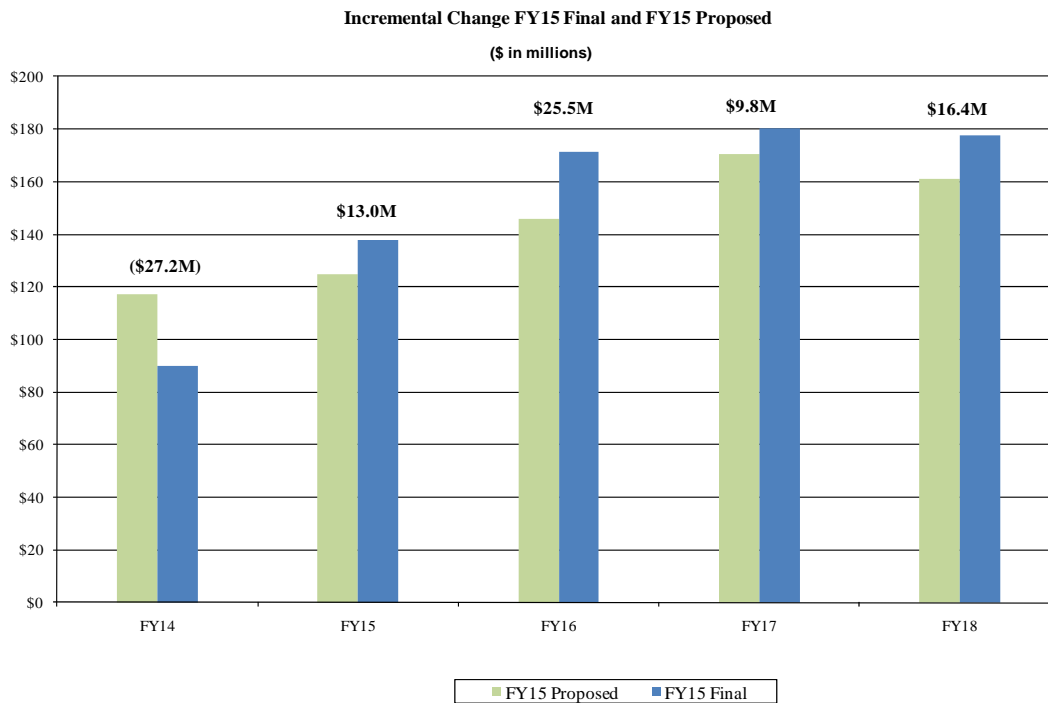
**Northern Intermediate High (NIH) Section 89 & 29 Redundancy Construction Phases 1 & 2 and West Street Pipe Reading Construction Phase 1A-** \$17.1 million, \$12.1 million, and \$2.1 million respectively (total construction cost \$19.8 million, \$22.4 million, and \$2.1 million) - This is a redundancy project for the MWRA’s Northern Intermediate High service area. Currently, this area is primarily supplied by a single 48-inch diameter pipeline, the Gillis Pump Station, and water distribution storage from the Bear Hill Tank. This project proposes a new seven mile redundant pipeline under two construction phases and will provide uninterrupted water supply to the service area in the event of a failure of the existing single supply pipe and to allow the existing pipe to be removed from service for inspection, maintenance, and repair.

**FY15 Final CIP Compared to the FY15 Proposed CIP by Program**

The FY15 Final CIP represents updated spending and schedules for projects contained in the FY15 Proposed CIP. The FY15 Final CIP increased overall by \$136.3 million or 2.4% above the FY15 Proposed CIP presented to the Board in December 2013 with a net increase of \$37.4 million in the FY14-18 time period.

	FY15 Proposed	FY15 Final	\$ Change	% Change	FY14-18 \$ Change	FY14-18 % Change
Wastewater Systems Improvements	\$ 2,758.9	\$ 2,885.8	\$ 126.9	4.6%	\$ 34.0	8.7%
Waterworks System Improvements	\$ 2,833.9	\$ 2,843.7	\$ 9.7	0.3%	\$ 3.9	1.4%
Business and Operations Support	\$ 123.0	\$ 122.7	\$ (0.4)	-0.3%	\$ (0.5)	-1.3%
<b>Total MWRA without contingency</b>	<b>\$ 5,715.9</b>	<b>\$ 5,852.2</b>	<b>\$ 136.3</b>	<b>2.4%</b>	<b>\$ 37.4</b>	<b>5.2%</b>

The chart below shows the incremental change by fiscal year between the FY15 Final and FY15 Proposed CIP.



The majority of the \$37.4 million increase during the FY14-18 Cap period was due to:

- Adding \$50 million for Inflow and Infiltration (I/I) sub-phases 9 & 10;
- Increased cost estimates and scope changes of \$8.7 million; and
- Revised schedules and cash flows.

### Future Risks and Opportunities

There are potential projects or required spending increases which are not yet funded in the FY15 Final CIP as staff is currently evaluating options for the best solution available. Depending on the final recommendations regarding the projects below, the shape of the CIP in future years could change significantly:

- Cross Harbor Cable
- Co-Digestion
- System Expansion
- Efficiency Improvements
- Shaft 7 Tunnel Junction
- Sudbury Aqueduct

## CIP Impact on Current Expense Budget

In addition to the annual financing costs included in the Current Expense Budget, the Capital Improvement Program affects the annual operating budget when capital facilities come on-line and require adjustments to operating budgets. In prior years, completion of the Deer Island Treatment Plant, the Carroll Water Treatment Plant, and the residuals processing facility in Quincy resulted in significant increases in operating expenses. New facilities are adding operating costs of approximately \$685,000 and MIS program related maintenance initiatives are increasing operating costs by nearly \$713,000 by FY25. These increases are offset by anticipated savings for energy initiatives at Deer Island as well as water and wastewater Alternative Energy Initiatives including solar, wind, and hydro-electric power projects which will result in energy savings of approximately \$1.3 million over the next 10 years. The following table summarizes projected CIP impact by project over the next ten years, beginning in FY16 on the operating budget.

Fiscal Year 2015	CEB Impacts (000)										
	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	Total
DI Treatment Plant Asset Protection	\$0	(\$326)	(\$33)	\$0	(\$146)	(\$72)	(\$74)	\$0	\$0	\$0	(\$650)
FERS Biofilter	0	0	0	0	0	0	0	0	0	0	0
Clinton Phosphorous Removal Project	0	0	120	0	0	0	0	0	0	0	120
Wastewater Alternative Energy Projects	0	0	(132)	0	0	0	(418)	0	0	0	(550)
North Dorchester Bay	0	371	0	0	0	0	0	0	0	0	371
<b>Total Wastewater (inflated)</b>	\$0	\$46	(\$45)	\$0	(\$146)	(\$72)	(\$492)	\$0	\$0	\$0	(\$709)
Carroll Water Treatment Plant	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Quabbin Water Treatment Plant	10	0	0	0	0	0	0	0	0	0	10
Wachusett Algae Treatment Facility	0	0	0	0	35	36	0	0	0	0	71
Spot Pond Storage Facility	113	0	0	0	0	0	0	0	0	0	113
Water Energy Projects	0	0	(66)	0	0	0	0	0	0	0	(66)
<b>Total Water (inflated)</b>	\$124	\$0	(\$66)	\$0	\$35	\$36	\$0	\$0	\$0	\$0	\$129
Maximo Upgrades & Lawson Enhancements	\$52	\$0	\$109	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$161
Storage Upgrades	0	0	109	113	0	0	0	0	0	0	222
Telecommunications	0	0	0	28	0	0	0	0	0	0	28
NET 2020 DITP & Southborough	77	0	0	0	0	0	0	0	0	0	77
Information Security Program	0	0	33	0	0	0	0	0	0	0	33
Information Technology Management Program	0	74	0	0	0	0	0	0	0	0	74
Information Technology Management Program	31	0	0	0	0	0	0	0	0	0	31
IT Infrastructure Program	88	0	0	0	0	0	0	0	0	0	88
<b>Total Business and Operations Support (inflated)</b>	\$247	\$74	\$251	\$141	\$0	\$0	\$0	\$0	\$0	\$0	\$713
<b>TOTAL MWRA</b>	\$371	\$120	\$141	\$141	(\$111)	(\$36)	(\$492)	\$0	\$0	\$0	\$133

## Capital Financing and Grant Revenues

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

MWRA expects to borrow the majority of funds necessary for future capital spending. Borrowing will include the issuance of fixed and variable rate revenue bonds; borrowing from the Commonwealth's Water Pollution Abatement Trust (also known as the State Revolving Loan Fund or SRF), and a tax-exempt commercial paper program.

## **MWRA Organization and History**

### **The MWRA Enabling Act**

MWRA was created by legislative act in 1984, and inherited the Sewerage and Waterworks Divisions of the Commonwealth of Massachusetts Metropolitan District Commission (MDC). In July 1985, MWRA assumed control of the water and sewer systems, including facilities, properties, and the right to utilize water withdrawn from system reservoirs. The Commonwealth, under the management of the MDC Watershed Management Division (now the Department of Conservation and Recreation – Division of Watershed Management), retained ownership of real property, including the reservoirs and watersheds.

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

In 1987, the legislature transferred responsibility to operate and maintain the Clinton Wastewater Treatment Plant from the Commonwealth to the MWRA.

### **History and Accomplishments**

In 1985, the U.S. District Court for Massachusetts found MDC in violation of numerous aspects of the federal Clean Water Act, and the responsibility for those violations passed to MWRA as successor to MDC. The court issued a detailed compliance schedule for actions to be taken by MWRA to achieve and maintain compliance with the Clean Water Act.

MWRA achieved all of the milestones in the schedule related to the construction of treatment facilities on Deer Island, and is working to achieve milestones with respect to implementation of its long-term Combined Sewer Overflow (CSO) control plan. These achievements have made noticeable, measurable improvements in the quality of Boston Harbor and its beaches.

MWRA is also working to achieve compliance with an extensive consent order issued by the Massachusetts Department of Environmental Protection (MassDEP) mandating the steps necessary to achieve required improvements to the MWRA water system.

### **MWRA Rates Management**

Between FY96 and FY02 the MWRA limited rate revenue increases to an average of 3.6% annually as a result of debt service assistance from the Commonwealth, federal grants to support the Boston Harbor Project, lower borrowing costs, use of financing tools that delayed costs to later years, a favorable bid climate for construction projects, and aggressive efforts to control capital and operating costs.

As debt service costs resulting from mandated capital investment have steadily increased, MWRA's dependence on rising debt service assistance (DSA) allocations have similarly increased. DSA reached a high of \$52.9 million in FY02. In FY03, in response to a state-wide recession, debt service assistance was eliminated and as a result, MWRA was forced to have an unprecedented mid-year rate

adjustment, increasing the rate increase from 2.9% to 6.9% as part of an overall strategy in response to cover the loss. Additionally, the Authority made substantial cuts to both its capital improvement program and current expense budgets. Reductions in debt service assistance result in greater reliance on reserves, budget cuts or a combination of the two. In response to a strengthening local economy, debt service assistance was restored in FY04 at the level of \$4.1 million. In the following four years, the debt service allocation increased to \$8.0 million in FY05, \$9.6 million in FY06, \$19.0 million in FY07, and \$17.0 million in FY08. In light of the economic downturn in the ensuing years, no Debt Service Assistance was received in FY09-11. In FY12, it once again restored at a reduced level of \$384,000 but was once again eliminated in FY13 through 9C cuts. For the FY14 Budget, no Debt Service Assistance was assumed given its elimination in FY13 but the MWRA received \$853,660 in Debt Service Assistance which was applied as a direct offset to the FY15 debt service line item.

Planning estimates for 2016 through 2024 forecast rate revenue requirement increases of 4.3% in FY16, 5.1% in FY17, 4.9% and 4.6% in FY18 and FY19, 6.5% in FY20, and 2.0%, 3.6%, -3.3%, and -1.6% in years FY21, FY22, FY23, and FY24 respectively.

In FY06, the MWRA formed a Rates Management Committee to evaluate the Authority's debt portfolio and credit structure to propose recommendations that deliver responsible short-term solutions for mitigating imminent rate spikes and long-term strategies for achieving predictable and sustainable rates. In line with the Board of Directors' strategy to deliver long-term predictable and sustainable rates for our 61 ratepayer communities, the MWRA initially preserved the scheduled use of its reserves for future years when projected rate increases are more significant. The changes to the indenture will release more than \$100.0 million in reserves that can be used to mitigate future rate increases, but the release date is now projected to occur in FY16 based on current borrowing projections. While this is a sizable release, it is not the panacea that will address an average Rate Revenue Requirement increase of \$23.8 million over the next ten years.

FY14 marks the first year when debt repayment exceeds new debt issues and thus marking the first year where leverage will decline. This is expected to continue for the foreseeable future and debt levels are projected to decline steadily. This will have a favorable influence on future rate increases.

The FY15 Budget:

- Continues to refine planning estimates assumptions to provide greater predictability of future assessments;
- Judiciously uses reserves to lower rate increases, but maintain adequate balances; and
- Continues the Authority's multi-year rates management strategy of providing predictable and reasonable rate increases to our member communities.

## **MWRA Organization**

MWRA has four separate divisions and the Affirmative Action and Compliance Unit Department (AACU).

Each division provides operations or support services to carry out MWRA's activities under the direction of the Executive Office. MWRA's organizational structure is included in the document before the Table of Contents.



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

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

The **Administration and Finance Division** was created in 2009 and is responsible for managing the finance and support service functions necessary to support daily operations of the Authority and insure the implementation of the Authority's long-term goals and strategies.

The Administration and Finance (A&F) Division is comprised of eleven departments: Director's Office; Rates and Budget; Treasury; Controller; Risk Management; Human Resources; Management Information Systems (MIS); Facilities Management; Fleet Services; Procurement; and Real Property and Environmental Management.

The Administration and Finance Division ensures that a variety of fiscal management systems are in place to monitor and control the Current Expense Budget (CEB) and Capital Improvement Program (CIP).

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

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

## **Statement of Financial Position**

In accordance with its enabling act, each year MWRA submits annual reports to the Governor, the President of the State Senate, the House of Representatives, the Advisory Board, and the Chairs of the State Senate and House Committees on Ways and Means containing financial statements relating to its operations maintained in accordance with Generally Accepted Accounting Principles in the United States of America (GAAP) and, commencing with the annual reports for 1986, audited by independent certified public accountants. MWRA's audited financial statements at June 30, 2014 are available online at [www.mwra.com](http://www.mwra.com).



Executive Office  
Budget

**EXECUTIVE OFFICE**

<b>FY15 Final Current Expense Budget EXECUTIVE DIVISION</b>						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 483,283	\$ 534,191	\$ 540,943	\$ 559,131	\$ 18,188	3.4%
OVERTIME	-	-	-	-	-	-
ONGOING MAINTENANCE	-	-	-	-	-	-
TRAINING & MEETINGS	695	-	612	900	288	47.1%
PROFESSIONAL SERVICES	142,888	145,098	158,222	164,269	6,047	3.8%
OTHER MATERIALS	1,187	5,105	2,037	4,085	2,048	100.5%
OTHER SERVICES	439,109	455,588	470,520	500,236	29,716	6.3%
<b>TOTAL</b>	<b>\$ 1,067,161</b>	<b>\$ 1,139,982</b>	<b>\$ 1,172,334</b>	<b>\$ 1,228,621</b>	<b>\$ 56,287</b>	<b>4.8%</b>

<b>FY15 Final Current Expense Budget EXECUTIVE DIVISION by Department</b>						
DEPARTMENT	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
EXECUTIVE OFFICE / BOARD OF DIRECTORS	\$ 489,399	\$ 542,799	\$ 547,353	\$ 568,456	\$ 21,103	3.9%
ADVISORY BOARD / OTHER COMMITTEES	577,762	597,183	624,981	660,165	35,184	5.6%
<b>TOTAL</b>	<b>\$ 1,067,161</b>	<b>\$ 1,139,982</b>	<b>\$ 1,172,334</b>	<b>\$ 1,228,621</b>	<b>\$ 56,287</b>	<b>4.8%</b>

The **Executive Office** 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 Office oversees a centralized MWRA-wide security program to preserve and protect MWRA facilities, systems and employees.

The Executive Office has direct oversight of the Office of Emergency Preparedness, Internal Audit, Public Affairs, and the Affirmative Action and Compliance Unit (AACU) Departments.

**FY15 Goals:**

- 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.

The Executive Office budget supports the Executive Director's Office (which includes the Board of Directors' cost center), 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 "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 and the Wastewater Advisory Committee.

**Budget Highlights:**

- The FY15 Final Budget is \$1.2 million, an increase of \$56,000 or 4.8% from the FY14 Actual spending.
- \$559,000 for **Wages and Salaries**, an increase of \$18,000 or 3.4% as compared to the FY14 Actual spending mainly due to cost of living adjustments. The final budget includes funding for five positions.
- \$164,000 for **Professional Services**, an increase of \$6,000 or 3.8% from the FY14 Actual spending, mainly due to salary increases for the WSCAC and WAC Executive Directors and Staff Assistant. This budget funds the Water Supply Citizens' Advisory Committee (WSCAC) and the Wastewater Advisory Committee (WAC) operating budgets.
- \$500,000 for **Other Services**, an increase of \$30,000 or 6.3% from the FY14 Actual spending, mainly due to increases in the MWRA Advisory Board operating expenses which include wages and salaries, space rental, and general administrative office expenses.

**OFFICE OF EMERGENCY PREPAREDNESS**

FY15 Final Current Expense Budget OFFICE OF EMERGENCY PREPAREDNESS							
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15		
WAGES & SALARIES	\$ 357,479	\$ 390,132	\$ 488,502	\$ 438,887	\$ (49,615)	-10.2%	
OVERTIME	-	12	771	-	(771)	-100.0%	
ONGOING MAINTENANCE	235,838	399,123	329,657	375,000	45,343	13.8%	
TRAINING & MEETINGS	2,117	1,652	1,902	-	(1,902)	-100.0%	
PROFESSIONAL SERVICES	1,476,020	1,587,698	1,727,302	1,708,295	(19,007)	-1.1%	
OTHER MATERIALS	50,343	31,311	21,746	35,535	13,789	63.4%	
OTHER SERVICES	21,000	10,774	18,821	124,040	105,219	559.1%	
<b>TOTAL</b>	<b>\$ 2,142,796</b>	<b>\$ 2,420,703</b>	<b>\$ 2,588,703</b>	<b>\$ 2,681,758</b>	<b>\$ 93,056</b>	<b>3.6%</b>	

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.

**FY15 Goals:**

- Develop and implement policies and programs to provide security, critical infrastructure protection, and emergency planning for the MWRA’s water and wastewater systems.
- Equip, train, and command the Emergency Service Unit (ESU).
- Develop and exercise emergency plans and procedures.
- Manage and direct contract security guard and security maintenance contracts.

**FY15 Initiatives:**

- Continue to enhance Emergency Response Plans for all water and wastewater facilities. Update Emergency Action Plans (EAPs) as needed, including Dam EAPs and spill control EAPs.
- Continue the process of ensuring that new construction and rehabilitation of facilities includes 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. Continue planning for updating the security monitoring system to replace obsolete equipment.
- Implement notification drills, tabletop exercises, and field training exercises (including at least one major field drill). Continue the community emergency response training program and tabletop exercise series for critical service areas with community staff.
- Continue to transition security system communications technology to the new standard.

### **FY14 Accomplishments:**

- Continued to update spill control Emergency Action Plans for water and wastewater facilities subject to spill regulations. Provided refresher training to all operations staff on spill control procedures.
- Completed Dam Emergency Action Plans for Western Section dams with detailed inundation mapping.
- Procured a consultant and began work on the Dam Emergency Action Plans for the Metropolitan dams.
- Completed a total of 84 training events or drills, including a significant Chelsea Hurricane drill.
- Completed deployment of new digital transmission vehicle, base, and handheld radios to support DCR's planned transition from analog equipment to digital equipment.
- Received payment in full under a Department of Homeland Security (DHS) grant of \$252,000 for implementation of hardening improvements from the 2010 DHS Regional Resiliency review and completed procurement of related items.
- Continued the process of ensuring that new construction and rehabilitation of facilities include an integrated security and surveillance system improvement component.
- Continued to provide an emergency response training program and a tabletop exercise series for critical service areas for MWRA community staff.
- Procured a new Guard Services contract.

### **Budget Highlights:**

- The FY15 Final Budget is \$2.7 million, an increase of \$93,000 or 3.6% from the FY14 Actual spending.
- \$439,000 for **Wages and Salaries**, a decrease of \$50,000 or 10.2% from the FY14 Actual spending. The budget includes funding for five positions.
- \$375,000 for **Ongoing Maintenance**, an increase of \$45,000 or 13.8% from the FY14 Actual spending, mainly due to increases for the new Intrusion Alarm and Semi-Annual monitoring service contracts and additional sites to be covered. This final budget includes funding of \$242,000 to cover the MWRA-wide security systems preventative maintenance and repair service, \$105,000 for MWRA-wide Security systems maintenance materials and equipment, including cameras, intrusion detection, card readers, and \$29,000 for the intrusion alarm annual and semi-annual monitoring services contracts.
- \$1.7 million for **Professional Services**, a decrease of \$19,000 or 1.1% from the FY14 Actual spending, primarily due to the elimination of FY14 one-time Dam EAP Updating Services cost. The final budget includes \$607,000 for security services for the DITP facility, \$567,000 for the Chelsea facility, \$348,000 for the Carroll Water Treatment Plant, \$40,000 for Charlestown Navy Yard (CNY) facility, \$87,000 for the Account Manager, and \$59,000 for the Roving guard.
- \$36,000 for **Other Materials**, an increase of \$14,000 or 63.4% from the FY14 Actual spending. This budget mainly funds purchase of Health and Safety materials for the ESU Team.
- \$124,000 for **Other Services**, an increase of \$105,000 from the FY14 Actual spending, due to an increase in annual licensing cost for two-way radios with Department of Conservation and Recreation (DCR). This budget also includes funding for mandatory monthly testing and inspection of the Self-Contained Breathing Apparatus (SCBA).

## AFFIRMATIVE ACTION and COMPLIANCE

FY15 Final Current Expense Budget AFFIRMATIVE ACTION & COMPLIANCE UNIT							
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15		
WAGES & SALARIES	\$ 548,888	\$ 513,749	\$ 557,924	\$ 574,278	\$ 16,354	2.9%	
OVERTIME	-	-	-	-	-	-	
TRAINING & MEETINGS	1,620	-	-	2,000	2,000	-	
OTHER MATERIALS	1,260	1,393	2,068	1,854	(214)	-10.3%	
OTHER SERVICES	580	309	321	620	299	93.1%	
<b>TOTAL</b>	<b>\$ 552,348</b>	<b>\$ 515,451</b>	<b>\$ 560,313</b>	<b>\$ 578,752</b>	<b>\$ 18,439</b>	<b>3.3%</b>	

The **Affirmative Action and Compliance Unit (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.

### FY15 Goals:

- 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 work force.
- 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 protected class candidates.
- 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 and monitor and report on contractor compliance and expenditures.

### FY15 Initiatives:

- Conduct a comprehensive self-identification outreach program for applicants and employees who are covered veterans and individuals with disabilities.
- Conduct a special meeting with executive, management and supervisory personnel to explain the intent of the new federal regulations on affirmative action and equal employment opportunity and individual responsibility for effective implementation, making clear the Executive Director's support for the program.
- Review and consider options toward updating current MBE/WBE/DBE subcontracting goals.

**FY14 Accomplishments:**

- Provided management guidance and participated in 72 position(s) selection committee interviews, sourced eighteen (18) outreach contacts, and referred 25 qualified candidates to Human Resources for underutilized positions.
- Conducted oversight of 65 construction and professional projects including 18 site visits and one compliance audit to ensure contractor compliance with the MWRA's MBE/WBE/DBE Program. All MBE/WBE targets have been achieved except, WBE Professional Services.

**Budget Highlights:**

- The FY15 Final Budget is \$579,000, an increase of \$18,000 or 3.3% from the FY14 Actual spending.
- \$574,000 for **Wages and Salaries**, an increase of \$16,000 or 2.9% from the FY14 Actual spending, primarily due to projected cost of living adjustments. The final budget includes funding for seven positions.



## INTERNAL AUDIT

FY15 Final Current Expense Budget INTERNAL AUDIT						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 632,155	\$ 651,971	\$ 686,696	\$ 691,117	\$ 4,421	0.6%
OVERTIME	-	11	-	-	-	-
ONGOING MAINTENANCE	5	-	-	-	-	-
TRAINING & MEETINGS	5,065	4,596	5,070	7,238	2,168	42.8%
OTHER MATERIALS	1,394	1,764	1,697	2,020	323	19.0%
OTHER SERVICES	1,306	1,100	2,540	1,062	(1,478)	-58.2%
<b>TOTAL</b>	<b>\$ 639,925</b>	<b>\$ 659,442</b>	<b>\$ 696,003</b>	<b>\$ 701,437</b>	<b>\$ 5,434</b>	<b>0.8%</b>

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 coordinates 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.

### FY15 Goals:

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

### FY14 Accomplishments:

- Identified \$1,633,000 in audit impact dollars related to: management advisory services, consultant audits, construction labor burden reviews, the early termination of two janitorial services contracts, a true-up of 2013 Boston Water and Sewer Company (BWSC) CSO financial assistance agreement activity, a true-up of 2013 Harbor Electric Energy Company (HEEC) billings for the harbor cable, a Charlestown Navy Yard lease operating cost adjustment, and a refund from an office supply vendor.
- Issued final audit reports on a follow-up review of Fleet Services activities, reviews of the Wastewater Advisory Committee (WAC) and Water Supply Citizens Advisory Committee (WSCAC), Bay State Fertilizer, and the MBE/WBE Program. Issued ten incurred cost audits, four preliminary consultant and seven preliminary construction reviews, and four other contract reviews.
- Provided management advisory and data analysis services for management initiatives dealing with the HEEC cross-harbor cable and the New England Fertilizer Company contract for operating the Pellet Plant.

**Budget Highlights:**

- The FY15 Final Budget is \$701,000, an increase of \$5,000 or 0.8% from the FY14 Actual spending.
- \$691,000 for **Wages and Salaries**, an increase of \$4,000 or 0.6% from the FY14 Actual spending, primarily due to projected cost of living adjustments. The final budget includes funding for eight positions.

**PUBLIC AFFAIRS**

<b>FY15 Final Current Expense Budget PUBLIC AFFAIRS</b>						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 1,036,558	\$ 1,085,187	\$ 1,012,009	\$ 1,050,525	\$ 38,516	3.8%
OVERTIME	-	-	58	-	(58)	-100.0%
TRAINING & MEETINGS	(463)	4,410	4,054	3,365	(689)	-17.0%
PROFESSIONAL SERVICES	1,050	3,187	4,925	1,050	(3,875)	-78.7%
OTHER MATERIALS	22,391	25,505	28,711	21,625	(7,086)	-24.7%
OTHER SERVICES	41,861	33,815	28,945	48,487	19,542	67.5%
<b>TOTAL</b>	<b>\$ 1,101,397</b>	<b>\$ 1,152,104</b>	<b>\$ 1,078,702</b>	<b>\$ 1,125,052</b>	<b>\$ 46,350</b>	<b>4.3%</b>

The **Public Affairs Department** is the institutional link to all MWRA constituencies. 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.

The **Community Relations Section** deals directly with cities and towns in the 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 and Coordination Department staff to ensure compliance with state and local regulations and restrictions.

The **Environmental Review and Compliance Section** is responsible for directing Authority-wide Massachusetts Environmental Protection Agency (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 web site, and provides design, editorial, and graphics services for other sections of MWRA. In addition, 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. Both sections are lead by the Special Assistant to the Executive Director, located in the Executive Office.

**FY15 Goals:**

- Enhance overall public understanding of MWRA’s mission, goals, and benefits to the public through extensive outreach and effective communication.
- Monitor and analyze legislation and regulations that affect the Authority, formulating appropriate responses in concert with the Office of the Executive Director (OED).
- Continue to coordinate the review of projects filed with Massachusetts Environmental Protection Agency (MEPA), and submit timely MEPA responses to ensure that Authority owned infrastructure is protected.

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

**Communications Section:**

- Respond promptly and accurately to media requests, ensuring coordination with appropriate internal and external parties.
- Continue to provide information to the public through the MWRA's internal and external websites, including social media like Twitter, Flickr and YouTube. For FY2015, planned upgrades to the website include installation of a search engine, a calendar feature, and enhanced service area maps.
- Design and produce publications, such as the Annual Water Quality Report, Dwayne the Storm Drain, and new Planter Kits.
- Continue to catalogue photo archive of all MWRA projects in Cumulus database and produce photo books to maintain a hard copy record of MWRA's improvements to the water and wastewater systems. In addition, the photo catalogue will be made available through MWRA's website in FY2015.
- Continue to provide classroom visits to schools within the MWRA service area to create awareness for young people about the importance of water and wastewater infrastructure in their lives and for the environment.

**FY15 Initiatives:**

***Ongoing Advocacy – Commonwealth Rate Relief***

MWRA's highest legislative priority continues to focus on the need for a more robust "Commonwealth Rate Relief Package" to help offset anticipated rate increases over the next several years.

## **FY14 Accomplishments:**

### ***Commonwealth Rate Relief***

The FY15 Final Budget for the Commonwealth includes \$1.1 million for Sewer Rate Relief.

The Massachusetts Legislature conducted its 188<sup>th</sup> Session from January 1, 2013 to July 31, 2014. The following bills of importance to MWRA passed during the legislative session:

### **Chapter 259 of the Acts of 2014 – SB2021: An Act Improving Drinking Water and Wastewater Infrastructure.**

In January 2013, Senate President Therese Murray committed to address the ongoing critical need for financial assistance for drinking and wastewater infrastructure. SB2021 was the final result of deliberations by both branches, and was signed into law by the Governor on August 6, 2014. Provisions of the bill include:

- (subject to appropriation) a 1:1 match to help interested communities pay the MWRA entrance fee;
- (subject to appropriation) a reimbursement of up to \$13.8 million of Inflow and Infiltration (I/I) interest free grants and loans provided by MWRA;
- additional financial assistance, including principal forgiveness, for projects connecting a local or regional governmental unit to an MWRA facility.

The Executive Director testified and wrote in support of the above provisions and more, and Public Affairs, in concert with the MWRA Advisory Board and Administration & Finance, actively participated in the broader advocacy effort undertaken by the Water Infrastructure Alliance.

### **Chapter 268 of the Acts of 2014 – HB4375: An Act providing for the preservation and improvement of land, parks and clean energy in the Commonwealth.**

This \$2.2 billion bond bill addressed a wide range of environmental and water quality issues and includes support for the MWRA's aqueduct recreational trail program.

### **Chapter 279 of the Acts of 2014 – SB2139: An Act authorizing the Massachusetts Water Resources Authority to dispose of certain real property in the City of Boston and to release an easement upon certain real property in the City of Boston.**

Following the MWRA Board of Directors' declaration of it as surplus, this bill enabled the conveyance of the 37,150 square foot parcel containing the Fox Point CSO facility to the Local 103 I.B.E.W Educational Corporation for the sum of \$372,000.

### **Chapter 113 of the Acts of 2013 – SB1837: An Act authorizing the Division of Capital Asset Management and Maintenance to grant an easement upon land of the commonwealth located in the Town of Ware to the Massachusetts Water Resources Authority.**

Passage of this bill (Article 97) formalized MWRA easement rights granted by the Metropolitan District Commission decades ago for land associated with MWRA's existing Ware Disinfection Facility that serves the Authority's Chicopee Valley Aqueduct (CVA) communities of Chicopee, Wilbraham and portions of South Hadley.

### **Chapter 52 of the Acts of 2013 – HB3570: An Act authorizing the Massachusetts Water Resources Authority to dispose of real property located in the City of Quincy and to grant an easement upon real property of the Massachusetts Water Resources Authority located in the City of Quincy.**

Passage of this bill approved a mutually agreed upon exchange of property and various easements in Quincy between MWRA and March Fourth LLC, enabling the more efficient operation of the Fore River Railroad by MWRA.

**Chapter 38 of the Acts of 2013 – An Act making appropriations for the fiscal year for the maintenance of the Departments, Boards, Commissions, Institutions, and certain activities of the Commonwealth for interest, sinking fund and serial bond requirements and for certain permanent improvements.**

Section 199 (a) authorized the Commissioner of Capital Asset Management and Maintenance, in consultation with MWRA, to convey to the Massachusetts Port Authority a parcel of land in East Boston for the Greenway Connector.

**Aqueduct Trail Progress.** To date, at the direction of the MWRA Board of Directors, staff have issued nine Section 8 (m) Permits as part of the Public Access Aqueducts Program (Staff Summary dated April 11, 2012) authorizing approximately 14.5 miles of public access. Permits cover the following Aqueducts and Communities:

- Framingham - Weston Aqueduct – Pilot segment (1.1 mile)
- Framingham - Weston Aqueduct (.35 mile) section near Wayland Town Line
- Framingham - Weston Aqueduct (remaining western sections) (all areas along the Weston Aqueduct are now authorized in Framingham, excluding tunnel sections). (3.9 miles)
- Total of over 5.5 miles along the Weston Aqueduct in Framingham.
  - Framingham - Bay Circuit Trail Connector (.35 mile)
  - Framingham - Sudbury Aqueduct – first segment (1.5 miles)
  - Northborough - Wachusett – first segment (2 miles)
  - Wellesley - Sudbury Aqueduct – all of it except a small stretch in Wellesley (2.6 miles)
  - Southborough - Bay Circuit Trail Connector (.5 mile)
  - Natick - Sudbury Aqueduct (2 sections totaling 1.5 miles)
  - Natick – Sudbury Aqueduct (2,500 feet totaling .5 mile)

The Town of Weston’s application is currently under review.

**Communications Section:**

In FY2014, MWRA hosted several media events to mark major milestones: Alewife Wetland Opening – October 15, 2013; Mass Water Forum – March 18, 2014; Aqueduct Trail Opening in Natick – April 24, 2014. Also, planning began for the Ultraviolet (UV) Event at Carroll Treatment Plant.

Graphics staff completed the Annual Water Quality Report completely in-house, as well as several brochures, labels and other artwork.

Communications staff continued to maintain and update both the external and internal websites, providing up-to-date information on MWRA’s projects and programs to both audiences. Highlights for FY2014 include the web version of the Annual Water Quality Report.

During FY2014, much progress was made on the Photo Archive Project. All historical photos – from both MWRA and DCR – have been digitized. In addition, photos from projects completed since the inception of MWRA have been recovered from Records Center boxes and photos scanned and catalogued into the Cumulus database. The first book – The Boston Harbor Project – was produced in FY2014, with several more in the queue to be completed in early FY2015.

During FY2014, the School Education Program made 445 classroom presentations in 30 communities reaching 12,625 students from pre-kindergarten to college level. In addition, there were more than 2,800 entries for the annual Poster, Essay and Video Contest. The topic for FY2014 was “It’s a Toilet, Not a Wastebasket.”

**Budget Highlights:**

- The FY15 Final Budget is \$1.1 million, an increase of \$46,000 or 4.3% from the FY14 Actual spending.
- \$1.1 million for **Wages and Salaries**, an increase of \$39,000 or 3.8% from the FY14 Actual spending, mainly due to the resignation of the Community Relations Manager during FY14. The final budget includes funding for 12 positions, one position less than funded in FY14.
- \$22,000 for **Other Materials**, a decrease of \$7,000 or 24.7% from the FY14 Actual spending, mainly due to payment for Planter Kits in FY14 that were ordered in FY13.
- \$48,000 for **Other Services**, an increase of \$20,000 or 67.5% from the FY14 Actual spending. Actual spending is below primarily due to delayed printing of Dwayne the Storm Drain booklets and less Planter Kit Boxes in FY14. This budget supports the printing needs of the department, as well as telephones, memberships and mailing house services. Printing also includes items such water bottles and stickers.



Operations Division  
Budget



## OPERATIONS DIVISION

FY15 Final Current Expense Budget OPERATIONS DIVISION						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 69,926,817	\$ 70,614,655	\$ 71,409,040	\$ 75,524,218	\$ 4,115,178	5.8%
OVERTIME	3,046,845	3,473,493	3,332,244	3,558,196	225,952	6.8%
FRINGE BENEFITS	54,278	58,593	56,561	61,270	4,709	8.3%
CHEMICALS	9,271,529	10,139,257	10,226,458	10,219,580	(6,878)	-0.1%
UTILITIES	22,666,107	22,960,065	23,309,214	23,370,581	61,367	0.3%
ONGOING MAINTENANCE	23,609,567	23,407,709	24,216,738	23,967,964	(248,774)	-1.0%
TRAINING & MEETINGS	84,048	107,585	135,493	140,000	4,507	3.3%
PROFESSIONAL SERVICES	2,135,541	2,160,077	1,941,662	2,775,035	833,373	42.9%
OTHER MATERIALS	4,478,030	5,766,975	4,586,537	4,554,476	(32,061)	-0.7%
OTHER SERVICES	19,437,632	18,629,541	18,155,052	18,683,362	528,310	2.9%
<b>TOTAL</b>	<b>\$ 154,710,395</b>	<b>\$ 157,317,952</b>	<b>\$ 157,368,999</b>	<b>\$ 162,854,682</b>	<b>\$ 5,485,683</b>	<b>3.5%</b>

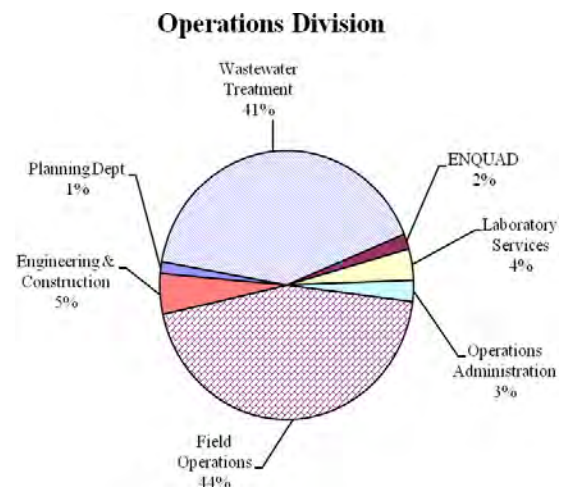
FY15 Final Current Expense Budget OPERATIONS DIVISION by Department						
DEPARTMENT	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
OPERATIONS ADMINISTRATION	\$ 2,880,947	\$ 3,749,217	\$ 4,126,009	\$ 3,962,465	\$ (163,544)	-4.0%
WASTEWATER TREATMENT	64,934,921	65,225,080	65,066,657	66,706,775	1,640,118	2.5%
FIELD OPERATIONS	69,117,281	70,781,717	70,514,110	72,718,946	2,204,836	3.1%
LABORATORY SERVICES	5,312,800	5,563,606	5,621,315	6,167,272	545,957	9.7%
ENQUAD	2,860,161	2,660,834	2,722,517	2,973,838	251,321	9.2%
ENGINEERING & CONSTRUCTION	7,569,131	7,273,287	7,175,077	8,069,580	894,503	12.5%
PLANNING DEPARTMENT	2,035,154	2,064,211	2,143,314	2,255,806	112,492	5.2%
<b>TOTAL</b>	<b>\$ 154,710,395</b>	<b>\$ 157,317,952</b>	<b>\$ 157,368,999</b>	<b>\$ 162,854,682</b>	<b>\$ 5,485,683</b>	<b>3.5%</b>

The **Operations Division** provides wastewater and water system services including operations, maintenance, and treatment; environmental monitoring and laboratory testing and analyses; and engineering, construction, planning, and administration. The Operations Division's departments are described below:

The **Wastewater Treatment Department** is 41% of the division's budget. The department operates and maintains the Deer Island Treatment Plant (DITP), Clinton Wastewater Treatment Plant, and Residuals Processing Facility (pelletization plant) at Fore River Staging Area (FRSA).

The **Field Operations Department (FOD)** is 44% of the division's budget. The department manages the wastewater pretreatment, water treatment, and wastewater and water distribution functions, including the Carroll Water Treatment Plant (CWTP). This department is responsible for operating, maintaining, and metering both systems.

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



The **Engineering and Construction Department** provides the following services to support the maintenance, repair, and rehabilitation of the wastewater and water systems: in-house engineering, consultant management, drafting, surveying, construction management, and other technical assistance. The department also oversees implementation of the Combined Sewer Overflow (CSO) plan.

The **Environmental Quality Department (EnQuad)** manages and reports on the monitoring of Boston Harbor and Massachusetts Bay water quality. The department also oversees MWRA's compliance with its National Pollutant Discharge Elimination System (NPDES) permits.

The **Laboratory Services Department** supports various client groups in the Operations Division, the 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 **Operations Administration Department** provides oversight and general management support in the areas of finance, contract administration, and personnel. The Operations Administration Department budget also includes funds for MWRA vehicle purchases and division-wide memberships.

#### **FY15 Goals:**

- Plan, develop, implement, and operate efficient, reliable, and economical water treatment/delivery and wastewater transport/treatment systems.
- Ensure compliance with state and federal drinking water quality and wastewater discharge regulations including the Safe Drinking Water Act (SDWA), the Clean Water Act, and National Pollutant Discharge Elimination System (NPDES) permits.
- Plan and implement 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.
- Dispose of wastewater treatment by-products in a cost-effective and environmentally sound manner.

#### **FY15 Initiatives:**

##### **Operations, Energy, and New Facilities Start-ups:**

- Continue to identify, assess, and implement initiatives to reduce energy demand and increase energy self-generation in MWRA's system, including the projects noted in MWRA's Memorandum of Understanding with NSTAR. Pursue grant-funding and cost-sharing arrangements to defray costs of implementing these initiatives.
- Self-generate ~28% of the Deer Island Treatment Plant's (DITP) required power through optimization of power generation assets, including the wind turbines and the Steam Turbine Generation (STG) back pressure system.
- Implement and evaluate pilot for commercial food waste co-digestion project at Deer Island Treatment Plant.
- Optimize new ultraviolet (UV) disinfection treatment process for MWRA's potable water system at the Carroll Water Treatment Plant and commence UV treatment at the Quabbin Disinfection Facility.
- Start-up and operate the new Spot Pond covered storage facility in water system.
- Identify and implement strategies for workforce succession in preparation for expected retirement of many MWRA employees in the upcoming five to ten years.

## **Engineering & Construction:**

- Notice to Proceed for numerous contracts including the following major projects:
  - Water System
    - Wachusett Aqueduct Pump Station - Construction
    - Weston Aqueduct Supply Mains – Sect 36/W11/S9 – All Valve
    - NHS Revere & Malden Pipe – Sect 53 Connections Design CA/RI
    - CWTP Existing Facilities Modifications – CP7
  - Wastewater System
    - Facility Asset Protection Alewife Brook Pump Station Rehab – Construction
    - DITP Asset Protection Winthrop Terminal Facility VFD Replacement - Construction
    - Facility Asset Protection Chelsea Screenhouse Upgrades
    - Facility Asset Protection Caruso Pump Station Improvements – Construction
    - DITP Asset Protection Future Misc. VFD Replacements – Design
- Substantially complete numerous CIP design and construction phases including the following:
  - Water System
    - Spot Pond Storage Facility Design/ Build
    - Metro West Tunnel Hultman Interconnection– Final Design/CA/I
    - Metro West Tunnel Hultman Interconnection – RI Services
    - Quabbin Water Treatment Plant UVWTP - Construction
    - Carroll Water Treatment Plant CWTP Ultraviolet Disinfection – Des/ESDC/R
  - Wastewater System
    - DITP Asset Protection Digester Modules 1 & 2 Pipe Replacement Engineering Services During Construction/Resident Engineer Inspection
    - CSO Program Brookline Sewer Separation Design/CS/RI
    - Facility Asset Protection NI Electricity & Grit/Screens Conveyance - Construction
    - DITP Asset Protection Centrifuge Backdrive Replacement
    - DITP Asset Protection Digester Sludge Pump Replacement Construction

## **Maintenance:**

- Optimize staff resources, overtime, service contracts, and as-needed design contracts to complete routine and major maintenance projects.
- 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 units replacement; gas compressor actuator valve rebuilds; and critical equipment maintenance.
- Work on numerous projects in Field Operations including meter inspection and repairs; facility repainting and coating repairs; manhole rehabilitation; heating system conversion at Framingham Pump Station; invasives control in the water reservoirs; dam inspections and tree clearing; and water tank inspections.

### **Environmental:**

- Plan for implementation of requirements of the new National Pollutant Discharge Elimination System (NPDES) Permits for DITP (assume new permit is issued in the fourth quarter of FY2015) and Clinton Wastewater Treatment Plant (assume new permit in effect for all of FY15).
- Continue work on other harbor and outfall monitoring initiatives including: calculating revised thresholds, working with the Department of Conservation and Recreation to implement appropriate beach management practices in South Boston, and improving instrumentation on National Oceanic and Atmospheric Administration's (NOAA's) weather buoy.
- Review and revise the TRAC permit fee structure.
- 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.
- Conduct invasive species removal and monitoring at water reservoirs.
- Implement and optimize changes in fluoride dosing in the water system to comply with revised regulations.

### **FY14 Accomplishments:**

#### **Operations, Energy, and New Facilities Start-ups:**

- Processed 99.2 average tons per day of sludge at the Pelletization Plant and disposed of 6,031 tons of grit and screenings through a contracted vendor.
- Assisted the Procurement Department with the procurement of contracts to supply and deliver chemicals for the water and wastewater system facilities. Chemicals procured included sodium hypochlorite, hydrofluosilicic acid, liquid oxygen, sodium hydroxide, sodium bisulfite, hydrogen peroxide, soda ash, and polymer.
- Procured multi-year electricity supply contracts with two vendors for MWRA facilities.
- Developed and commenced a Memorandum of Understanding with NSTAR for energy efficiency undertakings. The agreement allows MWRA to achieve higher rebates from the utility for implementing energy efficiency projects and also supports the identification and implementation of energy efficiency opportunities throughout MWRA's day-to-day operations and construction programs.
- Received revenue for energy generated at numerous facilities including the following: hydroelectric \$766,000 from Oakdale Station, \$214,000 from Cosgrove Station, and \$36,000 from the Loring Road Pump Station; wind of \$347,000 from Charlestown Pump Station; and solar of \$95,000 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 and the non-rate revenue from the sale of Renewable Portfolio Standards Program (RPS) credits resulted in \$2.9 million in revenue for FY14. Deer Island also self-generated ~25% of the plant's total required power during that period.
- Successfully commenced the new ultraviolet (UV) disinfection treatment process for MWRA's potable water system at the Carroll Water Treatment Plant.

## **Maintenance:**

- The Operations Division spent \$24.2 million on maintenance in FY14 of which \$11.9 million was for materials and \$12.3 million was for services.
- Procured and implemented numerous contracts for maintenance services, including; DITP thermal and hydro-power plant, DITP wind turbine, DITP oxygen facility, grounds-keeping, janitorial services, electrical system monitoring, instrumentation monitoring and repair, boiler and water heating services, fire protection sprinkler system maintenance, continuous emission monitoring system equipment, dam safety compliance, and elevator inspection and repair.
- Procured and implemented numerous contracts for maintenance projects including: manhole frames and covers replacement, emergency repair of metropolitan sewer section 155 siphon, installation of energy efficient LED extension lighting at the Southborough facility, digester mixer assembly repair at DITP, invasive species removal in the reservoirs, and installation of insulation on water pipes at several water pump stations.
- Completed numerous maintenance projects including excavation and repair of several water pipeline leaks; modifications to pumps at the Squantum Pump Station and other facilities; repair of the sewer line at the Gillis Pump Station; carbon media change-outs for odor control in several facilities; and repair of the radiator in Nut Island's generator.
- In the water system, exercised and replaced 745 and 20 mainline valves and 458 and 11 blow-off valves.
- In the wastewater system, inspected 32.62 miles and cleaned 17.75 miles of MWRA pipeline. Also inspected 723 structures and rehabilitated 112 manholes.

## **Engineering, Construction, and Planning:**

- Notice to Proceed for numerous contracts including the following major projects:
  - Water System
    - Weston Aqueduct Supply Mains WASM3 – MEPA/ Design/ CA/ RI
    - Southern Extra High (SEH) Redundancy/Storage Phase 1 – Final Design
  - Wastewater System
    - DITP Asset Protection – Scum Skimmer Replacement
    - DITP North Main Pump Station and Winthrop Terminal Facility Butterfly Valve Replacements
    - Facility Asset Protection Prison Point/Cottage Farm Engine Pump and Gearbox Rebuilds
    - Nut Island Electrical and Grit/Screenings Conveyance – Construction
    - DITP Clarifier Rehabilitation Phase 2 – Design
    - DITP Cryogenics Chillers Replacement
- Substantially completed numerous projects including the following:
  - Water System
    - CWTP Ultraviolet Disinfection - Construction
    - Weston Aqueduct Supply Mains Watertown Sect Rehab
    - Quabbin Transmission System – Oakdale Phase 1A Electrical – Construction
  - Wastewater System
    - DITP Asset Protection – Expansion Joint Repair – Construction 2
    - DITP Asset Protection – Primary & Secondary Clarifier Rehab - Design
    - DITP Asset Protection – Clarifier W3H Flush System
    - CSO Program Brookline Sewer Separation Construction

## Environmental:

- The TRAC Department completed the following Environmental Protection Agency (EPA)-required work for significant industrial users: 277 inspections, 185 monitoring events, and 373 sampling of connections. This department also issued or renewed 411 permits to Significant Industrial Users (SIUs) and non-SIUs.
- The TRAC Department submitted the Industrial Pretreatment Program Annual Report to the EPA for FY13 in October 2013.
- The TRAC Department continued work on the review of local limits at the Clinton Wastewater Treatment Plant as required under the NPDES permit renewal process.
- At DITP, treated 99.5% of flow through secondary and met secondary permit limits at all times. Operated DITP without any NPDES Permit violations during FY14.
- EnQuad 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 17 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.
- Met all water quality and treatment standards for giardia in the drinking water system during FY14. Also, maximum turbidity results at Quabbin and Wachusett were within DEP standards.
- During FY14, the Department of Laboratory Services performed 256,884 tests including the annual Lead and Copper Rule testing and Massachusetts Bay water column testing for the Harbor and Outfall Monitoring program.

## **Budget Highlights:**

- The FY15 Final Budget is \$162.9 million, which is \$5.5 million or 3.5%, more than FY14 Actual Spending.
- Line items that increased from FY14 Actual Spending include:
  - The FY15 Final Budget of \$75.5 million for **Wages and Salaries** is an increase of \$4.1 million or 5.8% from FY14 Actual Spending, primarily due to projected cost of living adjustments increases; more filled positions in FY15 than in FY14 due to retirement backfills; more temporary employees in FY15 for planned projects; and an increase in stand-by pay to reflect historical averages for wet weather use. The FY15 Final Budget funds 936 filled positions on average during the year versus 929 filled on average in FY14. The budget also includes \$803,000 for Stand-by Pay to ensure staffing availability and response during emergencies, \$250,000 for Interns to assist with peak workload and special initiatives, and \$192,000 for Temporary Employees.
  - The FY15 Final Budget for **Professional Services** is \$2.8 million, including \$1.5 million for lab and testing services; \$682,000 for engineering services and \$459,000 for other services. Major items in the budget include \$1.5 million for Harbor and Outfall Monitoring; \$375,000 for as-needed engineering services to support CEB-funded projects; \$155,000 for outsourced testing by the Central Laboratory; \$150,000 for MWRA's FY15 contribution to the Mystic River Modeling project; \$125,000 for the FY15 portion of the DI Local Limits study as required by the new NPDES permit; and \$107,000 for analysis and inspection of MWRA's dams. The FY15 Final Budget is \$833,000 or 42.9% more than FY14 Actual Spending primarily due to the addition of funds for the Local Limits and Mystic River Modeling projects plus budget increases for harbor and outfall monitoring, dam safety, as-needed engineering, and water leak detection based on planned workload.

- The FY15 Final Budget for **Other Services** is \$18.7 million, including \$13.9 million for sludge pelletization; \$1.9 million for space leases and rentals, including the Chelsea office facility; \$852,000 for grit and screenings removal and disposal; \$639,000 for telephones; \$416,000 for police details; and \$321,000 for memberships, dues, and subscriptions. The FY15 Final Budget is \$528,000 or 2.9% more than FY14 Actual Spending primarily due to increases for contractual inflation and quantities for sludge pelletization services; base rent and property tax increases for the Chelsea facility lease; and dues for numerous membership organizations. Sludge quantities were significantly lower than expected in FY14 whereas FY15 is based on a multi-year average.
- The FY15 Final Budget of \$3.6 million for **Overtime** is an increase of \$226,000 or 6.8% from FY14 Actual Spending primarily due to more wet weather overtime budgeted in FY15 than required in FY14, and the addition of NPDES-related sampling at the Carroll Water Treatment Plant. The FY15 Final Budget is sized based on multi-year spending patterns for all areas including wet weather use. FY14 had significantly less wet weather than expected whereas FY15 assumes a more typical year for weather patterns. The components of the budget include \$1.8 million for emergencies and wet weather staffing; \$959,000 for operational coverage; and \$790,000 for planned maintenance and other initiatives that must be completed at night or on weekends. The budget continues to incorporate reductions in overtime for coverage due to changes in staffing requirements and it also reflects managements' successful efforts to date to control spending for non-emergency overtime.
- The FY15 Final Budget of \$23.4 million for **Utilities** includes \$16.9 million for electricity, \$3.7 million for diesel fuel, \$2.1 million for water, and \$516,000 for natural gas. The increase of \$61,000 or 0.3% from FY14 Actual Spending is primarily due to additional diesel fuel purchases and increases in DITP water wholesale rates and use; offset by decreases for electricity and natural gas. Diesel fuel quantities and water use budgets are based on multi-year averages whereas FY14 actual use was lower than expected due to relatively mild weather and the resulting impact on operations. The decrease in electricity is primarily due to lower projected prices based on market forecasts. The utility budget by department is \$13.7 million for Deer Island Treatment Plant, \$5.1 million for Wastewater Operations, \$3.8 million for Water Operations, \$549,000 for the Chelsea Office facilities, and \$229,000 for the Clinton Wastewater Treatment Plant.
- The FY15 Final Budget of \$140,000 for **Training and Meetings** covers specialized training, attendance at industry conferences, and site visits to other plants. The budget funds training for topics such as spill response and boom deployment; Ultraviolet treatment; spill prevention and control; belt laser alignment; and cyber security. The FY15 Final Budget is \$4,500 or 3.3% more than FY14 Actual Spending primarily due to the inclusion of training funds for topics such as spill response, prevention, and control.
- Line items that decrease from FY14 Actual Spending include:
  - The FY15 Final Budget for **Maintenance** is \$24.0 million, a decrease of \$249,000 or 1.0% from FY14 Actual Spending primarily due to changes in project priorities from year to year. The FY15 Final Budget includes \$12.4 million for services and \$11.6 million for materials. By maintenance area, the largest categories of spending for materials and services include \$10.9 million for plant and machinery; \$4.8 million for building and grounds; \$2.7 million for electrical; \$2.6 million for specialized equipment, \$1.6 million for pipeline; and \$1.1 million for HVAC systems. The budget also funds special initiatives such as energy conservation projects in the Field Operations Department facilities; invasive plant control in the water reservoirs; and easement clearing on MWRA's aqueducts.
  - The FY15 Final Budget of \$4.6 million for **Other Materials** includes \$1.7 million for Vehicle Replacements; \$803,000 for Lab and Testing Supplies; \$500,000 for Vehicle Expenses (gas, tolls); \$393,000 for Equipment and Furniture; \$388,000 for Health and Safety Supplies; and \$321,000 for Work

Clothes. The decrease of \$32,000 or 0.7% from FY14 Actual Spending is primarily due to less funding in FY15 for numerous items based on projected needs; offset by increases in planned spending for equipment and furniture primarily for work planned at the Chelsea office facility.

- The FY15 Final Budget of \$10.2 million for **Chemicals** includes \$6.3 million for disinfection and treatment in the water system and \$3.9 million for disinfection, treatment, and odor control in the wastewater system. The budget includes \$3.7 million for soda ash; \$2.2 million for sodium hypochlorite; \$859,000 for ferric chloride; \$612,000 for liquid oxygen; \$541,000 for hydrofluosilicic acid; and \$523,000 for sodium bisulfite. The FY15 Final Budget is \$7,000 or 0.1% less than FY14 Actual Spending due to the net effect of price and usage decreases based on recent trends, contracts, and market projections; offset by an increase of approximately \$300,000 for chemicals at DITP for enterococcus treatment as expected to be required by the new NPDES permit.



**OPERATIONS ADMINISTRATION**

<b>FY15 Final Current Expense Budget OPERATIONS ADMINISTRATION</b>						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 1,905,682	\$ 1,915,020	\$ 2,125,923	\$ 1,803,357	\$ (322,566)	-15.2%
OVERTIME	101	-	120	-	(120)	-100.0%
FRINGE BENEFITS	-	-	3	-	(3)	-100.0%
ONGOING MAINTENANCE	(342)	-	-	-	-	-
TRAINING & MEETINGS	6,812	1,010	15,580	4,700	(10,880)	-69.8%
PROFESSIONAL SERVICES	9,740	166,309	(1,388)	200,000	201,388	14509.2%
OTHER MATERIALS	761,665	1,450,594	1,756,380	1,702,250	(54,130)	-3.1%
OTHER SERVICES	197,289	216,284	229,391	252,158	22,767	9.9%
<b>TOTAL</b>	<b>\$ 2,880,947</b>	<b>\$ 3,749,217</b>	<b>\$ 4,126,009</b>	<b>\$ 3,962,465</b>	<b>\$ (163,544)</b>	<b>-4.0%</b>

The **Operations Administration Department** is comprised of the Office of the Chief Operating Officer; the Office of the Deputy Chief Operating Officer of Program, Policy and Planning; 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, and general management.

**Budget Highlights:**

- The FY15 Final Budget is \$4.0 million, a decrease of \$164,000 or 4.0% from FY14 Actual Spending.
- \$1.8 million for **Wages and Salaries**, a decrease of \$323,000 or 15.2% from FY14 Actual Spending primarily due to more filled positions in FY14 than budgeted in FY15 as the result of recent organizational changes. The Operations Division will absorb any overspending for positions in this department within the overall division’s budget in FY15 Final Budget.
- \$4,700 for **Training & Meetings**, a decrease of \$11,000 or 69.8% from FY14 Actual Spending. The change is primarily due to American Water Works Association annual conference charges in FY14 that will not continue at the same level in FY15 as the conference will not be held in Boston.
- \$200,000 for **Professional Services**, an increase of \$201,000 from FY14 Actual Spending. The increase is primarily associated with an emerging agreement to contribute to the Mystic River Modeling Project. Funding also continues to cover energy consulting services to support procurements and evaluation of projects. Actual expenses for FY14 reflect a credit for the reclassification of a prior period expense.
- \$1.7 million for **Other Materials**, which is \$54,000 or 3.1% less than FY14 Actual Spending primarily due to additional spending in FY14 for vehicle replacements that were delayed from FY13. Funding in this line item is mostly for the replacement of older vehicles in MWRA’s fleet. At an average cost of \$30k -\$35k per vehicle, the budget supports replacement of 48-56 vehicles per year which is approximately 10%-11% of the active fleet.
- \$252,000 for **Other Services**, an increase of \$23,000 or 9.9%, from FY14 Actual Spending. The budget funds Authority-wide memberships including the Water Research Foundation (WRF), National Association of Clean Water Agencies (NACWA), Association of Metropolitan Water Agencies (AMWA), American Water works Association (AWWA), and the Boston Harbor Association (BHA) marine debris program. The funding change is due to increases for several memberships and the addition of funding for a membership with the Mystic River Watershed Association.

**WASTEWATER TREATMENT**

FY15 Final Current Expense Budget WASTEWATER TREATMENT						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 17,557,331	\$ 17,825,908	\$ 18,099,006	\$ 18,845,148	\$ 746,142	4.1%
OVERTIME	764,150	866,545	931,637	1,069,708	138,071	14.8%
FRINGE BENEFITS	15,150	16,082	17,017	16,374	(643)	-3.8%
CHEMICALS	2,773,772	3,397,825	3,569,186	3,574,302	5,116	0.1%
UTILITIES	13,537,849	13,673,883	13,457,361	13,917,979	460,618	3.4%
ONGOING MAINTENANCE	13,672,935	13,774,496	13,720,757	13,576,500	(144,257)	-1.1%
TRAINING & MEETINGS	5,439	7,907	12,051	14,900	2,849	23.6%
PROFESSIONAL SERVICES	111,911	76,076	241,797	158,200	(83,597)	-34.6%
OTHER MATERIALS	525,659	541,990	581,671	518,600	(63,071)	-10.8%
OTHER SERVICES	15,970,725	15,044,367	14,436,173	15,015,064	578,891	4.0%
<b>TOTAL</b>	<b>\$ 64,934,921</b>	<b>\$ 65,225,080</b>	<b>\$ 65,066,657</b>	<b>\$ 66,706,775</b>	<b>\$ 1,640,118</b>	<b>2.5%</b>

FY15 Final Current Expense Budget WASTEWATER TREATMENT						
FACILITY	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
DEER ISLAND	\$ 46,886,554	\$ 47,795,291	\$ 48,453,665	\$ 49,432,659	\$ 978,994	2.0%
RESIDUALS	16,531,865	15,906,760	15,014,521	15,596,487	581,966	3.9%
CLINTON	1,516,502	1,523,029	1,598,471	1,677,629	79,158	5.0%
<b>TOTAL</b>	<b>\$ 64,934,921</b>	<b>\$ 65,225,080</b>	<b>\$ 65,066,657</b>	<b>\$ 66,706,775</b>	<b>\$ 1,640,118</b>	<b>2.5%</b>

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 41% of the Operations Division’s FY15 Final Budget and 31% of MWRA’s FY15 Final Direct Expense Budget.

Incoming wastewater from MWRA customer communities is piped to several headworks facilities where large objects are screened out before the influent is transmitted to Deer Island Treatment Plant through underground tunnels. At Deer Island, wastewater from the north system is pumped through chambers that remove grit and detritus for disposal in an off-island landfill. South system flows undergo preliminary treatment at the Nut Island headworks and are then pumped directly into the primary treatment facility, bypassing the grit removal chambers. The primary treatment facility consists of stacked clarifiers where scum rises to the top and the sludge settles to the bottom. Secondary reactors and clarifiers remove organic matter through biological and gravity treatment. Primary and secondary sludge and scum are thickened, anaerobically digested, and further thickened to reduce the volume of sludge before it is pumped through the Braintree-Weymouth tunnel to MWRA's Residuals Processing Facility at Fore River Staging Area (FRSA). Methane, a byproduct of anaerobic digestion, is used to fuel the plant's boilers, which produce steam to provide heat and generate electricity.

**DEER ISLAND TREATMENT PLANT**

FY15 Final Current Expense Budget DEER ISLAND TREATMENT PLANT						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 16,822,253	\$ 17,105,459	\$ 17,375,674	\$ 18,100,073	\$ 724,399	4.2%
OVERTIME	717,421	809,580	878,057	1,011,708	133,651	15.2%
FRINGE BENEFITS	14,465	15,300	16,203	15,374	(829)	-5.1%
CHEMICALS	2,559,694	3,107,477	3,279,007	3,192,558	(86,449)	-2.6%
UTILITIES	13,270,049	13,452,849	13,208,873	13,688,816	479,943	3.6%
ONGOING MAINTENANCE	12,504,338	12,567,714	12,809,096	12,673,665	(135,431)	-1.1%
TRAINING & MEETINGS	5,439	7,907	11,694	11,200	(494)	-4.2%
PROFESSIONAL SERVICES	110,273	74,510	228,024	120,500	(107,524)	-47.2%
OTHER MATERIALS	385,968	382,007	428,575	370,600	(57,975)	-13.5%
OTHER SERVICES	496,654	272,488	218,462	248,165	29,703	13.6%
<b>TOTAL</b>	<b>\$ 46,886,554</b>	<b>\$ 47,795,291</b>	<b>\$ 48,453,665</b>	<b>\$ 49,432,659</b>	<b>\$ 978,994</b>	<b>2.0%</b>

**Program Description and Goals:**

The **Deer Island Treatment Plant** budget accounts for 30% of the Operations Division’s FY15 Final Budget. DITP has a peak primary treatment 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 50-60% 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 microorganisms to consume organic matter that remain in the wastewater flow. Secondary treatment raises the level of pollution removal to over 85%. Approximately 130 tons of pure oxygen is manufactured each day at Deer Island's cryogenic facility to support the biological treatment process.

Sludge from primary and scum from both primary and secondary treatment are 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 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. 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 energy. Digested sludge is pumped through 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.

## **Organizational Structure:**

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

- Operations staff manages the day-to-day 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 staff 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 70 megawatts of emergency electrical power.
- 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. The Process Control Unit 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 and predictive maintenance and corrective repairs on all equipment, utilizing a computerized maintenance management system (CMMS) to coordinate scheduling with Operations. 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 operate 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 the Operations and Maintenance Units. 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 Deer Island Treatment Plant (DITP) community and external constituents, and ensures quick access to plant drawings and technical information for operational and maintenance needs.
- O&M Support Section 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 policy direction and support in the areas of public access and community agreements.

## **Operating Assumptions**

Deer Island's FY15 Final Budget assumes treatment of an average flow of 359 mgd based on multi-year historical data. The projected quantity of digested sludge to be pumped to FRSA (TSS basis) is 103 TPD. This is based on multi-year data since the discontinuation of the DSL centrifuges and the start-up of the Braintree-Weymouth tunnel. It also accounts for recent improvements to digestion rates as a result of equipment modifications.

Deer Island's FY15 Final Budget accounts for the impact of self-generation of electricity from the steam turbine generators, combustion turbine generators, hydroelectric generators, wind turbine generators, and photovoltaic panels. In total, these assets will provide approximately 28% of the total energy requirements.

Deer Island continues to comply with the conditions of the current National Pollutant Discharge Elimination System (NPDES) Permit which expired in FY06. Given the uncertainty regarding the timing of the permit renewal from the Environmental Protection Agency (EPA), Deer Island's FY15 Final Budget only assumes a new permit will be in effect for the last three months of FY15. 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.

### **Budget Highlights:**

- The FY15 Final Budget is \$49.4 million, an increase of \$979,000 or 2.0%, from FY14 Actual Spending.
- \$18.1 million for **Wages and Salaries**, an increase of \$724,000 or 4.2% from FY14 Actual Spending primarily due to projected cost of living adjustments, funding for a temporary project engineer position in FY15, and increases in stand-by pay estimates based on multi-year history. The FY15 Final Budget includes \$194,000 for stand-by pay to support operational and maintenance needs primarily during storms and emergencies; \$56,000 for one contract employee; and \$14,000 for interns. The FY15 Final Budget funds 230 permanent positions, one temporary project engineer to assist with PICS, and part-time facility interns to assist with data collection and contract monitoring.
- \$1.0 million for **Overtime**, which is \$134,000 or 15.2% more than FY14 Actual Spending primarily due to below-average need for wet weather overtime in FY14 whereas the FY15 Final Budget is based on multi-year historical trends. Deer Island's budget supports overtime required for operational coverage, critical maintenance projects, and regulatory requirements (i.e. inspections).
- \$3.2 million for **Chemicals**, a decrease of \$86,000 or 2.6%, from FY14 Actual Spending. The decrease is due to projected lower pricing for chemicals offset by the inclusion of three months impact of a NPDES Permit. The FY15 Final Budget reflects management's expectation that a new NPDES permit will only be in effect for the last three months of FY15. The budget includes \$1.1 million for sodium hypochlorite, \$783,000 for ferric chloride, \$314,000 for activated carbon, \$302,000 for polymer, and \$296,000 for sodium bisulfite.
- \$13.7 million for **Utilities**, an increase of \$480,000 or 3.6% more than FY14 Actual Spending, mainly due to additional diesel fuel purchases and increases in water wholesale rates and estimated use. Diesel fuel quantities and water use budgets are based on multi-year averages whereas FY14 actual use was lower than expected due to relatively mild weather and the resulting impact on operations. The FY15 Final Budget includes \$10.3 million for electricity, \$1.8 million for diesel fuel, and \$1.6 million for water. The FY15 Final Budget reflects the average of three years of actual data for power usage and self-generation, plus revised self-generation estimates for the new back pressure steam turbine generator (BP STG).
- \$12.7 million for **Maintenance**, a decrease of \$135,000 or 1.1% from FY14 Actual Spending. The FY15 Final Budget includes \$5.8 million for materials and \$6.9 million for services. The combined totals for materials and services by category includes \$7.7 million or 61% is for plant and machinery, \$2.0 million for electrical systems, \$1.7 million is for building and grounds, and \$848,000 for HVAC systems.
- \$121,000 for **Professional Services**, a decrease of \$108,000 or 47.2%, from FY14 Actual Spending. The budget includes \$55,000 for as-needed engineering services to support priority maintenance projects in FY15, \$50,000 for emissions consulting, and \$16,000 for lab and testing and analysis. The decrease from FY14 to FY15 reflects more use of as-needed engineering services in FY14 versus as budgeted in FY15 based on project needs.

- \$371,000 for **Other Materials**, a decrease of \$58,000 or 13.5%, from FY14 Actual Spending mainly due to higher spending in FY14 than that planned in FY15. The FY15 Final Budget includes \$126,000 for health and safety materials, \$98,000 for work clothes, and \$68,000 for vehicles expenses (tolls, mileage, and gas).
- \$248,000 for **Other Services**, an increase of \$30,000 or 13.6% from FY14 Actual Spending. The FY15 Final Budget includes \$74,000 for permit fees, \$62,000 for health and safety services, \$36,000 for telephones, \$34,000 for membership dues and subscriptions, \$16,000 for printing, and \$15,000 for freight charges.

## RESIDUALS MANAGEMENT

FY15 Final Current Expense Budget RESIDUALS MANAGEMENT PROGRAM						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 113,188	\$ 116,333	\$ 115,594	\$ 119,867	\$ 4,273	3.7%
OVERTIME	-	-	-	-	-	-
FRINGE BENEFITS	-	-	-	-	-	-
UTILITIES	-	-	-	-	-	-
ONGOING MAINTENANCE	965,977	1,021,639	675,045	696,295	21,250	3.1%
TRAINING & MEETINGS	-	-	357	3,400	3,043	852.4%
PROFESSIONAL SERVICES	-	-	12,085	36,000	23,915	197.9%
OTHER MATERIALS	-	12,079	6,402	100	(6,302)	-98.4%
OTHER SERVICES	15,452,700	14,756,709	14,205,038	14,740,825	535,787	3.8%
<b>TOTAL</b>	<b>\$ 16,531,865</b>	<b>\$ 15,906,760</b>	<b>\$ 15,014,521</b>	<b>\$ 15,596,487</b>	<b>\$ 581,966</b>	<b>3.9%</b>

### Program Description and Goals:

The **Residuals Management Program** manages the processing and disposal of approximately 99-106 dry tons per day (on average per year) total suspended solids (TSS) of sludge from the anaerobic digestion process at Deer Island Treatment Plant, as well as the disposal of grit and screenings from all MWRA facilities. 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 processing facility, and to market and distribute sludge products. A 15-year contract with NEFCo became effective March 1, 2001 and will expire on December 31, 2015. Liquid sludge from Deer Island is pumped through the Braintree-Weymouth cross-harbor tunnel to the Fore River processing facility where it 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 reuse of biosolids to the greatest extent practicable.

A third-party independent condition assessment of the NEFCo facility noted that the facility was in excellent condition and recommended only minor modifications to several control system devices.

- The final budget is based on 103 tons per day (TPD based on TSS), consistent with historical actual annual tonnage since the start-up of the Braintree-Weymouth tunnel through FY14, discounted to reflect recent improvements in digestion as a result of equipment modifications.
- 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.

### Budget Highlights:

- The FY15 Final Budget is \$15.6 million, an increase of \$582,000 or 3.9%, from FY14 Actual Spending.
- \$120,000 for **Wages and Salaries**, an increase of \$4,000 or 3.7%, as compared with FY14 Actual Spending mainly due to projected cost of living adjustments. This line item funds one position. This department also receives on-going management oversight and staff support from other departments of the MWRA including Deer Island, Treasury, and Operations Administration.

- \$696,000 for **Maintenance**, an increase of \$21,000 or 3.1%, from FY14 Actual Spending. The funding supports the capital repair, replacement, and improvement component of the NEFCo contract, which includes a specific level per year adjusted to account for inflation. The change from FY14 to FY15 is due to differences in the base amount in each calendar year as included in the approved, contractual maintenance schedule established at the time of the contract award. The FY15 Final Budget also reflects adjustments for current inflation indices.
- \$36,000 for **Professional Services**, an increase of \$24,000 or 197.9% from FY14 Actual Spending. Funding supports the cost of bi-annual, permit-required, stack testing.
- \$14.7 million for **Other Services**, an increase of \$536,000 or 3.8%, from FY14 Actual Spending. The FY15 Final Budget primarily funds the **Sludge Pelletization** portion of the NEFCo contract. The FY15 Budget includes \$14.0 million for sludge, a \$517,000 increase as compared to FY14 Actual Spending due an increase in the projected inflation rates for natural gas, labor, and materials offset by a decrease to the inflation estimate for electricity based on current indices. The projected tonnage also increases from an average of 99.2 tons per day in FY14 to 103 tons per day in FY15, which is based on multi-year averages. In addition, this line item also covers Grit and Screenings disposal of \$852,000, which is a \$44,000 increase from FY14 Actual Spending of \$808,000. FY14 Actual Spending was less than expected primarily due to relatively drier weather patterns.



**CLINTON WASTEWATER TREATMENT PLANT**

FY15 Final Current Expense Budget CLINTON WASTEWATER TREATMENT PROGRAM						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 621,889	\$ 604,116	\$ 607,738	\$ 625,208	\$ 17,470	2.9%
OVERTIME	46,728	56,965	53,581	58,000	4,419	8.2%
FRINGE BENEFITS	685	782	814	1,000	186	22.9%
CHEMICALS	214,078	290,347	290,179	381,745	91,566	31.6%
UTILITIES	267,800	221,034	248,488	229,163	(19,325)	-7.8%
ONGOING MAINTENANCE	202,620	185,143	236,616	206,540	(30,076)	-12.7%
TRAINING & MEETINGS	-	-	-	300	300	-
PROFESSIONAL SERVICES	1,638	1,566	1,688	1,700	12	0.7%
OTHER MATERIALS	139,691	147,904	146,694	147,900	1,206	0.8%
OTHER SERVICES	21,373	15,172	12,673	26,073	13,400	105.7%
<b>TOTAL</b>	<b>\$ 1,516,502</b>	<b>\$ 1,523,029</b>	<b>\$ 1,598,471</b>	<b>\$ 1,677,629</b>	<b>\$ 79,158</b>	<b>5.0%</b>

**Program Description and Goals:**

The Clinton Wastewater Treatment Program provides advanced sewage 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.

The plant provides secondary treatment using an activated sludge process in combination with advanced nutrient removal and dechlorination. The major facilities include a 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 and a 6 mgd peak 24 hour rate. Residual materials are pressed and transported to an MWRA-owned landfill for disposal. Staff also performs regular monitoring of the landfill site.

The FY15 Final Budget continues to reflect savings from the operation of the Clinton aeration system efficiency improvements and redundant pumping at the influent and intermediate lift stations. These improvements were completed in calendar year 2013. Staff commenced the projects based on a consultant study that recommended installing fine bubble diffusers in three of the six secondary aeration tanks and removing the existing mechanical mixers to obtain a better oxygen transfer rate while reducing electricity consumption. In FY12, the project scope was expanded to include the installation of four permanent submersible auxiliary pumps to increase pumping capacity during high flow conditions in the plant and also the installation of SCADA to control the system, collect and store data, and visually monitor the processes. These improvements have saved approximately \$35,000 per year in electricity costs since installation. MWRA received a total of \$198,000 in grant funds from National Grid for both projects.

The FY15 Final Budget also assumes a full year of the new NPDES permit which affects chemical usage. Chemical usage has also changed due to better mixing and oxygen transfers as a result of the improvements in aeration tanks. This requires a significant increase in Soda Ash, for higher alkalinity, to counteract the biological activity caused by the oxygen.

## **Budget Highlights:**

- The FY15 Final Budget is \$1.7 million, an increase of \$79,000 or 5.0% from FY14 Actual Spending.
- \$625,000 for **Wages and Salaries**, an increase of \$17,000, or 2.9% from FY14 Actual Spending. The FY15 Final Budget funds seven positions and one part-time contract clerical position. The increase from FY14 Actual Spending is mainly due to projected cost of living adjustments. Wages and Salaries represent 37% of the FY15 Final Budget.
- \$58,000 for **Overtime**, an increase of \$4,000 or 8.2% from FY14 Actual Spending. Overtime is used for critical maintenance work and to meet the 24 hour, 7 day per week emergency coverage requirement. The FY15 Final Budget also includes incremental OT to cover the operational impacts of planned construction projects.
- \$382,000 for **Chemicals**, an increase of \$92,000 or 31.6% from FY14 Actual Spending. Chemicals are used for sludge processing, disposal, and wastewater treatment. The FY15 Final Budget assumes the new NPDES permit will be in effect for the full year. The chemical budget increase is due to expected higher use of Ferric Chloride and Soda Ash. Chemical usage estimates are based on trends through FY14, adjusted to account for improvements in the aeration system which causes better mixing and oxygen transfer, resulting in higher alkalinity and thus more treatment. Chemicals represent 23% of the FY15 Final Budget.
- \$229,000 for **Utilities**, a decrease of \$19,000 or 7.8% from FY14 Actual Spending. The FY15 Final Budget includes \$155,000 for electricity, \$58,000 for #2 Fuel Oil, and \$17,000 for water. The change from FY14 is primarily due to lower usage for electricity based on recent trends and operational improvements. Utilities represent 14% of the FY15 Final Budget.
- \$207,000 for **Maintenance**, a decrease of \$30,000 or 12.7% from FY14 Actual Spending due to the planned mix of projects for FY15 versus those that were completed in FY14. The FY15 Final Budget includes \$72,000 for major projects based on the most current rolling priority list. The remainder of the budget is for routine materials and services such as grounds keeping and snow removal; electrical repairs; and plumbing. Maintenance represents 12% of the FY15 Final Budget.
- \$148,000 for **Other Materials**, essentially level funded with FY14 Actual Spending. The FY15 Final Budget for Other Materials includes \$136,000 for clean fill for the landfill operations and \$12,000 for office supplies, health and safety materials, work clothing, and vehicle expenses.
- \$26,000 for **Other Services** which funds permit fees, telephones, railroad easements, and rental of a construction trailer.

**FIELD OPERATIONS**

FY15 Final Current Expense Budget FIELD OPERATIONS						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 35,927,959	\$ 36,361,523	\$ 36,595,216	\$ 38,919,640	\$ 2,324,424	6.4%
OVERTIME	2,102,678	2,460,544	2,294,513	2,365,282	70,769	3.1%
FRINGE BENEFITS	38,114	41,658	38,910	43,196	4,286	11.0%
CHEMICALS	6,497,757	6,741,432	6,657,272	6,645,277	(11,995)	-0.2%
UTILITIES	9,111,793	9,263,150	9,824,164	9,428,337	(395,827)	-4.0%
ONGOING MAINTENANCE	9,743,801	9,374,057	10,237,889	10,105,812	(132,077)	-1.3%
TRAINING & MEETINGS	62,670	83,335	90,496	94,000	3,504	3.9%
PROFESSIONAL SERVICES	507,936	556,814	249,182	780,500	531,318	213.2%
OTHER MATERIALS	2,022,727	2,708,894	1,227,485	1,135,386	(92,099)	-7.5%
OTHER SERVICES	3,101,846	3,190,310	3,298,983	3,201,516	(97,467)	-3.0%
<b>TOTAL</b>	<b>\$ 69,117,281</b>	<b>\$ 70,781,717</b>	<b>\$ 70,514,110</b>	<b>\$ 72,718,946</b>	<b>\$ 2,204,836</b>	<b>3.1%</b>

FY15 Final Current Expense Budget FIELD OPERATIONS by Program						
PROGRAM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
TOXIC REDUCTION & CONTROL	\$ 3,524,789	\$ 3,344,029	\$ 3,588,160	\$ 3,816,083	\$ 227,923	6.4%
WASTEWATER OPERATIONS	11,877,271	12,223,167	11,915,070	12,449,729	534,659	4.5%
WATER OPERATIONS & MAINT	25,685,781	26,424,382	27,634,871	27,998,582	363,711	1.3%
METRO MAINTENANCE	14,586,284	13,354,827	13,682,607	14,122,352	439,745	3.2%
OPERATIONS SUPPORT	8,201,808	8,599,003	8,833,657	9,135,367	301,710	3.4%
FOD ADMIN	5,241,348	6,836,309	4,859,745	5,196,833	337,088	6.9%
<b>TOTAL</b>	<b>\$ 69,117,281</b>	<b>\$ 70,781,717</b>	<b>\$ 70,514,110</b>	<b>\$ 72,718,946</b>	<b>\$ 2,204,836</b>	<b>3.1%</b>

The primary goal 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 Treatment Plant as well as MWRA’s industrial pretreatment, permitting, and monitoring program. FOD consists of six operating units: Toxic Reduction and Control, Wastewater Operations, Metropolitan Maintenance, Water Operations and Maintenance, Operations Support, and Administration.

**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 700 annually), issuing permits (300 annually), conducting sampling (more than 2,000 events annually), and carrying out enforcement activities (approximately 400 annually). The program tracks more than 1,400 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.

**Wastewater Operations** operates MWRA’s wastewater transport facilities, including four continuously staffed Headworks facilities; 12 fully automated pumping stations; and seven 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.

**Water Operations and Maintenance** is responsible for the treatment and delivery of approximately 199 million gallons per day (three year average mgd) of water from the Quabbin and Wachusett reservoirs to the community water systems. 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 MetroWest Tunnel, the Ware 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 facility and the Western Operations Center is located at the Carroll Water Treatment Plant.

**Metropolitan Maintenance** is responsible for the maintenance of MWRA's wastewater and water systems and facilities within the Route 128 area. Staff maintains pipelines, valves, interceptors, pumps, facility equipment, buildings, and grounds. Metropolitan Maintenance staff maintains a waterworks network of approximately 300 miles of water mains, 4,955 valves, 18 miles of deep rock tunnels, twelve pump stations, eight tunnel shafts, twelve distribution storage tanks, and a wastewater network of 240 miles of wastewater interceptors and appurtenances, twelve pump stations, four headworks, and six CSO facilities. In addition, this unit performs TV inspections of the wastewater interceptor system and leak detection.

**Operations Support** provides technical support to the Field Operations Department (FOD) in the areas of engineering, quality assurance, data management, metering, and monitoring. Engineering staff coordinate all engineering issues related to the operation of the water and wastewater systems. The Quality Assurance Unit monitors water treatment effectiveness, identifies treatment issues, and develops recommendations for water treatment improvements. Data management activities include performance reporting on water quality, development and maintenance of water quality treatment and optimization models, and tracking and analyzing chemical and hydraulic flow data. The Metering and Monitoring unit maintains 179 revenue water meters, 26 master water meters, 187 revenue wastewater meters, and 35 other wastewater monitoring sites. This unit collects meter data for operational and revenue generating purposes from the water and wastewater systems. It is also responsible for the maintenance of the water and wastewater Supervisory Control and Data Acquisition (SCADA) systems.

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

#### **Budget Highlights:**

- The FY15 Final Budget is \$72.7 million, an increase of \$2.2 million or 3.1% from FY14 Actual Spending.
- \$38.9 million for **Wages and Salaries**, an increase of \$2.3 million or 6.4% from FY14 Actual Spending mainly due to projected cost of living increases, an expanded intern program, more stand-by pay to reflect multi-year wet weather usage, and more filled positions in FY15. The Wages and Salaries line item accounts for 54% of the FY15 Final Budget and funds 503 positions. Of the remaining budget, \$550,000 is for stand-by pay to ensure support for operational and maintenance needs during wet weather and emergencies. The budget also includes \$120,000 for interns to provide support in several areas including Operations Engineering, Western Operations, and TRAC.
- \$2.4 million for **Overtime**, an increase of \$71,000 or 3.1% from FY14 Actual Spending mainly due to lower than expected wet weather events in FY14. The FY15 budget includes increases in funding for emergency overtime in the western water system operations and SCADA during wet weather events based on systematic needs and multi-year weather patterns. It also includes more NPDES-monitoring overtime in TRAC during wet weather. The budget includes \$1.2 million for emergency related overtime; \$609,000 for operational coverage needs; and \$584,000 for planned overtime covering scheduled maintenance and training.

- \$6.6 million for **Chemicals**, of which \$6.3 million is for water treatment and \$361,000 is for wastewater treatment. The FY15 Final Budget is \$12,000 or 0.2% less than FY14 Actual Spending primarily due to less than projected use of Hydrofluosilicic Acid due to a proposed regulatory change which would lower the dosing requirement offset by increases for liquid oxygen and nitrazyme based on multi-year estimates of actual use.
- \$9.4 million for **Utilities**, a decrease of \$396,000 or 4.0%, from FY14 Actual Spending mainly due to lower projected electricity prices in FY15 based on market forecasts offset by slightly higher usage based on multi-year historical operating patterns. The net decrease in electricity is offset by increases in diesel fuel primarily due to projected price increases. The FY15 Budget includes \$6.4 million for electricity, \$2.0 million for diesel fuel, \$516,000 for natural gas, and \$486,000 for water.
- \$10.1 million for **Maintenance**, a decrease of \$132,000 or 1.3% from FY14 Actual Spending. The FY15 Budget includes \$4.2 million in day-to-day needs, \$3.5 million for services, \$1.8 million in major projects, and \$557,000 for energy initiatives. Some of the major projects planned for FY15 include:

Manhole Rehabilitation Contract	\$360,000
Invasives Control - Stillwater Basin - DASH	\$210,000
Lightening Protection at the Chelsea Office Facility	\$160,000
Tree Clearing at Dams -South Dike clearing at the Toe	\$100,000
Spare Rotating Assembly for DeLauri	\$80,000
Invasives Control - Chestnut Hill	\$79,000
Tree Clearing at Dams - Foss Dam	\$70,000

- \$94,000 for **Training and Meetings**, an increase of \$4,000 or 3.9% from FY14 Actual Spending. The training budget covers cost of professional development required for work duties, health and safety compliance, and job-related licensures and certifications.
- \$781,000 for **Professional Services**, an increase of \$531,000 or 213.2% from FY14 Actual Spending mainly due to the inclusion of partial funding in FY15 for the Local Limit Study and lower than budgeted FY14 spending for as-needed engineering services and dam initiatives. The FY15 Final Budget includes \$622,000 for engineering services, which is made up of \$325,000 for as-needed engineering services to support CEB-funded maintenance projects; \$125,000 for the local limits study; \$107,000 for dam safety services; \$50,000 for a leak detection survey of the water system; and \$15,000 for evaluation of spill prevention, control, and countermeasure plans. The Professional Services budget also includes \$60,000 for an annual macrophyte survey at the reservoirs; \$54k for quality assurance services for macrophyte harvesting; and \$40,000 for energy audits at various facilities.
- \$1.1 million for **Other Materials**, a decrease of \$92,000 or 7.5% from FY14 Actual Spending mainly due to delays in purchasing equipment/furniture in FY14. The FY15 Final Budget includes \$390,000 for vehicle expenses for gas, mileage reimbursements, and tolls; \$240,000 for health and safety supplies; \$214,000 for work clothes; \$145,000 for lab and testing supplies; and \$85,000 for equipment and furniture.
- \$3.2 million for **Other Services**, a decrease of \$97,000 or 3.0% from FY14 Actual Spending mainly due to lower budget estimates for police details in FY15 based on planned projects and also FY14 unbudgeted expenses for the Constitution Beach CSO demolition and other work that will not carry forward to FY15. These decreases are partially offset by an expected increases in the Chelsea office building due to higher lease payments per contractual agreements and higher tax assessments. The FY15 Final Budget includes \$1.9 million for annual lease payments for the Chelsea office building; \$583,000 for telephones; \$405,000 for police details; and \$85,000 for telecommunications equipment and services for the contaminant monitoring system.

## LABORATORY SERVICES

FY15 Final Current Expense Budget LABORATORY SERVICES						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 3,983,943	\$ 4,113,753	\$ 4,200,693	\$ 4,563,513	\$ 362,820	8.6%
OVERTIME	67,731	71,746	61,699	56,706	(4,993)	-8.1%
FRINGE BENEFITS	445	512	505	1,200	695	137.6%
UTILITIES	16,464	23,032	27,689	24,265	(3,424)	-12.4%
ONGOING MAINTENANCE	186,431	252,330	248,489	285,652	37,163	15.0%
TRAINING & MEETINGS	773	141	5,176	2,000	(3,176)	-61.4%
PROFESSIONAL SERVICES	68,265	130,607	156,185	155,395	(790)	-0.5%
OTHER MATERIALS	921,303	889,095	827,126	985,556	158,430	19.2%
OTHER SERVICES	67,445	82,390	93,753	92,985	(768)	-0.8%
<b>TOTAL</b>	<b>\$ 5,312,800</b>	<b>\$ 5,563,606</b>	<b>\$ 5,621,315</b>	<b>\$ 6,167,272</b>	<b>\$ 545,957</b>	<b>9.7%</b>

The goal of the **Department of Laboratory Services (DLS)** is to provide high quality and responsive laboratory services to MWRA's water and wastewater treatment programs, including the Department of Conservation and Recreation (DCR) and the MWRA member water and wastewater communities. This includes 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, Clean Water Act, and National Pollutant Discharge Elimination System (NPDES) permits. The Department supports these functions at five locations: Chelsea, Southboro, Quabbin, the Central Laboratory at the Deer Island Treatment Plant, and the Clinton Wastewater Treatment Plant. 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 (TRAC), and wastewater residuals. DLS 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 (Mass DEP).

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

### Budget Highlights:

- The FY15 Final Budget is \$6.2 million, an increase of \$546,000 or 9.7% from FY14 Actual Spending.
- \$4.6 million for **Wages and Salaries**, an increase of \$363,000 or 8.6%, from FY14 Actual Spending. The FY15 Budget funds 55 positions, the same as funded in FY14. The increase from FY14 is mainly due to projected cost of living adjustments and lower than budgeted headcount in FY14. The FY15 Final Budget also includes \$124,000 for up to three temporary employee positions to cover peak workload and to assist with testing for Harbor and Outfall Monitoring, Carroll Water Treatment Plant special projects and an intern for summer beach monitoring.
- \$24,000 for **Utilities**, a decrease of \$3,000 or 12.4%, as compared with FY14 Actual Spending. This funding covers the purchase of gases and cryogenic liquids used for various laboratory instruments.
- \$286,000 for **Maintenance**, an increase of \$37,000 or 15.0% from FY14 Actual Spending primarily due to expected contract costs in FY15. The FY15 Final Budget includes \$204,000 for equipment service contracts, \$36,000 for harbor monitoring field equipment replacements, \$30,000 for Heating Ventilation Air Conditioning (HVAC) services to annually maintain and certify the fume hoods, and \$15,000 for laboratory modifications.

- \$155,000 for **Professional Services**, which is level funded with FY14 Actual Spending. 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. This budget also funds outside testing for the EPA-mandated unregulated contaminant monitoring rule 3 program (UCMR3) which is required for three years (FY14 to FY16).
- \$986,000 for **Other Materials**, an increase of \$158,000 or 19.2%, from FY14 Actual Spending primarily due to delays and reevaluations of instrument purchases in FY14. The FY15 Final Budget includes \$649,000 for laboratory and testing supplies and \$295,000 for replacement of obsolete or older equipment
- \$93,000 for **Other Services**, which is level funded with FY14 Actual Spending. The FY15 Final Budget primarily 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.

## ENVIRONMENTAL QUALITY

FY15 Final Current Expense Budget ENVIRONMENTAL QUALITY						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 1,465,986	\$ 1,422,607	\$ 1,410,573	\$ 1,486,964	\$ 76,391	5.4%
OVERTIME	985	1,922	1,151	2,000	849	73.8%
FRINGE BENEFITS	-	-	-	-	-	-
ONGOING MAINTENANCE	(905)	-	-	-	-	-
TRAINING & MEETINGS	1,405	2,925	3,406	12,000	8,594	252.3%
PROFESSIONAL SERVICES	1,369,550	1,221,137	1,292,785	1,452,840	160,055	12.4%
OTHER MATERIALS	18,157	6,012	1,567	4,580	3,013	192.3%
OTHER SERVICES	4,983	6,231	13,035	15,454	2,419	18.6%
<b>TOTAL</b>	<b>\$ 2,860,161</b>	<b>\$ 2,660,834</b>	<b>\$ 2,722,517</b>	<b>\$ 2,973,838</b>	<b>\$ 251,321</b>	<b>9.2%</b>

The **Environmental Quality Department (EnQuad)** manages and reports on environmental findings that may be linked to MWRA operations and projects. EnQuad monitors sewage influent and effluent quality; monitors the water quality of Boston Harbor, its tributary rivers, and Massachusetts Bay; manages and enters data; and complies with the reporting requirements of MWRA's National Pollutant Discharge Elimination System permits. MWRA submits permit reports to state and federal regulators, the Outfall Monitoring Science Advisory Panel and its subcommittees, and several libraries; and, as required by the permits, EnQuad posts many of these reports on MWRA's website, as well as a list of technical reports and other water quality information.

### Budget Highlights:

- The FY15 Final Budget is \$3 million, an increase of \$251,000 or 9.2%, from FY14 Actual Spending.
- \$1.5 million for **Wages & Salaries**, an increase of \$76,000 or 5.4% from FY14 Actual Spending mainly due to projected cost of living adjustments and contractual step increases. The budget funds 15 positions, which is consistent with the average number of filled positions in FY14.
- \$1.4 million for **Professional Services**, an increase of \$160,000 or 12.4% from FY14 Actual Spending primarily due to additional funding for data from the University of Maine Buoy in Cape Ann, MA. and increases in the expected workload in FY15 for existing Harbor and Outfall Monitoring (HOM) contracts. Of the total budget, \$1.1 million is for laboratory testing and analysis in support of MWRA's HOM Program and \$300,000 covers the following contracts which, except for biotoxicity testing, are co-funded through cost-sharing arrangements:
  - o Biotoxicity testing for Deer Island and Clinton treatment plants, and Combined Sewer Overflow facilities;
  - o University of Maine's buoy off Cape Ann, with instruments measuring algae and other water quality indicators;
  - o Cape Cod Bay water quality monitoring; and
  - o Bays Eutrophication Model.

The FY15 Final Budget continues to reflect the reduction in scope of HOM monitoring that began in CY2011 based on the favorable findings of nine years of monitoring data and regulatory approval. MWRA is saving approximately \$800,000 per year in monitoring costs due to these changes. In addition, in FY13 MWRA was successful in achieving regulatory approval to discontinue the ambient monitoring plan requirement to measure floatables, for estimated savings of \$40,000 per year.

- \$5,000 for **Other Materials**, an increase of \$3,000 or 192.3%, above FY14 Actual Spending. Funding supports office supplies, miscellaneous equipment, work clothes, and vehicle expenses.



- \$15,000 for **Other Services**, an increase of \$2,000 or 18.6%, from FY14 Actual Spending. Funding on this line item supports \$10,000 expense for a membership in NERACOOS to support the management of Buoy A in the Gulf of Maine as well as other memberships, telephones, and printing.

## ENGINEERING AND CONSTRUCTION

<b>FY15 Final Current Expense Budget ENGINEERING AND CONSTRUCTION</b>						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 7,290,274	\$ 7,120,388	\$ 7,068,191	\$ 7,903,885	\$ 835,694	11.8%
OVERTIME	111,200	72,736	43,123	64,500	21,377	49.6%
FRINGE BENEFITS	569	341	126	500	374	296.8%
ONGOING MAINTENANCE	7,647	6,825	9,603	-	(9,603)	-100.0%
TRAINING & MEETINGS	7,017	4,677	5,166	6,400	1,234	23.9%
PROFESSIONAL SERVICES	65,112	7,503	-	25,000	25,000	-
OTHER MATERIALS	66,557	37,261	28,899	40,480	11,581	40.1%
OTHER SERVICES	20,755	23,556	19,969	28,815	8,846	44.3%
<b>TOTAL</b>	<b>\$ 7,569,131</b>	<b>\$ 7,273,287</b>	<b>\$ 7,175,077</b>	<b>\$ 8,069,580</b>	<b>\$ 894,503</b>	<b>12.5%</b>

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 including 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. The **Wastewater Engineering Unit** manages all wastewater design and engineering projects including Combined Sewer Overflow (CSO) engineering activities. The unit also maintains the Design Information Services Center (DISC), which provides computer-aided design and drafting (CADD) services. The **Water Engineering Unit** manages all water design and engineering projects as well as specialized technical services in electrical, structural, mechanical, and civil engineering disciplines. 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.

### Budget Highlights:

- The FY15 Final Budget is \$8.1 million, an increase of \$895,000 or 12.5%, from FY14 Actual Spending.
- \$7.9 million for **Wages and Salaries**, an increase of \$836,000 or 11.8%, from FY14 Actual Spending mainly for contractual increases and lower than budgeted headcount in FY14. Wages and Salaries represent 98% of the FY15 Final Budget and includes funding for 81 positions.
- \$65,000 for **Overtime**, an increase of \$21,000 or 49.6%, from FY14 Actual Spending based on planned projects for FY15. 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.
- The **Maintenance** budget for specialized engineering copier services of \$9,000 was moved from Maintenance to Other Services to ensure consistency of account classification for this service within MWRA.
- \$6,000 for **Training & Meetings**, an increase of \$1,000 or 23.9%, from FY14 Actual Spending. Training funds cover attendance at conferences and technical seminars.

- The FY15 Final Budget for **Professional Services** includes \$25,000 to cover as-needed utility borings/test pit services to support CEB projects. This contract will help avoid situations where contractors have utility conflicts while working on MWRA construction projects.
- \$41,000 for **Other Materials**, an increase of \$12,000 or 40.1% from FY14 Actual Spending primarily due to vehicle expenses and office supplies funding based on multi-year historical actuals. The budget covers vehicle expenses, office supplies, health and safety supplies, and survey equipment.
- \$29,000 for **Other Services**, an increase of \$9,000 or 44.3% from FY14 Actual Spending primarily due to the move of specialized engineering copier services from Maintenance to Other Services to ensure consistency of account classification for this service within MWRA. Funding in this line items supports printing/duplicating, telephone expenses, specialized copier services, memberships and dues, and police details.

**PLANNING DEPARTMENT**

FY15 Final Current Expense Budget PLANNING AND COORDINATION						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	1,795,643	1,855,456	1,909,438	2,001,712	\$ 92,274	4.8%
OVERTIME	-	-	-	-	-	-
FRINGE BENEFITS	-	-	-	-	-	-
TRAINING & MEETINGS	(69)	7,590	3,618	6,000	2,382	65.8%
PROFESSIONAL SERVICES	3,028	1,631	3,100	3,100	-	0.0%
OTHER MATERIALS	161,963	133,132	163,409	167,625	4,216	2.6%
OTHER SERVICES	74,589	66,402	63,749	77,369	13,620	21.4%
<b>TOTAL</b>	<b>\$ 2,035,154</b>	<b>\$ 2,064,211</b>	<b>\$ 2,143,314</b>	<b>\$ 2,255,806</b>	<b>\$ 112,492</b>	<b>5.2%</b>

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. The following functions comprise the Department’s primary responsibilities:

**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. The group also 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 is 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. Planning and Coordination staff reviews water and wastewater system expansion requests, water supply agreements, and emergency withdrawal requests. Staff also assists the Operations Division on project siting decisions; environmental reviews; and permitting, including assessing impacts on MWRA facilities from other agency projects. Staff also assists in the development of strategies for long-term emergency risk reduction and preparation for MWRA facilities and systems, for a range of hazards including climate change and sea level rise.

**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 actively work with industry associations and other groups with interests and agendas consistent with MWRA’s to advance water and wastewater regulations that make environmental and economic sense. Senior staff conducts strategic policy research on a broad range of topics. Staff also conducts public health research and reports on potable water quality through production of the annual Consumer Confidence Report (CCR). Staff also coordinates with DCR on watershed protection initiatives.

**Community Support Program** - 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, water distribution systems technical assistance, water leak detection technical assistance, and water conservation programs.

**Budget Highlights:**

- The FY15 Final CEB is \$2.3 million, an increase of \$112,000 or 5.2%, from FY14 Actual Spending.
- \$2.0 million for **Wages and Salaries**, an increase of \$92,000 or 4.8%, from FY14 Actual Spending primarily due to projected cost of living adjustments. The FY15 Final Budget includes funding for 21 positions plus a year-round GIS intern position.
- \$6,000 for **Training and Meetings**, an increase of \$2,000 or 65.8%, from FY14 Actual Spending. Funding in this line item covers participation in training and conferences primarily focused on water quality regulations and geographic information systems (GIS).
- \$3,000 for **Professional Services**, which is level funded with FY14 Actual Spending. Funding covers costs associated with the translation of the Consumer Confidence Report and also programming of the GIS user interface.
- \$168,000 for **Other Materials**, an increase of \$4,000 or 2.6%, from FY14 Actual Spending. This line item supports funding of \$135,000 for postage and mailing of the Consumer Confidence Report (CCR); \$15,000 for water conservation kits; \$15,000 for mapping supplies; \$2,000 for office supplies; and \$1,000 for vehicle expenses.

\$77,000 for **Other Services**, an increase of \$14,000 or 21.4%, as compared with FY14 Actual Spending due to projected increases for printing costs. The funding in this line item includes \$58,000 for printing the Consumer Confidence Report and \$18,000 for printing water conservation and other informational brochures.



Law Division  
Budget

## LAW DIVISION

FY15 Final Current Expense Budget LAW DIVISION							
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15		
WAGES & SALARIES	\$ 1,556,666	\$ 1,541,984	\$ 1,553,270	\$ 1,576,145	\$ 22,875		1.5%
OVERTIME	99	-	-	-	-		-
TRAINING & MEETINGS	535	890	3,438	1,000	(2,438)		-70.9%
PROFESSIONAL SERVICES	110,886	60,014	90,548	121,000	30,452		33.6%
OTHER MATERIALS	3,707	3,656	5,160	5,964	804		15.6%
OTHER SERVICES	25,512	24,400	23,625	28,147	4,522		19.1%
<b>TOTAL</b>	<b>\$ 1,697,405</b>	<b>\$ 1,630,944</b>	<b>\$ 1,676,041</b>	<b>\$ 1,732,256</b>	<b>\$ 56,215</b>		<b>3.4%</b>

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 upon such claims were they to be litigated.

### FY15 Goals:

- Timely and cost effective resolution of legal disputes involving MWRA, through litigation or alternative means of dispute resolution.
- 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.
- Advocacy of MWRA interests in new and developing regulatory issues.
- Continue to exhaust all opportunities to shift cost of legal representation to insurers and indemnitors and to litigate insurance coverage disputes as they arise, all in the interest of cost savings.

### Budget Highlights:

- The FY15 Final Budget is \$1.7 million, an increase of \$56,000 or 3.4% as compared with FY14 Actual Spending.
- \$1.6 million for **Wages and Salaries**, an increase of \$23,000 or 1.5% as compared with FY14 Actual Spending mainly due to projected cost of living adjustments. The budget funds 16 positions.
- \$121,000 for **Professional Services**, an increase of \$30,000 or 33.6% as compared with FY14 Actual Spending. Funding in the line item supports projected need for outside legal services during FY15.

- \$28,000 for **Other Services**, an increase of \$5,000 or 19.1% as compared with FY14 Actual Spending. Funding in this line item supports legal database administrative fees and professional membership and dues for the legal staff.





Administration & Finance Division  
Budget

**ADMINISTRATION AND FINANCE DIVISION**

FY15 Final Current Expense Budget ADMINISTRATION AND FINANCE						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 15,345,968	\$ 15,326,937	\$ 15,502,849	\$ 16,140,449	\$ 637,600	4.1%
OVERTIME	39,230	69,354	67,175	62,404	(4,771)	-7.1%
FRINGE BENEFITS	17,608,265	17,477,887	18,017,803	18,238,135	220,332	1.2%
WORKERS' COMPENSATION	1,600,726	2,114,701	2,311,448	2,200,000	(111,448)	-4.8%
UTILITIES	100,731	97,516	87,533	101,773	14,240	16.3%
ONGOING MAINTENANCE	2,930,602	3,149,241	4,906,970	3,629,643	(1,277,327)	-26.0%
TRAINING & MEETINGS	90,611	201,463	178,212	206,516	28,304	15.9%
PROFESSIONAL SERVICES	1,233,132	1,046,589	977,577	1,187,552	209,975	21.5%
OTHER MATERIALS	955,387	1,119,318	1,338,065	1,327,168	(10,897)	-0.8%
OTHER SERVICES	3,018,817	3,167,800	3,036,328	3,152,546	116,218	3.8%
<b>TOTAL</b>	<b>\$ 42,923,467</b>	<b>\$ 43,770,807</b>	<b>\$ 46,423,960</b>	<b>\$ 46,246,189</b>	<b>\$ (177,771)</b>	<b>-0.4%</b>

FY15 Final Current Expense Budget ADMINISTRATION AND FINANCE						
DEPARTMENT	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
DIR OFFICE (FINANCE)	\$ 341,064	\$ 349,834	\$ 345,912	\$ 412,829	\$ 66,917	19.3%
RATES AND BUDGET	761,977	773,302	797,963	814,128	16,165	2.0%
TREASURY	868,222	974,700	966,582	1,016,075	49,493	5.1%
CONTROLLER	1,492,769	1,487,530	1,487,662	1,592,225	104,563	7.0%
RISK MANAGEMENT	406,198	395,442	455,596	432,181	(23,415)	-5.1%
DIVISION DIR (SUPP SER)	-	-	-	-	-	-
HUMAN RESOURCES	21,490,738	21,805,555	22,520,179	22,728,399	208,220	0.9%
MIS	8,900,651	9,115,523	10,325,126	10,334,944	9,818	0.1%
FACILITIES MANAGEMENT	2,370,827	2,395,648	2,376,064	2,261,612	(114,452)	-4.8%
FLEET SERVICES	1,824,489	1,929,142	1,947,022	2,072,977	125,955	6.5%
PROCUREMENT	3,873,820	3,783,562	4,550,834	3,814,600	(736,234)	-16.2%
REAL PROPERTY / ENVIRONMENTAL MGMT	592,712	760,569	651,020	766,219	115,199	17.7%
<b>TOTAL</b>	<b>\$ 42,923,467</b>	<b>\$ 43,770,807</b>	<b>\$ 46,423,960</b>	<b>\$ 46,246,189</b>	<b>\$ (177,771)</b>	<b>-0.4%</b>

The **Administration and Finance Division** is responsible for managing the finance and support service functions of the Authority.

The Administration and Finance (A&F) Division is comprised of eleven departments: Director's Office; Rates and Budget; Treasury; Controller; Risk Management; Human Resources; Management Information Systems (MIS); Facilities Management; Fleet Services; Procurement; and Real Property and Environmental Management.

The Administration and Finance Division performs a multitude of functions that support the daily operations and ensure the implementation of the Authority's long term goals and strategies.

The Administration and Finance Division ensures that a variety of fiscal management systems are in place to monitor and control the Current Expense Budget (CEB) and Capital Improvement Program (CIP).

**FY15 Goals:**

- Manage and coordinate the Authority's finance and support service functions.
- Develop and implement long-term strategies to ensure reasonable rate increases to MWRA's communities.
- Manage MWRA's debt portfolio to contribute to the achievement of sustainable and predictable rate increases.
- Minimize MWRA's exposure to financial loss stemming from contractor and vendor activities by reviewing risk exposure and establishing contract insurance requirements and monitoring contractors for compliance.
- 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, create an environment that fosters safety consciousness and productive work, maximize the number of early returns to work by employees who have incurred on-the-job injuries or illnesses, and aggressively manage the Workers' Compensation Program to reduce costs.
- Acquire the real property needed to complete MWRA's major capital projects in a timely and cost-effective manner; manage the disposition of surplus real property in an efficient manner; and provide staff and others with current information regarding MWRA's real property rights.
- 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.

**FY15 Initiatives**

- Continue assessment and evaluation of sustainable cost savings opportunities throughout the organization.
- Develop options and recommendations to ensure predictable, sustainable, and reasonable assessments and charges to our communities.
- Manage the process for negotiating successor collective bargaining agreement with all five collective bargaining unions of the MWRA.
- Continue the implementation of the Strategic IT Study.

**FY14 Accomplishments:**

- Developed the FY15 Budget consistent with the FY14 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.
- Together with the Human Resources and Procurement departments, Treasury implemented a Prepaid Visa Card program for our employees to purchase required work pants and boots. The card works like a debit/charge card

making the purchases easy for the employees and provides documentation for management. The Treasury procedures have been established, tested and documented.

- Continued to work with the landlord to implement facility improvements as provided in our lease agreements for CNY headquarters.
- Developed specifications for 56 new replacement vehicles or pieces of equipment of which the majority of these units will utilize alternative fuel, consistent with the Authority's goal of purchasing environmentally friendly products.
- Assisted the MWRA in being rated as one of the largest bio-fuel users by the Massachusetts Alternative Fuel Coalition (MAFC). The Authority continues to fuel diesel powered vehicles/equipment with bio-diesel.
- Continued implementation of Automated Vehicle Locator (AVL) Tracking System in MWRA vehicles.
- Successfully negotiated changes to the clothing allowance program and implemented a clothing allowance debit card program coordinated and administered by Human Resources.
- Completed a variety of technical training to MWRA employees including Confined Space Entry, Wind Turbine Tower Climbing Safety, Spill Containment, Practical Project Management, Signal Person Training and OSHA 8-Hour Annual Refresher training.
- Completed and collected the required acknowledgement of the State Ethics Commission's Summary of the Conflict of Interest Law from all employees.
- Developed a pilot program and RFP, working with Operations, Finance and Law, for co-digestion of organic waste at DITP.
- Competitively bid CY13 Renewable Energy Portfolio Standard certificates which resulted in FY14 revenues of \$398,198 (Class II). In addition, received FY14 revenues of \$1,988,636 from forward marketing of CY13 (Class I and Solar) Renewable Portfolio Standards (RPS) certificates.
- Awarded the following major contracts in FY14: Hatchery Pipeline and Hydroelectric Design; Harbor and Outfall Monitoring; DITP Pipe Supports for Sludge Pipelines; DITP Roofing Replacement; Clinton WTP Phosphorus Reduction Design; DITP Replacement of Scum Skimmers; Storm Pump Gear Box and Diesel Engine Upgrade; Webster Avenue Pipe Replacement Design; Pilot Program for Organic Digestion at DITP; Security Guard Services, Dam Safety Consulting Services; Rehabilitation of Anaerobic digesters at Clinton Treatment Plant; Section 111 Southern Extra High Redundancy Pipeline Design; DITP HVAC Replacement Design; Financial Advisor Services; Dam EAP Planning; DITP Valve and Piping Replacement; DITP Electrical Equipment Upgrade Construction 4 Resident Engineer Inspection; and NIH West Street Transmission Main.
- Advertised or received bids/proposals/statements for the following: Security Equipment Installation at Various Facilities; CVS Shea Ave. Leak Repair; DITP Cryogenics Chillers Replacement; NIH West Street Transmission Main; Quabbin Power, Communication and Security Hardening Design; DITP Clarifier Rehab Phase II Design; Construction WASM 36; Gate, Siphon and Floatables Controls 003; Boston Low Service Beacon Street Line Design; and DITP Thermal Power Plant BMS System Upgrade.
- Recycled 33.75 tons of paper, 374.27 tons of scrap metal (includes stainless steel and aluminum), 4,260 pounds of brass and copper, and 1,490 batteries in addition to scrapping 6 vehicles, generating \$94,768 in revenues.

**ADMINISTRATION AND FINANCE DIVISION DIRECTOR'S OFFICE**

FY15 Final Current Expense Budget ADMINISTRATION AND FINANCE DIVISION DIRECTOR'S OFFICE						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 333,417	\$ 337,251	\$ 336,559	\$ 402,529	\$ 65,970	19.6%
TRAINING & MEETINGS	2,214	4,352	2,049	4,000	1,951	95.2%
OTHER MATERIALS	4,352	7,597	5,323	5,100	(223)	-4.2%
OTHER SERVICES	1,081	634	1,981	1,200	(781)	-39.4%
<b>TOTAL</b>	<b>\$ 341,064</b>	<b>\$ 349,834</b>	<b>\$ 345,912</b>	<b>\$ 412,829</b>	<b>\$ 66,917</b>	<b>19.3%</b>

The **Administration and Finance (A&F) 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 as well as the 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 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 administrative and financial issues.

The division's continuing challenge in FY14 will be maintaining an agency-wide focus on balancing the competing needs to minimize rate increases while ensuring the provision of critical MWRA services.

**FY15 Goals:**

- Manage and coordinate the Authority's finance and support service functions.
- 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 reasonable rate increases to MWRA's communities.

**Budget Highlights:**

- The FY15 Final Budget is \$413,000, an increase of \$67,000 or 19.3% as compared to FY14 Actual Spending.
- \$403,000 for **Wages and Salaries**, an increase of \$66,000 or 19.6% as compared to FY14 Actual Spending mainly due to projected contractual increases, increased funding for interns, and a lower than budgeted headcount in FY14. The FY15 Final Budget funds three positions.

## RATES & BUDGET

FY15 Final Current Expense Budget RATES AND BUDGET						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 760,849	\$ 772,530	\$ 796,450	\$ 813,528	\$ 17,078	2.1%
TRAINING & MEETINGS	-	-	-	-	-	-
PROFESSIONAL SERVICES	-	-	-	-	-	-
OTHER MATERIALS	158	240	982	200	(782)	-79.6%
OTHER SERVICES	970	532	531	400	(131)	-24.7%
<b>TOTAL</b>	<b>\$ 761,977</b>	<b>\$ 773,302</b>	<b>\$ 797,963</b>	<b>\$ 814,128</b>	<b>\$ 16,165</b>	<b>2.0%</b>

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 future rate projections.

### FY15 Goals:

- Continually 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.
- 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.

### FY15 Initiatives:

- Continue assessment and evaluation of sustainable cost savings opportunities throughout the organization.
- Develop options and recommendations to ensure predictable, sustainable, and reasonable assessments and charges to our communities.
- Coordinate with MIS on the migration of the Hyperion application for the CIP and CEB to a new software application.

### FY14 Accomplishments:

- Developed the FY15 Budget consistent with the FY14 planning estimates, for both the Current Expense Budget and the Capital Improvement Program.

**Budget Highlights:**

- The FY15 Final Budget is \$814,000, an increase of \$16,000 or 2.0% as compared to FY14 Actual Spending.
- \$814,000 for **Wages and Salaries**, an increase of \$17,000 or 2.1% as compared to FY14 Actual Spending mainly due to projected contractual increases. The FY15 Final Budget funds eight positions.

## TREASURY

FY15 Final Current Expense Budget TREASURY						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 677,941	\$ 736,271	\$ 733,489	\$ 749,805	\$ 16,316	2.2%
OVERTIME	124	-	17	-	(17)	-100.0%
ONGOING MAINTENANCE	-	-	-	-	-	-
TRAINING & MEETINGS	-	90	90	-	(90)	-100.0%
PROFESSIONAL SERVICES	183,909	229,309	224,302	259,950	35,648	15.9%
OTHER MATERIALS	52	584	549	300	(249)	-45.4%
OTHER SERVICES	6,196	8,446	8,135	6,020	(2,115)	-26.0%
<b>TOTAL</b>	<b>\$ 868,222</b>	<b>\$ 974,700</b>	<b>\$ 966,582</b>	<b>\$ 1,016,075</b>	<b>\$ 49,493</b>	<b>5.1%</b>

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

### FY15 Goals:

- Manage MWRA's debt portfolio to contribute to the achievement of sustainable and predictable rate increases.
- Maximize investment return while maintaining compliance with the General Revenue Bond Resolution requirements regarding security and liquidity.

### FY14 Accomplishments:

- 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.
- Defeased \$27.2 of outstanding debt on June 19, 2014 for budgetary relief in fiscal years 2015, 2016, 2017, and 2018 thereby reducing the rate of increase to the Rate Revenue Requirement in those years. The source of funding for this defeasance was primarily the Fiscal Year 2014 current expense budget surplus.
- Completed the 2014A&B transaction on May 20, 2014. This refunding was necessitated by the expiration of the Bank of Nova Scotia liquidity facility on the variable rate Series 2008F. Through a competitive procurement, MWRA awarded portions of the 2008F series to Bank of America in the form of Direct Purchase Bonds and to the Bank of New York Mellon in the form of a Standby Bond Purchase Agreement reducing the cost of these bonds and further diversifying the variable rate debt program across banks.

### Budget Highlights:

- The FY15 Final Budget is \$1.0 million, an increase of \$49,000 or 5.1% as compared to FY14 Actual Spending.
- \$750,000 for **Wages and Salaries**, an increase of \$16,000 or 2.2% as compared to FY14 Actual Spending mainly due to projected contractual increases. The final budget funds nine positions.
- \$260,000 for **Professional Services**, an increase of \$36,000 or 15.9% as compared to FY14 Actual Spending mainly due to projected increased need.



## CONTROLLER

FY15 Final Current Expense Budget CONTROLLER							
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15		
WAGES & SALARIES	\$ 1,331,607	\$ 1,325,287	\$ 1,325,902	\$ 1,429,775	\$ 103,873		7.8%
OVERTIME	-	-	183	-	(183)		-100.0%
ONGOING MAINTENANCE	-	-	-	-	-		-
TRAINING & MEETINGS	-	-	-	-	-		-
PROFESSIONAL SERVICES	160,000	160,491	160,625	160,000	(625)		-0.4%
OTHER MATERIALS	193	87	27	300	273		1011.1%
OTHER SERVICES	969	1,665	925	2,150	1,225		132.4%
<b>TOTAL</b>	<b>\$ 1,492,769</b>	<b>\$ 1,487,530</b>	<b>\$ 1,487,662</b>	<b>\$ 1,592,225</b>	<b>\$ 104,563</b>		<b>7.0%</b>

The **Controller Department** consists of the Accounting, Accounts Payable, and Payroll units. The department has the responsibility for ensuring integrity within the financial accounting system and integration among the three 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.

### FY15 Goals:

- Implement process efficiencies in all department units.
- Enhance controls to safeguard Authority assets and ensure accurate and timely reporting.

### FY15 Initiatives:

- Integrate new contract accounting software module with existing accounting software.
- Complete automation of multiple Payroll Department documents.

### FY14 Accomplishments:

- Rolled out electronic time sheet approval to Deer Island Maintenance departments.
- Collaborated with Procurement and MIS Departments to substantially complete testing Contract Management for FY15 implementation.

### Budget Highlights:

- The FY15 Final Budget is \$1.6 million, an increase of \$105,000 or 7.0% as compared to FY14 Actual Spending.
- \$1.4 million for **Wages and Salaries**, an increase of \$104,000 or 7.8% as compared with FY14 Actual Spending mainly due to projected contractual increases and lower headcount in FY14. The FY15 Final Budget funds 18 positions.
- \$160,000 for **Professional Services**, which is level funded with FY14 Actual Spending. The FY15 Final Budget reflects anticipated costs associated with the annual financial statement audit, the A-133 Single Audit related to the receipt of federal funds, and the actuarial services related to GASB 45 Other Post Employment Benefits.

## RISK MANAGEMENT

FY15 Final Current Expense Budget RISK MANAGEMENT						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 357,568	\$ 364,317	\$ 397,081	\$ 401,581	\$ 4,500	1.1%
OVERTIME	-	23	-	-	-	-
TRAINING & MEETINGS	-	-	-	-	-	-
PROFESSIONAL SERVICES	48,173	30,757	57,751	30,000	(27,751)	-48.1%
OTHER MATERIALS	7	12	4	-	(4)	-100.0%
OTHER SERVICES	450	333	760	600	(160)	-21.1%
<b>TOTAL</b>	<b>\$ 406,198</b>	<b>\$ 395,442</b>	<b>\$ 455,596</b>	<b>\$ 432,181</b>	<b>\$ (23,415)</b>	<b>-5.1%</b>

The **Risk Management Department** is responsible for all MWRA insurance and risk management functions. Department staff manage 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 Insurance Certificate program. Department staff serve as liaisons to insurance industry participants including brokers, insurers, insurance consultants, and attorneys as well as providing support to all MWRA departments.

### FY15 Goals:

- Process self-insured automobile, general liability, property damage and construction contract claims in an efficient and timely manner.
- 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 exposure and establishing contract insurance requirements and monitoring contractors for compliance.

### Budget Highlights:

- The FY15 Final Budget is \$432,000, a decrease of \$23,000 or 5.1% from FY14 Actual Spending.
- \$402,000 for **Wages & Salaries**, an increase of \$4,500 or 1.1% as compared to FY14 Actual Spending mainly due to projected contractual increases. The proposed budget funds four positions.
- \$30,000 for **Professional Services**, a decrease of \$28,000 or 48.1% as compared to FY14 Actual Spending. FY14 included costs relating to the review and preparation of MWRA's Triennial Insurance Reserve Fund review.

**FACILITIES MANAGEMENT**

<b>FY15 Final Current Expense Budget FACILITIES MANAGEMENT</b>						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 412,641	\$ 409,142	\$ 421,954	\$ 424,188	\$ 2,234	0.5%
OVERTIME	16,527	23,481	28,724	24,154	(4,570)	-15.9%
FRINGE BENEFITS	34	18	8	-	(8)	-100.0%
UTILITIES	98,749	95,858	85,250	98,773	13,523	15.9%
ONGOING MAINTENANCE	12,107	13,087	148,881	30,900	(117,981)	-79.2%
TRAINING & MEETINGS	-	-	-	-	-	-
PROFESSIONAL SERVICES	3,200	9,350	8,700	-	(8,700)	-100.0%
OTHER MATERIALS	7,463	15,271	56,879	106,233	49,354	86.8%
OTHER SERVICES	1,820,106	1,829,441	1,625,668	1,577,364	(48,304)	-3.0%
<b>TOTAL</b>	<b>\$ 2,370,827</b>	<b>\$ 2,395,648</b>	<b>\$ 2,376,064</b>	<b>\$ 2,261,612</b>	<b>\$ (114,452)</b>	<b>-4.8%</b>

The **Facilities Management Department** provides a range of support services to MWRA staff located at 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 building occupants, 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 Chelsea 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.

**FY15 Goals:**

- Provide a safe and well-maintained working environment for all MWRA staff at CNY and provide appropriate space for staff by coordinating workspace planning, design, and furniture acquisitions.
- Maintain the CNY facility to prevent loss or deterioration of MWRA assets.
- Implement facility programs in conjunction with MWRA recycling and resource conservation efforts.
- Support efforts to limit the fleet size while meeting operational needs by providing reliable motor pool and transportation services.

**FY14 Accomplishments:**

- Continued to work with the landlord to implement facility improvements as provided in our lease agreements for CNY headquarters. One major initiative was to install a new, energy efficient heating and cooling system.
- In conjunction with MIS, continued implementation of multi-function technology for copiers and printers. By utilizing this technology it was possible to replace up to four individual units (printer, copier, scanner and fax) with one piece of equipment that performs all of these functions providing savings in floor space, power, equipment maintenance, and production costs (cost per page).

**Budget Highlights:**

- The FY15 Final Budget is \$2.3 million, a decrease of \$114,000 or 4.8%, as compared with FY14 Actual Spending.
- \$424,000 for **Wages and Salaries**, an increase of \$2,000 or 0.5%, as compared to FY14 Actual Spending mainly due to increased contractual agreements offset by elimination of FY14 one-time funding for temporary employees and interns. The budget supports seven positions.
- \$24,000 for **Overtime**, a decrease of \$4,600 or 15.9%, as compared with FY14 Actual Spending.
- \$99,000 for **Utilities**, an increase of \$14,000 or 15.9%, as compared to FY14 Actual Spending mainly due to increased electricity pricing.
- \$31,000 for **Ongoing Maintenance**, a decrease of \$118,000 or 79.2%, as compared with FY14 Actual Spending mainly due to lower than projected need for maintenance services in FY15 than those incurred in FY14 for building ventilation balancing initiatives. This line item includes funding for facility and equipment maintenance and services including heating, ventilation and air conditioning (HVAC), plumbing and electrical services for the CNY headquarters and the Marlboro Records Center and Warehouse.
- \$106,000 for **Other Materials**, an increase of \$49,000 or 86.8%, as compared with FY14 Actual Spending mainly due to increased funding for equipment and furniture. This line item includes funding for postage, supplies, furniture, and equipment.
- \$1.6 million for **Other Services**, a decrease of \$48,000 or 3.0%, as compared with FY14 Actual Spending mainly due to FY14 leased facility upgrades offset by contractual increases associated with the lease for the Charlestown Navy Yard and increased property taxes. This item includes funding for rental and operating costs for CNY headquarters facility and the Marlboro Records Center and Warehouse space.

## FLEET SERVICES

FY15 Final Current Expense Budget FLEET SERVICES						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 624,570	\$ 716,386	\$ 733,745	\$ 755,986	\$ 22,241	3.0%
OVERTIME	2,078	11,952	6,711	14,690	7,979	118.9%
FRINGE BENEFITS	15	158	8	1,000	992	12400.0%
UTILITIES	1,981	1,658	2,283	3,000	717	31.4%
ONGOING MAINTENANCE	650,070	647,629	629,236	684,000	54,764	8.7%
TRAINING & MEETINGS	-	-	42,000	42,000	-	0.0%
OTHER MATERIALS	544,983	550,563	532,507	570,201	37,694	7.1%
OTHER SERVICES	792	796	532	2,100	1,568	294.7%
<b>TOTAL</b>	<b>\$ 1,824,489</b>	<b>\$ 1,929,142</b>	<b>\$ 1,947,022</b>	<b>\$ 2,072,977</b>	<b>\$ 125,955</b>	<b>6.5%</b>

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.

### FY15 Goals:

- Continue to cost effectively maintain the Authority's fleet of vehicles and pieces of equipment.
- Continue Authority wide In-house Fleet Maintenance training.
- Continue with next phase of Automatic Vehicle Locators (AVL) devices in all Authority vehicles.

### FY14 Accomplishments:

- Developed specifications for 56 new replacement vehicles or pieces of equipment of which the majority of these units will utilize alternative fuel, consistent with the Authority's goal of purchasing environmentally friendly products.
- Assisted the MWRA in being rated as one of the largest bio-fuel users by the Massachusetts Alternative Fuel Coalition (MAFC). The Authority continues to fuel diesel powered vehicles/equipment with bio-diesel.
- Prepared documentation for the surplus sale of 28 vehicles and pieces of equipment and worked with the Procurement Department for the auction and disposal of the vehicles/equipment.
- Continued to work with MIS & Operations staff on the Maximo system upgrade which includes a transportation module specifically designed for a fleet environment.
- Developed and continued implementing the Federal Communications Commission (FCC) mandated frequency re-banding project for Motorola and Nextel.

**Budget Highlights:**

- The FY15 Final Budget is \$2.1 million, an increase of \$126,000 or 6.5% as compared to FY14 Actual Spending.
- \$756,000 for **Wages & Salaries**, an increase of \$22,000 or 3.0% as compared to FY14 Actual Spending mainly due to projected contractual increases. The final budget supports 11 positions.
- \$684,000 for **Ongoing Maintenance**, an increase of \$55,000 or 8.7% as compared with FY14 Actual Spending mainly due to lower than projected need in FY14. The budget includes funds for automotive materials and services to maintain MWRA's vehicle fleet.
- \$570,000 for **Other Materials**, an increase of \$38,000 or 7.1% as compared with FY14 Actual Spending due to lower vehicle fuel prices in FY14 than budgeted. The FY15 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.

## HUMAN RESOURCES

FY15 Final Current Expense Budget HUMAN RESOURCES						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 1,740,651	\$ 1,808,014	\$ 1,841,890	\$ 1,838,773	\$ (3,117)	-0.2%
OVERTIME	-	21	71	-	(71)	-100.0%
FRINGE BENEFITS	17,608,031	17,477,396	18,017,283	18,237,135	219,852	1.2%
WORKERS' COMPENSATION	1,600,726	2,114,701	2,311,448	2,200,000	(111,448)	-4.8%
ONGOING MAINTENANCE	-	-	-	-	-	-
TRAINING & MEETINGS	1,685	2,097	4,703	3,263	(1,440)	-30.6%
PROFESSIONAL SERVICES	512,618	374,418	311,329	412,602	101,273	32.5%
OTHER MATERIALS	13,465	15,944	19,542	16,845	(2,697)	-13.8%
OTHER SERVICES	13,562	12,964	13,913	19,782	5,869	42.2%
<b>TOTAL</b>	<b>\$ 21,490,738</b>	<b>\$ 21,805,555</b>	<b>\$ 22,520,179</b>	<b>\$ 22,728,399</b>	<b>\$ 208,220</b>	<b>0.9%</b>

FY15 Final Current Expense Budget HUMAN RESOURCES by Area						
AREA	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
EMPLOYEE/COMP/BEN	\$ 798,093	\$ 685,095	\$ 668,946	\$ 648,243	\$ (20,703)	-3.1%
LABOR RELATIONS	1,041,023	1,063,684	1,056,810	1,136,480	79,669	7.5%
TRAINING	402,137	419,146	423,447	461,278	37,831	8.9%
CENTRALIZED FRINGE BENEFITS	19,249,485	19,637,630	20,370,976	20,482,398	111,422	0.5%
<b>TOTAL</b>	<b>\$ 21,490,738</b>	<b>\$ 21,805,555</b>	<b>\$ 22,520,179</b>	<b>\$ 22,728,399</b>	<b>\$ 208,220</b>	<b>0.9%</b>

The **Human Resources Department** is comprised of three 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 function 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, its workers' compensation responsibilities, and its responsibilities for employee occupational safety and health. 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. It is responsible for the oversight and tracking of MWRA performance evaluation programs, Employee Assistance, and Tuition Reimbursement programs. In addition, the Human Resources Department includes the Centralized Fringe Benefits cost center, which includes the budget for fringe benefits for all MWRA employees as well as for mandatory payments for unemployment expenses and Medicare.

### FY15 Goals:

- Attract and retain a qualified high-performance workforce, hire and promote qualified minority and female 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, create an environment that fosters safety consciousness and productive work, maximize the number of early returns to work by employees who have incurred on-the-job injuries or illnesses, and aggressively manage the Workers' Compensation Program to reduce costs.

#### **FY15 Initiatives:**

- Manage the process for negotiating successor collective bargaining agreements with the remaining three collective bargaining unions of the MWRA.
- Support the collective bargaining negotiation process with data analysis, costing analysis, and wage and benefit survey data collection and analysis.
- Provide 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.
- Investigate complaints of violations of MWRA policies and Code of Conduct as necessary.
- Provide Authority-wide Harassment Prevention Training for all employees.
- Provide additional training for Administrative Certificate Program (ACP) and Productivity Improvement Program (PIP) as needed.
- Develop and communicate policies associated with harassment prevention and non-discrimination.
- Continue to Support the agency's efforts in developing and implementing succession plan activities in anticipation of an increase in retirements over the next several years.
- Work closely with the Affirmative Action Compliance Unit in implementing procedural changes resulting from new regulations from the Office of Federal Contract Compliance Program (OFCCP).
- Provide regular reporting on agency headcount and use of overtime/compensatory time.
- Procure and select a provider for drug and alcohol testing and implement and communicate procedures associated with testing.
- Work with Emergency Preparedness and Planning on emergency preparedness training initiatives and active shooter video training.

#### **FY14 Accomplishments:**

- Successfully negotiated successor collective bargaining agreements with two collective bargaining unions.
- Successfully negotiated and implemented an agreement with all five collective bargaining units regarding the use of an Automated Vehicle Locator Tracking System at MWRA.
- Successfully negotiated changes to the clothing allowance program and implemented a clothing allowance debit card program coordinated and administered by Human Resources.



- Prepared the organization for collective bargaining negotiations with all five collective bargaining units.
- Procured and selected a new dental insurance provider (Delta Dental). Managed the enrollment process for all dental participants to move from the former provider to Delta Dental.
- Successfully delivered Administrative Certification Program (ACP) training, Supervisory Development, Productivity Improvement Program (PIP) and Performance Management training.
- Completed a variety of technical training to MWRA employees including Confined Space Entry, Wind Turbine Tower Climbing Safety, Spill Containment, Practical Project Management, Signal Person Training and OSHA 8-Hour Annual Refresher training.
- Completed and collected the required acknowledgement of the State Ethics Commission's Summary of the Conflict of Interest Law from all employees.

**Budget Highlights:**

- The FY15 Final Budget is \$22.7 million, an increase of \$208,000 or 0.9% as compared to FY14 Actual Spending.
- \$1.8 million for **Wages and Salaries**, a decrease of \$3,000 or 0.2% as compared to FY14 Actual Spending mainly due to one less funded position offset by projected contractual increases. The budget includes funding for 21 positions.
- \$18.2 million for **Fringe Benefits**, an increase of \$220,000 or 1.2% as compared to FY14 Actual Spending. The budget includes \$15.8 million for health insurance, \$1.2 million for Medicare, \$1.1 million for dental insurance, \$141,000 for unemployment insurance, and \$31,000 for tuition reimbursement.
- \$2.2 million for **Workers' Compensation**, a decrease of \$111,000 or 4.8% as compared to FY14 Actual Spending. The Human Resources Department is responsible for the management of this program and the coordination with the third-party administrator and legal counsel.
- \$413,000 for **Professional Services**, an increase of \$101,000 or 32.5% as compared with FY14 Actual Spending. The FY15 Budget includes \$155,000 for Professional Development and Technical Training, \$122,000 for Workers' Compensation Claims Administration and Legal Services, \$56,000 for Arbitrators and Arbitration Expenses, \$45,000 for Medical Evaluation Services, \$21,000 for the Employee Assistance Program, and \$13,000 for Specialized Investigation Services.

## MANAGEMENT INFORMATION SYSTEMS (MIS)

<b>FY15 Final Current Expense Budget MANAGEMENT INFORMATION SYSTEM</b>						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 5,148,842	\$ 5,004,036	\$ 4,943,896	\$ 5,258,566	\$ 314,670	6.4%
OVERTIME	3,518	4,220	20,617	2,810	(17,807)	-86.4%
FRINGE BENEFITS	-	37	378	-	(378)	-100.0%
ONGOING MAINTENANCE	2,078,922	2,326,564	3,299,537	2,914,743	(384,794)	-11.7%
TRAINING & MEETINGS	80,043	155,470	121,798	146,528	24,730	20.3%
PROFESSIONAL SERVICES	325,233	230,717	212,705	325,000	112,295	52.8%
OTHER MATERIALS	277,135	413,172	599,185	527,732	(71,453)	-11.9%
OTHER SERVICES	986,958	981,307	1,127,010	1,159,565	32,555	2.9%
<b>TOTAL</b>	<b>\$ 8,900,651</b>	<b>\$ 9,115,523</b>	<b>\$ 10,325,126</b>	<b>\$ 10,334,944</b>	<b>\$ 9,818</b>	<b>0.1%</b>

The **MIS Department** provides MWRA with the information processing services necessary to carry out its 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 systems, the department also provides library and records management services.

### **FY15 Goals:**

The goal of the MIS department is to support more than 1,000 MWRA users, including those at the Charlestown Navy Yard (CNY), Chelsea, Deer Island, Southboro, Carroll Water Treatment Plant and other remote sites, by ensuring that:

- The automated business services delivered increase the efficiency of MWRA's business processes and improve the effectiveness of the staff while maintaining system security and integrity;
- Existing applications, operating systems, hardware, and network resources are cost-effectively maintained, supported, upgraded, and replaced;
- Future changes for Information System reflect management priorities and are consistent with the MWRA Master Plan and the five-year IT Strategic Plan; and
- Information Technology Service Management is implemented to improve customer satisfaction and improved efficiencies in delivering services.

### **FY15 Initiatives:**

#### **Information Technology Management Program Initiatives**

This program is intended to improve the organization of Information Technology (IT) and the oversight processes for selecting, implementing and operating IT solutions throughout the MWRA. The FY15 initiatives are as follows:

- Continue efforts to establish an Information Technology Task Force (ITTF) to recommend and prioritize projects, policies and standards.

- Establishment of a MWRA Software Development Life Cycle (SDLC) with the appropriate policies, procedures, standards, tools and techniques to efficiently deliver development efforts on time and within budget.
- Implement a set of policies, procedures, standards, tools, and techniques which employs the best practices for Information Technology Service Management (ITSM). This will be managed through the use of the MAXIMO Smart Cloud Control Desk Module following the MAXIMO 7.5 upgrade effort.
- In parallel with the ITSM effort, MIS will be re-organizing to better deliver services. This will include updating Job Descriptions to reflect the changing technologies and the methods of delivery, re-aligning the organization to match the ITSM and SDLC best practices, and focusing on how technology can be used to increase efficiency of staff and improve the effectiveness of the Authority's business processes.
- ITIL Training will continue and classes will be scheduled in Q1 and Q2 and others will be scheduled as needed.

### **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. This program relates to 123 applications with 227 modules that support various business functions across the Authority. Seventy-seven, or 63%, of these applications are commercially available off the shelf packages.

Major *FY2015* initiatives (contingent on the new Information Technology Task Force (ITTF) priority rankings) are as follows:

- **Administration and Finance Application Initiatives**
  - ***Enterprise Content Management Implementation:*** The objective of this project is to identify and define the requirements as they relate to the management of all electronic content at the MWRA and to initiate solicitation and procurement of technical solution(s) in preparation of a department-by-department implementation set of projects including eDiscover, Archive and Purge which will provide the MWRA with the following:
    - Rigorous and efficient electronic archiving
    - Purge and discovery processes to comply with the records retention requirements of the Commonwealth of Massachusetts
    - The ability to meet the requirements associated with public records requests and litigation document/e-discovery production
    - Improvements in the accessibility of documents throughout the Authority.
  - ***e-Procurement Implementation:*** This project is focused on the implementation of the Contract Management module from Infor Global Solutions.
  - ***Enterprise Resource Planning (ERP) System Upgrades:*** During FY15 upgrades will occur to the e-procurement applications and Mobile Supply Chain Management (MSCM) infrastructure, and BSI Tax Factory application.

- **Compliance Management Application Initiatives**

- ***e-Lab:*** The MWRA Department of Laboratory Services (DLS) is initiating a large scale two phase Laboratory Information Management System (LIMS) project that will improve productivity of staff and significantly reduce the amount of paper being generated. The first phase of this project will be based on a new module of LIMS called Electronic Laboratory Notebook (ELN). ELN is an electronic version of the paper notebooks being used by the laboratories. Additional ease of use functionality provided by ELN will streamline processes. The second phase of this project involves a re-design of the hardware architecture for capturing data from test equipment. The improvement in productivity will be realized by eliminating the printing of hard copy reports generated by automated test equipment, especially the gas chromatography reports. Instead all automated test equipment results will be digitally captured and stored in the LIMS database.
- ***Pretreatment Information Management System (PIMS) Business Cycle Enhancements:*** The objective of this project is to update the existing application and deliver new functionality in PIMS well in advance of the next TRAC business cycle for the MWRA's Pretreatment Program.
- ***SSO Monitoring and Reporting:*** MIS has been assigned to provide a business solution to streamline and automate the field data collections of Sanitary Sewer Overflow (SSO) spills, data compilation and reporting by using the latest mobile technology on field data collection, electronic reporting to required Agencies and parties, and providing a public web portal for sharing information on SSO spills on a 24X7 basis.

- **System Integration and Data Warehousing Application Initiatives**

- ***Geographic Information System (GIS) Integration:*** The purpose of the GIS Integration projects are to integrate the GIS spatial technology into business and operational applications and to determine an overall strategy of delivering a special real-time dashboard for managing the MWRA.
  - The GIS upgrade to 10.x and the database moved onto the ODA.
  - ***GIS TRAC Integration*** - The software is used by the TRAC department and has been upgraded as part of that upgrade linkage to stand-alone GIS mapping tools for query and tracing. This GIS application is in need of an upgrade as the GIS environment is evolving. The users have also identified issues with the current versions and will be addressed during the upgrade.
  - ***GIS Permit Integration*** - Permits to dig near our infrastructure and/or to connect to our sewer system are generated and tracked by different departments with stand-alone MS Access applications. These applications are antiquated and are not designed for enterprise environments. Integrating and redesigning these applications are critical to increase communication and effective management across departments.
- ***Management Dashboards & Reporting:*** These projects consolidate administrative management dashboards and reporting tools to assist in management of the day-to-day operations and to provide data to assist in Authority-wide decision making.

- Benefit Time Reporting
  - The Management Dashboard web application objective is to display the following data graphically in charts:
    - Compensation time
    - Overtime
    - Sick Time
    - Standby Shifts
  - Data and charts are grouped under the following categories:
    - By rates
    - Totals
    - Trend
    - MWRA/Division/Department/Sub cost center
    - Location
    - Employee
  
- **Operations Management Application Initiatives**
  - ***Computerized Maintenance Management System (CMMS) Enhancements:*** The MWRA is running Maximo version 5.2 which is no longer supported by IBM. Maximo must be upgraded to 7.5 in order to become supported by IBM. This effort includes:
    - Upgrade to Maximo 7.5.0.6 and Re-Implementation of Maximo Asset
    - Management for DITP and FOD into a single multi site system
    - New implementation of the following modules:
      - Calibration
      - Cloud Control Desk
      - Anywhere
      - Spatial
      - Linear
      - Advanced Planning and Optimization
    - Consolidation of nine miscellaneous asset systems
  - ***PI:*** The MWRA uses PI to monitor important operating parameters of assets in the field and also facility assets at DITP. The current system is a three tier configuration with servers for the database, application, and Processbook. The PI 2012 upgrade will monitor the same assets as the old system with much improved functionality and performance. The new system is a three tier configuration with servers for the database, application, and Processbook. The new system will be upgraded to a 64 bit OS and provide high availability features.

## Information Security Program Initiatives

This program focuses on the resiliency and sustainability of the MWRA's data security practices and computing-related assets. It also monitors for penetrations, intrusions, and malicious actions from external threats. The projects associated with this program continue to assess, implement, and improve the MWRA's information security protections, including recommendations to improve each IT system's security profile. The following are the FY2015 projects under this program:

- **Security Infrastructure Review, Upgrade, and Monitoring:** This project will engage a third party to review holistically MWRA's current information security infrastructure and configuration and make recommendations for improvement to carry MWRA forward for the next 3 years. Separately, the recommended improvements will go out for bid to complete the upgrades and supply monitoring services until FY2018.
- **Authority Mobile Application Delivery Implementation:** This project continues into FY15, delivering 30 applications to the appropriate mobile devices over the new Mobile Infrastructure.
- **Secure File Delivery Implementation:** This project evaluates and implements the proper software solution to allow MWRA employees to deliver files securely with non-MWRA entities (and *vice versa*).
- **Secure Media Destruction Program Improvements:** This annual project continues the standing practice of having a contractor come on-site to Chelsea and physically destroy (a.k.a. shred) MWRA's hard drives and other electronic components which might contain sensitive and confidential information.

## Technology Infrastructure Improvement Program Initiatives

The MWRA currently owns and operates 1,238 desktops, 160 laptops, 108 servers, 20 Wide Area Network Circuits and associated equipment. It also manages in excess of 18 Terabytes (TB) of data of which 7 TBs are stored in 148 database schemes and an additional 11 Terabytes of unstructured data are stored on file shares. 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 achieve and purge processes and technologies. The following FY2015 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).
- ***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, and Voice-Over-IP (VOIP) for communications.
- ***Network Storage Improvements:*** Plan for the migration and implementation for consolidation of new storage requirements for archiving, and implement e-discovery services.
- ***Office Automation Refresh Program:*** Upgrade existing PC platform from Windows XP to Windows 7. Mobile devices will transition from carrier Sprint/Nextel on Blackberry platform, to Verizon with Apple iPhones. The three year lease program for MFD's will replace 12 devices as well.

- **Communications:** An additional request to install Bi-Directional Amplifiers in 5 buildings at Deer Island will improve cell phone coverage to increase productivity, and safety for staff. Page Party systems have been repaired, replacing old equipment at several Headworks. Complete replacement and installations will be required at Prison Point, DeLauri, and Caruso Pump Stations.

## **FY14 Accomplishments:**

### **Information Technology Management Program Accomplishments**

- Standards and procedures were developed for assessing and prioritizing IT Projects by Information Technology Task Force (ITTF) members.
- The majority of job descriptions were revised and standardized to better align with the Information Technology Infrastructure Library (ITIL) IT services best practices.

### **Application Improvement Program Accomplishments**

- **Administration and Finance Application Accomplishments**
  - ***Enterprise Document/Records Management Implementation:*** *This initiative includes a number of related projects.*
    - ***Cumulus Upgrade:*** Cumulus application upgrade from version 8.6 to the current 9.1 version to maintain vendor support. Cumulus is the application used by the MWRA to manage and publish the MWRA's collection of photos and images. Staff created two new virtual servers (internal and external) for the Cumulus application and data storage, created shares with appropriate permissions, set up the public facing environment so that Cumulus catalogs can be made available on mwra.com. All data (approximately 2TB) was copied over to the internal server.
    - ***Document Content Survey:*** An assessment survey of agency wide active electronic documents was conducted to assist in the sizing of an enterprise solution for all electronic documents. Discussions involving a pilot project with Engineering and Construction have begun.
    - ***Historic Photo Digitization Project:*** The Library and Records Center unit supported a Public Affairs/Executive Office initiative to digitally capture historical images of the MWRA and MDC construction projects. Phase 1 of this project was completed in FY 14 Q3 with the delivery of more than 8,800 digital images from the Digital Commonwealth (DigiCom) Team. Images delivered to Public Affairs for digital asset management catalog development are expected to be published internally in the Fall of 2014 (FY 15 Q2) in conjunction with the DigiCom's efforts to publish the images. Library staff provided metadata to Public Affairs staff to add to the Cumulus digital asset management database and is working on generating the metadata for the future batches. Additional phases will continue following the Fall 2014 rollout and will be ongoing for several years until all the images are scanned, cataloged and published.
  - ***Enterprise Resource Planning (ERP) System Enhancements: Lawson 9.0.1 Upgrade:*** Staff assisted Procurement and HR/Payroll staff with user tests and completed roll-out of 9.0.1 application to the production server over the weekend of Sept 22nd/23rd. Go Live was successful.

- ***BottomLine Upgrade:*** BottomLine is a specialized application used for printing checks, AP invoices, as well as for reformatting ACH (Automated Clearing House) files used by banks for transactions such as direct deposit, child support, AP EFT vendors. The MWRA installed BottomLine version was on extended support which is due to expire in September of 2014. The application was successfully upgraded on both production system and the Disaster Recovery system after staff and users conducted numerous tests and parallel processes.
- ***E-Procurement - Contract Management:*** Extensive effort was undertaken to learn, configure and test a Contract Management application that is highly integrated with the Strategic Sourcing application. Strategic Sourcing is the Infor/Lawson application used for electronic bidding. Information about the awarded bid will be passed into the new Infor/Lawson Contract Management module. A significant data migration effort is under way to help allow all past and active contracts, change orders, amendments, and payments from the custom application to be available in the new system. IT Systems and application support staff worked with the vendor to upgrade the development system's Landmark Application Environment from 10.0.4.5 to 10.1.0.23 and the Landmark Application from version 9.0.1.10 to 9.1.1.1. Following testing of the upgraded development system, the production system will be upgraded in July. The upgrades allow us to stay current with the vendor's release and take advantage of recently added functionality. Staff and users continued working on new contract language, developing contract template types, new business processes, data migration from legacy systems, and reports.
- **Compliance Application Accomplishments**
  - ***Water Quality Reporting System:*** The Southborough Water Quality group procured a data analysis tool that is capable of correlating water quality testing results with other relevant data residing in spreadsheets, MS Access databases, comma delimited files, and other databases. This new data analysis tool has been configured to produce regulatory compliance reports on free chlorine, ozone contact and ultraviolet intensity at the Carroll Plant and Ware Disinfection Facility.
  - ***LIMS Upgrade:*** DLS and MIS staff upgraded the Labware Information Management System to version 6 to take advantage of new functionality and ensure continued vendor support.
- **System Integration and Data Warehousing Accomplishments**
  - ***Management Dashboards & Reporting - Open Checkbook Updates:*** Staff revised the vendor data download from Lawson and updated the application to reflect the new content and Quasi Government pages on the Commonwealths Open Checkbook site. The revised web interface was put into production on the MWRA Internet.
- **Operations Application Accomplishments**
  - ***ISO New England Spot Price:*** Created a new interface that updates PI with ISO New England spot electricity price with five minute averages for both the Boston and Western Mass. markets. This replaces an existing interface which did not have the capability to update more than one market. The interface includes Top View alarming every time the rates exceed \$650 per mega watt hour for 30 minutes or more.
  - ***Tellog Upgrade:*** The MWRA metering group has completed a project with Tellog to upgrade their software and Hardware. The hardware upgrade included locating the servers in the MIS data center.



- ***Tiscor Inspection System:*** InspectNTrack product, a web based application with a SQL back-end, which consolidated multiple standalone departmental databases. Staff worked with the vendor on data mapping and migration of the existing four standalone databases into a new centralized database. Standardized facility names exported from GIS being used and new or revised inspection routes were established. Data scrubbing and production server installation is complete.

### **Information Security Program Accomplishments**

- ***Information Security Plan Design and Implementation (Phase I):*** Completed Phase I of the design and development of the Information Security Plan. This included the development of policies, standards, procedures and an Information Security Awareness Computer Based Training program.
- ***FireEye Implementation:*** MWRA added another layer of protection against advanced threats and malware to MWRA networks during the last quarter of FY14. This protection covers both email-based and web-based methods of intrusion.
- ***DeLauri Pump Station Wind Turbine System Support:*** MIS provided ongoing review and support for the security of the computer system that is collecting and disseminating operational data about the turbine during FY14.

### **Technology Infrastructure Improvement Program Accomplishments**

#### **Office Automation Improvement and Refresh Efforts Accomplishments**

- ***Laptop Print, Fax, Scan and Copy:*** Replaced 70 laptops 5 years old and older. Installed new multi-function devices (MFDs) throughout MWRA facilities consolidating services (Print, FAX, Scan, Copier) onto one platform. The rollout has replaced 47 pieces of aged equipment for better than a 2:1 equipment reduction.
- ***SmartBoards:*** Nine SmartBoards were procured and installed at CNY, DITP, Southborough, CWTP, E&C, Chelsea EOC and Chelsea Muster Room.
- ***Contaminate Warning System (CWS):*** Continued to support efforts to execute the Contaminate Warning System (CWS) with the implementation of a private wireless network at 18 locations that allow the sampling devices to communicate with the application server located in the Chelsea Data Center.
- ***Symantec Encryption Management Software:*** This software enables the MWRA to further protect data. The software was installed onto the VMware production cluster with help from Symantec Tech Support.
- ***Data Network Wireless Access Points:*** These access points were installed in the Chelsea Vehicle Maintenance and TV Inspection bays. These access points enable the download of software upgrades from the manufacturer for vehicle maintenance onsite and the transfer of videos from the TV inspection vehicle to a MIS server on a regular basis for storage and to ensure data integrity.
- ***Backup Technology:*** Began a major undertaking to implement a new Backup Technology that meets the MWRA's ever increasing data requirements. In the month of January, implementation of Data Domain was introduced at CNY as part of this onsite backup solution and testing began. Other sites will include Chelsea, Southborough, Deer Island and CWTP. Data Domain provides local site back up for Chelsea, Deer Island, Southboro, and Charlestown.

- **Net2020 Infrastructure Upgrade Program:** Successfully completed an upgrade of the Core Network Switch in Chelsea Data Center. This core switch connects all the Authority's users to all the MIS services including Email, Internet, Intranet, and applications. With this implementation, the Chelsea's Network backbone speed has increased from 1GB to 10GB and provides speed of 1 GB to every Desktop in Chelsea.
- **Data Network Connectivity:** Western Operations has completed installation of approximately 1000 feet of conduit from the street to the Southborough facility. An order was placed with Verizon to run fiber optic cable through the conduit allowing Verizon to provide a high speed data network connection and redundancy to the Southborough facility in case of an MIS data network failure.
- **Data Network circuit upgrades** from 1.5MB to 10MB for Deer Island, Marlboro (CWTP), and Southboro. The Chelsea Internet circuit upgrade from 10MB to 50MB.
- **Environmental Control System:** Worked with the vendor and connected the new Environmental Control System to the MIS network. Worked with the vendor, on site, to ensure system was accessible on the network.
- **Email Upgrade:** Successfully completed migration of all MWRA email users to the new Exchange 2010 email system. The mailbox size for all users has been increased.
- **Distributed Antenna Systems (DAS):** Installations were completed at Deer Island Administration, Warehouse, Reception Training buildings, and sub-terrain galleries and tunnels. The remaining buildings at Deer Island, CWTP, Chelsea, Clinton, Weston, and Charlestown will be completed in September. The DAS was implemented to improve indoor cellular signal coverage and to provide the latest high speed (4G LTE) network connectivity. Verizon was the first service provider to join MWRA's DAS infrastructure.

#### **Budget Highlights:**

- The FY15 Final Budget is \$10.3 million, an increase of \$10,000 or 0.1% as compared to FY14 Actual Spending.
- \$5.3 million for **Wages and Salaries**, an increase of \$315,000 or 6.4%, as compared to the FY14 Actual Spending due to projected cost of living adjustments and lower than budgeted headcount in FY14. The budget includes funding for 56 positions, one position less than in FY14.
- \$2.9 million for **Ongoing Maintenance**, a decrease of \$385,000 or 11.7%, as compared to FY14 Actual Spending mainly due to timing and cost of computer licenses in FY14. Maintenance spending is for license and maintenance fees to support administrative, operations, and database applications used by MWRA staff.
- \$147,000 for **Training and Meetings**, an increase of \$25,000 or 20.3%, as compared with FY14 Actual Spending. Funding will support staff training in various computer applications as part of the MIS IT Strategic Plan.
- \$325,000 for **Professional Services**, an increase of \$112,000 or 52.8%, as compared to FY14 Actual Spending mainly due to the timing of MAXIMO professional support initiative. Funding will support the continued development of an MIS Strategic Plan and implementation services.

- \$528,000 for **Other Materials**, a decrease of \$71,000 or -11.9%, as compared to FY14 Actual Spending mainly due to the timing of specialized hardware requests, some of which occurred in FY14.
- \$1.2 million for **Other Services**, an increase of \$33,000 or 2.9%, as compared to FY14 actual Spending mainly due to increased telecommunications costs.

## PROCUREMENT

FY15 Final Current Expense Budget PROCUREMENT						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 3,497,314	\$ 3,434,479	\$ 3,538,806	\$ 3,630,147	\$ 91,341	2.6%
OVERTIME	16,983	29,657	10,852	20,750	9,898	91.2%
FRINGE BENEFITS	185	278	126	-	(126)	-100.0%
UTILITIES	-	-	-	-	-	-
ONGOING MAINTENANCE	189,502	161,962	829,315	-	(829,315)	-100.0%
TRAINING & MEETINGS	5,435	2,553	7,147	7,725	578	8.1%
OTHER MATERIALS	106,745	115,051	122,819	99,108	(23,711)	-19.3%
OTHER SERVICES	57,656	39,582	41,769	56,870	15,101	36.2%
<b>TOTAL</b>	<b>\$ 3,873,820</b>	<b>\$ 3,783,562</b>	<b>\$ 4,550,834</b>	<b>\$ 3,814,600</b>	<b>\$ (736,234)</b>	<b>-16.2%</b>

The **Procurement Department** includes three 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.

### FY15 Goals:

- Procure materials, equipment, supplies, construction, professional, and non-professional services in a timely, efficient, and openly competitive process in accordance with MWRA policies and procedures, including those related to meeting affirmative action goals.
- Maintain centralized, efficient, and cost-effective management of spare parts and operating supplies inventory.
- Provide timely and high quality services to initiating divisions to enable MWRA programs to meet their public, production, and schedule responsibilities.
- Maintain a recycling program in order to contain MWRA operating costs by removing recyclable materials from the waste stream.
- Implement electronic procurement for contract bids, which will significantly reduce the amount of paper processing.
- Initiate the review of Procurement Policies and Procedures (ADM20).
- Transfer current Purchasing Card (PCard) program from US Bank to Bank of America.
- Continue staff procurement training and conduct specification training sessions.

## **FY14 Accomplishments:**

- Competitively bid CY13 Renewable Energy Portfolio Standard certificates which resulted in FY14 revenues of \$398,198 (Class II). In addition, received FY14 revenues of \$1,988,636 from forward marketing of CY13 (Class I and Solar) Renewable Portfolio Standards (RPS) certificates.
- Awarded the following major contracts in FY14: Hatchery Pipeline and Hydroelectric Design; Harbor and Outfall Monitoring; DITP Pipe Supports for Sludge Pipelines; DITP Roofing Replacement; Clinton WTP Phosphorus Reduction Design; DITP Replacement of Scum Skimmers; Storm Pump Gear Box and Diesel Engine Upgrade; Webster Avenue Pipe Replacement Design; Pilot Program for Organic Digestion at DITP; Security Guard Services, Dam Safety Consulting Services; Rehabilitation of Anaerobic digesters at Clinton Treatment Plant; Section 111 Southern Extra High Redundancy Pipeline Design; DITP HVAC Replacement Design; Financial Advisor Services; Dam EAP Planning; DITP Valve and Piping Replacement; DITP Electrical Equipment Upgrade Construction 4 Resident Engineer Inspection; and NIH West Street Transmission Main.

Advertised or received bids/proposals/statements for the following: Security Equipment Installation at Various Facilities; CVS Shea Ave. Leak Repair; DITP Cryogenics Chillers Replacement; NIH West Street Transmission Main; Quabbin Power, Communication and Security Hardening Design; DITP Clarifier Rehab Phase II Design; Construction WASM 36; Gate, Siphon and Floatables Controls 003; Boston Low Service Beacon Street Line Design; and DITP Thermal Power Plant BMS System Upgrade.

- Continued to work with DITP, Field Operations, and utility companies to establish energy conservation programs at DITP and FOD facilities, using the Green Communities Act, the utilities' municipal programs, and other programs.
- Received proposals and supported DITP in award of pilot program contract for co-digestion of organic waste.
- Continued development of an electronic procurement bidding process for construction and professional service contracting based upon Lawson Strategic Sourcing, by developing the terms of use and the contract templates.
- Worked with Operations, Law, DEP and Wentworth Institute concerning wastewater energy recovery grant and pilot program at the Ward Street facility.
- Analyzed, along with DITP, Internal Audit, and Budget staff options for continued contracted operations of the Fore River pellet plant.
- Processed 10,185 purchase orders in FY14 for a total of \$46,422,766.
- Processed 256 procurements (with a value of over \$25,000) in FY14, including competitive bids, State blanket contracts, critical need, and sole source requests.
- Developed and implemented a Debit Card program for the purchase of non-logo employee clothing and footwear.
- Moved employee clothing procurement to an automated employee clothing purchase program through the use of a multi-state co-operative contract.
- Procured the Authority's vehicle purchases at the beginning of Fiscal Year 2014; including 40 vehicles procured through the use of a "Reverse Auction" format which resulted in savings to the Authority.

- Processed nine competitive bids in a compressed time frame for materials to be used in the Co-Digestion pilot project for an approximate total of \$450,000.
- Purchased 467,000 gallons of ultra-low-sulfur, #2 diesel fuel for the Deer Island Thermal/Power Plant at an average cost of \$3.08/gallon, lower than the FY14 budget price of \$3.50/gallon.
- Processed and awarded three year janitorial contracts each for the Deer Island, Chelsea, and Southboro facilities.
- Explored use of national cooperative contracts by joining the following cooperatives: MA Higher Education Consortium (MHEC), US Communities, National Inter-Government Procurement Alliance (IPA), National Joint Powers Alliance (NJPA), in order to leverage better item pricing.
- Initiated regular meetings with Deer Island, Chelsea, and MIS staff to foster better communication between MWRA departments and the Purchasing Unit
- Continued to seek out environmentally friendly products, among them recycled toners, batteries, copy paper, hybrid vehicles, and bio-fuels.
- Continued work with Operations on a Quality of Materials Sub-Committee. The subcommittee's goal is to examine a number of similar inventory items to determine if what is currently being stocked in inventory is the appropriate quality to adequately perform the intended function. The sub-committee is comprised of Purchasing, Materials Management and Operations staff.
- Set up an online vehicle and equipment auction process and brought in \$183,531 in revenue for FY14.
- Recycled 33.75 tons of paper, 374.27 tons of scrap metal (includes stainless steel and aluminum), 4,260 pounds of brass and copper, and 1,490 batteries in addition to scrapping 6 vehicles, generating \$94,768 in revenues.

#### **Budget Highlights:**

- The FY15 Final Budget is \$3.8 million, a decrease of \$736,000 or 16.2% as compared with FY14 Actual Spending. FY14 Actual Spending includes \$829,000 under Maintenance ("Warehouse Inventory") which represents the value of inventory which has been received in the warehouse but has yet to be distributed to the using division. If this funding were eliminated, Procurement would be showing an increase of \$93,000 or 2.5% from FY14 Actual Spending.
- \$3.6 million for **Wages and Salaries**, an increase of \$91,000 or 2.6% as compared with FY14 Actual Spending mainly due to projected cost of living adjustment increases. The funding supports 45 positions.
- \$99,000 for **Other Materials**, a decrease of \$24,000 or -19.3% as compared with FY14 Actual Spending mainly due to higher than budgeted needs in FY14. This line item mainly supports centralized office supply purchases.
- \$57,000 for **Other Services**, an increase of \$15,000 or 36.2% as compared with FY14 Actual Spending. This funding supports Advertising and Printing/Duplicating for contract documents and specifications. Advertising was below historical trends because a number of projects were rescheduled for FY15.

**REAL PROPERTY and ENVIRONMENTAL MANAGEMENT**

FY15 Final Current Expense Budget REAL PROPERTY / ENVIRONMENTAL MANAGEMENT						
LINE ITEM	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
WAGES & SALARIES	\$ 460,569	\$ 419,225	\$ 433,078	\$ 435,573	\$ 2,495	0.6%
OVERTIME	-	-	-	-	-	-
TRAINING & MEETINGS	1,234	36,900	425	3,000	2,575	605.9%
PROFESSIONAL SERVICES	-	11,546	2,165	-	(2,165)	-100.0%
OTHER MATERIALS	835	797	247	1,150	903	365.6%
OTHER SERVICES	130,074	292,101	215,105	326,496	111,391	51.8%
<b>TOTAL</b>	<b>\$ 592,712</b>	<b>\$ 760,569</b>	<b>\$ 651,020</b>	<b>\$ 766,219</b>	<b>\$ 115,199</b>	<b>17.7%</b>

The **Real Property and Environmental Management Department** negotiates the purchase or lease of real estate and land necessary to support MWRA's capital projects and operations and manages the disposition of surplus real property. 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 also provides 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.

**FY15 Goals:**

- Acquire the real property needed to complete MWRA's major capital projects in a timely and cost-effective manner; manage the disposition of surplus real property in an efficient manner; and provide staff and others with current information regarding MWRA's real property rights.
- Manage the centralized environmental management program, providing technical assistance regarding hazardous waste management, air quality compliance, and related issues during all phases of MWRA projects as well as monitor and provide assistance in maintaining environmental regulatory compliance at MWRA facilities.

**FY15 Initiatives:**

- Monitor progress of upcoming underground storage tank regulation amendments and Stage I Vapor Recovery regulations.
- Coordinate implementation of boiler and emergency generator air emissions regulation amendments including monitoring, maintenance, pollution control retrofits, and recordkeeping requirements.

**FY14 Accomplishments:**

- Provided ongoing real estate services, including appraisal and negotiation, on projects such as the, Charlestown Navy Yard lease, Chelsea lease, and NStar Lease.
- Provided real estate services as needed (appraisal, negotiation, survey review, title review, local zoning submittals, and legislation review) on Fore River Railroad track relocation land swaps with Quirk and Cashman, sale of Fox Point (Dorchester), sale of land adjacent to Chelsea Headworks to City of Chelsea and

acquisition of easement from City in private way, and the acquisition of easement from Department of Capital Asset Management (DCAM) for Ware Disinfection Facility.

- Managed nine (9) permit agreements (six at Turkey Hill and three at Walnut Hill). Coordinated with Operations for approval of the equipment changes and improving the invoicing system for maintenance reimbursements. Total revenue for the nine agreements approximates \$500,000 of which MWRA and the host community each receive half. Renegotiated three of nine permit agreements which were due for renewal.
- Managed fee assessment for long-term 8M permits on MWRA fee controlled land. 8M fees for these agreements total approximately \$50,000 per year. Also provided assistance to Operations on short-term 8M permit agreements in which fees are assessed.
- Staff are currently in the process of acquiring easements and negotiating licenses to support projects including: easements from 65+ property owners for Section 36, New W11C, and Shaft 9A in Arlington and Medford; easement swaps for Carroll Water Treatment Plant (CWTP) security entrance renovations in Marlboro; easement to support Alewife Brook Conduit renovations, easements for Section 4 Webster Ave Pipe Replacement (Somerville); and landrights from DCAM for Sudbury distribution mains in conjunction with surplus of Reservoirs 1 & 2.
- Provided real estate support services including deed research and coordination with Planning's Geographic Information System (GIS) group and Law to develop/improve comprehensive property maps for the Cochituate, Sudbury, Weston, and Wachusett Aqueducts, to support projects such as the aqueduct trail initiative. Provided real estate research for a comprehensive facility database in conjunction with GIS. Provided daily assistance in concert with Law and GIS to ongoing inquiries regarding MWRA real estate rights and ownership.
- Continued with remediation and assessment of oil contamination at the Fore River Staging Area (FRSA) facility.
- Completed the five-year evaluation of the temporary solution under the Massachusetts Contingency Plan for the historical waste oil release to Spot Pond Brook from the Gillis Pump Station. As part of this evaluation, sediment samples from the brook outfall and nearby vernal pool were collected and analyzed.
- Continued with the assessment of the oil contamination resulting from the February 2010 spill at the Cottage Farm Combined Sewer Overflow (CSO) facility. Installed an oil recovery well that will be used to evaluate whether the remaining oil in the ground is recoverable and if so, recovery will be implemented in FY15.
- Provided technical support for the assessment and abatement design for PCBs at the Cottage Farm CSO Facility and Remote Headworks facilities in conjunction with on-going design of facility upgrades. Completed Risk-Based PCB Abatement Plans for both facilities and submitted them to Environmental Protection Agency (EPA). Received approval from EPA for the plan submitted for Chelsea Creek Headworks. Continued pilot testing to evaluate the effectiveness of various abatement and encapsulation techniques for PCB contamination at Chelsea Creek Headworks.
- Coordinated with design consultant for the assessment and demolition design for PCBs, lead paint, and asbestos at the abandoned Westborough State Hospital Pump Station located on the grounds of the Carroll Water Treatment Plant.
- Continued to provide technical and regulatory coordination of the fuel tank maintenance contract. Completed fuel tank piping system upgrades at one facility, upgrade of gasoline vapor recovery systems to meet new DEP



requirements at four facilities, and general monitoring system repair and upgrades at other facilities. Coordinated with Supervisory Control and Data Acquisition (SCADA) support staff to provide real-time fuel tank system monitoring at six water pump stations for the Water Operations Control Center (OCC). Continued with the new Massachusetts Department of Environmental Protection (MassDEP)-required monthly inspection requirement for all underground fuel storage tank systems.

- Coordinated with TRAC and Western Water Operations for periodic sampling and monthly reporting to the EPA and the MassDEP for the individual NPDES Permit at the Carroll Water Treatment Plant.
- In response to the installation of a new electrical transformer completed a new draft Spill Prevention, Control, and Countermeasure (SPCC) Plan for the Intermediate Pump Station in Weymouth. Completed an update to the SPCC Plan for the MWRA Cottage Farm CSO Facility in response to the recently completed fuel system upgrade project. Completed the five-year review and update to the SPCC Plan for the MWRA Braintree-Weymouth Pump Station.
- Continued with MassDEP required periodic groundwater monitoring around the former wastewater holding tank at Clinton.
- Continued to coordinate the periodic sampling requirements and quarterly reporting to the EPA and the MassDEP for Hydroelectric General permits at the Cosgrove Intake Facility and Oakdale Power Station.
- Provided technical and environmental regulatory support regarding contaminated soil and groundwater as well as geotechnical issues on various design and construction projects, including:
  - Stoneham Low Service Covered Storage,
  - Remote Headworks Rehabilitation,
  - Northern Intermediate Redundancy project,
  - Section 36 Watertown-Waltham Connection,
  - Cottage Farm Oil fuel system upgrade project,
  - Alewife Brook Pump Station facility upgrades,
  - MWR003 Gate, Siphon and Floatables Control project
  - Belchertown Hatchery Pipeline
  - Southern Extra High Pipeline
  - Sudbury Aqueduct Connection Alternatives
  - WASM3 Rehabilitation
  - Nut Island Electrical Duct Bank
  - Delauri Security Upgrades
- Continued to work with EPA and Operations staff on implementing diesel engine emission controls for Cottage Farm, Prison Point, and CWTP. Completed emissions testing of the Cottage Farm engines. Coordinated installation of retrofit emissions controls for the new Loring Road emergency generator. Continued to work with Operations staff to implement new maintenance and recordkeeping requirements for emergency generators. Completed air emissions testing at the Deer Island East Odor Control Facility.
- Provided technical and environmental regulatory support for upgrades at the Ware Disinfection Facility including a new potable water supply for the facility, a new on-site septic system, a new industrial wastewater holding tank, a new wastewater dry well, and a new emergency power generator. Submitted self-certification documentation to DEP for the new industrial wastewater holding tank. Submitted application and received DEP approval, and completed construction of the new onsite septic system.

- Submitted application for Certificate of Compliance to the Cambridge Conservation Commission for completion of site restoration work following the February 2010 oil spill at Cottage Farm CSO facility.
- Represented MWRA in the Massachusetts Geological Survey annual meeting of the State Map Advisory Committee to assist the State Geologist with prioritize geological mapping activities in the next calendar year.

**Budget Highlights:**

- The FY15 Final Budget is \$766,000, an increase of \$115,000 or 17.7%, as compared to FY14 Actual Spending.
- \$436,000 for **Wages and Salaries**, an increase of \$2,000 or 0.6%, as compared to FY14 Actual Spending mainly for projected contractual increases. The budget supports four positions.
- \$3,000 for **Training and Meetings**, an increase of \$3,000 as compared to FY14 Actual Spending.
- \$326,000 for **Other Services**, an increase of \$111,000 or 51.8%, as compared to FY14 Actual Spending. The increase is due to the increased costs for the underground storage tank project based on projected usage and FY15 identified projects.



## Appendices

## APPENDIX A

### DIRECT EXPENSE BUDGET LINE ITEM DESCRIPTIONS

#### **Introduction**

MWRA's direct expense budget funds the annual expenses of its operating and support divisions. Though the direct expense budget constitutes less than half of MWRA's total budget, it is these expenses which directly support the provision of water and sewer services to MWRA's customers. The direct expense budget includes the annual costs of operating the water and sewer systems, and funds the policy direction, administrative, financial, and legal support services for MWRA's ongoing operations. The direct expense budget also includes the personnel costs for management and oversight of MWRA's extensive capital programs.

There are 11 line items in the division budgets. The line items are:

**Wages and Salaries** - This line item includes funds for regular pay, shift differential, holiday pay, and standby pay for MWRA staff, as well as funds for interns and temporary staff.

**Overtime** - This line item includes funds for overtime related to operations, maintenance, emergencies, and training.

**Fringe Benefits** - This line item includes funds for health and dental insurance, unemployment compensation, Medicare, and overtime meals.

**Workers' Compensation** - This line item includes funds for compensation payments, medical payments, and settlements of compensation claims.

**Chemicals** - This line item includes funds for the chemicals used in water and wastewater treatment, such as chlorine, sodium hypochlorite, soda ash, sodium bisulfite, and hydrofluosilicic acid.

**Utilities** - This line item includes funds for electricity, diesel fuel, and other utilities such as water and sewer services paid by MWRA to the towns in which it operates facilities.

**Maintenance** - This line item includes funds to purchase materials and services for the maintenance of MWRA's plants and machinery, water and sewer pipelines, grounds, and buildings.

**Training and Meetings** - This line item covers the costs of staff training, meetings, and professional seminars.

**Professional Services** - This line item funds outside consultants supporting MWRA activities, including engineering and construction services, laboratory and testing contracts, computer system consultants, and legal and audit services.

**Other Materials** - This line item includes funds for office materials, equipment, postage, laboratory supplies, MWRA vehicles, work clothes, and computer hardware and software.

**Other Services** - This line item includes funds for space leasing, health and safety initiatives, removal of grit and screenings from the sewerage system, and the contracted operation of MWRA's residuals processing plant.

Sections II – V present summaries of the MWRA's budgets with a detailed description of program budgets and highlights within each divisional section.

**APPENDIX B**

**BUDGET PROCESS AND TIMETABLE**

MWRA operates on a fiscal year that starts July 1. The Current Expense Budget development process begins in September and, as described below, continues through a series of interactive reviews and revisions until June, when the Board of Directors approves the final budget. Throughout the formal budget process, MWRA staff maintains an ongoing dialogue with the Board of Directors and Advisory Board to discuss issues, the status of budget development, and other concerns.

<b>MONTH</b>	<b>ACTIVITY</b>
September	Divisions receive budget targets, guidelines, and manuals for the development of budget requests, and can begin to access MWRA’s interactive budgeting system.
December	After the divisions return their budget requests, the Rates and Budget Department consolidates the authority-wide budgets, develops briefing materials for senior management, and identifies major budget issues.
January	The Executive Director determines proposed funding levels required to meet operational and financial objectives. Staff may seek appropriate policy direction from the Board.
February	MWRA transmits the Proposed Current Expense Budget to the Advisory Board for a 60-day review, during which time MWRA staff meet with Advisory Board staff, respond to questions, and provide updated information on plans and prices.
March – May	MWRA hosts public hearings to solicit comments on the proposed budget and community assessments from citizens in its service area. The Advisory Board reviews the proposed budget and transmits comments and recommendations to the MWRA.
June	The Board of Directors holds a hearing on the proposed budget and the Advisory Board’s comments and recommendations. The Board of Directors adopts a final Current Expense Budget and a schedule of final wholesale water and sewer assessments.

## APPENDIX C

### **MASSACHUSETTS WATER RESOURCES AUTHORITY BUDGET AND ASSESSMENT POLICIES AND PROCEDURES**

**(Revised August 2003 to incorporate changes to capital budget section of Management  
Policies adopted by the Board of Directors June 11, 2003)**

These policies and procedures govern certain budget, assessment, and rates management practices at the Massachusetts Water Resources Authority (MWRA). Policies and procedures may be amended from time to time, provided that changes in provisions governing reporting to or approvals by the Board of Directors or the Advisory Board must be approved by the Board of Directors. If any sections of these policies and procedures are at variance with requirements of MWRA's financing agreements, the latter shall govern.

#### ASSESSMENT POLICIES AND PROCEDURES

##### **Basis of MWRA Assessments**

MWRA is required by its Enabling Act to establish assessments which, with other revenues, provide sufficient funds each year to pay all current expenses, debt service, and obligations to the Commonwealth; to pay all costs of maintenance, replacement, improvements, extension, and enlargement of the sewer and waterworks systems; to create and maintain reserve funds; and to provide amounts required by financing agreements. These assessments are adopted by MWRA based on the rate revenue requirements set forth in the Current Expense Budget.

##### **Costs Recovered**

MWRA capitalizes certain of its asset costs in accordance with its capitalization policy. Capital expenditures are planned as set forth in the Capital Improvement Program and are recovered through assessments in accordance with MWRA financing agreements. The Current Expense Budget provides detailed information on capital and debt costs, additions to reserves, and all operations and maintenance costs to be recovered with current revenue.

##### **Sources of Current Revenue**

MWRA recovers most of its current expenses from users of the services it provides. In addition to rate revenue requirements, budgeted current revenue includes anticipated fines, fees, investment income on certain fund balances, and payments for contracted services. MWRA is committed to seeking additional sources of current revenue.

## **Coverage Requirements**

MWRA's financing agreements include coverage requirements which provide that each year revenue less operating expenses (net revenue) must be more than the amount required for debt service payments on outstanding bonds. The primary bond coverage requirement is that net revenue must be 120 percent of required debt service fund deposits for bonds outstanding excluding subordinated bonds. The secondary coverage requirement is that net revenue must be 110 percent of required debt service fund deposits for all bonds outstanding, including subordinated bonds. Revenue must be raised annually to meet the primary and secondary bond coverage requirements and may be used for additions to reserves or for payment of obligations to the Commonwealth. Amounts remaining after these uses are used to pay capital costs in order to reduce the need for future borrowing or to reduce current debt service costs. In addition, MWRA has a supplemental bond coverage requirement that amounts contained in its Community Obligation and Revenue Enhancement (CORE) Fund shall equal 10 percent of required debt service fund deposits for bonds outstanding, excluding subordinated bonds. Amounts required to be on deposit in the CORE Fund are recovered through assessments as necessary.

## **Budget Surpluses**

In any year in which current revenue exceeds both current expenses on a budget basis and amounts required to meet bond coverage tests, the amount of over-recovery is deposited first to reserve funds, if any, which are below the level specified in any financing agreements, and second into MWRA's rate stabilization fund or bond redemption fund. Amounts deposited in these funds are used to offset rate requirements in subsequent years and such, to provide rate relief for our communities. With Board approval, surplus funds can also be used for targeted defeasance in future years and/or to reduce future liabilities, as part of a multi-year rate strategy. MWRA consults with the Advisory Board regarding the yearly use of these funds.

## **Budgeting and Assessment Objectives**

MWRA follows conservative budgeting practices, and has the following objectives in developing budgets and community assessments:

1. To minimize total costs, consistent with MWRA's statutory responsibilities to provide effective, environmentally sound wholesale water delivery and wastewater collection and treatment services;
2. To minimize the cost of debt;
3. To avoid single year assessment spikes by prudent management of cost and assessment increases, and
4. To support inter-generational equity by avoiding unfair assessment burdens on either current or future ratepayers.



## **Allocation of Costs and Revenue to Systems**

Most of MWRA's current expenses are directly attributable to either water or sewerage service costs or to investment in either the water or sewerage systems. Expenses which support both systems (indirect system costs) are allocated to the water or sewer system based on generally accepted cost allocation principles. Investment, contract, and other income offsets water and sewerage expenses on either a direct or allocated, indirect basis. The resulting net cost of water and sewerage services is the amount to be recovered through water and sewer assessments.

## **Allocation of Rate Revenue Requirements to User Assessments**

Users of MWRA wholesale water and sewerage services are assessed for those services according to MWRA's water and sewer assessment methodologies. Assessments for water services are computed by MWRA based on metered water use for the preceding calendar year. The total assessment is allocated based on each community's share of water delivered in the immediately preceding calendar year.

Assessments for sewer services are computed on the basis of a combination of metered wastewater flow and loads, and population.

- Operations and Maintenance (O&M) costs are allocated based on total annual metered wastewater flow, and total annual average strength, septage, and high strength flow loads.
- Capital (or debt service) costs are allocated based on a combination of metered wastewater flow and loads, and population. One-quarter of capital costs are allocated based on maximum month flow, and total annual average strength, septage, and high strength flow loads. The remaining three-quarters of capital costs are allocated based on population. Half of the population allocation is based on census population and half is based on contributing population.

## **Schedule and Procedure for Adoption of Assessments**

During the preparation of the proposed Current Expense Budget, required water and sewer rate revenue is determined, and a preliminary calculation of the allocation of costs to user-specific assessments is made. This information is provided to MWRA customers to assist them in their own fiscal planning. As provided in the Enabling Act, the proposed Current Expense Budget and preliminary assessments undergo statutory review, including public hearings and review by MWRA's Advisory Board. Further refinements of projected expenses and revenues also occur during this period. If review and analysis of the proposed Current Expense Budget results in lower projected expenses or higher projected revenue, some or all of such savings from preliminary estimates of assessments can be included in the adopted budget as additions to the rate stabilization fund and used to reduce rate revenue requirements in subsequent years. Alternatively, some or all of such savings can be used to reduce final assessments to customers below preliminary estimates.

The Current Expense Budget and final water and sewer assessments are adopted in June for the fiscal year beginning in July. The budget adopted in June may differ from the proposed budget as a result of review and further refinement of the proposed budget, although final assessments adopted by MWRA must be sufficient to recover water and sewer rate revenue requirements specified in the adopted budget. Final water and sewer rate requirements and their allocation to users may thus change from preliminary estimates. In addition, any individual community's final assessment may be higher or lower than the preliminary estimate, both because of changes in the factors which affect the allocation of assessments among wholesale customers, and because of differences between MWRA's proposed and final budgets as approved by the Board of Directors.

### **Review and Dispute Resolution Process**

MWRA annually determines preliminary and final assessments for water and sewer services in February and June prior to the beginning of the new fiscal year. These assessments must satisfy the requirement that MWRA fully recover its water and sewer costs by apportioning total costs as assessments among its wholesale water and sewer customers pursuant to its water and sewer rate methodologies and to certain specified data including:

- Calendar year metered water volume and metered wastewater flow obtained from MWRA's water and wastewater metering systems;
- Federal and state community census statistics, and sewer population estimates and other information supplied on Customer Service Update forms and Municipal Discharge Permits; and
- High strength user monitoring data and estimates of community septage volumes as obtained by MWRA's Toxic Reduction and Control Department.

The review and dispute resolution process provides MWRA's wholesale customers with the opportunity to review and comment on the reasonableness of the data used to calculate preliminary water and sewer assessments. During the year, MWRA provides its customers with monthly summaries of water and wastewater flow data distributed, at a minimum, on a bimonthly basis. Because annual metered water and wastewater flows are major components for establishing water and sewer charges for each community, customers are strongly encouraged to review this data closely upon receipt and raise questions with MWRA staff concerning the data. MWRA expects that prompt customer review and comment on meter data will result in the resolution of most water and wastewater metering questions and assure the most consistency between preliminary assessments in February and final assessments announced in June. Community contributions of high strength flow and septage, and population data are made available with the release of preliminary assessments in February.

If after an initial review a community believes that specific data used to calculate assessments should be reevaluated, a community may submit a written objection to the Executive Director with a copy to the Rates Manager or their designee. The objection must be signed by the local official on record with MWRA as responsible for water or sewer services in the city, town, or

district. The objection should state the community's concern with the data used to calculate community assessments, and should also include information and technical data to support the community's objection.

In order for any data adjustments to be incorporated into the allocation of final fiscal year assessments, all objections to data used to calculate preliminary assessments must be received no later than the date of the final public hearing on the proposed budget and preliminary assessments, held pursuant to Section 10 of the MWRA Enabling Act. MWRA staff will review and evaluate the merits of all written objections. Customers are notified in writing of the results of this review prior to the release of final assessments.

Adjustments to preliminary data, if any, are not retroactive beyond the applicable calendar year for proposed assessments. Final fiscal year assessments are calculated incorporating adjustments, if any, resulting from the review and objection process, and final rate revenue requirements as adopted by the Board of Directors.

Written objection(s) may also be submitted following the adoption of final fiscal year assessments, but no later than the end of the fiscal year for which the assessments are applicable. Objections submitted in this manner must also be directed to the Executive Director with a copy to the Rates Manager or their designee.

Following MWRA staff review, adjustments to assessments resulting from the challenge of rate basis data that are submitted following the adoption of final fiscal year assessments will be applied to the subsequent year's assessments. Customers are notified in writing of the results of this review and any assessment adjustments prior to the release of the subsequent year's assessments.

### **Water and Sewer Assessment Payment Schedule**

MWRA adopts a schedule of assessments and a schedule of payments annually. Any adjustments for prior years resulting from the review and objection process are apportioned to each of the scheduled payment amounts. No interest is paid or billed by MWRA for previous year's adjustments.

Assessments are payable to MWRA in ten equal installments due on the first day of August, September, October, November, December, February, March, April, May, and June.

### **Interest Charge on Delinquent Payments**

For payments received after a payment due date MWRA levies an interest charge of one percent per month or 0.033 percent per day. Interest charges do not accrue until 30 days after the bills are mailed to MWRA's customer communities. Interest charges are added to subsequent regular billings.

## **Retail Rates**

MWRA assessments are for MWRA's provision of wholesale services. Local bodies which receive wholesale services in turn provide retail services to their users at the local level.

MWRA encourages its customers to establish retail rates which:

1. Recover the full cost of providing local water and/or sewerage services, including both direct costs and an allocation or estimate of indirect costs,
2. Charge users of local water and/or sewerage services in a manner which demonstrates to customers that increased use of services results in increased user costs,
3. Comply with MWRA policies directed to conservation of water; elimination of infiltration and inflow of surface water and ground water into the sewage collection, treatment, and disposal system; and removal or pretreatment of industrial wastes, and
4. To the extent consistent with #1 and #2, provide assistance to low income users through lifeline rates.

## CAPITALIZATION POLICY

It is the policy of the MWRA that capitalization of expenditures conforms to generally accepted accounting principles. Under such guidelines, MWRA has adopted the provisions of the Financial Accounting Standards Board's Statement No. 71, "Accounting for the Effects of Certain Types of Regulation," which is intended to assure that utility revenues are appropriately matched with incurred costs. Capital expenditures create assets or extend their useful lives. Assets are valued at their cost and provide benefits over an extended period of time. Sources of funds for capital expenditures include grants, proceeds of MWRA borrowing, loans, and current revenue.

Asset value created by MWRA is of two kinds. One is the value of tangible assets either created or increased through MWRA capital investments. Such assets include land, buildings, plant, equipment, and the system infrastructure for water and wastewater. The cost of such fixed asset investment includes not only purchase, rehabilitation, and construction cost, but also ancillary expenses necessary to make productive use of the asset. Ancillary costs can include, but are not limited to, costs for planning studies, professional fees, transportation charges, site preparation expenditures, and legal fees and claims directly attributable to the asset.

The second kind of asset value created by MWRA investment is the value of intangible assets. While such investment does not result in tangible MWRA assets, it does create a benefit to MWRA and its users over several years. Such assets include the cost of MWRA efforts to establish base-line leak detection information for the water systems of MWRA customers. The cost of providing water consumption-limiting devices to households is another example.

Expenditures for tangible assets are included in the Capital Improvement Program and Budget if the expected cost of the individual asset or capital project is \$100,000 or more and if the expected useful life is more than one year. Expenditures for intangible assets are capitalized if the expected cost is \$100,000 or more and if the expected benefit period is three years or more. Annually recurring costs and expenditures for maintenance of assets are not capitalized, even though their cost may exceed \$100,000. Examples of such maintenance expenditures include replacement of vehicles or computers, replacement of inoperable valves or other equipment before the anticipated useful life has been reached, and pipeline or interceptor repairs that do not add significant life to the underlying asset.

## RESERVES FUNDED FROM CURRENT REVENUE

### **Operating Reserve**

The Operating Reserve has been established to provide a source of funds to be used to pay operating expenses of the sewer or water systems should there not be sufficient funds otherwise available for that purpose. Bond agreements specify that the fund level shall not be less than one-sixth of MWRA's annual operating expenses.

### **Insurance Reserve**

The Insurance Reserve has been established to provide funds to restore, replace, or reconstruct lost or damaged property or facilities of the water or sewer system. It provides funds reserved against risks for which MWRA does not currently maintain insurance. This self-insurance reduces the cost MWRA might otherwise incur for purchased insurance policies. MWRA periodically evaluates the level of its insurance reserve and every three years a consulting engineer or an insurance consultant recommends an appropriate insurance reserve fund requirement. The current funding level of \$14.0 million has been determined to be adequate based on a FY14 Insurance Reserve Fund review performed by an outside insurance consultant who estimated an acceptable fund level in the range of \$12 to \$16 million. The next Insurance Reserve Fund review is expected to be finalized in February 2017.

### **Renewal and Replacement Reserve**

The Renewal and Replacement Reserve has been established to pay the costs of emergency repairs or capital improvements to the system when funds are not available in either the Construction Fund or the Operating Fund. Amounts may not be withdrawn until MWRA has specified the project to which the amount will be applied, its estimated cost, and estimated completion date. It must also certify that such expenditures are reasonably required for the continued operation of the systems, or for maintenance of revenues, or that other provisions have not been made for funding such expenditures. Every three years, MWRA receives recommendations from a consulting engineer as to the adequacy of the renewal and replacement reserve fund requirement. The Renewal and Replacement Reserve Fund requirement is presently established at \$35 million. The adequacy of the funding requirements for the Operating Reserve Fund and the Replacement Reserve Fund have been confirmed by the Consulting Engineer in its most recent triennial report dated October 2011, prepared and delivered in accordance with the General Resolution. The next Triennial Report is scheduled for October 2014.

## CURRENT EXPENSE BUDGET MANAGEMENT POLICIES AND PROCEDURES

### **A. Budget Allocations**

#### **Budget Contingency Holdbacks**

After the Board of Directors adopts the Current Expense Budget each year, the Executive Director, the Chief Operating Officer, or a division director may reserve between two percent and four percent of a division's approved budget as a budget contingency to be expended only upon approval of the Executive Director. The contingency holdback may be from any line item or cost center or combinations thereof, and any amount reserved as a budget contingency is not to be included in the monthly budget allocation process described below. The Administration, Finance, and Audit Committee will be notified of all budget contingency holdback amounts.

#### **Monthly Allocation of the Annual Current Expense Budget**

Initial monthly allocations are made for purposes of adopting and filing an operating budget in accordance with MWRA's financing agreements. Before the end of the first reporting period of the fiscal year, divisions, with the assistance of the Rates and Budget Department, allocate the approved budget, less any holdbacks, by month. The allocations set forth planned expenditures and accruals for each of the 12 months of the year to be compared to actual expenditures and accruals as reported in MWRA's monthly variance reports.

### **B. Budget Variance Monitoring and Analysis**

At the close of each monthly accounting period, the Treasury Department prepares MWRA financial statements. The Rates and Budget Department then prepares monthly variance reports that compare planned to actual revenues and expenses.

#### **Variance Analysis**

Division directors and staff review variance reports and explain variances between planned and actual expenditures as requested by the Rates and Budget Department. Variance explanations are prepared as needed, usually at the end of each quarter of the fiscal year. At least twice each year MWRA staff prepares forecasts of year-end expenditures and revenue. Barring extraordinary circumstances, division directors are responsible for controlling spending within the overall division budget. The Rates and Budget Department reviews all variances and projections so that appropriate measures may be taken to ensure that overall spending is within the MWRA's budget.

Variance explanations are submitted to the Rates and Budget Department in accordance with the schedule developed by the Rates and Budget Department. Each month the Rates and Budget Department prepares a summary of budget variances for inclusion in the Management Indicators Report (Yellow Notebook). The Rates and Budget Department also prepares a monthly staff summary (except for July and August) to the Board of Directors describing major budget

variances and a quarterly budget variance report for inclusion in the Board of Directors Report on Key Indicators of MWRA Performance (Orange Notebook). At least twice a year, the Rates and Budget Department prepares a staff summary to the Board of Directors on year-end projections of revenue and expenses.

### **C. Budget Amendments**

An amendment to an MWRA Current Expense Budget is defined as follows:

A proposed change in an adopted budget or a proposed budget transmitted to the MWRA Advisory Board in accordance with Section 8(b) of Chapter 372 of the Acts of 1984 which meets any of the following criteria:

1. Any increase in total current expenses.
2. An increase of five percent or more in total division expenses.
3. An increase in any expense line item (subsidiary account) of 15 percent or more if that line item is at least 2.5 percent of total current expenses.
4. An addition or deletion of a specific new program or initiative, the cost of which is greater than one percent of total current expenses, unless the addition or deletion has been specifically recommended by the Advisory Board.

The Executive Director, with the concurrence of the Chairman of the Board of Directors and the Chairman of the Administration, Finance, & Audit Committee of the Board of Directors, submits proposed amendments to the Advisory Board for comment and recommendation. At the end of the Advisory Board 30-day review period, the Board of Directors may take action on the amendment.

## **CAPITAL BUDGET MANAGEMENT POLICIES AND PROCEDURES**

### **General Guidelines**

The Authority shall periodically adopt and revise capital facility programs for the Waterworks and Sewer Systems and capital budgets based on these programs. The Authority shall consult in the preparation of its capital facility programs for the Sewer and Waterworks Systems with the Authority's Advisory Board and the Executive Office of Environmental Affairs, and may consult with other agencies of federal, state and local government concerned with the programs of the Authority. Proposed capital facility programs and capital expenditure budgets for said systems shall be submitted to the Advisory Board for such consultation no less than sixty days prior to adoption or revision by the Authority. The Authority shall prepare a written response to reports submitted to it by the Advisory Board, which response shall state the basis for any substantial divergence between the actions of the Authority and the recommendations contained in such reports of the Advisory Board. The Authority shall capitalize expenditures in accordance with



generally accepted accounting principles. Capital expenditures will be planned in accordance with Authority financing agreements and policies for amortization of capital costs.

### **Capital Budget Contingency**

A contingency for each fiscal year is incorporated into the Capital Improvement Program for the purpose of providing for unanticipated or unpredictable expenditures under the CIP spending cap.

### **Capital Budget Monitoring and Reporting**

The Authority shall continually monitor the progress of capital projects for purposes of managerial control and decision-making and for financial planning and management. Two capital budget variance analysis reports will be provided to the Board of Directors, one for the first six months of a year and one at year-end. The reports will include planned project schedules and budgets compared to actual performance. The reports will highlight any major changes, either in scope or budget, of any project. Based on these reports, staff may recommend to the Board of Directors revisions, if appropriate, to the annual and five-year caps based upon said changes. In addition, capital budget progress reports shall be provided to the Board of Directors on a regular basis, both as project specific updates and in Quarterly Orange Notebook reports that shall include discussions of project progress compared to schedules. Monthly Financial Summary reports shall include discussions of capital expenditures compared to budget.

### **Capital Budget Spending Cap**

Beginning in June 2003, the Board of Directors established a five-year Capital Budget Spending cap and annual caps for each year within the cap period. Spending for any year in the cap period may vary within plus or minus 20% of the annual cap, as long as total spending for the five-year period does not exceed the five-year cap. Before the end of each five-year cap period, the Board will adopt a cap for the next five-year period and annual caps for each year in the period. The Board established the third five-year cap for the FY14-18 period at its June 2013 meeting.

### **Expenditures in Excess of the Spending Cap**

In the event of unanticipated spending requirements, the Executive Director may recommend to the Board of Directors that annual expenditures exceed an annual cap by more than 20% or that five-year expenditures exceed the current five-year CIP spending cap. In such an event, a proposed plan to adjust the five-year cap or any of the annual caps will be presented to the Board. Any such proposed plan will be submitted to the MWRA Advisory Board for review and comment for a period of thirty days. At the end of the thirty-day period, the Board of Directors may take action on the proposed plan.

**APPENDIX D**

**MWRA Planning Estimates FY2015 to FY2024**

<b>COMBINED UTILITIES</b>										
	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024
<b>EXPENSES</b>										
Direct Expenses	\$217,149	\$223,431	\$229,635	\$236,031	\$242,603	\$249,103	\$255,858	\$262,342	\$269,495	\$276,845
Indirect Expenses	47,512	47,861	49,057	51,496	52,982	54,483	56,116	58,940	55,166	56,995
Capital Financing (before offsets)	<u>417,424</u>	<u>442,936</u>	<u>469,614</u>	<u>498,111</u>	<u>515,501</u>	<u>571,038</u>	<u>570,866</u>	<u>602,376</u>	<u>557,742</u>	<u>535,213</u>
Sub-Total Expenses	\$682,085	\$714,228	\$748,307	\$785,638	\$811,085	\$874,625	\$882,840	\$923,658	\$882,403	\$869,052
Debt Service Assistance	(854)	0	0	0	0	0	0	0	0	0
Bond Redemption Savings	(6,746)	(2,541)	(5,783)	(1,398)	0	(3,362)	(1,024)	(12,000)	0	0
Variable Rate Savings	0	0	0	0	0	0	0	0	0	0
Total Expenses	\$674,485	\$711,687	\$742,524	\$784,240	\$811,085	\$871,263	\$881,816	\$911,658	\$882,403	\$869,052
<b>REVENUE &amp; INCOME</b>										
Non-Member and Other Revenue	\$14,440	\$14,883	\$15,271	\$15,731	\$16,020	\$16,328	\$16,578	\$16,924	\$16,723	\$16,890
Interest Income	9,729	8,934	8,151	10,410	12,937	13,310	13,694	13,837	13,963	14,120
Rate Stabilization	0	9,459	6,217	10,602	0	8,638	1,596	0	0	0
Total Other Revenue	\$24,170	\$33,276	\$29,639	\$36,743	\$28,958	\$38,276	\$31,868	\$30,760	\$30,686	\$31,010
Total Rate Revenue	\$650,316	\$678,411	\$712,885	\$747,497	\$782,127	\$832,987	\$849,948	\$880,898	\$851,717	\$838,042
Rate Revenue Increase	3.4%	4.3%	5.1%	4.9%	4.6%	6.5%	2.0%	3.6%	-3.3%	-1.6%
Estimated Annual Household Charge **										
Based on water use of 61k gpy (weighted)	\$1,010	\$1,062	\$1,116	\$1,174	\$1,229	\$1,294	\$1,348	\$1,411	\$1,445	\$1,479
Based on water use of 90k gpy (weighted)	\$1,490	\$1,567	\$1,646	\$1,732	\$1,813	\$1,910	\$1,989	\$2,082	\$2,132	\$2,183
<b>WASTEWATER UTILITY</b>										
	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024
<b>EXPENSES</b>										
Direct Expenses	\$148,145	\$152,353	\$156,616	\$161,019	\$165,519	\$169,911	\$174,496	\$178,796	\$183,696	\$188,732
Indirect Expenses	14,552	14,049	14,455	15,067	15,649	16,225	16,896	17,533	18,309	19,046
Capital Financing (before offsets)	<u>285,404</u>	<u>293,143</u>	<u>317,891</u>	<u>322,459</u>	<u>345,658</u>	<u>384,001</u>	<u>377,216</u>	<u>384,952</u>	<u>332,252</u>	<u>317,184</u>
Sub-Total Wastewater Expenses	\$448,100	\$459,545	\$488,962	\$498,545	\$526,826	\$570,136	\$568,609	\$581,281	\$534,258	\$524,962
Debt Service Assistance	(785)	0	0	0	0	0	0	0	0	0
Bond Redemption Savings	0	0	(5,783)	0	0	0	0	0	0	0
Variable Rate Savings	0	0	0	0	0	0	0	0	0	0
Total Wastewater Expenses	\$447,315	\$459,545	\$483,179	\$498,545	\$526,826	\$570,136	\$568,609	\$581,281	\$534,258	\$524,962
<b>REVENUE &amp; INCOME</b>										
Non-Member and Other Revenue	\$5,256	\$5,353	\$5,466	\$5,577	\$5,702	\$5,845	\$5,955	\$6,083	\$6,165	\$6,285
Interest Income	6,152	5,495	4,635	5,929	7,463	7,816	8,095	8,205	8,205	8,116
Rate Stabilization	0	0	1,944	0	0	0	0	0	0	0
Prior Year Utility Surplus/Deficit Transfer	(4,175)	0	0	0	0	0	0	0	0	0
Total Other Revenue	\$7,232	\$10,848	\$12,045	\$11,506	\$13,165	\$13,661	\$14,051	\$14,287	\$14,370	\$14,401
Wastewater Rate Revenue	\$440,082	\$448,697	\$471,134	\$487,039	\$513,661	\$556,476	\$554,558	\$566,994	\$519,889	\$510,561
Rate Revenue Increase	3.4%	2.0%	5.0%	3.4%	5.5%	8.3%	-0.3%	2.2%	-8.3%	-1.8%
Estimated Annual Household Charge **										
Based on water use of 61k gpy (weighted)	\$602	\$625	\$656	\$685	\$720	\$765	\$788	\$820	\$822	\$845
Based on water use of 90k gpy (weighted)	\$888	\$922	\$968	\$1,011	\$1,063	\$1,129	\$1,163	\$1,210	\$1,212	\$1,246
<b>WATER UTILITY</b>										
	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024
<b>EXPENSES</b>										
Direct Expenses	\$69,004	\$71,078	\$73,019	\$75,012	\$77,084	\$79,193	\$81,362	\$83,546	\$85,799	\$88,112
Indirect Expenses	32,960	33,812	34,602	36,429	37,333	38,259	39,220	41,407	36,857	37,949
Capital Financing (before offsets)	<u>132,021</u>	<u>149,793</u>	<u>151,724</u>	<u>175,653</u>	<u>169,842</u>	<u>187,037</u>	<u>193,650</u>	<u>217,424</u>	<u>225,490</u>	<u>218,029</u>
Sub-Total Water Expenses	\$233,985	\$254,683	\$259,345	\$287,093	\$284,259	\$304,488	\$314,231	\$342,377	\$348,145	\$344,090
Debt Service Assistance	(68)	0	0	0	0	0	0	0	0	0
Bond Redemption Savings	(6,746)	(2,541)	0	(1,398)	0	(3,362)	(1,024)	(12,000)	0	0
Variable Rate Savings	0	0	0	0	0	0	0	0	0	0
Total Water Expenses	\$227,171	\$252,142	\$259,345	\$285,695	\$284,259	\$301,126	\$313,207	\$330,377	\$348,145	\$344,090
<b>REVENUE &amp; INCOME</b>										
Non-Member and Other Revenue	\$9,184	\$9,530	\$9,805	\$10,154	\$10,318	\$10,483	\$10,623	\$10,841	\$10,558	\$10,605
Interest Income	3,578	3,439	3,515	4,481	5,474	5,494	5,598	5,632	5,758	6,004
Rate Stabilization	0	9,459	4,274	10,602	0	8,638	1,596	0	0	0
Prior Year Utility Surplus/Deficit Transfer	4,175	0	0	0	0	0	0	0	0	0
Total Other Revenue	\$16,937	\$22,428	\$17,594	\$25,237	\$15,792	\$24,615	\$17,817	\$16,473	\$16,317	\$16,609
Water Rate Revenue	\$210,234	\$229,714	\$241,751	\$260,458	\$268,466	\$276,511	\$295,390	\$313,904	\$331,828	\$327,481
Rate Revenue Increase	3.5%	9.3%	5.2%	7.7%	3.1%	3.0%	6.8%	6.3%	5.7%	-1.3%
Estimated Annual Household Charge **										
Based on water use of 61k gpy (weighted)	\$408	\$437	\$460	\$489	\$508	\$529	\$560	\$592	\$623	\$635
Based on water use of 90k gpy (weighted)	\$603	\$645	\$678	\$721	\$750	\$780	\$826	\$873	\$919	\$937

\*\* Annual household charges are estimated for communities that receive full water and wastewater services from MWRA weighted by the number of households in each of these core communities. Based on community responses to the 2013 MWRA Advisory Board's Annual Water and Sewer Retail Rate Survey.

## APPENDIX E

### GLOSSARY OF FINANCIAL AND OPERATING TERMS

**8M permit:** Permission granted by MWRA to persons who wish to construct property improvements on land either adjoining or overlapping MWRA property interests. Permission may be conditioned on various operational and/or engineering concerns.

**Accrued Costs:** Adjustments to paid expenditures to account for materials or services received but for which payment has not been made.

**Activated Sludge:** The sludge that results when primary effluent is mixed with bacteria-laden sludge and then agitated and aerated to promote biological treatment.

**Advanced Waste Treatment:** Wastewater treatment beyond the secondary or biological stage that includes the removal of nutrients such as phosphorus and nitrogen and the removal of a higher percentage of suspended solids and organic matter than primary treatment.

**Advisory Board:** The agency that represents the interests of MWRA's 61 user communities to the Board of Directors in an advisory capacity in accordance with the provisions of MWRA's Enabling Act. The Advisory Board elects three members of the Board of Directors, reviews and comments on MWRA's CIP and CEB, and approves the addition of new communities to the wastewater and water systems.

**Aerobic:** In the presence of free oxygen.

**Anaerobic:** Life or processes such as bacteria that digest sludge that require, or are not destroyed by, the absence of free oxygen.

**AOOC:** Assimilable Organic Carbon - One measure of the "food" available to bacteria within a water system. More complex carbon compounds can become assimilable when oxidized by strong disinfectants.

**ARRA:** American Recovery and Reinvestment Act of 2009 – principal forgiveness loans distributed based on the Department of Environmental Protection's Intended Use Plan.

**Ash:** The inert material remaining after the combustion of wastewater sludge. Ash is either wet or dry depending on combustion system design.

**Bacteria:** One-celled microscopic organisms commonly found in the environment. Bacteria can be harmful, such as pathogens, or helpful and perform a variety of biological treatment processes.

**BDOC:** Biologically Degradable Organic Carbon - Another, more precise, measure of the "food" available to bacteria within a water system.

**BGD:** Billion gallons per day.

**Biofilm:** Growth of various bacteria within a water distribution system on the pipe walls. Biofilm growth can contribute to iron corrosion, colored water, poor taste, excessive chlorine demand, and complications with coliform testing.

**Blow-off valves:** Valves operated during pipeline repair to de-water (drain) a portion of a pipeline.

**BOD:** Biochemical Oxygen Demand - An indicator of the amount of biodegradable contaminants in wastewater.

**Board of Directors:** The 11-member governing board of MWRA.

**Bond Resolution:** A document adopted by the Board of Directors that governs MWRA's issuance of revenue bonds and sets forth its obligations to bondholders.

**Boston Harbor Project:** An extensive plan of activities which MWRA developed and implemented to construct new wastewater treatment facilities in response to a federal court order to comply with the provisions of the U.S. Clean Water Act.

**Business Systems Plan (BSP):** The strategic planning framework for MWRA's management information systems. The BSP is updated annually to reflect ongoing business requirements, new opportunities identified by ongoing MWRA strategic planning efforts, technology changes, and user requests.

**BWSC:** Boston Water and Sewer Commission - The agency responsible for providing water and sewer services to the City of Boston, MWRA's largest customer.

**CADD:** Computer aided drafting and design.

**Capital Improvement Program (CIP):** A plan which identifies and estimates the nature, schedule, cost, and financing of long-term assets that MWRA intends to build or acquire during a specific period.

**Capital Investment:** Development of a facility or other asset that adds to the long-term value of an organization.

**Carroll Water Treatment Plant (CWTP):** Water treatment facility for waters from Quabbin and Wachusett Reservoirs with capacity of 405 mgd using ozonation as a primary disinfectant and UV as a secondary disinfectant beginning in 2014.

**CDF:** Cosgrove Disinfection Facility

**Cathodic Protection:** A form of corrosion protection that is particularly effective against galvanic corrosion. Galvanic corrosion occurs when pipe metal is in the presence of other metals

while immersed in water. The interaction of these elements causes an electric current to flow away from the pipe, taking electrons with it and pitting the pipe as a result. Cathodic protection reverses the current, thereby stopping the corrosion.

**Centrifuge:** A machine that uses centrifugal force to separate substances of different densities and remove moisture. MWRA uses centrifuges at the Deer Island Wastewater Treatment Plant to de-water sludge.

**CFM:** Cubic Feet per Minute - A measure of the quantity of a material flowing through a pipe.

**Chloramination:** The process of adding chloramine to drinking water. Chloramine, a form of chlorine and ammonia, is used as a residual disinfectant because it lasts longer in the water distribution system than primary disinfectants.

**Chloramine:** A long lasting residual disinfectant created by combining measured amounts of chlorine and ammonia. Chloramine forms fewer disinfection by-products than chlorine.

**Chlorination:** The process of adding chlorine to drinking water to inactivate pathogens.

**Chlorine:** A relatively strong primary disinfectant, effective against bacteria, *giardia*, and viruses, but not *cryptosporidium*. Concerns exist about the health effects of its by-products, some of which are or will be regulated.

**Clarifiers:** Settling tanks or basins in which wastewater is held for a period of time, during which heavier solids settle to the bottom and lighter materials float to the surface.

**Clean Water Act:** A law passed by Congress in 1972, and subsequently amended, which sets national standards for pollution reduction, permits discharges from wastewater treatment plants, and promotes achievement of the national goal that all surface waters be "fishable and swimmable."

**Cleaning and Lining:** Cleaning and cement lining of unlined cast iron water mains to improve hydraulic capacity and extend useful life.

**CMMS (Computerized Maintenance Management System):** *Maximo* is the computerized maintenance management system which is an essential component of successful asset management. This system is an important tool used in refining the long-term maintenance strategy to ensure proper maintenance and replacement of plant assets.

**Co-Digestion Process:** Introduction of non-wastewater derived organic waste material into the wastewater anaerobic digestion process. Co-digestion could potentially increase digester gas production which would be utilized for heating and electricity generation at Deer Island.

**Coliform bacteria:** A group of lactose fermenting bacteria, which while not of direct health concern, are used as a first line indicator of potential problems. See fecal coliform and *E.coli*.

**Comminutor** - A machine or process that pulverizes and reduces solids to minute particles.

**Commonwealth Debt Service Assistance (DSA):** Funds appropriated by the Commonwealth to offset MWRA capital financing expenses.

**Community Obligation and Revenue Enhancement (CORE) Fund:** A fund established by MWRA's bond resolution that is used to provide insurance against delays by communities in paying charges due to MWRA.

**Composting:** The process of converting wastewater treatment residuals to a soil-like humus material often used in the horticultural industry. The process involves the aerobic breakdown of the residuals and the addition of sawdust or wood chips.

**Corrosion Control:** Adjustments to the chemistry of treated water to reduce its ability to dissolve lead, copper, other metals, or form hydrogen sulfide. Corrosion control can include adjustments to pH and alkalinity, as well as the addition of corrosion inhibitors such as phosphates or oxidizers.

**Coverage Requirement:** Requirement of MWRA's bond resolution which provides that each year, revenue less operating expenses (net revenue) must be more than the amount required for debt service payments on outstanding bonds.

**CP (Construction Package):** Major construction projects such as the Carroll Water Treatment Plant or the North Dorchester Bay CSO project will group areas of work into individual construction contracts.

**Cross-Connection:** A point at which potable water piping is connected to a non-potable water source creating an opportunity for the introduction of pollutants into the potable water.

**Cryogenic oxygen plant:** MWRA operates a cryogenic oxygen-based facility as part of its secondary wastewater treatment program at Deer Island.

**Cryptosporidium:** A protozoan parasite that can cause severe gastrointestinal disease in healthy individuals, and may be fatal to people with compromised immune systems. Cryptosporidia exist in the environment as hard walled oocysts that are very resistant to chlorination, but can be inactivated by disinfection with ozone or ultraviolet light.

**CSO:** Combined Sewer Overflow – An overflow point and the discharged flow from a combined sewer system intended to provide hydraulic relief to avoid system flooding and backups during large wet weather events. During large rainstorms, systems can become overloaded, with the excess discharged directly into surface waters. The discharged flow and the discharge location are called CSOs. In the metropolitan Boston area there are approximately 47 active, permitted CSOs that currently discharge into rivers or Boston Harbor.

**CSO Facilities:** MWRA has six facilities that intercept the flow from CSO pipes. Four of these facilities provide treatment and two provide storage prior to discharge. The CSO facilities have some capacity to store flow and pump it to the Deer Island plant after rainstorms end.

**CT:** Concentration x Contact Time - A measure of disinfection effectiveness established under the Surface Water Treatment Rule. CT is the product of the concentration of disinfectant [C] and the time it has been in contact with the water [T]. Required CT varies by type of disinfectant, organism, temperature, and pH.

**CTG (Combustion Turbine Generator):** CTGs are used to generate electricity during planned cable outages, wet weather operations and for participation in price response events.

**Current Expense Budget:** A financial plan that estimates the revenues and expenses associated with MWRA's operations for a fiscal year.

**C-Value:** The carrying capacity of a water main for a specified length and pressure drop that is determined by its diameter and resistance to flow. The friction coefficient "C" of the main is often used as a measure of flow resistance. C-values for new pipe are about 120 for water mains that are 6 to 16-inches in diameter, and 130 and 140 for larger diameter mains.

**DAF:** Dissolved Air Flotation - A process of adding super saturated air into water to cause coagulated solids to rise to the top to be skimmed off. DAF replaces conventional gravity sedimentation (clarification) and is particularly cost-effective for low turbidity waters subject to periodic algae blooms.

**DBP:** Disinfection By-products - Complex compounds formed by the use of oxidizing agents such as chlorine or ozone in waters containing organic matter.

**D/DBP Stage 1:** Disinfectants/Disinfection By-products, Stage 1 Rule - Promulgated 11/1998, and effective 1/2002, this rule set DBP limits at 80 parts per billion for Trihalomethanes and 60 parts per billion for Haloacetic Acids, averaging all samples over four quarters.

**D/DBP Stage 2:** Disinfectants/Disinfection By-products Stage 2 Rule - The rule further regulates the amount of DBPs allowed in water. The 80/60 values set in Stage 1 will now apply to each individual sample location in a "Locational Running Annual Average".

**Debt Service:** In a given fiscal year, the amount of money necessary to pay interest and principal on outstanding notes and revenue bonds.

**DEP:** Department of Environmental Protection - The Massachusetts agency that regulates water pollution control, water supplies, and waterways and dispenses federal and state grant funds to support these activities.

**Department:** A sub-unit of an MWRA division.

**Department of Conservation and Recreation (DCR):** Created in 2003 through the merger of the Metropolitan District Commission and the Department of Environmental Management, DCR manages the Commonwealth's diverse parks system and protects and enhances natural resources and outdoor recreational opportunities throughout Massachusetts.

**De-watering:** The process of removing water from wastewater treatment residuals. De-watered sludge has the appearance of mud or wet soil material.

**Diffusers:** A system of shafts, rising from the end of MWRA's effluent outfall tunnel to the seabed, which disperses treated wastewater over a large area. Technically, the diffusers are the "sprinkler heads" mounted on top of the riser shafts that lead from the outfall tunnel and disperse wastewater into Massachusetts Bay.

**Digesters:** Tanks for the storage and anaerobic or aerobic decomposition of organic matter present in sludge.

**Direct Program Expenses:** Costs directly associated with providing services or performing activities.

**Disinfection, Primary:** The inactivation (killing) of pathogenic organisms in a water system by the use of chemical or other disinfection agents.

**Disinfection, Residual:** The presence of a measurable residual of disinfectant within a water distribution system to help control bacterial re-growth and guard against contamination.

**Dissolved Oxygen (DO):** A measure of the amount of oxygen in a given amount of water. Adequate levels of DO are needed to support aquatic life. Low dissolved oxygen concentrations can result from inadequate wastewater treatment.

**Division:** A major organizational unit within MWRA, encompassing the activities and resources for providing a major service or function.

**DLS (Department of Laboratory Services):** Laboratory Services is a full service analytical testing and consulting group within the MWRA that primarily serves client groups primarily within the Operations Division. The analytical services that Laboratory Services provides include wet chemistry, metals, organics, and microbiology testing. Related services include field sampling, technical consultation, and contract laboratory management.

**DMR (Discharge Monitoring Report):** Monthly reports that are submitted to federal and state regulators. MWRA monitors the effluent (treated sewage) that is discharged into Massachusetts Bay, to ensure that it meets the standards set out in the NPDES permit. Analytical support to the effluent monitoring program is provided by the Department of Laboratory Services.

**E.coli:** A normal inhabitant of the digestive tract of mammals. The presence of *E.coli* indicates probable contamination by fecal matter.

**Effluent:** Treated wastewater discharged from a treatment plant.

**EIR:** Environmental Impact Report – A document prepared in adherence with the Massachusetts Environmental Policy Act (MEPA) to review the environmental impact of projects and ensure opportunities for public review and comment.



**EIS:** Environmental Impact Statement – A document prepared in adherence with the National Environmental Policy Act to review the environmental impact of projects and ensure opportunities for public review and comment.

**Enabling Act:** Legislation (Chapter 372 of the Acts of 1984) that established MWRA and define its purpose and authority as of January 1, 1985.

**ENF:** Environmental Notification Form - The first step in the MEPA process.

**EOC:** Emergency Operations Center

**EOEA:** Executive Office of Environmental Affairs - The Massachusetts cabinet office that oversees state environmental agencies.

**EPA:** Environmental Protection Agency - The federal government agency responsible for environmental enforcement and investigation.

**ESWTR:** Enhanced Surface Water Treatment Rule - A federal rule that is promulgated in three stages:

1) Interim Enhanced Surface Water Treatment Rule (IESWTR): The IESWTR was promulgated in 1998 and tightened the requirements for the operation of water filtration plants in large systems to take a first step toward controlling *cryptosporidium* in source waters. IESWTR also added *cryptosporidium* to the list of issues considered within watershed protection plans for unfiltered systems.

2) LT1ESWTR primarily extends the IESWTR to smaller systems

3) LT2ESWTR: further tightens the standards for the operation of filtration plants and adds requirements for 99% inactivation of *cryptosporidium* and the use of two primary disinfectants for unfiltered systems. The concept of proportional treatment, with less treatment required for cleaner sources, will be implemented as part of the rule.

**Enterococcus:** A pathogen indicator, similar to fecal coliform, that is used in the Massachusetts Water Quality Standards for marine waters, consistent with the Federal Clean Water Act requirements, which indicates potential contamination from human or animal waste.

**Eutrophication:** Nutrient enrichment of a lake or other water body typically characterized by increased growth of planktonic algae and rooted plants. Eutrophication can be accelerated by wastewater discharges and polluted runoff.

**Expenditures:** Payments for goods and services received.

**Expenses:** Costs associated with the operating activities of a period, including expenditures and accrued costs.

**Facility Information System (FIS):** The management information system at the Deer Island Treatment Plant.

**Fecal coliform bacteria:** A group of bacteria used as a primary indicator organism for potential contamination from human or animal waste. Also called thermo-tolerant bacteria. Specific organisms in the group may or may not be of health concern (see *E.coli*).

**Filtration:** A water treatment process involving the removal of suspended particulate matter by passing the water through a porous medium such as sand or carbon.

**Fiscal Year:** The 12-month financial period used by MWRA that begins July 1 and ends June 30 of the following calendar year. MWRA's fiscal year is numbered according to the calendar year in which it ends.

**Flash coat:** A light coat of shotcrete used to cover minor blemishes on a concrete surface.

**FOD (Field Operations Department):** Department within the Operations Division created 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 Treatment Plant as well as MWRA's industrial pretreatment, permitting, and monitoring programs.

**Force Main:** A pressure pipe joining the pump discharge at a water or wastewater pumping station with a point of gravity flow.

**FRSA (Fore River Staging Area):** The site of the Sludge Pelletization Plant.

**Giardia:** A protozoan parasite that can cause severe gastrointestinal disease, although there is medical treatment available. *Giardia* exist in the environment as hard-walled cysts, and are moderately resistant to chlorine disinfection.

**Goal:** A statement in general terms of a desired condition, state of affairs, or situation. Goals, which are long-term in nature and not usually directly measurable, provide general direction for the activities of operating units.

**Global Positioning System (GPS):** Also known as an Automatic Vehicle Location system (GPS/AVL), this tool provides real-time transmission alerts utilizing a cell phone/satellite communication system and a web-based mapping system to track vehicles and operator-driven mobile equipment in MWRA's service area. The system allows MWRA to respond more quickly to emergencies, enhance driver and vehicle safety, reduce fuel costs, track mileage electronically, monitor unauthorized vehicle usage, and improve efficiency.

**Graphitization:** A corrosion mechanism that alters the molecular structure of the carbon/iron matrix of cast iron pipe. During the process, iron atoms are forced away from the metal leaving behind an unstable carbon matrix. The result is a weakened pipe, easily susceptible to ruptures. High frequency in the number of breaks causes leakage to be a major problem of graphitized pipe.

**Grit:** Sand-like materials that quickly settle out of wastewater.

**Groundwater:** A body of water beneath the surface of the ground. Groundwater is made up primarily of water that has seeped down from the surface.

**HAA:** Haloacetic Acids - A class of disinfection by-products related to chlorine disinfection. HAAs are regulated under D/DBP Stage 1 Rule at 60 ppb.

**Harbor Electric Energy Company (HEEC):** A subsidiary of NStar which installed a cross harbor power cable and built a sub-station to provide power for construction and operation of the new Deer Island Treatment Plant.

**Head House:** A structure containing the control gates to a conduit such as a sewer pipeline.

**Headworks:** A preliminary treatment structure or device, usually including a screening and de-gritting operation, that removes large or heavy materials such as logs and sand from wastewater prior to primary treatment.

**Heavy Metals:** Metals such as lead, silver, gold, mercury, bismuth, and copper that can be precipitated by hydrogen sulfide in an acid solution.

**HOM (Harbor and Outfall Monitoring):** A comprehensive program to provide environmental data that helps to predict and measure the effect of Deer Island outfall discharge on the marine ecosystem.

**Incentives and Other Charges:** A fee system designed to help recover permitting, inspecting, and monitoring costs incurred by MWRA's TRAC Program and provide incentives to permitted users to reduce discharges.

**Indirect Expenses:** Costs not directly associated with providing services or performing activities.

**Infiltration/Inflow (I/I):** The problem of clean water flows entering sewers resulting in diminished pipe capacity for sanitary flows and in costly pumping and treatment of unnecessarily large wastewater volumes. Infiltration is groundwater that leaks into the sewerage system through pipe joints and defects. Inflow, primarily a wet-weather phenomenon, refers to water that enters sewers from improperly connected catch basins, sump pumps, land and basement drains, and defective manholes. Inflow also enters through improperly closed or defective tidegates during high tides.

**Influent:** The flow of water that enters the wastewater treatment process.

**Insurance Reserve:** A fund established to adequately reserve against risks for which MWRA does not currently maintain insurance.

**Interceptors:** The large pipes that convey wastewater from collection systems to treatment plants.

**Investment Income:** Income derived by investing certain operating and reserve fund balances in interest-yielding securities in accordance with the provisions of MWRA's bond resolution.

**ISO - NE (Independent System Operator of New England):** Non-profit wholesale operator of the regional grid system. The MWRA receives payment from ISO-NE when Deer Island and Carroll Water Treatment Plant remove themselves from the grid. Both plants participate in load response programs offered by ISO-NE which pays larger commercial and industrial electricity consumers to “shed load” during grid peaks. There are several programs available such as price, demand response and load response. MWRA constantly evaluates the options and participates in the most advantageous program.

**Labor Costs:** Direct costs of employing permanent and temporary personnel, including wages, salaries, overtime pay, fringe benefits, and workers' compensation.

**Land Application:** The use of wastewater treatment residuals on land for agricultural benefits.

**Landfilling:** The disposal of residuals by burial. Modern landfills have double liners, leachate collection systems, and other design features to protect against groundwater contamination.

**LCR:** Lead and Copper Rule – A federal rule that set an action level for lead and copper at “worst case” consumer taps. Optimized corrosion control, notification, education, and lead service replacements are all components of compliance plans.

**Leachate:** Water that drains from a landfill after having been in contact with, and potentially contaminated by, buried residuals. Modern landfills are designed to collect leachate for subsequent treatment.

**Limnology:** The scientific study of physical, chemical, meteorological, and biological conditions in fresh waters.

**LIMS:** Laboratory Information and Management System – An automated database system used to transfer information between MWRA’s Central Laboratory to its client groups and to process information obtained by the Central Laboratory to monitor substances that enter and leave the MWRA wastewater system. Use of LIMS removes the potential for human error in the sampling process by bar coding samples, eliminating the need to transcribe sample data, producing pre-printed project-specific sample check-off forms for field crews, and automating testing through pre-set test codes and project-specific parameters.

**LOX (Liquid Oxygen):** Liquid oxygen is used together with electrical energy to generate ozone at the Carroll Water Treatment Plant.

**Mapping Protocols:** Sets of specifications defining the content and format of data to be collected.

**MCL:** Maximum Contaminant Level - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available control technology.

**MCLG:** Maximum Contaminant Level Goal - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**Massachusetts Environmental Policy Act (MEPA) Unit:** A unit of the Commonwealth's Executive Office of Environmental Affairs responsible for implementation of the state environmental review process.

**Methane:** A colorless, nonpoisonous, flammable gas produced as a by-product of anaerobic sludge processing. At Deer Island, MWRA uses methane as fuel to provide heat and hot water and to generate electricity.

**MGD:** Million gallons per day.

**MIS:** Management Information Systems

**Mission:** A description of the fundamental purposes and major activities of an operating unit or program.

**Mitigation:** Financial remuneration or non-financial considerations that MWRA provides to communities to alleviate the negative effects of major construction projects.

**Molybdenum (Mo):** A metallic element that resembles chromium and tungsten in many properties, and is used in strengthening and hardening steel. Mo is a trace element in plant and animal metabolism. The concentration of molybdenum in sludge products is strictly regulated.

**NACWA (Nation Association of Clean Water Agencies):** NACWA represents the interests of publicly owned wastewater treatment plants. NACWA is involved in all areas of water quality protection including the development of environmental legislation and assisting federal regulatory agencies in the implementation of environmental programs.

**NEFCo:** New England Fertilizer Company - The contractor responsible for the operation of processing sludge into fertilizer pellets at MWRA's residuals processing plant located in Quincy. NEFCo is also responsible for marketing and distributing the pellets and disposing of any product that is not marketable.

**National Pollutant Discharge Elimination System (NPDES) Permit:** A permit issued by EPA in conjunction with DEP that governs wastewater discharges into surface waters.

**NHS (Northern High Service):** Project that involves a series of water system pipeline improvements in the MWRA's Northern High Service Area.

**Nitrification:** An aerobic process in which bacteria changes the ammonia and organic nitrogen in wastewater into oxidized nitrogen (usually nitrate). Second-stage BOD is sometimes referred to as the nitrification stage (first-stage BOD is called the carbonaceous stage). Also, a similar process in the water distribution system, where ammonia from chloramine can be used by nitrifying bacteria, resulting in a reduced chlorine residual, and the potential for additional bacteria growth.

**OCC:** Metropolitan Operations Control Center, located at MWRA's Chelsea Facility.

**OEP (Office of Emergency Preparedness):** The Office of Emergency Preparedness has oversight over security, exercises, emergency operations, planning, the Emergency Services Unit and critical infrastructure protection.

**OMS (Operations Management Systems):** OMS correlates PICS data with laboratory analysis to track and analyze DITP's process performance with regard to the plant's discharge permit from EPA and DEP and with respect to cost effective operation.

**Operating Reserve:** A fund established to adequately reserve for operating contingencies, required by MWRA's bond resolution to be not less than one-sixth of its annual operating expenses.

**Organic Matter:** Material containing carbon, the cornerstone of plant and animal life. It originates from domestic and industrial sources.

**Other User Charges:** Revenue received per agreements MWRA has for provision of water, sewer, and other services to entities other than communities which are charged assessments.

**Outfall:** The pipe or structure where effluent is discharged into receiving waters.

**Ozonation:** The application of ozone to water, wastewater, or air, generally for the purposes of disinfection or odor control. The Carroll Water Treatment Plant (CWTP) employs the ozonation process to inactivate pathogens, including *cryptosporidium*, with lower levels of DBPs.

**Ozone:** A strong disinfectant made from oxygen and electrical energy. Ozone is effective against *cryptosporidium*.

**Pathogens:** Harmful organisms, often called germs that can cause disease. Waterborne pathogens (or the diseases they cause) include *giardia*, *cryptosporidium*, cholera, typhoid, *E.coli*, Hepatitis A, *legionella*, and MAC.

**Payments in Lieu of Taxes (PILOT):** Amounts which MWRA pays each fiscal year to cities and towns for land owned by the Commonwealth in the Quabbin, Ware River, Wachusett, and

Sudbury watersheds. Consistent with the provisions of MWRA's Enabling Act, these payments are based on the past commitments of the Commonwealth of Massachusetts.

**Penalty Revenue:** Revenue derived from penalties assessed by MWRA to violators of its sewer use regulations.

**Performance Measure:** An indicator of the work and/or service provided, defined by output, work or service quality, efficiency, effectiveness, or productivity.

**Performance Objective:** A statement of proposed accomplishments or attainments that is short-term in nature and measurable.

**PICS (Process Instrumentation and Control System):** PICS provides real-time operations data from systems throughout Deer Island (including system status, flow, etc.).

**Plume:** The rising discharge of treated wastewater effluent from a treatment plant outfall pipe.

**Preliminary Treatment:** The process of removing large solid objects, sticks, gravel, and grit from wastewater.

**Pretreatment:** The reduction or elimination of pollutant properties in wastewater prior to discharge into a sewer system.

**Primacy:** Primary enforcement authority for Federal Safe Drinking Water Act regulations delegated to a state by the Environmental Protection Agency (EPA).

**Primary Treatment:** A wastewater treatment process that takes place in a rectangular or circular tank and allows substances in wastewater that readily settle or float to be separated from the water being treated. Primary treatment results in 50-60% removal of suspended solids and 30-34% removal of BOD.

**Program:** An organized group of activities and the resources to carry them out aimed at achieving one or more related objectives.

**Rate Revenue:** Revenue received from annual assessments of communities within MWRA's service area for water and sewer services.

**Rate Stabilization Reserve:** A fund established by the Board of Directors that is used to reduce rate revenue requirements. MWRA finances this reserve with unexpended or surplus funds available from the Current Expense Budget at the end of each fiscal year.

**RCM (Reliability Centered Maintenance):** A maintenance strategy adopted at Deer Island in FY00 for critical systems. RCM is a failure modes and effects process that involves maintenance, operations and engineering staff in the development of preventative maintenance and operation plans for plant systems.

**Relief Sewer:** A sewer built to carry flows in excess of the capacity of an existing sewer.

**RGGI:** The Regional Greenhouse Gas Initiative is a mandatory, market-based program in the United States to reduce greenhouse gas emissions. The program involves selling emission allowances through auctions and investing the proceeds in demand-side management and clean energy technology projects.

**Remote Headworks:** The initial structures and devices of a treatment plant set apart by some distance from the plant site.

**Renewal and Replacement Reserve:** A fund established to adequately reserve for the cost of capital improvements not provided for by funds available through the Capital Improvement Program or the Current Expense Budget.

**Residuals:** The by-products of the wastewater treatment process, including scum (floatables), grit and screenings, primary sludge, and secondary sludge.

**Revenue Bonds:** Bonds payable from a specific source of revenue and which do not pledge the full faith and credit of the issuer.

**RPS (Renewable Portfolio Standards):** State policies which mandate a state to generate a percent of its electricity from renewable resources. Qualified renewable generation facilities for the MWRA include: the Steam Turbine Generator (STG) and a variety of Hydroelectric, Wind and Solar units. The MWRA is issued electronic certificates for each megawatt hour of electricity produced from the digester gas, which is considered renewable energy. RPS credits are a source of revenue for the MWRA.

**Safe Yield Model:** The equation used to determine the maximum dependable draft that can be made continuously on a water supply source during a period of years during which the probable driest period or period of greatest deficiency in water supply is likely to occur.

**SAMS:** Sewerage Analysis and Management System – A database which contains specifications of the location, size, and condition of MWRA wastewater interceptors and appurtenances and which produces maps for use by MWRA and outside parties.

**Sanitary Sewers:** In a separate system, pipes that carry only domestic wastewater.

**SCADA:** Supervisory Control and Data Acquisition - Equipment for monitoring and controlling water or wastewater facilities remotely.

**SCBA:** Self-contained breathing apparatus.

**Screenings:** Large items such as wood and rags that are collected from wastewater in coarse screens prior to primary treatment.



**Scum:** Floatable materials such as grease, oil, and plastics that are skimmed from the surface of wastewater as it flows through large settling tanks.

**SDWA:** Safe Drinking Water Act - A Federal law enacted in 1986 and amended in 1996 that requires EPA to establish national primary drinking water regulations for water suppliers which consist of MCLs or treatment techniques.

**Secondary Treatment:** Usually following primary treatment, secondary treatment employs microorganisms to reduce the level of BOD and suspended solids in wastewater.

**Sedimentation Tanks:** Settling tanks where solids are removed from sewage. Wastewater is pumped to the tanks where the solids settle to the bottom or float on the top as scum. The scum is skimmed off the top, and solids on the bottom are pumped out for further treatment and/or final disposal.

**Seeding:** The initial filling of sludge into digesters.

**Sensitive user:** A member of a group within the general population likely to be at greater risk than the general population of adverse health effects due to exposure to contaminants in drinking water. Sensitive users include infants, children, pregnant women, the elderly, and individuals with histories of serious illness.

**Septic Tanks:** Tanks used for domestic wastes when a sewer line is not available to carry them to a treatment plant. Periodically, the septage is pumped out of the tanks, usually by commercial firms, and released into a wastewater treatment system.

**Shotcrete:** Mortar or concrete conveyed through a hose and projected at high velocity onto a surface; also known as air-blown mortar, pneumatically applied sprayed mortar, or gunned concrete.

**Siphon:** A closed conduit, a portion of which lies above the hydraulic grade line, resulting in a pressure less than atmospheric and requiring a vacuum within the conduit to start flow. A siphon utilizes atmospheric pressure to effect or increase the flow of water through the conduit.

**Slip Lining:** Insertion by pushing or pulling of lines fabricated of plastic, concrete cylinder pipe, reinforced concrete, or steel through existing conduits from access pits.

**Sludge:** Material removed by sedimentation during primary and secondary treatment. Sludge includes both settled particulate matter and microorganisms and is the single largest component of wastewater residuals. At the time sludge is removed during the treatment process, it contains only 0.5% to 5% solid content by weight. It has the appearance of muddy water.

**Sodium Hypochlorite (NaOCl):** A liquid form of chlorine that MWRA uses in the disinfection and/or odor processes at the Deer Island Treatment Plant, various other Wastewater facilities, and the Carroll Water Treatment Plant (CWTP).

**Storm Sewers:** Separate systems of pipes that carry only water runoffs from roofs, streets, and parking lots during storms.

**Surcharging:** Loads on a system beyond those normally anticipated; also, the height of wastewater in a sewer manhole above the crown of the sewer when the sewer is flowing completely full.

**Suspended Solids:** The particulate matter contained in wastewater.

**SWTR:** Surface Water Treatment Rule – A Federal rule promulgated in 1989 that affects all utilities using surface waters or waters under the influence of surface waters. SWTR requires filtration unless certain criteria on source water quality, watershed control, and disinfection effectiveness can be met (see also ESWTR).

**Telemetry:** Remote measuring or monitoring devices connected to a central monitoring station via telephone lines.

**TCR:** Total Coliform Rule – A federal rule that requires monitoring of water distribution systems for coliform bacteria and chlorine residual. No more than 5% of the coliform samples in a month can be positive.

**TOC:** Total Organic Carbon - A measure of the amount of organic material in water. Often used as a surrogate for disinfectant demand or DBP precursors.

**Transition:** A short section of conduit used as a conversion section to unite two conduits having different hydraulic elements.

**TTHM:** Total Trihalomethanes - A class of disinfection by-products, related to primarily chlorine disinfection (see D/DBP Rule).

**TRAC:** Toxic Reduction and Control – The department responsible for MWRA's industrial pretreatment program.

**TSS (Total Suspended Solids):** A measure of the settleable solids and non-settleable solids in wastewater. During the primary treatment process, flows are routed to primary treatment clarifiers that remove about half of the pollutants brought to the plant in typical wastewater (50-60% of total suspended solids and up to 50% of pathogens and toxic contaminants are removed).

**Ultraviolet (UV) Treatment:** Ultraviolet light is an effective method of disinfection in drinking and wastewater applications. UV light damages the DNA of microbes, and is particularly effective against cryptosporidium. Federal regulations require two primary disinfectants for unfiltered water systems. The Carroll Water Treatment Plant added UV as a second disinfectant (in addition to ozonation) in February 2014 and will add at the Quabbin Disinfection Facility in Ware by October 2014.

**United States Geological Survey (USGS):** The federal agency that collects Geographic Information System (GIS) data for developing mapping protocols.

**Vector Jet Truck:** A vehicle used to clean and/or remove blockages from sewer lines by pushing and/or pulling fluids in the sewer.

**VMM:** Vehicle Management and Maintenance – The program responsible for management and maintenance of MWRA’s vehicles and heavy equipment.

**WASM (Weston Aqueduct Supply Mains):** Project involving the rehabilitation of the four Weston Aqueduct Supply Mains that carry potable water to MWRA’s service area. When complete, they will transmit about one-third of the water to MWRA’s service area and the City tunnel will carry the remaining two-thirds.

**Wastewater:** The water carried by sewers serving residences and businesses that enters wastewater facilities for treatment. Wastewater is any water that has been adversely affected in quality by anthropogenic influence. It comprises liquid waste discharged by domestic residences, commercial properties, and/or agricultural and can encompass a wide range of potential contaminants and concentrations.

**Wastewater Treatment Plant (WTP):** A facility containing a series of tanks, screens, filters, and other equipment and processes for removing pollutants from wastewater.

**Watershed Reimbursement:** An amount that MWRA pays to the Department of Conservation and Recreation (DCR) each fiscal year for maintaining and managing the primary sources of MWRA's water supply (watersheds) in accordance with the laws of the Commonwealth of Massachusetts. The amount of the reimbursement is determined by prevailing legislation.

**Wholesale Water and Sewer Services:** Potable water and wastewater collection, transport, delivery, and treatment services that MWRA provides to communities. Communities provide the same services directly to retail customers or end users.

**WOCC:** Western Operations Control Center, located at the Carroll Water Treatment Plant.

**APPENDIX F**  
**FY15 Current Expense Budget - Capital Financing Detail (as of 6/30/2014)**

	<b>Outstanding as of 6/30/2014</b>	<b>Total</b>	<b>Sewer</b>	<b>Water</b>
<b>SRF<sup>1</sup></b>				
Unrefunded (93A, 93D, 95A,98C)	\$ 3,780,000	6,117	6,117	
1999E Sewer		388,800	388,800	-
1999E Water	\$ 11,424,376	577,349	-	577,349
1999F	\$ 248,850,000	19,270,818	19,270,818	-
2000E Sewer		2,825,835	2,825,835	-
2000E Water	\$ 58,014,466	575,490	-	575,490
2001C Water	\$ 2,330,000	250,007	-	250,007
2001D Sewer		386,254	386,254	-
2001D Water	\$ 4,066,225	81,889	-	81,889
2002H Sewer		3,138,324	3,138,324	-
2002H Water	\$ 85,465,000	1,546,234	-	1,546,234
2002I Sewer		103,291	103,291	-
2002I Water	\$ 1,904,511	1,534	-	1,534
2003A	\$ 806,375	70,111	-	70,111
2003B	\$ 2,106,223	224,729	-	224,729
2003C Sewer		1,362,127	1,362,127	-
2003C Water	\$ 36,949,071	969,617	-	969,617
2004C Sewer		540,161	540,161	-
2004C Water	\$ 9,239,831	90,281	-	90,281
2004D Sewer		2,702,638	2,702,638	-
2004D Water	\$ 54,134,935	644,215	-	644,215
2005C Sewer		418,901	418,901	-
2005C Water	\$ 6,143,563	69,271	-	69,271
2005D Sewer		3,385,857	3,385,857	-
2005D Water	\$ 60,782,940	803,774	-	803,774
2005E Sewer		24,961	24,961	-
2005E Water	\$ 321,917	5,479	-	5,479
2006C Sewer		487,670	487,670	-
2006D Sewer		3,735,194	3,735,194	-
2006D Water	\$ 70,866,163	1,611,774	-	1,611,774
2006E Sewer		22,883	22,883	-
2006E Water	\$ 376,359	10,281	-	10,281
2007C Sewer		308,828	308,828	-
2007C Water	\$ 5,111,845	186,670	-	186,670
2007D Sewer		1,149,882	1,149,882	-
2007E Sewer		3,293,526	3,293,526	-
2007E Water	\$ 64,625,114	1,262,313	-	1,262,313
2008G Sewer		404,622	404,622	-
2008G Water	\$ 5,287,714	82,285	-	82,285
2009C Sewer		5,752,343	5,752,343	-
2009C Water	\$ 96,670,032	1,888,913	-	1,888,913
2009D Sewer		648,990	648,990	-
2009D Water	\$ 10,407,857	85,792	-	85,792
2010C Sewer				
2010C Water	\$ 33,035,745			
2010D Sewer		1,425,263	1,425,263	-
2010D Water	\$ 44,139,395	1,439,551	-	1,439,551
2011A Sewer		383,880	383,880	-
2011A Water	\$ 9,826,049	370,274	-	370,274
2012C Sewer		524,166	524,166	-
2012C Water	\$ 10,941,017	254,659	-	254,659
2012D Sewer		2,856,382	2,856,382	-
2012D Water	\$ 50,470,093	532,246	-	532,246
2013B Sewer		2,213,651	2,213,651	-
2013B Water	\$ 38,738,294	533,550	-	533,550
2014C Sewer		283,286	283,286	-
2014C Water	\$ 10,671,051	384,995	-	384,995
Pool 18 Sewer		2,409,546	2,409,546	-
Pool 18 Water		627,072	-	627,072
Pool 19 Sewer		1,939,875	1,939,875	-
Pool 19 Water		886,208	-	886,208
<b>Total SRF Debt</b>	<b>\$ 1,064,204,066</b>	<b>78,460,634</b>	<b>62,394,071</b>	<b>\$ 16,066,562</b>

**APPENDIX F**  
**FY15 Current Expense Budget - Capital Financing Detail (as of 6/30/2014)**

	Outstanding as of 6/30/2014	Total	Sewer	Water
<b>MWRA Senior Debt</b>				
1993C New/Refunding	\$ 19,625,000	3,937,180	3,445,033	492,148
2002J New	\$ 296,300,000	15,416,475	13,874,828	1,541,648
2002J Refunding	\$ 1,000,000	50,000	25,000	25,000
2004B Refunding	\$ 38,405,000	1,920,250	1,680,219	240,031
2005A Refunding	\$ 344,830,000	44,147,525	19,866,386	24,281,139
2005B Refunding	\$ 80,290,000	4,014,500	1,338,033	2,676,467
2006A New	\$ 149,990,000	6,876,300	-	6,876,300
2006B Refunding	\$ 216,935,000	10,354,800	7,766,100	2,588,700
2007A New	\$ 198,000,000	8,933,188	1,518,642	7,414,546
2007B Refunding	\$ 647,950,000	34,017,375	28,574,595	5,442,780
2009A New	\$ 76,445,000	3,822,250	2,866,688	955,563
2009B Refunding	\$ 271,030,000	13,321,794	9,591,692	3,730,102
2010A New	\$ 96,530,000	4,686,100	3,280,270	1,405,830
2010B Refunding	\$ 173,835,000	17,156,750	9,950,915	7,205,835
2011B New	\$ 140,140,000	9,545,675	6,681,973	2,863,703
2011C Refunding	\$ 327,160,000	16,064,275	6,265,067	9,799,208
2012A New	\$ 139,365,000	6,742,375	3,371,188	3,371,188
2012B Refunding	\$ 86,775,000	4,240,325	890,468	3,349,857
2013A Refunding	\$ 169,835,000	7,527,650	4,215,484	3,312,166
FY14 New Money (2014)		6,260,840	3,819,524	2,441,316
FY15 New Money (2015)		1,800,000	990,000	810,000
Potential Defeasance/Restructuring				
<b>Total Senior</b>	<b>\$ 3,474,440,000</b>	<b>220,835,626</b>	<b>\$ 130,012,102</b>	<b>\$ 90,823,524</b>
<b>Subordinate Debt</b>				
1999B	\$ 58,600,000	1,904,500	1,142,700	761,800
2002C Refunding	\$ 35,120,000	1,141,400	380,429	760,971
2008A Refunding	\$ 334,345,000	64,517,197	56,775,134	7,742,064
2008C Refunding	\$ 113,840,000	9,313,946	8,941,388	372,558
2008E Refunding	\$ 133,640,000	8,152,040	7,499,877	652,163
2008F Refunding	\$ 50,000,000	1,625,000	146,250	1,478,750
2012E Refunding	\$ 62,830,000	2,041,975	428,815	1,613,160
2012F Refunding	\$ 60,300,000	1,959,750	411,548	1,548,203
2012G Refunding	\$ 55,260,000	5,300,759	5,088,729	212,030
2014A Refunding	\$ 50,000,000	1,625,000	146,250	1,478,750
2014B Refunding	\$ 64,755,000	2,104,538	189,408	1,915,130
Potential Defeasanc/Restructuring				
<b>Total Subordinate Debt</b>	<b>\$ 1,018,690,000</b>	<b>99,686,106</b>	<b>\$ 81,150,527</b>	<b>\$ 18,535,579</b>
<b>Total SRF &amp; MWRA Debt Service<sup>2</sup></b>	<b>\$ 5,557,334,066</b>	<b>398,982,365</b>	<b>\$ 273,556,700</b>	<b>\$ 125,425,665</b>
Water Pipeline Commercial Paper	\$ 170,000,000	4,148,453	-	4,148,453
Current Revenue/Capital <sup>3</sup>		10,200,000	9,792,000.000	408,000
Capital Lease		3,217,060	1,955,245.760	1,261,814
CORE Fund Deposit		876,507	99,555.430	776,951
<b>Sub-Total</b>	<b>\$ 170,000,000</b>	<b>18,442,019</b>	<b>\$ 11,846,801</b>	<b>\$ 6,595,218</b>
<b>Total Capital Financing (before Debt Service Offsets)</b>	<b>\$ 5,727,334,066</b>	<b>417,424,385</b>	<b>\$ 285,403,501</b>	<b>\$ 132,020,884</b>
<b>Debt Service Offsets</b>				
FY14 Debt Service Assistance <sup>4</sup>		(853,660)	\$(785,367)	\$(68,293)
Bond Redemption		(6,745,598)	-	(6,745,598)
Total Debt Service Offsets		(7,599,258)	(785,367)	(6,813,891)
<b>Total Capital Financing</b>	<b>\$ 5,727,334,066</b>	<b>409,825,126</b>	<b>\$ 284,618,134</b>	<b>\$ 125,206,992</b>

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

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

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

<sup>4</sup> Debt Service Assistance funds received in FY14 are being applied to the FY15 debt service requirement.