

MASSACHUSETTS WATER RESOURCES AUTHORITY



Fiscal Year 2014 CURRENT EXPENSE BUDGET

BOARD OF DIRECTORS

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MASSACHUSETTS WATER RESOURCES AUTHORITY

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September 2013

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 2014. The CEB was approved by the MWRA's Board of Directors at its June 26, 2013 meeting.

The Final FY2014 budget resulted in a 3.49% combined assessment increase in line with the MWRA Advisory Board recommendation. MWRA was able to reduce the rate revenue requirement in the Final budget by \$1.3 million by reducing direct expenses and the optional pension funding related to the new mortality table increases. It is important to note that MWRA level funded direct expenses, which represent approximately 33% of the total expenses, five times in the past six years through cost control, efficiency improvement initiatives, and self-generation of energy.

The FY2014 total expenses are \$658.4 million, of which 60% or \$392.2 million is for capital financing costs, \$214.4 million for direct expenses, and \$46.8 million for indirect expenses. Debt Service remains the largest component of the budget and represents the greatest rate management challenge in the future, as significant debt obligations come due. However, it is encouraging that FY14 begins a new era in that, for the first time, MWRA will be reducing its total bonded indebtedness over the FY14-18 period by paying more principal than spending for capital projects.

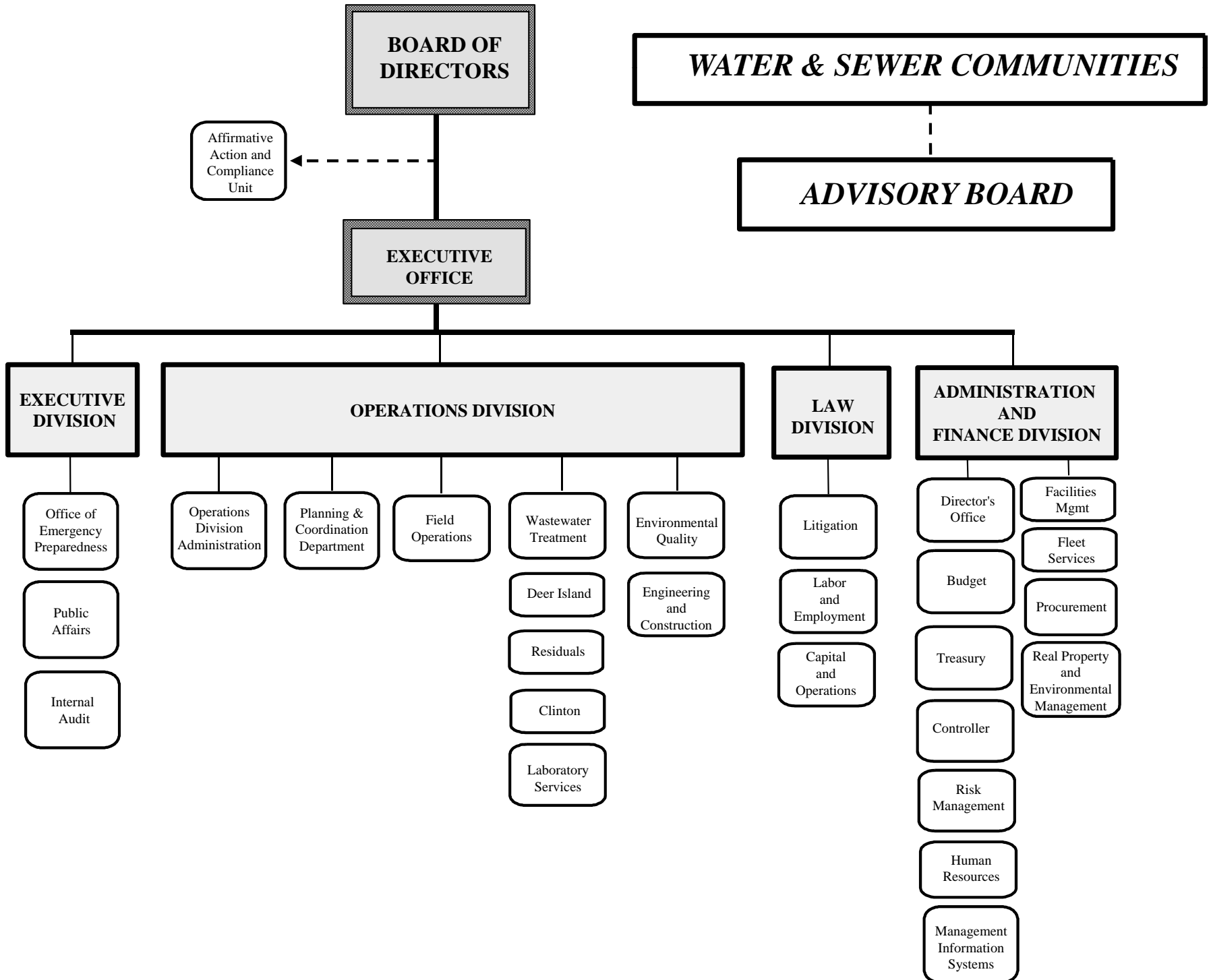
The overall increase from the FY2013 budget is \$22.6 million or 3.5%. In line with MWRA's multi-year rates strategy and past practice, the Authority used the available surplus funds from FY13 to defease debt and thus to achieve targeted rate relief in the most challenging future years.

Additional budget information and a copy of this document are available online at 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



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WATER & SEWER COMMUNITIES

Affirmative Action and Compliance Unit

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EXECUTIVE DIVISION

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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 FY14 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.

FY14 Final Budget Summary

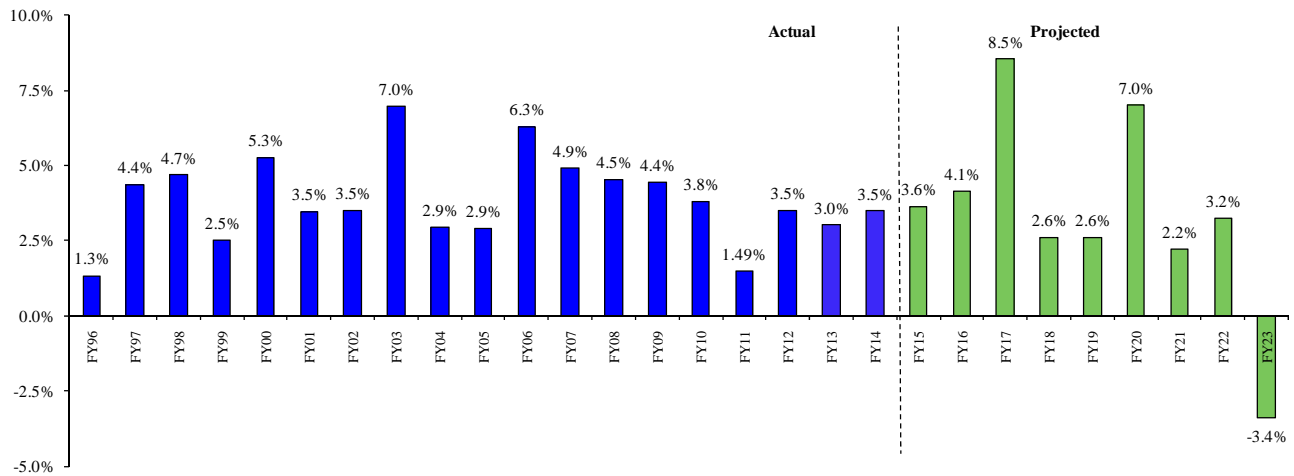
The FY14 Final Budget resulted in a 3.5% final assessment increase versus the 3.9% increase put forth in the FY14 Proposed CEB. MWRA was able to further reduce Indirect Expenses by \$884,000 mainly by cutting the optional Pension payment for the change in mortality tables, lowering Debt Service by \$784,000 to reflect increased defeasance and the latest State Revolving Fund (SRF) structure, and lowering Direct Expenses by \$472,000 mainly to recognize the lower than projected sludge quantities, lower diesel fuel requirements, and updated assumptions for maintenance projects.

However, these measures may not be sustainable in future 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 FY14 Final Budget, projected future rate changes are depicted in the following chart:

Historical and Projected Rate Revenue Changes



Total expenses of \$658.4 million, \$24.4 million or 3.9% above FY13 Actual Spending. Capital financing costs remain the largest component of the budget and account for 60.3% of total expenses. No Debt Service Assistance (DSA) is assumed for FY14.

Total expenses include \$397.2 million for capital financing costs, 60.3% of total costs, and \$261.2 million or 39.7% for operating expenses, of which \$214.4 million is for direct expenses and \$46.8 million is for indirect expenses. Total expenses increased \$24.4 million or 3.9% from the FY13 actuals, \$17.0 million which comes from increased capital financing expenses and \$7.4 million which comes from higher operating expenses.

The \$17.0 million or 4.5% increase in capital financing expenses before offsets reflects debt service associated with the projected issuances of \$100.0 million in new money in June of 2014 as well as new State Revolving Fund (SRF) debt of \$53.8 million to be issued in FY14. Offsetting these issuances, are the impacts of the FY13 defeasance of \$25.4 million, which is estimated to yield savings of approximately \$1.0 million in FY14, \$10.2 million in FY15, and \$15.1 million in FY16.

The \$7.5 million or 2.9% increase in operating expenses from FY13 Actual Spending is mainly due to wages and salaries of \$4.2 million for negotiated cost of living adjustments (COLA), the decision to make an additional \$1.9 million contribution towards the Authority’s Pension liability, Watershed of \$1.2 million mainly for increased Payment in Lieu of Taxes (PILOT) expense and increased operating costs, and higher professional services, maintenance, chemicals, and fringe benefits.

Total Revenues of \$658.4 are budgeted for FY14. The FY14 Final Rate Revenue Requirement is \$628.7 million, an increase of \$21.2 million or 3.5% over the FY13 Rate Revenue Requirement. FY14 non-rate revenues total \$29.7 million, an increase of \$231,000 or 0.8% from FY13 Actual Spending mainly due to a higher use of Rate Stabilization funding and higher Other User Charges of \$420,000 mainly for Chicopee Valley Aqueduct (CVA) adjustments offset by lower Investment Income and lower Other Revenue mainly due to lower energy revenue. The FY14 non-rate revenue budget includes \$11.6 million for Investment Income and \$18.1 million in Other User Charges and Other Revenue –

which includes an estimated \$2.6 million from the sale of renewable energy portfolio credits and participation in demand response programs and \$707,000 in energy revenue from wind, hydroelectric, and solar production.

Table I-1 shows MWRA's FY14 Final Budget for revenue and expenses compared with the FY13 Actual and FY12 Actual. Changes from FY13 to FY14 are described in the Revenue and Expense section of the Executive Summary.

Table I-1

TOTAL MWRA	FY12 Actual	FY13 Actual	FY14 Final	Change FY14 Final vs FY13 Actual	
				\$	%
EXPENSES					
WAGES AND SALARIES	\$ 89,887,813	\$ 90,658,806	\$ 94,874,284	\$ 4,215,478	4.6%
OVERTIME	3,086,175	3,542,871	3,580,025	37,154	1.0%
FRINGE BENEFITS	17,662,544	17,536,480	18,063,825	527,345	3.0%
WORKERS' COMPENSATION	1,600,726	2,114,701	2,000,000	(114,701)	-5.4%
CHEMICALS	9,271,528	10,139,257	10,671,225	531,968	5.2%
ENERGY AND UTILITIES	22,766,837	23,057,581	22,760,588	(296,993)	-1.3%
MAINTENANCE	26,776,012	26,956,073	27,761,580	805,507	3.0%
TRAINING AND MEETINGS	184,229	320,596	330,917	10,321	3.2%
PROFESSIONAL SERVICES	5,099,517	5,002,664	6,083,402	1,080,738	21.6%
OTHER MATERIALS	5,513,699	6,955,029	5,969,470	(985,559)	-14.2%
OTHER SERVICES	22,985,817	22,323,327	22,278,699	(44,628)	-0.2%
TOTAL DIRECT EXPENSES	\$ 204,834,898	\$ 208,607,384	\$ 214,374,017	\$ 5,766,633	2.8%
INSURANCE	\$ 2,076,962	\$ 2,220,704	\$ 2,093,618	\$ (127,086)	-5.7%
WATERSHED/PILOT	25,629,604	26,004,694	27,214,833	1,210,139	4.7%
HEEC PAYMENT	3,561,130	3,492,064	3,346,854	(145,210)	-4.2%
MITIGATION	1,744,579	1,517,791	1,566,797	49,006	3.2%
ADDITIONS TO RESERVES	195,467	1,398,329	169,304	(1,229,025)	-87.9%
RETIREMENT FUND	5,488,792	10,490,247	7,455,103	(3,035,144)	-28.9%
POSTEMPLOYMENT BENEFITS/ ADDITIONAL PENSION DEPOSIT	1,874,378	-	4,976,411	4,976,411	
TOTAL INDIRECT EXPENSES	\$ 40,570,912	\$ 45,123,829	\$ 46,822,920	\$ 1,699,090	3.8%
DEBT SERVICE (before offsets)	\$ 365,136,323	\$ 380,244,437	\$ 397,226,267	\$ 16,981,830	4.5%
VARIABLE RATE DEBT				-	
BOND REDEMPTION				-	
DEBT SERVICE ASSISTANCE	(384,323)	-	-	-	
TOTAL DEBT SERVICE	\$ 364,752,000	\$ 380,244,437	\$ 397,226,267	\$ 16,981,830	4.5%
TOTAL EXPENSES	\$ 610,157,810	\$ 633,975,651	\$ 658,423,205	\$ 24,447,553	3.9%
REVENUE & INCOME					
RATE REVENUE	\$ 589,700,000	\$ 607,512,000	\$ 628,721,001	\$ 21,209,001	3.49%
OTHER USER CHARGES	7,264,794	7,707,031	8,127,379	420,348	5.5%
OTHER REVENUE	5,655,582	8,173,785	6,444,291	(1,729,494)	-21.2%
RATE STABILIZATION	1,091,780		3,500,000	3,500,000	
INVESTMENT INCOME	16,267,462	13,590,492	11,630,534	(1,959,958)	-14.4%
TOTAL REVENUE & INCOME	\$ 619,979,621	\$ 636,983,308	\$ 658,423,205	\$ 21,439,896	3.4%

FY14 Goals:

- Ensure delivery of reliable and cost-effective water and sewer services to customer communities.
- Continue close monitoring of financial markets to maximize investment income and reduce debt financing obligations while managing overall risk exposure to preserve MWRA's strong credit ratings.
- Continue the Authority's long-term assessment management strategy of providing reasonable and predictable rate increases to MWRA's 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.
- 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.
- 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.
- Timely and cost effective resolution of legal disputes involving MWRA, through litigation or alternative means of dispute resolution.
- Advocacy of MWRA interests in new and developing regulatory issues.
- 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.

FY14 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.
- Continue to identify, assess, and implement initiatives to reduce energy demand and increase energy self-generation in MWRA's system. Pursue grant-funding and cost-sharing arrangements to defray costs of implementing these initiatives.
- Identify and implement strategies for workforce succession in preparation for expected retirement of many MWRA employees in the upcoming five to ten years.
- 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.
- Continue implementation of the electronic procurement (e-procurement) process.

FY13 Accomplishments:

- At DITP, treated 98.9% of flow through secondary and met secondary permit limits at all times. Operated DITP without any NPDES Permit violations during FY13.
- Maintained MWRA's strong credit ratings, Aa1, AA+, AA+ from Moody's, Standard & Poor's and Fitch respectively. MWRA's credit ratings from all three major agencies are only one ratings step below the highest rating of AAA. These high credit ratings enable MWRA to borrow at very advantageous interest rates helping to minimize debt service expenses.
- Continued the new construction and rehabilitation of facilities including integrated security and surveillance system improvements.
- Completed the Massachusetts Water Pollution Abatement Trust Pool 17 borrowing. This \$40.6 million borrowing is made at subsidized interest rates contributing to a lower overall cost of debt for the Authority.
- Completed the 2012 Series E, F, and G transaction. These three bond series of \$62.8 million, \$60.3 million, and \$57.8 million respectively replaced the 2008B and 2008C1 variable rate bond series. These bonds were issued as direct competitive placement variable rate bonds. This mode provides additional diversification from liquidity bank risk.
- Completed pricing the 2013A \$170.6 million Refunding for savings transaction for an All-In-True Interest Cost of 2.45%, the lowest in MWRA history to that point. Taking advantage of the low interest rates, the refunding resulted in a net present value savings of \$13.1 million.
- Provided information and worked with communities expressing interest in joining the Authority.
- Distributed a total of \$27.4 million in grants and interest free loans (\$12.3 million in grants and \$15.1 million in loans) to member sewer communities through the Infiltration/Inflow (I/I) Local Financial Assistance Program and \$37.3 million in 10-year interest free loans to member communities as part of the Local Pipeline and Water System Assistance Loan Program.
- Received revenue for energy generated at numerous facilities including the following: hydroelectric \$281,000 from Oakdale Station, \$204,000 from Cosgrove Station, and \$33,000 from the Loring Road Pump Station; solar \$92,000 from CWTP; wind \$344,000 from Charlestown Pump Station.
- Competitively bid Renewable Energy Portfolio Standard certificates which resulted in FY13 revenues of \$486,000 (Class II). In addition, received FY13 revenues of \$1.4 million from forward marketing of CY12 (Class I and Solar) Renewable Portfolio Standards (RPS) certificates.
- Continued 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 \$2.4 million in revenue for FY13. Deer Island also self-generated ~26% of the plant's total required power during that period.

- Awarded the following major contracts in FY13: DITP Expansion Joint Repair Construction 2; Sudbury Aqueduct Pressurization and Connections; Letters of Credit, Liquidity Facilities or Direct Purchases; Nut Island Switchgear Modifications; Caruso Pump Station Improvements Design; Wachusett Aqueduct Emergency Interconnection Valves; DITP Concrete Steel Restoration and Coating, Phase IV; North Dike Tree Removal at Wachusett Reservoir; and DITP Replacement of Four Gravity Thickener Center Columns; Disclosure Counsel Services; DITP North Main Pump Station ESDC/REI; Quabbin UV Disinfection; Security Improvements at Various Facilities Design; Quabbin UV Disinfection Facilities; DITP Waste Sludge Centrifuges Power and Control Systems Upgrade; Roof Replacement Bellevue and New Neponset Pump Station; DITP Electrical Equipment Upgrade Construction 4; Rehab of WASM 3 Design; and Audit Services; Automatic Vehicle Locator Tracking System; Gillis Pump Station Short Term Improvements; and Nut Island Electrical Improvements.

Advertised or received bids/proposals/statements for the following: 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; and Webster Avenue Pipe Replacement Design.

- Directed the development of the next five-year CIP cap which is significantly lower than the prior two (2) caps, reflecting the changing nature of the capital program from mandated projects to asset protection and water redundancy initiatives.
- Procured Energy Management System for Southborough facility and LED outdoor lighting retrofits for numerous water and wastewater facilities. Completed indoor lighting retrofits at the Cottage Farm and Prison Point wastewater facilities. Completed energy audits at six MWRA facilities in the southern system.
- Commenced implementation of the IT Study recommendations.
- Procured the Authority's vehicle purchases at the beginning of Fiscal Year 2013 including 33 vehicles procured through the use of a "Reverse Auction" format.
- Began preparation for development and implementation of an electronic procurement (e-procurement) process for construction contracting based upon Lawson Strategic Sourcing.
- Successfully negotiated and implemented an agreement with all five collective bargaining units regarding the use of an Automated Vehicle Locator Tracking System at MWRA.
- 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 is \$490,700 of which MWRA and the host community each receive half. Currently renegotiating five of the nine permit agreements which are due for renewal.
- Identified \$3.1 million in savings related to: internal audits, management advisory services, consultant audits, construction labor burden reviews, a construction claim settlement, review of three CSO financial assistance agreements, the early termination of two janitorial services contracts, and the true-up of CY 2011 and 2012 HEEC billings.
- Recycled 36.61 tons of paper, 222.60 tons of scrap metal, and 5777.36 pounds of brass, copper, stainless steel and aluminum, generating \$62,767 in revenues.
- The TRAC Department completed the following Environmental Protection Agency (EPA)-required work for significant industrial users: 122 inspections, 23 monitoring events, and 284 sampling of connections. This department also issued or renewed 101 permits to Significant Industrial Users (SIUs) and non-SIUs.

- Met all water quality and treatment standards for giardia in the drinking water system during the first six months of FY13. Also, maximum turbidity results at Quabbin and Wachusett were within DEP standards.
- Successfully negotiated a successor lease agreements for Charlestown Navy Yard (CNY) headquarters which resulted in budgetary savings.
- In the wastewater system, inspected 32.25 miles and cleaned 28.7 miles of MWRA pipeline. Also inspected 1,168 structures and rehabilitated 132 manholes.
- In the water system, exercised 988 and replaced 23 mainline valves and exercised 521 and replaced 15 blow-off valves.

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 FY14 Final Budget.

Table I-2

SOURCES & USES OF FUNDS*		
\$ in Millions		
<i>Sources of Funds</i>		
Other User Charges	\$8.1	1.2%
Other Revenue	6.4	1.0%
Investment Income	11.6	1.8%
Rate Revenue	628.7	95.5%
Rate Stabilization	3.5	0.5%
TOTAL REVENUE	\$658.4	100.0%
<i>Uses of Funds</i>		
Total Expenses before Debt		
Service Offsets	\$658.4	
Less:		
Debt Service Assistance	0.0	
Bond Redemption	0.0	
Sub-Total Net Expenses	658.4	
Capital Financing	397.2	60.3%
Direct Expenses	214.4	32.6%
Indirect Expenses	46.8	7.1%
TOTAL EXPENSES	\$658.4	100.0%
TOTAL EXPENSES Less Offsets	\$658.4	

*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 FY14 Final Budget, 95.5% of revenue is derived from rate revenue. The remaining 4.5% 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 FY14 Final Budget, the MWRA will raise \$628.7 million of its total revenue requirements from water and sewer assessments to member communities. Of the \$628.7 million, \$425.5 million will fund the sewerage system, an increase of 3.4% as compared to FY13; and \$203.2 million will fund the water system, an increase of 3.7% as compared to FY13.

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 FY14 Final Budget total \$8.1 million, an increase of \$420,000 or 5.5% from FY13 Actual Spending and includes \$4.6 million paid by the Chicopee Valley Aqueduct communities, \$1.5 million for the transfer of the water used at Deer Island, \$651,000 in entrance fees paid by Stoughton and Wilmington, \$500,000 for the Commonwealth's partial reimbursement for Clinton Wastewater Treatment Plant expenses, \$474,000 in water revenue, and \$339,000 in sewer revenue to contract communities.

Other Revenue

Other Revenue is budgeted at \$6.4 million, a decrease of \$1.7 million or 21.2% from the FY13 Actual Spending, reflecting unplanned revenues totaling over \$2.0 million recorded in FY13 including, \$724,000 for sale of land in Chelsea and surplus vehicles and equipment, \$712,000 for Miscellaneous Revenue (including NSTAR and a variety of other vendor rebates and other smaller items), \$433,000 for Federal Emergency Management Agency (FEMA) reimbursements, and \$239,000 for higher net energy related revenue mostly for Charlestown Wind and Renewable Portfolio Standard (RPS) sales.

Other Revenue includes \$3.3 million for the sale of Renewable Portfolio Credits, sale of generated power, and revenues for demand response programs, in addition to \$2.3 million in permit fees and penalties.

Permit Fees and Penalties

The FY14 Final Budget includes \$2.3 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 FY14 Final Budget includes \$4.1 million in miscellaneous revenues of which \$3.3 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 as well as large number of miscellaneous revenue items.

Investment Income

MWRA earns income by investing reserves and fund balances in a variety of interest-yielding securities. The FY14 Budget includes \$11.6 million in investment income, a decrease of \$2.0 million or 14.4% from FY13 Actual Spending due lower average fund balances and lower short-term interest rate projections. The FY14 short-term interest rate is 0.20%, 20 basis points less than the FY13 Budget of 0.40%.

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 FY14 Final Budget, \$3.5 million in Rate Stabilization fund usage is projected.

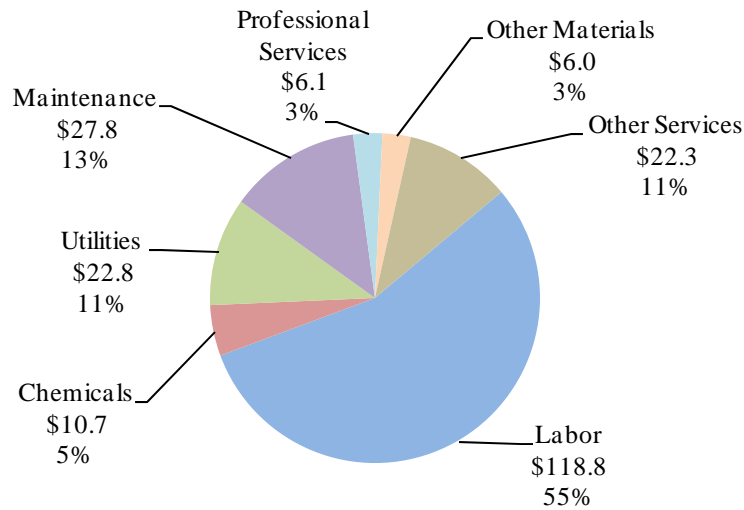
Direct Program Expenses

The FY14 Final Direct Expense Budget is \$214.4 million, \$5.8 million or 2.8% above FY13 Actual Spending. The principal drivers for the increase are wages and salaries due to wage increases, professional services due to lower than projected need in FY13 and newly identified initiatives for FY14, maintenance due to increased projects, chemicals due to pricing, and fringe benefits due to increased rates offset by lower headcount funding, other materials due to FY13 one-time purchase of radios, and lower electricity due to FY13 congestion pricing during the winter heating season. 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 55%, followed then by maintenance 13%, other services 11%, and utilities 11%.

FIGURE I-1
Direct Expenses by Category
(in millions)



- Wages and Salaries** – The FY14 Final Budget includes \$94.9 million for wages and salaries as compared to \$90.7 million, an increase of \$4.2 million or 4.6% over FY13 Actual Spending largely due to contractual agreements, lower than budgeted headcount in FY13, and the mix effect of salaries of those retiring being generally higher than new hires. Of the \$94.9 million, \$93.0 million is for regular pay. The final budget assumes a headcount of 1,175 funded positions, 20 positions lower than the FY13 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 FY14 Final Budget includes \$3.6 million for overtime, essentially level funded with the FY13 Actual Spending. The FY14 Budget assumes overtime will be limited to coverage, emergencies, and critical maintenance projects.
- Fringe Benefits** – The FY14 Final Budget includes \$18.1 million for fringe benefits, an increase of \$527,000 or 3.0% from FY13 Actual Spending mainly due to increased healthcare and dental costs.
- Workers' Compensation** – The FY14 Final Budget includes \$2.0 million for workers' compensation, a decrease of \$115,000 or 5.4% from FY13 Actual Spending. The FY14 Final Budget is based on the average actual spending for FY10-12.
- Chemicals** – The FY14 Final Budget includes \$10.7 million for chemicals, an increase of \$532,000 or 5.2% from FY13 Actual Spending. The majority of the increase in the budget is due to projected chemical cost increases and increased usage of several chemicals based on historical trends and dosing changes.

- **Utilities** – The FY14 Final Budget includes \$22.8 million for utilities, a decrease of \$297,000 or 1.3% from FY13 Actual Spending mainly due to lower projected pricing for electricity in FY14 than in FY13 offset by higher costs for natural gas and diesel fuel. The budget assumes funding of \$16.3 million for electricity, \$3.6 million for diesel fuel, \$2.0 million for water and \$628,000 for natural gas. The FY14 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 FY14 Final Budget includes \$27.8 million for maintenance projects, an increase of \$806,000 or 3.0% from FY13 Actual Spending. FY13 Actual Spending was lower than projected due to the large number of capital maintenance projects that were underway in FY13 to the large number of capital projects that were being addressed.
- **Training and Meetings** – The FY14 Final Budget includes \$331,000 for training initiatives, and is primarily level funded with FY13 Actual Spending.
- **Professional Services** – The FY14 Final Budget \$6.1 million for professional services, an increase of \$1.1 million or 21.6% from FY13 Actual Spending mainly due to lower than projected need in FY13 and new initiatives identified for FY14. The budget reflects funding for Security of \$1.8 million, regulatory monitoring of \$1.7 million, and Other professional services funding of \$1.2 million to support items such as the Authority-wide MIS initiatives, Treasury outside consulting support services, and energy audits.
- **Other Materials** – The FY14 Final Budget includes \$6.0 million for other materials, a decrease of \$986,000 or 14.2% from FY13 Actual Spending mainly due to the FY13 purchase of radios. The budget includes funding of \$1.7 million for vehicle purchases, \$1.1 million for vehicle expenses mostly for gasoline purchases, \$808,000 for lab and testing supplies, \$540,000 for equipment and furniture, and \$437,000 for computer hardware needs.
- **Other Services** – The FY14 Final Budget includes \$22.3 million for other services, which is level funded with FY13 Actual Spending. The budget includes funding of \$13.8 million for sludge pelletization, \$3.3 million for Space/Lease Rentals and related expenses for the CNY and Chelsea facilities, and \$1.4 million for voice and data costs. The largest decrease, or \$350,000, is related to Space Lease/Rentals due to the favorable negotiation of the Charlestown Navy Yard facility lease.

Functional Area Budget Summary

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 FY14 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

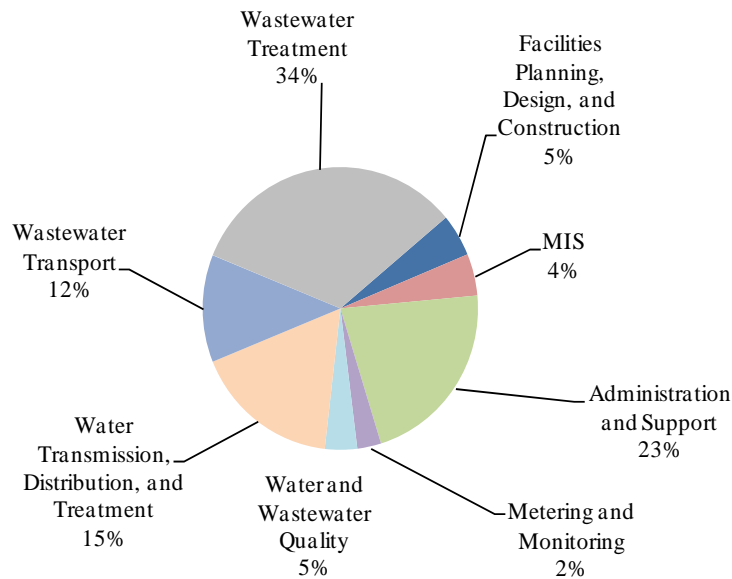
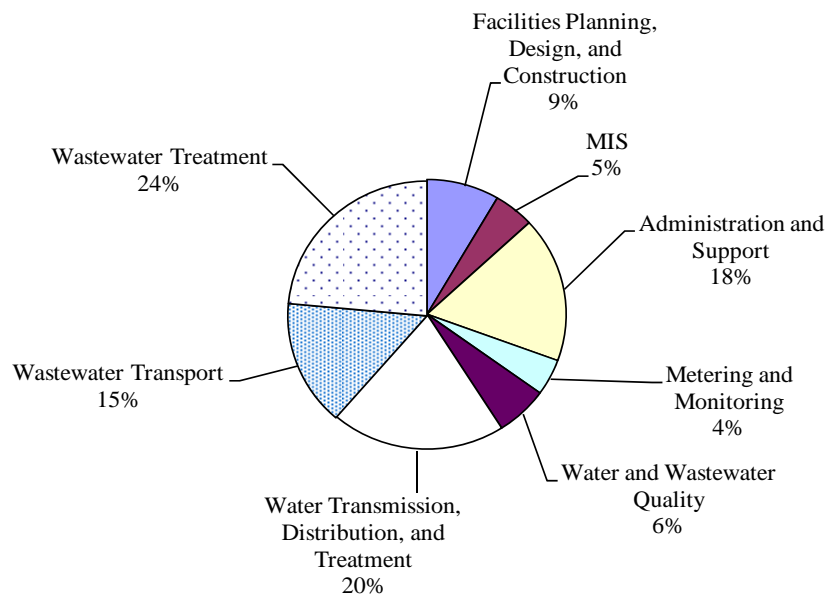


Figure I-3 on the following page illustrates staffing by Functional Area and shows the breakdown of the 1,172 filled positions as of June 2013. Of the 1,175 funded positions, 58% are devoted to operating and maintaining the water and wastewater treatment and transport systems; 23% to administration and support and MIS functions, and 9% 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 FY14 Budget Indirect Expenses total \$46.8 million, an increase of \$1.7 million or 3.8% above FY13 Actual Spending. Below are the highlights of major changes:

- The FY14 Final Budget includes \$27.2 million for the Department of Conservation and Recreation (DCR) Office of Watershed Management, an increase of \$1.2 million or 4.7% over FY13 Actual Spending mainly due to increased Payment in Lieu of Taxes (PILOT) payments and operating expenses. The budget is comprised of \$13.4 million for reimbursement of operating expenses net of revenues, \$8.2 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 FY14 Final Budget includes \$12.4 million for the Pension Fund, an increase of \$1.9 million or 18.5% over the FY13 contribution. Of the \$12.4 million contribution, \$5.9 million represents the minimum required contribution for FY14 based on the most recent actuarial evaluation of January 1, 2011, \$1.6 million reflects recognition of the projected increases associated with the revised mortality tables, and \$5.0 million represents the redirection of Other Post Employment Benefit (OPEB) funding included in the FY14 Proposed Budget to the Pension Fund.
- The FY14 Final Budget includes \$3.3 million for the Harbor Energy Electric Company (HEEC), a decrease of \$145,000 or 4.2% from FY13 Actual Spending primarily due to lower than projected maintenance costs. 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.
- The FY14 Final Budget includes \$2.1 million for Insurance, a decrease of \$127,000 or 5.7% from FY13 Actual Spending primarily due to lower than projected premiums in FY13. The FY14 Final Budget was based on actual average spending for the past five years, FY08-12.
- 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 the FY08, FY09, FY10, FY12, and FY13 Budgets. It was temporarily halted in FY11 to achieve a 1.5% rate increase. In an effort to restore the Authority's long-term commitment for its liabilities, \$5.0 million of the estimated OPEB liability, has been included as an optional payment to the Pension Fund in the FY14 Budget.

Capital Financing

Outstanding Debt and Debt Management

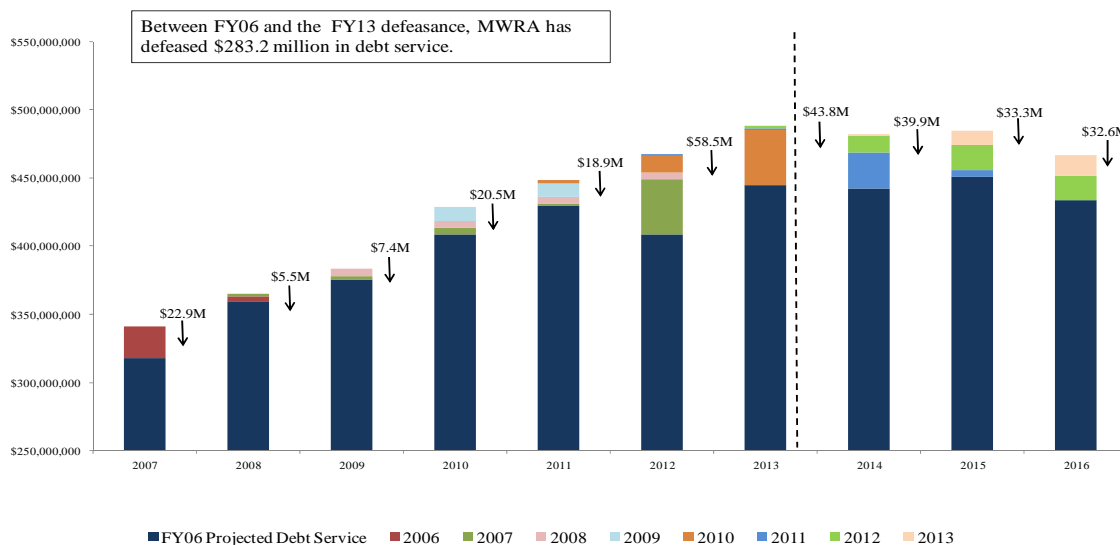
The \$7.6 billion spent on MWRA's modernization efforts to date, has relied heavily on debt financing. Total debt as of June 30, 2013 was \$5.8 billion consisting of senior and subordinated debt, as well as Tax-Exempt Commercial Paper. The MWRA enjoys strong unenhanced senior debt ratings of Aa1, AA+, and AA+ from Moody's, Standard & Poor, and Fitch, respectively.

As a result of the Authority's Capital Improvement Program, debt service as a percentage of total expenses (before offsets) has increased steadily from 36% in 1990 to 60% in the FY14 Final Budget. Much of this debt service is for completed projects, primarily the Boston Harbor Project and the Integrated Water Supply Improvement Program. The MWRA's capital spending, from its inception, has been dominated by projects mandated by court order or regulatory requirements, which in total have accounted for 80% of capital spending to date. Going forward, and as the Combined Sewer Overflow (CSO) project winds down, greater emphasis and spending will be focused on asset protection and water redundancy initiatives.

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.

In June 2013, MWRA executed a \$25.4 million defeasance to achieve debt service reductions through the use of FY13 surplus funds. These actions will result in debt service reductions of \$1.0 million in FY14, \$10.2 million in FY15, and \$15.1 million in FY16.

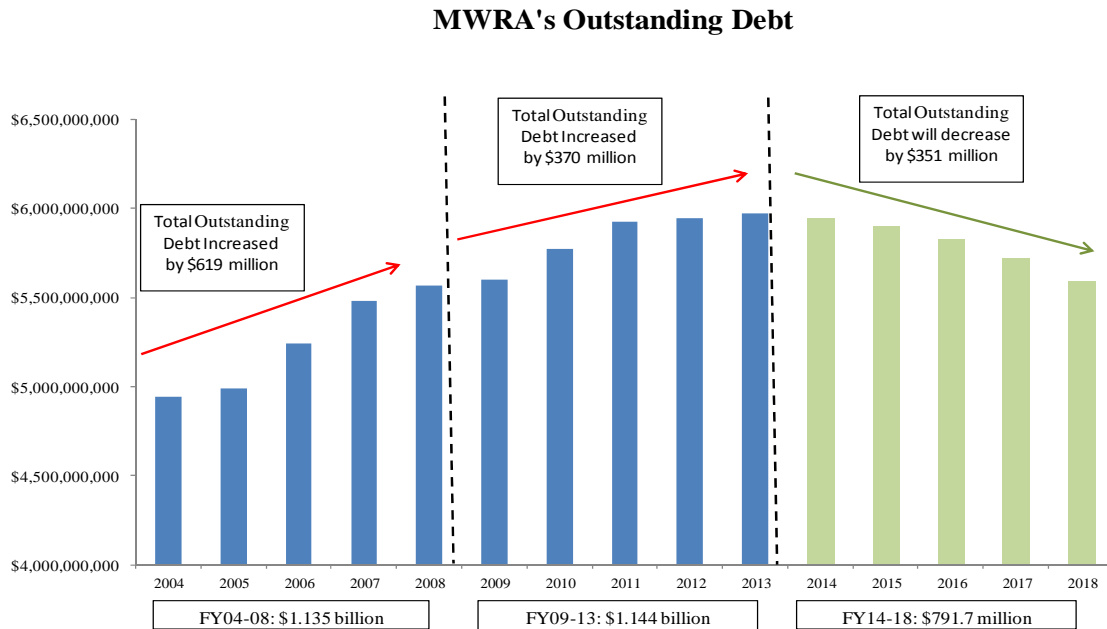
**Impact of Defeasances
FY06 - FY13**



As shown on the chart above, since 2006 the Authority has used defeasances to reduce future year's debt service requirements by \$283.2 million.

As presented in the FY14 CIP staff summary, FY14 represents a significant milestone in that the Authority established the lowest five-year spending cap for the FY14-18 period since 1990, resulting in lower borrowing requirements in future years.

Most importantly, MWRA will be reducing its total bonded indebtedness over the next five years as illustrated in the graph below.



The FY14 Final capital financing costs total \$397.2 million and remain the largest portion of the MWRA's budget, accounting for 60.3% of total expenses. No Debt Service Assistance (DSA) has been included in the FY14 Final Budget.

The FY14 Final capital financing costs increased by \$17.0 million or 4.5% compared to the FY13 Actual Spending.

The FY14 Final capital financing budget includes:

- \$204.5 million in principal and interest payments on MWRA's senior fixed rate bonds. This amount includes \$1.1 million to support issuance of \$100 million in June 2014;
- \$100.1 million in principal and interest payments on subordinate bonds;
- \$76.0 million in principal and interest payments on State Revolving Fund (SRF) loans. This amount includes \$3.7 million to support issuances of \$53.8 million in FY14;

- \$9.2 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; and
- \$3.2 million for the Chelsea Lease.

The FY14 Final Budget assumes a 3.25% interest rate for variable rate debt which is the same level as in FY13. 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 or Letter of Credit 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.

Table I-3 on the following page provides detail on the FY14 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 FY14 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.

	Amount Outstanding	Total FY14 Capital Costs	Sewer	Water
Total SRF ¹ Debt	\$1,109.6	\$76.0	\$60.6	\$15.4
Total Senior Debt	\$3,522.7	204.5	128.2	76.2
Total Subordinate Debt	\$1,071.5	100.1	81.6	18.6
Total SRF and Debt Service²	\$5,703.9	\$380.5	\$270.4	\$110.2
Water Pipeline Commercial Paper	144.0	4.1	0.0	4.1
Current Revenue/Capital ³		9.2	8.4	0.8
Capital Lease		3.2	2.0	1.3
CORE Fund Deposit ⁴		0.1	-4.6	4.7
Sub-Total	144.0	\$16.7	\$5.7	\$10.9
Total Capital Financing (before Debt Service Offsets)	5,847.9	\$397.2	\$276.1	\$121.1
Debt Service Offsets:				
Debt Service Assistance	0.0	0.0	0.0	0.0
Total Capital Financing	5,847.9	\$397.2	\$276.1	\$121.1

¹ SRF debt service payments reflect net MWRA obligations after state and federal subsidies.

² Numbers may not add due to rounding.

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

⁴ CORE Fund Deposit sewer/water split reflects the balancing of the account required whenever new deposits are made. Last deposit was in 2002.

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 FY14 Final Budget, rate revenue from BWSC will account for 31% of MWRA's total rate revenue. Table I-4, on page I-18, lists MWRA communities, the services received, and the MWRA assessments for FY14.

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-19 presents the calculation of MWRA's FY14 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 FY14 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.

Table I-4

**Massachusetts Water Resources Authority
Final FY14 Water and Sewer Assessments**

25-Jun-13

MWRA Fully Served Water and Sewer Customers	Final FY13 Water Assessment	Final FY14 Water Assessment	Percent Change from FY13	Final FY13 Sewer Assessment	Final FY14 Sewer Assessment	Percent Change from FY13	Final FY13 Combined Assessment	Final FY14 Combined Assessment	Dollar Change from FY13	Percent Change from FY13
ARLINGTON	\$4,706,235	\$4,553,819	-3.2%	\$7,404,065	\$7,661,286	3.5%	\$12,110,300	\$12,215,105	\$104,805	0.9%
BELMONT	2,263,350	2,516,559	11.2%	4,593,647	4,652,803	1.3%	6,856,997	7,169,362	312,365	4.6%
BOSTON (BWSC)	71,651,462	73,408,095	2.5%	116,347,350	122,165,554	5.0%	187,998,812	195,573,649	7,574,837	4.0%
BROOKLINE	5,656,061	5,906,771	4.4%	12,401,739	12,675,295	2.2%	18,057,800	18,582,066	524,266	2.9%
CHELSEA	3,406,236	3,524,702	3.5%	6,451,121	6,833,214	5.9%	9,857,357	10,357,916	500,559	5.1%
EVERETT	4,334,567	4,486,488	3.5%	7,243,065	7,612,435	5.1%	11,577,632	12,098,923	521,291	4.5%
FRAMINGHAM	7,355,228	7,645,878	4.0%	10,385,748	10,691,353	2.9%	17,740,976	18,337,231	596,255	3.4%
LEXINGTON	5,145,927	5,555,065	8.0%	6,954,177	7,014,300	0.9%	12,100,104	12,569,365	469,261	3.9%
MALDEN	6,053,825	6,264,071	3.5%	11,319,673	11,761,795	3.9%	17,373,498	18,025,866	652,368	3.8%
MEDFORD	5,534,818	5,520,265	-0.3%	10,766,699	10,943,641	1.6%	16,301,517	16,463,906	162,389	1.0%
MELROSE	2,405,858	2,519,249	4.7%	5,437,804	5,648,906	3.9%	7,843,662	8,168,155	324,493	4.1%
MILTON	2,718,549	2,834,490	4.3%	4,985,169	4,999,997	0.3%	7,703,718	7,834,487	130,769	1.7%
NEWTON	9,695,370	10,333,024	6.6%	19,917,866	20,152,363	1.2%	29,613,236	30,485,387	872,151	2.9%
NORWOOD	3,372,954	3,133,277	-7.1%	5,967,178	6,147,982	3.0%	9,340,132	9,281,259	(58,873)	-0.6%
QUINCY	9,889,803	10,147,276	2.6%	18,073,247	18,635,986	3.1%	27,963,050	28,783,262	820,212	2.9%
READING	1,811,212	1,854,203	2.4%	4,326,182	4,499,328	4.0%	6,137,394	6,353,531	216,137	3.5%
REVERE	4,362,470	4,353,201	-0.2%	9,486,795	9,920,985	4.6%	13,849,265	14,274,186	424,921	3.1%
SOMERVILLE	6,167,896	6,440,071	4.4%	13,887,278	14,595,600	5.1%	20,055,174	21,035,676	980,497	4.9%
STONEHAM	3,104,419	3,262,031	5.1%	4,357,938	4,452,189	2.2%	7,462,357	7,714,220	251,863	3.4%
WALTHAM	7,792,300	7,809,194	0.2%	12,485,924	12,759,248	2.2%	20,278,224	20,568,442	290,218	1.4%
WATERTOWN	2,925,467	2,945,405	0.7%	5,471,720	5,654,172	3.3%	8,397,187	8,599,577	202,390	2.4%
WINTHROP	1,387,397	1,429,691	3.0%	3,036,088	3,161,934	4.1%	4,423,485	4,591,625	168,140	3.8%
TOTAL	\$171,741,404	\$176,442,825	2.7%	\$301,300,473	\$312,640,366	3.8%	\$473,041,877	\$489,083,191	\$16,041,314	3.4%

MWRA Sewer and Partial Water Customers	Final FY13 Water Assessment	Final FY14 Water Assessment	Percent Change from FY13	Final FY13 Sewer Assessment	Final FY14 Sewer Assessment	Percent Change from FY13	Final FY13 Combined Assessment	Final FY14 Combined Assessment	Dollar Change from FY13	Percent Change from FY13
CANTON	\$2,138,489	\$1,414,000	-33.9%	\$3,313,092	\$3,460,713	4.5%	\$5,451,581	\$4,874,713	(\$576,868)	-10.6%
NEEDHAM	964,345	1,271,018	31.8%	5,381,187	5,423,810	0.8%	6,345,532	6,694,828	349,296	5.5%
STOUGHTON	700,394	758,402	8.3%	4,420,052	4,364,713	-1.3%	5,120,446	5,123,115	2,669	0.1%
WAKEFIELD	1,617,772	1,604,779	-0.8%	5,512,303	5,549,601	0.7%	7,130,075	7,154,380	24,305	0.3%
WELLESLEY	854,839	1,423,735	66.6%	5,078,134	5,246,821	3.3%	5,932,973	6,670,556	737,583	12.4%
WILMINGTON	296,556	125,176	-57.8%	2,241,570	2,408,266	7.4%	2,538,126	2,533,442	(4,684)	-0.2%
WINCHESTER	974,666	1,127,860	15.7%	3,634,180	3,718,082	2.3%	4,608,846	4,845,942	237,096	5.1%
WOBURN	2,535,816	3,549,339	40.0%	8,959,770	9,134,120	1.9%	11,495,586	12,683,459	1,187,873	10.3%
TOTAL	\$10,082,877	\$11,274,309	11.8%	\$38,540,288	\$39,306,126	2.0%	\$48,623,165	\$50,580,435	\$1,957,270	4.0%

MWRA Sewer-only Customers	Final FY13 Water Assessment	Final FY14 Water Assessment	Percent Change from FY13	Final FY13 Sewer Assessment	Final FY14 Sewer Assessment	Percent Change from FY13	Final FY13 Combined Assessment	Final FY14 Combined Assessment	Dollar Change from FY13	Percent Change from FY13
ASHLAND				\$2,081,319	\$2,175,735	4.5%	\$2,081,319	\$2,175,735	\$94,416	4.5%
BEDFORD				2,909,153	2,968,529	2.0%	2,909,153	2,968,529	59,376	2.0%
BRAINTREE				7,597,309	7,759,278	2.1%	7,597,309	7,759,278	161,969	2.1%
BURLINGTON				4,723,848	4,846,498	2.6%	4,723,848	4,846,498	122,650	2.6%
CAMBRIDGE				20,768,232	21,224,419	2.2%	20,768,232	21,224,419	456,187	2.2%
DEDHAM				4,864,300	4,924,268	1.2%	4,864,300	4,924,268	59,968	1.2%
HINGHAM SEWER DISTRICT				1,513,205	1,562,020	3.2%	1,513,205	1,562,020	48,815	3.2%
HOLBROOK				1,434,900	1,495,280	4.2%	1,434,900	1,495,280	60,380	4.2%
NATICK				4,634,401	4,903,457	5.8%	4,634,401	4,903,457	269,056	5.8%
RANDOLPH				5,393,673	5,561,761	3.1%	5,393,673	5,561,761	168,088	3.1%
WALPOLE				3,300,822	3,373,364	2.2%	3,300,822	3,373,364	72,542	2.2%
WESTWOOD				2,317,405	2,362,136	1.9%	2,317,405	2,362,136	44,731	1.9%
WEYMOUTH				10,131,271	10,400,989	2.7%	10,131,271	10,400,989	269,718	2.7%
TOTAL				\$71,669,838	\$73,557,734	2.6%	\$71,669,838	\$73,557,734	\$1,887,896	2.6%

MWRA Water-only Customers	Final FY13 Water Assessment	Final FY14 Water Assessment	Percent Change from FY13	Final FY13 Sewer Assessment	Final FY14 Sewer Assessment	Percent Change from FY13	Final FY13 Combined Assessment	Final FY14 Combined Assessment	Dollar Change from FY13	Percent Change from FY13
LYNNFIELD WATER DISTRICT	\$401,149	\$467,594	16.6%				\$401,149	\$467,594	\$66,445	16.6%
MARBLEHEAD	1,825,752	1,990,555	9.0%				1,825,752	1,990,555	164,803	9.0%
NAHANT	309,977	349,194	12.7%				309,977	349,194	39,217	12.7%
SAUGUS	3,151,506	2,963,455	-6.0%				3,151,506	2,963,455	(188,051)	-6.0%
SOUTHBOROUGH	595,717	695,113	16.7%				595,717	695,113	99,396	16.7%
SWAMPSCOTT	1,661,956	1,781,628	7.2%				1,661,956	1,781,628	119,672	7.2%
WESTON	1,684,844	1,898,881	12.7%				1,684,844	1,898,881	214,037	12.7%
TOTAL	\$9,630,901	\$10,146,420	5.4%				\$9,630,901	\$10,146,420	\$515,519	5.4%

MWRA Partial Water-only Customers	Final FY13 Water Assessment	Final FY14 Water Assessment	Percent Change from FY13	Final FY13 Sewer Assessment	Final FY14 Sewer Assessment	Percent Change from FY13	Final FY13 Combined Assessment	Final FY14 Combined Assessment	Dollar Change from FY13	Percent Change from FY13
DEDHAM-WESTWOOD WATER DISTRICT	\$28,781	\$124,703	333.3%				\$28,781	\$124,703	\$95,922	333.3%
LYNN (LWSC)	259,592	242,626	-6.5%				259,592	242,626	(16,966)	-6.5%
MARLBOROUGH	2,753,457	3,184,761	15.7%				2,753,457	3,184,761	431,304	15.7%
NORTHBOROUGH	883,118	1,022,003	15.7%				883,118	1,022,003	138,885	15.7%
PEABODY	621,271	779,127	25.4%				621,271	779,127	157,856	25.4%
TOTAL	\$4,546,219	\$5,353,220	17.8%				\$4,546,219	\$5,353,220	\$807,001	17.8%

SYSTEMS TOTAL	Final FY13 Water Assessment	Final FY14 Water Assessment	Percent Change from FY13	Final FY13 Sewer Assessment	Final FY14 Sewer Assessment	Percent Change from FY13	Final FY13 Combined Assessment	Final FY14 Combined Assessment	Dollar Change from FY13	Percent Change from FY13
SYSTEMS TOTAL	\$196,001,401	\$203,216,774	3.7%	\$411,510,599	\$425,504,226	3.4%	\$607,512,000	\$628,721,000	\$21,209,000	3.5%

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 FY14 Rate Revenue Requirement
(000's)

	Sewer	Water	Total
Allocated Direct Expenses	\$146,911	\$67,463	\$214,374
Allocated Indirect Expenses	\$14,412	\$32,411	\$46,823
PLUS			
Capital Expenses:			
Debt Service (less offsets)	\$270,358	\$110,191	\$380,549
Current Revenue for Capital	\$8,372	\$828	\$9,200
Other Capital Expenses	-\$2,625	\$10,102	\$7,477
PLUS			
Non-Rate Revenue:			
Investment Income	-\$7,703	-\$3,928	-\$11,631
Fees and Other Revenue	-\$4,221	-\$10,351	-\$14,572
Rate Stabilization	\$0	-\$3,500	-\$3,500
EQUALS			
Rate Revenue Requirement	\$425,504	\$203,217	\$628,721

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 FY14, community assessments will represent 95.5% 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 FY14 the Authority tightened certain planning estimate assumptions for future years and limited annual capital spending to \$160 million.

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 FY14 through FY23. 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 is included in the FY14 planning estimates for the first time.

Rates & Budget Projections										
FY14 Final CEB	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023
Total Rate Revenue (\$000)	\$ 628,721	\$ 651,551	\$ 678,509	\$ 736,413	\$ 755,600	\$ 775,286	\$ 829,570	\$ 847,999	\$ 875,457	\$ 845,784
Rate Revenue Change from Prior Year (\$000)	\$ 21,209	\$ 22,830	\$ 26,959	\$ 57,904	\$ 19,187	\$ 19,686	\$ 54,284	\$ 18,429	\$ 27,458	\$ (29,673)
Rate Revenue Increase	3.5%	3.6%	4.1%	8.5%	2.6%	2.6%	7.0%	2.2%	3.2%	-3.4%
Use of Reserves (\$000)	\$ 3,500	\$ 12,000	\$ 12,000	\$ 12,000	\$ 4,900	\$ 4,466	\$ 12,000	\$ -	\$ 12,000	\$ -

Estimated Household Bill

Based on annual water usage of 61,000 gallons	\$ 970	\$ 1,014	\$ 1,065	\$ 1,133	\$ 1,184	\$ 1,227	\$ 1,295	\$ 1,352	\$ 1,412	\$ 1,448
Based on annual water usage of 90,000 gallons	\$ 1,432	\$ 1,497	\$ 1,571	\$ 1,672	\$ 1,747	\$ 1,810	\$ 1,911	\$ 1,994	\$ 2,084	\$ 2,136

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 \$58.9 million increase in direct expenses from FY14 to FY23 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 FY14;
- 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;
- Long-term fixed rate debt issues with 30-year terms and 5.0% interest rates in FY14, 5.5% rates in FY15, 5.75% rates in FY16 and 40-year terms and 6.00% rates from FY17 and beyond;
- Variable rate interest projected at 3.25% in FY14, 3.50% in FY15, 3.75% in FY16, 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

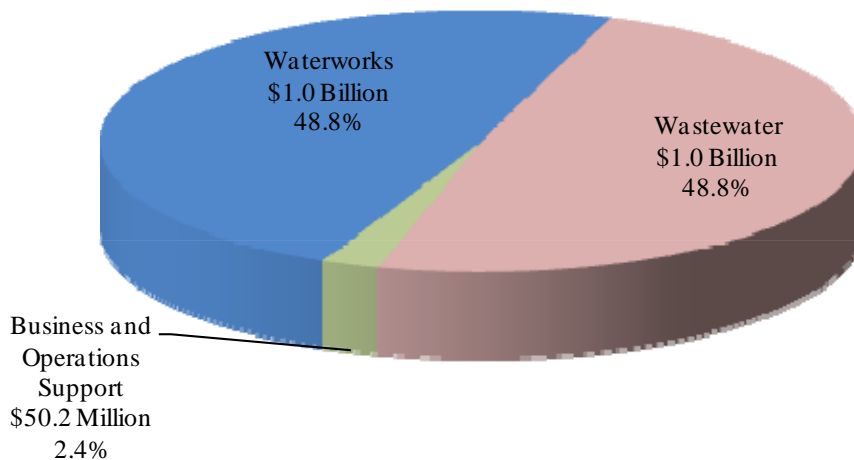
revisions to professional services are already reflected in the budget. More importantly, going forward the MWRA is faced with a growing need to maintain its facilities and ensure that adequate funding is available.

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.

FY14 Final Capital Improvement Program

The FY14 Final Capital Improvement Program (CIP) budget totals \$5.6 billion, of which approximately \$3.5 billion has been expended through FY12 with a remaining balance of \$2.1 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 \$9.7 billion dollars of which \$7.7 billion has been spent through FY13.

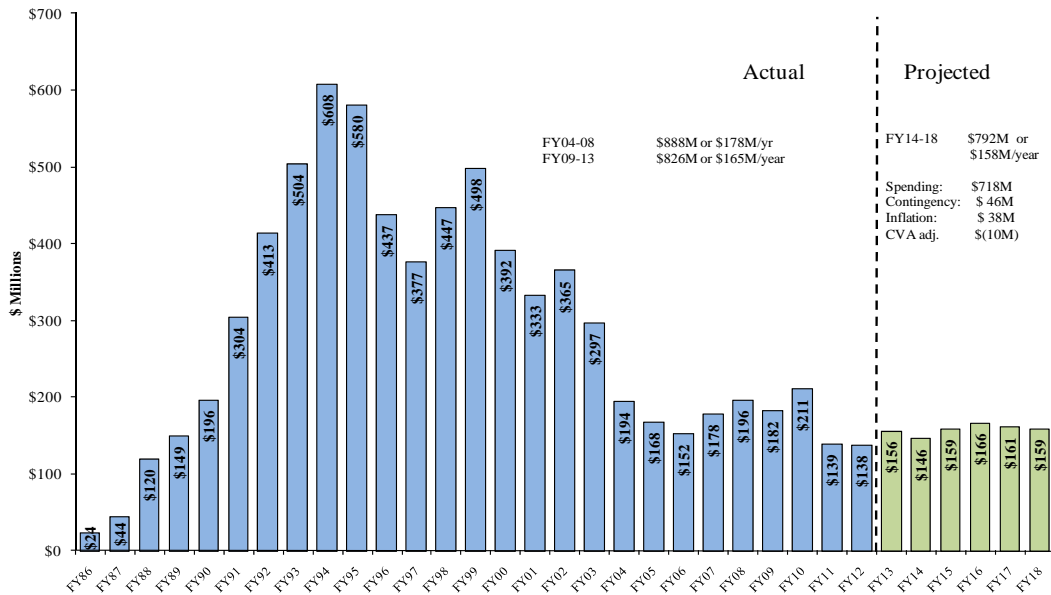
Of the remaining spending, Wastewater System Improvements and Waterworks System Improvements both represent \$1.0 billion or 48.8%, and Business and Operations Support are \$50.2 million or 2.4%.



It is interesting to note that for the first time, the Waterworks and Wastewater project spending are at about the same level.

Historical Spending

The chart below captures the historical CIP spending through FY12 and projected spending with contingency to FY18 based on the FY14 Final CIP.



The average spending for FY04-13 was \$171 million per year and based on the FY14 Final CIP, we are currently projecting average annual spending during the FY14-18 Cap period will be just over \$158 million per year.

The Shift from Mandated Projects

Since 1985, nearly 80% of the Authority's spending has been on court-mandated projects. Going forward, Asset Protection and Water System Redundancy projects will dominate future spending. The Pipeline Replacement and Rehabilitation, Energy program initiatives, and IT infrastructure updates will also be a continuing effort.

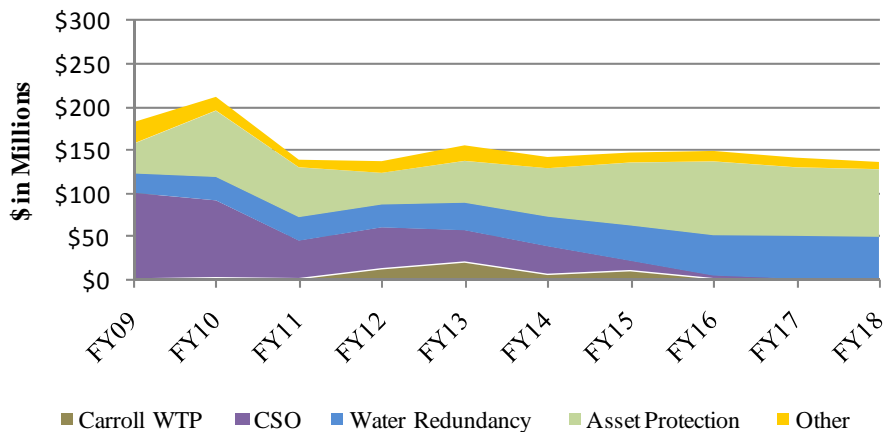
The table below captures the changing nature of the program in the future.

	Total Contract	FY09-13	FY14-18	Beyond 18
Asset Protection	\$ 1,944.0	\$ 252.0	\$ 370.1	\$ 686.4
Carroll WTP	\$ 433.3	\$ 39.4	\$ 21.0	\$ 0.1
Water Redundancy	\$ 1,851.2	\$ 138.4	\$ 223.1	\$ 627.0
CSO	\$ 863.4	\$ 316.5	\$ 48.1	\$ 1.3
Other	\$ 536.7	\$ 80.1	\$ 55.6	\$ (93.7)
Total	\$5,628.5	\$ 826.4	\$ 718.0	\$1,221.2
Asset Protection	34.5%	30.5%	51.6%	56.2%
Carroll WTP	7.7%	4.8%	2.9%	0.0%
Water Redundancy	32.9%	16.7%	31.1%	51.3%
CSO	15.3%	38.3%	6.7%	0.1%
Other	9.5%	9.7%	7.7%	-7.7%
Total	100.0%	100.0%	100.0%	100.0%

As presented above, Asset Protection and Water Redundancy initiatives account for 30.5% and 16.7% of FY09-13 spending. These percentages will grow substantially to 51.6% and 31.1% respectively for the FY14-18 timeframe.

The graph below displays the projected trend of expenditures by major category for the FY09-18 time period.

FY14 Final Expenditure Forecast by Major Category



FY14 Final CIP Expenditures

The FY14 Final CIP contains future spending estimated at \$2.1 billion. The FY14 Final CIP (without contingency) includes planned expenditures of \$142.5 million for FY14 and total projected expenditures of \$718.0 million for the FY14-18 timeframe.

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

	Total Contract Amount	Payments Thru FY12	Remaining Balance	FY13	Total FY09-13	FY14	FY15	FY16	FY17	FY18	Total FY14-18	Beyond 18
Wastewater System Improvements	\$2,685.1	\$1,661.8	\$1,023.3	\$79.9	\$524.0	\$84.3	\$77.8	\$79.8	\$64.8	\$62.3	\$368.9	\$574.5
Interception & Pumping	846.5	518.6	327.9	2.3	32.7	13.1	22.2	28.9	28.8	25.3	118.4	207.3
Treatment	659.6	168.7	490.9	19.7	136.6	39.4	44.4	46.6	34.8	33.9	199.1	272.0
Residuals	168.0	64.2	103.9	0.4	0.8	0.4	0.3	0.2	0.2	0.5	1.5	101.9
CSO	888.1	802.3	85.8	36.4	316.5	32.3	11.3	3.6	0.1	0.8	48.1	1.3
Other Wastewater	122.9	108.1	14.8	21.0	37.4	(0.9)	(0.5)	0.5	1.0	1.7	1.8	(8.0)
Waterworks System Improvements	\$2,821.0	\$1,799.6	\$1,021.4	\$71.6	\$268.7	\$49.8	\$61.0	\$58.6	\$68.0	\$69.7	\$307.1	\$642.7
Drinking Water Quality Improvements	657.2	559.7	97.4	40.0	91.2	32.3	20.6	2.3	1.4	0.6	57.3	0.1
Transmission	1,186.0	737.9	448.1	18.0	83.0	6.4	25.6	23.6	18.9	5.6	80.0	350.1
Distribution & Pumping	948.4	384.1	564.3	4.5	67.5	10.7	13.4	29.3	43.9	57.3	154.6	405.2
Other Waterworks	29.4	117.9	(88.5)	9.0	27.0	0.5	1.4	3.4	3.8	6.2	15.2	(112.7)
Business & Operations Support	122.4	72.2	50.2	4.3	\$33.6	8.4	8.8	10.9	8.9	4.9	\$41.9	4.0
Total MWRA	\$5,628.5	\$3,533.6	\$2,094.9	\$155.8	\$826.4	\$142.5	\$147.6	\$149.3	\$141.8	\$136.8	\$718.0	\$1,221.2

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 \$906,000 and MIS program related maintenance initiatives are increasing operating costs by nearly \$735,000 by FY24. These increases are offset by anticipated savings for chemicals at Framingham Extension Relief Sewer and energy initiatives at Deer Island as well as water and wastewater Alternative Energy Initiatives including solar, wind, and hydroelectric power projects which will result in energy savings of approximately \$1.6 million over the next 10 years. The following table summarizes projected CIP impact by project over the next ten years, beginning in FY15 on the operating budget.

Fiscal Year	CEB Impacts (000)										
	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	Total
DI Treatment Plant Asset Protection	\$0	(\$198)	(\$164)	\$0	\$0	(\$150)	(\$74)	(\$76)	\$0	\$0	(\$663)
FERS Biofilter	0	0	0	0	0	0	(123)	0	0	0	(123)
Clinton Phosphorous Removal Project	0	0	30	93	0	0	0	0	0	0	123
Wastewater Alternative Energy Projects	0	0	0	(136)	0	0	0	(431)	0	0	(567)
North Dorchester Bay	0	0	382	0	0	0	0	0	0	0	382
Total Wastewater (inflated)	\$0	(\$198)	\$249	(\$43)	\$0	(\$150)	(\$197)	(\$507)	\$0	\$0	(\$847)
Carroll Water Treatment Plant	\$155	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$155
Quabbin Water Treatment Plant	21	4	0	0	0	0	0	0	0	0	26
Wachusett Algae Treatment Facility	0	0	0	31	32	0	0	0	0	0	63
Spot Pond Storage Facility	77	80	0	0	0	0	0	0	0	0	157
Water Energy Projects	0	0	0	(225)	0	0	0	0	0	0	(225)
Total Water (inflated)	\$253	\$84	\$0	(\$194)	\$32	\$0	\$0	\$0	\$0	\$0	\$175
Maximo Upgrades & Lawson Enhancements	\$0	\$53	\$0	\$113	\$0	\$0	\$0	\$0	\$0	\$0	\$166
Storage Upgrades	0	0	0	113	116	0	0	0	0	0	228
Telecommunications	0	0	0	0	29	0	0	0	0	0	29
NET 2020 DIIP & Southborough	0	80	0	0	0	0	0	0	0	0	80
Information Security Program	0	0	0	34	0	0	0	0	0	0	34
Information Technology Management Program	0	0	76	0	0	0	0	0	0	0	76
Information Technology Management Program	0	32	0	0	0	0	0	0	0	0	32
IT Infrastructure Program	0	90	0	0	0	0	0	0	0	0	90
Total Business and Operations Support (inflated)	\$0	\$255	\$76	\$259	\$145	\$0	\$0	\$0	\$0	\$0	\$735
TOTAL MWRA	\$253	\$140	\$325	\$21	\$177	(\$150)	(\$197)	(\$507)	\$0	\$0	\$63

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 is assumed as none is included in the Governor's budget. Although not budgeted in FY14, MWRA's projected share of Conference Committee Funding is estimated at \$800,000 in FY14.

Planning estimates for 2014 through 2023 forecast rate revenue requirement increases of 3.5% in FY14, 3.6% in FY15, 4.1% in FY16, 8.5% in FY17, 2.6% in FY18 and FY19, 7.0% in FY20, and 2.2%, 3.2%, and -3.4% in years FY20, FY21, FY22, and FY23 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 FY14 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, 2011 and 2010 are available online at www.mwra.com.



Executive Office
Budget

EXECUTIVE OFFICE

FY14 Final Current Expense Budget EXECUTIVE DIVISION						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 422,374	\$ 483,283	\$ 534,191	\$ 542,963	\$ 8,772	1.6%
OVERTIME	-	-	-	-	-	-
ONGOING MAINTENANCE	-	-	-	-	-	-
TRAINING & MEETINGS	-	695	-	900	900	-
PROFESSIONAL SERVICES	154,323	142,888	145,098	160,696	15,598	10.7%
OTHER MATERIALS	4,231	1,187	5,105	3,585	(1,520)	-29.8%
OTHER SERVICES	454,552	439,108	455,588	469,973	14,385	3.2%
TOTAL	\$ 1,035,480	\$ 1,067,161	\$ 1,139,982	\$ 1,178,117	\$ 38,135	3.3%

FY14 Final Current Expense Budget EXECUTIVE DIVISION by Department						
DEPARTMENT	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
EXECUTIVE OFFICE / BOARD OF DIRECTORS	\$ 430,528	\$ 489,399	\$ 542,799	\$ 551,812	\$ 9,013	1.7%
ADVISORY BOARD / OTHER COMMITTEES	604,952	577,762	597,183	626,305	29,122	4.9%
TOTAL	\$ 1,035,480	\$ 1,067,161	\$ 1,139,982	\$ 1,178,117	\$ 38,135	3.3%

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.

FY14 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. The Executive Office budget accounts for less than 1% of the MWRA FY14 Final Direct Expense Budget.

Budget Highlights:

- The FY14 Final Budget is \$1.2 million, an increase of \$38,000 or 3.3% from FY13 Actual Spending mostly due to increases in the MWRA Advisory Board and Advisory Committees budgets.
- \$543,000 for **Wages and Salaries**, an increase of \$9,000 or 1.6% as compared to FY13 Actual Spending. The Final budget includes funding for five positions.
- \$161,000 for **Professional Services**, an increase of \$16,000 or 10.7% from FY13 Actual Spending. This budget funds the Water Supply Citizens' Advisory Committee (WSCAC) and the Wastewater Advisory Committee (WAC) budgets. The Advisory group budgets increased due to cost of living adjustments and higher health insurance cost.
- \$470,000 for **Other Services**, an increase of \$14,000 or 3.2% from FY13 Actual Spending. This budget funds the MWRA Advisory Board staff and operating expenses, including wages and salaries, space rental, and general administrative office expenses.

OFFICE OF EMERGENCY PREPAREDNESS

FY14 Final Current Expense Budget OFFICE OF EMERGENCY PREPAREDNESS						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 476,285	\$ 357,479	\$ 390,132	\$ 425,859	\$ 35,727	9.2%
OVERTIME	-	-	12	-	(12)	-100.0%
ONGOING MAINTENANCE	223,758	235,838	399,123	358,500	(40,623)	-10.2%
TRAINING & MEETINGS	-	2,117	1,652	-	(1,652)	-100.0%
PROFESSIONAL SERVICES	1,473,337	1,476,020	1,587,698	1,908,295	320,597	20.2%
OTHER MATERIALS	42,642	50,343	31,311	35,535	4,224	13.5%
OTHER SERVICES	20,563	21,000	10,774	122,100	111,326	1033.3%
TOTAL	\$ 2,236,585	\$ 2,142,797	\$ 2,420,702	\$ 2,850,289	\$ 429,587	17.7%

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 Operations Support & Emergency Preparedness reports directly to the Executive Director on Emergency Preparedness matters.

FY14 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.

FY14 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.
- Procure a new Guard Services contract by November 2013 and a new Security Equipment Maintenance contract by March 2014 to replace expiring existing contracts.
- 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.

FY13 Accomplishments:

- Updated spill control Emergency Action Plans to all water and wastewater facilities subject to spill regulations. Provided refresher training to all operations staff on spill control procedures.
- Continued updating Dam Emergency Action Plans with drafts of Western Section plans with detailed inundation mapping completed. All Western facilities are completed and Metro facilities will be done in FY14.
- Completed a total of 74 training events or drills for Calendar 2012 as compared to 54 events or drills in 2011.
- Commenced deployment of new digital transmission vehicle, base, and handheld radios to support DCR's planned transition from analog equipment to digital equipment.
- Received a Department of Homeland Security (DHS) grant for \$257,000 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 including 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.

Budget Highlights:

- The FY14 Final Budget is \$2.8 million, an increase of \$430,000 or 17.7% from FY13 Actual Spending.
- \$426,000 for **Wages and Salaries**, an increase of \$36,000 or 9.2% from FY13 Actual Spending mainly due to contractual agreements and promotional increase for newly created position. The final budget includes funding for five positions.
- \$359,000 for **Ongoing Maintenance**, a decrease of \$41,000 or 10.2% from FY13 Actual Spending primarily due to MWRA-wide security systems maintenance services and materials being lower than anticipated. The final budget includes funding of \$230,000 to cover the MWRA-wide security systems preventative maintenance and repair service, \$100,000 for MWRA-wide Security systems maintenance materials and equipment, including cameras, intrusion detection, card readers, and \$28,500 for the intrusion alarm annual and semi-annual monitoring services contracts.
- \$1.9 million for **Professional Services**, an increase of \$321,000 or 20.2% from FY13 Actual Spending, primarily due to increased costs for security guard services to reflect the SEIU standard wage rates at the various MWRA facilities. The FY14 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, \$59,000 for the Roving guard, and \$50,000 for the Patrol vehicle and equipment. In addition, the budget includes funding for the update of the Dam Emergency Plans in compliance with National and State regulations was included.
- \$36,000 for **Other Materials**, an increase of \$4,000 or 13.5% from FY13 Actual Spending primarily due to increased need for Health and Safety materials for the Emergency Safety Unit (ESU) Team expanded training program. The final budget includes \$30,000 for the purchase of Health and Safety materials for the ESU Team.
- \$122,000 for **Other Services**, an increase of \$111,000 from FY13 Actual Spending due to the inclusion of potential Department of Conservation and Recreation (DCR) licensing costs for two-way radios. The final budget also includes \$20,000 for mandatory monthly testing and inspection of the Self-Contained Breathing Apparatus (SCBA).

AFFIRMATIVE ACTION and COMPLIANCE

FY14 Final Current Expense Budget AFFIRMATIVE ACTION & COMPLIANCE UNIT						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 550,862	\$ 548,888	\$ 513,749	\$ 575,001	\$ 61,252	11.9%
OVERTIME	-	-	-	-	-	-
TRAINING & MEETINGS	2,420	1,620	-	2,000	2,000	-
OTHER MATERIALS	1,347	1,260	1,393	1,510	117	8.4%
OTHER SERVICES	308	580	309	632	323	104.5%
TOTAL	\$ 554,937	\$ 552,348	\$ 515,451	\$ 579,143	\$ 63,692	12.4%

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.

FY14 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.

FY13 Accomplishments:

- Provided management guidance and participated in 60 position(s) selection committee interviews, sourced two outreach contacts, and referred 14 qualified candidates to Human Resources for underutilized positions.
- Conducted oversight of 77 construction and professional projects including 37 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 FY14 Final Budget is \$579,000, an increase of \$64,000 or 12.4% from FY13 Actual Spending.
- \$575,000 for **Wages and Salaries**, an increase of \$61,000 or 11.9% from FY13 Actual Spending due to the staff vacancies during FY13 which has since been backfilled and increases for contractual agreements. The final budget includes funding for seven positions.

INTERNAL AUDIT

FY14 Final Current Expense Budget INTERNAL AUDIT							
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14		
WAGES & SALARIES	\$ 615,777	\$ 632,155	\$ 651,971	\$ 671,181	\$ 19,210	2.9%	
OVERTIME	-	-	11	-	(11)	-100.0%	
TRAINING & MEETINGS	6,267	5,065	4,596	7,238	2,642	57.5%	
OTHER MATERIALS	1,880	1,394	1,764	2,020	256	14.5%	
OTHER SERVICES	1,126	1,306	1,100	1,062	(38)	-3.5%	
TOTAL	\$ 625,050	\$ 639,920	\$ 659,442	\$ 681,501	\$ 22,059	3.3%	

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.

FY14 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.

FY13 Accomplishments:

- Identified \$3.1 million in savings related to: internal audits, management advisory services, consultant audits, construction labor burden reviews, a construction claim settlement, review of three CSO financial assistance agreements, the early termination of two janitorial services contracts, and the true-up of CY 2011 and 2012 HEEC billings.
- Issued final audit reports on MIS Equipment Management, Chelsea Facility Physical Security, and the Purchase Card Program. Issued eight incurred cost audits, three preliminary construction reviews, seven preliminary construction reviews, and several contract reviews.
- Provided management advisory and data analysis services for a number of management initiatives, including CNY lease negotiations.

Budget Highlights:

- The FY14 Final Budget is \$682,000, an increase of \$22,000 or 3.3% from FY13 Actual Spending.
- \$671,000 for **Wages and Salaries**, an increase of \$19,000 or 2.9% from FY13 Actual Spending, primarily due to contractual wages increases. The final budget includes funding for eight positions.

PUBLIC AFFAIRS

FY14 Final Current Expense Budget PUBLIC AFFAIRS						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 1,080,485	\$ 1,036,558	\$ 1,085,187	\$ 1,133,107	\$ 47,920	4.4%
OVERTIME	67	-	-	-	-	-
TRAINING & MEETINGS	5,327	(463)	4,410	3,365	(1,045)	-23.7%
PROFESSIONAL SERVICES	2,328	1,050	3,187	1,050	(2,137)	-67.1%
OTHER MATERIALS	29,453	22,391	25,505	21,625	(3,880)	-15.2%
OTHER SERVICES	16,974	41,861	33,815	48,967	15,152	44.8%
TOTAL	\$ 1,134,634	\$ 1,101,397	\$ 1,152,104	\$ 1,208,114	\$ 56,010	4.9%

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 **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. The section is lead by the Special Assistant to the Executive Director, located in the Executive Office.

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.

FY14 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).
- 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, and respond 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 emergencies affecting them or surrounding communities.
- Continuing to work with the public and public officials on MWRA Aqueduct Trail Initiative.

Budget Highlights:

- The FY14 Final Budget is \$1.2 million, an increase of \$56,000 or 4.9% from FY13 Actual Spending.
- \$1.1 million for **Wages and Salaries**, an increase of \$48,000 or 4.4% from FY13 Actual Spending. The increase is due to contractual wages increases. The final budget includes funding for 13 positions.
- \$22,000 for **Other Materials**, a decrease of \$4,000 or 15.2% as compared to FY13 Actual Spending primarily due to revised needs assessment.
- \$49,000 for **Other Services**, an increase of \$15,000 or 44.8% as compared to FY13 Actual Spending. This increase is mainly due to lower than projected spending for printing/duplicating services during FY13. This budget supports the printing of the Annual Report and other printing needs of the department.



Operations Division
Budget

OPERATIONS DIVISION

FY14 Final Current Expense Budget OPERATIONS DIVISION						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 68,581,180	\$ 69,926,817	\$ 70,614,655	\$ 73,963,889	\$ 3,349,234	4.7%
OVERTIME	3,850,564	3,046,845	3,473,493	3,522,621	49,128	1.4%
FRINGE BENEFITS	67,373	54,278	58,593	61,135	2,542	4.3%
CHEMICALS	8,697,048	9,271,529	10,139,257	10,671,224	531,967	5.2%
UTILITIES	21,839,172	22,666,107	22,960,065	22,653,178	(306,887)	-1.3%
ONGOING MAINTENANCE	24,604,384	23,609,567	23,407,709	23,913,315	505,606	2.2%
TRAINING & MEETINGS	75,746	84,048	107,585	122,900	15,315	14.2%
PROFESSIONAL SERVICES	3,081,740	2,135,541	2,160,077	2,723,673	563,596	26.1%
OTHER MATERIALS	3,384,996	4,478,030	5,766,978	4,699,047	(1,067,931)	-18.5%
OTHER SERVICES	18,322,402	19,437,633	18,629,542	18,511,528	(118,014)	-0.6%
TOTAL	\$ 152,504,605	\$ 154,710,395	\$ 157,317,954	\$ 160,842,510	\$ 3,524,556	2.2%

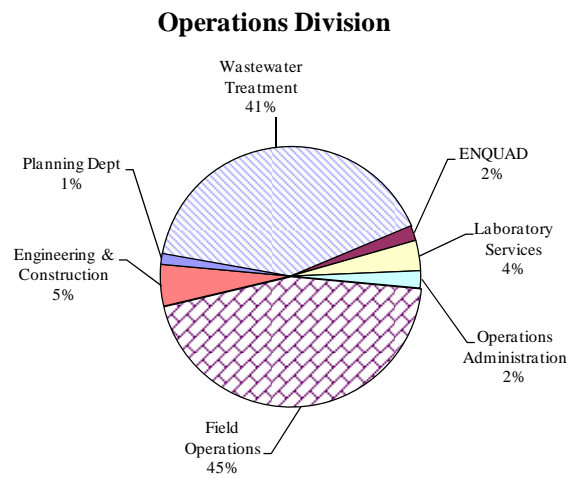
FY14 Final Current Expense Budget OPERATIONS DIVISION by Department						
DEPARTMENT	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
OPERATIONS ADMINISTRATION	\$ 2,692,130	\$ 2,880,949	\$ 3,749,217	\$ 3,450,500	\$ (298,717)	-8.0%
WASTEWATER TREATMENT	61,246,914	64,934,921	65,225,080	65,820,139	595,059	0.9%
FIELD OPERATIONS	69,613,770	69,117,279	70,781,719	72,090,881	1,309,162	1.8%
LABORATORY SERVICES	5,400,095	5,312,800	5,563,606	6,057,337	493,731	8.9%
ENQUAD	3,637,549	2,860,161	2,660,834	3,000,790	339,956	12.8%
ENGINEERING & CONSTRUCTION	7,881,547	7,569,131	7,273,287	8,283,008	1,009,721	13.9%
PLANNING DEPARTMENT	2,032,600	2,035,154	2,064,211	2,139,855	75,644	3.7%
TOTAL	\$ 152,504,605	\$ 154,710,395	\$ 157,317,954	\$ 160,842,510	\$ 3,524,556	2.2%

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 45% 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.

FY14 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.

FY14 Initiatives:

Operations, Energy, and New Facilities Start-ups:

- Continue to implement and optimize Supervisory Control and Data Acquisition (SCADA) in Wastewater Operations facilities.
- Continue to identify, assess, and implement initiatives to reduce energy demand and increase energy self-generation in MWRA's system. Pursue grant-funding and cost-sharing arrangements to defray costs of implementing these initiatives.
- Self-generate ~28% of 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 modifications.
- 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
 - Long-Term Redundancy Wachusett Aqueduct Construction
 - Carroll Water Treatment Plant Existing Facilities Modifications CP 7
 - Carroll Water Treatment Plant Storage Tank Roof Drainage System
 - Southern Extra High System Redundancy and Storage Phase I Final Design
 - Wastewater System
 - DITP Asset Protection Gravity Thickener Rehabilitation
 - DITP Asset Protection DSL Pump Replacement Phase 2
 - DITP Asset Protection Winthrop Terminal Facility (WTF) VFD Replacement – Construction
 - DITP Asset Protection Digester and Storage Tank Rehabilitation Design
 - DITP HVAC Equipment Replacement Design
 - DITP Clarifier Phase 2 Design
 - Facility Asset Protection Rehabilitation of Sections 186 and 4 Construction
 - Facility Asset Protection Prison Point and Cottage Farm Facilities
- Substantially complete numerous CIP design and construction phases including the following:
 - Water System
 - CWTP Ultraviolet Disinfection Construction
 - Northern Intermediate High Gillis Pump Station Improvements
 - Weston Aqueduct Supply Mains Watertown Section Rehabilitation
 - Quabbin Transmission System Oakdale Phase 1A Electrical Construction
 - Dam Projects Safety Modification and Repair Design
 - Central Monitoring System Winsor Dam High Line Replacement
 - Wastewater System
 - DITP Miscellaneous VFD Replacements
 - DITP Expansion Joint Repair Construction 2
 - DITP Digester Sludge Pump Replacement Construction
 - DITP Primary and Secondary Clarifier Rehab Design
 - DITP Roof Replacement Phase 3
 - DITP Clarifier Flush System
 - Residuals Condition Assessment/Technology and Regulatory Review
 - DITP Asset Protection NMPS and WTF Butterfly Valve Replacement
 - DITP Scum Skimmer Replacement

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 bearing overhauls, digester mixer replacement, reactor gearbox rebuilds, and critical equipment maintenance.
- Work on numerous projects in Field Operations including meter inspection and repairs, manhole rehabilitation, HVAC and lighting efficiency upgrades, dam inspections, grinder repairs, 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 after FY14) and Clinton Wastewater Treatment Plant (assume new permit as of July 2013).
- 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. This work can commence after the Environmental Protection Agency (EPA) issues the new NPDES permits.
- Continue to prepare for the start-up of ultra-violet (UV) treatment at the Carroll Water Treatment Plant and Quabbin facility.
- Conduct invasive species removal and monitoring at water reservoirs.

FY13 Accomplishments:

Emergencies

- Successfully operated both systems during hurricane Sandy in late October 2012. Cleared more than 100 downed trees on the aqueduct right of ways and at reservoirs and facilities.

Operations, Energy, and New Facilities Start-ups:

- Procured Energy Management System for Southborough facility and LED outdoor lighting retrofits for numerous water and wastewater facilities. Completed indoor lighting retrofits at the Cottage Farm and Prison Point wastewater facilities. Completed energy audits at six MWRA facilities in the southern system.
- Assisted the Procurement Department with the procurement of contracts to supply and deliver chemicals for the water and wastewater system facilities. Chemicals procured included aqua ammonia, soda ash, sodium hypochlorite, hydrofluosilicic acid, ferric chloride, carbon dioxide, sodium bisulfite, nitrazyme, VX456, and polymer.
- Received revenue for energy generated at numerous facilities including the following: hydroelectric \$281,000 from Oakdale Station, \$204,000 from Cosgrove Station, and \$33,000 from the Loring Road Pump Station; solar \$92,000 from CWTP; wind \$344,000 from Charlestown Pump Station.
- Continued 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 \$2.4 million in revenue for FY13. Deer Island also self-generated ~26% of the plant's total required power during that period.
- Processed 101 average tons per day of sludge at the Pelletization Plant and disposed of 7,057 tons of grit and screenings through a contracted vendor

Maintenance:

- The Operations Division spent \$23.4 million on maintenance of which \$13.1 million was for materials and \$10.3 million was for services.
- Procured and implemented numerous contracts for maintenance services including: DITP thermal and hydro power plant maintenance; DITP wind turbine maintenance; DITP CTG maintenance; DITP janitorial services; metro operations paving and electrical testing; crane maintenance; boiler and water heating service at numerous facilities; fuel storage tank maintenance; and DITP concrete/steel restoration and coating repair.
- Procured and implemented numerous contracts for maintenance projects including: dam repairs; dewatering pump replacements at headworks facilities; invasive species removal at the Wachusett reservoir; and rebuilding a grinder at the Braintree-Weymouth Pump Station.
- Completed numerous maintenance projects including winter maintenance on treatment train B at the CWTP; leak repair of a water main in Dorchester; pump vibration analysis at selected wastewater pump stations; scrubber inspection and cleaning at Nut Island; and building repairs and painting at numerous facilities.
- In the water system, exercised 988 and replaced 23 mainline valves and exercised 521 and replaced 15 blow-off valves.
- In the wastewater system, inspected 32.25 miles and cleaned 28.7 miles of MWRA pipeline. Also inspected 1,168 structures and rehabilitated 132 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
 - Weston Aqueduct Supply Mains Watertown Section Rehabilitation
 - Quabbin Water Treatment Plant - UVWTP – Construction
 - NIH Redundancy & Storage – Gillis Pump Station Improvements
 - Long-Term Redundancy – Sudbury Aqueduct MEPA Review
 - Wastewater System
 - DITP Centrifuge Backdrive Replacements
 - DITP Electric Equipment Upgrade – Construction 4
 - Facility Asset Protection NI Electric & Grit/Sreenings Conveyance
- Substantially completed numerous projects including the following:
 - Water System
 - MetroWest Tunnel Lower Hultman Rehabilitation – Construction 6A
 - MetroWest Tunnel Upper Hultman Rehabilitation – Construction 6B
 - Southern Spine Distribution Mains Sections 21, 22, 43 Design
 - Northern Intermediate High Redundancy and Storage – Interconnections
 - Valve Replacement Construction 7
 - Lynnfield Pipeline Construction Phase 2
 - Dam Safety Modifications and Repairs, Construction

- Wastewater System
 - CSO Program North Dorchester Bay Tunnel - Design/ESDC
 - CSO Program North Dorchester Bay Tunnel and Facilities – CM Services
 - CSO Program North Dorchester Bay Facilities Design
 - CSO Program Brookline Sewer Separation project
 - CSO Program Morrissey Boulevard Drain Design
 - Clinton Aeration Efficiency Improvements

Environmental:

- The TRAC Department completed the following Environmental Protection Agency (EPA)-required work for significant industrial users: 212 inspections, 183 monitoring events, and 381 sampling of connections. This department also issued or renewed 274 permits to Significant Industrial Users (SIUs) and non-SIUs.
- The TRAC Department submitted the Industrial Pretreatment Program Annual Report to the EPA for FY12 in October 2012.
- 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 98.9% of flow through secondary and met secondary permit limits at all times. Operated DITP without any NPDES Permit violations during FY13.
- 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 FY13. Also, maximum turbidity results at Quabbin and Wachusett were within DEP standards.
- During FY13, the Department of Laboratory Services performed 254,736 tests including the annual Lead and Copper Rule testing and fish and shellfish testing for the Harbor and Outfall Monitoring program.

Budget Highlights:

- The FY14 Budget is \$160.8 million, which is \$3.5 million or 2.2%, more than FY13 Actual Spending.
- Increases from FY13 Actual Spending include:
 - The FY14 Budget of \$74.0 million for **Wages and Salaries** is an increase of \$3.3 million or 4.7 % from FY13 Actual Spending, primarily due to contractual wage increases; lower salaries for new hires as compared to their predecessors; and the expansion of the internship program in conjunction with the Authority’s succession planning and workforce development initiative. The FY14 Budget funds 933 filled positions on average during the year, approximately the same as were filled in FY13. The budget also includes \$783,500 for Stand-by Pay to ensure staffing availability and response during emergencies, \$241,000 for Temporary Employees, and \$283,000 for Interns to assist with peak workload and special initiatives.
 - The FY14 Budget for **Professional Services** is \$2.7 million, a net increase of \$564,000 or 26.1% from FY13 Actual Spending primarily due to the inclusion of funds for test-pit drillings; additional work on dam inspections and repairs; a periodic, comprehensive reservoir-wide plant population survey; a water system

leak detection survey; and projected spending for Harbor and Outfall Monitoring (HOM) contracts based on scheduled work. The FY14 Budget includes \$1.5 million for the HOM Program; \$460,000 for as-needed engineering support for CEB maintenance projects; \$203,500 for dam analysis, design, and inspection services; \$153,000 for outsourcing laboratory testing for peak and non-routine work; \$150,000 for utility test-pit borings for capital and maintenance projects; \$70,000 for energy services to support facility audits and energy procurements; \$60,000 for a reservoir-wide plant population survey; and \$50,000 for a water system leak detection survey.

- The \$10.7 million FY14 Budget for **Chemicals** is a net increase of \$532,000 or 5.2% from FY13 Actual Spending primarily due to price increases for soda ash, ferric chloride, sodium bisulfite, aqua ammonia, and other chemicals. Also, the budget for liquid oxygen at the Carroll Water Treatment Plant is more in FY14 than spent in FY13 primarily because of lower use in the Spring of 2013 due to better water quality. The FY14 Budget includes \$6.7 million for disinfection and treatment in the water system and \$4.0 million for disinfection, treatment, and odor control in the wastewater system. The FY14 Budget assumes reduced fluoride usage at the Carroll Water Treatment Plant will not be in effect in FY14 due to uncertainty regarding the commencement of the new regulations. The FY13 Final Budget included a partial year reduction in use based on expectations of regulatory approval in FY13.
- The FY14 Budget for **Maintenance** is \$23.9 million, a net increase of \$506,000 or 2.2% from FY13 Actual Spending primarily due to changes in project priorities from year to year (+\$844,000) offset by the varying annual contractual amounts for maintenance at the pelletization plant (-\$348,000). The FY14 Budget includes \$10.7 million for materials and \$13.3 million for services. By maintenance area, the largest categories of spending for materials and services include \$11.0 million for plant and machinery; \$4.7 million for building and grounds; \$2.7 million for specialized equipment; \$2.4 million for electrical, \$1.5 million for pipeline; and \$1.4 million for HVAC systems. The budget also funds special initiatives including \$500,000 for energy conservation projects in the Field Operations Department facilities; \$384,000 for invasive plant control in the water reservoirs; and \$320,000 for easement clearing. .
- The FY14 Budget of \$3.5 million for **Overtime** is a net increase of \$49,000 or 1.4% from FY13 Actual Spending. The FY14 Budget is sized based on multi-year spending patterns and includes adjustments for wage increases. The components of the budget include \$1.8 million for emergencies and wet weather staffing; \$943,000 for operational coverage; and \$705,000 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 \$123,000 FY14 Budget for **Training and Meetings** covers specialized training, attendance at industry conferences, and site visits to other plants. The major training funded in the FY14 Budget includes \$15,000 for site visits to other water treatment plants that use ultra-violet technology, \$9,000 for annual boom deployment, \$8,000 for belt laser alignment, \$8,000 for cyber security, \$7,000 for electrical medium voltage, \$5,000 for SCADA, and \$5,000 for hydraulic equipment.
- Decreases from FY13 Actual Spending include:
 - The \$4.7 million FY14 Budget for **Other Materials**, a net decrease of \$1.1 million or 18.5% from FY13 Actual Spending. The FY14 Budget includes \$1.7 million for Vehicle Replacements; \$808,000 for Lab and Testing Supplies; \$524,000 for Equipment and Furniture; \$506,000 for Vehicle Expenses (gas, tolls); \$412,000 for Health and Safety Supplies; and \$318,000 for Work Clothes. The decrease is due to spending of \$1.7 million for radio replacements in FY13 that are not budgeted in FY14. This decrease is offset by increases for furniture replacement at the Chelsea office building and additional vehicle replacements associated with the aging fleet pool. Approximately 50% of the active fleet will be seven years or older at

the beginning of FY14. The FY14 Budget funds replacement of approximately 52 vehicles, or approximately 10.5% of the active fleet.

- The FY14 Budget of \$22.7 million for **Utilities** includes \$16.2 million for electricity, \$3.6 million for diesel fuel, \$2.0 million for water, and \$628,000 for natural gas. The utility budget by department is \$13.0 million for DITP, \$5.1 million for Wastewater Operations, \$3.7 million for Water Operations, \$571,000 for the Chelsea Office facilities, and \$241,000 for the Clinton Wastewater Treatment Plant.

The Division's FY14 Budget is a net decrease of \$307,000 or 1.3% from FY13 Actual Spending due to a decrease of \$781,000 for electricity; offset by increases of \$185,000 for diesel fuel, \$177,000 for natural gas, and \$50,000 for water. The electricity decrease is due to projected lower prices in FY14 than in FY13 of \$1.2 million offset by slightly higher purchased quantity estimates based on historical averages of \$380,000. The diesel fuel increase is due to projected higher prices for FY14 versus FY13 of \$680,000 offset by lower purchased quantities primarily because of heating system conversions from diesel fuel to natural gas at the Braintree-Weymouth Intermediate Pump Station and the Chelsea Headworks facility. The increase for natural gas is also due to the heating system conversion, although the net annual impact of the project on overall utilities spending is projected to result in savings in FY14.

- The FY14 Budget for **Other Services** is \$18.5 million and it funds \$13.8 million for sludge pelletization services; \$1.8 million for the Chelsea Office Building lease; \$903,000 for grit and screenings removal and disposal; \$607,000 for telephones; and \$403,000 for police details. The net decrease of \$118,000 or less than 1% from FY13 Actual Spending is primarily due to a shift in funding for invasive plant control to maintenance to reflect the on-going nature of the work. The FY14 Budget for sludge pelletization is essentially level-funded as compared to FY13 spending due to the net effect of lower projected inflation rates for natural gas in FY14 versus FY13, offset by higher projected tonnage (104 tpd) in FY14 versus FY13 spending (101 tpd) based on historical averages.
- The FY14 Budget is subject to risk in the following areas: timing of the new NPDES permits for Clinton and Deer Island; chemical and utility usage and prices; sludge quantities; impacts of co-digestion at DITP; timing of changes in fluoride regulations; and more than expected emergency-related maintenance, stand-by pay, and overtime needs.

OPERATIONS ADMINISTRATION

FY14 Final Current Expense Budget OPERATIONS ADMINISTRATION						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 1,865,867	\$ 1,905,682	\$ 1,915,020	\$ 1,514,411	\$ (400,609)	-20.9%
OVERTIME	238	101	-	-	-	-
FRINGE BENEFITS	-	-	-	-	-	-
ONGOING MAINTENANCE	-	(342)	-	-	-	-
TRAINING & MEETINGS	2,284	6,812	1,010	5,200	4,190	414.9%
PROFESSIONAL SERVICES	5,467	9,740	166,309	30,000	(136,309)	-82.0%
OTHER MATERIALS	713,187	761,668	1,450,594	1,702,250	251,656	17.3%
OTHER SERVICES	105,087	197,288	216,284	198,639	(17,645)	-8.2%
TOTAL	\$ 2,692,130	\$ 2,880,949	\$ 3,749,217	\$ 3,450,500	\$ (298,717)	-8.0%

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 FY14 Budget is \$3.5 million, a decrease of \$300,000 or 8.0% from FY13 Actual Spending.
- \$1.5 million for **Wages and Salaries**, a decrease of \$400,000 or 20.9% from FY13 Actual Spending. The funding supports 25 filled positions in the department offset by a division-wide vacancy adjustment equivalent to 7 positions.
- \$5,000 for Training & Meetings, an increase of \$ 4,000 or 414.9% from FY13 Actual Spending. The increase supports the Deputy Chief Operating Officer's training and meeting expenses, which were previously charged to the Field Operations Department.
- \$30,000 for **Professional Services**, a decrease of \$136,000 or 82.0%, from FY13 Actual Spending. Funding covers energy consulting services to support procurements and evaluation of projects. The decrease from FY13 to FY14 is primarily due to the unbudgeted spending in FY13 for preparation of the Massachusetts Emergency Management Agency (MEMA)/Federal Emergency Managements Agency (FEMA) Hazard Mitigation Grant Program applications.
- \$1.7 million for **Other Materials**, an increase of \$252,000 or 17.3%, from FY13 Actual Spending. The budget includes \$1.7 million for the replacement of aged vehicles in MWRA's fleet, which is \$200,000 more than FY13 spending due to the need to replace numerous older vehicles. The FY14 Budget will allow MWRA to replace approximately 52 vehicles which is ~10.5% of the active fleet. Actual spending for vehicle purchases for FY02-FY13 is as follows:

FY02: \$ 622,000	FY07:\$1,846,396	FY12: \$ 757,946
FY03: \$ 120,000	FY08:\$1,425,758	FY13: \$1,466,672
FY04: \$1,580,000	FY09:\$1,134,779	
FY05: \$1,237,289	FY10:\$ 826,513	
FY06: \$ 717,381	FY11:\$ 706,368	

From FY00 to FY03, MWRA limited replacement of vehicles pending completion of an extensive fleet review. In FY03 MWRA reduced the active fleet by more than 11% (from 561 to 496 vehicles) as a result of this initiative. For example, staff identified opportunities to meet the needs of the new waterworks system facilities through redeployment of existing vehicles rather than adding to the fleet. Approximately 50% of MWRA's active, operable fleet is seven years or older.

- \$199,000 for **Other Services** which is a decrease of \$18,000 or 8.2% from FY13 Actual Spending. Of this amount, \$198,000 is for Authority-wide memberships including the American Waterworks Association Research Foundation (AWWARF), National Association of Clean Water Agencies (NACWA), Association of Metropolitan Water Agencies (AMWA), American Waterworks Association (AWWA), and the Boston Harbor Association (BHA) marine debris program. The FY14 Budget continues to include partial funding for MWRA's membership in AWWARF.

WASTEWATER TREATMENT

FY14 Final Current Expense Budget WASTEWATER TREATMENT						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 16,976,936	\$ 17,557,331	\$ 17,825,908	\$ 18,733,596	\$ 907,688	5.1%
OVERTIME	950,891	764,150	866,545	1,064,133	197,588	22.8%
FRINGE BENEFITS	19,075	15,150	16,082	15,330	(752)	-4.7%
CHEMICALS	2,271,711	2,773,772	3,397,825	3,481,960	84,135	2.5%
UTILITIES	12,296,072	13,537,849	13,673,883	13,206,619	(467,264)	-3.4%
ONGOING MAINTENANCE	12,772,381	13,672,935	13,774,496	13,453,529	(320,967)	-2.3%
TRAINING & MEETINGS	1,787	5,439	7,907	13,500	5,593	70.7%
PROFESSIONAL SERVICES	346,189	111,911	76,076	173,200	97,124	127.7%
OTHER MATERIALS	504,686	525,659	541,990	558,640	16,650	3.1%
OTHER SERVICES	15,107,186	15,970,725	15,044,368	15,119,632	75,264	0.5%
TOTAL	\$ 61,246,914	\$ 64,934,921	\$ 65,225,080	\$ 65,820,139	\$ 595,059	0.9%

FY14 Final Current Expense Budget WASTEWATER TREATMENT						
FACILITY	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
DEER ISLAND	\$ 44,246,489	\$ 46,886,554	\$ 47,795,291	\$ 48,614,549	\$ 819,258	1.7%
RESIDUALS	15,539,049	16,531,865	15,906,759	15,574,057	(332,702)	-2.1%
CLINTON	1,461,376	1,516,502	1,523,030	1,631,533	108,503	7.1%
TOTAL	\$ 61,246,914	\$ 64,934,921	\$ 65,225,080	\$ 65,820,139	\$ 595,059	0.9%

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 FY14 Budget and 31% of MWRA's FY14 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

FY14 Final Current Expense Budget DEER ISLAND TREATMENT PLANT						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 16,278,877	\$ 16,822,253	\$ 17,105,459	\$ 17,947,200	\$ 841,741	4.9%
OVERTIME	916,406	717,421	809,580	1,011,633	202,053	25.0%
FRINGE BENEFITS	18,716	14,465	15,300	14,330	(970)	-6.3%
CHEMICALS	2,066,352	2,559,694	3,107,477	3,190,008	82,531	2.7%
UTILITIES	11,985,464	13,270,049	13,452,849	12,966,045	(486,804)	-3.6%
ONGOING MAINTENANCE	11,736,526	12,504,338	12,567,714	12,577,743	10,029	0.1%
TRAINING & MEETINGS	1,127	5,439	7,907	9,800	1,893	23.9%
PROFESSIONAL SERVICES	344,215	110,273	74,510	170,500	95,990	128.8%
OTHER MATERIALS	397,774	385,968	382,007	409,900	27,893	7.3%
OTHER SERVICES	501,032	496,654	272,488	317,390	44,902	16.5%
TOTAL	\$ 44,246,489	\$ 46,886,554	\$ 47,795,291	\$ 48,614,549	\$ 819,258	1.7%

Program Description and Goals:

The **Deer Island Treatment Plant** budget accounts for 30% of the Operations Division’s FY14 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 FY14 Budget assumes treatment of an average flow of 360 mgd based on twelve years of historical data. The projected quantity of digested sludge to be pumped to FRSA (TSS basis) is 104 TPD. This is based on data from the seven years after 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 FY14 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 FY14 Budget does not assume the new permit will be in effect for FY14. 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 FY14 Budget is \$48.6 million, an increase of \$819,000 or 1.7%, from FY13 Actual Spending.
- \$17.9 million for **Wages and Salaries**, an increase of \$842,000 or 4.9%, from FY13 Actual Spending primarily due to wage increases. The FY14 Budget funds on average 230 filled permanent positions, three less than budgeted in FY13. The FY14 Budget also includes \$194,000 for stand-by pay to support operational and maintenance needs primarily during storms and emergencies.
- \$1.0 million for **Overtime**, which is \$202,000 or 25.0% more than FY13 Actual Spending. The increase is mainly due to the FY14 Budget having a higher estimate for wet weather/storm overtime than what was actually spent in FY13. The FY14 budget is based on historical spending whereas FY13 was lower than anticipated due to a relatively mild winter. Overtime supports operational coverage, critical maintenance projects, and regulatory requirements (i.e. inspections).
- \$3.2 million for **Chemicals**, an increase of \$83,000 or 2.7%, from FY13 Actual Spending. The FY14 Budget reflects management's expectation that a new NPDES permit will not be in effect for Deer Island for FY14. The budget includes \$1.2 million for sodium hypochlorite, \$810,000 for ferric chloride, \$309,000 for polymer, \$273,000 for activated carbon, and \$148,000 for sodium bisulfite. The increase from FY13 to FY14 is primarily due to a projected net increase in chemical prices.
- \$13.0 million for **Utilities**, a decrease of \$487,000 or 3.6% from FY13 Actual Spending mainly due to lower projected Electricity pricing offset by diesel fuel for higher projected quantity and pricing than that in FY13. The FY14 Budget includes \$9.6 million for electricity, \$1.8 million for diesel fuel, and \$1.5 million for water. The FY14 Budget reflects the average of several years of actual data for power usage and self-generation. The FY14 Budget also reflects revised self-generation estimates for the new back pressure steam turbine generator (STG), based on limited FY13 actual output.
- \$12.6 million for **Maintenance**, which is essentially level-funded with FY13 Actual Spending. The FY14 Budget includes \$5.6 million for materials and \$7.0 million for services. Of the total, \$8.0 million or 64% is for plant and machinery services and materials, \$1.8 million is for electrical system maintenance, and \$1.2 million is for building and grounds work.
- \$171,000 for **Professional Services**, an increase of \$96,000 or 128.8%, from FY13 Actual Spending. The increase is due to funding for 'as-needed' design contracts to support the development of major CEB-funded

maintenance projects. The budget reflects the level of support expected for the priority projects in FY14. Spending for these services in FY13 was less than expected due to shifts in project priorities.

- \$410,000 for **Other Materials**, an increase of \$28,000 or 7.3%, from FY13 Actual Spending. The FY14 Budget includes \$150,000 for health and safety materials, \$98,000 for work clothes, and \$68,000 for vehicles expenses (tolls, mileage, and gas).
- \$317,000 for **Other Services**, an increase of \$45,000 or 16.5% from FY13 Actual Spending. The FY14 Budget includes \$101,000 for permit fees, \$50,000 for fax and copier leasing and servicing, \$62,000 for hazardous safety services, \$36,000 for telephones, and \$12,000 for freight charges.

RESIDUALS MANAGEMENT

FY14 Final Current Expense Budget RESIDUALS MANAGEMENT PROGRAM						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 107,382	\$ 113,188	\$ 116,333	\$ 116,915	\$ 582	0.5%
OVERTIME	-	-	-	-	-	-
FRINGE BENEFITS	-	-	-	-	-	-
UTILITIES	-	-	-	-	-	-
ONGOING MAINTENANCE	843,858	965,977	1,021,639	673,847	(347,792)	-34.0%
TRAINING & MEETINGS	-	-	-	3,400	3,400	-
PROFESSIONAL SERVICES	-	-	-	1,000	1,000	-
OTHER MATERIALS	-	-	12,079	100	(11,979)	-99.2%
OTHER SERVICES	14,587,809	15,452,700	14,756,708	14,778,795	22,087	0.1%
TOTAL	\$ 15,539,049	\$ 16,531,865	\$ 15,906,759	\$ 15,574,057	\$ (332,702)	-2.1%

Program Description and Goals:

The **Residuals Management Program** manages the processing and disposal of approximately 101-110 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.

In FY11, MWRA completed a third-party independent condition assessment of the NEFCo facility. The consultants noted the facility was in excellent condition and recommended only minor modifications to several control system devices.

- The budget is based on 104 tons per day (TPD based on TSS), consistent with historical actual annual tonnage since the start-up of the Braintree-Weymouth tunnel through FY13, 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 FY14 Budget is \$15.6 million, a decrease of \$333,000 or 2.1%, from FY13 Actual Spending.
- \$117,000 for **Wages and Salaries**, which is primarily level funded with FY13 Actual Spending and 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.

- \$674,000 for **Maintenance**, a decrease of \$348,000 or 34.0%, from FY13 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 FY13 to FY14 is based on an approved replacement schedule established at the time of the contract award.
- \$14.8 million for **Other Services**, an increase of \$22,000 or 0.1% from FY13 Actual Spending. The FY14 Budget primarily funds the **Sludge Pelletization** portion of the NEFCo contract. The FY14 Budget includes \$13.8 million for sludge is essentially level-funded as compared to FY13 spending due to the net effect of lower projected inflation rates for natural gas in FY14 versus FY13, offset by higher projected tonnage (104 tpd) in FY14 versus FY13 actuals (101 tpd) based on historical averages. In addition, this line item also covers Grit and Screenings disposal of \$903,000 and Printing of \$20,000.

CLINTON WASTEWATER TREATMENT PLANT

FY14 Final Current Expense Budget CLINTON WASTEWATER TREATMENT PROGRAM						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 590,677	\$ 621,889	\$ 604,116	\$ 669,480	\$ 65,364	10.8%
OVERTIME	34,485	46,728	56,965	52,500	(4,465)	-7.8%
FRINGE BENEFITS	359	685	782	1,000	218	27.9%
CHEMICALS	205,359	214,078	290,347	291,951	1,604	0.6%
UTILITIES	310,608	267,800	221,034	240,574	19,540	8.8%
ONGOING MAINTENANCE	191,997	202,620	185,143	201,940	16,797	9.1%
TRAINING & MEETINGS	660	-	-	300	300	-
PROFESSIONAL SERVICES	1,973	1,638	1,566	1,700	134	8.6%
OTHER MATERIALS	106,913	139,691	147,904	148,640	736	0.5%
OTHER SERVICES	18,345	21,373	15,173	23,448	8,275	54.5%
TOTAL	\$ 1,461,376	\$ 1,516,502	\$ 1,523,030	\$ 1,631,533	\$ 108,503	7.1%

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, was 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 FY14 Budget reflects the first full year of operation of the Clinton aeration system efficiency improvements and redundant pumping at the influent and intermediate lift stations. These improvements were completed in the 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. The redundant pumps also enable MWRA to avoid the cost of renting additional pumps which were required four times in the past two years. Further, the new submersible pumps are energy efficient and will significantly reduce the plant's energy consumption (approximate savings of \$35,000 per year). National Grid allotted a grant for \$177,000 for this work which became available at completion in early 2013.

Budget Highlights:

- The FY14 Budget is \$1.6 million, an increase of \$109,000 or 7.1% from FY13 Actual Spending.

- \$669,000 for **Wages and Salaries**, an increase of \$65,000 or 10.8% from FY13 Actual Spending. This funds eight positions and one part-time contract clerical position. FY14 spending is higher than FY13 due to wage increases and lower than budgeted headcount in FY13. Wages and Salaries represent 41% of the FY14 budget.
- \$53,000 for **Overtime**, a decrease of \$4,000 or 7.8% from FY13 Actual Spending. Overtime is used for critical maintenance work and to meet the 24 hour, 7 day per week emergency coverage requirement.
- \$292,000 for **Chemicals**, essentially level funded with FY13 Actual Spending. Chemicals are used for sludge processing and disposal and wastewater treatment. The FY14 Final Budget assumes the new NPDES permit will be in effect for the full year. Chemicals represent 17.9% of the budget.
- \$241,000 for **Utilities**, an increase of \$20,000 or 8.8% from FY13 Actual Spending. The budget includes \$166,000 for electricity, \$62,000 for fuel oil, and \$12,000 for water. The increase in FY14 is mainly due to lower than projected electricity spending in FY13 due to efficiency initiatives. Utilities represent 14.7% of the FY14 budget.
- \$202,000 for **Maintenance**, a \$17,000 or 9.1% increase from FY13 Actual Spending. The FY14 Budget includes \$61,000 for major projects based on the most current rolling priority list. The remainder of the budget is for routine materials and services. Maintenance represents 12.4% of the FY14 budget.
- \$149,000 for **Other Materials**, essentially level funded with the FY13 Actual Spending. The Other Materials budget includes \$136,000 for clean fill for the landfill operation.
- \$23,000 for **Other Services**, an \$8,000 or 54.5% increase from FY13 Actual Spending. The budget includes \$11,000 for permit fees, \$5,000 for telephones, and \$3,000 for railroad easement expenses.

FIELD OPERATIONS

FY14 Final Current Expense Budget FIELD OPERATIONS						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 34,976,521	\$ 35,927,958	\$ 36,361,523	\$ 37,921,216	\$ 1,559,693	4.3%
OVERTIME	2,655,359	2,102,678	2,460,544	2,335,282	(125,262)	-5.1%
FRINGE BENEFITS	47,180	38,114	41,658	44,105	2,447	5.9%
CHEMICALS	6,425,336	6,497,757	6,741,432	7,189,265	447,833	6.6%
UTILITIES	9,526,403	9,111,793	9,263,150	9,426,655	163,505	1.8%
ONGOING MAINTENANCE	11,596,068	9,743,801	9,374,057	10,135,603	761,546	8.1%
TRAINING & MEETINGS	62,590	62,671	83,335	86,800	3,465	4.2%
PROFESSIONAL SERVICES	405,450	507,936	556,814	683,500	126,686	22.8%
OTHER MATERIALS	1,020,851	2,022,727	2,708,894	1,258,830	(1,450,064)	-53.5%
OTHER SERVICES	2,898,012	3,101,844	3,190,312	3,009,625	(180,687)	-5.7%
TOTAL	\$ 69,613,770	\$ 69,117,279	\$ 70,781,719	\$ 72,090,881	\$ 1,309,162	1.8%

FY14 Final Current Expense Budget FIELD OPERATIONS by Program						
PROGRAM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
TOXIC REDUCTION & CONTROL	\$ 3,504,134	\$ 3,524,789	\$ 3,344,030	\$ 3,500,740	\$ 156,710	4.7%
WASTEWATER OPERATIONS	12,120,182	11,877,271	12,223,167	12,530,698	307,531	2.5%
WATER OPERATIONS & MAINT	26,266,747	25,685,781	26,424,382	27,762,546	1,338,164	5.1%
METRO MAINTENANCE	14,402,761	14,586,284	13,354,828	13,996,658	641,830	4.8%
OPERATIONS SUPPORT	8,617,057	8,201,808	8,599,003	8,960,713	361,710	4.2%
FOD ADMIN	4,702,889	5,241,346	6,836,309	5,339,526	(1,496,783)	-21.9%
TOTAL	\$ 69,613,770	\$ 69,117,279	\$ 70,781,719	\$ 72,090,881	\$ 1,309,162	1.8%

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, Pre-treatment Information Management System (PIMS), 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. FY13 was the first full-year of operation of the South Boston CSO facilities. The wastewater system is monitored and controlled from the operations control center (OCC) in Chelsea.

Water Operations and Maintenance is responsible for the treatment and delivery of approximately 207 million gallons per day (mgd) (three year average) 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, 4,900 valves, 18 miles of deep rock tunnels, ten pump stations, eight tunnel shafts, eleven distribution storage tanks, a wastewater network of 240 miles of wastewater interceptors and appurtenances, 12 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 coordinates 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 FY14 Budget is \$72.1 million, an increase of \$1.3 million or 1.8% from FY13 Actual Spending.
- \$37.9 million for **Wages and Salaries**, which is \$1.6 million or 4.3% more than FY13 Actual Spending mainly due to wage increases and fewer than budgeted positions in FY13. The Wages and Salaries line item accounts for 53% of the FY14 Budget and funds 502 positions, ten fewer than budgeted in FY13. Of the remaining budget, \$543,000 is for stand-by pay to ensure support for operational and maintenance needs during wet weather and emergencies. The budget also includes \$84,000 for interns and \$40,000 for temporary employees to provide support in several areas including operations engineering, SCADA, and TRAC.
- \$2.3 million for **Overtime**, a decrease of \$125,000 or 5.1% from FY13 Actual Spending due to higher emergency overtime due to storm events in FY13. The budget includes \$1.2 million for emergency related overtime, \$571,000 for planned overtime covering scheduled maintenance and training, and \$564,000 for operational coverage needs.

- \$7.2 million for **Chemicals**, of which \$6.7 million is for water treatment and \$516,000 is for wastewater treatment. The FY14 Budget is \$448,000 or 6.6% more than FY13 Actual Spending due to price and volume increases for water chemicals, including soda ash and liquid oxygen. The budget also reflects price increases for wastewater chemicals, including Nitrazyme and V/X. The FY14 Budget includes \$3.4 million for soda ash for alkalinity control, \$1.1 million for sodium hypochlorite for disinfection, \$762,000 for hydrofluosilicic acid for fluoridation, \$726,000 for liquid oxygen for ozone generation, \$290,000 for carbon dioxide to control water pH, \$218,000 for sodium bisulfite for dechlorination, \$273,000 for aqua ammonia for disinfection, \$264,000 for Nitrazyme and VX-456 for Framingham Extension Relief Sewer odor and corrosion control, and \$37,000 for sodium hydroxide for pH and odor control.
- \$9.4 million for **Utilities**, an increase of \$164,000 or 1.8% from FY13 Actual Spending. The FY14 Budget includes \$6.4 million for electricity, \$1.8 million for diesel fuel, \$628,000 for natural gas, and \$454,000 for water. The increase from FY13 to FY14 is the net effect of price increases for electricity, offset by lower quantities for diesel due to the conversion of heating systems at two headworks facilities from diesel to natural gas.
- \$10.1 million for **Maintenance**, an increase of \$762,000 or 8.1% from FY13 Actual Spending. The increase is due to project priorities planned for FY14 and also less than budgeted spending in FY13 resulting from project delays and reconfigurations. The FY14 Budget includes \$4.1 million in day-to-day needs, \$3.5 million for services, \$2.0 million in major projects, and \$507,000 for energy initiatives. Some of the major projects planned for FY14 include:

Easement Clearing	\$320,000
Carpet Replacement - Chelsea Facility	\$275,000
Invasives Control - Stillwater Basin	\$250,000
Manhole Rehabilitation Contract	\$180,000
Bellevue Roof Replacement	\$131,000
Replace 10 WW Flow Meters	\$125,000
- \$87,000 for **Training and Meetings**, an increase of \$3,000 or 4.2% from FY13 Actual Spending which covers training required for job duties, health and safety compliance, and job-related licensures and certifications.
- \$684,000 for **Professional Services**, an increase of \$127,000 or 22.8% from FY13 Actual Spending primarily due to the inclusion of a comprehensive reservoir-wide plant population survey and a leak-detection survey for the water system. The budget also includes additional funds for dam inspection and repair based on identified work. The FY14 Budget includes \$579,000 for engineering services, which is made up of \$310,000 for as-needed engineering services to support CEB-funded maintenance projects; \$204,000 for a multi-year dam safety contract; \$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 a triennial macrophyte survey at the reservoirs and \$40,000 for energy audits at various south system facilities.
- \$1.3 million for **Other Materials**, a decrease of \$1.5 million or 53.5% from FY13 Actual Spending due to a \$1.7 million unbudgeted charge in FY13 for replacement of portable radios. The FY14 Budget includes \$389,000 for vehicle expenses for gas, mileage reimbursements, and tolls; \$240,000 for health and safety supplies, \$216,000 for equipment/furniture to replace aging furniture and work stations at the Chelsea facility, \$210,000 for work clothes; and \$145,000 for lab and testing supplies.
- \$3.0 million for **Other Services**, a decrease of \$181,000 or 5.7% from FY13 Actual Spending due to lower than anticipated costs for the new contaminant monitoring system and a shift in the funding for invasives control to the maintenance budget to reflect the on-going nature of that work. The FY14 Budget includes \$1.8 million for annual lease payments for the Chelsea office building, \$549,000 for telecommunications equipment and services and SCADA needs at various facilities, and \$392,000 for police details.

LABORATORY SERVICES

FY14 Final Current Expense Budget LABORATORY SERVICES							
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14		
WAGES & SALARIES	\$ 4,029,511	\$ 3,983,943	\$ 4,113,753	\$ 4,466,765	\$ 353,012	8.6%	
OVERTIME	61,556	67,731	71,746	56,706	(15,040)	-21.0%	
FRINGE BENEFITS	405	445	512	1,200	688	134.4%	
UTILITIES	16,697	16,464	23,032	19,903	(3,129)	-13.6%	
ONGOING MAINTENANCE	233,054	186,431	252,330	314,818	62,488	24.8%	
TRAINING & MEETINGS	206	773	141	2,000	1,859	1318.4%	
PROFESSIONAL SERVICES	97,446	68,265	130,607	153,423	22,816	17.5%	
OTHER MATERIALS	870,872	921,303	889,095	965,556	76,461	8.6%	
OTHER SERVICES	90,348	67,445	82,390	76,966	(5,424)	-6.6%	
TOTAL	\$ 5,400,095	\$ 5,312,800	\$ 5,563,606	\$ 6,057,337	\$ 493,731	8.9%	

The **Department of Laboratory Services (DLS)** goal 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 (SDWA), 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 (DITP), 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 (MDEP).

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

Budget Highlights:

- The FY14 Budget is \$6.1 million, an increase of \$494,000 or 8.9% from FY13 Actual Spending.
- \$4.5 million for **Wages and Salaries**, an increase of \$353,000 or 8.6%, from FY13 Actual Spending. The FY14 Budget funds 55 positions. The increase from FY13 is due to wage increases and the addition of a permanent position to manage the new, mobile laboratory. The FY14 Budget also includes \$124,000 for up to four temporary employee positions to cover peak workload, Harbor and Outfall Monitoring, the Carroll Water Treatment Plant special testing, and summer beach testing.
- \$20,000 for **Utilities**, a decrease of \$3,000 or 13.6% from FY13 Actual Spending. The FY14 Budget includes the purchase of gases and cryogenic liquids used for various laboratory instruments.

- \$315,000 for **Maintenance**, an increase of \$62,000 or 24.8%, from FY13 Actual Spending due to current project priorities. The FY14 Budget includes \$211,000 for equipment service contracts, \$40,000 for Laboratory modifications, \$33,000 for harbor monitoring field equipment replacements, and \$30,000 for Heating Ventilation Air Conditioning (HVAC) services to annually maintain and certify the fume hoods.
- \$153,000 for **Professional Services**, an increase of \$23,000 or 17.5% from FY13 Actual Spending. The budget funds laboratory and testing analysis services that 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 includes \$48,000 of outside testing for the EPA mandated (UCMR3) unregulated contaminant monitoring rule 3 program (UCMR3). The increase for FY14 is due to lower than projected need for these services in FY13.
- \$966,000 for **Other Materials**, an increase of \$76,000 or 8.6%, from FY13 Actual Spending. The FY14 Budget includes \$649,000 for laboratory and testing supplies. The cost of laboratory supplies has increased from FY13 due to the inclusion of additional supplies for the mobile laboratory. The budget also includes \$275,000 for replacement of obsolete or older equipment.
- \$77,000 for **Other Services**, a decrease of \$5,400 or 6.6%, from FY13 Actual Spending. The FY14 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

FY14 Final Current Expense Budget ENVIRONMENTAL QUALITY						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 1,405,236	\$ 1,465,986	\$ 1,422,607	\$ 1,446,560	\$ 23,953	1.7%
OVERTIME	465	985	1,922	2,000	78	4.1%
FRINGE BENEFITS	-	-	-	-	-	-
ONGOING MAINTENANCE	142	(905)	-	-	-	-
TRAINING & MEETINGS	1,644	1,405	2,925	3,000	75	2.6%
PROFESSIONAL SERVICES	2,225,388	1,369,550	1,221,137	1,530,450	309,313	25.3%
OTHER MATERIALS	2,104	18,157	6,012	14,580	8,568	142.5%
OTHER SERVICES	2,570	4,983	6,231	4,200	(2,031)	-32.6%
TOTAL	\$ 3,637,549	\$ 2,860,161	\$ 2,660,834	\$ 3,000,790	\$ 339,956	12.8%

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 FY14 Budget is \$3.0 million, an increase of \$340,000 or 12.8%, from FY13 Actual Spending.
- \$1.4 million for **Wages & Salaries**, which is \$24,000 or 1.7% more than FY13 Actual Spending. The FY14 Budget includes funding for 15 positions.
- \$1.5 million for **Professional Services**, an increase of \$310,000 or 25.3% compared to FY13 Actual Spending. Of this amount, \$1.2 million is for laboratory testing and analysis in support of MWRA's Harbor and Outfall Monitoring (HOM) Program. The increase from FY13 spending is due to a hard-bottom survey that is done every third year, a new contract for continuous monitoring near the outfall, and estimated costs of Red Tide monitoring which is higher than FY13 due to lower spending for monitoring in FY13 as levels of *Alexandrium* remained low throughout the season. The balance 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 A new contract for required continuous monitoring
 - 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
 - o Bays Eutrophication Model
 - o Sea Grant study of trace organic chemicals (personal care products, pharmaceuticals, endocrine disruptors).

The FY14 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.

ENGINEERING AND CONSTRUCTION

FY14 Final Current Expense Budget ENGINEERING AND CONSTRUCTION						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 7,540,258	\$ 7,290,274	\$ 7,120,388	\$ 7,982,392	\$ 862,004	12.1%
OVERTIME	182,036	111,200	72,736	64,500	(8,236)	-11.3%
FRINGE BENEFITS	713	569	341	500	159	46.6%
ONGOING MAINTENANCE	2,739	7,647	6,825	9,366	2,541	37.2%
TRAINING & MEETINGS	5,757	7,017	4,677	6,400	1,723	36.8%
PROFESSIONAL SERVICES	-	65,112	7,503	150,000	142,497	1899.2%
OTHER MATERIALS	125,635	66,557	37,261	46,650	9,389	25.2%
OTHER SERVICES	24,409	20,755	23,556	23,200	(356)	-1.5%
TOTAL	\$ 7,881,547	\$ 7,569,131	\$ 7,273,287	\$ 8,283,008	\$ 1,009,721	13.9%

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 FY14 Budget is \$8.3 million, an increase of \$1.0 million or 13.9%, from FY13 Actual Spending primarily due to wage increases and the large number of vacant positions in FY13.
- \$8.0 million for **Wages and Salaries**, an increase of \$860,000 or 12.1%, from FY13 Actual Spending. Wages and Salaries represent 96% of the FY14 Budget and includes funding for 83 positions, three positions fewer than included in the FY13 CEB. In FY13, the average number of filled positions was 77, which is six fewer positions than budgeted for FY14.
- \$65,000 for **Overtime**, a decrease of \$8,000 or 11.3%, from FY13 Actual Spending. 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. Overtime spending in FY13 was high due to one-time additional coverage on the Upper Hultman, Carroll Water Treatment Plant UV and the Lynnfield/Saugus Pipeline construction projects.

- \$9,000 for **Maintenance**, an increase of \$2,500 or 37.2% from FY13 Actual Spending. Maintenance covers two service contracts for the DISC Unit's specialized printers and plotters. Warranty coverage on a new copier resulted in maintenance service contract savings in FY13.
- \$6,000 for **Training & Meetings**, an increase of \$2,000 or 36.8% from FY13 Actual Spending. Training funding covers attendance at conferences and technical seminars.
- \$150,000 for **Professional Service**, an increase of \$143,000 from FY13 Actual Spending. The FY14 Budget includes the addition of an As-needed Utility Borings/Test Pit contract to support construction activities. This contract will help avoid situations where contractors have utility conflicts while working on MWRA construction projects.
- \$47,000 for **Other Materials**, an increase of \$9,000 or 25.2% from FY13 Actual Spending primarily due to less than budgeted need in FY13. The budget covers vehicle expenses, office supplies, health and safety supplies, and survey equipment. Vehicle expense fluctuates from year to year depending on the location of active construction projects in relation to MWRA facilities.
- The \$23,000 for **Other Services** which is primarily level funded with FY13 Actual Spending. The FY14 Budget includes funding for printing/duplicating, telephone expenses, memberships and dues, and police details.

PLANNING AND COORDINATION DEPARTMENT

FY14 Final Current Expense Budget PLANNING AND COORDINATION						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	1,786,851	1,795,643	1,855,456	1,898,950	\$ 43,494	2.3%
OVERTIME	18	0	0	0	-	-
FRINGE BENEFITS	-	-	-	-	-	-
TRAINING & MEETINGS	1,478	(69)	7,590	6,000	(1,590)	-20.9%
PROFESSIONAL SERVICES	1,800	3,028	1,631	3,100	1,469	90.1%
OTHER MATERIALS	147,660	161,963	133,132	152,541	19,409	14.6%
OTHER SERVICES	94,793	74,589	66,402	79,264	12,862	19.4%
TOTAL	\$ 2,032,600	\$ 2,035,154	\$ 2,064,211	\$ 2,139,855	\$ 75,644	3.7%

The **Planning and Coordination 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. 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. Provides demand analysis and forecasting of water and wastewater flows for master planning and system operations; model reservoir operations, 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.

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, environmental reviews, and permitting, including impacts on MWRA facilities from other agency projects, and assists in the development of strategies for long-term emergency risk reduction and preparation for MWRA facilities and systems.

Regulatory and Policy Matters - Staff work with various regulatory entities to promote 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 and staff conducts public health research, including outreach and water quality reporting and the annual Consumer Confidence Report (CCR). Staff also coordinates with DCR on watershed protection initiatives.

Community Support Program - Staff are responsible for inflow/infiltration (I/I) reduction policy development,

implementation, and reporting, provide oversight of and reporting on MWRA leak detection and demand management programs, and report 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 FY14 Budget is \$2.1 million, an increase of \$76,000 or 3.7% from FY13 Actual Spending.
- \$1.9 million for **Wages and Salaries**, an increase of \$43,000 or 2.3% from FY13 Actual Spending primarily due to wage increases. The FY14 Budget includes funding for 21 positions.
- \$6,000 for **Training and Meetings**, a decrease of \$2,000 or 20.9% from FY13 Actual Spending. The FY14 Budget covers participation in training and conferences primarily focused on water quality regulations and geographic information systems (GIS).
- \$3,000 for **Professional Services**, an increase of \$1,000 or 90.1% from FY13 Actual Spending. The FY14 Budget covers costs associated with the translation of the Consumer Confidence Report and also programming of the GIS user interface.
- \$153,000 for **Other Materials**, an increase of \$19,000 or 14.6% from FY13 Actual Spending. The FY14 Budget includes funding of \$134,000 for postage and mailing of the Consumer Confidence Report, \$15,000 for water conservation kits, \$10,000 for mapping supplies, \$2,000 for office supplies, and \$1,000 for vehicle expenses. The increase in FY14 is due to lower than projected need for these supplies in FY13.
- \$79,000 for **Other Services**, an increase of \$13,000 or 19.4% from FY13 Actual Spending. The FY14 Budget includes \$55,000 for printing the Consumer Confidence Report, \$10,000 for printing the Lead in Tap Water brochures, and \$10,000 for reprinting the water conservation bill stuffers. The increase in FY14 is due to lower than projected printing costs in FY13.



Law Division
Budget

LAW DIVISION

FY14 Final Current Expense Budget LAW DIVISION							
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14		
WAGES & SALARIES	\$ 1,612,193	\$ 1,556,666	\$ 1,541,984	\$ 1,547,618	\$ 5,634	0.4%	
OVERTIME	-	99	-	-	-	-	
TRAINING & MEETINGS	845	535	890	1,000	110	12.4%	
PROFESSIONAL SERVICES	67,544	110,886	60,014	121,000	60,986	101.6%	
OTHER MATERIALS	4,095	3,707	3,656	5,964	2,308	63.1%	
OTHER SERVICES	25,702	25,512	24,400	28,147	3,747	15.4%	
TOTAL	\$ 1,710,379	\$ 1,697,405	\$ 1,630,944	\$ 1,703,729	\$ 72,785	4.5%	

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.

FY14 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 FY14 Final Budget is \$1.7 million, an increase of \$73,000 or 4.5% from FY13 Actual Spending.
- \$1.5 million for **Wages and Salaries**, an increase of \$6,000 or 0.4% from FY13 Actual Spending. The budget funds 16 positions.
- \$121,000 for **Professional Services**, an increase of \$61,000 or 101.6% from FY13 Actual Spending due to lower than projected need for outside legal services during FY13.
- \$28,000 for **Other Services**, an increase of \$4,000 or 15.4% from FY13 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

FY14 Final Current Expense Budget ADMINISTRATION AND FINANCE						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 15,166,542	\$ 15,345,968	\$ 15,326,937	\$ 16,014,666	\$ 687,729	4.5%
OVERTIME	48,666	39,230	69,354	57,404	(11,950)	-17.2%
FRINGE BENEFITS	17,289,695	17,608,265	17,477,887	18,002,690	524,803	3.0%
WORKERS' COMPENSATION	2,228,175	1,600,726	2,114,701	2,000,000	(114,701)	-5.4%
UTILITIES	138,122	100,731	97,516	107,410	9,894	10.1%
ONGOING MAINTENANCE	3,135,984	2,930,602	3,149,241	3,489,765	340,524	10.8%
TRAINING & MEETINGS	36,965	90,611	201,463	193,514	(7,949)	-3.9%
PROFESSIONAL SERVICES	859,070	1,233,132	1,046,589	1,168,688	122,099	11.7%
OTHER MATERIALS	858,895	955,387	1,119,319	1,200,184	80,865	7.2%
OTHER SERVICES	4,709,833	3,018,818	3,167,800	3,096,293	(71,507)	-2.3%
TOTAL	\$ 44,471,947	\$ 42,923,470	\$ 43,770,807	\$ 45,330,614	\$ 1,559,807	3.6%

FY14 Final Current Expense Budget ADMINISTRATION AND FINANCE						
DEPARTMENT	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
DIR OFFICE (FINANCE)	\$ 322,759	\$ 341,067	\$ 349,834	\$ 363,795	\$ 13,961	4.0%
RATES AND BUDGET	741,029	761,977	773,302	795,600	22,298	2.9%
TREASURY	904,827	868,222	974,700	981,493	6,793	0.7%
CONTROLLER	1,538,224	1,492,769	1,487,530	1,553,391	65,861	4.4%
RISK MANAGEMENT	393,035	406,198	395,442	431,745	36,303	9.2%
DIVISION DIR (SUPP SER)	-	-	-	-	-	-
HUMAN RESOURCES	21,606,094	21,490,738	21,805,555	22,279,953	474,398	2.2%
MIS	8,532,999	8,900,651	9,115,523	10,247,261	1,131,738	12.4%
FACILITIES MANAGEMENT	2,551,180	2,370,827	2,395,648	2,162,670	(232,978)	-9.7%
FLEET SERVICES	1,872,739	1,824,489	1,929,142	2,035,814	106,672	5.5%
PROCUREMENT	3,516,243	3,873,820	3,783,562	3,767,175	(16,387)	-0.4%
REAL PROPERTY / ENVIRONMENTAL MGMT	2,492,818	592,712	760,569	711,717	(48,852)	-6.4%
TOTAL	\$ 44,471,947	\$ 42,923,470	\$ 43,770,807	\$ 45,330,614	\$ 1,559,807	3.6%

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).

FY14 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.

FY14 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.
- Continue and expand the electronic procurement (e-procurement) process for construction contracting based upon Lawson Strategic Sourcing.

FY13 Accomplishments:

- Directed the development of the next five-year CIP cap which is significantly lower than the prior two (2) caps, reflecting the changing nature of the capital program from mandated projects to asset protection and water redundancy initiatives.
- 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.

- Completed the Massachusetts Water Pollution Abatement Trust Pool 17 borrowing. This \$40.6 million borrowing is made at subsidized interest rates contributing to a lower overall cost of debt for the Authority.
- Completed the 2012 Series E, F, and G transaction. These three bond series of \$62.8 million, \$60.3 million, and \$57.8 million respectively replaced the 2008B and 2008C1 variable rate bond series. These bonds were issued as direct competitive placement variable rate bonds. This mode provides additional diversification from liquidity bank risk.
- Completed pricing the 2013A \$170.6 million Refunding for savings transaction for an All-In-True Interest Cost of 2.45%, the lowest in MWRA history to that point. Taking advantage of the low interest rates, the refunding resulted in a net present value savings of \$13.1 million or 7.46%
- Successfully negotiated a 10-year successor lease agreement for the Charlestown Navy Yard (CNY) Headquarters which resulted in budgetary savings.
- Evaluated options for potential water-system expansion opportunities based on long-term strategic budgeting.
- Developed specifications in Fleet Services for 41 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.
- Successfully negotiated and implemented an agreement with all five collective bargaining units regarding the use of an Automated Vehicle Locator Tracking System at MWRA.
- 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.
- Developed a pilot program and RFP, working with Operations, Finance and Law, for co-digestion of organic waste at DITP.
- Competitively bid Renewable Energy Portfolio Standard certificates which resulted in FY13 revenues of \$486,000 (Class II). In addition, received FY13 revenues of \$1,430,000 from forward marketing of CY12 (Class I and Solar) Renewable Portfolio Standards (RPS) certificates.
- Awarded the following major contracts in FY13: DITP Expansion Joint Repair Construction 2; Sudbury Aqueduct Pressurization and Connections; Letters of Credit, Liquidity Facilities or Direct Purchases; Nut Island Switchgear Modifications; Caruso Pump Station Improvements Design; Wachusett Aqueduct Emergency Interconnection Valves; DITP Concrete Steel Restoration and Coating, Phase IV; North Dike Tree Removal at Wachusett Reservoir; and DITP Replacement of Four Gravity Thickener Center Columns; Disclosure Counsel Services; DITP North Main Pump Station ESDC/REI; Quabbin UV Disinfection; Security Improvements at Various Facilities Design; Quabbin UV Disinfection Facilities; DITP Waste Sludge Centrifuges Power and Control Systems Upgrade; Roof Replacement Bellevue and New Neponset Pump Station; DITP Electrical Equipment Upgrade Construction 4; Rehab of WASM 3 Design; and Audit Services; Automatic Vehicle Locator Tracking System; Gillis Pump Station Short Term Improvements; and Nut Island Electrical Improvements.

Advertised or received bids/proposals/statements for the following: 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; and Webster Avenue Pipe Replacement Design.

- Recycled 36.61 tons of paper, 222.60 tons of scrap metal, and 5777.36 pounds of brass, copper, stainless steel and aluminum, generating \$62,767 in revenues.

ADMINISTRATION AND FINANCE DIVISION DIRECTOR'S OFFICE

FY14 Final Current Expense Budget						
ADMINISTRATION AND FINANCE DIVISION DIRECTOR'S OFFICE						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 316,476	\$ 333,417	\$ 337,251	\$ 356,202	\$ 18,951	5.6%
TRAINING & MEETINGS	1,764	2,214	4,352	2,093	(2,259)	-51.9%
OTHER MATERIALS	3,922	4,355	7,597	4,200	(3,397)	-44.7%
OTHER SERVICES	597	1,081	634	1,300	666	105.0%
TOTAL	\$ 322,759	\$ 341,067	\$ 349,834	\$ 363,795	\$ 13,961	4.0%

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.

FY14 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 FY14 Final Budget is \$364,000, an increase of \$14,000 or 4.0% from the FY13 Actual Spending.
- \$356,000 for **Wages and Salaries**, an increase of \$19,000 or 5.6% from the FY13 Actual Spending mainly due to contractual increases. The FY14 Final Budget funds three positions.

RATES & BUDGET

FY14 Final Current Expense Budget RATES AND BUDGET							
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14		
WAGES & SALARIES	\$ 739,705	\$ 760,849	\$ 772,530	\$ 795,000	\$ 22,470	2.9%	
TRAINING & MEETINGS	-	-	-	-	-	-	
PROFESSIONAL SERVICES	-	-	-	-	-	-	
OTHER MATERIALS	468	158	240	200	(40)	-16.7%	
OTHER SERVICES	856	970	532	400	(132)	-24.8%	
TOTAL	\$ 741,029	\$ 761,977	\$ 773,302	\$ 795,600	\$ 22,298	2.9%	

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 work 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.

FY14 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.

FY14 Initiatives:

- Continue to develop staff skills for cross functionality between CIP and CEB.
- 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.

FY13 Accomplishments:

- Developed the FY14 Final Budget consistent with the FY13 planning estimates, for both the Current Expense Budget and the Capital Improvement Program.

- Directed the development of the next five-year CIP cap which is significantly lower than the prior two (2) caps, reflecting the changing nature of the capital program from mandated projects to asset protection and water redundancy initiatives.
- Evaluated options for potential water-system expansion opportunities based on long-term strategic budgeting.
- Undertook an initiative to save all CEB and CIP documents electronically and coordinated with the Central Library to ensure proper records retention.

Budget Highlights:

- The FY14 Final Budget is \$796,000, an increase of \$22,000 or 2.9% from the FY13 Actual Spending.
- \$795,000 for **Wages and Salaries**, an increase of \$22,000 or 2.9%, from the FY13 Actual Spending mainly due to contractual increases. The FY14 Final Budget funds eight positions.

TREASURY

FY14 Final Current Expense Budget TREASURY						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 641,248	\$ 677,941	\$ 736,271	\$ 725,923	\$ (10,348)	-1.4%
OVERTIME	309	124	-	-	-	-
ONGOING MAINTENANCE	-	-	-	-	-	-
TRAINING & MEETINGS	-	-	90	-	(90)	-100.0%
PROFESSIONAL SERVICES	257,329	183,909	229,309	248,050	18,741	8.2%
OTHER MATERIALS	1,041	52	584	300	(284)	-48.6%
OTHER SERVICES	4,900	6,196	8,446	7,220	(1,226)	-14.5%
TOTAL	\$ 904,827	\$ 868,222	\$ 974,700	\$ 981,493	\$ 6,793	0.7%

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

FY14 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.

FY13 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.
- Completed the Massachusetts Water Pollution Abatement Trust Pool 17 borrowing. This \$40.6 million borrowing is made at subsidized interest rates contributing to a lower overall cost of debt for the Authority.
- Completed the 2012 Series E, F, and G transaction. These three bond series of \$62.8 million, \$60.3 million, and \$57.8 million respectively replaced the 2008B and 2008C1 variable rate bond series. These bonds were issued as direct competitive placement variable rate bonds. This mode provides additional diversification from liquidity bank risk.
- Completed the \$170.6 million Refunding for savings transaction series 2013A for an All-In-True Interest Cost of 2.45%, the lowest in MWRA history to that point. Taking advantage of the low interest rates, the refunding resulted in a net present value savings of \$13.1 million or 7.46%

Budget Highlights:

- The FY14 Final Budget is \$981,000, an increase of \$7,000 or 0.7% as compared with the FY13 Actual Spending.
- \$726,000 for **Wages and Salaries**, a decrease of \$10,000 or 1.4% from the FY13 Actual Spending. The final budget funds nine positions, one less position than in the FY13 Final Budget.
- \$248,000 for **Professional Services**, an increase of \$19,000 or 8.2% as compared with the FY13 Actual Spending.

CONTROLLER

FY14 Final Current Expense Budget CONTROLLER							
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14		
WAGES & SALARIES	\$ 1,348,206	\$ 1,331,607	\$ 1,325,287	\$ 1,390,941	\$ 65,654	5.0%	
OVERTIME	-	-	-	-	-	-	
ONGOING MAINTENANCE	-	-	-	-	-	-	
TRAINING & MEETINGS	-	-	-	-	-	-	
PROFESSIONAL SERVICES	189,000	160,000	160,491	160,000	(491)	-0.3%	
OTHER MATERIALS	109	193	87	300	213	244.8%	
OTHER SERVICES	909	969	1,665	2,150	485	29.1%	
TOTAL	\$ 1,538,224	\$ 1,492,769	\$ 1,487,530	\$ 1,553,391	\$ 65,861	4.4%	

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.

FY14 Goals:

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

FY14 Initiatives:

- Integrate new contract accounting software module with existing accounting software.
- Complete implementation of electronic vendor remittances.

FY13 Accomplishments:

- Rolled out electronic time sheet approval to two additional Authority departments.
- Collaborated with Procurement and MIS Departments to substantially complete testing Strategic Sourcing and e-Procurement for FY13 implementation.

Budget Highlights:

- The FY14 Final Budget is \$1.6 million, an increase of \$66,000 or 4.4% as compared to the FY13 Actual Spending.
- \$1.4 million for **Wages and Salaries**, an increase of \$66,000 or 5.0% as compared with the FY13 Actual Spending mainly due to contractual increases and lower than budgeted spending in FY13. The FY14 Final Budget funds 18 positions.
- \$160,000 for **Professional Services**, which is level funded with the FY13 Actual Spending. The contract for audit services expires in March, 2013. The FY14 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

FY14 Final Current Expense Budget RISK MANAGEMENT						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 351,829	\$ 357,568	\$ 364,317	\$ 386,295	\$ 21,978	6.0%
OVERTIME	566	-	23	-	(23)	-100.0%
TRAINING & MEETINGS	-	-	-	-	-	-
PROFESSIONAL SERVICES	40,134	48,173	30,757	45,000	14,243	46.3%
OTHER MATERIALS	(214)	7	12	-	(12)	-100.0%
OTHER SERVICES	720	450	333	450	117	35.1%
TOTAL	\$ 393,035	\$ 406,198	\$ 395,442	\$ 431,745	\$ 36,303	9.2%

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 is 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 provides support to all MWRA departments.

FY14 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 FY14 Final Budget is \$432,000, an increase of \$36,000 or 9.2% from the FY13 Actual Spending.
- \$386,000 for **Wages & Salaries**, an increase of \$22,000 or 6.0% from the FY13 Actual Spending mainly due to contractual increases. The final budget funds four positions.
- \$45,000 for **Professional Services**, an increase of \$14,000 or 46.3% from the FY13 Actual Spending relating to review and preparation of MWRA's triennial Insurance Reserve Fund review.

FACILITIES MANAGEMENT

FY14 Final Current Expense Budget FACILITIES MANAGEMENT						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 477,655	\$ 412,641	\$ 409,142	\$ 427,710	\$ 18,568	4.5%
OVERTIME	16,019	16,527	23,481	24,154	673	2.9%
FRINGE BENEFITS	42	34	18	-	(18)	-100.0%
UTILITIES	136,412	98,749	95,858	104,410	8,552	8.9%
ONGOING MAINTENANCE	69,965	12,107	13,087	35,900	22,813	174.3%
TRAINING & MEETINGS	60	-	-	-	-	-
PROFESSIONAL SERVICES	-	3,200	9,350	-	(9,350)	-100.0%
OTHER MATERIALS	74,792	7,463	15,271	57,733	42,462	278.1%
OTHER SERVICES	1,776,235	1,820,106	1,829,441	1,512,763	(316,678)	-17.3%
TOTAL	\$ 2,551,180	\$ 2,370,827	\$ 2,395,648	\$ 2,162,670	\$ (232,978)	-9.7%

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.

FY14 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.

FY13 Accomplishments:

- Successfully negotiated a successor lease agreements for Charlestown Navy Yard (CNY) headquarters which resulted in budgetary savings.
- Continued to work with the landlord to implement facility improvements as provided in our lease agreements for CNY headquarters.

- In conjunction with MIS, implemented 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 FY14 Final Budget is \$2.2 million, a decrease of \$233,000 or 9.7%, as compared with FY13 Actual Spending.
- \$428,000 for **Wages and Salaries**, an increase of \$19,000 or 4.5%, as compared to FY13 Actual Spending mainly due to increased contractual agreements. The budget supports seven positions.
- \$24,000 for **Overtime**, which is level funded to FY13 Actual Spending.
- \$104,000 for **Utilities**, an increase of \$9,000 or 8.93% as compared to FY13 Actual Spending mainly due to lower than projected electricity pricing in FY13.
- \$36,000 for **Ongoing Maintenance**, an increase of \$23,000 or 174.3% as compared with FY13 Actual Spending mainly due to lower than projected need for maintenance services in FY13. 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.
- \$58,000 for **Other Materials**, an increase of \$42,000 or 278.1% as compared with FY13 Actual Spending mainly due to lower than budgeted need for postage in FY13. This line item includes funding for postage, supplies, furniture and equipment.
- \$1.5 million for **Other Services**, a decrease of \$317,000 or 17.3% as compared with FY13 Actual Spending mainly due to the renegotiated lease for the Charlestown Navy Yard facility which will show budgetary savings in FY14. This item includes funding for rental and operating costs for CNY headquarters facility and the Marlboro Records Center and Warehouse space.

FLEET SERVICES

FY14 Final Current Expense Budget FLEET SERVICES						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 669,965	\$ 624,570	\$ 716,386	\$ 734,429	\$ 18,043	2.5%
OVERTIME	14,157	2,078	11,952	14,690	2,738	22.9%
FRINGE BENEFITS	110	15	158	1,000	842	532.9%
UTILITIES	1,582	1,981	1,658	3,000	1,342	80.9%
ONGOING MAINTENANCE	684,807	650,070	647,629	683,750	36,121	5.6%
TRAINING & MEETINGS	-	-	-	25,205	25,205	-
OTHER MATERIALS	501,346	544,983	550,563	570,201	19,638	3.6%
OTHER SERVICES	772	792	796	3,539	2,743	344.6%
TOTAL	\$ 1,872,739	\$ 1,824,489	\$ 1,929,142	\$ 2,035,814	\$ 106,672	5.5%

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.

FY14 Goals:

- Continue to cost effectively maintain the Authority's fleet of vehicles and pieces of equipment.
- Continue the Authority-wide 2-way radio communications re-banding project, and coordinate distribution and installation of all 2-way radio equipment.
- Install Automatic Vehicle Locators(AVL) devices in all authority vehicles.

FY13 Accomplishments:

- Developed specifications for 41 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 58 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 FY14 Final Budget is \$2.0 million, an increase of \$107,000 or 5.5% as compared to FY13 Actual Spending.
- \$734,000 for **Wages & Salaries**, an increase of \$18,000 or 2.5% as compared to FY13 Actual Spending mainly due to contractual increases. The final budget supports 11 positions.
- \$684,000 for **Ongoing Maintenance**, an increase of \$36,000 or 5.6% as compared to FY13 Actual Spending mainly due to lower than projected need for maintenance materials in FY13. The final budget includes funds for automotive materials and services to maintain MWRA's vehicle fleet.
- \$570,000 for **Other Materials**, an increase of \$20,000 or 3.6% as compared to FY13 Actual Spending mainly due to lower than projected vehicle fuel pricing in FY13. The FY14 Final Budget includes funds for vehicle/equipment fueling which is based on historical fuel usage. 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

FY14 Final Current Expense Budget HUMAN RESOURCES						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 1,686,848	\$ 1,740,651	\$ 1,808,014	\$ 1,823,952	\$ 15,938	0.9%
OVERTIME	-	-	21	-	(21)	-100.0%
FRINGE BENEFITS	17,289,376	17,608,031	17,477,396	18,001,690	524,294	3.0%
WORKERS' COMPENSATION	2,228,175	1,600,726	2,114,701	2,000,000	(114,701)	-5.4%
ONGOING MAINTENANCE	18	-	-	-	-	-
TRAINING & MEETINGS	2,323	1,685	2,097	3,963	1,866	89.0%
PROFESSIONAL SERVICES	372,608	512,618	374,418	415,638	41,220	11.0%
OTHER MATERIALS	15,099	13,465	15,944	15,170	(774)	-4.9%
OTHER SERVICES	11,647	13,562	12,964	19,540	6,576	50.7%
TOTAL	\$ 21,606,094	\$ 21,490,738	\$ 21,805,555	\$ 22,279,953	\$ 474,398	2.2%

FY14 Final Current Expense Budget HUMAN RESOURCES by Area						
AREA	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
EMPLOYEE/COMP/BEN	\$ 657,772	\$ 798,093	\$ 685,095	\$ 690,223	\$ 5,128	0.7%
LABOR RELATIONS	1,035,454	1,041,023	1,063,685	1,101,110	37,425	3.5%
TRAINING	361,950	402,137	419,145	442,545	23,400	5.6%
CENTRALIZED FRINGE BENEFITS	19,550,918	19,249,485	19,637,630	20,046,075	408,445	2.1%
TOTAL	\$ 21,606,094	\$ 21,490,738	\$ 21,805,555	\$ 22,279,953	\$ 474,398	2.2%

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.

FY14 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.

FY14 Initiatives:

- Manage the process for negotiating successor collective bargaining agreement with all five 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.
- Lead procurement efforts for contracts associated with workers' compensation administrative and legal services and the MWRA Dental Plan.
- Provide training and guidance to MWRA managers in the areas of leave management, time and attendance issues, and matters of employee conduct issues.
- Investigate complaints of violations of MWRA policies and Code of Conduct as necessary.
- Review, document, and streamline Human Resources processes through automation and procedure documentation.
- Provide additional training for Administrative Certificate Program (ACP), Productivity Improvement Program (PIP), and Authority-wide Harassment Prevention Training.
- Support the agency's efforts in developing and implementing succession plan activities in anticipation of an increase in retirements over the next several years.

FY13 Accomplishments:

- 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 supported the Authority's efforts in defending itself in several arbitration hearings.
- Successfully negotiated a three year extension contract for the MWRA Employee Assistance Program (EAP) and Blue Cross Blue Shield dental program.
- Successfully delivered Administrative Certification Program (ACP) training, Supervisory Development, Productivity Improvement Program (PIP) and Performance Management training.
- Completed and collected the required acknowledgement of the State Ethics Commission's Summary of the Conflict of Interest Law from all employees.

- 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.
- Organized compliance with the bi-annual online State Ethics Training for all employees and maintained training compliance documentation as required by the State Ethics Commission.
- Successfully procured and selected vendor for MWRA's Workers' Compensation Third-Party Administration Services and successfully transferred records and claims to the new vendor.

Budget Highlights:

- \$1.8 million for **Wages and Salaries**, an increase of \$16,000 or 0.9% over the FY13 Actual Spending. The FY14 Budget includes funding for 21 positions.
- \$18.0 million for **Fringe Benefits**, an increase of \$524,000 or 3.0% over the FY13 Actual Spending. The budget includes \$15.5 million for health insurance, \$1.3 million for Medicare, \$1.0 million for dental insurance, \$161,000 for unemployment insurance, and \$31,000 for tuition reimbursement.

Health and Dental Insurance budgets are 2.3% and 2.7% higher than FY13 Actual Spending mainly due to increased rates.

- \$2.0 million for **Workers' Compensation**, a decrease of \$115,000 or 5.4% as compared to the FY13 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.
- \$416,000 for **Professional Services**, an increase of \$41,000 or 11.0% over FY13 Actual Spending. The FY14 Budget includes \$155,000 for Professional Development and Technical Training, \$119,000 for Workers' Compensation Claims Administration and Legal Services, \$56,000 for Arbitrators and Arbitration Expenses, \$44,000 for Medical Evaluation Services, \$25,000 for the Employee Assistance Program, and \$15,000 for Specialized Investigation Services.

MANAGEMENT INFORMATION SYSTEMS (MIS)

FY14 Final Current Expense Budget MANAGEMENT INFORMATION SYSTEM						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 4,972,127	\$ 5,148,842	\$ 5,004,036	\$ 5,353,921	\$ 349,885	7.0%
OVERTIME	3,510	3,518	4,220	2,810	(1,410)	-33.4%
FRINGE BENEFITS	-	-	37	-	(37)	-100.0%
ONGOING MAINTENANCE	2,581,022	2,078,922	2,326,564	2,770,115	443,551	19.1%
TRAINING & MEETINGS	26,311	80,043	155,470	146,528	(8,942)	-5.8%
PROFESSIONAL SERVICES	-	325,233	230,717	300,000	69,283	30.0%
OTHER MATERIALS	141,503	277,135	413,172	466,322	53,150	12.9%
OTHER SERVICES	808,526	986,958	981,307	1,207,565	226,258	23.1%
TOTAL	\$ 8,532,999	\$ 8,900,651	\$ 9,115,523	\$ 10,247,261	\$ 1,131,738	12.4%

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.

FY14 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.

FY14 Initiatives:

- **Information Technology Management Program**

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 FY14 initiatives are as follows:

- Establishment of 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 put in place with the MAXIMO 7.5 upgrade effort through the use of the Smart Cloud Control Desk Module.
- 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.

- **Application Improvement Program**

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 initiatives for FY2014 area as follows:

- **Administration and Finance Initiatives**

- ***Enterprise Document/Records Management Implementation*** The objective of this project is to identify and define the requirements as they relate to electronic content management at the MWRA and to solicit and procure a technical solution in preparation of a department-by-department implementation set of projects.
- ***e-Procurement Implementation*** This project is focused on the implementation of the Contract Management modules from Infor Global Solutions.

- **Compliance Management Initiatives**

- ***Laboratory Information System (LIMS) v6 Upgrade*** The objective of this project is to upgrade LIMS to the most current version (version 6) that LabWare supports.
- ***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.

- **System Integration and Data Warehousing 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.
- ***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 will be used to identify trends and other information not readily available with these stand-alone systems. The Aquarius Water Quality data analysis tool will be capable of generating compliance reports that are currently being done manually.
- ***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.

- **Operations Management Initiative**

- **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:
 - Completing the upgrade
 - Implementing the Calibration Module.
 - Implementing Smart Cloud Control Desk Module
- **Tiscor Inspection System:** InspectNTrack product, a web based application with a SQL back-end, which could be used to consolidate multiple standalone departmental TISCOR databases as reviewed and chosen by users. 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**

This program focuses on the resiliency and sustainability of the MWRA's data security practices. The projects associated with this program will establish policies, procedures and an information security awareness program for all of the MWRA. Furthermore, it will review each IT system and make recommendations to improve its security profile. The following are the FY2014 projects under this program:

- **Information Security Plan Design and Implementation**
- **Firewall Upgrade**
- **Authority Mobile Device Management Implementation**
- **Secure File Delivery**
- **Security Infrastructure Upgrades**
- **Secure Media Destruction Program**

- **Technology Infrastructure Improvement Program**

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 archive and purge processes and technologies. The following FY2014 projects are currently under way:

- **IT System Architecture Development:** Establish cross-department standards for the following domains: Access, Information, Application, Integration, Management and Security.
- **Exchange 2010 email system:** Complete the migration of all MWRA email users to the new Exchange 2010 email system. The mailbox size for all users will be increased.
- **Distributed Antenna Systems (DAS):** Implement wireless infrastructure of Distributed Antenna Systems (DAS) at key MWRA locations to provide in-building cell phone coverage signal improvement for service providers. This will allow the migration to the new wireless service provider to be completed.

- ***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.
- ***Core Switches:*** Implement Core Switches for Phase 2 of Net2020
- ***Network Storage Improvements:*** Plan for the migration and implementation for consolidation of new storage requirements for archiving, and implement e-discovery services.

FY13 Accomplishments:

- **Application Improvement Program**

- **Administration and Finance Initiatives**

- ***Historic Photo Digitization Project:***

The Library and Records Center unit is supporting a Public Affairs/Executive Office initiative to digitally capture historical images of the MWRA and MDC construction projects. Staff, with input from the Executive Office, evaluated services provided by the Digital Commonwealth (DigiCom) and decided to have them scan the MWRA assets including glass negatives, largely housed at State Archives, and MWRA photo albums. The first five boxes of glass negatives were delivered to the Digital Commonwealth (DigiCom) Team for free scanning and in Q2, initial scans from the pilot project were received. DigiCom returned the pilot glass negatives to the State Archives and picked up additional scanning work (10 boxes) from the State Archives. Pilot images were delivered to Public Affairs for digital asset management catalog development. Library staff sent 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. This process 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: Assisted the Payroll department with a parallel payroll run on the upgraded development system. Staff reviewed the results with the Payroll department who were satisfied with the outcome. 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. Program code was brought over from development server and staff validated system functions, updated custom database fields, recompiled programs, etc. Minor problems with the 9.0.1 upgrade such as Oracle grants, synonyms, and permission updates, Mobile Supply Chain Management printing and a couple minor screen issues were fixed. Go Live occurred with minimal impact to the users.

- ***Strategic Sourcing Supplier Portal:***

The Strategic Sourcing Supplier Portal went live with Supplier/Vendor registration in March and was followed with purchasing event posting, bidding and award functionality in April. Presentations were given to the Utility Contractors of New England (UCANE) and the Construction Industries of Massachusetts who requested a parallel test of the system which is scheduled for the Fall of FY14. Contracts Management application training for core team was held in May and the application configuration and development is underway.

- ***Asset Management Systems Consolidation:***

Through the Inventory Control Task force a recommendation was made to consolidate nine asset tracking systems into two. MIS prepared and presented a business solution proposal at the Inventory Control Task Committee meeting to use MAXIMO 7.5, which offers new functionality that will suit the needs of the Authority

- ***OrgPlus Upgrade:***

This upgrade brought the version current and corrected defects in the chart display functionality. (Note: Recent organization change to Planning will have an impact to this application, Employee Directory, e-forms etc.).

- **System Integration and Data Warehousing Initiatives**

- Updated the Community OMMS Website to be compatible with non-Microsoft web browsers.
- Waste Water Quality (WQ) Oracle Upgrade

- **Operations Management Initiative**

- ***Guard One Plus:***

The Guard One facility tour management system was upgraded from a PC based system to client server. The facilities that are using the new system are CNY, DITP, Chelsea and CWTP. The new Guard One Plus provides better upload capability, more robust reporting and has been centralized in the MIS Chelsea Data Center.

- **Information Security Program**

- Bid award for the design and development of the Information Security Plan was approved on April 10, 2013.

- **Technology Infrastructure Improvement Program**

- ***Office Automation Improvement and Refresh Efforts***

- ***Print, Fax, Scan and Copy:*** Installed 13 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.
- ***Smart Boards*** – Five Smart Boards were procured and installed at CNY, DITP, Southborough, CWTP and Chelsea Muster Room.

- ***Contaminate Warning System (CWS):*** Continue 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.

- ***Email Domain: @mwra.com:*** Completed implementation of Email Domain: @mwra.com as primary email domain suffix. Change went into effect as expected without any impact to mail functionality.

- ***Telog and IIS Server Support:*** Staff completed a project plan to upgrade the Telog server. Additionally, staff completed the following: (1) Installation and configuration of anti-virus, new software, service pack and Windows security patches on two virtual machines; (2) Set up of the required databases and login

accounts on the SQL server; (3) Configuration of IIS web server; (4) Daily tape backup on SQL databases from Monday through Friday; and (5) New SQL maintenance plans to perform database backup during the weekends.

- **SQL Server 2012 Upgrade:** Upgrade SQL server 2005 to SQL server 2012.

Budget Highlights:

- The FY14 Final Budget is \$10.2 million, an increase of \$1.1 million or 12.4%, as compared to FY13 Actual Spending.
- \$5.4 million for **Wages and Salaries**, an increase of \$350,000 or 7.0%, as compared to FY13 Actual Spending mainly due to contractual increases. The budget includes funding for 57 positions, 3 positions less than in FY13.
- \$2.8 million for **Ongoing Maintenance**, an increase of \$444,000 or 19.1%, as compared to FY13 Actual Spending. 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**, a decrease of \$9,000 or 5.8%, as compared to FY13 Actual Spending mainly due to FY13 one-time training request. Funding will support staff training in various computer applications as part of the MIS IT Strategic Plan.
- \$300,000 for **Professional Services**, an increase of \$69,000 or 30.0%, as compared to FY13 Actual Spending. Funding will support the continued development of an MIS Strategic Plan and implementation services.
- \$466,000 for **Other Materials**, an increase of \$53,000 or 12.9%, as compared to FY13 Actual Spending primarily due to increased specialized hardware requests.
- \$1.2 million for **Other Services**, an increase of \$226,000 or 23.1%, as compared to FY13 Actual Spending.

PROCUREMENT

FY14 Final Current Expense Budget PROCUREMENT						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 3,513,516	\$ 3,497,314	\$ 3,434,479	\$ 3,594,221	\$ 159,742	4.7%
OVERTIME	14,105	16,983	29,657	15,750	(13,907)	-46.9%
FRINGE BENEFITS	167	185	278	-	(278)	-100.0%
UTILITIES	129	-	-	-	-	-
ONGOING MAINTENANCE	(199,828)	189,502	161,962	-	(161,962)	-100.0%
TRAINING & MEETINGS	4,462	5,435	2,553	7,725	5,172	202.6%
OTHER MATERIALS	120,162	106,745	115,051	84,608	(30,443)	-26.5%
OTHER SERVICES	63,530	57,656	39,582	64,871	25,289	63.9%
TOTAL	\$ 3,516,243	\$ 3,873,820	\$ 3,783,562	\$ 3,767,175	\$ (16,387)	-0.4%

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.

FY14 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.
- Continue staff procurement training.

FY13 Accomplishments:

- Competitively bid Renewable Energy Portfolio Standard certificates which resulted in FY13 revenues of \$486,000 (Class II). In addition, received FY13 revenues of \$1.4 million from forward marketing of CY12 (Class I and Solar) Renewable Portfolio Standards (RPS) certificates.

- Awarded the following major contracts in FY13: DITP Expansion Joint Repair Construction 2; Sudbury Aqueduct Pressurization and Connections; Letters of Credit, Liquidity Facilities or Direct Purchases; Nut Island Switchgear Modifications; Caruso Pump Station Improvements Design; Wachusett Aqueduct Emergency Interconnection Valves; DITP Concrete Steel Restoration and Coating, Phase IV; North Dike Tree Removal at Wachusett Reservoir; and DITP Replacement of Four Gravity Thickener Center Columns; Disclosure Counsel Services; DITP North Main Pump Station ESDC/REI; Quabbin UV Disinfection; Security Improvements at Various Facilities Design; Quabbin UV Disinfection Facilities; DITP Waste Sludge Centrifuges Power and Control Systems Upgrade; Roof Replacement Bellevue and New Neponset Pump Station; DITP Electrical Equipment Upgrade Construction 4; Rehab of WASM 3 Design; and Audit Services; Automatic Vehicle Locator Tracking System; Gillis Pump Station Short Term Improvements; and Nut Island Electrical Improvements.

Advertised or received bids/proposals/statements for the following: 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; and Webster Avenue Pipe Replacement Design.

- Continued to work with the Field Operations Department (FOD) and utility companies to establish energy conservation programs at FOD facilities, using the Green Communities Act, the utilities' municipal programs, and other programs.
- Worked with Operations and MIS to issue an RFP for an Automated Vehicle Locator Tracking System procurement; received bids and awarded a contract in June.
- Developed a pilot program and RFP, working with Operations, Finance and Law, for co-digestion of organic waste at DITP.
- Continued development of an electronic procurement bidding process for construction contracting based upon Lawson Strategic Sourcing. Met with contractor associations and provided demonstrations for contractors and the Inspector General. Began training for Lawson Contract Management.
- Participated in planning for, and developed contract documents for, a program to combat invasive species at Wachusett reservoir.
- Implemented the Lawson electronic purchasing system for goods and services valued over \$2,000.
- Procured the Authority's vehicle purchases at the beginning of Fiscal Year 2013 including 33 vehicles procured through the use of a "Reverse Auction" format.
- Bid the annual copy paper contract and received more favorable pricing than that listed on the State Blanket contract.
- Developed a list of approved tools and constructed and bid a contract for the purchase of the approved tools.
- Continued to work with Operations to review and update if necessary, sole source procedures.
- Continued work 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.

- Held two successful training sessions in the fall of 2012 on purchasing procedures. The first was conducted by the Inspector General’s Office on the subject of “Bidding Basics”. The second was an Operational Services Division (OSD) conducted training session for MWRA staff on how to use the State’s procurement website Comm-Pass. Both training sessions were held at MWRA headquarters in Charlestown.
- Processed 10,147 purchase orders in FY13 for a total of \$50,933,331.
- FY13: processed 118 competitive bids, 10 State Blanket contracts, 11 contract amendments, 4 critical need, and 12 sole source purchases for items and services valued over \$25,000.
- Updated and reassigned buyer commodity assignments and distributed the revised list to Authority staff.
- Continued to seek out environmentally friendly products, among them recycled toners, batteries, copy paper, hybrid vehicles, and bio-fuels.
- Set up an online vehicle and equipment auction process and brought in \$249,627 in revenue in FY 13.
- Recycled 36.61 tons of paper, 222.60 tons of scrap metal, and 5777.36 pounds of brass, copper, stainless steel and aluminum, generating \$62,767 in revenues.

Budget Highlights:

- The FY14 Final Budget is \$3.8 million, a decrease of \$16,000 or 0.4% from FY13 Actual Spending.
- \$3.6 million for **Wages and Salaries**, an increase of \$160,000 or 4.7% from FY13 Actual Spending mainly due to contractual agreements. The funding supports 46 positions, the same level as in FY13.
- \$85,000 for **Other Materials**, a decrease of \$30,000 or 26.5% from FY13 Actual Spending. Reduction of the amount for centralized office supply purchases accounts for most of the change.
- \$65,000 for **Other Services**, an increase of \$25,000 or 63.9% from FY13 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 later years.

REAL PROPERTY and ENVIRONMENTAL MANAGEMENT

FY14 Final Current Expense Budget REAL PROPERTY / ENVIRONMENTAL MANAGEMENT						
LINE ITEM	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Final	Change FY13 to FY14	
WAGES & SALARIES	\$ 448,967	\$ 460,569	\$ 419,225	\$ 426,071	\$ 6,846	1.6%
OVERTIME	-	-	-	-	-	-
TRAINING & MEETINGS	2,045	1,234	36,900	8,000	(28,900)	-78.3%
PROFESSIONAL SERVICES	-	-	11,546	-	(11,546)	-100.0%
OTHER MATERIALS	668	835	797	1,150	353	44.3%
OTHER SERVICES	2,041,138	130,074	292,101	276,496	(15,605)	-5.3%
TOTAL	\$ 2,492,818	\$ 592,712	\$ 760,569	\$ 711,717	\$ (48,852)	-6.4%

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 manage 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.

FY14 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; monitor and provide assistance in maintaining environmental regulatory compliance at MWRA facilities.

FY14 Initiatives:

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

FY13 Accomplishments:

- Provided ongoing real estate services, including appraisal and negotiation, on projects such as the Fore River Railroad track relocation project, Charlestown Navy Yard lease, Chelsea lease, Marlboro lease, and the surplus of land adjacent to Chelsea Headworks.
- Provided real estate services on surplus of Waban Reservoir (Newton), Fox Point (Dorchester), and Commercial Point (Dorchester) and evaluation of property needs at Deer Island.

- 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 is \$490,700 of which MWRA and the host community each receive half. Currently renegotiating five of the nine permit agreements which are due for renewal.
- Managed fee assessment for long-term 8M permits on MWRA fee controlled land. 8M fees for these agreements total \$49,900 per year. Also provided assistance to Operations on short-term 8M permit agreements in which fees are assessed.
- Staff acquired easements and negotiated licenses and extensions to support projects such as the Hultman Aqueduct Interconnections and Ward Street Headworks (license with Wentworth Institute of Technology). Began work on acquisitions for Section 36, New W11C, and Shaft 9A in Waltham and Carroll Water Treatment Plant (CWTP) entrance renovations. Additionally, provided real estate support on projects such as disposition of property at the former East Boston Steam and Pump Stations to the Department of Capital Asset Management (DCAM) and evaluating long-term real estate needs for Weston Aqueduct Supply Mains (WASM) 3 Rehabilitation. Working to acquire additional land from DCAM for Ware Disinfection Facility related uses and Massachusetts Department of Transportation (MassDOT) for acquisition of land for Shaft 5/5A.
- 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, and other projects, such as Shafts 5 and 5A, as they arise, to support projects such as the aqueduct trail initiative. Provided real estate research to begin developing a comprehensive facility database which supported feasibility assessment for solar panel sites. 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 FRSA facility.
- Continued with the assessment of the oil contamination resulting from the February 2010 spill at the Cottage Farm Combined Sewer Overflow (CSO) facility. Submitted a Class C RAO to the DEP marking the first step in final site closure with DEP.
- Completed the Polychlorinated biphenyl (PCB) Abatement at the Chicopee Valley Aqueduct Intake Facility and submitted the completion report to the Environmental Protection Agency (EPA).
- Completed the assessment, finalized and obtained approval from EPA of the PCB Abatement Plan for the Alewife Brook Pump Station.
- 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. Submitted a risk-based PCB abatement plan for Chelsea Creek Headworks to EPA for approval.
- Evaluated sub-surface soil and groundwater investigation program results from the Chelsea Creek Headworks facility and established MassDEP reporting requirements for newly-discovered contamination. Coordinated with design staff to determine future assessment and remediation requirements.
- Provided input to the design of a replacement fuel tank system at the Weston Reservoir facility.

- Completed site assessment and submitted final close-out report to MassDEP for groundwater contamination at the Newton Street Pump Station in Brookline discovered during an in-house valve replacement project.
- Continued to provide technical and regulatory coordination of the fuel tank maintenance contract. Completed fuel tank piping system upgrades at two 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 wastewater and water Operations Control Center (OCC). Initiated the new MassDEP-required monthly inspection requirement for all underground fuel storage tank systems. Completed DEP-required triennial third party inspections at all underground fuel storage facilities.
- Completed new underground storage tank operator training for Operations staff. Real Property staff became certified as ClassA/B Operators by the Massachusetts Department of Environmental Protection (MassDEP).
- Provided technical support and regulatory liaison for review of the draft National Pollutant Discharge Elimination System (NPDES) permit for annual maintenance discharges for the Carroll Water Treatment Plant. Received the final NPDES permit for this facility from EPA.
- Coordinated with Operations staff to complete significant spill containment improvements at the Southboro facility. Completed updates to the Spill Prevention, Control, and Countermeasure (SPCC) Plans for the MWRA Southboro facility. Coordinated with MWRA construction staff to complete spill containment improvements at the Oakdale Power 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 Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (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 issues on various design and construction projects, including:
 - Stoneham Low Service Covered Storage,
 - Charlestown Wind Turbine,
 - Remote Headworks Rehabilitation,
 - Northern Intermediate Redundancy project,
 - Section 36 Watertown-Waltham Connection,
 - Oakdale Power Station Electrical Upgrade,
 - Phase VII Valve Replacements including cleanout of a mercury-contaminated meter chamber,
 - Lynnfield/Saugus Pipeline,
 - Cottage Farm Oil fuel system upgrade project,
 - Alewife Brook Pump Station facility upgrades,
 - MWR003 Gate, Siphon and Floatables Control project
- Completed third party verification of the greenhouse gas report for the Bio-solids Processing Facility. Coordinated with MassDEP and Deer Island staff on establishing new startup limits for the Deer Island boilers, completed in March 2013. Worked with EPA and Operations staff on defining and implementing diesel engine emission controls for Cottage Farm, Prison Point, and CWTP. Worked with Operations staff to implement new maintenance and recordkeeping requirements for emergency generators.

- Provided technical and environmental regulatory support for upgrades at the Ware Disinfection Facility including a new potable water supply for the facility, a new onsite septic system, a new industrial waste water holding tank, and a new wastewater dry well.

Budget Highlights:

- The FY14 Final Budget is \$712,000, a decrease of \$49,000 or 6.4%, as compared to the FY13 Actual Spending.
- \$426,000 for **Wages and Salaries**, an increase of \$7,000 or 1.6%, as compared to the FY13 Actual Spending. The budget supports four positions. The increase is due to salary increases.
- \$8,000 for **Training and Meetings**, a decrease of \$29,000 or 78.3% as compared to the FY13 Actual Spending. The decrease is due to a one-time underground storage tank operator training program conducted in FY13.
- \$276,000 for **Other Services**, a decrease of \$16,000 or 5.3%, as compared to the FY13 Actual Spending. The decrease is due to a 10% reduction in the underground storage tank budget based on projected usage.



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.

MONTH	ACTIVITY
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 acceptable and reasonable based on a FY11 Insurance Reserve Fund review performed by an outside insurance consultant who estimated the required fund level in the range of \$12 to \$16 million. The next Insurance Reserve Fund review is expected to be finalized in February 2014.

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 and Finance 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 FY2014 to FY2023

	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023
COMBINED UTILITIES										
EXPENSES										
Direct Expenses	\$214,374	\$220,466	\$226,613	\$233,113	\$239,490	\$246,197	\$252,762	\$259,461	\$266,034	\$273,293
Indirect Expenses	46,823	49,959	49,543	50,193	52,604	54,023	55,412	56,913	59,681	55,775
Capital Financing (before offsets)	<u>397,226</u>	<u>417,519</u>	<u>440,460</u>	<u>491,778</u>	<u>495,445</u>	<u>506,895</u>	<u>561,341</u>	<u>560,066</u>	<u>590,687</u>	<u>545,427</u>
Sub-Total Expenses	\$658,423	\$687,944	\$716,616	\$775,085	\$787,539	\$807,115	\$869,515	\$876,440	\$916,402	\$874,494
Debt Service Assistance	0	0	0	0	0	0	0	0	0	0
Bond Redemption Savings	0	(4,138)	(2,527)	(5,783)	(4,900)	(3,125)	(3,574)	0	(8,806)	0
Variable Rate Savings	0	0	0	0	0	0	0	0	0	0
Total Expenses	\$658,423	\$683,806	\$714,089	\$769,302	\$782,639	\$803,990	\$865,941	\$876,440	\$907,596	\$874,494
REVENUE & INCOME										
Non-Member and Other Revenue	\$14,572	\$14,985	\$15,237	\$15,541	\$15,803	\$15,918	\$16,175	\$16,480	\$16,759	\$16,582
Interest Income	11,631	9,409	10,869	11,131	11,236	11,445	11,770	11,961	12,186	12,128
Rate Stabilization	<u>3,500</u>	<u>7,862</u>	<u>9,473</u>	<u>6,217</u>	<u>0</u>	<u>1,341</u>	<u>8,426</u>	<u>0</u>	<u>3,194</u>	<u>0</u>
Total Other Revenue	\$29,702	\$32,255	\$35,580	\$32,889	\$27,039	\$28,704	\$36,371	\$28,441	\$32,138	\$28,710
Total Rate Revenue	\$628,721	\$651,551	\$678,509	\$736,413	\$755,600	\$775,286	\$829,570	\$847,999	\$875,457	\$845,784
Rate Revenue Increase	3.49%	3.6%	4.1%	8.5%	2.6%	2.6%	7.0%	2.2%	3.2%	-3.4%
Estimated Annual Household Charge **										
Based on water use of 61k gpy (weighted)	\$970	\$1,014	\$1,065	\$1,134	\$1,184	\$1,227	\$1,295	\$1,352	\$1,413	\$1,448
Based on water use of 90k gpy (weighted)	\$1,431	\$1,496	\$1,571	\$1,672	\$1,747	\$1,810	\$1,911	\$1,994	\$2,084	\$2,136
WASTEWATER UTILITY										
EXPENSES										
Direct Expenses	\$146,911	\$150,929	\$155,030	\$159,569	\$164,064	\$168,653	\$173,128	\$177,681	\$182,055	\$187,046
Indirect Expenses	14,412	16,560	15,429	15,314	15,922	16,450	16,966	17,553	18,134	18,833
Capital Financing (before offsets)	<u>276,105</u>	<u>281,642</u>	<u>289,820</u>	<u>330,891</u>	<u>320,225</u>	<u>338,663</u>	<u>376,184</u>	<u>368,399</u>	<u>375,098</u>	<u>321,412</u>
Sub-Total Wastewater Expenses	\$437,428	\$449,131	\$460,279	\$505,774	\$500,211	\$523,765	\$566,278	\$563,633	\$575,287	\$527,291
Debt Service Assistance	0	0	0	0	0	0	0	0	0	0
Bond Redemption Savings	0	0	0	(5,783)	0	0	0	0	0	0
Variable Rate Savings	0	0	0	0	0	0	0	0	0	0
Total Wastewater Expenses	\$437,428	\$449,131	\$460,279	\$499,992	\$500,211	\$523,765	\$566,278	\$563,633	\$575,287	\$527,291
REVENUE & INCOME										
Non-Member and Other Revenue	\$5,587	\$5,691	\$5,798	\$5,932	\$6,041	\$6,172	\$6,323	\$6,444	\$6,582	\$6,678
Interest Income	7,703	5,723	6,616	6,521	6,548	6,767	7,066	7,169	7,269	7,164
Rate Stabilization	0	0	0	1,454	0	489	0	0	0	0
Prior Year Utility Surplus/Deficit Transfer	<u>(1,366)</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Other Revenue	\$11,923	\$11,414	\$12,414	\$13,907	\$12,589	\$13,428	\$13,390	\$13,613	\$13,851	\$13,842
Wastewater Rate Revenue	\$425,504	\$437,717	\$447,864	\$486,084	\$487,622	\$510,337	\$552,888	\$550,020	\$561,436	\$513,449
Rate Revenue Increase	3.40%	2.9%	2.3%	8.5%	0.3%	4.7%	8.3%	-0.5%	2.1%	-8.5%
Estimated Annual Household Charge **										
Based on water use of 61k gpy (weighted)	\$578	\$603	\$627	\$666	\$688	\$722	\$766	\$790	\$821	\$825
Based on water use of 90k gpy (weighted)	\$853	\$889	\$925	\$983	\$1,016	\$1,065	\$1,131	\$1,165	\$1,212	\$1,217
WATER UTILITY										
EXPENSES										
Direct Expenses	\$67,463	\$69,537	\$71,583	\$73,545	\$75,426	\$77,544	\$79,634	\$81,780	\$83,979	\$86,246
Indirect Expenses	32,411	33,399	34,114	34,879	36,683	37,574	38,446	39,360	41,547	36,942
Capital Financing (before offsets)	<u>121,121</u>	<u>135,878</u>	<u>150,640</u>	<u>160,887</u>	<u>175,220</u>	<u>168,232</u>	<u>185,157</u>	<u>191,667</u>	<u>215,589</u>	<u>224,015</u>
Sub-Total Water Expenses	\$220,995	\$238,813	\$256,337	\$269,310	\$287,328	\$283,350	\$303,237	\$312,807	\$341,115	\$347,203
Debt Service Assistance	0	0	0	0	0	0	0	0	0	0
Bond Redemption Savings	0	(4,138)	(2,527)	0	(4,900)	(3,125)	(3,574)	0	(8,806)	0
Variable Rate Savings	0	0	0	0	0	0	0	0	0	0
Total Water Expenses	\$220,995	\$234,675	\$253,810	\$269,310	\$282,428	\$280,225	\$299,663	\$312,807	\$332,309	\$347,203
REVENUE & INCOME										
Non-Member and Other Revenue	\$8,985	\$9,293	\$9,439	\$9,609	\$9,762	\$9,746	\$9,852	\$10,036	\$10,177	\$9,904
Interest Income	3,928	3,686	4,253	4,609	4,688	4,677	4,703	4,792	4,917	4,964
Rate Stabilization	<u>3,500</u>	<u>7,862</u>	<u>9,473</u>	<u>4,763</u>	<u>0</u>	<u>852</u>	<u>8,426</u>	<u>0</u>	<u>3,194</u>	<u>0</u>
Prior Year Utility Surplus/Deficit Transfer	<u>1,366</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Other Revenue	\$17,779	\$20,841	\$23,165	\$18,981	\$14,450	\$15,276	\$22,981	\$14,828	\$18,287	\$14,868
Water Rate Revenue	\$203,217	\$213,834	\$230,645	\$250,329	\$267,978	\$264,949	\$276,682	\$297,979	\$314,022	\$332,335
Rate Revenue Increase	3.68%	5.2%	7.9%	8.5%	7.1%	-1.1%	4.4%	7.7%	5.4%	5.8%
Estimated Annual Household Charge **										
Based on water use of 61k gpy (weighted)	\$391	\$411	\$438	\$467	\$496	\$505	\$529	\$562	\$591	\$623
Based on water use of 90k gpy (weighted)	\$578	\$607	\$646	\$690	\$731	\$745	\$780	\$829	\$872	\$920

** 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 2012 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.

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.

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.

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.

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).

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

Vactor 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
FY14 Current Expense Budget - Capital Financing Detail (as of 6/30/2013)

	Outstanding as of 6/30/2013	Total	Sewer	Water
SRF ¹				
Unrefunded (93A, 93D, 95A,98C)	\$ 5,340,000	12,659	12,659	
1999E Sewer		399,982	399,982	-
1999E Water	\$ 12,399,577	581,810	-	581,810
1999F	\$ 264,940,000	18,281,335	18,281,335	-
2000E Sewer		2,822,376	2,822,376	-
2000E Water	\$ 60,769,388	569,096	-	569,096
2001C Water	\$ 2,620,000	249,081	-	249,081
2001D Sewer		388,258	388,258	-
2001D Water	\$ 4,594,682	82,136	-	82,136
2002H Sewer		3,140,737	3,140,737	-
2002H Water	\$ 89,580,000	1,546,651	-	1,546,651
2002I Sewer		103,471	103,471	-
2002I Water	\$ 1,986,328	1,485	-	1,485
2003A	\$ 881,768	69,599	-	69,599
2003B	\$ 2,367,899	224,280	-	224,280
2003C Sewer		1,361,292	1,361,292	-
2003C Water	\$ 38,801,625	968,117	-	968,117
2004C Sewer		543,782	543,782	-
2004C Water	\$ 9,625,193	92,983	-	92,983
2004D Sewer		3,825,415	3,825,415	-
2004D Water	\$ 57,137,545	643,364	-	643,364
2005C Sewer		420,427	420,427	-
2005C Water	\$ 6,442,560	69,217	-	69,217
2005D Sewer		3,388,490	3,388,490	-
2005D Water	\$ 63,593,747	804,846	-	804,846
2005E Sewer		24,961	24,961	-
2005E Water	\$ 345,449	5,479	-	5,479
2006C Sewer		487,659	487,659	-
2006D Sewer		3,738,286	3,738,286	-
2006D Water	\$ 74,753,334	1,613,908	-	1,613,908
2006E Sewer		22,883	22,883	-
2006E Water	\$ 401,494	10,281	-	10,281
2007C Sewer		309,703	309,703	-
2007C Water	\$ 5,493,006	189,486	-	189,486
2007D Sewer		1,150,701	1,150,701	-
2007E Sewer		3,296,001	3,296,001	-
2007E Water	\$ 67,453,738	1,263,536	-	1,263,536
2008G Sewer		405,692	405,692	-
2008G Water	\$ 5,655,419	82,367	-	82,367
2009C Sewer		5,757,305	5,757,305	-
2009C Water	\$ 101,878,601	1,890,704	-	1,890,704
2009D Sewer		649,614	649,614	-
2009D Water	\$ 10,887,273	85,874	-	85,874
2010C Sewer				
2010C Water	\$ 33,035,745			
2010D Sewer		1,426,292	1,426,292	-
2010D Water	\$ 45,937,219	1,440,860	-	1,440,860
2011A Sewer		384,214	384,214	-
2011A Water	\$ 10,347,920	371,419	-	371,419
2012C Sewer		524,090	524,090	-
2012C Water	\$ 11,473,683	254,618	-	254,618
2012D Sewer		2,855,898	2,855,898	-
2012D Water	\$ 52,637,872	532,162	-	532,162
2013B Sewer		2,161,800	2,161,800	-
2013B Water	\$ 40,557,005	729,035	-	729,035
Pool 18 Sewer		2,692,833	2,692,833	-
Pool 18 Water		1,012,067	-	1,012,067
Total SRF Debt	\$ 1,109,586,561	\$ 75,960,617	\$ 60,576,155	\$ 15,384,461

APPENDIX F
FY14 Current Expense Budget - Capital Financing Detail (as of 6/30/2013)

	Outstanding as of 6/30/2013	Total	Sewer	Water
MWRA Senior Debt				
1993C New/Refunding	\$ 28,705,000	10,589,212	9,265,561	1,323,652
2002J New	\$ 1,000,000	24,489,025	22,040,123	2,448,903
2002J Refunding	\$ 296,300,000	50,000	25,000	25,000
2004B Refunding	\$ 48,950,000	2,447,500	2,141,563	305,938
2005A Refunding	\$ 344,830,000	17,697,525	7,963,886	9,733,639
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	\$ 80,280,000	3,822,250	2,866,688	955,563
2009B Refunding	\$ 274,100,000	13,321,794	9,591,691	3,730,102
2010A New	\$ 97,740,000	4,722,400	3,305,680	1,416,720
2010B Refunding	\$ 183,570,000	17,778,500	10,311,530	7,466,970
2011B New	\$ 144,840,000	6,900,925	4,830,648	2,070,278
2011C Refunding	\$ 327,160,000	16,064,275	6,265,067	9,799,208
2012A New	\$ 144,675,000	9,679,425	4,839,713	4,839,713
2012B Refunding	\$ 86,775,000	4,027,325	845,738	3,181,587
2013A Refunding	\$ 170,635,000	7,551,650	4,228,924	3,322,726
FY14 New Money (2014)		1,133,333	512,602	620,731
Potential Defeasance/Restructuring				
Total Senior	\$ 3,522,725,000	\$ 204,471,301	\$ 128,231,782	\$ 76,239,520
Subordinate Debt				
1999B	\$ 62,300,000	1,904,500	1,142,700	761,800
2002C Refunding	\$ 35,120,000	1,141,400	380,429	760,971
2008A Refunding	\$ 337,675,000	64,435,800	56,703,504	7,732,296
2008C Refunding	\$ 117,680,000	9,309,865	8,937,470	372,395
2008E Refunding	\$ 173,060,000	8,663,709	7,970,612	693,097
2008F Refunding	\$ 164,755,000	5,354,538	481,908	4,872,630
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	\$ 57,820,000	5,305,704	5,093,476	212,228
Potential Defeasanc/Restructuring				
Total Subordinate Debt	\$ 1,071,540,000	\$ 100,117,241	\$ 81,550,462	\$ 18,566,779
Total SRF & MWRA Debt Service²	\$ 5,703,851,561	\$ 380,549,159	\$ 270,358,400	\$ 110,190,760
Water Pipeline Commercial Paper	\$ 144,000,000	4,127,811	-	4,127,811
Current Revenue/Capital ³		9,200,000	8,372,000	828,000
Capital Lease		3,217,060	1,952,196	1,264,864
CORE Fund Deposit ⁴		132,238	(4,577,351)	4,709,589
Sub-Total	\$ 144,000,000	\$ 16,677,109	\$ 5,746,845	\$ 10,930,264
Total Capital Financing (before Debt Service Offsets)	\$ 5,847,851,561	\$ 397,226,269	\$ 276,105,245	\$ 121,121,025
Debt Service Offsets				
Debt Service Assistance				
Total Capital Financing	\$ 5,847,851,561	\$ 397,226,269	\$ 276,105,245	\$ 121,121,025

¹ SRF debt service payments reflect net MWRA obligations after state and federal subsidies.

² Numbers may not add due to rounding.

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

⁴ CORE Fund Deposit sewer/water split reflects the balancing of the account required whenever new deposits are made. Last deposit was in 2007.

MASSACHUSETTS WATER RESOURCES AUTHORITY



Fiscal Year 2015 CURRENT EXPENSE BUDGET

BOARD OF DIRECTORS

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Prepared under the direction of

Frederick A. Laskey, Executive Director
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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.

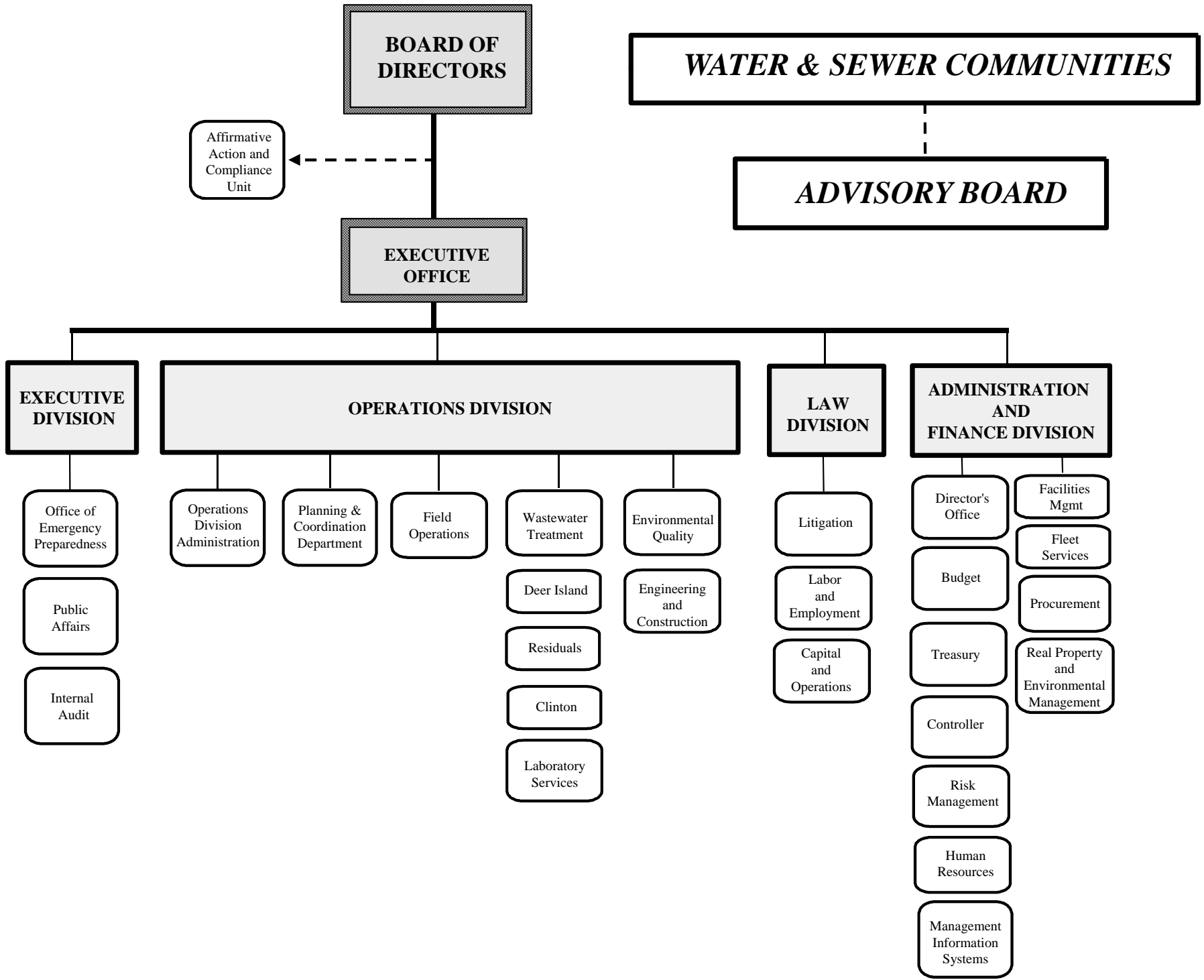
Going forward, the Authority, in line with MWRA's multi-year rates management strategy, plans to continue the practice of using available surplus funds from the prior fiscal year to defease debt for targeted rate relief in future years. Also, the Authority will continue to aggressively pursue cost savings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

Additional budget information and a copy of this document are available online at www.mwra.com. 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

EXECUTIVE DIVISION

OPERATIONS DIVISION

LAW DIVISION

ADMINISTRATION AND FINANCE DIVISION

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

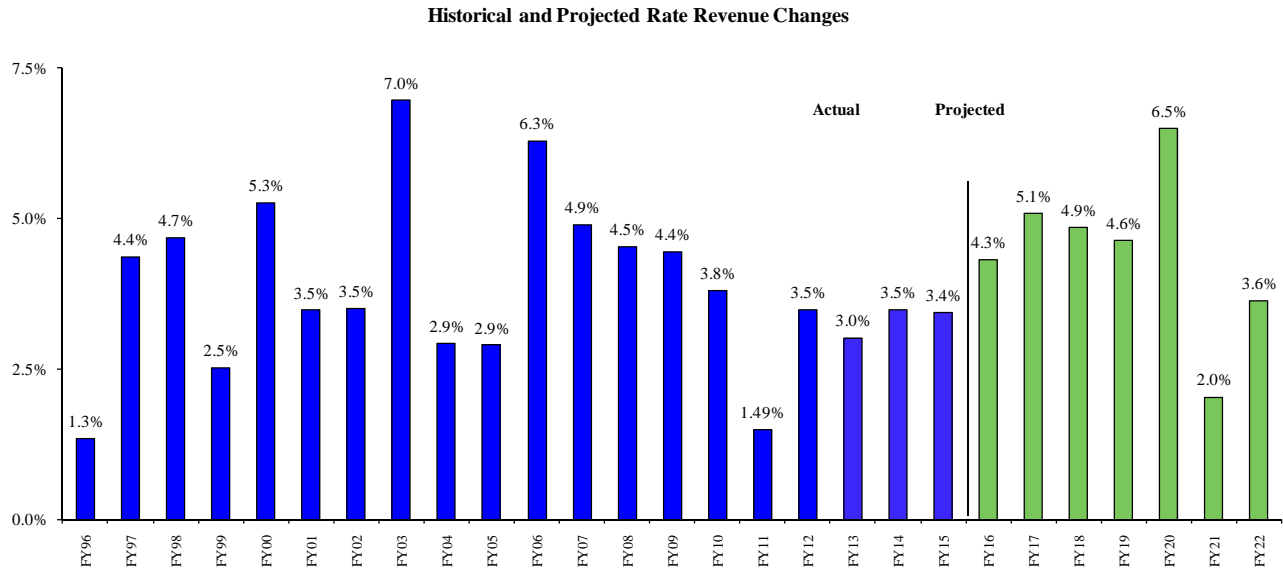
The FY15 Proposed Current Expense Budget (CEB) submitted to the Advisory Board at the February 2014 Board meeting proposed a 3.6% combined assessment increase.

In the Draft Final CEB presented to the Board at the June 4th 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	
				\$	%
EXPENSES					
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%
TOTAL DIRECT EXPENSES	\$ 208,607,384	\$ 211,565,055	\$ 217,148,742	\$ 5,583,687	2.6%
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%
TOTAL INDIRECT EXPENSES	\$ 45,123,829	\$ 46,328,773	\$ 47,511,514	\$ 1,182,741	2.6%
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%
VARAIABLE RATE DEBT/OTHER	-	-	-	-	
DEFEASANCE ACCOUNT	-	-	-	-	
BOND REDEMPTION	-	-	(6,745,598)	(6,745,598)	
DEBT SERVICE ASSISTANCE	-	(853,660)	(853,660)	-	
TOTAL DEBT SERVICE	\$ 380,244,437	\$ 401,549,684	\$ 409,825,128	\$ 8,275,445	2.1%
TOTAL EXPENSES	\$ 633,975,650	\$ 659,443,512	\$ 674,485,384	\$ 15,041,871	2.3%
REVENUE & INCOME					
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%
TOTAL REVENUE & INCOME	\$ 636,983,311	\$ 663,647,109	\$ 674,485,384	\$ 10,838,275	1.6%

* 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%
TOTAL REVENUE	\$674.5	100.0%
<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%
TOTAL EXPENSES	\$682.1	100.0%
TOTAL EXPENSES Less Offsets	\$674.5	
*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.

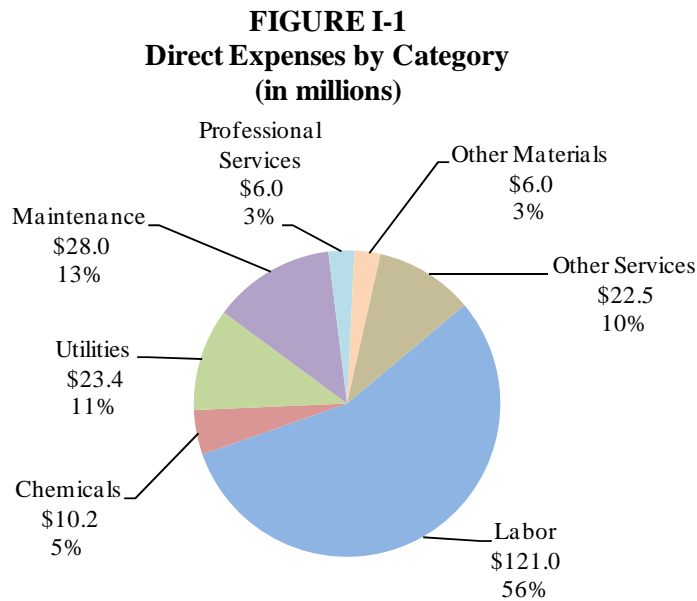
Direct Program Expenses

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.

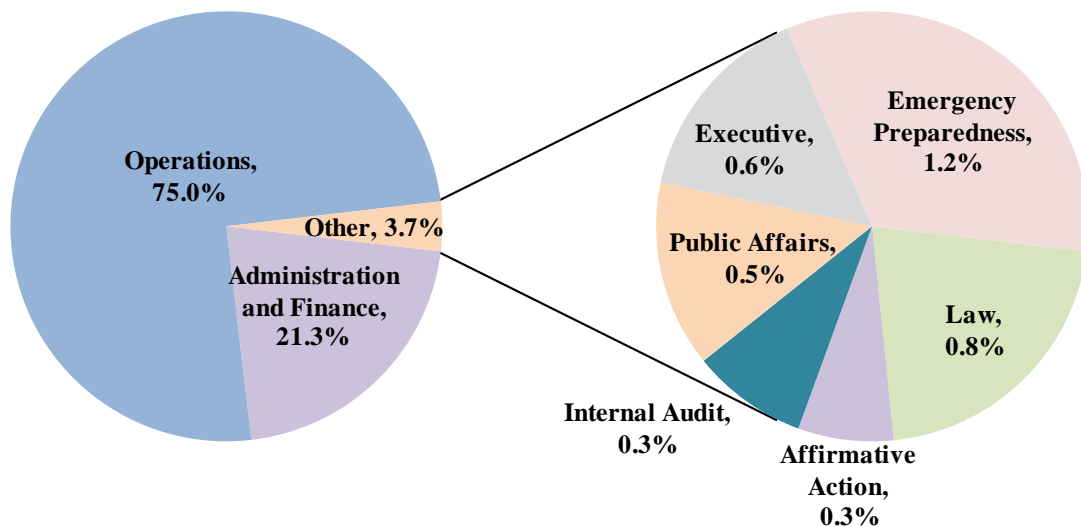
Other Services

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.

**MWRA Direct Expense Budgets
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**

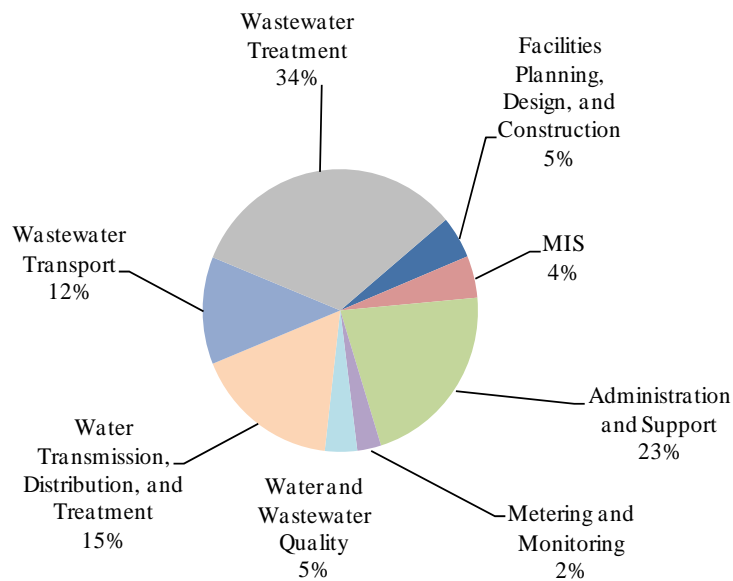
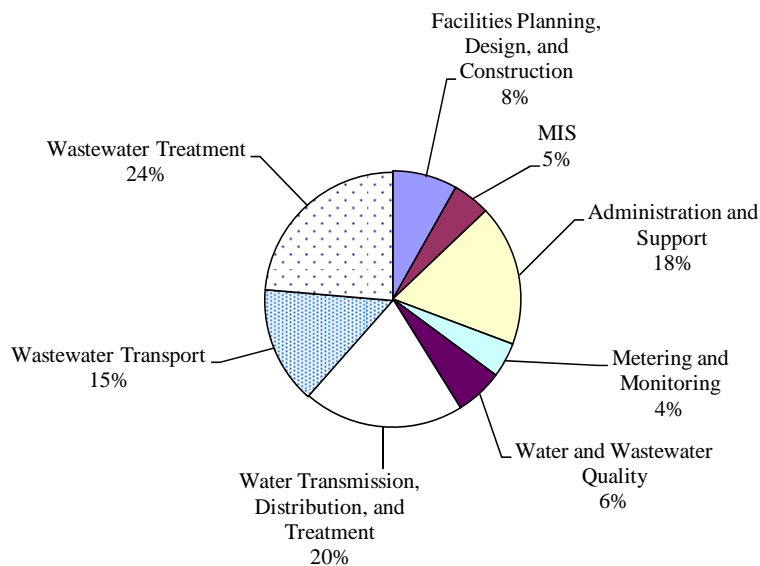


Figure I-3 on the following page illustrates staffing by Functional Area and shows the breakdown of the 1,162 filled positions as of June 2014. Of the 1,162 filled positions, 59% are devoted to operating and maintaining the water and wastewater treatment and transport systems; 23% to administration and 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

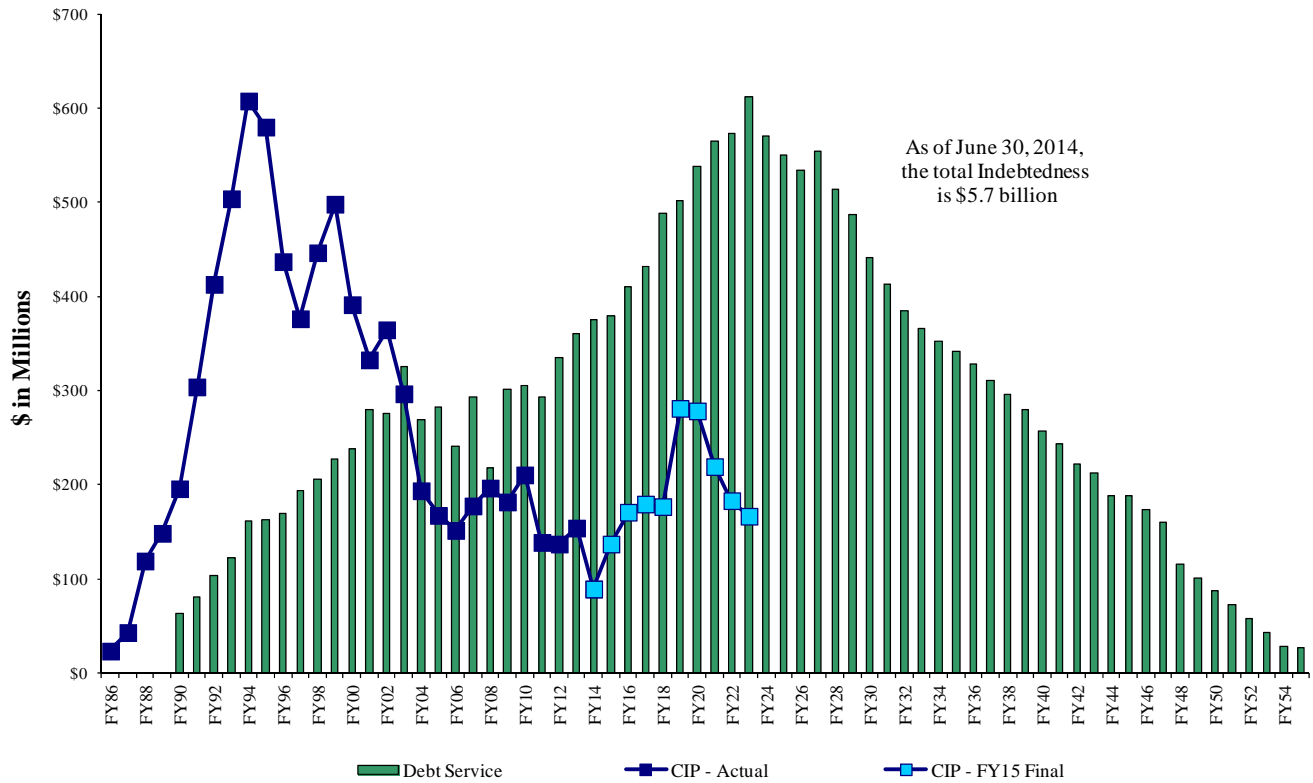
Outstanding Debt and Debt Management

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.

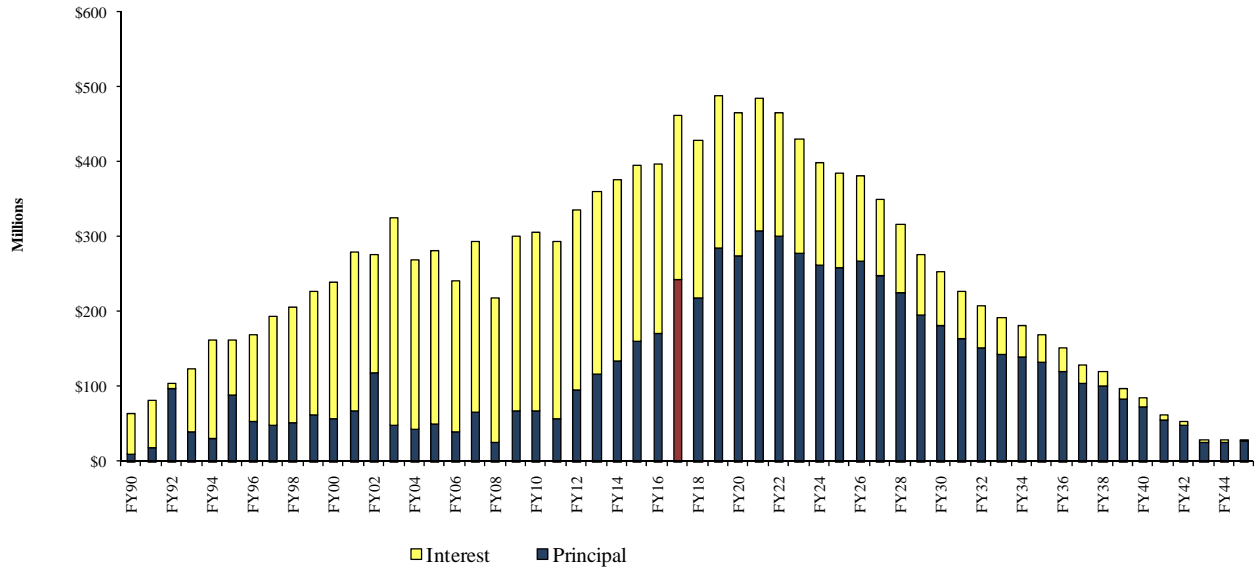
MWRA Capital Improvement Spending & Debt Service



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

	Amount Outstanding	Total FY15 Capital Costs	Sewer	Water
Total SRF ¹ 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
Total SRF and Debt Service²	\$5,557.3	\$399.0	\$273.6	\$125.4
Water Pipeline Commercial Paper	170.0	4.1	0.0	4.1
Current Revenue/Capital ³		10.2	9.8	0.4
Capital Lease		3.2	2.0	1.3
CORE Fund Deposit		0.9	0.1	0.8
	170.0	\$18.4	\$11.8	\$6.6
Total Capital Financing (before Debt Service Offsets)	5,727.3	\$417.4	\$285.4	\$132.0
Debt Service Offsets:				
Debt Service Assistance		(0.9)	(0.8)	(0.1)
Bond Redemption		(6.7)	0.0	(6.7)
Total Capital Financing	5,727.3	\$409.8	\$284.6	\$125.2

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%
TOTAL	\$176,442,825	\$182,802,152	3.6%	\$312,640,366	\$322,691,415	3.2%	\$489,083,191	\$505,493,567	\$16,410,376	3.4%

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%
TOTAL	\$11,274,309	\$10,757,692	-4.6%	\$39,306,126	\$40,090,013	2.0%	\$50,580,435	\$50,847,705	\$267,270	0.5%

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%
TOTAL				\$73,557,734	\$77,300,747	5.1%	\$73,557,734	\$77,300,747	\$3,743,013	5.1%

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%
TOTAL	\$10,146,420	\$10,718,289	5.6%				\$10,146,420	\$10,718,289	\$571,869	5.6%

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%
TOTAL	\$5,353,220	\$5,955,474	11.3%				\$5,353,220	\$5,955,474	\$602,254	11.3%
SYSTEMS TOTAL	\$203,216,774	\$210,233,607	3.5%	\$425,504,226	\$440,082,175	3.4%	\$628,721,000	\$650,315,782	\$21,594,782	3.4%

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
PLUS			
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
PLUS			
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
EQUALS			
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:

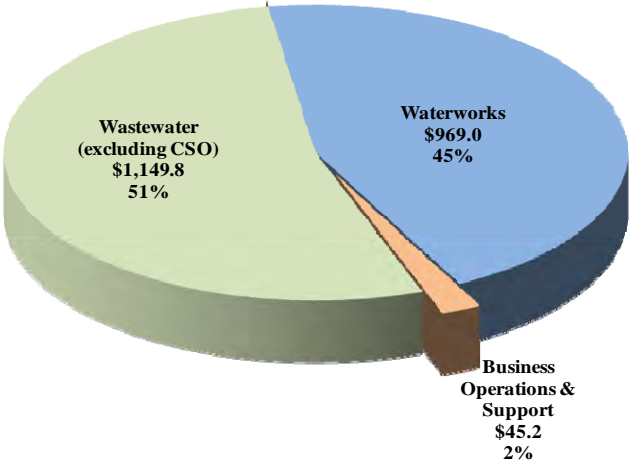
- Changes in anticipated borrowing rates or expected investment income rates;
- The planning estimates do not factor in any positive year-end variances which may be used to defease debt or reserved to offset Rate Revenue Requirements in future years;
- Fewer opportunities for SRF borrowing than expected 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

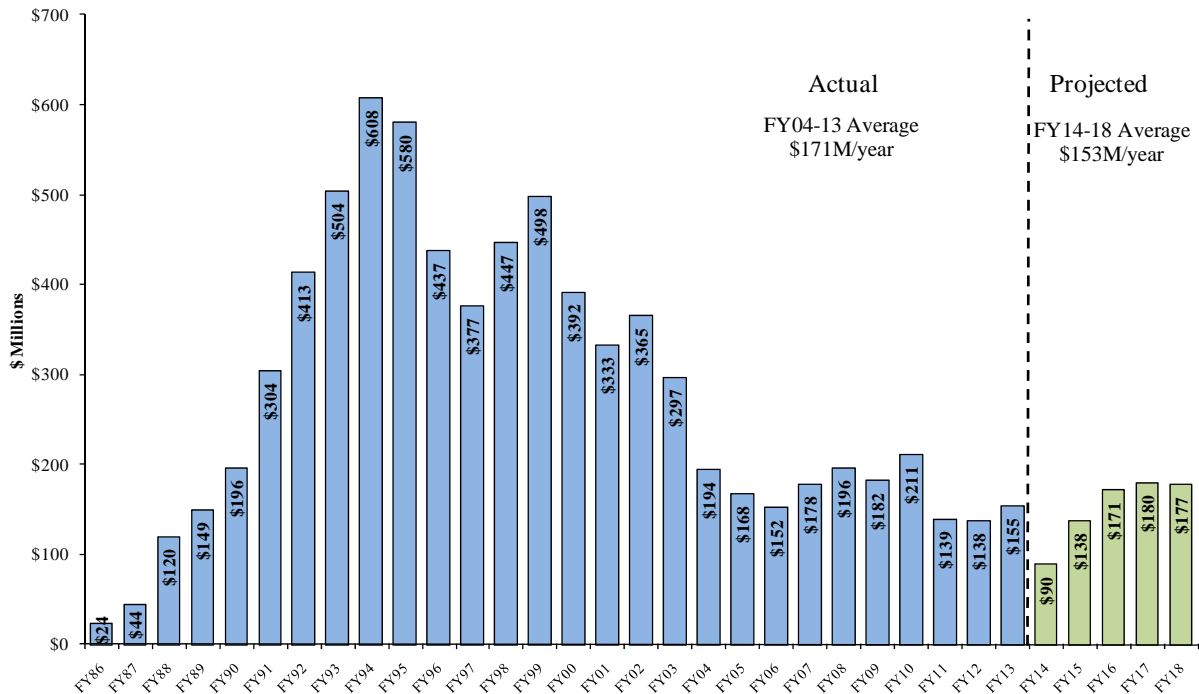
The FY15 Final Capital Improvement Program (CIP) budget totals \$5.9 billion, of which approximately \$3.7 billion has been expended through FY13 with a remaining balance of \$2.2 billion. It is important to note that the totals represented above do not include the Boston Harbor Project and some other 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)
Total	\$5,852.2	\$ 826.4	\$ 756.3	\$1,131.1	\$ 276.7
Asset Protection	36.7%	30.5%	55.1%	61.8%	52.8%
Carroll WTP	7.4%	4.8%	2.7%	0.2%	0.0%
Water Redundancy	31.9%	16.7%	26.9%	40.7%	74.1%
CSO	14.8%	38.3%	7.1%	0.1%	0.0%
Other	9.2%	9.7%	8.2%	-2.8%	-27.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

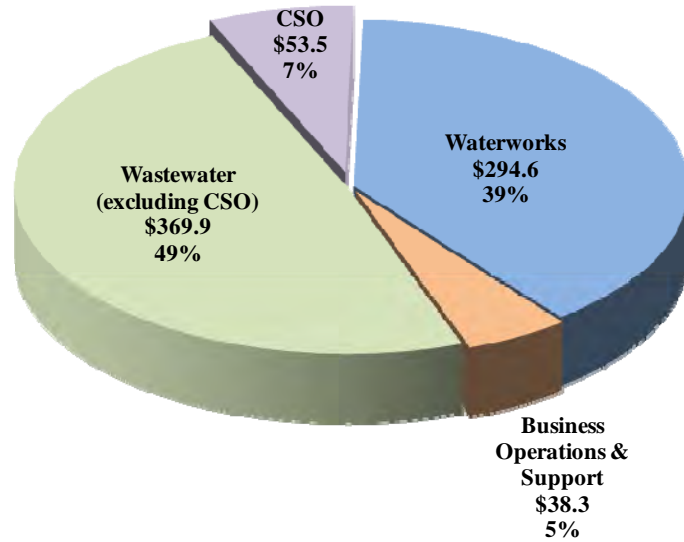
FY15 Final CIP

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
Wastewater System Improvements	\$2,885.8	\$1,736.0	\$1,149.8	\$42.2	\$82.6	\$105.4	\$99.3	\$93.8	\$423.4
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
Waterworks System Improvements	\$2,843.7	\$1,874.7	\$969.0	\$41.4	\$45.2	\$57.2	\$73.0	\$77.9	\$294.6
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
Total MWRA	\$5,852.2	\$3,688.1	\$2,164.1	\$89.8	\$137.6	\$171.4	\$180.1	\$177.4	\$756.3

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

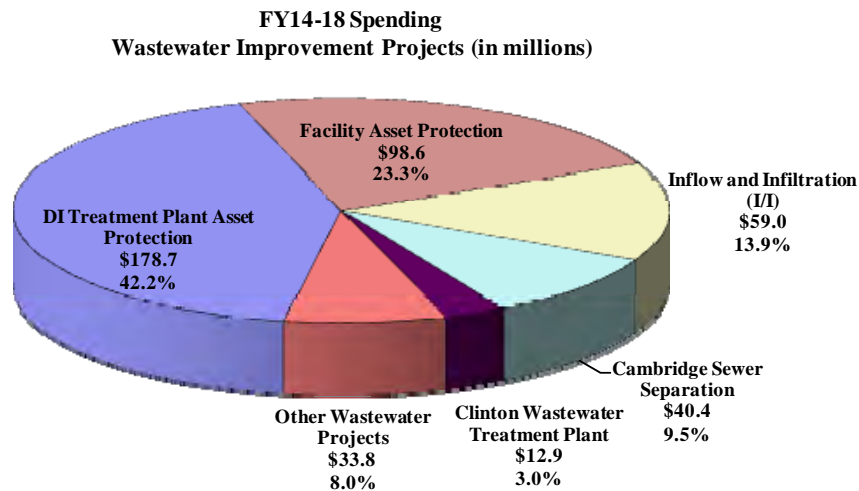


Top 10 Projects – FY14-18 Cap Period

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:

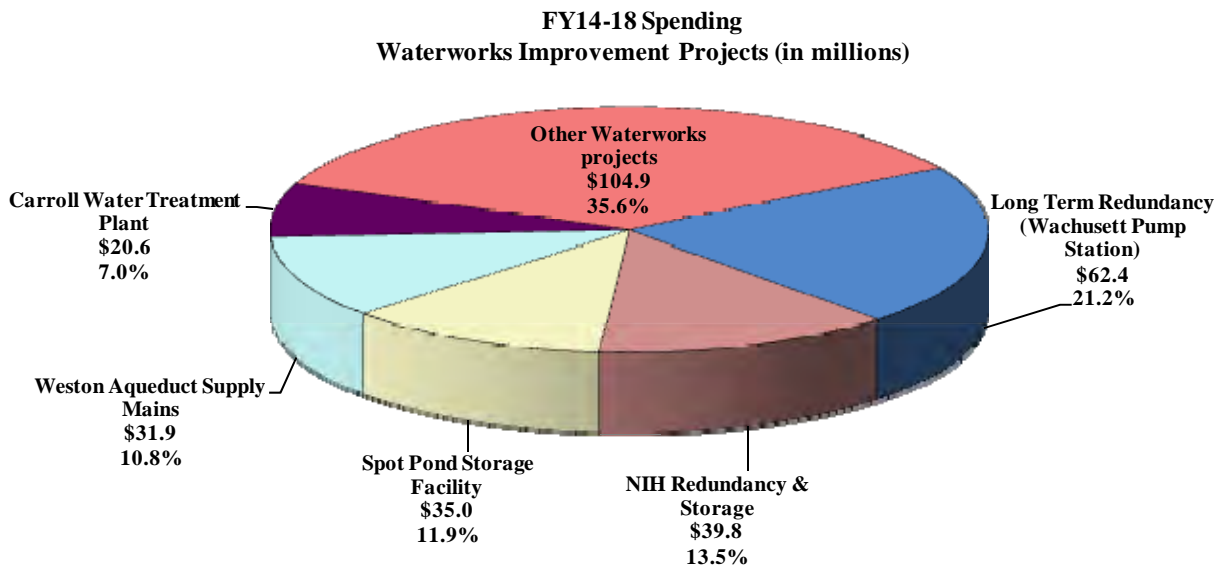


Chelsea Headworks Construction - \$40.9 million (\$53.7 million total construction cost). This major rehabilitation project includes replacement/upgrade to the screens, grit collection system, grit and handling systems, odor control systems, HVAC, mechanical, plumbing and instrumentation. Solids handling 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.

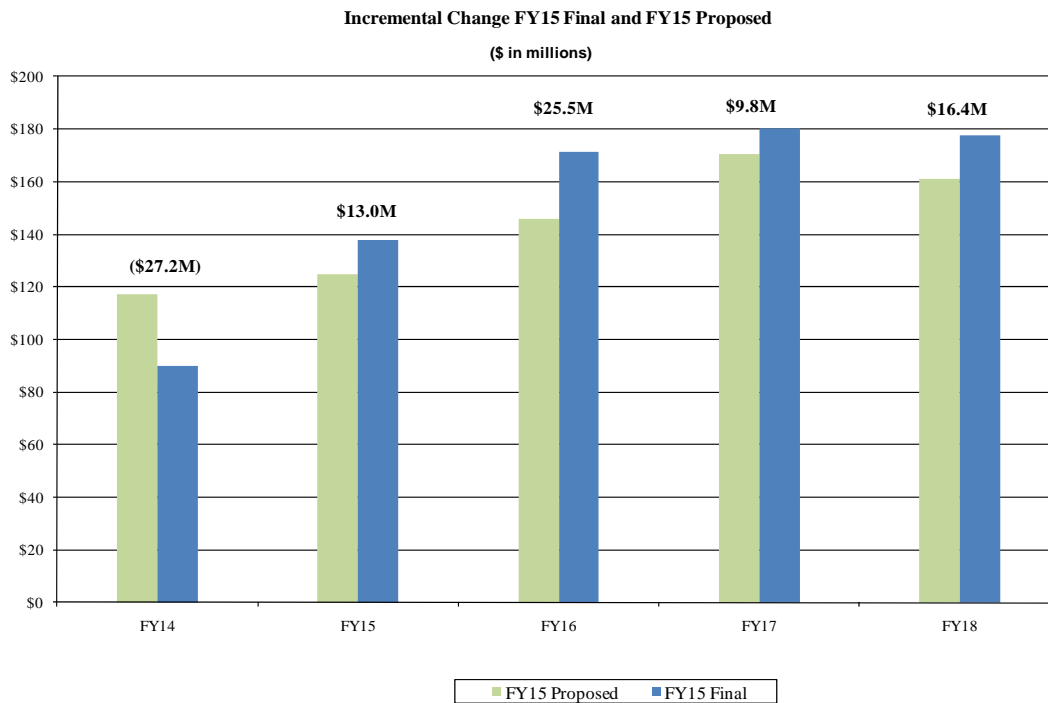
Northern Intermediate High (NIH) Section 89 & 29 Redundancy Construction Phases 1 & 2 and West Street Pipe Reading Construction Phase 1A- \$17.1 million, \$12.1 million, and \$2.1 million respectively (total construction cost \$19.8 million, \$22.4 million, and \$2.1 million) - This is a redundancy project 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%
Total MWRA without contingency	\$ 5,715.9	\$ 5,852.2	\$ 136.3	2.4%	\$ 37.4	5.2%

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
Total Wastewater (inflated)	\$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)
Total Water (inflated)	\$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
Total Business and Operations Support (inflated)	\$247	\$74	\$251	\$141	\$0	\$0	\$0	\$0	\$0	\$0	\$713
TOTAL MWRA	\$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.



Executive Office
Budget

EXECUTIVE OFFICE

FY15 Final Current Expense Budget EXECUTIVE DIVISION						
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%
TOTAL	\$ 1,067,161	\$ 1,139,982	\$ 1,172,334	\$ 1,228,621	\$ 56,287	4.8%

FY15 Final Current Expense Budget EXECUTIVE DIVISION by Department						
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%
TOTAL	\$ 1,067,161	\$ 1,139,982	\$ 1,172,334	\$ 1,228,621	\$ 56,287	4.8%

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%	
TOTAL	\$ 2,142,796	\$ 2,420,703	\$ 2,588,703	\$ 2,681,758	\$ 93,056	3.6%	

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%	
TOTAL	\$ 552,348	\$ 515,451	\$ 560,313	\$ 578,752	\$ 18,439	3.3%	

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%
TOTAL	\$ 639,925	\$ 659,442	\$ 696,003	\$ 701,437	\$ 5,434	0.8%

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

FY15 Final Current Expense Budget PUBLIC AFFAIRS						
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%
TOTAL	\$ 1,101,397	\$ 1,152,104	\$ 1,078,702	\$ 1,125,052	\$ 46,350	4.3%

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 188th 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%
TOTAL	\$ 154,710,395	\$ 157,317,952	\$ 157,368,999	\$ 162,854,682	\$ 5,485,683	3.5%

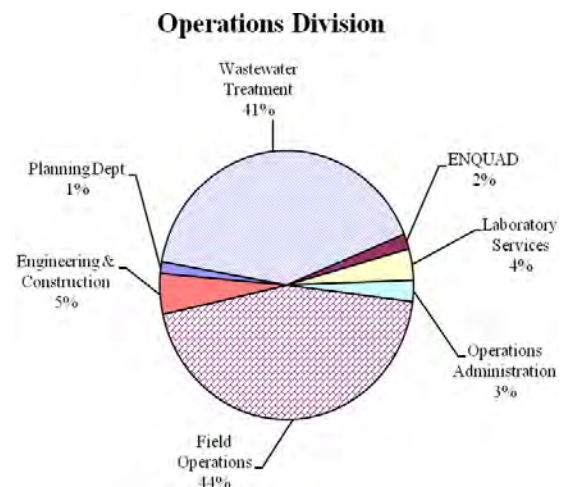
FY15 Final Current Expense Budget OPERATIONS DIVISION by Department						
DEPARTMENT	FY12 Actual	FY13 Actual	FY14 Actual	FY15 Final	Change FY14 to FY15	
OPERATIONS ADMINISTRATION	\$ 2,880,947	\$ 3,749,217	\$ 4,126,009	\$ 3,962,465	\$ (163,544)	-4.0%
WASTEWATER TREATMENT	64,934,921	65,225,080	65,066,657	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%
TOTAL	\$ 154,710,395	\$ 157,317,952	\$ 157,368,999	\$ 162,854,682	\$ 5,485,683	3.5%

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

FY15 Final Current Expense Budget OPERATIONS ADMINISTRATION						
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%
TOTAL	\$ 2,880,947	\$ 3,749,217	\$ 4,126,009	\$ 3,962,465	\$ (163,544)	-4.0%

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%
TOTAL	\$ 64,934,921	\$ 65,225,080	\$ 65,066,657	\$ 66,706,775	\$ 1,640,118	2.5%

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%
TOTAL	\$ 64,934,921	\$ 65,225,080	\$ 65,066,657	\$ 66,706,775	\$ 1,640,118	2.5%

The **Deer Island Treatment Plant**, the **Residuals Management Program**, and the **Clinton Treatment Plant** comprise the Wastewater Treatment Department. Together, the budgets for these programs represent 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%
TOTAL	\$ 46,886,554	\$ 47,795,291	\$ 48,453,665	\$ 49,432,659	\$ 978,994	2.0%

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%
TOTAL	\$ 16,531,865	\$ 15,906,760	\$ 15,014,521	\$ 15,596,487	\$ 581,966	3.9%

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%
TOTAL	\$ 1,516,502	\$ 1,523,029	\$ 1,598,471	\$ 1,677,629	\$ 79,158	5.0%

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%
TOTAL	\$ 69,117,281	\$ 70,781,717	\$ 70,514,110	\$ 72,718,946	\$ 2,204,836	3.1%

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%
TOTAL	\$ 69,117,281	\$ 70,781,717	\$ 70,514,110	\$ 72,718,946	\$ 2,204,836	3.1%

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%
TOTAL	\$ 5,312,800	\$ 5,563,606	\$ 5,621,315	\$ 6,167,272	\$ 545,957	9.7%

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%
TOTAL	\$ 2,860,161	\$ 2,660,834	\$ 2,722,517	\$ 2,973,838	\$ 251,321	9.2%

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

FY15 Final Current Expense Budget ENGINEERING AND CONSTRUCTION						
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%
TOTAL	\$ 7,569,131	\$ 7,273,287	\$ 7,175,077	\$ 8,069,580	\$ 894,503	12.5%

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%
TOTAL	\$ 2,035,154	\$ 2,064,211	\$ 2,143,314	\$ 2,255,806	\$ 112,492	5.2%

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%
TOTAL	\$ 1,697,405	\$ 1,630,944	\$ 1,676,041	\$ 1,732,256	\$ 56,215		3.4%

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%
TOTAL	\$ 42,923,467	\$ 43,770,807	\$ 46,423,960	\$ 46,246,189	\$ (177,771)	-0.4%

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%
TOTAL	\$ 42,923,467	\$ 43,770,807	\$ 46,423,960	\$ 46,246,189	\$ (177,771)	-0.4%

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%
TOTAL	\$ 341,064	\$ 349,834	\$ 345,912	\$ 412,829	\$ 66,917	19.3%

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%
TOTAL	\$ 761,977	\$ 773,302	\$ 797,963	\$ 814,128	\$ 16,165	2.0%

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%
TOTAL	\$ 868,222	\$ 974,700	\$ 966,582	\$ 1,016,075	\$ 49,493	5.1%

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%
TOTAL	\$ 1,492,769	\$ 1,487,530	\$ 1,487,662	\$ 1,592,225	\$ 104,563		7.0%

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%
TOTAL	\$ 406,198	\$ 395,442	\$ 455,596	\$ 432,181	\$ (23,415)	-5.1%

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

FY15 Final Current Expense Budget FACILITIES MANAGEMENT						
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%
TOTAL	\$ 2,370,827	\$ 2,395,648	\$ 2,376,064	\$ 2,261,612	\$ (114,452)	-4.8%

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%
TOTAL	\$ 1,824,489	\$ 1,929,142	\$ 1,947,022	\$ 2,072,977	\$ 125,955	6.5%

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%
TOTAL	\$ 21,490,738	\$ 21,805,555	\$ 22,520,179	\$ 22,728,399	\$ 208,220	0.9%

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%
TOTAL	\$ 21,490,738	\$ 21,805,555	\$ 22,520,179	\$ 22,728,399	\$ 208,220	0.9%

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)

FY15 Final Current Expense Budget MANAGEMENT INFORMATION SYSTEM						
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%
TOTAL	\$ 8,900,651	\$ 9,115,523	\$ 10,325,126	\$ 10,334,944	\$ 9,818	0.1%

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%
TOTAL	\$ 3,873,820	\$ 3,783,562	\$ 4,550,834	\$ 3,814,600	\$ (736,234)	-16.2%

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%
TOTAL	\$ 592,712	\$ 760,569	\$ 651,020	\$ 766,219	\$ 115,199	17.7%

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.

MONTH	ACTIVITY
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

COMBINED UTILITIES										
	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024
EXPENSES										
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
REVENUE & INCOME										
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
WASTEWATER UTILITY										
	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024
EXPENSES										
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
REVENUE & INCOME										
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
WATER UTILITY										
	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024
EXPENSES										
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
REVENUE & INCOME										
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)

	Outstanding as of 6/30/2014	Total	Sewer	Water
SRF¹				
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
Total SRF Debt	\$ 1,064,204,066	78,460,634	62,394,071	\$ 16,066,562

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

	Outstanding as of 6/30/2014	Total	Sewer	Water
MWRA Senior Debt				
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				
Total Senior	\$ 3,474,440,000	220,835,626	\$ 130,012,102	\$ 90,823,524
Subordinate Debt				
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				
Total Subordinate Debt	\$ 1,018,690,000	99,686,106	\$ 81,150,527	\$ 18,535,579
Total SRF & MWRA Debt Service²	\$ 5,557,334,066	398,982,365	\$ 273,556,700	\$ 125,425,665
Water Pipeline Commercial Paper	\$ 170,000,000	4,148,453	-	4,148,453
Current Revenue/Capital ³		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
Sub-Total	\$ 170,000,000	18,442,019	\$ 11,846,801	\$ 6,595,218
Total Capital Financing (before Debt Service Offsets)	\$ 5,727,334,066	417,424,385	\$ 285,403,501	\$ 132,020,884
Debt Service Offsets				
FY14 Debt Service Assistance ⁴		(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)
Total Capital Financing	\$ 5,727,334,066	409,825,126	\$ 284,618,134	\$ 125,206,992

¹ SRF debt service payments reflect net MWRA obligations after state and federal subsidies.

² Numbers may not add due to rounding.

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

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

MASSACHUSETTS WATER RESOURCES AUTHORITY



Fiscal Year 2016 CURRENT EXPENSE BUDGET

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November 2015

Louis M. Taverna, Chairman
MWRA Advisory Board
100 First Avenue
Boston, MA 02129

Dear Chairman Taverna:

This letter transmits to the Advisory Board MWRA's Current Expense Budget (CEB) for Fiscal Year 2016. The CEB was approved by the MWRA's Board of Directors on June 24, 2015.

The Final FY2016 budget resulted in a 3.4% combined assessment increase, which is significantly lower than the 4.3% increase projected for FY16 last year. This increase is in line with Board of Directors and Advisory Board's directives.

The FY2016 total expenses are \$702.5 million, of which 61.6% or \$432.7 million is for capital financing costs, \$222.8 million for direct expenses, and \$47.0 million for indirect expenses. The overall expenses increased \$28.0 million or 4.2% from the FY2015 budget.

FY16 was favorably impacted by the Amended and Restated Bond Resolution effective in FY15, which eliminated the FY16 Community Obligation and Revenue Enhancement (CORE) fund deposit required under the old resolution, and enabled MWRA to preserve \$3.5 million of Bond Redemption reserves for use in future years. The elimination of the CORE fund and the reduction of the Renewal and Replacement Reserve fund contributed to projected assessment reductions and allowed the Authority to deposit \$10.0 million into an Irrevocable Other Post Employment Benefit (OPEB) Trust.

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. The Authority will continue to aggressively pursue cost savings initiatives to control spending wherever is possible. The combination of these measures resulted in assessment increases below 4% for the next five years, which is in agreement with the Advisory Board's recommendations.

Additional budget information and a copy of this document are available online at 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

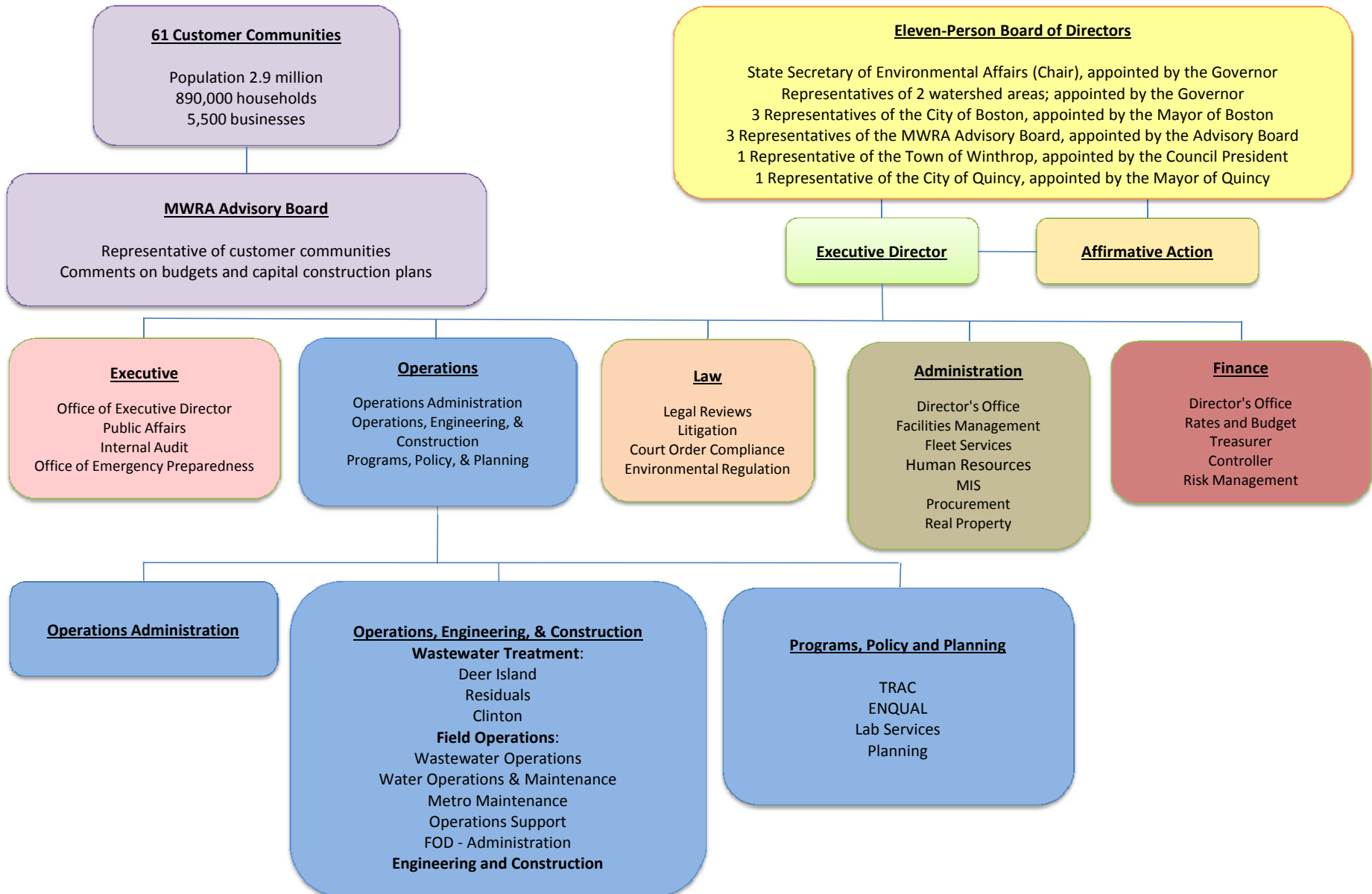


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Executive Summary

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 member community assessments and charges. MWRA's mission is to provide reliable, cost-effective, high-quality water and sewer services that protect public health, promote environmental stewardship, maintain customer confidence, and support a prosperous economy. MWRA's long-term plan emphasizes improvements in service and systems and includes 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 providing sustainable and predictable assessments 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. MWRA has a five-year Strategic Business Plan which articulates the mission statement, values, and goals of the agency, including specific initiatives.

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 transmits its FY16 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.

Final FY16 Budget Summary

The Final FY16 Budget has a combined assessment increase of 3.4%.

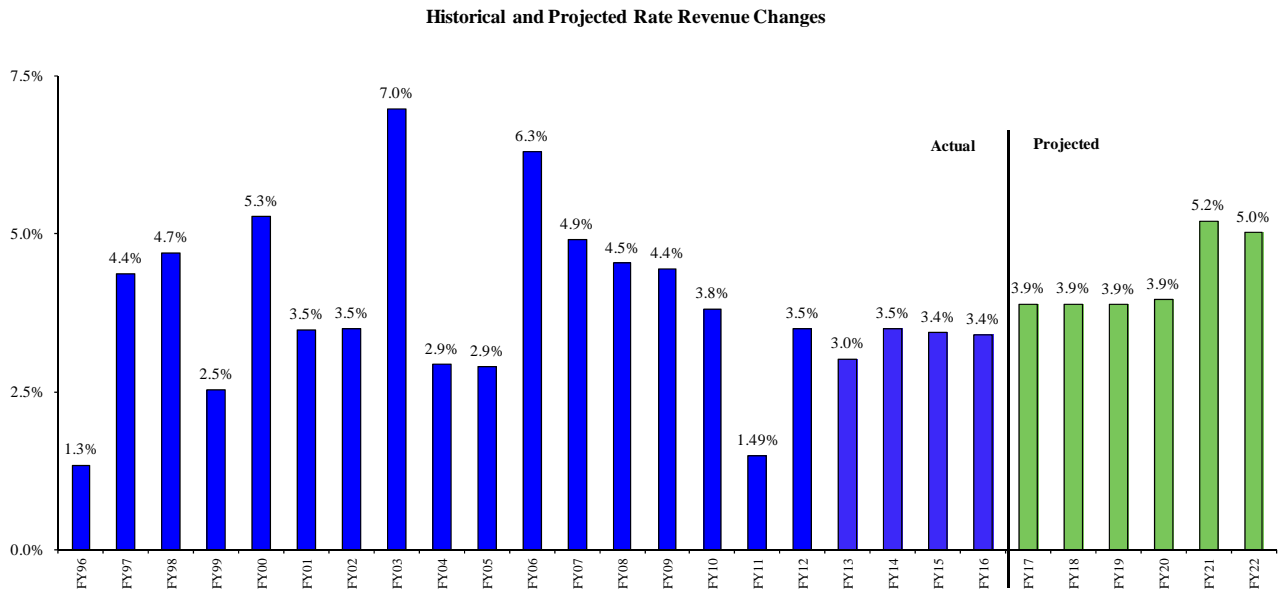
Measures taken by the Authority to achieve the 3.4% rate increase include:

- Limiting Direct and Indirect Expenses increase to 2.6%;
- Continued practice of targeted defeasance;
- Budgeted headcount at 1,170 positions, 5 fewer positions than FY15;
- Budgeted 1,160 Full-Time Equivalent (FTE's) positions;
- Debt Service savings of \$1.3 million in FY16 from a \$30 million defeasance in FY15;
- Higher Other Revenue of \$5.6 million due to a one-time revenue for water provided during the community managed CSO project to Cambridge;

- The release of the debt service reserves related to the amendments to the Bond Indenture is included in the planning estimates; and
- Assumes No Debt Service Assistance.

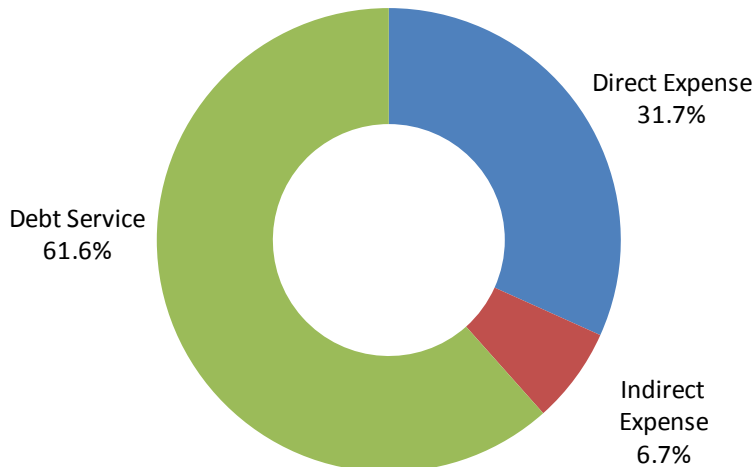
As MWRA continues to pursue a rate management strategy which promotes sustainable and predictable assessments and addresses the Authority’s Pension and Other Post Employment Benefits (OPEB) related liabilities.

The graph below represents historical and projected assessment changes based on the Final FY16 Budget.



The Final FY16 Budget projects total expenses of \$702.5 million, \$34.2 million or 5.1% above FY15 Actuals. Capital financing costs remain the largest component of the CEB and account for 61.6% of total expenses. No Debt Service Assistance (DSA) is assumed for FY16.

FY16 Current Expense Budget



Total expenses include \$432.7 million for Capital Financing costs and \$269.8 million for operating expenses, of which \$222.8 million is for Direct Expenses and \$47.0 million is for Indirect Expenses. Total expenses increased \$34.2 million or 5.1% from FY15 Actuals mainly due to a higher debt service requirement of \$23.5 million, higher Direct Expenses of \$10.4 million due to inclusion of Cost of Living Adjustments (COLA) for staff, higher healthcare costs, and higher projected energy expenses.

The \$23.5 million or 5.7% increase in capital financing expenses reflects debt service associated with the projected issuances of \$100 million in June 2015 and \$100 million of new money in June 2016 as well as new State Revolving Fund (SRF) debt of \$54.5 million to be issued in FY16. Offsetting these issuances, are the impacts of the \$26.5 million targeted defeasance which will reduce debt service by approximately \$1.3 million in FY16, \$12.6 million in FY17, \$13.1 million in FY18, and \$4.0 million in FY19.

The Final FY16 Rate Revenue Requirement is \$672.4 million, an increase of \$22.1 million or 3.4% over the FY15 Budget.

The Final FY16 Budget revenues, excluding rate revenue, total \$30.1 million, an increase of \$2.1 million or 7.4% over FY15 Actuals. The Final FY16 Budget non-rate revenue budget includes \$20.7 million in Other User Charges and Other Revenue and \$9.4 million for Investment Income. The majority of the increase is due to recognizing a one-time water revenue for water provided to the City of Cambridge during an FY14 Combined Sewer Overflow (CSO) project.

The table on the following page shows MWRA's Final FY16 Budget for revenue and expenses compared with the FY15 Budget and FY14 Actual. Changes from FY15 to FY16 are described in the Revenue and Expense section of the Executive Summary.

Table I-1

TOTAL MWRA	FY14 Actuals	FY15 Actuals	FY16 Final Budget	Change	
				FY16 Final Budget vs FY15 Actuals	
				\$	%
EXPENSES					
WAGES AND SALARIES	\$ 91,751,235	\$ 94,350,655	\$ 99,363,168	\$ 5,012,513	5.3%
OVERTIME	3,400,247	4,521,867	4,219,293	(302,574)	-6.7%
FRINGE BENEFITS	18,074,366	18,325,579	19,326,756	1,001,177	5.5%
WORKERS' COMPENSATION	2,311,448	2,307,123	2,343,000	35,877	1.6%
CHEMICALS	10,226,458	9,749,142	9,790,849	41,707	0.4%
ENERGY AND UTILITIES	23,396,747	21,073,529	23,164,822	2,091,293	9.9%
MAINTENANCE	29,453,365	28,322,686	28,698,772	376,086	1.3%
TRAINING AND MEETINGS	328,782	369,657	413,714	44,057	11.9%
PROFESSIONAL SERVICES	4,900,235	4,950,866	5,819,611	868,745	17.5%
OTHER MATERIALS	5,986,021	6,060,042	6,164,588	104,546	1.7%
OTHER SERVICES	21,736,151	22,378,137	23,529,902	1,151,765	5.1%
TOTAL DIRECT EXPENSES	\$ 211,565,055	\$ 212,409,283	\$ 222,834,475	\$ 10,425,192	4.9%
INSURANCE	\$ 2,050,555	\$ 2,161,628	\$ 2,160,797	(831)	0.0%
WATERSHED/PILOT	26,640,877	27,167,900	28,096,233	928,333	3.4%
HEEC PAYMENT	3,525,799	2,690,026	1,946,157	(743,869)	-27.7%
MITIGATION	1,494,900	1,459,902	1,400,000	(59,902)	-4.1%
ADDITIONS TO RESERVES	169,304	482,953	(34,927)	(517,880)	-107.2%
RETIREMENT FUND	7,470,927	7,824,155	8,159,521	335,366	4.3%
ADDITIONAL PENSION DEPOSIT		-	-	-	
POSTEMPLOYMENT BENEFITS	4,976,411	4,821,320	5,224,848	403,528	8.4%
TOTAL INDIRECT EXPENSES	\$ 46,328,773	\$ 46,607,884	\$ 46,952,628	\$ 344,745	0.7%
STATE REVOLVING FUND	\$ 72,684,514	\$ 75,066,883	\$ 81,876,276	6,809,393	9.1%
SENIOR DEBT	\$ 229,505,983	240,678,003	283,024,431	42,346,428	17.6%
SUBORDINATE DEBT	\$ 100,117,241	99,686,106	49,222,442	(50,463,664)	-50.6%
LOCAL WATER PIPELINE CP	\$ 316,440	263,758	4,149,242	3,885,484	1473.1%
CURRENT REVENUE/CAPITAL	\$ 9,200,000	10,200,000	11,200,000	1,000,000	9.8%
CAPITAL LEASE	\$ 3,217,060	3,217,060	3,217,060	-	0.0%
CORE FUND DEPOSIT	\$ 132,238	730,421	-	(730,421)	-100.0%
BOND REDEMPTION		(6,745,598)	-	6,745,598	-100.0%
VARIABLE RATE SAVINGS	\$ (12,770,132)	(13,016,491)	-	13,016,491	-100.0%
DEFEASANCE ACCOUNT	-	-	-	-	
DEBT SERVICE ASSISTANCE	(853,660)	(853,660)	-	853,660	-100.0%
TOTAL DEBT SERVICE	\$ 401,549,684	\$ 409,226,482	\$ 432,689,451	\$ 23,462,969	5.7%
TOTAL EXPENSES	\$ 659,443,512	\$ 668,243,648	\$ 702,476,554	\$ 34,232,906	5.1%
REVENUE & INCOME					
RATE REVENUE	\$ 628,721,000	\$ 650,315,783	\$ 672,440,000	22,124,217	3.4%
OTHER USER CHARGES	8,030,020	8,274,428	8,683,898	409,470	4.9%
OTHER REVENUE	11,266,436	10,014,309	12,000,066	1,985,757	19.8%
RATE STABILIZATION	3,500,000	-	-	-	
INVESTMENT INCOME	12,129,653	9,688,997	9,352,590	(336,407)	-3.5%
TOTAL REVENUE & INCOME	\$ 663,647,109	\$ 678,293,517	\$ 702,476,554	\$ 24,183,037	3.6%

FY16 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.
- 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.
- 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.
- Advocacy of MWRA interests in new and developing regulatory issues.
- Continue to develop and implement long-term strategies to ensure assessment increases to MWRA's communities are sustainable and predictable.
- 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.

FY16 Initiatives:

- Continue assessment and evaluation of sustainable cost savings opportunities throughout the organization.
- 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 Eversource. Pursue grant-funding and cost-sharing arrangements to defray costs of implementing these initiatives.
- Prepare for commencement of pilot, commercial food waste co-digestion project at Deer Island Treatment Plant in FY17.
- Continue to optimize new ultraviolet disinfection treatment process for MWRA's potable water system at the Carroll Water Treatment Plant and Brutsch Disinfection Facility.
- Start-up and operate new Spot Pond covered storage facility in water system.
- Plan for implementation of requirements of the new National Pollutant Discharge Elimination

System (NPDES) Permits for DITP (assume new permit is issued after FY16) and Clinton Wastewater Treatment Plant (assume new permit in effect for all of FY16).

- Continue work on other harbor and outfall monitoring initiatives including: calculating revised thresholds, continuing to work with Department of Conservation and Recreation implementation of appropriate beach management practices in South Boston, and improving instrumentation on National Oceanic and Atmospheric Administration's (NOAA's) weather buoy.
- Continue to develop and implement contaminant monitoring plans in the water system.

FY15 Accomplishments:

- Developed the FY16 Budget consistent with the FY15 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.
- Implemented the Amendments to the Authority's General Bond Resolution, which allowed for the release of \$112 million in reserves of which \$102 million was used to defease outstanding debt for budgetary relief in fiscal years 2016 through 2027. The remaining \$10 million was deposited to MWRA's OPEB Trust.
- Defeased \$30.5 million of outstanding debt on June 22, 2014 for budgetary relief for fiscal year 2016 through 2019 thereby reducing the rate of increase to the Rate Revenue Requirement in those years. The sources of funding for this defeasance was primarily the fiscal year 2015 current expense budget surplus.
- Competitively bid CY14 Renewable Energy Portfolio Standard certificates which resulted in FY15 revenues of \$330,000 (Class II). In addition, received FY15 revenues of \$1.0 million from forward marketing of CY14 (Class I and Solar) Renewable Portfolio Standards (RPS) certificates.
- Procured multi-year electricity supply contracts for MWRA's facilities.
- Received revenue for energy generated at numerous facilities including the following: hydroelectric \$507,000 from Oakdale Station, \$179,000 from Cosgrove Station, and \$15,000 from the Loring Road Pump Station; wind of \$443,000 from Charlestown Pump Station; and solar of 93,000 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

\$1.8 million in revenue for FY15. Deer Island also self-generated ~29% of the plant's total required power during the year.

- Received \$648,000 in utility rebates for completed energy projects.
- Processed 100.4 average tons per day of sludge at the Pelletization Plant and disposed of 6,227 of grit and screenings through a contracted vendor.
- In water system, exercised 767 and replaced 24 mainline valves; exercised 391 and replaced 10 blow-off valves.
- In the wastewater system, inspected 29 miles and cleaned 21.65 miles of MWRA pipeline. Also inspected more than 1,100 structures and rehabilitated 25 manholes.
- At DITP, treated 99% of flow through secondary and met secondary permit limits at all times. Operated DITP without any NPDES Permit violations during FY15.

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. The table below shows MWRA's sources and uses of funds for The Final FY16 Budget.

Revenue

SOURCES & USES OF FUNDS*		
\$ in Millions		
<i>Sources of Funds</i>		
Other User Charges	\$8.7	1.2%
Other Revenue	12.0	1.7%
Investment Income	9.4	1.3%
Rate Revenue	672.4	95.7%
Rate Stabilization	0.0	0.0%
TOTAL REVENUE	\$702.5	100.0%
<i>Uses of Funds</i>		
Total Expenses before Debt		
Service Offsets	\$702.5	
Less:		
Debt Service Assistance	0.0	
Bond Redemption	0.0	
Sub-Total Net Expenses	702.5	
Capital Financing	432.7	61.6%
Direct Expenses	222.8	31.7%
Indirect Expenses	47.0	6.7%
TOTAL EXPENSES	\$702.5	100.0%
TOTAL EXPENSES Less Offsets	\$702.5	
*May not add up due to rounding		

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 Final FY16 Budget, 95.7% of revenue is derived from rate revenue. The remaining 4.3% of revenue will come from interest on investments, charges to other water and sewer customers (including Chicopee Valley Aqueduct (CVA) communities), non-recurring revenue, annual charges to sewer system users with permits issued by MWRA's Toxic Reduction and Control Department (TRAC), penalties assessed to holders of sewer use permits, and other miscellaneous sources.

Rate Revenue

Under The Final FY16 Budget, the MWRA will raise \$672.4 million of its total revenue requirements from water and sewer assessments to member communities. Of the \$672.4 million, \$446.1 million will fund the sewerage system, an increase of 1.4% as compared to FY15; and \$226.4 million will fund the water system, an increase of 7.7% as compared to FY15.

Non-Rate Revenue

Other User Charges

Other User Charges include revenues derived from the provision of water and sewer services to communities and other entities under special agreements. Other User Charges in the Final FY16 Budget total \$8.7 million, an increase of \$409,000 or 4.9% from FY15 Actuals and includes \$4.8 million for CVA communities, \$1.7 million for Deer Island water usage, \$753,000 in entrance fees paid by Stoughton, Wilmington, and the Dedham Westwood Water District, \$500,000 for the Commonwealth's partial reimbursement for Clinton Wastewater Treatment Plant expenses, \$608,000 in water revenue, and \$366,000 in sewer revenue to contract communities.

Other Revenue

Other Revenue is budgeted at \$12.0 million, an increase of \$2.0 million or 19.8% from FY15 Actuals mainly for due to one-time revenue for water provided during the community managed CSO project to the City of Cambridge.

Other Revenue includes \$2.2 million in permit fees and penalties, \$3.1 million for the sale of Renewable Portfolio Credits, sale of generated power, and revenues for demand response programs, and \$6.7 million in miscellaneous revenue.

Permit Fees and Penalties

The Final FY16 Budget includes \$2.2 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.

Energy Revenue

The Final FY16 Budget includes \$3.1 million which 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 as well as a large number of miscellaneous revenue items.

Miscellaneous Revenue

The Final FY16 Budget includes \$6.7 million in miscellaneous revenue mainly for the City of Cambridge one-time water revenue as highlighted above.

Investment Income

MWRA earns income by investing reserves and fund balances in a variety of interest-yielding securities. The Final FY16 Budget includes \$9.4 million in investment income, a decrease of \$336,000 or 3.5% from FY15 Actuals due to having fewer funds invested long-term due to liquidity needs for the reserve release based on the amendments to the Bond Indenture anticipated for FY16. The FY16 short-term interest rate is 0.20%, unchanged from the FY15 Budget.

Non-Recurring Revenue

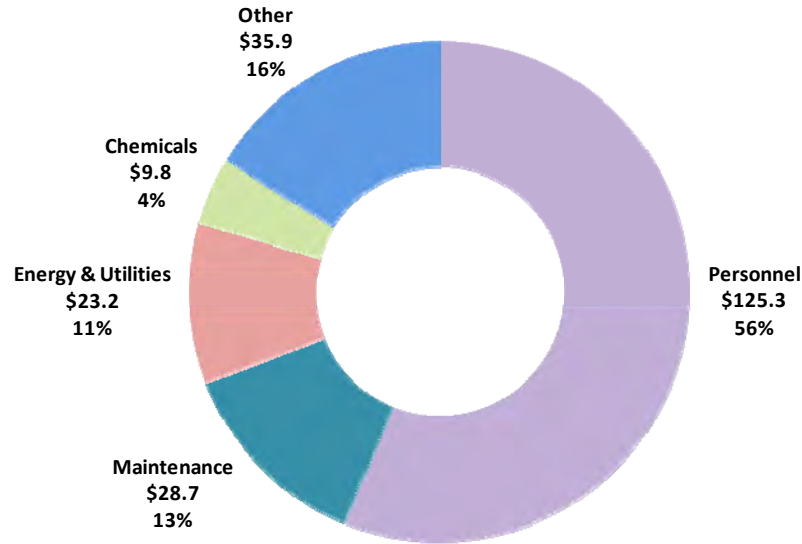
Non-Recurring Revenue is one-time revenue used in a given fiscal year to reduce assessments to member communities. In any fiscal year when annual revenues exceed expenses, MWRA may transfer the unexpended amount to the rate stabilization reserve. Within certain limits, MWRA may use this money to reduce the Rate Revenue Requirement in any subsequent year. Consistent with the requirements of its enabling act and its general bond resolution, MWRA treats transfers from the rate stabilization reserve as revenue in that fiscal year. For the Final FY16 Budget, no Rate Stabilization fund usage is projected.

Direct Program Expenses

The Final FY16 Direct Expense Budget is \$222.8 million, \$10.4 million or 4.9% above FY15 Actuals. The principal drivers for the increase are wages and salaries due to cost of living adjustments (COLAs), increased energy costs mainly for projected electricity pricing, sludge expense reflecting higher contract indices, fringe benefits for projected healthcare cost increases, and higher maintenance. 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.

The chart below 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) are the largest component of the direct expense budget 56%, other (professional services, other materials, and other services) 16%, maintenance 13%, utilities 11%, and chemicals 4%.

Direct Expenses by Category
(in millions)



Wages and Salaries – The budget includes \$99.4 million for Wages and Salaries as compared to \$94.4 million reported in FY15, an increase of \$5.0 million or 5.3%. Regular Pay which is 98.2% of total Wages and Salaries, increased \$2.8 million mostly for COLA increases. The Final FY16 Budget funds 1,170 positions, 5 fewer positions than FY15 Budget. On the Full-Time-Equivalent (FTE’s) basis the budget is set for 1,160. The Authority started to report FTE’s in June of 2015. It is important to note that the Authority is striving to achieve the 1,150 FTE goal recommended by Amawalk consultants based on a staffing study in 2012, to be reached in a five-year timeframe. As always, new hires and backfills of vacant positions will be managed at the agency level and addressed on a case-by-case basis by senior management.

Overtime – The budget includes \$4.2 million for Overtime, \$303,000 or 6.7% less than FY15 Actuals. Fewer projected wet weather events in FY16 more than offset the increase in funding is associated with the planned overtime activities for the North Main Pump Station and Winthrop Terminal Facility Butterfly Valve Replacement project which will require as many as 62 overnight shutdowns.

Fringe Benefits – The budget includes \$19.3 million for Fringe Benefits, an increase of \$1.0 million or 5.6% from FY15 Actuals. Health Insurance premiums total \$16.8 million, an increase of \$1.0 million or 6.4% from FY15 Actuals largely due to anticipated cost increases.

Workers’ Compensation – The budget includes \$2.3 million for Workers’ Compensation, an increase of \$36,000 or 1.6% from FY15 Actuals and is based on a three-year average of actual and projected spending.

Chemicals – The budget includes \$9.8 million for Chemicals, an increase of \$42,000 or 0.4% from FY15 Actuals mainly due to the revised dosing protocol for fluoride as well as updated assumptions for usage and pricing based on the most recent information. The FY16 Budget does not include any funding for the new Deer Island National Pollutant Discharge Elimination System (NPDES) permit which is projected to have more stringent requirements for enterococcus treatment compliance.

Utilities – The budget includes \$23.2 million for Utilities, which is \$2.1 million or 9.9% from FY15 Actuals. The increase reflects underspending on electricity in FY15 due to lower than expected congestion pricing and lower than budgeted and transmission and delivery expenses that are not projected to continue in FY16. The budget funds \$16.9 million for Electricity, \$3.3 million for Diesel Fuel, \$2.2 million for Water, and \$486,000 for Natural Gas.

Maintenance – The budget includes \$28.7 million for Maintenance projects, an increase of \$376,000 or 1.3% from FY15 Actuals. The FY16 Maintenance request is in line with FY14 actual maintenance spending of \$29.5 million.

Training and Meetings – The budget includes \$414,000 for Training and Meetings, an increase of \$44,000 or 11.9% from FY15 Actuals.

Professional Services – The budget includes \$5.8 million for Professional Services, an increase of \$869,000 or 17.5% from FY15 Actuals. The budget reflects funding of \$1.8 million for Security, \$1.7 million for Regulatory Monitoring, and \$1.3 million for Other Professional Services to support items such as the professional staff development and as-needed professional services.

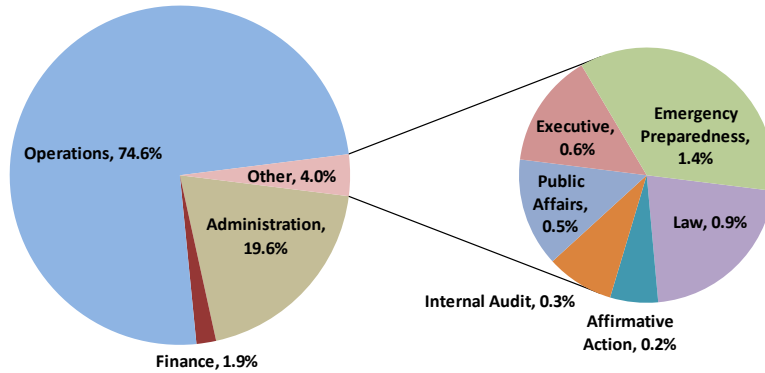
Other Materials – The budget includes \$6.2 million for Other Materials, an increase of \$105,000 or 1.7% from FY15 Actuals. The budget includes funding of \$1.7 million for Vehicle Purchases, \$996,000 for Vehicle Expenses mostly for gasoline purchases, \$841,000 for Lab and Testing Supplies, \$709,000 for Equipment/Furniture, \$435,000 for Health and Safety, \$425,000 for Computer Hardware needs, and \$377,000 for Work Clothes.

Other Services – The budget includes \$23.5 million for Other Services, an increase of \$1.2 million or 5.1% from FY15 Actuals. The budget includes funding of \$14.1 million for Sludge Pelletization, \$3.6 million for Space/Lease Rentals and related expenses for the CNY and Chelsea facilities, \$1.7 million for Voice and Data costs, \$1.2 million for Grit & Screenings, and \$1.2 million for Other Services. The largest increase is for Telecommunications of \$268,000 for increased lines for security initiatives, Sludge Pelletization of \$218,000 due to increases in inflation indices, and Space/Lease Rentals of \$144,000 for contractual increases.

Functional Area Budget Summary

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

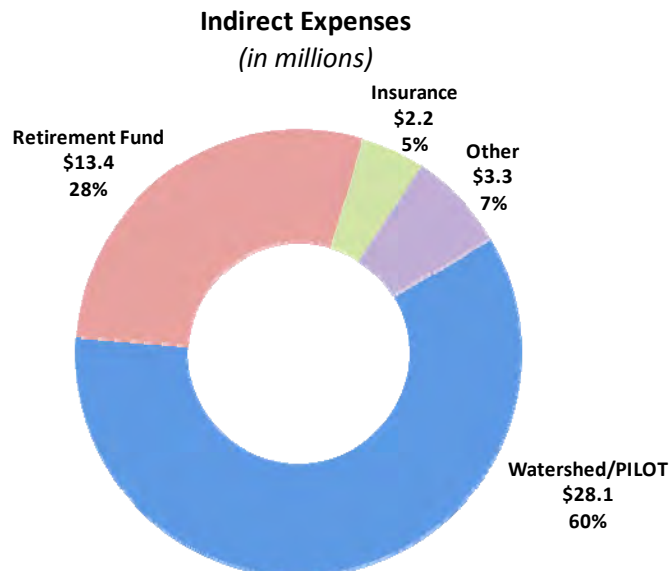
MWRA Direct Expense Budgets by Division



Indirect Program Expenses

The Final FY16 Indirect Expense Budget is \$47.0 million, \$345,000 or 0.7%, above FY15 Actuals. The principal drivers for the increase are the Water Supply Protection Program due to higher operating expenses and Payment in Lieu of Taxes (PILOT) costs, Pension due to higher mandatory and optional payment amounts, and increased Addition to Reserves.

The graph below combines related indirect expense line items into the general cost categories and shows that Water Supply Protection Program expenses are the largest component of the indirect expense budget 60% followed by Retirement Fund 28%, Other (for items such as HEEC, Mitigation, and Addition to Reserves) 7%, and Insurance 5%.



Insurance

MWRA purchases property and casualty insurance from external insurance carriers with a self-insured retention of \$2.5 million dollars and Worker's Compensation Excess insurance with a self-insured retention of \$500,000 per claim. The Final FY16 Budget includes \$2.2 million for Insurance, level funded at FY15 Actuals. The Final FY16 Budget was based on actual average spending for the past five years, FY10-14. The budget includes \$1.7 million for premiums and fees and \$440,000 for the projected cost of claims made against the self-insured portion of MWRA coverage. MWRA mitigates the budgetary risk of self-insurance by maintaining an Insurance Reserve. The reserve, which was established as part of the Bond Resolution, requires that an independent insurance consultant review the funding level every three years and provide recommendations as to its adequacy. The Insurance Reserve Fund is currently funded at \$14.0 million which was within the acceptable range as indentified in the insurance consultant review as of February 2014.

Watershed Reimbursement/PILOT

The Enabling Act directs MWRA to pay the Commonwealth of Massachusetts for several statutory obligations: Payment in Lieu of Taxes (PILOT) for Commonwealth-owned land in the watersheds, operating expenses of the Division of Water Supply Protection, and debt service costs for purchases of land around the supply reservoirs to protect the watersheds. The Final FY16 Budget includes \$28.1 million for the Division of Water Supply Protection (formerly MDC Division of Watershed Management), an increase of \$928,000 or 3.4%, over FY15 Actuals. The budget is comprised of \$13.1 million for reimbursement of operating expenses net of revenues, \$7.9 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 increases are for operating expenses net of revenues of \$394,000 mainly for contractual increases and Payment in Lieu of Taxes of \$200,000.

Harbor Electric Energy Company (HEEC)

The Final FY16 Budget includes \$1.9 million for the Harbor Energy Electric Company (HEEC), a decrease of \$744,000 or 27.7%, from FY15 Actuals. This funding is for the repayment of the capital investment for the Deer Island electric cable and substation which provides electric power to the treatment plant. The significant decrease is due to contractual obligations which expired in May 2015.

Mitigation

MWRA disburses mitigation funds to communities affected by MWRA projects or facilities pursuant to MWRA's Statement of Mitigation Principles and/or specific agreements with communities. MWRA mitigation may include relieving the direct impacts of construction, meeting environmental and regulatory requirements, long-term operating agreements, or community compensation for impacts over and above those addressed by other mitigation. In rare situations, where the extent and duration of the impact of a project or facility on a community is such that restoring the area to its pre-project state is insufficient to relieve the stress of MWRA's presence during the project, MWRA funds or contributes to improvements to affected areas.

Mitigation expenses are funded in the capital budget and in the current expense budget. The Final FY16 Budget includes funding of \$1.4 million in potential community compensation for the City of Quincy and the Town of Winthrop. Both mitigation agreements terms were recently extended from FY15 to FY25.

Operating Reserves

The Final FY16 Budget includes a reduction of \$34,927 for the Operating Reserve, a decrease of \$518,000 from the FY15 Budget. 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 Final FY16 Budget, the required balance is \$39.4 million versus the \$39.5 million required in FY15.

Retirement System Contribution

The Final FY16 Budget includes \$8.2 million for the Retirement Fund, an increase of \$335,000 or 4.3%, over FY15 Actuals. This funding of \$8.2 million represents the minimum required contribution for FY16 based on the most recent actuarial evaluation of January 1, 2013. The Pension Fund achieved virtual full funding as of January 1, 2015 at 98.3%.

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 plan to pay down our pension liability and upon reaching full funding, move to address the OPEB obligation. This strategy was employed in the FY08-15 budgets (although temporarily halted in FY11 to achieve a 1.5% rate increase). Based on the latest actuarial evaluation, MWRA's pension fund is at 98.3% funding level, which is considered virtually fully funded. As such, in the Final FY16 Budget the Authority will begin funding its OPEB liability at \$5.2 million, continuing the Authority's long-term commitment to address its liabilities. Furthermore, to maximize the benefits in terms of returns and accounting treatment, an irrevocable OPEB Trust was established after Board approval and funding started on April 23rd, 2015 with \$10,800,000 deposit. The source of the deposit is \$10 million cash reserves which became available due to the Amended and Revised Bond Indenture, and \$800,000 from funds appropriated in FY10 for funding OPEB.

Indirect Expenses

Indirect Expenses for FY16 total \$47.0 million, a decrease of \$345,000 or 0.7% from FY15 Budget Actuals. Below are the highlights of major changes:

The budget includes \$28.1 million for the Division of Water Supply Protection (formerly MDC Division of Watershed Management), an increase of \$938,000 or 3.4% over FY15 Actuals. The budget is comprised of \$14.1 million for reimbursement of operating expenses net of revenues, \$8.3 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 increases are for operating expenses net of revenues of \$394,000 mainly for contractual increases and Payment in Lieu of Taxes of \$200,000.

The budget includes \$8.2 million for the Retirement Fund, an increase of \$343,000 or 4.4% over FY15 Actuals required contribution. This funding of \$8.2 million represents the minimum required contribution for FY16 based on the actuarial valuation of January 1, 2013, and confirmed by the January 1, 2015 actuarial report.

The budget includes \$1.9 million for the Harbor Energy Electric Company (HEEC), a decrease of \$744,000 or 27.7% from FY15 Actuals. This funding is for the repayment of the capital investment for the Deer Island electric cable and substation which provides electric power to the treatment plant. The significant decrease is due to contractual obligations which expired in May 2015, ending the amortization of the cable financing component of the capital investment.

The budget includes \$2.2 million for Insurance nearly matching FY15's Actuals. The FY16 Budget was based on actual average spending for the past five years, FY10-14. It should be noted that at the June 3rd meeting, the Board of Directors approved the MWRA FY16 Insurance program with a not to exceed estimate of \$290,000 for the excess liability coverage line item. Since the June 3rd Board meeting, staff obtained the actual amount for the excess liability coverage which was \$267,000, for a savings of \$23,000.

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 plan to pay down our pension liability and upon reaching full funding, move to address the OPEB obligation. This strategy was employed in the FY08-15 budgets (although temporarily halted in FY11 to achieve a 1.5% rate increase). Based on the latest actuarial evaluation, MWRA's pension fund is at 98.3% funding level, which is considered virtually fully funded. As such, in the Final FY16 Budget the Authority will begin funding its OPEB liability at \$5.2 million, continuing the Authority's long-term commitment to address its liabilities. Furthermore, to maximize the benefits in terms of returns and accounting treatment, an irrevocable OPEB Trust was established after Board approval and funding started on April 23rd, 2015 with \$10,800,000 deposit. The source of the deposit is \$10 million cash reserves which became available due to the Amended and Revised Bond Indenture, and \$800,000 from funds appropriated in FY10 for funding OPEB.

Funding for the Operating Reserve for FY16 is \$518,000 lower than the FY15 Budget. 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 Final FY16 Budget the required balance is \$39.4 million versus the \$39.5 million required in FY15.

Capital Financing

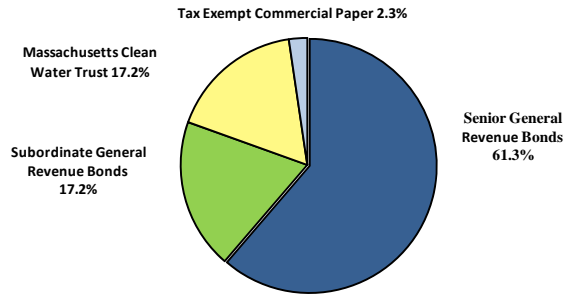
Outstanding Debt and Debt Management

The \$7.9 billion spent on MWRA's modernization efforts to date, has relied heavily on debt financing. Total debt as of June 30, 2015 was \$5.6 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.

Type	Principal Outstanding June 30, 2015	% of Total
Senior General Revenue Bonds	\$ 3,434,620,000	61.3%
Massachusetts Clean Water Trust	\$ 1,076,000,218	19.2%
Subordinate General Revenue Bonds	\$ 963,370,000	17.2%
Tax Exempt Commercial Paper	\$ 130,000,000	2.3%
Total	\$ 5,603,990,218	100.0%

80.5% of MWRA's Debt is Fixed Rate

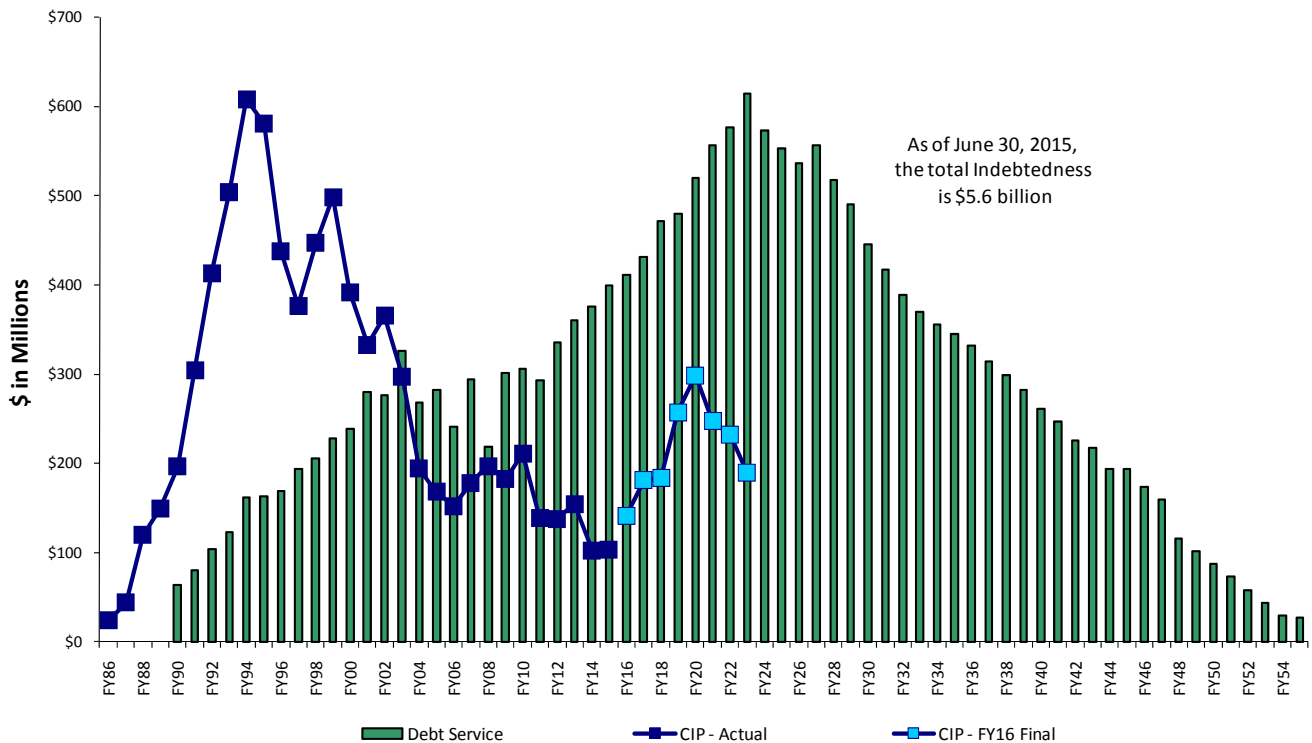
Principal Outstanding



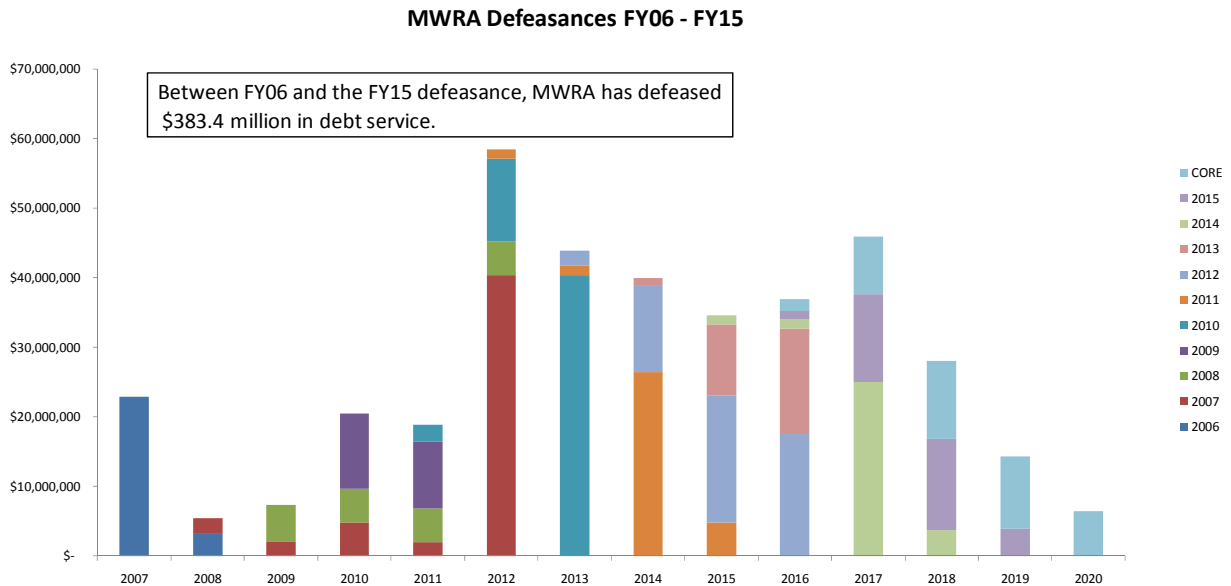
The following graph was updated with The Final FY16 CIP spending and debt service projections to illustrate the relationship between the MWRA’s CIP and debt service.

Over the past 25 years, 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 capital spending will be geared towards asset protection and water redundancy initiatives. As indicated above, as of June 30, 2015, MWRA’s total debt was \$5.6 billion which relate to the significant increases in debt service obligations in the upcoming years. The Authority’s debt service obligation as a percent of total expenses has increased from 36% in 1990 to over 61% in the Final FY16 Budget, thus continuing to be the largest challenge for the Authority to manage assessments in future years.

MWRA Capital Improvement Spending & Debt Service



MWRA continues to actively manage 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, 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. Since 2006, the Authority has used these tools to defease over \$383.4 million in debt as illustrated on the graph on the next page.



The Final FY16 Budget capital financing costs total \$432.7 million and remain the largest portion of the MWRA’s budget and includes a targeted defeasance which will reduce debt service by approximately \$903,000 in FY16, \$8.6 million in FY17, \$9.6 million in FY18, and \$1.4 million in FY19.

The Final FY16 Budget assumes a 3.25% interest rate for variable rate debt which is the same level as in FY15. 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 Final FY16 Budget capital financing costs increased by \$23.5 million or 5.7% compared to the FY15 actuals. This increase in the MWRA’s debt service is the result of projected FY16 issuances partially offset by the impact of the projected defeasance. The Final FY16 capital financing budget includes:

- \$283.0 million in principal and interest payments on MWRA’s senior fixed rate bonds. This amount includes \$6.5 million to support issuances of \$100 million in June 2015 and \$1.8 million to support issuances of \$100 million of new money in June 2016.
- \$49.2 million in principal and interest payments on subordinate bonds;

- \$81.9 million in principal and interest payments on SRF loans. This amount includes \$5.4 million to support issuances of \$16.0 million in Spring 2015 and \$46.5 million in 2016;
- \$11.2 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

The table below provides detail on The Final FY16 Budget capital financing line item. It further illustrates how upgrading the sewerage system has dominated the capital program to date. Current and future borrowings increasingly support improvements to the water system. A complete list of the Authority's indebtedness by series is presented in Appendix F.

	Amount Outstanding	Total FY16 Capital Costs	Sewer	Water
Total SRF ¹ Debt	\$1,076.0	\$81.9	\$63.9	\$18.0
Total Senior Debt	\$3,434.6	283.0	181.5	101.5
Total Subordinate Debt	\$963.4	49.2	34.8	14.4
Total SRF and Debt Service²	\$5,474.0	\$414.1	\$280.3	\$133.8
Water Pipeline Commercial Paper	130.0	4.1	0.0	4.1
Current Revenue/Capital ³		11.2	11.2	0.0
Capital Lease		3.2	1.9	1.3
CORE Fund Deposit		0.0	0.0	0.0
	130.0	\$18.6	\$13.1	\$5.4
Total Capital Financing (before Debt Service Offsets)	5,604.0	\$432.7	\$293.4	\$139.3
Debt Service Offsets:				
Debt Service Assistance		0.0	0.0	0.0
Bond Redemption		0.0	0.0	0.0
Total Capital Financing	5,604.0	\$432.7	\$293.4	\$139.3

¹ SRF debt service payments reflect net MWRA obligations after state and federal subsidies.

² Numbers may not add due to rounding.

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

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 2.9 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 Final FY16 Budget, rate revenue from BWSC will account for 31% of MWRA's total rate revenue. The table on page I-20, lists MWRA communities, the services received, and the MWRA assessments for FY16.

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

The table on page I-21 presents the calculation of MWRA's Final FY16 Rate Revenue Requirement. The table shows that most of MWRA's current expenses are directly attributable to either water or sewer service costs, or to investment in the water or sewer systems. Expenses that support both systems are allocated to water or sewer assessments based on generally accepted cost allocation principles. Investment Income and Other Revenues offset water and sewer expenses. The resulting net cost of water and sewer services is the amount MWRA recovers through water and sewer assessments.

Wholesale Assessment Methodology

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

MWRA Fully Served Water and Sewer Customers	Final FY15 Water Assessment	Final FY16 Water Assessment	Percent Change from FY15	Final FY15 Sewer Assessment	Final FY16 Sewer Assessment	Percent Change from FY15	Final FY15 Combined Assessment	Final FY16 Combined Assessment	Dollar Change from FY15	Percent Change from FY15
ARLINGTON	\$4,555,760	\$4,724,970	3.7%	\$7,726,704	\$7,699,278	-0.4%	\$12,282,464	\$12,424,248	\$141,784	1.2%
BELMONT	2,582,348	2,674,576	3.6%	4,664,723	4,624,861	-0.9%	7,247,071	7,299,437	52,366	0.7%
BOSTON (BWSC)	75,628,730	80,205,208	6.1%	128,143,674	129,701,392	1.2%	203,772,404	209,906,600	6,134,196	3.0%
BROOKLINE	6,529,438	6,910,863	5.8%	12,542,458	12,639,575	0.8%	19,071,896	19,550,438	478,542	2.5%
CHELSEA	3,782,023	4,155,184	9.9%	7,256,657	7,435,243	2.5%	11,038,680	11,590,427	551,747	5.0%
EVERETT	4,611,174	4,636,654	0.6%	7,816,187	8,056,404	3.1%	12,427,361	12,693,058	265,697	2.1%
FRAMINGHAM	7,583,720	8,243,826	8.7%	11,278,349	11,893,982	5.5%	18,862,069	20,137,808	1,275,739	6.8%
LEXINGTON	6,035,866	6,695,144	10.9%	7,177,414	6,970,176	-2.9%	13,213,280	13,665,320	452,040	3.4%
MALDEN	6,273,748	6,941,818	10.6%	12,260,112	12,439,049	1.5%	18,533,860	19,380,867	847,007	4.6%
MEDFORD	5,979,858	6,432,009	7.6%	11,075,116	11,355,458	2.5%	17,054,974	17,787,467	732,493	4.3%
MELROSE	2,650,477	2,853,930	7.7%	5,945,198	6,054,875	1.8%	8,595,675	8,908,805	313,130	3.6%
MILTON	2,854,051	3,156,824	10.6%	5,025,212	5,018,915	-0.1%	7,879,263	8,175,739	296,476	3.8%
NEWTON	10,437,524	12,205,271	16.9%	20,176,404	19,710,607	-2.3%	30,613,928	31,915,878	1,301,950	4.3%
NORWOOD	3,277,568	3,755,101	14.6%	6,492,751	6,718,885	3.5%	9,770,319	10,473,986	703,667	7.2%
QUINCY	10,605,214	11,918,042	12.4%	19,001,720	19,481,076	2.5%	29,606,934	31,399,118	1,792,184	6.1%
READING	1,931,410	2,032,766	5.2%	4,642,124	4,624,378	-0.4%	6,573,534	6,657,144	83,610	1.3%
REVERE	4,484,031	5,013,281	11.8%	10,193,891	10,261,623	0.7%	14,677,922	15,274,904	596,982	4.1%
SOMERVILLE	6,896,106	7,060,400	2.4%	14,845,808	15,585,894	5.0%	21,741,914	22,646,294	904,380	4.2%
STONEHAM	3,490,972	3,381,301	-3.1%	4,477,065	4,429,220	-1.1%	7,968,037	7,810,521	(157,516)	-2.0%
WALTHAM	8,061,502	8,631,171	7.1%	12,953,820	12,680,425	-2.1%	21,015,322	21,311,596	296,274	1.4%
WATERTOWN	3,096,347	3,392,382	9.6%	5,774,673	5,760,051	-0.3%	8,871,020	9,152,433	281,413	3.2%
WINTHROP	1,454,285	1,629,550	12.1%	3,221,355	3,183,339	-1.2%	4,675,640	4,812,889	137,249	2.9%
TOTAL	\$182,802,152	\$196,650,271	7.6%	\$322,691,415	\$326,324,706	1.1%	\$505,493,567	\$522,974,977	\$17,481,410	3.5%

MWRA Sewer and Partial Water Customers	Final FY15 Water Assessment	Final FY16 Water Assessment	Percent Change from FY15	Final FY15 Sewer Assessment	Final FY16 Sewer Assessment	Percent Change from FY15	Final FY15 Combined Assessment	Final FY16 Combined Assessment	Dollar Change from FY15	Percent Change from FY15
CANTON	\$991,292	\$1,286,728	29.8%	\$3,547,316	\$3,933,960	10.9%	\$4,538,608	\$5,220,688	\$682,080	15.0%
NEEDHAM	1,193,697	1,012,962	-15.1%	5,466,144	5,408,445	-1.1%	6,659,841	6,421,407	(238,434)	-3.6%
STOUGHTON	931,975	1,106,344	18.7%	4,391,426	4,392,863	0.0%	5,323,401	5,499,207	175,806	3.3%
WAKEFIELD	1,611,741	1,855,071	15.1%	5,594,367	5,563,282	-0.6%	7,206,108	7,418,353	212,245	2.9%
WELLESLEY	1,379,407	852,477	-38.2%	5,333,992	5,278,300	-1.0%	6,713,399	6,130,777	(582,622)	-8.7%
WILMINGTON	363,646	353,379	-2.8%	2,353,306	2,476,867	5.3%	2,716,952	2,830,246	113,294	4.2%
WINCHESTER	1,253,400	1,234,222	-1.5%	3,867,732	3,868,461	0.0%	5,121,132	5,102,683	(18,449)	-0.4%
WOBBURN	3,032,534	3,091,283	1.9%	9,535,730	9,492,994	-0.4%	12,568,264	12,584,277	16,013	0.1%
TOTAL	\$10,757,692	\$10,792,466	0.3%	\$40,090,013	\$40,415,172	0.8%	\$50,847,705	\$51,207,638	\$359,933	0.7%

MWRA Sewer-only Customers	Final FY15 Water Assessment	Final FY16 Water Assessment	Percent Change from FY15	Final FY15 Sewer Assessment	Final FY16 Sewer Assessment	Percent Change from FY15	Final FY15 Combined Assessment	Final FY16 Combined Assessment	Dollar Change from FY15	Percent Change from FY15
ASHLAND				\$2,310,206	\$2,380,635	3.0%	\$2,310,206	\$2,380,635	\$70,429	3.0%
BEDFORD				3,085,246	3,199,185	3.7%	3,085,246	3,199,185	113,939	3.7%
BRAINTREE				8,363,839	8,507,387	1.7%	8,363,839	8,507,387	143,548	1.7%
BURLINGTON				4,943,181	4,905,353	-0.8%	4,943,181	4,905,353	(37,828)	-0.8%
CAMBRIDGE				22,157,757	23,259,670	5.0%	22,157,757	23,259,670	1,101,913	5.0%
DEDHAM				5,024,472	5,063,931	0.8%	5,024,472	5,063,931	39,459	0.8%
HINGHAM SEWER DISTRICT				1,651,545	1,695,096	2.6%	1,651,545	1,695,096	43,551	2.6%
HOLBROOK				1,594,287	1,657,660	4.0%	1,594,287	1,657,660	63,373	4.0%
NATICK				5,330,710	5,526,614	3.7%	5,330,710	5,526,614	195,904	3.7%
RANDOLPH				5,931,064	6,011,817	1.4%	5,931,064	6,011,817	80,753	1.4%
WALPOLE				3,509,806	3,559,098	1.4%	3,509,806	3,559,098	49,292	1.4%
WESTWOOD				2,426,073	2,473,296	1.9%	2,426,073	2,473,296	47,223	1.9%
WEYMOUTH				10,972,561	11,087,503	1.0%	10,972,561	11,087,503	114,942	1.0%
TOTAL				\$77,300,747	\$79,327,245	2.6%	\$77,300,747	\$79,327,245	\$2,026,498	2.6%

MWRA Water-only Customers	Final FY15 Water Assessment	Final FY16 Water Assessment	Percent Change from FY15	Final FY15 Sewer Assessment	Final FY16 Sewer Assessment	Percent Change from FY15	Final FY15 Combined Assessment	Final FY16 Combined Assessment	Dollar Change from FY15	Percent Change from FY15
LYNNFIELD WATER DISTRICT	\$490,333	\$614,185	25.3%				\$490,333	\$614,185	\$123,852	25.3%
MARBLEHEAD	2,101,639	2,278,325	8.4%				2,101,639	2,278,325	176,686	8.4%
NAHANT	382,274	425,527	11.3%				382,274	425,527	43,253	11.3%
SAUGUS	3,202,440	3,645,083	13.8%				3,202,440	3,645,083	442,643	13.8%
SOUTHBOROUGH	765,656	850,020	11.0%				765,656	850,020	84,364	11.0%
SWAMPSCOTT	1,782,932	1,827,959	2.5%				1,782,932	1,827,959	45,027	2.5%
WESTON	1,993,015	2,240,675	12.4%				1,993,015	2,240,675	247,660	12.4%
TOTAL	\$10,718,289	\$11,881,774	10.9%				\$10,718,289	\$11,881,774	\$1,163,485	10.9%

MWRA Partial Water-only Customers	Final FY15 Water Assessment	Final FY16 Water Assessment	Percent Change from FY15	Final FY15 Sewer Assessment	Final FY16 Sewer Assessment	Percent Change from FY15	Final FY15 Combined Assessment	Final FY16 Combined Assessment	Dollar Change from FY15	Percent Change from FY15
DEDHAM-WESTWOOD WATER DISTRICT	\$49,042	\$305,532	523.0%				\$49,042	\$305,532	\$256,490	523.0%
LYNN (LWSC)	209,723	264,873	26.3%				209,723	264,873	55,150	26.3%
MARLBOROUGH	3,433,407	3,894,026	13.4%				3,433,407	3,894,026	460,619	13.4%
NORTHBOROUGH	1,044,206	1,103,542	5.7%				1,044,206	1,103,542	59,336	5.7%
PEABODY	1,219,096	1,480,393	21.4%				1,219,096	1,480,393	261,297	21.4%
TOTAL	\$5,955,474	\$7,048,366	18.4%				\$5,955,474	\$7,048,366	\$1,092,892	18.4%
SYSTEMS TOTAL	\$210,233,607	\$226,372,877	7.7%	\$440,082,175	\$446,067,123	1.4%	\$650,315,782	\$672,440,000	\$22,124,218	3.4%

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.

Calculation of the FY16 Rate Revenue Requirement (000's)

	Sewer	Water	Total
Allocated Direct Expenses	\$150,055	\$72,780	\$222,834
Allocated Indirect Expenses	\$12,998	\$33,955	\$46,953
PLUS			
Capital Expenses:			
Debt Service (less offsets)	\$280,282	\$133,842	\$414,123
Current Revenue for Capital	\$11,200	\$0	\$11,200
Other Capital Expenses	\$1,923	\$5,443	\$7,366
PLUS			
Non-Rate Revenue:			
Investment Income	-\$4,935	-\$4,418	-\$9,353
Fees and Other Revenue	-\$5,455	-\$15,229	-\$20,684
Rate Stabilization	\$0	\$0	\$0
EQUALS			
Rate Revenue Requirement	\$446,067	\$226,373	\$672,440

Revenue and Expenditure Trends

Because MWRA is required by its enabling act to balance its budget and to establish annual assessments to cover all expenses, revenue must change as expenses are changing each year. The Rate Revenue Requirement in any year is the difference between MWRA expenses and other revenue sources, most notably non-rate revenue, investment income, and debt service assistance from the Commonwealth (which directly reduces debt service expense). For FY16, community assessments are projected to represent 95.7% 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, the Authority continues to tighten certain planning estimate assumptions for future years and has limited annual capital spending to \$160.0 million.

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

The table below and Appendix D (in more detail) present the combined estimated future rate revenue requirements for FY16 through FY25. The planning estimates shown below assume no Debt Service Assistance from the Commonwealth and use of Rate Stabilization and Bond Redemption reserves through FY2023 to manage the rate increases. These projections also include the release of cash and debt service reserves starting in FY16 as a result of Bond Indenture changes.

Rates & Budget Projections											
FY16 Final CEB	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025
Total Rate Revenue (\$000)	\$ 650,316	\$ 672,440	\$ 698,606	\$ 725,790	\$ 753,918	\$ 783,697	\$ 824,471	\$ 865,825	\$ 836,159	\$ 822,366	\$ 813,431
Rate Revenue Change from Prior Year (\$000)	\$ 21,595	\$ 22,124	\$ 26,166	\$ 27,184	\$ 28,128	\$ 29,779	\$ 40,774	\$ 41,355	\$ (29,666)	\$ (13,793)	\$ (8,935)
Rate Revenue Increase	3.4%	3.4%	3.9%	3.9%	3.9%	3.9%	5.2%	5.0%	-3.4%	-1.6%	-1.1%
Use of Reserves (\$000)	\$ 6,746	\$ -	\$ -	\$ -	\$ -	\$ 34,682	\$ 13,646	\$ 13,136	\$ 1,156	\$ -	\$ -

Estimated Household Bill

Based on annual water usage of 61,000 gallons	\$1,007	\$1,055	\$1,100	\$1,154	\$1,204	\$1,253	\$1,326	\$1,393	\$1,425	\$1,460	\$1,497
Based on annual water usage of 90,000 gallons	\$1,486	\$1,556	\$1,622	\$1,703	\$1,777	\$1,848	\$1,956	\$2,055	\$2,102	\$2,154	\$2,208

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

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

The second largest budget factor is projected growth of base operating costs. The estimated \$61.1 million increase in direct expenses from FY16 to FY25 is primarily the result of an assumed annual inflation rate.

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

- Direct expense inflation rate of 2.5% for salaries and 3.0% for other direct expenses starting in FY17;
- CIP inflation rate of 2.5%;
- Capital spending based on the latest CIP expenditure forecast up to FY18, and spending is capped at \$160 million per year starting in FY18;
- Long-term fixed rate debt issues with 30-year terms and 5.0% interest rates in FY16, 5.5% rates in FY17, 5.75% rates in FY18 and 6.0% rates from FY19 and beyond;
- Variable rate interest projected at 3.25% in FY16, 3.50% in FY17, 3.75% in FY18, 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, the peak years on the next ten-year horizon regarding assessments are driven by the current debt structure. FY20 still represents a significant challenge for the Authority from a long-term rates management perspective.

FY16 Final Capital Improvement Program

The Final FY16 Capital Improvement Program totals \$6.0 billion of which approximately \$3.8 billion has been spent through FY14 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. In FY16, the Authority will also reach a significant milestone as the court mandated Combined Sewer Overflow (CSO) program is nearing completion.

FY16 spending is projected to be \$140.5 million of which \$88.1 million supports Wastewater System Improvements, \$43.4 million supports Waterworks System Improvements, and \$9.0 million is for Business and Operations Support.

FY14-18 Cap Spending

Based on the Final FY16 CIP, the five-year spending is now at \$689.1 million, which is \$102.5 million or 13.0% below the base-line cap and is attributable to exclusion of the Community Assistance Programs, cash flow changes between the years based on the latest cost estimates, and updated schedules. The exclusion of the Community Assistance Programs from the Cap calculation account for a reduction of \$65.0 million.

Final FY16 Cap FY14-18 Comparison

Final FY16		FY14	FY15	FY16	FY17	FY18	Total FY14-18
		Projected Expenditures	\$102.2	\$104.7	\$140.5	\$180.8	\$183.4
	Contingency	0.0	4.7	7.6	11.1	11.4	34.8
	Inflation on Unawarded Construction	0.0	0.0	1.1	5.4	8.6	15.1
	Less: I/I Program	0.0	(17.2)	(17.2)	(18.9)	(17.6)	(71.0)
	Less: Water Loan Program	0.0	1.4	2.2	2.5	(0.1)	6.0
	Less: Chicopee Valley Aqueduct Projects	(5.6)	(1.4)	(0.1)	(0.1)	(0.2)	(7.3)
	FY16 Draft Final FY14-18 Spending	\$96.6	\$92.2	\$134.1	\$180.8	\$185.5	\$689.1

Final FY16 vs. FY14-18 Base-Line Cap		FY14	FY15	FY16	FY17	FY18	Total FY14-18
		Projected Expenditures	(\$40.3)	(\$42.9)	(\$8.8)	\$39.1	\$46.5
	Contingency	(7.6)	(4.8)	(2.4)	1.3	2.1	(11.3)
	Inflation on Unawarded Construction	(0.8)	(4.2)	(7.3)	(5.7)	(4.9)	(22.8)
	Less: I/I Program	0.0	(17.2)	(17.2)	(18.9)	(17.6)	(71.0)
	Less: Water Loan Program	0.0	1.4	2.2	2.5	(0.1)	6.0
	Less: Chicopee Valley Aqueduct Projects	(0.6)	0.7	1.4	1.2	0.2	3.0
	FY14-18 Cap (\$ Change)	(\$49.2)	(\$66.9)	(\$32.2)	\$19.5	\$26.3	(\$102.5)
	FY14-18 Cap (% Change)	-33.8%	-42.1%	-19.4%	12.1%	16.6%	-13.0%

The FY14-18 Cap based on the Final FY16 CIP complies with both the overall and annual Cap requirements.

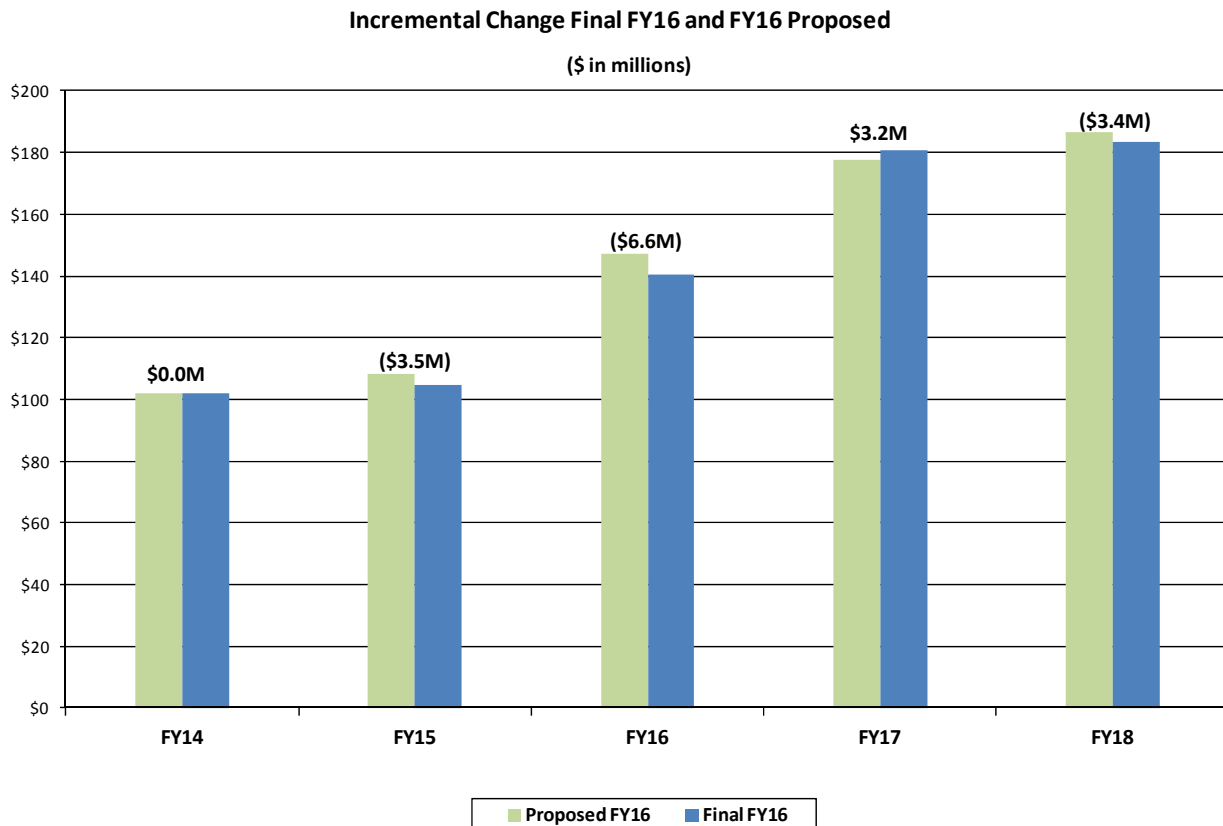
Final FY16 CIP Compared to the FY16 Proposed CIP by Program

The Final FY16 CIP increased by \$3.2 million versus the FY16 Proposed CIP approved by the Board of Directors in June 2015, with most of the additional spending in years outside of the current Cap period.

	Proposed FY16	Final FY16	\$ Change	% Change	Proposed FY16 FY14-18	Final FY16 FY14-18	FY14-18 \$ Change	FY14-18 % Change
Wastewater Systems Improvements	\$ 2,975.5	\$ 2,974.6	\$ (0.9)	0.0%	\$ 432.0	\$ 419.3	\$ (12.7)	-2.9%
Waterworks System Improvements	2,906.7	2,909.4	2.7	0.1%	248.3	251.3	3.0	1.2%
Business and Operations Support	127.0	128.4	1.4	1.1%	41.5	40.9	(0.6)	-1.4%
Total MWRA without contingency	\$ 6,009.2	\$ 6,012.4	\$ 3.2	0.1%	\$ 721.8	\$ 711.5	\$ (10.3)	-1.4%

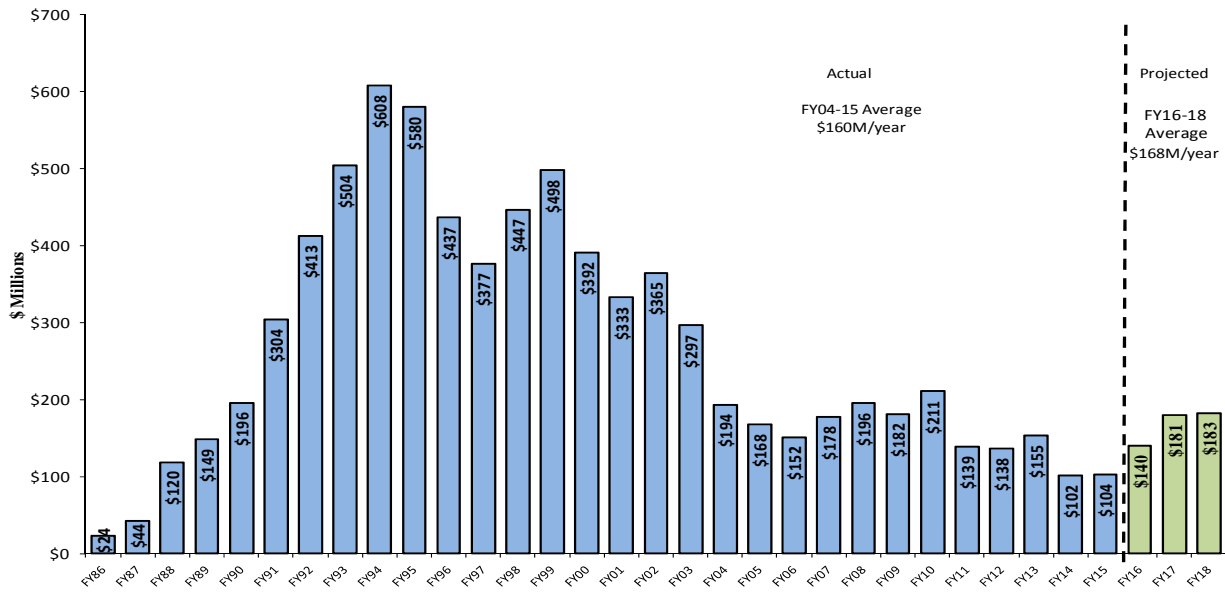
The Final FY16 CIP is primarily level funded with the Proposed FY16 CIP and reflects updated scope changes and cost estimates, particularly in the FY14-18 timeframe.

The chart below shows the incremental change between the Final FY16 CIP and the Proposed FY16 CIP by fiscal year.



Historical Spending

The chart on the following page captures the historical CIP spending through FY14 and projects spending to FY18 based on the Final FY16 CIP.



Changing Nature of the Capital Program - Shift from Mandated Projects

Since 1985, nearly 80% of the Authority’s spending has been on court mandated projects. Going forward, the majority of spending will support Asset Protection, Water System Redundancy, Pipeline Replacement and Rehabilitation, and continued support for Community Assistance programs. Asset Protection and Water System Redundancy spending is projected to rise from past levels and currently accounts for 56.4% and 25.8% of FY14-18 capital expenditures respectively, a total of nearly \$585.0 million of the \$711.5 million projected to be spent over the 5-year period.

	Total Contract	FY09-13	FY14-18	FY19-23	Beyond 23
Asset Protection	\$2,254.7	\$248.0	\$401.2	\$734.8	\$235.3
Carroll WTP	438.2	38.5	15.2	11.8	0.0
Water Redundancy	1895.0	134.7	183.8	495.3	218.5
CSO	873.8	315.5	57.7	3.0	0.0
Other	550.7	88.4	53.6	-21.1	-64.8
Total	\$6,012.4	\$825.1	\$711.5	\$1,223.8	\$389.0
Asset Protection	37.5%	30.1%	56.4%	60.0%	60.5%
Carroll WTP	7.3%	4.7%	2.1%	1.0%	0.0%
Water Redundancy	31.5%	16.3%	25.8%	40.5%	56.2%
CSO	14.5%	38.2%	8.1%	0.2%	0.0%
Other	9.2%	10.7%	7.5%	-1.7%	-16.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

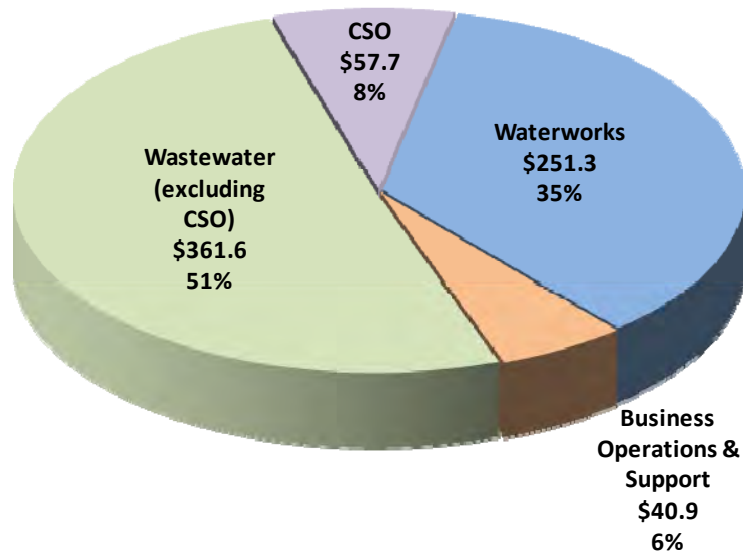
The Final FY16 projects total CIP spending of \$2.2 billion starting in FY15.

Final FY16 FY14-18 CIP Expenditures

Spending during the FY14-18 timeframe is projected to be \$711.5 million. Yearly cash-flows for the Cap period are shown below:

	Total Contract Amount	Payments Thru FY14	Projected Spending	FY14	FY15	FY16	FY17	FY18	Total FY14-18
Wastewater System Improvements	\$2,974.6	\$1,791.7	\$1,182.9	\$55.7	\$71.5	\$88.1	\$108.3	\$95.7	\$419.3
Interception & Pumping	890.0	527.4	362.6	6.9	9.5	20.1	32.2	29.3	98.0
Treatment	775.6	213.8	561.8	29.1	21.5	37.6	50.2	45.7	184.0
Residuals	167.6	64.6	103.0	0.1	-	-	2.9	1.6	4.6
CSO	898.5	853.3	45.2	15.6	23.3	13.2	4.1	1.5	57.7
Other Wastewater	242.9	132.5	110.3	4.0	17.2	17.2	18.9	17.6	75.0
Waterworks System Improvements	\$2,909.4	\$1,915.6	\$993.8	\$41.0	\$26.3	\$43.4	\$62.9	\$77.7	\$251.3
Drinking Water Quality Improvements	666.3	625.4	40.9	30.2	15.1	6.4	4.9	2.3	58.9
Transmission	1,224.2	759.5	464.7	4.5	3.0	19.5	24.3	27.5	78.8
Distribution & Pumping	949.1	377.5	571.6	4.8	9.1	17.4	31.9	42.6	105.8
Other Waterworks	69.8	153.2	(83.4)	1.5	(0.9)	0.1	1.8	5.2	7.8
Business & Operations Support	128.4	83.0	45.4	5.5	6.9	9.0	9.6	10.0	40.9
Total MWRA	\$6,012.4	\$3,790.3	\$2,222.1	\$102.2	\$104.7	\$140.5	\$180.8	\$183.4	\$711.5

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

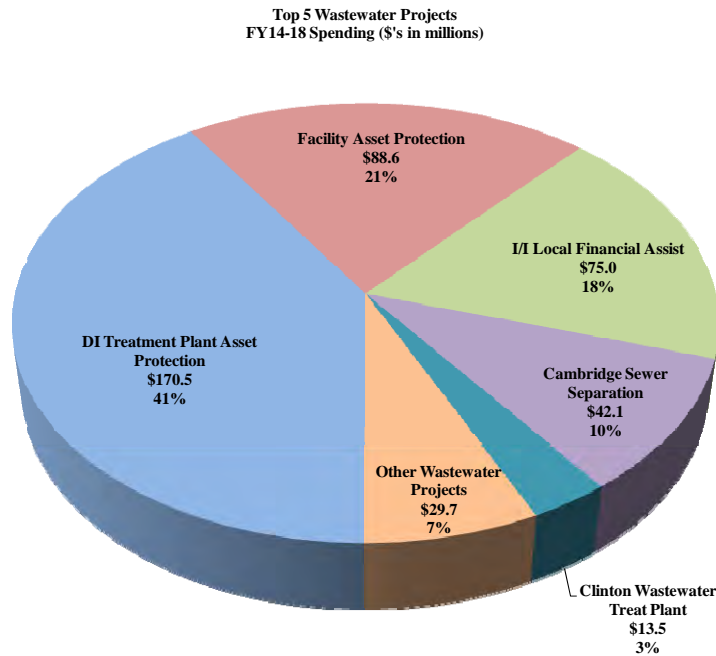


Top 10 Projects – FY14-18 Cap Period

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 5 projects for the Wastewater program total \$389.7 million for FY14-18 period and represent 93.0% of the \$432.0 million total program.

Project	Total Contract Amount	FY14-18 Spending	% of Program
DI Treatment Plant Asset Protection	\$ 720.4	\$ 170.5	41%
Facility Asset Protection	311.8	88.6	21%
I/I Local Financial Assist	242.6	75.0	18%
Cambridge Sewer Separation	92.6	42.1	10%
Clinton Wastewater Treat Plant	20.5	13.5	3%
Total Top 5 Wastewater Projects	\$ 1,387.8	\$ 389.7	93%
Other Wastewater Projects	1,586.8	29.7	7%
Total Wastewater	\$ 2,974.6	\$ 419.3	100%

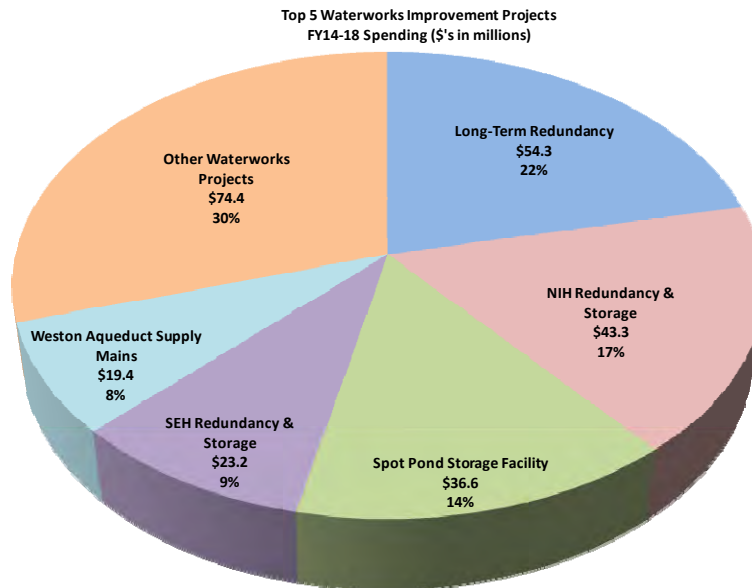
The breakdown of the \$419.3 million program by the major projects is illustrated below:



Similarly, the top five projects for the Waterworks program total \$176.9 million for FY14-18 and represent 70% of the \$251.3 million total program.

Project	Total Contract Amount	FY14-18 Spending	% of Program
Long-Term Redundancy	\$ 409.4	\$ 54.3	22%
NIH Redundancy & Storage	90.2	43.3	17%
Spot Pond Storage Facility	61.2	36.6	15%
SEH Redundancy & Storage	99.5	23.2	9%
Weston Aqueduct Supply Mains	281.1	19.4	8%
Total Top 5 Waterworks Projects	\$ 941.4	\$ 176.9	70%
Other Waterworks Projects	1,968.0	74.4	30%
Total Waterworks	\$ 2,909.4	\$ 251.3	100%

The breakdown of the \$251.3 million program by the major projects is illustrated below:



Future Risks

Going forward the largest decision that MWRA will have to make is pertaining to the Long-Term Redundancy project specifically the Sudbury Aqueduct alternatives plans. That decision will have a significant impact on the capital program for the next 10-15 years.

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. Operating costs will be reduced by approximately \$623,000 through FY26, primarily due to Asset Protection projects at the Deer Island Treatment Plant. These reductions will be offset by IS program related maintenance initiatives that are projected to increase operating costs by nearly \$699,000 by FY26. The following table summarizes the projected CIP impact on the operating budget by project over the next ten years, beginning in FY16.

Fiscal Year	CEB Impacts (000)										
	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	Total
DI Treatment Plant Asset Protection (not including Co-Digestion or Combined Heat and Power Plant)	(\$278)	(\$16)	\$202	(\$225)	(\$290)	(\$72)	\$0	\$0	\$0	\$0	(\$678)
DI Treatment Plant Asset Protection - Co-Digestion ONLY	0	0	0	0	0	0	0	0	0	0	0
Clinton Phosphorous Removal Project	0	30	31	0	0	0	0	0	0	0	61
Wastewater Alternative Energy Projects	0	0	0	0	0	0	0	0	0	0	0
North Dorchester Bay	0	371	(382)	0	0	0	430	(443)	0	0	(24)
Total Wastewater (inflated)	(\$278)	\$386	(\$149)	(\$225)	(\$290)	(\$72)	\$430	(\$443)	\$0	\$0	(\$641)
Carroll Water Treatment Plant	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Quabbin Water Treatment Plant	0	0	0	0	0	0	0	0	0	0	0
Wachusett Algae Treatment Facility	0	0	0	0	41	42	0	0	0	0	82
Spot Pond Storage Facility	0	0	0	0	0	0	0	0	0	0	0
Water Energy Projects	0	(32)	(33)	0	0	0	0	0	0	0	(65)
Total Water (inflated)	\$0	(\$32)	(\$33)	\$0	\$41	\$42	\$0	\$0	\$0	\$0	\$18
Maximo Upgrades & Lawson Enhancements	\$52	\$106	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$158
Storage Upgrades	0	106	109	0	0	0	0	0	0	0	215
Telecommunications	0	0	27	0	0	0	0	0	0	0	27
NET 2020 DITP & Southborough	0	0	0	0	0	0	0	0	0	0	0
Information Security Program	0	32	0	0	0	0	0	0	0	0	32
Information Technology Management Program	72	0	0	0	0	0	0	0	0	0	72
Application Improvement Program	0	0	0	84	0	0	0	0	0	0	84
IT Infrastructure Program	0	0	111	0	0	0	0	0	0	0	111
Total Business and Operations Support (inflated)	\$124	\$244	\$247	\$84	\$0	\$0	\$0	\$0	\$0	\$0	\$699
TOTAL MWRA	(\$155)	\$598	\$65	(\$141)	(\$249)	(\$30)	\$430	(\$443)	\$0	\$0	\$76

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 Massachusetts Clean Water 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 \$50.2 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 was once again restored at a reduced level of \$384,000 but was once again eliminated in FY13 through 9C cuts. For the FY14 and FY15 budgets, no Debt Service Assistance was assumed but the Authority received \$854,000 of Debt Service Assistance in March 2014.

Planning estimates for 2016 through 2025 forecast rate revenue requirement increases of 3.4% in FY16, 3.9% annually from FY17 through FY20, 5.2% in FY21, 5.0% in FY22, and decreases of 3.4%, 1.6%, and 1.1% in years FY23, FY24, and FY25, 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 sustainable and predictable rates. In line with the Board of Directors' strategy to deliver long-term sustainable and predictable 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 change to the indenture released more than \$113 million in reserves in April 2015 and was applied in future years to mitigate rate increases.

The FY16 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 sustainable and predictable assessment increases to our member communities.

MWRA Organization

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

Each division provides operations or support services to carry out MWRA's activities under the direction of the Executive Office. MWRA's organizational structure is included in the document 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 the Planning and Coordination Department.

In FY2015 the **Administration and Finance Division** was separated into two divisions.

The **Administration Division** is responsible for managing the support services functions of the Authority.

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

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

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

Finance (A&F) Division is comprised of five departments: Director's Office; Rates and Budget; Treasury; Controller; and Risk Management.

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

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

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

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, 2015 are available online at www.mwra.com.



Executive Office Budget

EXECUTIVE DIVISION

Executive

Office of Executive Director
Office of Emergency Preparedness
Internal Audit
Public Affairs

FY16 Final Current Expense Budget							
EXECUTIVE DIVISION							
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16		
WAGES & SALARIES	\$ 534,191	\$ 540,943	\$ 578,597	\$ 578,483	\$ (114)	0.0%	
OVERTIME	-	-	65	-	(65)	-100.0%	
FRINGE BENEFITS	-	-	-	-	-	-	
CHEMICALS	-	-	-	-	-	-	
UTILITIES	-	-	-	-	-	-	
ONGOING MAINTENANCE	-	-	-	-	-	-	
TRAINING & MEETINGS	-	612	43	900	857	1982.4%	
PROFESSIONAL SERVICES	145,098	158,222	155,009	167,452	12,443	8.0%	
OTHER MATERIALS	5,105	2,037	3,069	3,520	451	14.7%	
OTHER SERVICES	455,588	470,520	499,041	526,456	27,415	5.5%	
TOTAL	\$ 1,139,982	\$ 1,172,334	\$ 1,235,824	\$ 1,276,811	\$ 40,987	3.3%	

FY16 Final Current Expense Budget							
EXECUTIVE DIVISION by Department							
DEPARTMENT	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16		
EXECUTIVE OFFICE	\$ 467,860	\$ 473,229	\$ 506,811	\$ 507,106	\$ 295	0.1%	
BOARD OF DIRECTORS	74,939	74,124	78,863	79,969	1,106	1.4%	
ADVISORY BOARD / OTHER COMMITTEES	597,183	624,981	650,150	689,736	39,586	6.1%	
TOTAL	\$ 1,139,982	\$ 1,172,334	\$ 1,235,824	\$ 1,276,811	\$ 40,987	3.3%	

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.

FY16 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, hold 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. The Executive Office budget accounts for less than 1% of the MWRA FY16 Final Direct Expense Budget.

Budget Highlights:

- The FY16 Final Budget is \$1.3 million, an increase of \$41,000 or 3.3%, as compared to FY15 Actual Spending.
- \$578,000 for **Wages and Salaries**, in line with FY15 Actual Spending. The final budget includes funding for five positions.
- \$167,000 for **Professional Services**, an increase of \$12,000 or 8.0%, as compared to FY15 Actual Spending, mainly due to projected increases in the Advisory Committees operating expenses. This budget funds the Water Supply Citizens' Advisory Committee (WSCAC) and the Wastewater Advisory Committee (WAC) budgets.
- \$527,000 for **Other Services**, an increase of \$27,000 or 5.5%, as compared to FY15 Actual Spending, mainly due to projected increases in the MWRA Advisory Board operating expenses which include wages and salaries, space rental, and general administrative office expenses.

OFFICE OF EMERGENCY PREPAREDNESS

FY16 Final Current Expense Budget						
OFFICE OF EMERGENCY PREPAREDNESS						
LINE ITEM	FY13	FY14	FY15	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 390,132	\$ 488,502	\$ 554,860	\$ 590,797	\$ 35,937	6.5%
OVERTIME	12	771	797	-	(797)	-100.0%
FRINGE BENEFITS	-	2	-	-	-	-
CHEMICALS	-	-	-	-	-	-
UTILITIES	-	-	-	-	-	-
ONGOING MAINTENANCE	399,123	329,657	553,878	465,151	(88,727)	-16.0%
TRAINING & MEETINGS	1,652	1,902	3,915	17,000	13,085	334.3%
PROFESSIONAL SERVICES	1,587,698	1,727,302	1,804,732	1,895,000	90,268	5.0%
OTHER MATERIALS	31,311	21,746	12,849	33,260	20,411	158.8%
OTHER SERVICES	10,774	18,821	110,950	124,172	13,222	11.9%
TOTAL	\$ 2,420,703	\$ 2,588,703	\$ 3,041,980	\$ 3,125,380	\$ 83,400	2.7%

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.

FY16 Goals:

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

FY16 Initiatives:

- Continue to enhance Emergency Response Plans for all water and wastewater facilities. Update Emergency Action Plans (EAPs) as needed, including Western Section 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.

- Implement notification drills, tabletop exercises, and field training exercises (including at least one major drill). Continue the community emergency response training program and tabletop exercise series for critical service areas with community staff.
- Continue to transition security monitoring system to the new standard.
- Establish a new security monitoring center in Chelsea and work towards establishing a backup monitoring center at Norumbega.

FY15 Accomplishments:

- Participated in the planning for and execution of a multi-agency desktop drill for a train derailment at the Wachusett Reservoir.
- Continued to update spill control Emergency Action Plans for water and wastewater facilities subject to spill regulations.
- Completed draft Dam Emergency Action Plans for Eastern Section dams with detailed inundation mapping.
- Completed a total of 103 training events or drills.
- Continued the process of ensuring that new construction and rehabilitation of facilities include an integrated security and surveillance system improvement component. New systems were installed at the Nut Island Headworks, Commonwealth Avenue Pump Station (PS), Newton Street PS, Lexington Street PS, Gillis PS and Clinton WWTP. The security system was expanded at the William A. Brutsch Water Treatment Facility. Significant progress was made towards installing a security system at the new Spot Pond PS.
- Continued to provide an emergency response training program and a tabletop exercise series for critical service areas for MWRA community staff.
- Procured a new Security Equipment Maintenance and Repair Services contract.

Budget Highlights:

- The FY16 Final Budget is \$3.1 million, an increase of \$83,000 or 2.7%, as compared to FY15 Actual Spending.
- \$591,000 for **Wages and Salaries**, an increase of \$36,000 or 6.5%, as compared to FY15 Actual Spending, mainly due to cost of living adjustments. The budget includes funding for six positions, one position more than included in the FY15 Budget.
- \$465,000 for **Ongoing Maintenance**, a decrease of \$89,000 or 16.0%, as compared to FY15 Actual Spending. This budget includes funding of \$306,000 to cover the MWRA-wide security systems preventative maintenance and repair service, \$125,000 for MWRA-wide Security systems maintenance materials and equipment, including cameras, intrusion detection, card readers, and \$34,000 for the intrusion alarm annual and semi-annual monitoring services contracts.

- \$1.9 million for **Professional Services**, an increase of \$90,000 or 5.0%, as compared to FY15 Actual Spending, primarily due to the increased cost of the new security guard contract. The final budget includes \$636,000 for security services at the DITP facility, \$591,000 for the Chelsea facility, \$405,000 for the Carroll Water Treatment Plant, \$84,000 for the Account Manager, \$47,000 for the Training Officer, \$55,000 for vehicle maintenance and emergency allowance, and \$22,000 for Charlestown Navy Yard (CNY) facility. Also included under Professional Services is \$55,000 for updating the Dam EAPs to match the regulatory change to FEMA's PD-64 and annual updates.
- \$33,000 for **Other Materials**, an increase of \$20,000, as compared to FY15 Actual Spending. This budget mainly funds purchase of Health and Safety materials for the ESU Team, which is being expanded.
- \$124,000 for **Other Services**, an increase of \$13,000 or 11.9%, as compared to FY15 Actual Spending. This budget includes funding for licensing cost for two-way radios with Department of Conservation and Recreation (DCR) and for mandatory monthly testing and inspection of the Self-Contained Breathing Apparatus (SCBA).

AFFIRMATIVE ACTION AND COMPLIANCE UNIT

FY16 Final Current Expense Budget							
AFFIRMATIVE ACTION & COMPLIANCE UNIT							
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16		
WAGES & SALARIES	\$ 513,749	\$ 557,924	\$ 510,897	\$ 525,433	\$ 14,536	2.8%	
OVERTIME	-	-	137	-	(137)	-100.0%	
FRINGE BENEFITS	-	-	-	-	-	-	
CHEMICALS	-	-	-	-	-	-	
UTILITIES	-	-	-	-	-	-	
ONGOING MAINTENANCE	-	-	-	-	-	-	
TRAINING & MEETINGS	-	-	1,250	6,295	5,045	403.6%	
PROFESSIONAL SERVICES	-	-	-	-	-	-	
OTHER MATERIALS	1,393	2,068	1,703	1,664	(39)	-2.3%	
OTHER SERVICES	309	321	312	936	625	200.5%	
TOTAL	\$ 515,451	\$ 560,313	\$ 514,298	\$ 534,328	\$ 20,030	3.9%	

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.

FY16 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.

FY16 Initiatives:

- Conduct a comprehensive voluntary self-identification survey of employees to identify the Race and ethnic designations as used by the Equal Employment Opportunity Commission. Definitions of the race and ethnicity categories are as follows: Hispanic or Latino, 1). White (Not Hispanic or Latino), 2). Black or African American (Not Hispanic or Latino), 3). Native Hawaiian or Other Pacific Islander (Not Hispanic or Latino), 4). Asian (Not Hispanic or Latino), 5). American Indian or Alaska Native (Not Hispanic or Latino), and a **NEW Category** - Two or More Races (Not Hispanic or Latino) - All persons who identify with more than one of the above five races.

FY15 Accomplishments:

- Provided management guidance and participated in 50 position(s) selection committee interviews, sourced eighteen (18) outreach contacts, and referred 16 qualified candidates to Human Resources for underutilized positions.
- Completed a comprehensive self-identification outreach program for employees who are covered veterans and individuals with disabilities.
- Conducted oversight of 114 construction and professional projects including 2 site visits monitoring the minority and women workforce as well as MBE/WBE/DBE compliance. With the exception of WBE Nonprofessional Services, the other procurement targets remain.

Budget Highlights:

- The FY16 Proposed Budget is \$534,000, a decrease of \$20,000 or 3.9%, as compared to FY15 actual spending.
- \$525,000 for **Wages and Salaries**, an increase of \$15,000 or 2.8%, as compared to FY15 actual spending, mainly due to the transfer of a vacant position to Public Affairs department partially offset by cost of living adjustments. The proposed budget includes funding for six positions, one position less than in the FY15 Budget.

INTERNAL AUDIT

FY16 Final Current Expense Budget							
INTERNAL AUDIT							
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16		
WAGES & SALARIES	\$ 651,971	\$ 686,696	\$ 692,181	\$ 745,299	\$ 53,118	7.7%	
OVERTIME	11	-	-	-	-	-	
FRINGE BENEFITS	-	-	-	-	-	-	
CHEMICALS	-	-	-	-	-	-	
UTILITIES	-	-	-	-	-	-	
ONGOING MAINTENANCE	0	-	5	-	(5)	-100.0%	
TRAINING & MEETINGS	4,596	5,070	6,249	7,238	989	15.8%	
PROFESSIONAL SERVICES	-	-	-	-	-	-	
OTHER MATERIALS	1,764	1,697	1,309	2,020	711	54.4%	
OTHER SERVICES	1,100	2,540	2,820	1,162	(1,658)	-58.8%	
TOTAL	\$ 659,442	\$ 696,003	\$ 702,564	\$ 755,719	\$ 53,155	7.6%	

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.

FY16 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.

FY15 Accomplishments:

- Identified \$1.8 million in savings related to: internal audits, management advisory services, consultant audits, construction labor burden reviews, the determination of an operating cost base for the CNY lease, and on-going savings from the lease of the engine house by the Fore River Railroad Corporation.
- Issued final audit reports on Unmatched Receipts and Accruals, Laboratory Services' Quality Assurance Program, Expanded Affirmative Action Requirements, Records Management, and the Town of Brookline and City of Boston CSO Financial Assistance Agreements. Issued seven incurred cost audits, three preliminary consultant and seven preliminary construction reviews, and six other contract reviews.

- Provided management advisory and data analysis services dealing with the Cottage Farm PCB clean-up plan, 8(m) Permit Fees, contract negotiations with HEEC, NEFCo and solar energy.

Budget Highlights:

- The FY16 Final Budget is \$756,000, an increase of \$53,000 or 7.6%, as compared to FY15 Actual Spending.
- \$745,000 for **Wages and Salaries**, an increase of \$53,000 or 7.7%, as compared to FY15 Actual Spending, primarily due to increased work hours for two part-time staff and cost of living adjustments. The final budget includes funding for eight positions.

PUBLIC AFFAIRS

FY16 Final Current Expense Budget							
PUBLIC AFFAIRS							
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16		
WAGES & SALARIES	\$ 1,085,187	\$ 1,012,009	\$ 1,060,003	\$ 1,138,257	\$ 78,254	7.4%	
OVERTIME	-	58	852	-	(852)	-100.0%	
FRINGE BENEFITS	-	-	-	-	-	-	
CHEMICALS	-	-	-	-	-	-	
UTILITIES	-	-	-	-	-	-	
ONGOING MAINTENANCE	-	-	-	-	-	-	
TRAINING & MEETINGS	4,410	4,054	(572)	3,365	3,937	-688.0%	
PROFESSIONAL SERVICES	3,187	4,925	1,175	1,300	125	10.6%	
OTHER MATERIALS	25,505	28,711	25,199	25,625	426	1.7%	
OTHER SERVICES	33,815	28,945	31,903	43,769	11,866	37.2%	
TOTAL	\$ 1,152,104	\$ 1,078,702	\$ 1,118,560	\$ 1,212,316	\$ 93,756	8.4%	

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 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.

FY16 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.
- Continue to provide accurate and timely information to the public through the MWRA's website and the media, including social media like Twitter and Flickr.
- Continue to circulate Annual Water Quality Report to every household within the MWRA service area.

FY16 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. The current FY16 General Appropriations Act (GAA) includes \$1.1 million for Sewer Rate Relief.

FY15 Accomplishments:

The Massachusetts Legislature began its two-year session in January 2013 and encompassed the first half of FY15. The following bills of importance to MWRA passed during the last legislative session:

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 several Section 8 (m) Permits as part of the Public Access Aqueducts Program authorizing approximately 21 miles of Aqueduct Trails. 13 miles are currently open to the public.

Permits from the Towns of Wayland, Sherborn and Needham are currently under review.

Wachusett Aqueduct and Open Channel

Northborough: 4.7 miles authorized (2.0 miles opened)
Southborough: 2.1 miles authorized (2.1 miles opened along the Open Channel)

Bay Circuit Trail Connector

Framingham: .1 mile authorized
Southborough: .4 miles authorized

Weston Aqueduct

Framingham: 4.3 miles authorized (1.45 miles opened)
¹*Weston: 1.5 miles authorized (1.5 miles opened)*

Sudbury Aqueduct

Framingham: 1.5 miles authorized (1.5 miles opened)
Natick: 1.4 miles authorized (1.4 miles opened)
Wellesley: 3.0 miles authorized (3.0 miles opened)

Cochituate Aqueduct

Natick: 2.6 miles authorized

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

School Education - The School Education staff conducts weekly classroom visits within the MWRA service area to educate elementary school children on the importance of water and sewer infrastructure on their daily lives. The annual poster, essay and video contest raised awareness of this program and provide a unique opportunity for the students, teachers and parents to learn together about MWRA's mission.

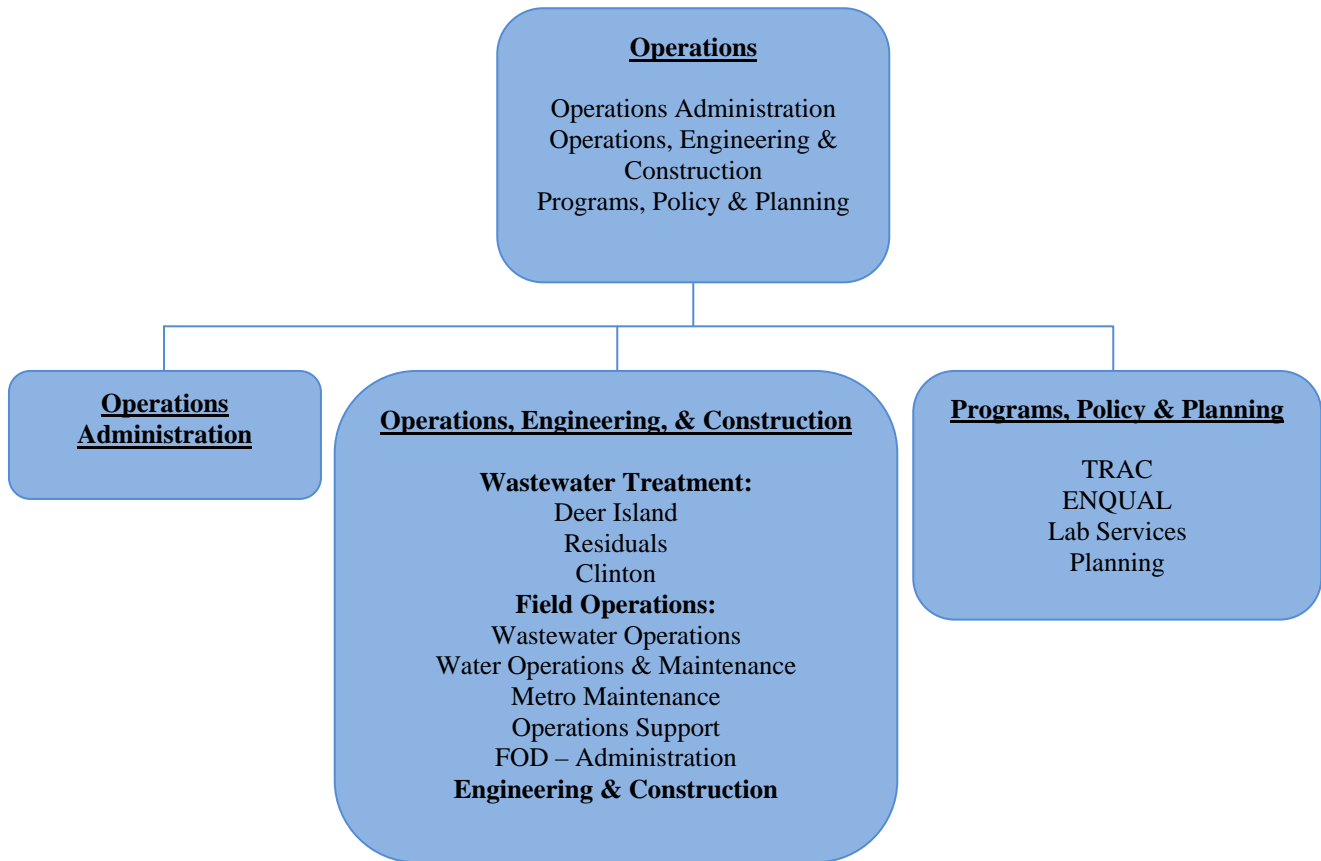
Budget Highlights:

- The FY16 Final Budget is \$1.2 million, an increase of \$94,000 or 8.4%, as compared to FY15 Actual Spending.
- \$1.1 million for **Wages and Salaries**, an increase of \$78,000 or 7.4%, as compared to FY15 Actual Spending, mainly due to the addition one position and cost of living adjustments. The final budget includes funding for 13 positions.
- \$26,000 for **Other Materials**, an increase of \$426 which is level funded as compared to FY15 Actual Spending.
- \$44,000 for **Other Services**, an increase of \$12,000 or 37.2%, from the FY15 Actual Spending mainly due to historical Spending. This budget supports the printing needs of the department, including State of the Harbor Report and the Annual Report.



Operations Division Budget

OPERATIONS DIVISION



FY16 Final Current Expense Budget						
OPERATIONS DIVISION						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 70,614,655	\$ 71,409,040	\$ 73,730,110	\$ 77,452,257	\$ 3,722,146	5.0%
OVERTIME	3,473,493	3,332,244	4,388,800	4,158,579	(230,221)	-5.2%
FRINGE BENEFITS	58,593	56,561	80,606	62,618	(17,988)	-22.3%
CHEMICALS	10,139,257	10,226,458	9,749,142	9,790,848	41,706	0.4%
UTILITIES	22,960,065	23,309,214	20,974,683	23,058,796	2,084,113	9.9%
ONGOING MAINTENANCE	23,407,709	24,216,738	23,826,321	24,506,090	679,769	2.9%
TRAINING & MEETINGS	107,585	135,493	130,078	172,400	42,322	32.5%
PROFESSIONAL SERVICES	2,160,077	1,941,662	1,871,719	2,514,247	642,528	34.3%
OTHER MATERIALS	5,766,978	4,586,538	4,930,576	4,973,563	42,988	0.9%
OTHER SERVICES	18,629,541	18,155,052	18,395,102	19,515,512	1,120,410	6.1%
TOTAL	\$ 157,317,952	\$ 157,368,999	\$ 158,077,137	\$ 166,204,909	\$ 8,127,772	5.1%

FY16 Final Current Expense Budget						
OPERATIONS DIVISION by Department						
DEPARTMENT	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
OPERATIONS ADMINISTRATION	\$ 3,749,217	\$ 4,126,009	\$ 4,455,415	\$ 4,629,679	\$ 174,264	3.9%
OPERATIONS, ENGINEERING & CONSTRUCTION	137,590,258	136,808,083	136,314,899	142,823,561	6,508,661	4.8%
PROGRAMS, POLICY & PLANNING	15,978,478	16,434,907	17,306,823	18,751,670	1,444,847	8.3%
TOTAL	\$ 157,317,952	\$ 157,368,999	\$ 158,077,137	\$ 166,204,909	\$ 8,127,772	5.1%

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. MWRA's Chief Operating Officer (COO) leads this division.

The Operations Division is comprised of the following two key sections, which are lead by Deputy Chief Operating Officers (DCOO): Programs, Policy and Planning (P,P,&P) and Operations, Engineering, & Construction (O,E,&C). The DCOOs also provide support to the Chief Operating Officer on key MWRA operations, technical, policy, community coordination, permitting and public constituency matters. Additionally, the **Operations Administration Department** serves both sections and provides division-level 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.

The **Programs, Policy & Planning Section** is comprised of the Toxic Reduction & Control, Environmental Quality (EnQual), Lab Services, and Planning departments. In total, the budgets for these programs represent 11.3% of the Operations Division's FY16 Final Budget and 8.4% of MWRA's FY16 Final Direct Expense Budget. This section focuses on the following:

- master planning, business planning, and strategic initiatives (such as system expansion)
- environmental programs and regulatory coordination
- water and wastewater quality testing and reporting
- divisional budget preparation and monitoring
- financial planning and analysis
- accounts payable and contract administration
- human resources management functions; and
- energy audits, reporting, program evaluation, and analysis.

Brief descriptions of the departments in this section are as follows:

- **The Toxic Reduction and Control (TRAC) Department** operates a multi-faceted program to minimize and control the inflow of hazardous or toxic materials into the MWRA sewer system. TRAC operates MWRA's Environmental Protection Agency (EPA-approved) Industrial Pretreatment Program.
- The **Environmental Quality Department (EnQual)** has two sections: EnQual-Water and EnQual-Wastewater (WW). EnQual-Water manages compliance with the reporting requirements of the MA DEP Drinking Water Regulations, as well as conducts and oversees the drinking water quality monitoring program. EnQual-WW manages compliance with the reporting requirements of MWRA's National Pollutant Discharge Elimination System (NPDES) permit. This unit analyzes environmental data and prepares reports on the quality of sewage influent and effluent and the water quality of Boston Harbor and its tributary rivers and Massachusetts Bay.
- The **Laboratory Services Department** supports various client groups in the Operations Division, the Department of Conservation and Recreation (DCR), and the MWRA member communities; providing field sampling, laboratory testing, and reporting services. Most of the testing is required

to meet the strict guidelines of regulatory programs and permits including the Safe Drinking Water Act (SDWA) and MWRA's NPDES permits.

- The **Planning 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 **Operations, Engineering & Construction Section** is comprised of the Wastewater Treatment, Field Operations, and Engineering & Construction departments. In total, the budgets for these programs represent 86% of the Operations Division's FY16 Final Budget and 64% of MWRA's FY16 Final Direct Expense Budget. This section focuses on the following:

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

Brief descriptions of the departments in this section are as follows:

- The **Wastewater Treatment Department** operates and maintains the Deer Island Treatment Plant (DITP), Clinton Wastewater Treatment Plant, and Residuals Processing Facility (pelletization plant) at Fore River Staging Area (FRSA).
- The **Field Operations Department (FOD)** 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 **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.

FY16 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.

FY16 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 Eversource. Pursue grant-funding and cost-sharing arrangements to defray costs of implementing these initiatives.
- Prepare for commencement of pilot, commercial food waste co-digestion project at Deer Island Treatment Plant in FY17.
- Self-generate ~29% 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.
- Continue to optimize new ultraviolet disinfection treatment process for MWRA's potable water system at the Carroll Water Treatment Plant and Brutsch Disinfection Facility.
- Start-up and operate new Spot Pond covered storage facility in water system.
- Continue to 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
 - NIH Redundancy & Storage: Section 89/29 Redundancy – Construction Phase 1B
 - Carroll Water Treatment Plant: Existing Facilities Modification – CP7
 - Central Monitoring System: Quabbin Power Communication & Security
 - Winsor Station Pipeline: Hatchery Pipeline – Construction
 - Wastewater System
 - Facility Asset Protection: Chelsea Creek Upgrades – Construction
 - Clinton Wastewater Treatment Plant: Phosphorous Reduction -Construction
 - Alewife Brook Pump Station Upgrades – Construction
 - DITP Asset Protection: Sodium Bisulfite & Hypochlorite Tank Rehab
 - DITP Combined Heat and Power - Design
 - DITP Gravity Thickener Rehabilitation
- Substantially complete numerous CIP design and construction phases including the following:
 - Spot Pond Storage Facility Design/Build
 - CSO Program: Cambridge Sewer Separation – Design and Construction
 - CSO Program: Reserved Channel Sewer Separation – Design and Construction
 - DITP Asset Protection: NMPS VFD Replacement - Construction
 - DITP Asset Protection: Electrical Equipment Upgrade – Construction 4
 - Facility Asset Protection: Prison Pt/Cottage Farm Engine Pump and Gearbox Rebuilds
 - Facility Asset Protection: Chelsea Screenhouse Upgrades

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 unit replacement; PLC replacements; and critical equipment maintenance.
- Work on numerous projects in Field Operations including meter inspection and repairs; manhole rehabilitation; pipeline repair and replacement; invasives control in the water reservoirs; dam inspections and tree clearing; and water tank inspections and cleaning.
- Commence and complete periodic facility painting and coating projects at DITP and Clinton.

Environmental:

- Plan for implementation of requirements of the new National Pollutant Discharge Elimination System (NPDES) Permits for DITP (assume new permit is issued after FY16) and Clinton Wastewater Treatment Plant (assume new permit in effect for all of FY16).
- Continue work on other harbor and outfall monitoring initiatives including: calculating revised thresholds, continuing to work with Department of Conservation and Recreation implementation of appropriate beach management practices in South Boston, and improving instrumentation on National Oceanic and Atmospheric Administration's (NOAA's) weather buoy.
- 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.
- Continue implementation and monitor effects of reduced fluoride dosing in the water system per regulatory changes.
- Continue to develop and implement contaminant monitoring plans in the water system.

FY15 Accomplishments:

Operations, Energy, and New Facilities Start-ups:

- Procured multi-year electricity supply contracts for MWRA's facilities.
- Assisted the Procurement Department with contracts to supply and deliver chemicals for the water and wastewater system facilities. Chemicals procured included sodium hypochlorite, hydrofluorosilicic acid, ferric chloride, sodium bisulfate, aqua ammonia, hydrogen sulfide, and polymer.
- Received revenue for energy generated at numerous facilities including the following: hydroelectric \$507,000 from Oakdale Station, \$179,000 from Cosgrove Station, and \$15,000 from the Loring Road Pump Station; wind of \$443,000 from Charlestown Pump Station; and solar of \$93,000 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 \$1.8 million in revenue for FY15. Deer Island also self-generated ~29% of the plant's total required power during the year.
- Received \$648,000 in utility rebates for completed energy projects.

- Processed 100.4 average tons per day of sludge at the Pelletization Plant and disposed of 6,227 of grit and screenings through a contracted vendor.

Maintenance:

- The Operations Division spent \$23.8 million on maintenance of which \$13.1 million was for materials and \$10.7 million was for services.
- Procured and implemented numerous contracts for maintenance services, including the following:
 - Temporary flow monitoring and data collection at MWRA wastewater sites
 - Sudbury Aqueduct tree removal
 - Grounds keeping at numerous facilities
 - Instrumentation services at numerous facilities
 - Union Park O&M contract
 - Deer Island (DI) oxygen generation facilities services
- Procured maintenance-related materials including DI PVDF fittings and piping; water system gate valves; DI evaporator coils; five trailer-mounted wastewater pumps; and electrical hardware and supplies.
- Procured and implemented numerous contracts for maintenance projects including:
 - installation of energy efficient lighting at numerous facilities
 - Shea Avenue CVA system leak repair
 - installation of three energy efficient gas-fired unit heaters at Brattle Court Pump Station
 - easement clearing for section 83 and 89 pipeline in water system
 - furnish and install pump, gear box, diesel engine upgrades at Prison Point and Cottage Farm CSO Facilities
- Completed numerous maintenance projects including the following:
 - replacement of two ammonia pumps at CWTP
 - replacement of sump pump system in Hultman Shaft 4 building
 - repaired leads in water system section 62 pipeline
 - replaced berm at the IPS and locksets and doors at numerous wastewater facilities
 - installed new Variable Frequency Drives at Caruso Pump Station.
- In water system, exercised 767 and replaced 24 mainline valves; exercised 391 and replaced 10 blow-off valves.
- In the wastewater system, inspected 29 miles and cleaned 21.65 miles of MWRA pipeline. Also inspected more than 1,100 structures and rehabilitated 25 manholes.

Engineering, Construction, and Planning:

- Awarded contract and issued Notice to Proceed for numerous projects including the following:

- Water System
 - Spot Pond Supply Mains Rehab: Section 4 Webster Ave Bridge Pipe Rehab Construction
 - Weston Aqueduct Supply Mains: Section 36/C/S9 – A11 Valve
 - Quabbin Power: Design
 - Waterworks Facility Asset Protection: Beacon St. Line Repair – Design CA/RI
- Wastewater System
 - CSO Program: MWR003 Gate & Siphon construction 2
 - Chelsea Screen House Upgrades Construction
 - DITP Asset Protection: NMPS Winthrop Terminal Facility – ESDC/REI
 - DITP Asset Protection: Clarifier Rehab Phase 2 – Design
 - DITP Asset Protection: Thermal Power Plant Boiler Control Replacement
 - DITP Asset Protection: Cryogenics Chillers Replacement
 - DITP Asset Protection: VFD Additions, Secondary Oxygen Reactor Batteries A, B, and C.
- Substantially completed numerous projects including the following:
 - Water System
 - Quabbin Water Treatment Plant: Quabbin UVWTP – Construction
 - Metro West Tunnel: Hultman Interconnect – Final Design/ CA/RI
 - NIH Redundancy & Storage: Gillis Pump Station Improvements
 - NIH Redundancy & Storage: West Street Pipeline Reading – Construction Phase 1A
 - Quabbin Ultraviolet Chicopee Valley Aqueduct (CVA) Shea Avenue Repair
 - Wastewater System
 - DITP Asset Protection: Digester Modules 1 & 2 Pipe Replacement ESDC/REI
 - DITP Asset Protection: Digester Sludge Pump Replacement – Pipe Supports Construction
 - DITP Asset Protection: Roof Replacement
 - DITP Asset Protection: Centrifuge Backdrive Replacement
 - Facility Asset Protection: NI Electrical & Grit/Screens Conveyance - Construction
 - Brookline Sewer Separation: Design/CS/RI

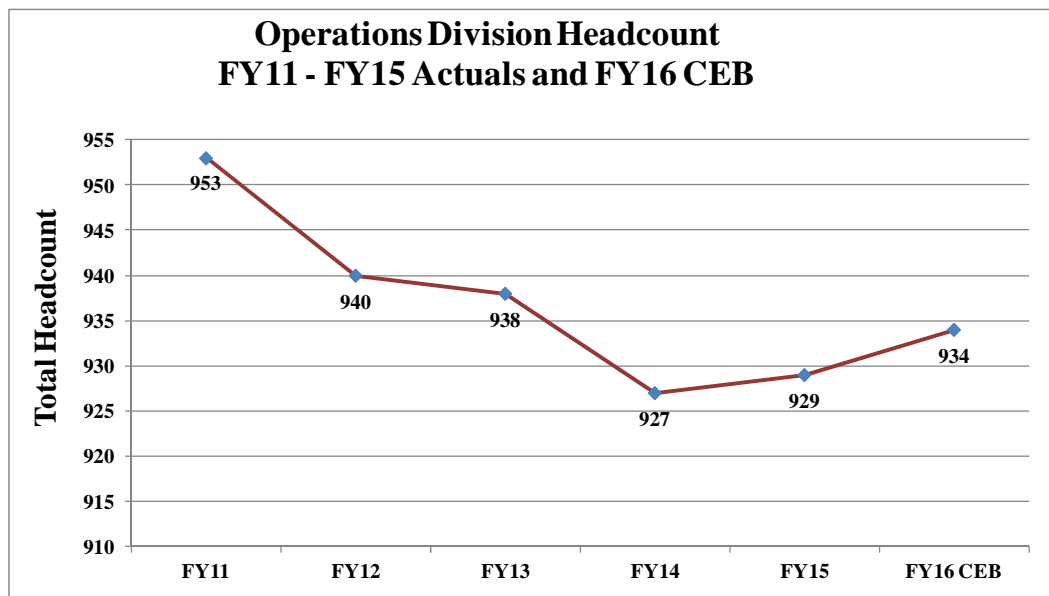
Environmental:

- The TRAC Department completed the following Environmental Protection Agency (EPA)-required work for significant industrial users: 253 inspections, 189 monitoring events, and 381 sampling of connections. This department also issued or renewed 300 permits to Significant Industrial Users (SIUs) and non-SIUs.
- The TRAC Department submitted the Industrial Pretreatment Program Annual Report to the EPA for FY14 in October 2014.
- 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.

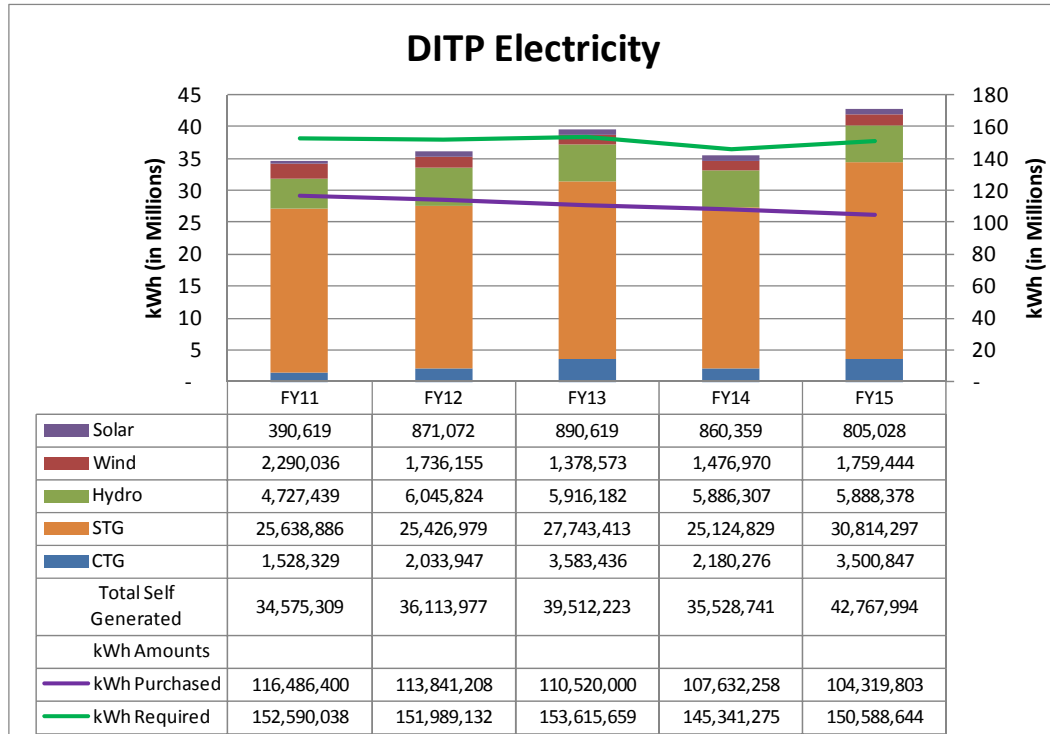
- At DITP, treated 99% of flow through secondary and met secondary permit limits at all times. Operated DITP without any NPDES Permit violations during FY15.
- EnQual carried out permit-required environmental monitoring of Boston Harbor and Massachusetts Bay water column, sediments, fish and shellfish and CSO receiving water quality. The department finalized thirteen 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 FY15. Also, maximum turbidity results at Quabbin and Wachusett were within DEP standards.
- During FY15, the Department of Laboratory Services performed 256,000 tests including the annual Lead and Copper Rule testing and Massachusetts Bay water column testing for the Harbor and Outfall Monitoring program.

Budget Highlights:

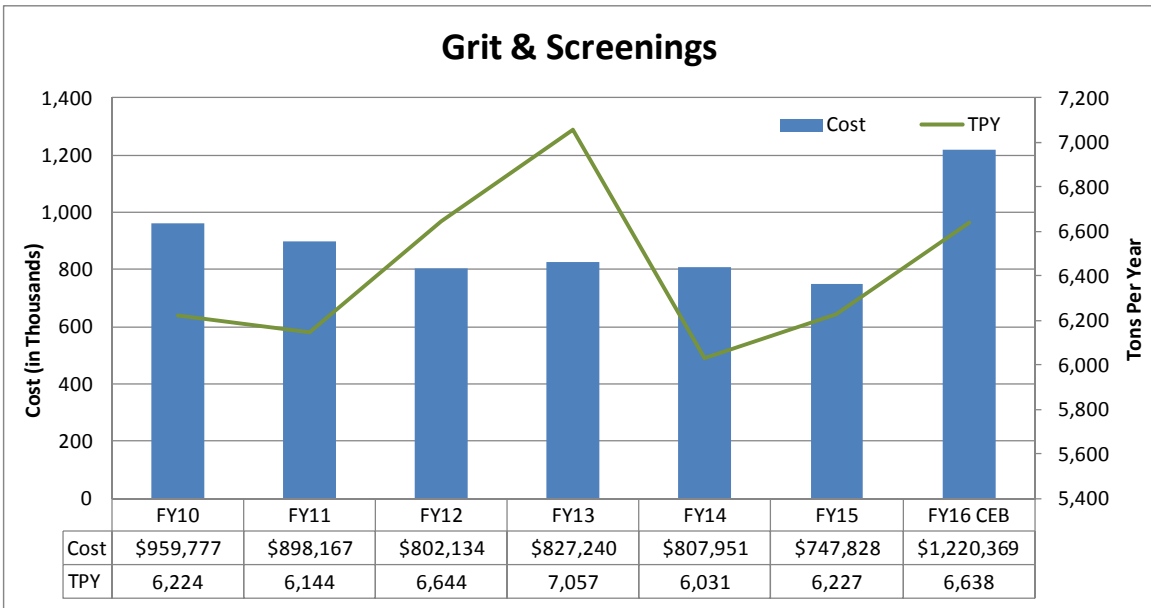
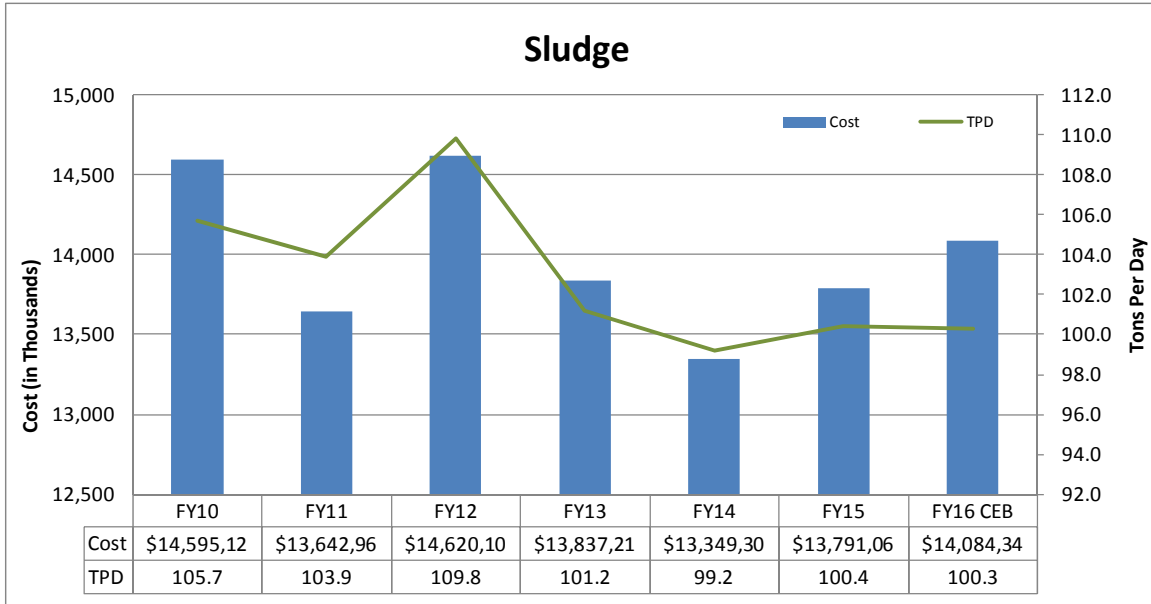
- The FY16 Final Budget is \$166.2 million, which is \$8.1 million or 5.1%, more than FY15 Actual Spending.
- Line items that increase from FY15 Actual Spending include:
 - The FY16 Final Budget of \$77.5 million for **Wages and Salaries** is an increase of \$3.7 million or 5.0% from FY15 Actual Spending, primarily due to wage increases associated with collective bargaining agreements and more filled positions expected in FY16 than in FY15. The FY16 Final Budget funds 934 filled positions on average during the year versus fewer filled on average in FY15. The budget also includes \$752,000 for Stand-by Pay to ensure staffing availability and response during emergencies, \$258,000 for Interns, and \$187,000 for Temporary Employees to assist with peak workloads and special initiatives.



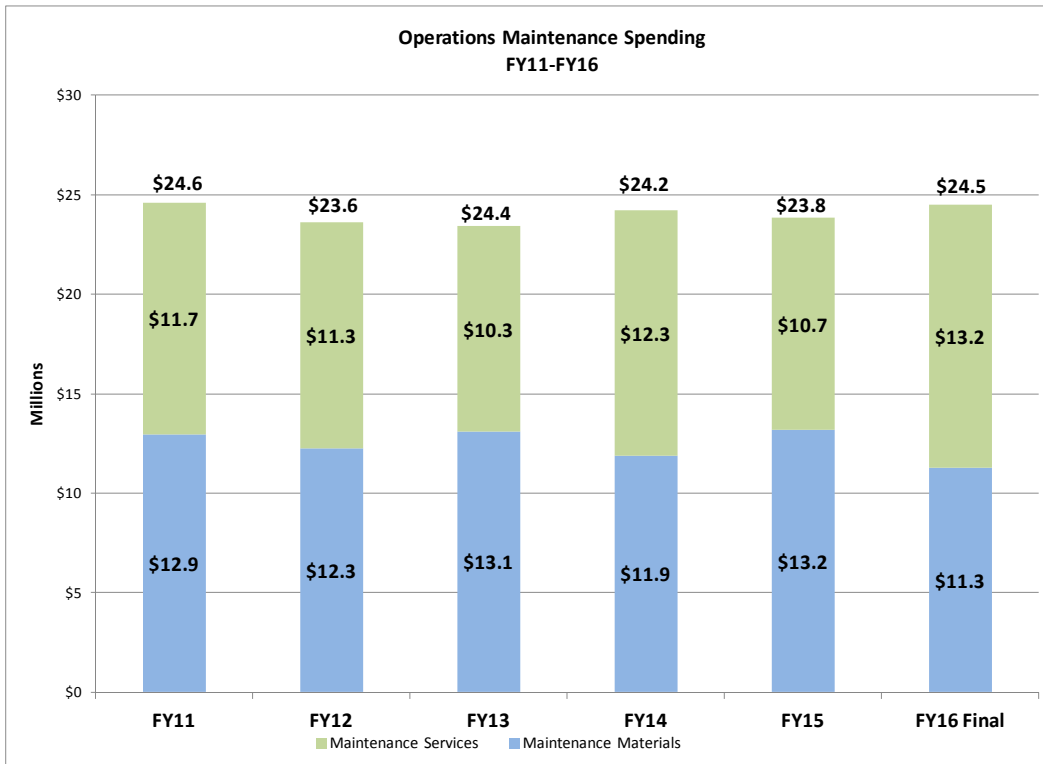
- The FY16 Final Budget of \$23.1 million for **Utilities** includes \$16.8 million for electricity, \$3.3 million for diesel fuel, \$2.2 million for water, and \$486,000 for natural gas. The increase of \$2.1 million or 9.9% from FY15 Actual Spending is primarily due to projected price changes for electricity and diesel fuel based on market conditions and wholesale water rate increases for DITP. The utility budget by department is \$12.9 million for Deer Island Treatment Plant, \$5.1 million for Wastewater Operations, \$4.3 million for Water Operations, \$540,000 for the Chelsea office and maintenance facilities, and \$224,000 for the Clinton Wastewater Treatment Plant.



- The FY16 Final Budget for **Other Services** is \$19.5 million, including \$14.1 million for sludge pelletization; \$2.0 million for space leases and rentals, including the Chelsea office facility; \$1.2 million for grit and screenings removal and disposal; \$678,000 for telecommunications equipment; \$450,000 for police details; and \$366,000 for memberships, dues, and subscriptions. The FY16 Final Budget is \$1.1 million or 6.1% more than FY15 Actual Spending primarily due to contractual increases for inflation for sludge pelletization services; prices for the grit and screenings disposal contract; base rent and property taxes for the Chelsea facility lease; and dues for numerous membership organizations.



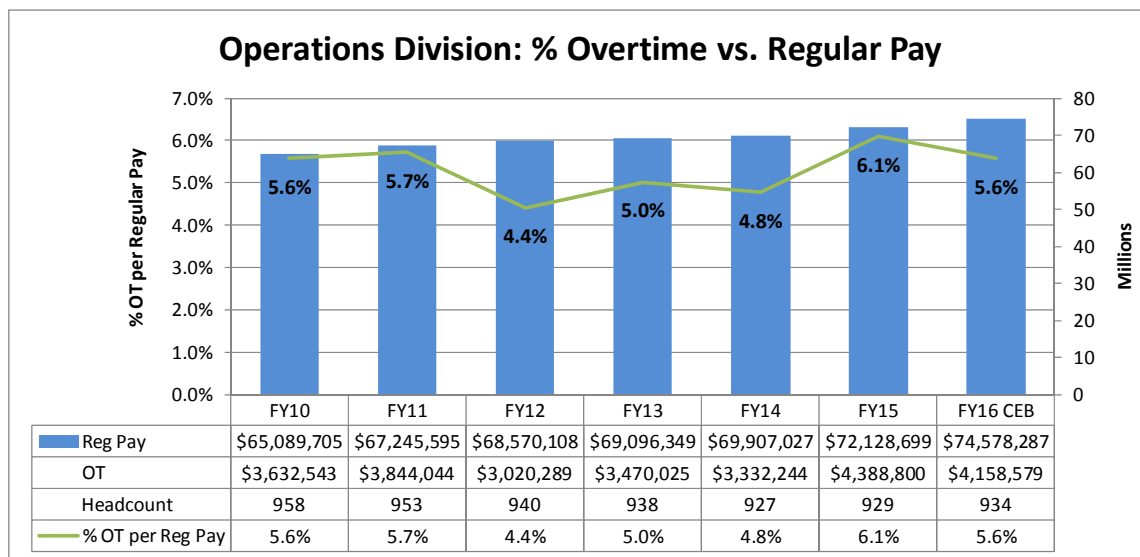
- The FY16 Final Budget for **Maintenance** is \$24.5 million, a net increase of \$680,000 or 2.9% from FY15 Actual Spending primarily due to changes in project priorities from year to year. The FY16 Final Budget includes \$13.2 million for services and \$11.3 million for materials. By maintenance area, the largest categories of spending for materials and services include \$11.9 million for plant and machinery; \$4.5 million for building and grounds; 2.8 million for specialized equipment; \$2.5 million for electrical; \$1.6 million for pipeline; and \$830,000 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; painting and coating upkeep at the Clinton Wastewater Treatment Plant; and easement clearing on MWRA’s aqueducts. As shown below, Maintenance spending has been fairly consistent over the last few fiscal years.



- The FY16 Final Budget for **Professional Services** is \$2.5 million, including \$1.7 million for lab and testing services; \$435,000 for other services; and \$360,000 for engineering services. Major items in the budget include \$1.5 million for Harbor and Outfall Monitoring; \$233,000 for as-needed engineering services to support CEB-funded projects; \$181,000 for outsourced testing by the Central Laboratory; \$150,000 for MWRA’s FY16 contribution to the Mystic River Modeling project; \$100,000 for a railroad contaminant study; \$70,000 for a comprehensive reservoir wide plant survey in the water system; \$65,000 for dam safety services; and \$55,000 for invasive species control services in the reservoirs. The FY16 Final Budget is \$643,000 or 34.3% more than FY15 Actual Spending primarily due resizing of numerous services based on an assessment of need in FY16 and the addition of the railroad contaminant study.
- The FY16 Final Budget of \$5.0 million for **Other Materials** includes \$1.7 million for Vehicle Replacements; \$841,000 for Lab and Testing Supplies; \$693,000 for Equipment and Furniture; \$516,000 for Vehicle Expenses (gas, tolls); \$401,000 for Health and Safety Supplies; and \$362,000 for Work Clothes. The increase of \$43,000 or 0.9% from FY15 Actual Spending is primarily due to increased funding for water quality monitoring equipment associated with contaminant monitoring initiatives.
- The FY16 Final Budget of \$9.8 million for **Chemicals** includes \$6.1 million for disinfection and treatment in the water system and \$3.7 million for disinfection, treatment, and odor control in the wastewater system. The budget includes \$3.9 million for soda ash; \$2.0 million for sodium hypochlorite; \$904,000 for ferric chloride; \$445,000 for liquid oxygen; \$393,000 for hydrofluosilicic acid; and \$326,000 for sodium bisulfite. The FY16 Final Budget is \$42,000 or 0.4% more than FY15 Actual Spending due to the net effect of price and usage adjustments

based on recent trends, contracts, and market projections. The FY16 budget also reflects projected reductions in fluoride usage in the water system due to regulatory changes. It should be noted that no funding for assumed enterococcus compliance associated with the new DITP permit has been included in the FY16 budget.

- The FY16 Final Budget of \$172,000 for **Training and Meetings** covers specialized training, attendance at industry conferences, and site visits as required to vendors and other plants. The FY16 Final Budget funds training for topics such as spill response and boom deployment; spill prevention and control; belt laser alignment; cyber security; and electrical voltage. The FY16 Final Budget is \$42,000 or 32.5% more than FY15 Actual Spending primarily due to increased need for workforce development associated with succession planning and the impacts of expected retirements.
- Line items that decrease from FY15 Actual Spending include:
 - The FY16 Final Budget of \$4.2 million for **Overtime** is a net decrease of \$230,000 or 5.3% from FY15 Actual Spending. The FY16 Final Budget includes \$515,000 of overtime for valve shutdowns required to complete the DITP North Main Pump Station (NMPS) and Winthrop Terminal Facility Butterfly Valve Replacement CIP project. It also includes contractual wage increases. These increases are offset by a decrease from FY15 to FY16 due to sizing of emergency maintenance based on multi-year spending patterns instead of on FY15 actual spending which was unusually high due to severe winter weather. The components of the budget include \$1.8 million for emergencies and wet weather staffing; \$1.3 million for planned maintenance and other initiatives (i.e. DITP NMPS valve shutdowns) that must be completed at night or on weekends; and \$968,000 for operational coverage. The budget continues to incorporate reductions in overtime for coverage due to changes in staffing requirements and also reflects managements’ successful efforts to date to control spending for non-emergency overtime.



It is important to highlight the increase in OT and a percentage of regular pay in FY15 was as a result of the severely bad weather during the Winter 2015.

OPERATIONS ADMINISTRATION

FY16 Final Current Expense Budget							
OPERATIONS ADMINISTRATION							
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16		
WAGES & SALARIES	\$ 1,915,020	\$ 2,125,923	\$ 2,307,256	\$ 2,433,908	\$ 126,652	5.5%	
OVERTIME	-	120	282	-	(282)	-100.0%	
FRINGE BENEFITS	-	3	-	-	-	-	
CHEMICALS	-	-	-	-	-	-	
UTILITIES	-	-	-	-	-	-	
ONGOING MAINTENANCE	-	-	-	-	-	-	
TRAINING & MEETINGS	1,010	15,580	10,288	4,700	(5,588)	-54.3%	
PROFESSIONAL SERVICES	166,309	(1,388)	78,738	200,000	121,263	154.0%	
OTHER MATERIALS	1,450,594	1,756,380	1,811,438	1,702,500	(108,938)	-6.0%	
OTHER SERVICES	216,284	229,391	247,413	288,571	41,158	16.6%	
TOTAL	\$ 3,749,217	\$ 4,126,009	\$ 4,455,415	\$ 4,629,679	\$ 174,264	3.9%	

The **Operations Administration Department** is comprised of the Office of the Chief Operating Officer (COO); the Office of the Deputy Chief Operating Officer (DCOO) 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.

FY16 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 Operations Division and ensure adherence to all internal practices and applicable external policies and regulations.
- Continue to aggressively pursue renewable and sustainable energy projects to reduce the environmental impacts of daily operations, increase energy efficiencies, and reduce overall operating costs.

FY16 Major Initiatives:

- Continue to implement projects included in the Eversource Memorandum of Understanding (MOU).
- Continue to evaluate implementation of the Co-Digestion Project at the Deer Island Treatment Plant.
- Make substantial progress, complete, and/or implement startup of major capital projects including: Spot Pond Covered Storage, UV Treatment at both water treatment plants, and Combined Sewer Overflow projects.
- In light of the number of likely retirements in the next five to ten years, prepare and implement strategies for succession planning and workforce development.

- Continue to evaluate and pursue options for the next phase of the Cross Harbor Cable.

FY15 Accomplishments:

- Developed agreement with United States Geological Survey (USGS) to contribute to modeling work to be coordinated through the Mystic River Watershed Association.
- Developed an Authority-wide FY16-FY20 Business Plan.
- Completed numerous projects noted in the Eversource MOU and received more than \$600,000 in utility rebates.
- Made significant progress on major projects including Spot Pond Storage Facility Design/Build and Deer Island North Main Pump Station VFD Construction. Additionally, the City of Cambridge awarded the last contract in the Combined Sewer Overflow (CSO) program.

Budget Highlights:

- The FY16 Final Budget is \$ 4.6 million, an increase of \$174,000 or 3.9%, from FY15 Actual Spending.
- \$2.4 million for **Wages and Salaries**, an increase of \$127,000 or 5.5%, from FY15 Actual Spending due to wage increases primarily associated with collective bargaining agreements and also more funded positions than filled in FY15 due to delays in hiring during the year. The budget funds 27 positions offset by a vacancy rate to reflect that actual pace of hiring.
- \$5,000 for **Training & Meetings**, a decrease of \$6,000 or 54.3% from FY15 Actual Spending. Funding in this line item is for attendance at conferences for the COO and DCOO.
- \$200,000 for **Professional Services**, which is an increase of \$121,000 or 154.0% from FY15 Actual Spending. The budget funds the second year of an evolving agreement to contribute to the Mystic River Modeling Project. MWRA expects to contribute up to a total of \$400,000 for this project over several years. The budget also includes \$45,000 for energy consulting services to support procurements and evaluation of projects as well as \$5,000 for Technical Assistance costs associated with applying for FEMA grants.
- \$1.7 million for **Other Materials**, which is a decrease of \$109,000 or 6.0% from FY15 Actual Spending. Funding in this line item is mostly for the replacement of older vehicles in MWRA's fleet. At an average cost of \$30,000 to \$35,000 per vehicle, the budget supports replacement of 48-56 vehicles which is approximately 10%-11% of the active fleet. More vehicles were replaced than budgeted in FY15 due to unplanned critical purchases and delays in receiving vehicles ordered in the prior year.
- \$289,000 for **Other Services**, an increase of \$41,000 or 16.6%, from FY15 Actual Spending. The budget contains Authority-wide memberships including the Water Research Foundation (WRF; formerly AWWARF), 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 a \$40,000 increase to MWRA's partial contribution for membership in WRF, bringing the total contribution to \$160,000.

OPERATIONS, ENGINEERING & CONSTRUCTION

Operations, Engineering, & Construction

Wastewater Treatment:

Deer Island

Residuals

Clinton

Field Operations:

Wastewater Operations

Water Operations & Maintenance

Metro Maintenance

Operations Support

FOD – Administration

Engineering & Construction

FY16 Final Current Expense Budget						
Operations, Engineering & Construction						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 56,247,804	\$ 56,468,999	\$ 58,134,027	\$ 60,894,153	\$ 2,760,126	4.7%
OVERTIME	3,326,884	3,209,439	4,222,642	4,019,005	(203,637)	-4.8%
FRINGE BENEFITS	57,030	54,869	78,482	60,568	(17,914)	-22.8%
CHEMICALS	10,139,257	10,226,458	9,749,142	9,790,848	41,706	0.4%
UTILITIES	22,936,753	23,281,525	20,951,802	23,031,591	2,079,789	9.9%
ONGOING MAINTENANCE	22,939,793	23,752,689	23,269,390	23,931,994	662,604	2.8%
TRAINING & MEETINGS	95,248	100,373	100,706	140,200	39,494	39.2%
PROFESSIONAL SERVICES	634,091	490,979	329,896	563,927	234,031	70.9%
OTHER MATERIALS	3,148,891	1,699,515	1,722,903	1,575,432	(147,471)	-8.6%
OTHER SERVICES	18,064,505	17,523,237	17,755,909	18,815,843	1,059,934	6.0%
TOTAL	\$ 137,590,258	\$ 136,808,083	\$ 136,314,899	\$ 142,823,561	\$ 6,508,661	4.8%

FY16 Final Current Expense Budget						
OPERATIONS, ENGINEERING & CONSTRUCTION by Programs						
FACILITY	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WASTEWATER TREATMENT	\$ 65,225,080	\$ 65,066,656	\$ 63,852,040	\$ 67,764,259	\$ 3,912,219	6.1%
FIELD OPERATIONS	65,091,890	64,566,350	65,308,951	67,330,902	2,021,951	3.1%
ENGINEERING & CONSTRUCTION	7,273,288	7,175,077	7,153,909	7,728,400	574,491	8.0%
TOTAL	\$ 137,590,258	\$ 136,808,083	\$ 136,314,899	\$ 142,823,561	\$ 6,508,661	4.8%

The Operations, Engineering & Construction Section is comprised of the Wastewater Treatment, Field Operations, and Engineering & Construction departments. In total, the budgets for these programs represent 86% of the Operations Division's FY16 Final Budget and 64% of MWRA's FY16 Final Direct Expense Budget.

The Deputy Chief Operating Officer of Operations, Engineering and Construction (DCOO–O,E&C) oversees this section, which focuses on the following:

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

The DCOO–O,E&C also provides support to the Chief Operating Officer (COO) on key MWRA operations, technical, policy, community coordination, permitting and public constituency matters.

WASTEWATER TREATMENT

FY16 Final Current Expense Budget						
WASTEWATER TREATMENT						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 17,825,908	\$ 18,099,006	\$ 18,914,089	\$ 19,504,507	\$ 590,418	3.1%
OVERTIME	866,545	931,637	1,257,123	1,130,213	(126,910)	-10.1%
FRINGE BENEFITS	16,082	17,017	26,236	17,743	(8,493)	-32.4%
CHEMICALS	3,397,825	3,569,186	3,481,612	3,445,879	(35,733)	-1.0%
UTILITIES	13,673,883	13,457,361	11,697,399	13,101,765	1,404,366	12.0%
ONGOING MAINTENANCE	13,774,496	13,720,757	12,976,875	14,148,609	1,171,734	9.0%
TRAINING & MEETINGS	7,907	12,051	12,213	20,300	8,087	66.2%
PROFESSIONAL SERVICES	76,076	241,797	171,644	212,308	40,664	23.7%
OTHER MATERIALS	541,990	581,671	599,711	568,700	(31,011)	-5.2%
OTHER SERVICES	15,044,367	14,436,173	14,715,139	15,614,235	899,096	6.1%
TOTAL	\$ 65,225,080	\$ 65,066,656	\$ 63,852,040	\$ 67,764,259	\$ 3,912,219	6.1%

FY16 Final Current Expense Budget						
WASTEWATER TREATMENT by Program						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
DEER ISLAND	\$ 47,795,291	\$ 48,453,665	\$ 46,817,125	\$ 49,921,101	\$ 3,103,976	6.6%
RESIDUALS	15,906,760	15,014,521	15,375,189	15,955,410	580,221	3.8%
CLINTON	1,523,029	1,598,471	1,659,726	1,887,748	228,022	13.7%
TOTAL	\$ 65,225,080	\$ 65,066,656	\$ 63,852,040	\$ 67,764,259	\$ 3,912,219	6.1%

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 FY16 Final Budget and 30% of MWRA's FY16 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

FY16 Final Current Expense Budget						
DEER ISLAND TREATMENT PLANT						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 17,105,459	\$ 17,375,674	\$ 18,188,028	\$ 18,757,828	\$ 569,800	3.1%
OVERTIME	809,580	878,057	1,200,367	1,075,213	(125,154)	-10.4%
FRINGE BENEFITS	15,300	16,203	25,501	16,743	(8,758)	-34.3%
CHEMICALS	3,107,477	3,279,007	3,171,902	3,092,151	(79,751)	-2.5%
UTILITIES	13,452,849	13,208,873	11,463,089	12,877,689	1,414,600	12.3%
ONGOING MAINTENANCE	12,567,714	12,809,096	12,004,627	13,240,052	1,235,425	10.3%
TRAINING & MEETINGS	7,907	11,694	12,213	16,600	4,387	35.9%
PROFESSIONAL SERVICES	74,510	228,024	122,390	172,500	50,110	40.9%
OTHER MATERIALS	382,007	428,575	451,412	411,600	(39,812)	-8.8%
OTHER SERVICES	272,487	218,462	177,596	260,725	83,129	46.8%
TOTAL	\$ 47,795,291	\$ 48,453,665	\$ 46,817,125	\$ 49,921,101	\$ 3,103,976	6.6%

Program Description and Goals:

The **Deer Island Treatment Plant (DITP)** budget accounts for 30% of the Operations Division's FY16 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% 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%. More than 100 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 is thickened in gravity thickeners. Sludge from secondary treatment is thickened in centrifuges. Polymer is used in the secondary sludge thickening process to increase its efficiency. Digestion occurs in the egg-shaped anaerobic digesters at the Deer Island Treatment Plant. There are a total of 12 digesters, each 90 feet in diameter 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 Treatment Plant (DITP) 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 have developed the Reliability Centered Maintenance (RCM) program, which has improved plant performance by applying maintenance resources where they are most effective. RCM analyzes the operating systems with the objective of ensuring critical functions perform as required. Implementation of a preventive maintenance program using RCM helps reduce the cost of maintaining the plant and improves the efficiency by anticipating when maintenance will be required. An on-island warehouse, managed by Procurement Department staff, ensures there is adequate stock for maintenance repairs and plant operations.
- Capital Engineering provides technical support services for both 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 management for the plant plus policy direction and support in the areas of public access and community agreements.

Operating Assumptions

Deer Island's FY16 Final Budget assumes treatment of an average flow of 354 mgd based on ten years of historical data. The projected quantity of digested sludge to be pumped to FRSA (TSS basis) is 100.3 TPD. This is based on tonnage trends from recent years which reflect the increased digestion from the operation of an eighth digester.

Deer Island's FY16 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 29% 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 FY16 Final Budget does not assume a new permit will be in effect during FY16. 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.

FY16 Goals:

- Meet or surpass environmental compliance standards for the Deer Island Wastewater Treatment Plant as required by the NPDES permit and air quality permits.
- Maintain DITP assets over the long term at the lowest possible life cycle cost and acceptable risk; consistent with customer, community, and regulatory support service levels.
- Commence and complete DITP's CIP projects on time and within budget.
- Continue to maximize energy efficiency, self-generation, and revenue.

FY16 Major Initiatives:

- Complete procurement process for Co-digestion Pilot Program vendor and continue to implement program with the aim of start-up by FY17.
- Continue to implement the North Main Pump Station capital project involving replacement of all ten motors and VFDs in the NMPS. Close coordination is required with operations to execute the replacement while retaining needed plant capacity.
- Continue to implement the North Main Pump Station and Winthrop Terminal Facility Butterfly Valve Replacement capital project which involves replacement of valves, magnetic flow meters, piping, actuators, and other parts. The FY16 Final Budget assumes an average of three plant shut-downs per month during lower flow periods for a total of 36 during the year to do the work associated with this project.

- Implement projects in CIP according to schedule including issuing Notice to Proceeds for key projects and phases such as Combined Heat and Power Design, Ancillary Modifications Design 4, and Barge Berth and Facility Replacement.
- Upgrade computerized maintenance management software, Maximo, to a more current version.
- Complete numerous major maintenance projects including installation of seventeen actuators to enhance operations control of Primary effluent and return sludge valves; replacement of electrical distribution substation equipment; and modifications or upgrades to each CTG to increase reliability.
- Complete key cyber security initiatives recommended by Idaho National Labs Audit to improve PICS system.
- Complete projects and operational changes recommended by the Eversource DITP energy Audit.

FY15 Accomplishments:

- Met secondary permit limits at all times, treating on average 99% of flows with full secondary treatment.
- DITP received the National Association of Clean Water Agencies' "Platinum Peak Performance Award" for 2014, which recognized that the plant had no permit violations in eight years.
- Provided approximately 29% of required power through self-generation.
- Put the backpressure turbine and a steam bypass valve into service to increase electrical energy production; resulting in 1.3 MW increase from the steam generators. Expect 4.5 kWh additional electrical production in FY16.
- Avoided ISO-NE peak hour demand by taking Deer Island off the grid and supplying plant power with the CTGs, therefore avoiding approximately \$500,000 in capacity charges for FY16.
- On average, more than 98.1% of all digester gas generated was utilized at the Thermal/Power Plant in FY15.
- Completed two major capital projects including the Centrifuge Back Drive Replacement and the Pipe Supports for Sludge Pipelines.
- For the sixth straight year, staff met goal of 100% completion of all assigned Preventative Maintenance Work Orders. Also maintained availability of critical equipment remained at 99.7%, while maintaining a reasonable backlog of work and controlling levels of overtime.
- Completed numerous maintenance projects including replacement of the East and West Odor control HVAC cooling coils and other smaller HVAC coils, heat exchangers, and condensing units throughout the plant; replacement of thickened primary sludge pump plunger style pumps with less maintenance intensive progressive cavity pumps; and replacement of secondary clarifier feed control valve actuators.
- Deer Island hosted more than 3,000 guests for tours of the facility.

Budget Highlights:

- The FY16 Final Budget is \$49.9 million, an increase of \$3.1 million or 6.6%, from FY15 Actual Spending primarily due to projected utility prices, maintenance projects, and wage increases.
- \$18.8 million for **Wages and Salaries**, an increase of \$570,000 or 3.1%, from FY15 Actual Spending primarily due to wage increases associated with collective bargaining agreements. The FY16 Final Budget funds on average 232 filled permanent positions. The FY16 Final Budget also includes \$194,000 for stand-by pay to support operational and maintenance needs primarily during storms and emergencies, \$65,000 for one contract employee to assist with facility management, and \$21,000 for interns.
- \$1.1 million for **Overtime**, a decrease of \$125,000 or 10.4% from FY15 Actual Spending primarily due to significantly greater than budgeted overtime use in FY15 as a result of numerous major snowstorms. The FY16 Final Budget is based on multi-year historical trends and supports overtime required for operational coverage, critical maintenance projects, and regulatory requirements (i.e. inspections).
- \$3.1 million for **Chemicals**, a decrease of \$80,000 or 2.5% from FY15 Actual Spending. The FY16 budget is based on multi-year historical usage trends and projected market prices, which are expected to be favorable in the next year. The FY16 Final Budget reflects management's expectation that a new NPDES permit will not be in effect during FY16. The budget includes \$997,000 for sodium hypochlorite, \$868,000 for ferric chloride, \$316,000 for hydrogen peroxide, \$303,000 for activated carbon, \$293,000 for polymer, and \$118,000 for sodium hydroxide.
- \$12.9 million for **Utilities**, which includes \$9.4 million for electricity, \$1.7 million for diesel fuel, and \$1.7 million for water. The FY16 Final Budget reflects the average of three years of actual data for power usage and self-generation. The \$1.4 million or 12.3% increase from FY15 Actual Spending is mainly due to projected increases in electricity and diesel fuel pricing based on market assessments and water rate increases based on growth in MWRA's wholesale rate.
- \$13.2 million for **Maintenance**, an increase of \$1.2 million or 10.3% from FY15 Actual Spending primarily due to the projected workload and projects in FY16 based on Deer Island's prioritization process. The FY16 Final Budget includes \$5.7 million for materials and \$7.5 million for services. Of the total, \$8.8 million or 66% is for plant and machinery services and materials, \$2.0 million is for electrical system maintenance, and \$1.4 million is for building and grounds work.
- \$173,000 for **Professional Services**, an increase of \$50,000 or 40.9% from FY15 Actual Spending primarily due to the projected use of as-needed engineering services based on project needs. The budget includes \$105,000 for as-needed engineering services to support priority maintenance projects in FY16; \$50,000 for environmental testing required as part of MWRA's air quality permit; and \$18,000 for lab and testing and analysis.
- \$412,000 for **Other Materials**, a decrease of \$40,000 or 8.8% from FY15 Actual Spending primarily due to the use of multi-year historical averages as the basis for the FY16 budget. The FY16 Final Budget includes \$159,000 for health and safety materials, \$98,000 for work clothes, \$68,000 for vehicles expenses (tolls, mileage, and gas), and \$42,000 for office supplies.
- \$261,000 for **Other Services**, an increase of \$83,000 or 46.8%, from FY15 Actual Spending primarily due to the use of multi-year historical averages as the basis for the FY16 budget. The FY16 Final Budget includes \$74,000 for permit fees, \$62,000 for health and safety hazardous safety services,

\$36,000 for telephones, \$34,000 for membership dues and subscriptions, \$15,000 for freight charges, and \$10,000 for printing services.

RESIDUALS

FY16 Final Current Expense Budget						
RESIDUALS MANAGEMENT PROGRAM						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 116,333	\$ 115,594	\$ 130,260	\$ 130,161	\$ (99)	-0.1%
OVERTIME	-	-	-	-	-	-
FRINGE BENEFITS	-	-	-	-	-	-
CHEMICALS	-	-	-	-	-	-
UTILITIES	-	-	-	-	-	-
ONGOING MAINTENANCE	1,021,639	675,045	699,035	444,837	(254,198)	-36.4%
TRAINING & MEETINGS	-	357	-	3,400	3,400	-
PROFESSIONAL SERVICES	-	12,085	19,144	38,108	18,964	99.1%
OTHER MATERIALS	12,079	6,402	15,844	10,100	(5,744)	-36.3%
OTHER SERVICES	14,756,708	14,205,038	14,510,907	15,328,804	817,898	5.6%
TOTAL	\$ 15,906,760	\$ 15,014,521	\$ 15,375,189	\$ 15,955,410	\$ 580,221	3.8%

Program Description and Goals:

The **Residuals Management Program** manages the processing and disposal of approximately 100-105 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 continues to December 31, 2015. After negotiations with NEFCo, MWRA approved a revised, five-year contract extension that will go into effect in January 2016. MWRA pumps liquid sludge from Deer Island through the Braintree-Weymouth cross-harbor tunnel to the Fore River processing facility where the sludge is dewatered, dried, and shipped by either rail or truck for use as fertilizer or to other appropriate disposal. MWRA is committed to the beneficial 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 FY16 Budget reflects an assumption of 100.3 average tons per day (TPD based on TSS) per recent history which reflects improvements in digestion due to the use of an eighth digester.
- 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.

FY16 Goals:

- Dispose of all sludge in a reliable and cost-effective manner consistent with all prevailing regulations and maximize beneficial reuse of the processed pellets.

- Dispose of grit and screenings in a reliable, economical, and environmentally sensitive manner consistent with all prevailing regulations.
- Maintain and expand local (within Massachusetts) beneficial use of MWRA's processed pellets.

FY16 Initiatives:

- Oversee the NEFCo contract to ensure successful pelletization and distribution of an average of 100.3 TPD of sludge.
- In conjunction with NEFCo, commence implementation of the contract extension and initiate all planned capital projects schedule for 2016.
- Evaluate and expand marketing efforts for Bay State Fertilizer.
- Oversee the contractual disposal of an estimated 6,638 tons of grit and screenings.

FY15 Accomplishments:

- NEFCo successfully processed, pelletized, and distributed 100.4 average TPD of sludge.
- MWRA sold 58 tons of Bay State Fertilizer through retail outlets and distributed 34 tons of pellets to public sector clients.
- MWRA's contractor disposed of 6,227 tons of grit and screenings.
- Negotiated, revised, and finalized five-year extension to pelletization contract with NEFCo. Next phase starts in January 2016.

Budget Highlights:

- The FY16 Final Budget is \$16.0 million, an increase of \$580,000 or 3.8%, from FY15 Actual Spending.
- \$130,000 for **Wages and Salaries**, which funds one permanent position and a part-time marketing intern position to assist with development of retail markets for MWRA's Bay State Fertilizer product. This department also receives on-going management oversight and staff support from other departments of the MWRA including Deer Island, Treasury, and Operations Administration.
- \$445,000 for **Maintenance**, a decrease of \$254,000 or 36.4%, from FY15 Actual Spending. The funding supports the maintenance repair, replacement, and improvement component of the existing NEFCo contract for June through December 2015. The contract includes a specific level of maintenance per year adjusted to account for inflation. The decrease from FY15 to FY16 is due to a change in MWRA's budgeting and accounting treatment for NEFCo's capital projects in the next phase of the extended contract. Specifically, as of January 2016, MWRA will fund NEFCo's capital projects through the Capital Improvement Program budget since the work meets MWRA's capitalization criteria for MWRA assets.
- \$38,000 for **Professional Services** which is a \$19,000 increase from FY15 Actual Spending. The budget includes \$37,000 for NEFCo's design and contract management services in support of capital work planned for January through June 2016 per the terms of the extended contract. This is offset by a decrease due to the exclusion of funding for bi-annual stack testing in FY16 since it will not be required this year.

- \$15.3 million for **Other Services**, an increase of \$818,000 or 5.6%, from FY15 Actual Spending. The FY16 Final Budget primarily funds the **Sludge Pelletization** services provided through a contract with NEFCo. The FY16 Final Budget includes \$14.1 million for sludge processing, a \$293,000 or 2.1 % increase as compared to FY15 Actual Spending due to an increase in the projected inflation rates for materials, electricity, natural gas, and labor. Projected FY16 sludge tonnage of 100.3 average tons per day (TPD) is consistent with the FY15 average. In addition, this line item also covers Grit and Screenings disposal of \$1.2 million, which is \$473,000 or 63.2% more than FY15 Actual Spending primarily due to price increases and greater quantities budgeted for FY16 based on historical averages than FY15 actual quantities.

CLINTON

FY16 Final Current Expense Budget							
CLINTON WASTEWATER TREATMENT PROGRAM							
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16		
WAGES & SALARIES	\$ 604,116	\$ 607,738	\$ 595,801	\$ 616,518	\$ 20,717	3.5%	
OVERTIME	56,965	53,581	56,756	55,000	(1,756)	-3.1%	
FRINGE BENEFITS	782	814	735	1,000	265	36.1%	
CHEMICALS	290,347	290,179	309,710	353,728	44,018	14.2%	
UTILITIES	221,034	248,488	234,310	224,076	(10,234)	-4.4%	
ONGOING MAINTENANCE	185,143	236,616	273,213	463,720	190,507	69.7%	
TRAINING & MEETINGS	-	-	-	300	300	-	
PROFESSIONAL SERVICES	1,566	1,688	30,110	1,700	(28,410)	-94.4%	
OTHER MATERIALS	147,904	146,694	132,454	147,000	14,546	11.0%	
OTHER SERVICES	15,172	12,673	26,637	24,706	(1,931)	-7.2%	
TOTAL	\$ 1,523,029	\$ 1,598,471	\$ 1,659,726	\$ 1,887,748	\$ 228,022	13.7%	

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 flow rate. Residual materials are pressed and transported to an MWRA-owned landfill for disposal. Staff also performs regular monitoring of the landfill site.

The FY16 Final Budget reflects the third full fiscal year of operation of the Clinton aeration system efficiency improvements and redundant pumping at the influent and intermediate lift stations. These improvements were completed in 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. It also included the installation of SCADA to control the system, collect data for storage, and report on select processes. The redundant pumps enable MWRA to avoid the cost of renting additional pumps which were required four times in the past. Further, the new submersible pumps are energy efficient and significantly reduce the plant's energy consumption.

The FY16 Final Budget assumes the requirements of the new NPDES permit will be in full effect for the whole year. The new permit requires year-round limits for phosphorus discharge, which impacts the use

of Ferric Chloride. Clinton's FY16 Final Budget includes estimates for numerous maintenance projects including \$250,000 for periodic painting and coating of facilities and equipment due to corrosion.

The FY16 Final Budget does not include funds for the operational impact of the Clinton Digester Cleaning and Rehabilitation Capital projects as they are not scheduled for substantial completion until April 2017. Clinton's two digesters are approximately 20% filled with compacted grit which is limiting their efficiency. The project calls for emptying, cleaning, and rehabilitating the tanks, installing a 36 inch influent gate, which would allow for throttling back on the plant flow during high flow conditions, and concrete repairs throughout the plant. This work may impact plant operations during wet weather emergencies/severe weather, thus increasing overtime and the timing of CEB maintenance projects. If this occurs, MWRA will identify available funds within the FY16 Final Budget and will absorb any additional expenses.

FY16 Goals:

- Meet or surpass environmental compliance standards for Clinton Treatment Plant as required by the NPDES permit.
- Maintain Clinton Treatment Plant assets over the long term at the lowest possible life cycle cost and acceptable risk; consistent with customer, community, and regulatory support service levels.
- Move forward with design and construction of major Clinton Infrastructure Rehabilitation and Renewal Projects.
- Continue to maximize energy efficiency through audits and implementation of recommendations.

FY16 Initiatives:

- Implement enhanced phosphorus control at the Clinton Wastewater Treatment Plant to comply with the requirements of the new NPDES permit.
- Commence and complete the painting and coating of the plant facilities and equipment.
- Commence the Phosphorus Removal Construction CIP Project which is expect be substantially completed by August 2017.
- Commence the Clinton Roofing Rehabilitation CIP Project which is expected to be substantial completed by December 2016.
- Implement lighting improvement recommendations identified in a recent energy audit.

FY15 Accomplishments:

- Clinton met all NPDES permit requirements for the year with the exception of one toxicity violation in September.
- Completed all routine monthly maintenance projects includes, repoured concrete on top two flights of concrete on primary clarifiers 3 and 4, refurbished floating cover on secondary digester, replaced two sludge transfer pumps and two recirculation pumps and valves in digesters, installed plant-wide security system on all doors, hatches, and nine security cameras were installed. Also installed new heat pumps for cooling in electric and generator rooms.
- Completed energy audit and commenced review of the audits recommendation.
- Operated plant successfully and without any incident through unusually severe winter weather.

Budget Highlights:

- \$617,000 for **Wages and Salaries**, an increase of \$21,000 or 3.5%, from FY15 Actual Spending. The FY16 Final Budget funds eight permanent positions, including one part-time clerical position that was previously budgeted as a temporary employee. The small increase from FY15 to FY16 reflects wage increases offset by the inclusion of a vacancy rate to reflect the pace of hiring.
- \$55,000 for **Overtime**, a decrease of \$2,000 or 3.1%, from FY15 Actual Spending based on historical trends. Overtime is used for critical maintenance work and to meet the 24 hour, seven day per week emergency coverage requirement.
- \$354,000 for **Chemicals**, an increase of \$44,000 or 14%, from FY15 Actual Spending due primarily to usage adjustments based on actual experience. Chemicals are used for sludge processing and disposal and wastewater treatment. The FY16 Final Budget assumes the new NPDES permit will be in effect for the full year. Chemicals represent 19% of the budget.
- \$224,000 for **Utilities**, a decrease of \$10,000 or 4.4%, from FY15 Actual Spending. The budget includes \$160,000 for electricity, \$54,000 for fuel oil, and \$10,000 for water. Electricity is primarily based on FY14 actual usage because it was the first full fiscal year with the aeration system fully operational. Utilities represent 12% of the FY16 Final Budget.
- \$464,000 for **Maintenance**, an increase of \$191,000 or 69.7%, from FY15 Actual Spending due to the inclusion of a non-routine, major painting and coating project. The FY16 Final Budget includes \$250,000 for painting to address issues with the aerated grit tank as well as \$70,000 for major projects based on the most current rolling priority list. The remainder of the budget is for routine materials and services. Maintenance represents 25% of the FY16 Final Budget.
- \$147,000 for **Other Materials**, an increase of \$15,000 or 11.0%, from FY15 Actual Spending. The Other Materials budget includes \$135,000 for clean fill for the landfill operation.
- \$25,000 for **Other Services**, a decrease of \$2,000 or 7.2%, from FY15 Actual Spending. The budget includes \$13,000 for permit fees, \$5,000 for telephones, and \$3,000 for railroad easement expenses.

FIELD OPERATIONS

FY16 Final Current Expense Budget						
FIELD OPERATIONS						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 31,301,507	\$ 31,301,802	\$ 32,197,907	\$ 33,802,022	\$ 1,604,115	5.0%
OVERTIME	2,387,603	2,234,679	2,906,531	2,822,827	(83,704)	-2.9%
FRINGE BENEFITS	40,607	37,726	52,103	42,325	(9,778)	-18.8%
CHEMICALS	6,741,432	6,657,272	6,267,530	6,344,969	77,439	1.2%
UTILITIES	9,262,870	9,824,164	9,254,403	9,929,826	675,423	7.3%
ONGOING MAINTENANCE	9,158,471	10,022,329	10,292,373	9,783,385	(508,988)	-4.9%
TRAINING & MEETINGS	82,665	83,156	73,028	111,000	37,972	52.0%
PROFESSIONAL SERVICES	550,512	249,182	158,251	351,618	193,367	122.2%
OTHER MATERIALS	2,569,640	1,088,945	1,091,844	971,637	(120,207)	-11.0%
OTHER SERVICES	2,996,581	3,067,096	3,014,980	3,171,293	156,313	5.2%
TOTAL	\$ 65,091,890	\$ 64,566,350	\$ 65,308,951	\$ 67,330,902	\$ 2,021,951	3.1%

FY16 Final Current Expense Budget						
FIELD OPERATIONS by Program						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WASTEWATER OPERATIONS	\$ 12,223,167	\$ 11,915,070	\$ 11,752,934	\$ 12,666,643	\$ 913,709	7.8%
WATER OPERATIONS & MAINT	26,424,382	27,634,871	27,560,341	28,605,001	1,044,660	3.8%
METRO MAINTENANCE	14,915,959	15,476,388	16,140,065	16,038,602	(101,463)	-0.6%
OPERATIONS SUPPORT	4,692,072	4,680,275	4,793,945	4,865,057	71,112	1.5%
FOD ADMIN	6,836,309	4,859,745	5,061,666	5,155,599	93,933	1.9%
TOTAL	\$ 65,091,890	\$ 64,566,350	\$ 65,308,951	\$ 67,330,902	\$ 2,021,951	3.1%

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

Wastewater Operations operates MWRA's wastewater transport facilities, including four continuously staffed Headworks facilities; 12 fully automated pumping stations; and six Combined Sewer Overflow (CSO) facilities which are similarly unstaffed. The wastewater system is monitored and controlled from the operations control center (OCC) in MWRA's Chelsea facility.

Water Operations and Maintenance is responsible for the treatment and delivery of approximately 196 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 Brutsch Water Treatment Plant, the Cosgrove Intake Facility, the Norumbega Reservoir, and the covered storage facilities. There are two operations centers that provide for monitoring and control of the water system on a 24-hour per day basis. The Metropolitan

Operations and Control Center (OCC) is located at MWRA's Chelsea office facility and the Western Operations Center is located at the Carroll Water Treatment Plant.

Metropolitan Maintenance is responsible for the maintenance of MWRA's wastewater and water systems and facilities within the Route 128 area. Staff maintain pipelines, valves, interceptors, pumps, facility equipment, buildings, and grounds. Metropolitan Maintenance staff maintain 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. This unit also performs TV inspections of the wastewater interceptor system and leak detection. In addition, this unit maintains 179 revenue water meters, 26 master water meters, 187 revenue wastewater meters, and 35 other wastewater monitoring sites.

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

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

FY16 Goals:

Wastewater Operations

- Meet all operational and regulatory performance standards and requirements.
- Promote the use of technology throughout Wastewater Operations to maximize staff productivity and ensure information is readily available to support decision making.
- Provide efficient and cost effective operation of the MWRA's wastewater system.

Water Operations and Maintenance

- Operate and maintain the water supply and treatment facilities to provide an adequate supply of properly treated drinking water to meet all operational and regulatory performance requirements.
- Supply water to customer communities at the expected pressure.
- Continue to maximize staff productivity and efficiency for the maintenance of these facilities.
- Coordinate the operation of these facilities with on-going construction projects such as the Wachusett Aqueduct Pump Station.
- Minimize lag time for leak repair.
- Exercise 1,100 main line valves and 370 blow off valves.

Metropolitan Maintenance

- Continue to maximize staff productivity and efficiency for the maintenance of these facilities.

- Ensure that necessary maintenance and support are provided to meet the operational performance standards and regulatory requirements for all of MWRA's facilities in the metropolitan Boston communities.
- Optimize the use of Maximo, MWRA's computerized maintenance management system, to ensure cost-effective maintenance of facilities and equipment.

Operations Support

- Maximize availability and operations of SCADA system to support operations of MWRA's wastewater and water systems.

FY16 Major Initiatives:

Wastewater Operations

- Expand the use of Maximo where appropriate.
- Constructively apply technology to improve crew efficiency and crew accountability.
- Expand the use of the computerized tracking system to ensure daily and adequate inspection of MWRA's facilities

Water Operations and Maintenance

- Perform system upgrades at the Carroll Water Treatment Plant to replace outdated equipment and to improve efficiency during low demand periods.
- Make modifications and repairs to dams and appurtenances to meet the requirements of the Office of Dam Safety.
- Continue the invasives removal work at Wachusett, Sudbury, and Chestnut Hill reservoirs.
- Survey the MWRA water system for leaks.

Metropolitan Maintenance

- Exercise close supervision of the metro maintenance, equipment maintenance, TV inspection, and process control programs and meet performance goals in all areas as tracked in MWRA's monthly Yellow Notebook.
- Continue to review and revise operating procedures.

Operations Support

- Pilot test Verizon Wireless network on SCADA system.
- Roll out Multi Protocol Label Switching network.
- Implement data diode system on SCADA production network.

FY15 Accomplishments:

Wastewater Operations

- Wastewater Operations staff participated in planned power outages at the Intermediate Pump Station (IPS) and the Prison Point Station while the electrical utilities made improvements to their electrical distribution systems with no impacts to operations.
- Performed monthly SPCC Inspections required by DEP at Cottage Farm CSO, Prison Point CSO, and Braintree/Weymouth Pump Station.

Metropolitan Maintenance

- Replaced 20 main line valves and retrofitted ten blow-off valve sites during the fiscal year.
- Identified and repaired over 30 leaks, most with the pipelines remaining in service
- Overall valve operability is 92% to 95%, a result of continued valve exercising, repair, and replacement.
- Successfully managed through the record snow storms in January and February. Provided snow removal assistance to Boston, Chelsea, Quincy, Winthrop, and the MBTA (through MEMA).
- Assisted many customer communities with valve, leak detection, water quality issues, as well as assistance with water main breaks in February, during historically cold weather.

Water Operations and Maintenance

- Completed and commenced operations of UV treatment at the William A. Brutsch Water Treatment Facility.
- Staff replaced the Rutland-Holden sewer easement from Rte. 122 to Briarwood Drive including 1900' of roadway and 17 culvert crossings.
- Continued invasives removal work in the Stillwater Basin, Sudbury Reservoir, and Chestnut Hill Reservoir.

Metropolitan Maintenance

- Staff performed 1,072 manhole inspections.
- Cleaned and maintained 21.65 miles of the MWRA's sewer system
- Inspected 52 siphon barrels and cleaned 57 siphon barrels.
- Removed and replaced variable frequency drives at Commonwealth Avenue Water Pump Station, Squantum, and Caruso WW Pump Stations.
- Removed and replaced three submersible sample pumps at Prison Point CSO.
- Removed and replaced a high voltage transformer at the Intermediate Pump Station (IPS).

Operations Support:

- Completed DEP sanitary surveys of the water system.
- Worked with Department of Homeland Security and Idaho National Labs on a SCADA network cyber security assessment; applied software patches as needed; upgraded SCADA PCs; removed sensitive SCADA files from MIS network; updated firewalls.
- Installed fiber optics at Brutsch Disinfection Facility between SCADA panels; upgraded PLC programming to current standards; merged UV system into SCADA system.
- At CWTP, replaced six SCADA servers and all 16 PLC processors and switches; updated contact time calculation to use giardia contact time instead of performance ratios; and merged UV system into SCADA system.
- Completed key work including performed preventative and corrective maintenance work on instrumentation and control systems throughout MWRA waste water facilities; relocated Ward St/DITP radio antenna in preparation for tower removal; upgraded SCADA network at Prison Point and Cottage Farm; and optimized storm pumping controls at Caruso Pump Station.

Budget Highlights:

- The FY16 Final Budget is \$67.3 million, an increase of \$2.0 million or 3.1%, from FY15 Actual Spending.
- \$33.8 million for **Wages and Salaries**, an increase of \$1.6 million or 5.0%, from FY15 Actual Spending mainly due to wage increases associated with collective bargaining agreements and more funding for the intern program. The Wages and Salaries line item accounts for 50% of the FY16 Final Budget and funds 431 positions after applying a 2% vacancy rate to reflect the likely pace of hiring for positions that become vacant. Of the remaining budget, \$448,000 is for stand-by pay to ensure support for operational and maintenance needs during wet weather and emergencies and \$122,000 is for interns to provide support in several areas including Operations Engineering and SCADA.
- \$2.8 million for **Overtime**, a decrease of \$84,000 or 2.9% from FY15 Actual Spending. The budget, which reflects collective bargaining increases, includes \$1.2 million for emergency related overtime; \$1.1 million for planned overtime; and \$572,000 for operational coverage needs. The budget for planned overtime is increasing significantly due to the inclusion of \$451,000 for overtime associated with system shut-downs required to complete the North Main Pump Station (NMPS)/ Winthrop Terminal Facility Butterfly Replacement project. This is offset by decreases from FY15 to FY16 for emergency OT, which is based on multi-year trends and is thus less than FY15 which had unusually severe winter weather.
- \$6.3 million for **Chemicals**, of which \$6.1 million is for water treatment and \$255,000 is for wastewater treatment. The FY16 Final Budget is \$78,000 higher or 1.2% higher than FY15 actual spending due to an increase of \$164,000 in Soda Ash and \$26,000 in Aqua Ammonia primarily as a result of price increase and \$219,000 for Sodium Bisulfite based on increased use. These increases are offset by a \$202,000 decrease in Fluoride as a result of implementation of federally recommended dosing levels. Also, since FY14, improvements by Town of Framingham have lowered the hydrogen

sulfide levels in the system, resulting in lower dosing of Bioxide and the discontinuation of use of VX-456.

- \$9.9 million for **Utilities**, an increase of \$675,000 or 7.3%, from FY15 Actual Spending. The FY16 Budget includes \$7.2 million for electricity, \$1.6 million for diesel fuel, \$516,000 for water, \$486,000 for natural gas, and \$88,000 for propane. Electricity increases \$359,000 primarily due to projected increased pricing and volume, Diesel Fuel increases by \$343,000 due to increases pricing offset by lower volume, Water increases by \$65,000 due to the use of three year averages for budgeting, and Propane increases by \$25,000 due to higher winter pricing.
- \$9.8 million for **Maintenance**, a decrease of \$509,000 or 4.9% from FY15 Actual Spending. The FY16 Budget includes \$4.3 million in day-to-day needs, \$3.2 million for services, \$1.8 million in major projects, and \$338,000 for energy initiatives. Some of the major projects planned for the FY16 Budget include:

Manhole Rehabilitation Contract	\$360,000
Invasives Control - Stillwater Basin – DASH	\$329,000
New Lead Pumps at DeLauri Pump Station	220,000
Carpet Replacement - Chelsea Facility	\$100,000
Annual tank cleaning	\$100,000
Retrofit new VFDs for Caruso Large Pumps	\$90,000

- \$111,000 for **Training and Meetings**, an increase of \$38,000 or 52.0%, from FY15 Actual Spending which covers training required for work duties, health and safety compliance, and job-related licensures and certifications. The increase from FY15 to FY16 is due to increased funding for cybersecurity and SCADA technical training.
- \$352,000 for **Professional Services**, an increase of \$193,000 or 122%, from FY15 Actual Spending. The FY16 Budget includes \$213,000 for engineering services, which is made up of \$133,000 for as-needed engineering services to support CEB-funded maintenance projects; \$65,000 for a multi-year dam safety contract; and \$15,000 for evaluation of spill prevention, control, and countermeasure plans. Additionally, the Professional Services budget also includes \$70,000 for an annual macrophyte survey at the reservoirs; \$55,000 for water quality assurance services for macrophyte harvesting; and \$10,000 for energy audits at various facilities. The increase from FY15 to FY16 is primarily due to expected increases in spending for as-needed engineering services for all of FOD and invasive plant surveys at the reservoirs.
- \$972,000 for **Other Materials**, a decrease of \$120,000 or 11.0% from FY15 Actual Spending. The FY16 Budget includes \$402,000 for vehicle expenses for gas, mileage reimbursements, and tolls; \$252,000 for work clothes; and \$219,000 for health and safety supplies. The decrease from FY15 to FY16 is due to less need for carpet and furniture replacement in the Chelsea Facility in FY16.
- \$3.2 million for **Other Services**, an increase of \$156,000 or 5.2%, from FY15 Actual Spending. The FY16 Budget includes \$2.0 million for annual lease payments for the Chelsea office building; \$505,000 for telephones, and \$430,000 for police details. The increase from FY15 to FY16 is primarily due to projected increases in taxes associated with the Chelsea Office facility lease.

ENGINEERING AND CONSTRUCTION

FY16 Final Current Expense Budget						
ENGINEERING AND CONSTRUCTION						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 7,120,388	\$ 7,068,191	\$ 7,022,031	\$ 7,587,624	\$ 565,593	8.1%
OVERTIME	72,736	43,123	58,989	65,965	6,976	11.8%
FRINGE BENEFITS	341	126	143	500	357	249.7%
CHEMICALS	-	-	-	-	-	-
UTILITIES	-	-	-	-	-	-
ONGOING MAINTENANCE	6,825	9,603	142	-	(142)	-100.0%
TRAINING & MEETINGS	4,677	5,166	15,466	8,900	(6,566)	-42.5%
PROFESSIONAL SERVICES	7,503	-	-	1	1	-
OTHER MATERIALS	37,261	28,899	31,349	35,095	3,746	12.0%
OTHER SERVICES	23,556	19,969	25,790	30,315	4,525	17.5%
TOTAL	\$ 7,273,288	\$ 7,175,077	\$ 7,153,909	\$ 7,728,400	\$ 574,491	8.0%

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 as well as specialized technical services in electrical, structural, mechanical, and civil engineering disciplines. The **Water Engineering Unit** manages all water design and engineering projects. The unit also maintains the Design Information Services Center (DISC), which provides computer-aided design and drafting (CADD) services. The **Construction Unit** provides contract management and resident inspection on all MWRA water and wastewater construction and rehabilitation projects, with the exception of Deer Island Treatment Plant.

FY16 Goals:

- In accordance with the prevailing CIP, 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.
- Meet milestones established in Federal court-ordered Combined Sewer Overflow (CSO) plan.

FY16 Major Initiatives:

- Award contracts and issue Notice to Proceed for numerous contracts including the following major projects:

- Water System
 - Long-term Redundancy; Wachusett Aqueduct Pump Station Construction
 - Northern Intermediate High Redundancy & Storage: Section 89/29 Construction Phase 1 B
 - Carroll Water Treatment Plant: award Existing Facilities Modifications - CP7
 - Central Monitoring System: Quabbin Power Communication & Security
 - Northern High Service/Revere & Malden Pipeline: Section 53 Connections Design
 - Winsor Station Fish Hatchery Pipeline – Construction
 - Waterworks Facility Asset Protection: Beacon Street Line Repair construction

- Wastewater System
 - Chelsea Creek Headworks Upgrades - Construction
 - Alewife Brook Pump Station Upgrades – Construction
 - Clinton WWTP Phosphorus Reduction Facility – Construction
 - Caruso Pump Station Improvements – Construction
 - Chelsea Creek Headworks Upgrade Resident Engineering and Inspection
 - Wastewater Meter System Equipment Replacement: Planning/Study/Design

- Substantially complete numerous contracts including the following major phases:
 - Spot Pond Storage Facility Design/Build
 - CSO Cambridge Sewer Separation Design and Construction
 - CSO Reserved Channel Design and Construction

- Complete the following regarding the Combined Sewer Overflow plan:
 - Meet the following plan milestones including: complete MWR003 Gate and Siphon by October 2015 and complete reserved Channel and Cambridge/Alewife sewer separation projects by December 2015
 - Renew Charles River and Alewife Brook/Mystic River CSO varaince extensions for the period 2016-19
 - Develop scope of services for court-manadated 3-year CSO performance assessment

FY15 Accomplishments:

- Awarded contracts and issued Notice to Proceed for numerous contracts including the following major phases:
 - Spot Pond Supply Mains Rehabilitation - Section 4 Webster Ave Bridge Pipe Rehab Construction
 - Weston Aqueduct Supply Mains - Section 36/W11/S 9-All Valve Construction
 - Central Monitoring System - Quabbin Power Design
 - Waterworks Facility Asset Protection - Beacon Street Line Repair Design
 - Chelsea Screen House Upgrades Construction
 - CSO Project MWR003 Construction

- Substantially completed numerous contracts including the following major phases:
 - Brutsch UV Water Treatment Plant: Design and Construction and CVA Shea Avenue Leak Repair
 - Hultman Interconnection – Final Design
 - Carroll Water Treatment Plant UV Disinfection Design and Existing Facility Modifications CP7 Design
 - NIH Redundancy & Storage: Short Term Improvements Design, West St Pipeline Reading Construction Ph1A, and Gillis Pump Station Improvements Construction
 - Quabbin Transmission System: complete Oakdale Phase 1A Electrical – Design
 - Brookline Sewer Separation Design

Budget Highlights:

- The FY16 Final Budget is \$7.7 million, an increase of \$575,000 or 8.0% compared to FY15 Actual Spending.
- \$7.6 million for **Wages and Salaries**, an increase of \$566,000 or 8.1% compared to FY15 Actual Spending mainly for contractual increases and lower than budgeted headcount in FY15. Wages and Salaries represent 98.2% of the FY16 Final Budget and includes funding for 77 positions net of a vacancy rate adjustment to reflect the pace of hiring.
- \$66,000 for **Overtime**, an increase of \$7,000 or 11.8% as compared to FY15 Actual Spending, which was less than budgeted due to actual project needs. The FY16 Overtime budget is based on planned projects for FY16 and it includes increases due to collective bargaining agreements. 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.
- \$9,000 for **Training & Meetings**, a decrease of \$7,000 or 42.5%, compared to FY15 Actual Spending. Training funds cover attendance at conferences and technical seminars. In FY15, more staff attended out of state conferences and on-site factory inspections than historical actuals.
- \$35,000 for **Other Materials**, an increase of \$4,000 or 12%, compared to FY15 Actual Spending. The FY16 budget is based on historical spending. In FY15, actual spending for vehicle expenses and office supplies was less than historical actuals. The budget covers vehicle expenses, office supplies, health and safety supplies, and survey equipment.
- \$30,000 for **Other Services**, an increase of \$5,000 or 17.5% compared to FY15 Actual Spending due to higher historical spending for membership and dues and lower historical spending in Police Details. Funding in this line items supports printing/duplicating, telephone expenses, specialized copier services, memberships and dues, and police details.

PROGRAMS, POLICY, & PLANNING

Programs, Policy & Planning

TRAC
ENQUAL
Lab Services
Planning

FY16 Final Current Expense Budget						
PROGRAMS, POLICY & PLANNING						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 12,451,831	\$ 12,814,118	\$ 13,288,828	\$ 14,124,196	\$ 835,368	6.3%
OVERTIME	146,609	122,684	165,876	139,574	(26,302)	-15.9%
FRINGE BENEFITS	1,563	1,689	2,124	2,050	(74)	-3.5%
CHEMICALS	-	-	-	-	-	-
UTILITIES	23,311	27,689	22,881	27,205	4,324	18.9%
ONGOING MAINTENANCE	467,916	463,414	556,931	574,096	17,165	3.1%
TRAINING & MEETINGS	11,326	19,540	19,084	27,500	8,416	44.1%
PROFESSIONAL SERVICES	1,359,677	1,452,070	1,463,086	1,750,320	287,234	19.6%
OTHER MATERIALS	1,167,493	1,130,643	1,396,234	1,695,631	299,397	21.4%
OTHER SERVICES	348,751	402,424	391,780	411,098	19,318	4.9%
TOTAL	\$ 15,978,478	\$ 16,434,272	\$ 17,306,823	\$ 18,751,670	\$ 1,444,847	8.3%

FY16 Final Current Expense Budget						
PROGRAMS, POLICY & PLANNING by Program						
PROGRAM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
TOXIC REDUCTION & CONTROL	\$ 3,344,029	\$ 3,588,160	\$ 3,764,566	\$ 3,921,724	\$ 157,158	4.2%
ENVIRONMENTAL QUALITY	4,085,955	4,143,529	4,275,976	5,105,192	829,216	19.4%
LAB SERVICES	5,563,606	5,621,316	5,932,398	6,246,851	314,453	5.3%
PLANNING	2,984,888	3,081,268	3,333,883	3,477,903	144,020	4.3%
TOTAL	\$ 15,978,478	\$ 16,434,272	\$ 17,306,823	\$ 18,751,670	\$ 1,444,847	8.3%

The Programs, Policy & Planning Section is comprised of the Toxic Reduction & Control, Environmental Quality (EnQual), Lab Services, and Planning departments. The Environmental Quality Department has two units; EnQual-Wastewater and EnQual-Water Quality Assurance (water system). The Planning Department also has two units; Planning and Meter Data. In total, the budgets for these programs represent 11.3% of the Operations Division's FY16 Final Budget and 8.4% of MWRA's FY16 Final Direct Expense Budget.

The Deputy Chief Operating Officer of Programs, Policy, and Planning (DCOO-P,P,&P) oversees this section, which focuses on the following:

- Master planning, business planning, and strategic initiatives (such as system expansion);
- Environmental programs and regulatory coordination;
- Water and wastewater quality testing and reporting;

- Divisional budget preparation and monitoring;
- Financial planning and analysis;
- Accounts payable and contract administration;
- Human resources management functions; and
- Energy audits, reporting, program evaluation, and analysis.

The DCOO–P,P,&P also provides support to the Chief Operating Officer (COO) on key MWRA operations, technical, policy, community coordination, permitting, and public constituency matters.

TOXIC REDUCTION AND CONTROL

FY16 Final Current Expense Budget							
TOXIC REDUCTION AND CONTROL							
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16		
WAGES & SALARIES	\$ 3,153,332	\$ 3,391,080	\$ 3,582,311	\$ 3,712,278	\$ 129,967	3.6%	
OVERTIME	70,038	58,252	62,997	71,568	8,571	13.6%	
FRINGE BENEFITS	1,005	1,173	1,221	1,200	(21)	-1.7%	
CHEMICALS	-	-	-	-	-	-	
UTILITIES	217	-	-	-	-	-	
ONGOING MAINTENANCE	5,240	23,213	3,034	21,500	18,466	608.7%	
TRAINING & MEETINGS	-	-	-	-	-	-	
PROFESSIONAL SERVICES	6,302	-	-	-	-	-	
OTHER MATERIALS	100,983	105,581	109,971	107,178	(2,793)	-2.5%	
OTHER SERVICES	6,913	8,861	5,032	8,000	2,968	59.0%	
TOTAL	\$ 3,344,029	\$ 3,588,160	\$ 3,764,566	\$ 3,921,724	\$ 157,158	4.2%	

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.

FY16 Goals:

- Regulate the level of toxic inflows into the MWRA sewerage system by inspecting, permitting, and monitoring industrial users.
- Ensure compliance with MWRA and Federal regulations by issuing appropriate enforcement actions as outlined in the Enforcement Response Plan.

FY16 Major Initiatives:

- Staff will complete regulatory review of the local limits applicable to the industrial users in the Clinton service area under the requirements of the National Pollution Discharge Elimination System (NPDES) permit renewal process for the Clinton Wastewater Treatment Plant.
- TRAC staff will utilize the Pre-treatment Information Management System (PIMS) software to schedule and track work, as well as to draft permits and track permit requirements. Sampling required by permits is entered into the PIMS system by permittees' contract laboratories. This electronic reporting system is subject to EPA's Cross Media Electronic Reporting Rule (CROMERR) and as such, needs to be upgraded to meet the requirements of the rule. TRAC staff are working with MWRA's MIS staff to ensure that the PIMS system meets these requirements.

FY15 Accomplishments:

- MWRA's Incentive and Other Charges Program recovers a substantial portion of MWRA's costs of inspecting, monitoring, and permitting industrial sewer users. The total adjusted amount billed under the program in FY15 was \$2,111,972. Collections for FY15 totaled \$2,087,679, approximately 99% of the adjusted amount invoiced.
- In FY15 the TRAC conducted 208 annual Significant Industrial User (SIU) inspections required by EPA, 918 oil/water separator inspections, and two inspections of septage hauling companies and receiving sites. Staff issued 265 permits to industrial users during FY15 including 75 permits issued to SIUs.
- In FY15, the Monitoring group conducted approximately 1,241 SIU and 168 Non SIU sampling events as required by EPA and the monitoring plan. Additionally, 1,528 events were sampled for non-industrial sampling events (e.g. emergencies, Combined Sewer Overflow, Clinton NPDES permit, Carroll Water Treatment Plant NPDES permit, Oakdale and Cosgrove NPDES permit) as well as other events.

Budget Highlights:

- The FY16 Final Budget is \$3.9 million, an increase of \$157,000 or 4.2%, from FY15 Actual Spending.
- \$3.7 million for **Wages & Salaries**, an increase of \$130,000 or 3.6% from FY15 Actual Spending primarily due to collective bargaining increases. The budget funds approximately 42 positions.
- \$22,000 for **Ongoing Maintenance**, an increase of \$18,000 from FY15 Actual Spending. This funds sampling equipment, materials, and maintenance of equipment used in sampling industrial discharges at permitted industries.
- \$107,000 for **Other Materials**, a decrease of \$3,000 or 2.5%, from FY15 Actual Spending. Funding in this line item mainly supports lab and testing supplies and health and safety materials.
- \$8,000 for **Other Services**, an increase of \$3,000 or 59.0% from FY15 Actual Spending. This funds printing costs for regulations, public advertising of industrial users in Significant Noncompliance, and police details for sampling work done in public streets.

ENVIRONMENTAL QUALITY

FY16 Final Current Expense Budget						
ENVIRONMENTAL QUALITY						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 2,711,894	\$ 2,664,297	\$ 2,734,691	\$ 2,967,883	\$ 233,192	8.5%
OVERTIME	4,145	2,734	3,708	4,800	1,092	29.5%
FRINGE BENEFITS	35	11	25	200	175	700.0%
CHEMICALS	-	-	-	-	-	-
UTILITIES	-	-	-	-	-	-
ONGOING MAINTENANCE	21,613	24,265	97,896	50,000	(47,896)	-48.9%
TRAINING & MEETINGS	3,596	3,406	4,709	15,000	10,291	218.5%
PROFESSIONAL SERVICES	1,221,137	1,292,785	1,290,537	1,565,775	275,238	21.3%
OTHER MATERIALS	44,219	34,430	35,065	389,080	354,015	1009.6%
OTHER SERVICES	79,317	121,601	109,346	112,454	3,108	2.8%
TOTAL	\$ 4,085,955	\$ 4,143,529	\$ 4,275,976	\$ 5,105,192	\$ 829,216	19.4%

FY16 Final Current Expense Budget						
ENVIRONMENTAL QUALITY by Department						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
ENQUAL	\$ 2,660,834	\$ 2,722,517	\$ 2,715,087	\$ 3,018,389	\$ 303,302	11.2%
WATER QUALITY ASSURANCE	1,425,121	1,421,012	1,560,889	2,086,803	525,914	33.7%
TOTAL	\$ 4,085,955	\$ 4,143,529	\$ 4,275,976	\$ 5,105,192	\$ 829,216	19.4%

The **Environmental Quality Department** (EnQual) has two sections: EnQual-Water and EnQual-Wastewater (WW). EnQual-Water manages compliance with the reporting requirements of the MA Department of Environmental Protection Drinking Water Regulations, as well as conducts and oversees the drinking water quality monitoring program. Activities include maintaining and monitoring the Contaminant Monitoring System (CMS) and a mobile S::CAN unit for as-needed sampling in the communities. The group also maintains an algae monitoring program, responds to customer complaints, and reviews system water quality data. EnQual-WW manages compliance with the reporting requirements of MWRA's National Pollutant Discharge Elimination System (NPDES) permits. The group must submit permit reports to state and federal regulators, the science advisory panel and its subcommittees, and several libraries, and post many of these reports on its Harbor and Bay web pages. EnQual-WW also manages environmental data and monitors and reports on the quality of sewage influent and effluent; Boston Harbor and its tributary rivers, and Massachusetts Bay.

FY16 Goals:

- Develop and manage an improved monitoring program for Boston Harbor and Mass Bay, reflecting relevant current concerns and long-term interests of the area.
- Provide technical and scientific guidance in the development of the EPA-required CSO performance assessment.
- Respond to EPA and DEP NPDES regulatory changes and program initiatives.

- Develop and implement a Reservoir Contaminant monitoring program, as well as a 24/7 Contaminant response program including alarms, consequence management procedures, on-call staffing, and a mobile WQ trailer.
- Develop and implement a 24/7 Contaminant response program including alarms, consequence management procedures, on-call staffing, and a mobile WQ trailer.
- Complete the final year (of three years) community sampling required under the EPA Unregulated Contaminant Monitoring Rule 3 program, ending in December 2015.

FY16 Major Initiatives:

- Explore modification of the Ambient Monitoring Plan to better address issues of emerging concern involving potential impacts of the outfall. This involves working with regulators and their Outfall Monitoring Science Advisory Panel (OMSAP) to review the goals and monitoring questions underlying the Ambient Monitoring Plan, which is required by DITP's NPDES permit.
- Working with staff from Planning and Operations Support, plan CSO performance assessment, including ongoing water quality monitoring. This is the next phase of the Long-term CSO Control Plan, which calls for three years of assessment before 2020 to ensure that the goals of the plan are met. The water quality standards variances for the Charles River and Mystic River require such water quality monitoring.
- MWRA is jointly funding a project with MIT Sea Grant in which U/Mass Boston researchers will develop methods to extract water quality data (algae, water clarity) from satellite images collected by the LANDSAT program run by US Geological survey.
- Work with researchers from the University of Massachusetts/Boston to develop methods to pinpoint bacterial sources to beaches, to help determine if beach closures result from human waste or from pets, wildlife, or other sources.
- Staff are working with researchers from the University of Maine and Northeastern Regional Association of Coastal and Ocean Observing Systems (NERACOOS) to provide five-year funding for the NERACOOS program, including an oceanographic buoy in the Massachusetts Bay partially funded by MWRA. This funding plan would mean substantial reductions in MWRA's level of support starting in FY17.
- Sanitary sewer overflows (SSOs) are rare but must be reported quickly and accurately; there is also public interest in this information. Staff have been working with Field Operations, Planning, MIS, and Public Affairs on a system to more quickly gather data, make accurate volume estimates, and report SSO information to regulators and the public.
- Replace and enhance monitoring capabilities on the Wachusett Reservoir. This includes new profiling buoys with both water quality and petroleum sensor technology, a towable petroleum sonde, and both water quality and petroleum handheld sondes. Staff are working with MA DCR to design, procure,

install, and activate a year-round, all-day monitoring shed at the Route 12 Bridge, which will provide both routine water quality information and potential contaminant detection.

- Develop and train staff on emergency response procedures for reservoir sampling events. Staff are also training in Incident Command System (ICS) protocols, procedures, and practices to aid in integration of service in the case of an emergency event.
- Monitor algal toxins and adapt the program to the rapidly changing regulatory landscape of this current issue.
- Roll out an On-Call Rotation for contaminant monitoring response technicians. This program involves field sampling and chemistry training as well as Contaminant Warning System monitoring hardware and software familiarization. Field response availability will extend to all-year, all-day coverage.

FY15 Accomplishments:

- Permits – Submitted permit renewals for Cosgrove and Oakdale hydroelectric facilities. Submitted successful applications to DEP for treatment works modification permit, for Clinton influent gates, and for Clinton phosphorus removal. Submitted routine monthly, quarterly, and annual reports, and required notifications under Part II of permits, DITP blending order, and Clinton copper order. Submitted successful applications for NACWA Peak Performance awards for DITP and Clinton.
- Several new draft or final EPA regulations required review and analysis of impact on MWRA. These included draft stormwater permits, “Clean Waters Rule”, recreational water quality criteria, human health water quality criteria, “sufficiently sensitive” rule, and proposed new pathogen indicators. In addition, reviewed revisions to DEP wastewater regulations to ensure existing procedures comply with the regulation. Analyzed historical wastewater bacteria data to identify potential issues in achieving adequate disinfection and compliance with newly proposed recreational water quality limits.
- Implemented the UV disinfection report for regulatory compliance. Performing Intensity-Time disinfection reporting for both Carroll Water Treatment Plant and Brutsch Water Treatment Facility.
- All permit-required monitoring was successfully completed in FY15. Staff presented the findings of MWRA’s evaluations of two FY15 Contingency Plan threshold exceedances to regulators and OMSAP, which concurred that they resulted from natural causes unrelated to outfall discharge. Along with Mystic River Watershed Association (MyRWA), worked with EPA to improve its grading system for the Mystic River, using MWRA and MyRWA data to clarify that water quality in the main stem of the river meets standards most of the time, while water quality problems remaining in tributary streams are from illicit sewer discharges to storm drain systems and urban stormwater runoff, rather than CSOs.

Budget Highlights:

- The FY16 Final Budget is \$5.1 million, an increase of \$829,000 or 19.4%, from FY15 Actual Spending.

- \$3.0 million for **Wages & Salaries**, essentially level-funded with FY15 Actual Spending. The budget funds 33 positions offset by a 2% vacancy rate to reflect the likely pace of hiring for backfilling vacant positions.
- \$50,000 for **Ongoing Maintenance**, to fund parts and maintenance for the drinking water Contaminant Monitoring System and S::CAN drinking water analysis equipment. FY15 Actual Spending was higher due to the purchase of a mobile S:CAN unit budgeted in FY14.
- \$1.6 million for **Professional Services**, \$275,000 or 2.3% more than FY15 Actual Spending. \$100,000 of this additional funding is for a special study by the University of Massachusetts/Amherst on railroad contaminants. The remainder of the funding is for as-needed task orders related to red tide testing. The FY16 Final Budget includes \$1.2 million for laboratory testing and analysis in support of MWRA's Harbor and Outfall Monitoring (HOM) Program, including Cape Cod Bay monitoring; and \$134,000 covers contracts for the following activities which are co-funded through cost-sharing arrangements:
 - o University of Maine's buoy off Cape Ann; instruments measuring algae and other water-quality indicators
 - o Bays Eutrophication Model maintenance
 - o Study of satellite imaging to measure water quality.

The FY16 Final Budget continues to reflect approximately \$840,000 in annual savings due to the reduction in scope of HOM monitoring that took place in 2011 through 2013 based on favorable findings of many years of monitoring data and regulatory approval.

- \$389,000 for **Other Materials**, an increase of \$354,000 from FY15 Actual Spending which is needed to support the addition of security-related purchases in the water system including a concrete hut to construct at Wachusett Reservoir and ten sondes.
- \$112,000 for **Other Services**, level funded with the FY15 Actual Spending. This funds professional memberships and Verizon communication costs related to the Contaminant Monitoring System.

LABORATORY SERVICES

FY16 Final Current Expense Budget							
LABORATORY SERVICES							
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16		
WAGES & SALARIES	\$ 4,113,753	\$ 4,200,693	\$ 4,249,159	\$ 4,543,349	\$ 294,190	6.9%	
OVERTIME	71,746	61,699	99,170	61,706	(37,464)	-37.8%	
FRINGE BENEFITS	512	505	873	600	(273)	-31.3%	
CHEMICALS	-	-	-	-	-	-	
UTILITIES	23,032	27,689	22,881	27,205	4,324	18.9%	
ONGOING MAINTENANCE	252,330	248,489	201,737	307,396	105,659	52.4%	
TRAINING & MEETINGS	141	5,176	3,679	4,000	321	8.7%	
PROFESSIONAL SERVICES	130,607	156,185	169,449	181,445	11,996	7.1%	
OTHER MATERIALS	889,095	827,126	1,097,396	1,028,498	(68,898)	-6.3%	
OTHER SERVICES	82,390	93,753	88,054	92,652	4,598	5.2%	
TOTAL	\$ 5,563,606	\$ 5,621,316	\$ 5,932,398	\$ 6,246,851	\$ 314,453	5.3%	

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 (SDWA), 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 (DITP), 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 (MassDEP).

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

FY16 Goals:

The DLS performance goals are:

- > 95% of lab results completed on-time.
- < 9 days average turnaround time.
- > 98% of quality control tests within specifications.
- Complete targeted laboratory work consistent with staffing level (goal 100%).

FY16 Major Initiatives:

- **Ethics Training** - Expand laboratory ethics and data integrity training to meet upcoming DEP laboratory certification requirements.

- **NPDES Permits** - Provide laboratory data and consulting to wastewater operations and ENQUAL on Clinton or Deer Island draft or final NPDES permits.
- **Electronic Laboratory Notebook (ELN)** - Implement ELN software on wireless tablet computers at three of the water quality laboratory locations.
- **Laboratory Renovation Projects** - Three major projects continue in FY16. These include CP-7 to replace the roof and HVAC system at Southboro Lab; modifications at the Quabbin Lab to resolve plumbing and other issues; and replacement of the HVAC system and fume hoods at the Central Laboratory.

FY15 Accomplishments:

DLS continued to provide high-quality, responsive, timely, and cost-effective laboratory services to our clients in compliance with strict testing guidelines required by all regulatory programs and permits, including the Safe Drinking Water Act and NPDES permits. DLS's performance versus key goals in FY15 was as follows:

- 97% of lab results were completed on time versus goal of > 95%
- Turnaround time averaged 5.9 days versus goal of < 9 days
- 98.1% of quality control tests were within specifications versus goal > 98%
- Completed 96.2% of targeted laboratory work with slightly reduced staffing (average 94% of budget).

Several projects and activities in FY15 are noteworthy including;

- **DEP Certification Audits** - In FY15, the Chelsea and Southboro Labs passed DEP's bi-annual on-site certification audit.
- **Proficiency Test (PT) Samples** - DLS received a passing score of 98.8% for all PT parameters on the first try. DEP certification requires correct results for each certified parameter in proficiency test (PT) samples.
- **Ethics and Lab Safety Required Training** - All lab staff participated in required training for Right To Know, laboratory safety, hazardous waste, and laboratory ethics.
- **Mobile Laboratory** -The Mobile Lab Project Manager completed the analytical demonstration of capability for the two major instruments for testing samples for metals and organics and participated in several field drills.
- **Cyanide Analysis Methods** - DLS purchased a new cyanide instrument that employs in-line digestion/distillation and selective/sensitive detection by amperometry. DLS obtained DEP certification for the new method and commenced implementation. DLS staff also published a paper on use of the equipment in an industry journal, successfully submitted another paper for publication in another journal, and presented the information at a national conference.

Budget Highlights:

- The FY16 Final Budget is \$6.2 million, an increase of \$314,000 or 5.3% from FY15 Actual Spending primarily in Wages and Salaries and Maintenance.
- \$4.5 million for **Wages and Salaries**, an increase of \$294,000 or 6.9% from FY15 Actual Spending due to wage increases and the inclusion of more positions in FY16 based on the Lab's projected needs. The FY16 Final Budget funds 55 permanent positions.
- \$27,000 for **Utilities**, an increase of \$4,000 or 18.9% from FY15 Actual Spending. This funding covers the purchase of gases and cryogenic liquids used for various laboratory instruments.
- \$307,000 for **Maintenance**, an increase of \$106,000 or 52.4% from FY15 Actual Spending. The increase is primarily due to significant underspending in FY15 resulting from delays in awarding instrument service contracts, which have been awarded in early FY16.
- \$4,000 for **Training and Meetings**, an increase of \$321 or 8.7% from FY15 Actual Spending. The funding covers EPA Environmental Laboratory Advisory Board Forum on Lab Accreditation/National Environmental Monitoring Conference.
- \$181,000 for **Professional Services**, an increase of \$12,000 or 7.1% from FY15 Actual Spending based on projected need and price increases. 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).
- \$1 million for **Other Materials**, a decrease of \$69,000 or 6.3% from FY15 Actual Spending primarily for increased projected needs in FY16. This line item includes \$680,000 for laboratory supplies and \$300,000 for laboratory instrument replacements.
- \$93,000 for **Other Services**, an increase of \$5,000 or 5.2% from FY15 Actual Spending. This 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.

PLANNING

FY16 Final Current Expense Budget							
PLANNING							
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16		
WAGES & SALARIES	\$ 2,472,853	\$ 2,558,048	\$ 2,722,668	\$ 2,900,686	\$ 178,018	6.5%	
OVERTIME	681	-	-	1,500	1,500	-	
FRINGE BENEFITS	11	-	5	50	45	900.0%	
CHEMICALS	-	-	-	-	-	-	
UTILITIES	63	-	-	-	-	-	
ONGOING MAINTENANCE	188,733	167,447	254,264	195,200	(59,064)	-23.2%	
TRAINING & MEETINGS	7,590	10,958	10,696	8,500	(2,196)	-20.5%	
PROFESSIONAL SERVICES	1,631	3,100	3,100	3,100	-	0.0%	
OTHER MATERIALS	133,195	163,506	153,802	170,875	17,073	11.1%	
OTHER SERVICES	180,132	178,209	189,348	197,992	8,644	4.6%	
TOTAL	\$ 2,984,888	\$ 3,081,268	\$ 3,333,883	\$ 3,477,903	\$ 144,020	4.3%	

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 Department's primary responsibilities are as follows:

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

System Planning and Renewal - Staff with expertise in engineering and planning are responsible for water and wastewater system master planning, infrastructure needs assessment, and capital project development. This work is done in coordination with staff across MWRA. Key work includes:

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

Regulatory and Policy Matters - Staff work with various regulatory entities to advocate for cost-effective rule setting that protects the environment and promotes public health. Senior staff members also actively work with industry associations and other groups with agendas consistent with MWRA's to advance regulations that make environmental and economic sense. Senior staff conduct strategic policy research on a broad range of topics. Staff also conduct public health research and reports on potable water quality through production of the annual regulatory-required Consumer Confidence Report (CCR). Staff also coordinates with DCR on watershed protection initiatives.

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.

Meter Data – Staff 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.

FY16 Goals:

- Provide cost-effective and timely mapping, modeling, data analysis, and regulatory review services to support decision-making on operational, planning, environmental, regulatory, and infrastructure issues.
- Direct and manage MWRA's planning processes as assigned including master planning, business planning, and water system expansion planning.
- Oversee and manage MWRA's technical community support programs primarily in the areas of sewer I/I control/reduction and water leak detection/demand management.
- In conjunction with the Office of the Executive Director and Public Affairs, serve as the Operations Division's lead on regulatory and policy matters potentially affecting MWRA's water and wastewater systems.

FY16 Major Initiatives:

- Complete scope development, coordinate within MWRA and with Advisory Board, and procure consultant services for wastewater meter upgrade project.
- Provide computer modeling support for major capital programs including, North System Pumping Station Valve Replacement, Metropolitan Tunnel Redundancy Project, and CSO evaluation

- Complete reports on sea level rise adaptation, green house gas tracking and energy efficiency efforts, and develop and maintain a sustainability section on MWRA's web page.
- Update the MWRA wastewater maps, and produce an updated atlas. Participate in efforts to update selected water record plans and real estate records.

FY15 Accomplishments:

- Managed the process for developing and producing MWRA's FY16-FY20 Business Plan which was approved by MWRA's Board of Directors in March, 2015.
- Distributed \$16.3 million in grants and \$10.4 million in no-interest loans which is offset by repayment of prior-period loans of \$9.2 million which resulted in net spending of \$17.5 million.
- Distributed \$20.2 million in Local Water Pipeline Assistance Program loans to member communities offset by repayment of prior-period loans of \$21.7 million which resulted in total net spending of (\$1.5) million.
- Produced and distributed the 2014 annual water system Consumer Confidence Report to 850,000 households in 41 municipalities in MWRA's service area.

Budget Highlights:

- The FY16 Final Budget is \$3.5 million, an increase of \$144,000 or 4.3%, from FY15 Actual Spending primarily due to wage increases and more filled positions in FY16 versus FY15.
- \$2.9 million for **Wages and Salaries**, an increase of \$178,000 or 6.5%, from the FY15 Actual Spending. The FY16 Final Budget includes funding for 30 permanent positions. The budget also includes a 2% vacancy rate to reflect the likely pace of hiring for vacant positions. The budget increase is primarily due to wage increases associated with collective bargaining agreements. The FY16 Final Budget also includes \$13,000 for Stand-by Pay to support employees on call for Telog issues, \$10,000 for two summer interns to assist with GIS work and policy research, and \$3,000 for Temp Employees.
- \$195,000 for **Maintenance**, a decrease of \$59,000 or 23.2%, from FY15 Actual Spending based on projected needs. The FY16 Final Budget has \$70,000 in Special Equipment Services for water meter flow testing, \$60,000 for wastewater meter verification, \$60,000 for wastewater community testing temporary metering, and \$5,000 for telog software maintenance.
- \$8,500 for **Training and Meetings**, a decrease of \$2,000 or 20.5% from FY15 Actual Spending. The budget covers participation in training and conferences primarily focused on water quality regulations and geographic information systems.

- \$3,000 for **Professional Services**, which is level funded with FY15 Actual Spending and covers costs associated with the translation of the Consumer Confidence Report (CCR) and also programming of the GIS user interface.
- \$171,000 for **Other Materials**, an increase of \$17,000 or 11.1% compared to FY15 Actual Spending primarily due to anticipated postage increases. This line item includes funding of \$143,000 for postage and mailing of the CCR, \$15,000 for water conservation kits, \$10,000 for mapping supplies, \$2,000 for office supplies, \$1,000 for vehicle expenses, and \$500 for work clothes for the employees in our Meter Data section.
- \$198,000 for **Other Services**, an increase of \$9,000 or 4.6% compared with FY15 Actual Spending. The funding in this line item includes \$118,000 for telephones expenses to support meter operations, \$60,000 for printing the CCR, \$18,000 for printing water conservation and other informational brochures, \$2,000 for Memberships and Dues, and \$1,000 for Police Details.



Law Division
Budget

LAW DIVISION

Law

Legal Reviews
Litigation
Court Order Compliance
Environmental
Regulation

FY16 Final Current Expense Budget						
LAW DIVISION						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 1,541,984	\$ 1,553,270	\$ 1,642,863	\$ 1,751,658	\$ 108,795	6.6%
OVERTIME	-	-	572	-	(572)	-100.0%
FRINGE BENEFITS	-	-	-	-	-	-
CHEMICALS	-	-	-	-	-	-
UTILITIES	-	-	-	-	-	-
ONGOING MAINTENANCE	-	-	-	-	-	-
TRAINING & MEETINGS	890	3,438	787	1,000	214	27.1%
PROFESSIONAL SERVICES	60,014	90,548	88,186	116,000	27,814	31.5%
OTHER MATERIALS	3,656	5,160	4,892	5,984	1,092	22.3%
OTHER SERVICES	24,400	23,625	26,653	25,947	(706)	-2.6%
TOTAL	\$ 1,630,945	\$ 1,676,041	\$ 1,763,952	\$ 1,900,589	\$ 136,637	7.7%

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.

FY16 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 FY16 Budget is \$1.9 million, an increase of \$137,000 or 7.7%, as compared to FY15 actual spending.
- \$1.8 million for **Wages and Salaries**, an increase of \$108,000 or 6.6%, as compared to FY15 actual spending, mainly due to cost of living adjustments and the addition of one staff member. The budget funds 17 positions, one position more than in FY15.
- \$116,000 for **Professional Services**, an increase of \$28,000 or 31.5%, as compared to FY15 actual spending. Funding in the line item supports projected need for outside legal services during FY16.
- \$26,000 for **Other Services**, a decrease of \$1,000 or 2.6%, as compared to FY15 actual spending. Funding in this line item supports legal database administrative fees and professional membership and dues for the legal staff.



Administration Division Budget

ADMINISTRATION DIVISION

Administration

Director's Office
Facilities Management
Fleet Services
Human Resources
MIS
Procurement
Real Property

FY16 Final Current Expense Budget						
ADMINISTRATION						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 11,791,282	\$ 11,913,368	\$ 11,939,698	\$ 12,930,096	\$ 990,397	8.3%
OVERTIME	69,332	66,975	130,645	60,714	(69,931)	-53.5%
FRINGE BENEFITS	17,477,887	18,017,803	18,244,973	19,264,138	1,019,165	5.6%
WORKERS' COMPENSATION	2,114,701	2,311,448	2,307,123	2,343,000	35,877	1.6%
CHEMICALS	-	-	-	-	-	-
UTILITIES	97,516	87,533	98,846	106,026	7,180	7.3%
ONGOING MAINTENANCE	3,149,241	4,906,970	3,942,483	3,727,532	(214,951)	-5.5%
TRAINING & MEETINGS	197,021	176,073	226,456	202,516	(23,941)	-10.6%
PROFESSIONAL SERVICES	626,031	534,899	491,663	611,602	119,939	24.4%
OTHER MATERIALS	1,110,797	1,331,179	1,074,880	1,112,602	37,722	3.5%
OTHER SERVICES	3,156,191	3,023,997	3,304,073	3,283,134	(20,939)	-0.6%
TOTAL	\$ 39,789,999	\$ 42,370,243	\$ 41,760,840	\$ 43,641,359	\$ 1,880,519	4.5%

FY16 Final Current Expense Budget						
ADMINISTRATION by Department						
DEPARTMENT	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
ADMIN DIRECTOR'S OFFICE	\$ -	-	-	133,720	133,720	-
HUMAN RESOURCES	21,805,555	22,520,179	22,797,542	23,846,451	1,048,909	4.6%
MIS	9,115,523	10,325,125	10,162,225	10,744,786	582,561	5.7%
FACILITIES MANAGEMENT	2,395,647	2,376,064	2,312,496	2,286,889	(25,607)	-1.1%
FLEET SERVICES	1,929,142	1,947,022	1,775,292	2,017,345	242,052	13.6%
PROCUREMENT	3,783,562	4,550,834	4,064,066	3,949,577	(114,490)	-2.8%
REAL PROPERTY / ENVIRONMENTAL MGMT	760,570	651,020	649,218	662,592	13,374	2.1%
TOTAL	\$ 39,789,999	\$ 42,370,243	\$ 41,760,840	\$ 43,641,359	\$ 1,880,519	4.5%

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

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

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

FY16 Goals:

- Manage and coordinate the Authority's support service functions.
- 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.

FY16 Initiatives

- Continue the implementation of the Strategic IT Study.
- Upgrade employment application program to enhance applicant database and expedite critical hiring.

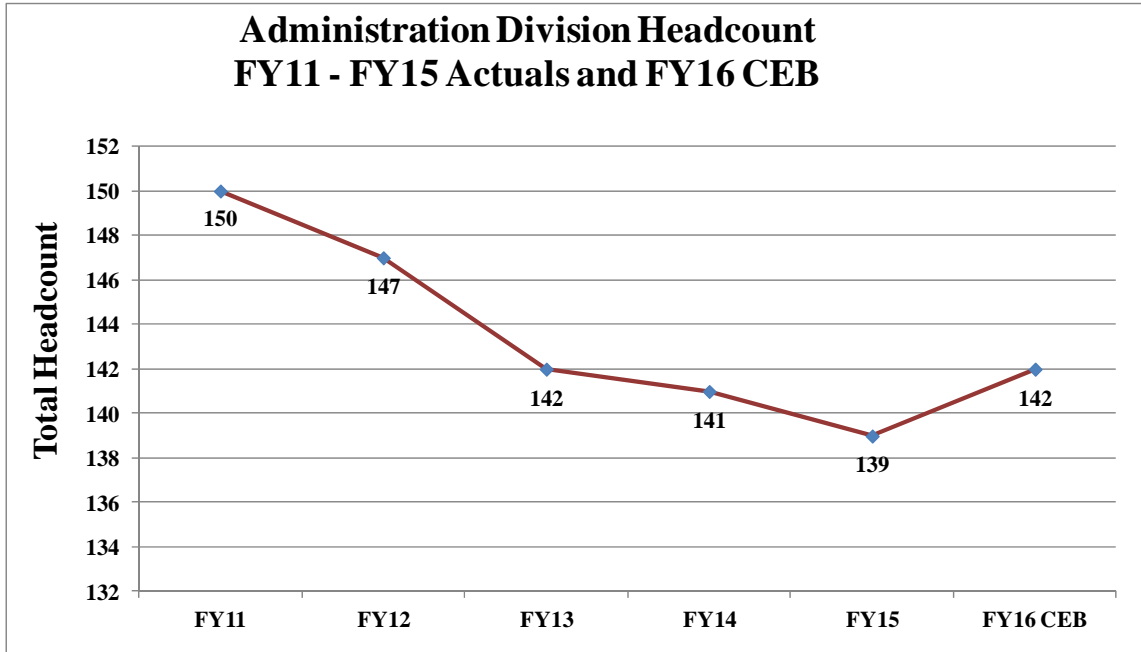
FY15 Accomplishments:

- Continued to work with the landlord to implement facility improvements as provided in our lease agreements for CNY headquarters.
- Developed specifications for 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.
- The Authority continues to fuel diesel powered vehicles/equipment with bio-diesel. The MWRA is rated as one of the largest bio-fuel users by the Massachusetts Alternative Fuel Coalition (MAFC).
- Continued implementation of Automated Vehicle Locator (AVL) Tracking System in MWRA vehicles.
- 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.
- Began collecting the required acknowledgement of the State Ethics Commission's Summary of the Conflict of Interest Law from all employees.

- Competitively bid CY14 Renewable Energy Portfolio Standard certificates which resulted in FY15 revenues of \$330,000 (Class II). In addition, received FY15 revenues of \$1.0 million from forward marketing of CY14 (Class I and Solar) Renewable Portfolio Standards (RPS) certificates.
- Awarded the following major contracts in FY15: DITP Cryogenics Chillers Replacement; Quabbin Power, Communication and Security Improvements Design; DITP Clarifier Rehab Phase II Design; Construction WASM 36; Gate, Siphon and Floatables Controls 003; Boston Low Service Beacon Street Line Design; DITP Thermal Power Plant BMS System Upgrade; VFD Additions DITP Secondary Oxygen Reactor Batteries A, B and C, and North Main Pump Station – Winthrop Terminal Facility ESDC/REI ; Instrumentation Systems Services; Fore River Railroad Mainline Adjustment Design; Security Equipment Maintenance and Repair; NPDES Compliance; Leak Detection Survey Services; Section 4 Webster Ave. Pipe and Utility Bridge Replacement; Maximo Upgrade; Adams St. Grade Crossing and Cattlepass Bridge, Upgrades to Chelsea Screen House, Southborough Water Quality Laboratory Upgrades; Electric Power Profile Accounts; Insurance Renewal.
- Advertised or received bids/proposals/statements for the following: Reading Extension Sewer Rehabilitation Design; Section 4 Webster Ave. Pipe and Utility Bridge Replacement; Maximo Upgrade; Adams St. Grade Crossing and Cattlepass Bridge; Upgrades to Chelsea Creek Screen House; Upgrades to Chelsea Screen House ESDC; Nut Island Headworks Odor Control Evaluation; Electric Power Profile Accounts; Insurance Renewal; DITP Fuel Oil System Upgrade; Alewife Brook Pump Station Rehabilitation; Electric Power DITP; Wachusett Aqueduct Pump Station.
- Recycled 1,240 batteries, 7.43 tons of paper, 1220.36 tons of scrap metal (includes stainless steel and aluminum), and 2,480 pounds of brass and copper, generating \$64,000 in revenues.

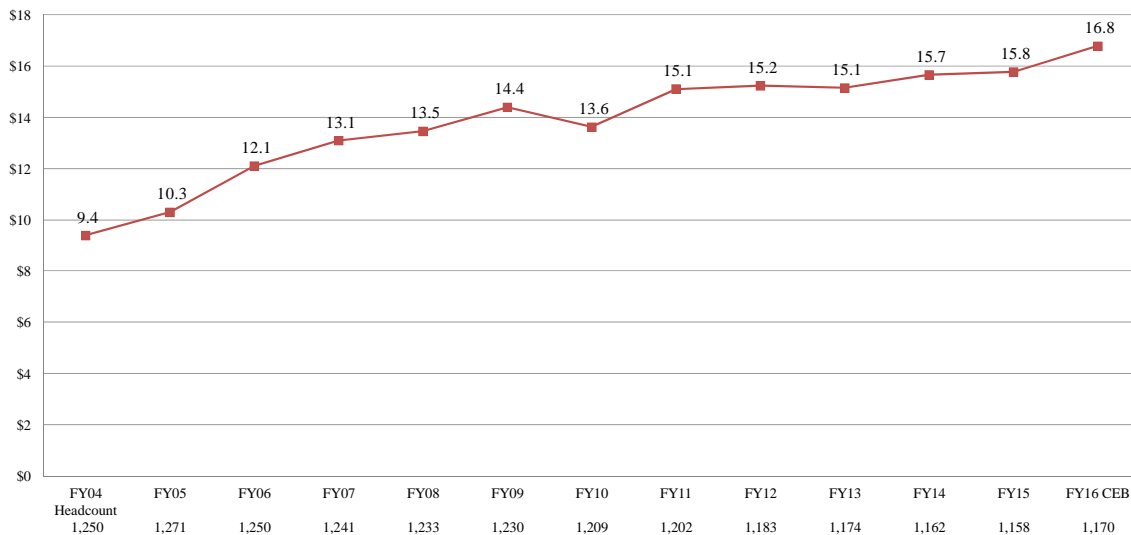
Budget Highlights:

- The FY16 Final Budget is \$44.0 million, an increase of \$1.9 million or 4.5%, from FY15 Actual Spending.
- \$12.9 million for **Wages and Salaries**, and increase of \$990,000 or 8.3% mainly due to cost of living adjustments and funding 3 positions more than in FY15. The budget funds 142 positions.



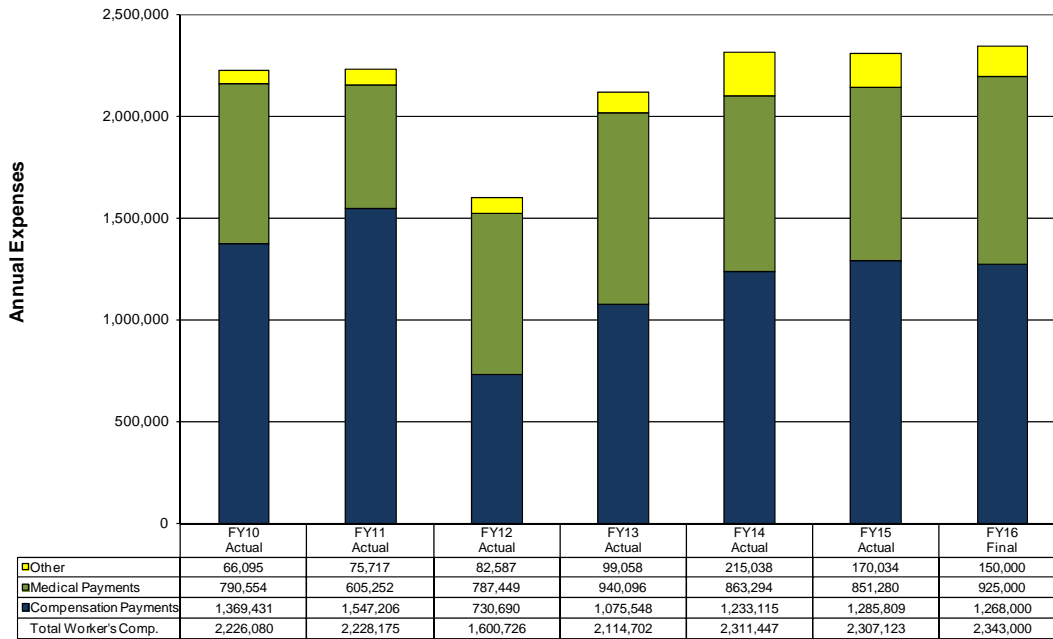
- \$61,000 for **Overtime**, a decrease of \$70,000 or 53.5% from FY15 Actual Spending. FY15 spending was unusual due to the severe winter weather and the amount of snowplowing that was needed.
- \$19.3 million for **Fringe Benefits**, an increase of \$1.0 million of 5.6% from Actual Spending. The main reason for the increase is the continuing hike in health insurance cost.

**Health Insurance Spending
(In Millions)**



- \$2.3 million for **Workers' Compensation**, an increase of \$36,000 or 1.6% from FY15 Actual Spending. The Workers' Compensation is determined by using a three-year average of actual and projected spending.

**Workers' Compensation Expenses
FY10 - FY15 Actual, and FY16 Final**



- \$106,000 for **Utilities**, an increase of \$7,000 or 7.3% due to increased pricing.
- \$3.7 million for **Maintenance**, a decrease of \$215,000 or 5.5% from FY15 Actual Spending due to lower than projected need in FY16 based on anticipated work load.
- \$203,000 for **Training**, a decrease of \$24,000 or 10.6% from FY15 Actual Spending. The training budget supports the training needs of the division, particularly the MIS department.
- \$612,000 for **Professional Services**, an increase of \$120,000 or 24.4% from FY15 Actual Spending. Funding The FY16 Budget includes Professional Development and Technical Training, Workers' Compensation Claims Administration and Legal Services, Arbitrators and Arbitration Expenses, Medical Evaluation Services, Employee Assistance Program, and for Specialized Investigation Services.
- \$1.1 million for Other Materials, and increase of \$38,000 or 3.5% over FY15 Actual Spending. Included in the Other Material funding is \$461,000 for vehicle expenses mainly fuels, \$425,000 for the divisional computer hardware needs, and \$115,000 for office supplies.
- \$3.3 million for **Other Services**, a decrease of \$21,000 or 0.6% from FY15 Actual Spending. Funding in FY16 mainly covers Space/Lease Rentals for the Charlestown Navy Yard Headquarters of \$1.6 million and Telecommunications expenses for all facilities and security data lines of \$1.0 million.

DIRECTOR'S OFFICE

FY16 Final Current Expense Budget					
ADMINISTRATION DIVISION DIRECTOR'S OFFICE					
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16
WAGES & SALARIES	\$ -	\$ -	\$ -	\$ 133,720	\$ 133,720
OVERTIME	-	-	-	-	-
FRINGE BENEFITS	-	-	-	-	-
CHEMICALS	-	-	-	-	-
UTILITIES	-	-	-	-	-
ONGOING MAINTENANCE	-	-	-	-	-
TRAINING & MEETINGS	-	-	-	-	-
PROFESSIONAL SERVICES	-	-	-	-	-
OTHER MATERIALS	-	-	-	-	-
OTHER SERVICES	-	-	-	-	-
TOTAL	\$ -	\$ -	\$ -	\$ 133,720	\$ 133,720

The **Administration 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 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.

FY16 Goals:

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

Budget Highlights:

- This budget was previously combined with the Finance Division Director's Office and is new for FY16 CEB.

FACILITIES MANAGEMENT

FY16 Final Current Expense Budget						
FACILITIES MANAGEMENT						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 409,142	\$ 421,954	\$ 426,512	\$ 430,356	\$ 3,844	0.9%
OVERTIME	23,481	28,724	44,493	24,154	(20,339)	-45.7%
FRINGE BENEFITS	18	8	85	-	(85)	-100.0%
CHEMICALS	-	-	-	-	-	-
UTILITIES	95,858	85,250	96,780	103,526	6,746	7.0%
ONGOING MAINTENANCE	13,087	148,881	11,618	30,900	19,282	166.0%
TRAINING & MEETINGS	-	-	-	-	-	-
PROFESSIONAL SERVICES	9,350	8,700	-	7,500	7,500	-
OTHER MATERIALS	15,271	56,879	57,118	55,750	(1,368)	-2.4%
OTHER SERVICES	1,829,441	1,625,668	1,675,890	1,634,703	(41,187)	-2.5%
TOTAL	\$ 2,395,647	\$ 2,376,064	\$ 2,312,496	\$ 2,286,889	\$ (25,607)	-1.1%

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.

FY16 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.

FY15 Accomplishments:

- Continued to work with the landlord to implement facility improvements as provided in our lease agreements for CNY headquarters.

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

Budget Highlights:

- The FY16 Final Budget is \$2.3 million, a decrease of \$26,000 or 1.1%, as compared with the FY15 Actual Spending.
- \$430,000 for **Wages and Salaries**, an increase of \$4,000 or 0.9%, as compared to FY15 Actual Spending, mainly due to contractual increases. The budget supports seven positions.
- \$24,000 for **Overtime**, a decrease of \$20,000 or 45.7%, as compared to FY15 Actual Spending, mainly due to Overtime spending in FY15 as a result of the severe winter weather.
- \$104,000 for **Utilities**, an increase of \$7,000 or 7.0%, as compared to FY15 Actual Spending, mainly due to increased electricity pricing.
- \$31,000 for **Ongoing Maintenance**, an increase of \$19,000 or 166.0%, as compared to FY15 Actual Spending. 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.
- \$8,000 for **Professional Services**, an increase of \$8,000 or 100%, as compared to FY15 Actual Spending. Funding will support as-need professional services which arise during the year.
- \$56,000 for **Other Materials**, a decrease of \$1,000 or 2.4%, as compared to FY15 Actual Spending. This line item includes funding for postage, supplies, furniture, and equipment.
- \$1.6 million for **Other Services**, a decrease of \$41,000 or 2.5%, as compared to FY15 Actual Spending. This item includes funding for rental and operating costs for CNY headquarters facility and the Marlboro Records Center and Warehouse space.

FLEET SERVICES

FY16 Final Current Expense Budget						
FLEET SERVICES						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 716,386	\$ 733,745	\$ 735,492	\$ 781,860	\$ 46,368	6.3%
OVERTIME	11,952	6,711	8,728	13,000	4,272	48.9%
FRINGE BENEFITS	158	8	120	250	130	108.3%
CHEMICALS	-	-	-	-		
UTILITIES	1,658	2,283	2,066	2,500	434	21.0%
ONGOING MAINTENANCE	647,629	629,236	559,977	710,000	150,023	26.8%
TRAINING & MEETINGS	-	42,000	38,850	42,000	3,150	8.1%
PROFESSIONAL SERVICES	-	-	-	-	-	-
OTHER MATERIALS	550,563	532,507	429,160	466,135	36,975	8.6%
OTHER SERVICES	796	532	900	1,600	700	77.8%
TOTAL	\$ 1,929,142	\$ 1,947,022	\$ 1,775,292	\$ 2,017,345	\$ 242,052	13.6%

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.

FY16 Goals:

- Continue to cost effectively maintain the Authority's fleet of vehicles and pieces of equipment.
- Integrate more alternative fueled vehicles into the authority's fleet.
- Continue to install Automatic Vehicle Locators (AVL) devices in all authority vehicles.

FY15 Accomplishments:

- Developed specifications for 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.
- The Authority continues to fuel diesel powered vehicles/equipment with bio-diesel. MWRA in being rated as one of the largest bio-fuel users by the Massachusetts Alternative Fuel Coalition (MAFC).
- Prepared documentation for the surplus sale of 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.

Budget Highlights:

- The FY16 Proposed Budget is \$2.0 million, an increase of \$242,000 or 13.6%, as compared to FY15 Actual Spending.
- \$782,000 for **Wages & Salaries**, an increase of \$46,000 or 6.3%, as compared to FY15 Actual Spending mainly due to due contractual increases. The final budget supports 11 positions.
- \$710,000 for **Ongoing Maintenance**, an increase of \$150,000 or 26.8%, as compared to FY15 Actual Spending. The budget includes funds for automotive materials and services to maintain MWRA's vehicle fleet.
- \$466,000 for **Other Materials**, an increase of \$37,000 or 8.6%, as compared to FY15 Actual Spending. The FY16 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

FY16 Final Current Expense Budget						
HUMAN RESOURCES						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 1,808,014	\$ 1,841,890	\$ 1,784,493	\$ 1,802,571	\$ 18,078	1.0%
OVERTIME	21	71	209	-	(209)	-100.0%
FRINGE BENEFITS	17,477,396	18,017,283	18,243,431	19,263,888	1,020,457	5.6%
WORKERS' COMPENSATION	2,114,701	2,311,448	2,307,123	2,343,000	35,877	1.6%
CHEMICALS	-	-	-	-	-	-
UTILITIES	-	-	-	-	-	-
ONGOING MAINTENANCE	-	-	-	-	-	-
TRAINING & MEETINGS	2,097	4,703	4,119	3,263	(856)	-20.8%
PROFESSIONAL SERVICES	374,418	311,329	435,440	399,102	(36,338)	-8.3%
OTHER MATERIALS	15,944	19,542	11,095	16,845	5,750	51.8%
OTHER SERVICES	12,964	13,913	11,632	17,782	6,150	52.9%
TOTAL	\$ 21,805,555	\$ 22,520,179	\$ 22,797,542	\$ 23,846,451	\$ 1,048,909	4.6%

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. 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.

FY16 Goals:

- Attract and retain a qualified high-performance workforce, hire and promote qualified minority, female, and veteran employees, and offer a competitive total compensation package (salary and benefits) to all employees.
- Maintain effective relationships with the unions representing the MWRA workforce while protecting and enhancing management flexibility. Ensure that collective bargaining objectives are met, support MWRA initiatives by designing and implementing appropriate labor relations strategies, 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.

FY16 Initiatives:

- Upgrade employment application program to enhance applicant database and expedite critical hiring.
- Develop additional specialized recruitment sources to attract women, minorities, and veterans for difficult to fill positions including expanding social network recruiting capabilities.
- Expand supervisory, professional, and career development training programs necessary to support succession planning initiatives including developing additional job shadowing training programs.
- Develop a model to establish a knowledge transfer program for each department.
- Negotiate new contracts for dental insurance and Employee Assistance Program (EAP).
- Continue to develop and expand summer intern program.
- 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.

FY15 Accomplishments:

- Negotiated successor collective bargaining agreements with all five collective bargaining unions of the MWRA.
- Continued to support the agency's efforts in developing and implementing succession planning activities in anticipation of an increase in retirements over the next several years.
- Investigated complaints of violations of MWRA policies and Code of Conduct as necessary.
- Updated and communicated policies associated with harassment prevention and non-discrimination.
- Completed a variety of professional and technical training to MWRA employees including Confined Space Entry, Wind Turbine Tower Climbing Safety, Certified Water/Wastewater Maintenance Technician (IMI), Hoisting License Mandatory Refresher Training, Wastewater & Water Operator Exam Prep, OSHA 24-Hour Hazmat Technician Refresher, OSHA 10-Hour Construction Safety, Ultra-Violet Vendor Training (Switchgear, I&C Meters, SCADA, Generator), Supervisory Development, Business Writing, Specification Writing and Vehicle Maintenance.
- Provided regular reporting on agency headcount and use of overtime/compensatory time.

Budget Highlights:

- The FY16 Budget is \$23.8 million, an increase of \$1.0 million 4.6% as compared to FY15 Actual Spending.

- \$1.8 million for **Wages and Salaries**, an increase of \$18,000 or 1.0%, as compared to FY15 Actual Spending mainly due to cost of living adjustments. The budget includes funding for 19 positions, 2 fewer than in FY15.
- \$19.3 million for **Fringe Benefits**, an increase of \$1.0 million or 5.6%, as compared to FY15 Actual Spending. The budget includes \$16.8 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.
- \$2.3 million for **Workers' Compensation**, an increase of \$36,000 or 1.6%, as compared to FY15 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.
- \$399,000 for **Professional Services**, a decrease of \$36,000 or 8.3%, as compared to FY15 Actual Spending. The FY16 Budget includes \$155,000 for Professional Development and Technical Training, \$109,000 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)

FY16 Final Current Expense Budget						
MANAGEMENT INFORMATION SYSTEM						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 5,004,036	\$ 4,943,896	\$ 5,048,011	\$ 5,561,979	\$ 513,968	10.2%
OVERTIME	4,220	20,617	45,758	2,810	(42,948)	-93.9%
FRINGE BENEFITS	37	378	893	-	(893)	-100.0%
CHEMICALS	-	-	-	-	-	-
UTILITIES	-	-	-	-	-	-
ONGOING MAINTENANCE	2,326,564	3,299,537	3,078,530	2,986,632	(91,897)	-3.0%
TRAINING & MEETINGS	155,470	121,798	179,569	146,528	(33,041)	-18.4%
PROFESSIONAL SERVICES	230,717	212,705	56,223	200,000	143,777	255.7%
OTHER MATERIALS	413,172	599,185	453,031	459,272	6,241	1.4%
OTHER SERVICES	981,307	1,127,010	1,300,210	1,387,565	87,355	6.7%
TOTAL	\$ 9,115,523	\$ 10,325,125	\$ 10,162,225	\$ 10,744,786	\$ 582,561	5.7%

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.

FY16 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:

- 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.

FY16 Initiatives:

Information Technology Management Program

This program is intended to improve Information Technology (IT) organization and the oversight processes for selecting, implementing and operating IT solutions throughout the MWRA. The FY16 initiatives are as follows:

- Establishment of an Information Technology Steering Committee 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 put in place with the MAXIMO 7.6 upgrade effort through the use of the Control Desk Module.
- In parallel with the ITSM effort, MIS will continue to 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.

Application Improvement Program

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 initiatives for FY2016 area as follows:

Administration and Finance Initiatives

- ***Enterprise Content Management Implementation:*** A component of Enterprise Content Management is underway with the pilot design and implementation of both the Enterprise Vault system archiving application and the Clearwell identification and collection electronic discovery application. These applications will provide the MWRA with rigorous and efficient electronic archiving, disposal processes that will comply with the records retention requirements of the Commonwealth of Massachusetts, improved ability to meet the requirements associated with public records requests and litigation document/discovery production, and improvements in the accessibility of documents throughout the Authority. Worked with e-Vault consultant on best practices for policies and completed two draft default policies on Enterprise Vault Mailbox policy and Vault Desktop policy for review by team members. Conducted three training session for Department Records Managers on the new Active Records Filing Scheme Application. This application was developed and used to collect data for sizing the storage capacity and defining business policies based on record types.
- ***e-Procurement Implementation:*** This project focuses on the implementation of the Contract

Management module from Infor Global Solutions. The focus in FY16 will be on Construction and Professional Services contracts.

- ***Enterprise Resource Planning (ERP) System Upgrades:*** During FY16, upgrades are scheduled for the e-procurement applications infrastructure, Mobile Supply Chain Management (MSCM), and the Business Software, Inc. Tax Factory application. In addition, a comprehensive ERP Upgrade plan will be developed.

Compliance Management Initiatives

- ***E-LAB:*** Phase one of E-LAB project was completed. The Laboratory Information Management System (LIMS) was upgraded to version 6. Phase two of this project, Electronic Laboratory Notebook (ELN) is in development and will be completed in FY2016.
- ***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. The current PIMS application is not compliant with EPA's Cross-Media Electronic Reporting Regulation (CROMERR) requirements. CROMERR requirements were reviewed to determine what modules of PIMS need to be enhanced. Required modifications can be done partially by the vendor and partially by MIS utilizing EPA's shared services. MIS is working to determine scope of required changes to the PIMS application.
- ***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.

System Integration and Data Warehousing 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.
- ***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.

Operations Management Initiative

- ***Computerized Maintenance Management System (CMMS) Enhancements:*** The system is used to manage maintenance activities for Water and Wastewater assets. The MWRA Board of Directors approved the award of the Maximo Upgrade from 5.2 to 7.6 in FY15 Q4; the project is expected to be completed in FY17 Q4. This effort includes:

- Completing the upgrade
 - Consolidating DI and FOD systems into one
 - Implementing four new modules
 - Implementing Control Desk Module as a replacement for Service Desk
- **PI:** The MWRA uses PI to monitor important operating parameters of assets in the field and also facility assets at DITP and CWTP. The current system is running on “end-of-life” hardware and server operating system (OS). The PI 2015 upgrade will monitor the same assets as the old system with much improved functionality and performance. The new system is a multi-tier configuration with servers for the database and application, and desktops for the Processbook and datalink client tools. The new system will be upgraded to a 64 bit OS within a virtual environment and provides high availability features.
 - **Telog:** An update to the Telog Enterprise system was applied. This update provides real-time access of Telog meters to OCC operators and metering staff. Over 150 PI flow, pressure, and gradient tags have been updated to support the migration of Telog meters to wireless communications. The project is expected to be completed by end of FY16 Q2.

Information Security Program

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 FY2016 projects under this program:

- ***Security Infrastructure Review, Upgrade, and Monitoring***
- ***Authority Mobile Application Delivery Implementation***
- ***Secure File Delivery Implementation***
- ***Secure Media Destruction Program Improvements***

Technology Infrastructure Improvement Program

The MWRA currently owns and operates 1,305 desktops, 179 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 TB 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 archive 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.
 - **Campus Wide WIFI:** The MWRA has pockets of wireless access points in Vehicle Maintenance, Warehouse, and Laboratory Services. These systems have limited access, are administered independently, and have no redundancy. The design approach for Campus Wide WIFI is to provide a resilient wireless network at all of the MWRA locations where it is cost effective, can be centrally managed, and that provides redundancy.
 - **Voice-Over-IP (VOIP):** The existing legacy PBX phone systems are approaching the end of support and product life. VOIP is a mature technology and a core component of Unified Communications. Explore VOIP technologies for solution set that offers existing PBX functionality as a minimum.
- **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:** Desktop, mobile, printers, MFD etc.
- **Workforce Mobilization:** Explore new technologies and hardware platforms to improve efficiencies in business process while in the field. Target business units for this initiative are Engineering and Construction, Water and Wastewater Operations, and Maintenance.

FY15 Accomplishments:

Information Technology Management Program

- **Change Management:** A Change Management policy was documented to establish a framework for introducing a proposed change to an MWRA Information Technology (IT) resource. Tracking will be put into place with the Maximo 7.6 upgrade effort through the use of the Control Desk module.
- **MIS Reorganization:** With the hiring of a Manager of IT Security, Architecture & Engineering and other PCR amendments being approved by the Board, MIS has begun the organizational transformation recommended in the 5 year Strategic Plan. The reorganization is now 34% complete.

Application Improvement Program

- **e-Discovery Archive and Purge Solution:** Began data collection for the following consultant's templates: (1) Enterprise Vault Solution Design, (2) Archiving Policies, and compiled a list of

Department contacts for the Business Definition phase. Installed and configured the documentation portal and informed IT Team members to begin reviewing templates and collecting data. IT and Records Center staff completed the collection of the retention codes and periods by department and added them into interim database for querying and reporting. Developed a SQL database to manage the records series codes, corresponding departments and Department Records Managers (DRMs), Active Records Filing Schemes, and Vital Records Filing Schemes.

E-Procurement - Strategic Sourcing and Contracts Management: An environment and application upgrade on the development system was completed in FY15 Q3; the environment was upgraded from 10.0.4 to 10.1 and the application from 9.1.1.1 to 9.1.1.4 and has required fixes and new functionality needed for implementing Construction Contracts. The first Non-Professional Service (NPS) Contract event was posted in (Q3) and awarded in Strategic Sourcing module after the Staff Summary was approved and signed. The awarded event was moved from Strategic Sourcing module into the Contract Management (CM) module where the official Contract Document was generated, signed and activated (Q4). Created new security roles for Contracts, Affirmative Action Compliance Unit (AACU), and Accounts Payable (AP) staff. Also completed custom workflows for approvals and new contract reports. Prepared a Construction Chapter 30 contract mock event for members of the Utility Contractors of New England (UCANE).

- ***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 at the end of FY15 Q1. Go Live was successful. Supported new state-mandated sick leave plan for temporary employees for a 7/3/15 go-live date. MWRA active temporary employees have been enrolled into this plan and will be restricted to using specific sick pay codes within the time entry system. Implemented changes to split the Administration and Finance Divisions into two distinct divisions; changes affect sub-cost centers, tables, and reports.
- ***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. This project was completed in FY15 Q2.
- ***GIS:*** Completed a proof of concept (Enqual's Harbor Station Viewer) using new technology that is now available because of the recent GIS upgrade. The new technology allows for easier distribution and access to GIS mapping applications and plays a key role in future development efforts. The Project was a proof of concept to use the new tools available in the recently upgraded GIS System. The development initiative was completed in FY15 Q2.
- ***Operations Management Monitoring System (OMMS):*** OMMS is a set of web applications that allow management to view near real-time operational data from MWRA authorized desktop computers and mobile devices. Recent expansion of this system now allows staff to

monitor flows and pressures at 10 additional pump stations. A new category has also been added that organizes data by community which allows MWRA staff to quickly view a member community's flow and pressure.

Information Security Program

- ***Security Awareness Computer Based Training (CBT):*** Created a “How to Reset Password” job aid for CBT training and had it posted on Pipeline. Installed, configured, and tested the Learning Management System on a new CBT development server, and then copied the setup to a new production server. For staff with PCs, sent a reminder to them for completing the training. Staff without PCs (approximately 300) were requested to attend scheduled sessions offered at Chelsea or DITP MIS Training Rooms to access PCs to complete the training or access the training through a supervisor's PC.
- ***Authority Mobile Application Delivery Implementation:*** Proof of Concept environment has been built in support of the Mobile Device Management platform. 35 iPads and 145 iPhones are being managed with platform. Nine applications have been identified for mobile application delivery.

Technology Infrastructure Improvement Program

- ***Desktop Refresh Program:*** Completed the upgrade of some 825 desktops from Windows XP to Windows 7 of which 417 were PC replacements and 411 were in place upgrades in FY15 Q2.
- ***Distributed Antenna System (DAS):*** The final DAS implementation for Deer Island was completed in FY15 Q4 to enhance the Verizon cellular signal strength within the facilities. This included five buildings: Winthrop, Disinfection, Main Switch, North and South Pump Station.
- ***Print, Fax, Scan and Copy:*** Installed new multi-function devices (MFDs) throughout MWRA facilities consolidating services (Print, FAX, Scan, Copier) onto one platform. The rollout has replaced 55 pieces of aged equipment for better than a 2:1 equipment reduction. In addition, MWRA will enter into a new 36-month lease for eighteen MFDs expected to come off support in FY16; and three new requests from Operations staff for a total of 21 new or replacement MFDs in FY16.
- ***Storage and SAN:*** The MWRA increased the storage capacity to accommodate, GIS, and Cumulus archiving project at the end of FY15 Q1.
- ***Net2020 Infrastructure Upgrade Program:*** Successfully completed an upgrade of the Core Network Switch in Chelsea Data Center. Deer Island was completed in FY15 Q4. This core switch connects all the Authority's users to all the MIS services including Email, Internet, Intranet, and applications. With this implementation, the Network backbone speed has increased from 1GB to 10GB and provides speed of 1 GB to every Desktop at these locations.

- **Data Network circuit upgrades:** The final stage of the DITP upgrade was completed in FY15 Q4.

Budget Highlights:

- The FY16 Budget is \$10.7 million, an increase of \$583,000 or 5.7%, as compared to FY15 Actual Spending.
- \$5.6 million for **Wages and Salaries**, an increase of \$514,000 or 10.2%, as compared to FY15 Actual Spending, due to cost of living adjustments and lower than budgeted headcount in FY15. The budget includes funding for 56 positions.
- \$3.0 million for **Ongoing Maintenance**, a decrease of \$92,000 or 3.0%, as compared to FY15 Actual Spending. 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**, a decrease of \$33,000 or 18.4%, as compared to FY15 Actual Spending. Funding will support staff training in various computer applications as part of the MIS IT Strategic Plan.
- \$200,000 for **Professional Services**, an increase of \$144,000 or 255.7%, as compared to FY15 Actual Spending. Funding will support the continued development of an MIS Strategic Plan and implementation services.
- \$459,000 for **Other Materials**, an increase of \$6,000 or 1.4%, as compared to FY15 Actual Spending.
- \$1.4 million for **Other Services**, an increase of \$87,000 or 6.7%, as compared to FY15 Actual Spending. Funding of \$1.0 million for facility and security data lines, \$188,000 of Other Rentals mostly multi-purpose copiers, faxes, and scanners, and \$128,000 for Other Services mainly for Automatic Vehicle Locator (AVL) services.

PROCUREMENT

FY16 Final Current Expense Budget						
PROCUREMENT						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 3,434,479	\$ 3,538,806	\$ 3,566,438	\$ 3,767,018	\$ 200,580	5.6%
OVERTIME	29,657	10,852	31,457	20,750	(10,707)	-34.0%
FRINGE BENEFITS	278	126	444	-	(444)	-100.0%
CHEMICALS	-	-	-	-	-	-
UTILITIES	-	-	-	-	-	-
ONGOING MAINTENANCE	161,962	829,315	292,358	-	(292,358)	-100.0%
TRAINING & MEETINGS	2,553	7,147	2,379	7,725	5,346	224.7%
PROFESSIONAL SERVICES	-	-	-	-	-	-
OTHER MATERIALS	115,051	122,819	124,420	113,700	(10,720)	-8.6%
OTHER SERVICES	39,582	41,769	46,570	40,384	(6,186)	-13.3%
TOTAL	\$ 3,783,562	\$ 4,550,834	\$ 4,064,066	\$ 3,949,577	\$ (114,490)	-2.8%

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.

FY16 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.
- Continue implementing electronic procurement for contract bids, which will significantly reduce the amount of paper processing.
- Finalize review of Procurement Policies and Procedures (e.g. ADM13, ADM20).
- Continue staff procurement training.

- Continue staff participation in Maximo upgrade efforts and Lawson-Maximo Interface redesign.

FY15 Accomplishments:

- Competitively bid CY14 Renewable Energy Portfolio Standard certificates which resulted in FY15 revenues of \$330,000 (Class II). In addition, received FY15 revenues of \$1.0 million from forward marketing of CY14 (Class I and Solar) Renewable Portfolio Standards (RPS) certificates.
- Awarded the following major contracts in FY15: DITP Cryogenics Chillers Replacement; Quabbin Power, Communication and Security Improvements Design; DITP Clarifier Rehab Phase II Design; Construction WASM 36; Gate, Siphon and Floatables Controls 003; Boston Low Service Beacon Street Line Design; DITP Thermal Power Plant BMS System Upgrade; VFD Additions DITP Secondary Oxygen Reactor Batteries A, B and C, and North Main Pump Station – Winthrop Terminal Facility ESDC/REI ; DITP Valve and Piping Replacement ESDC/REI; Instrumentation Systems Services; Fore River Railroad Mainline Adjustment Design; Security Equipment Maintenance and Repair; NPDES Compliance; Leak Detection Survey Services; Section 4 Webster Ave. Pipe and Utility Bridge Replacement; Maximo Upgrade; Adams St. Grade Crossing and Cattlepass Bridge, Upgrades to Chelsea Screen House, Southborough Water Quality Laboratory Upgrades; Electric Power Profile Accounts; Insurance Renewal.
- Advertised or received bids/proposals/statements for the following: Reading Extension Sewer Rehabilitation Design; Section 4 Webster Ave. Pipe and Utility Bridge Replacement; Maximo Upgrade; Adams St. Grade Crossing and Cattlepass Bridge; Upgrades to Chelsea Creek Screen House; Upgrades to Chelsea Screen House ESDC; Nut Island Headworks Odor Control Evaluation; Electric Power Profile Accounts; Insurance Renewal; DITP Fuel Oil System Upgrade; Alewife Brook Pump Station Rehabilitation; Electric Power DITP; Wachusett Aqueduct Pump Station.
- 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.
- Continued development of an electronic procurement bidding process for construction and non-professional services contracting based upon Lawson Strategic Sourcing. Developed the terms of use and the contract templates and began bidding non-professional services contracts electronically.
- Completed review of procurement sections of the Management Policies of the Board of Directors (ADM1) (in preparation for recommendation at the July 2015 meeting of the Board) and completed preliminary review of other procurement procedures (ADM13, ADM20).
- Processed 9,845 purchase orders in FY15 for a total of \$38,900,216.
- Instituted an on-line virtual catalog for the provision of logo employee clothing, provided by ServiceWear Apparel, procured through the U.S. Communities Government Purchasing Alliance. This program along with the Debit Card program provides employees a choice in the selection of uniform clothing items while realizing efficiencies now that MWRA staff no longer orders, receives, stores, or distributes clothing items.

- Moved the Authority's Purchasing Card Program to Bank of America NA, through the Commonwealth of Massachusetts State Blanket Agreement PRF44designatedOSC. MWRA will now receive an annual rebate based on the total Commonwealth P-Card purchasing spends. At the current State rebate percentage, with MWRA's annual spend of approximately \$500,000, MWRA will realize an annual rebate which is estimated to be at least \$7,000 while also eliminating all per card fees that are charged by the current vendor.
- Procured the Authority's vehicle purchases at the beginning of Fiscal Year 2015; including 34 vehicles procured through the use of a "Reverse Auction" format.
- Purchased 254,000 gallons of ultra-low-sulfur, #2 diesel fuel for the Deer Island Thermal/Power Plant in November, 2014 at a cost of \$2.7053/gallon. Purchased 378,000 gallons of ultra-low-sulfur, #2 diesel fuel for the Deer Island Thermal/Power Plant in March, 2015 at a cost of \$2.1403/gallon. Both purchases lower than the FY15 budget price of \$3.20/gallon.
- Conducted six training sessions on Specification Development for Authority staff with approximately 120 employees attending. Provided a training session on MWRA's e-portal for approximately 35 employees.
- Continued 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.
- Set up an online vehicle and equipment auction process and brought in \$386,000 in revenue during FY 15.
- Recycled 1240 batteries, 7.43 tons of paper, 1220.36 tons of scrap metal (includes stainless steel and aluminum) and 2,480 pounds of brass and copper, generating \$64,000 in revenues.

Budget Highlights:

- The FY16 Final Budget is \$3.9 million, a decrease of \$114,000 or 2.8%, from FY15 Actual Spending.
- \$3.8 million for **Wages and Salaries**, an increase of \$201,000 or 5.6%, from FY15 Actual Spending mainly due to cost of living adjustments. The funding supports 44 positions, one position lower than the FY15 Budget.
- \$114,000 for **Other Materials**, a decrease of \$11,000 or 8.6%, from FY15 Actual Spending mainly due to historical spending trends. This line item mainly supports centralized office supply purchases.
- \$40,000 for **Other Services**, a decrease of \$6,000 or 13.3%, from FY15 Actual Spending. This funding supports Advertising and Printing/Duplicating for contract documents and specifications.

REAL PROPERTY AND ENVIRONMENTAL MANAGEMENT

FY16 Final Current Expense Budget						
REAL PROPERTY / ENVIRONMENTAL MANAGEMENT						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 419,225	\$ 433,078	\$ 378,752	\$ 452,592	\$ 73,840	19.5%
OVERTIME	-	-	-	-	-	-
FRINGE BENEFITS	-	-	-	-	-	-
CHEMICALS	-	-	-	-	-	-
UTILITIES	-	-	-	-	-	-
ONGOING MAINTENANCE	-	-	-	-	-	-
TRAINING & MEETINGS	36,900	425	1,540	3,000	1,460	94.8%
PROFESSIONAL SERVICES	11,546	2,165	-	5,000	5,000	-
OTHER MATERIALS	797	247	56	900	844	1506.0%
OTHER SERVICES	292,101	215,105	268,871	201,100	(67,770)	-25.2%
TOTAL	\$ 760,570	\$ 651,020	\$ 649,218	\$ 662,592	\$ 13,374	2.1%

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 provide special expertise and assistance to MWRA staff regarding air quality and hazardous material issues. Assistance includes management of oil and hazardous materials site assessment and remediation, air emission permit negotiations, and preparation and submittal of quarterly/annual monitoring reports.

FY16 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.

FY16 Initiatives:

- Implement the recently-promulgated underground storage tank regulations including the revised Stage I requirements for gasoline dispensing facilities.
- Coordinate implementation of the anticipated air quality operating permit renewal for the Deer Island Treatment Plant.

FY15 Accomplishments:

- Provided ongoing real estate services, including appraisal and negotiation, on projects such as the Fore River Railroad track relocation project, Charlestown Navy Yard lease, Chelsea lease.
- Provided real estate services (appraisal, negotiation, plan and legislation review) on sale of Fox Point (Dorchester) and for easement swap with Quincy Shipyard, LLC (Quincy).
- Managed nine (9) permit agreements (six at Turkey Hill and three at Walnut Hill), including the termination of two (2) permit agreements with MetroPCS per its request in second quarter of FY15. Coordinated with Operations for approval of the equipment changes (including removal) and improving the invoicing system for maintenance reimbursements. Total revenue for the nine agreements is \$470,000 of which MWRA and the host community each receive half. Currently renegotiating one of seven permit agreements due for renewal.
- Provide real estate support to Operations and Public Affairs for issuance 8m permits to private entities requesting use of MWRA controlled land and to cities and towns applying to the aqueduct trails program. Managed fee assessment for long-term 8M permits on MWRA fee controlled land. 8M fees for these agreements total approximately \$52,000 per year. Staff acquired and disposed property interests to support projects. Acquired permanent easements and/or licenses for 1) Section W11/Section 36 (Arlington) for remaining 18 out of 66 private properties 2) Section 4 Webster Avenue Pipe Bridge Replacement (Somerville) from private property owner, NStar, and MBTA 3) Alewife Brook Conduit CSO Project (Cambridge) from MassDOT.
- In progress as of FY15 year-end: Carroll Water Treatment Plant (CWTP) security entrance renovations, easement acquisitions, and grant of license to City of Marlborough and temporary easement acquisition from private owner; acquisition of fee interest property interest from City of Chelsea for Chelsea Headworks Renovation.
- 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. Provide 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.
- Continued with the remediation assessment of the oil contamination resulting from the February 2010 spill at the Cottage Farm Combined Sewer Overflow (CSO) facility.
- Continued to provide technical support for regulatory response actions related to soil and groundwater contamination at the Chelsea Creek Headworks.

- Provided technical support for the assessment and abatement design for PCBs at the Cottage Farm CSO Facility. Continued to evaluate project scope and schedule.
- Continued to provide technical support for the planned PCB abatement at the Chelsea Creek Headworks. Continued to provide technical support during the pilot testing to evaluate the effectiveness of various abatement and encapsulation techniques.
- 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 Gillis Pump Station, comprehensive leak detection testing and internal repair of a 20,000-gallon underground tank at Nut Island Headworks, repaired and rebuilt underground piping sumps at multiple facilities, replaced tank monitoring systems at three facilities, and general monitoring system repair and upgrades at other facilities. Continued with the MassDEP-required monthly inspection requirement for all underground fuel storage tank systems.
- Completed updates to the Spill Prevention, Control, and Countermeasure (SPCC) Plan for the MWRA Biosolids Processing Facility and Lonergan Intake. Incorporated these new and revised plans into the MWRA-wide SPCC annual training program.
- Continued to prepare, coordinate and oversee the completion of annual SPCC Plan training of over 200 MWRA oil handling staff and managers.
- Continued with MassDEP-required periodic groundwater monitoring around the former wastewater holding tank at Clinton.
- 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 and Pump Station,
 - Remote Headworks Rehabilitation,
 - Northern Intermediate High project,
 - Section 36 Watertown-Waltham Connection,
 - Alewife Brook Pump Station facility upgrades,
 - MWR003 Gate, Siphon and Floatables Control project
 - Southern Extra High Pipeline
 - Sudbury Aqueduct Connection Alternatives
 - Section 53 Water Line
 - Fells Covered Storage microwave antenna tower project
 - Webster Avenue, Somerville pipe bridge
 - Ward Street Headworks antenna demolition
- Continued to provide ongoing regulatory technical support to Operations staff for the diesel oxidation catalyst-equipped engines at Cottage Farm, Prison Point, and CWTP. Coordinated installation of retrofit emissions controls DEP registration for the new Arlington Covered Storage emergency

generator. Also submitted the DEP registration for the new emergency generator at the Brusch Disinfection Facility. Continued to work with Operations staff to implement maintenance and recordkeeping requirements for emergency generators.

- Completed air emissions compliance testing at the Biosolids Processing Facility and the DITP's West Odor Control Facility and Combustion Turbine Generator stacks per air permit monitoring and testing requirements
- Completion and timely submission of on-line greenhouse gas emissions reporting for DITP and the Biosolids Processing Facility via the Climate Registry Information System for compliance with the DEP and the Electronic Greenhouse Gas Reporting Tool for compliance with EPA.
- Completion and timely submission of Source Registration and Emissions Statements for DITP, the Pellet Plant and Arlington Pump Station via the eDEP's on-line electronic filing system.
- Continue to prepare and submit quarterly, semi-annual and annual air monitoring and emissions compliance reports to EPA and DEP for DITP, Biosolids Processing Facility, Nut Island Treatment Plant, Carroll Water Treatment Plant, Prison Point CSO and Cottage Farm CSO.
- Provided technical and environmental regulatory support for upgrades at the Ware Disinfection Facility including a new potable water supply for the facility, a new onsite septic system, a new industrial waste water holding tank, and a new wastewater dry well. Submitted self-certification documentation to DEP for the new industrial wastewater holding tank.
- 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 FY16 Final Budget is \$663,000 an increase of \$13,000 or 2.1%, as compared to FY15 Actual Spending.
- \$453,000 for **Wages and Salaries**, an increase of \$74,000 or 19.5%, as compared to FY15 Actual Spending mainly for projected contractual increases and filling of a vacant position. The budget supports four positions.
- \$3,000 for **Training and Meetings**, an increase of \$1,000 or 94.8%, as compared to FY15 Actual Spending.
- \$5,000 for **Professional Services**, an increase of \$5,000 or 100%, as compared to FY15 Actual Spending.
- \$201,000 for **Other Services**, a decrease of \$68,000 or 25.2%, as compared to FY15 Actual Spending. The decrease is due to the decreased costs for the underground storage tank project based on the award of a new lower cost contract.



Finance Division Budget

FINANCE DIVISION

Finance

Director's Office
Rates and Budget
Treasury
Controller
Risk Management

FY16 Final Current Expense Budget						
FINANCE DIVISION						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 3,535,656	\$ 3,589,481	\$ 3,641,446	\$ 3,650,888	\$ 9,442	0.3%
OVERTIME	23	200	-	-	-	-
FRINGE BENEFITS	-	-	-	-	-	-
WORKERS' COMPENSATION	-	-	-	-	-	-
UTILITIES	-	-	-	-	-	-
ONGOING MAINTENANCE	-	-	-	-	-	-
TRAINING & MEETINGS	4,442	2,139	1,451	3,000	1,549	106.8%
PROFESSIONAL SERVICES	420,558	442,678	538,383	514,010	(24,373)	-4.5%
OTHER MATERIALS	8,520	6,885	5,566	6,350	784	14.1%
OTHER SERVICES	11,609	12,332	7,283	8,815	1,532	21.0%
TOTAL	\$ 3,980,807	\$ 4,053,715	\$ 4,194,129	\$ 4,183,063	\$ (11,066)	-0.3%

FY16 Final Current Expense Budget						
FINANCE by Department						
DEPARTMENT	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
DIR OFFICE (FINANCE)	\$ 349,833	\$ 345,912	\$ 378,113	\$ 280,187	\$ (97,926)	-25.9%
CONTROLLER	1,487,530	1,487,662	1,496,244	1,579,853	83,609	5.6%
RATES AND BUDGET	773,302	797,962	830,770	848,345	17,575	2.1%
TREASURY	974,700	966,582	1,056,582	1,012,860	(43,723)	-4.1%
RISK MANAGEMENT	395,442	455,597	432,420	461,819	29,399	6.8%
TOTAL	\$ 3,980,807	\$ 4,053,715	\$ 4,194,129	\$ 4,183,063	\$ (11,066)	-0.3%

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

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

The 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 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).

FY16 Goals:

- Manage and coordinate the Authority's finance functions.
- Develop and implement long-term strategies to ensure assessment increases to MWRA's communities are sustainable and predictable.
- Manage MWRA's debt portfolio to contribute to the achievement of sustainable and predictable rate increases.
- 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.

FY16 Initiatives

- Continue assessment and evaluation of sustainable cost savings opportunities throughout the organization.
- Develop options and recommendations to ensure sustainable and predictable assessments and charges to our communities.
- Continue the implementation of the Strategic IT Study.

FY15 Accomplishments:

- Developed the FY16 Budget consistent with the FY15 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.

DIRECTOR'S OFFICE

FY16 Final Current Expense Budget						
FINANCE DIVISION DIRECTOR'S OFFICE						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 337,251	\$ 336,559	\$ 369,655	\$ 270,747	\$ (98,908)	-26.8%
OVERTIME	0	0	0	0	-	-
FRINGE BENEFITS	0	0	0	0	-	-
CHEMICALS	0	0	0	0	-	-
UTILITIES	0	0	0	0	-	-
ONGOING MAINTENANCE	0	0	0	0	-	-
TRAINING & MEETINGS	4,352	2,049	1,361	3,000	1,639	120.4%
PROFESSIONAL SERVICES	0	0	0	0	-	-
OTHER MATERIALS	7,597	5,323	4,616	5,100	484	10.5%
OTHER SERVICES	634	1,981	2,481	1,340	(1,141)	-46.0%
TOTAL	\$ 349,833	\$ 345,912	\$ 378,113	\$ 280,187	\$ (97,926)	-25.9%

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

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

The division's continuing challenge in FY16 will be maintaining an agency-wide focus on balancing the competing needs to minimize assessment increases while ensuring the provision of critical MWRA services.

FY16 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 FY16 Proposed Budget is \$280,000, a decrease of \$98,000 or 25.9%, as compared to FY15 Actual Spending.

- \$271,000 for **Wages and Salaries**, a decrease of \$99,000 or 26.8%, as compared to FY15 Actual Spending, mainly due to the transfer of the Director, Administration to the Administrations Division Director's Office department offset by cost of living increases. The FY16 Budget funds two positions, one less than in FY15.

RATES AND BUDGET

FY16 Final Current Expense Budget						
RATES AND BUDGET						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 772,530	\$ 796,450	\$ 829,846	\$ 847,070	\$ 17,224	2.1%
OVERTIME	-	-	-	-	-	-
FRINGE BENEFITS	-	-	-	-	-	-
CHEMICALS	-	-	-	-	-	-
UTILITIES	-	-	-	-	-	-
ONGOING MAINTENANCE	-	-	-	-	-	-
TRAINING & MEETINGS	-	-	-	-	-	-
PROFESSIONAL SERVICES	-	-	-	-	-	-
OTHER MATERIALS	240	982	615	650	35	5.8%
OTHER SERVICES	532	531	310	625	316	101.9%
TOTAL	\$ 773,302	\$ 797,962	\$ 830,770	\$ 848,345	\$ 17,575	2.1%

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.

FY16 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.
- Provide financial analysis as required.

FY16 Initiatives:

- Continue assessment and evaluation of sustainable cost savings opportunities throughout the organization.
- Develop options and recommendations to ensure sustainable, predictable, and reasonable assessments and charges to our communities.

FY15 Accomplishments:

- Developed the FY16 Budget consistent with the FY15 planning estimates, for both the Current Expense Budget and the Capital Improvement Program.
- Provided financial analysis for system expansion initiatives and preliminary long-term water redundancy options.

Budget Highlights:

- The FY16 Budget is \$848,000, an increase of \$18,000 or 2.1%, as compared to FY15 Actual Spending.
- \$847,000 for **Wages and Salaries**, an increase of \$17,000 or 2.1%, as compared to FY15 Actual Spending, mainly due to contractual increases. The FY16 Budget funds eight positions, level funded with FY15.

TREASURY

FY16 Final Current Expense Budget						
TREASURY						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 736,271	\$ 733,489	\$ 705,338	\$ 674,650	\$ (30,688)	-4.4%
OVERTIME	-	17	-	-	-	-
FRINGE BENEFITS						
CHEMICALS						
UTILITIES						
ONGOING MAINTENANCE	-	-	-	-	-	-
TRAINING & MEETINGS	90	90	90	-	(90)	-100.0%
PROFESSIONAL SERVICES	229,309	224,302	348,072	334,010	(14,062)	-4.0%
OTHER MATERIALS	584	549	183	300	117	64.0%
OTHER SERVICES	8,446	8,135	2,899	3,900	1,001	34.5%
TOTAL	\$ 974,700	\$ 966,582	\$ 1,056,582	\$ 1,012,860	\$ (43,723)	-4.1%

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.

FY16 Goals:

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

FY15 Accomplishments:

- Implemented the Amendments to the Authority’s General Bond Resolution, which allowed for the release of \$112 million in reserves of which \$102 million was used to defease outstanding debt for budgetary relief in fiscal years 2016 through 2027. The remaining \$10 million was deposited to MWRA’s OPEB Trust.
- Defeased \$30.5 million of outstanding debt on June 22, 2014 for budgetary relief for fiscal year 2016 through 2019 thereby reducing the rate of increase to the Rate Revenue Requirement in those years. The sources of funding for this defeasance was primarily the fiscal year 2015 current expense budget surplus.
- Maintained MWRA’s strong credit ratings, Aa1, AA+, AA+ from Moody’s, Standard & Poor’s and Fitch respectively. MWRA’s credit ratings from all three major agencies are only one ratings step below the highest rating of AAA. These high credit ratings enable MWRA to borrow at very advantageous interest rates which helps minimize debt service expenses.

- Completed the 2014 Series D, E and F bond transaction which was a refunding and new money transaction. The transaction included \$73.1 million in new money and \$170.8 million in refunding bonds, which were issued at an All-in TIC of 3.41%. The refunding transaction resulted in \$20.2 million or 10.5% present value savings and \$56.4 million in gross debt service savings.
- Completed the Massachusetts Clean Water Trust (MCWT) Pool 18 borrowing. This \$52.6 million transaction was made at subsidized interest rates contributing to a lower overall cost of debt for the Authority.

Budget Highlights:

- The FY16 Budget is \$1.0 million, a decrease of \$44,000 or 4.1% as compared to FY15 Actual Spending.
- \$675,000 for **Wages and Salaries**, a decrease of 31,000 or 4.4%, as compared to FY15 Actual Spending mainly due to one less budgeted position offset by cost of living increases. The final budget funds eight positions, one position fewer than in the FY15 Budget.
- \$334,000 for **Professional Services**, a decrease of \$14,000 or 4.0%, as compared to FY15 Actual Spending.

CONTROLLER

FY16 Final Current Expense Budget						
CONTROLLER						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 1,325,287	\$ 1,325,902	\$ 1,334,187	\$ 1,437,403	\$ 103,216	7.7%
OVERTIME	-	183	-	-	-	-
FRINGE BENEFITS	-	-	-	-	-	-
CHEMICALS	-	-	-	-	-	-
UTILITIES	-	-	-	-	-	-
ONGOING MAINTENANCE	-	-	-	-	-	-
TRAINING & MEETINGS	-	-	-	-	-	-
PROFESSIONAL SERVICES	160,491	160,625	160,975	140,000	(20,975)	-13.0%
OTHER MATERIALS	87	27	152	300	148	97.2%
OTHER SERVICES	1,665	925	930	2,150	1,220	131.2%
TOTAL	\$ 1,487,530	\$ 1,487,662	\$ 1,496,244	\$ 1,579,853	\$ 83,609	5.6%

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

FY16 Goals:

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

FY16 Initiatives:

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

FY15 Accomplishments:

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

Budget Highlights:

- The FY16 Budget is \$1.6 million, an increase \$84,000 or 5.6%, as compared to FY15 Actual Spending.
- \$1.4 million for **Wages and Salaries**, an increase of \$103,000 or 7.7%, as compared to FY15 Actual Spending, mainly due to lower headcount in FY15 and cost of living increases in FY16. The FY16 Budget funds 17 positions, one position fewer than in FY15.

- \$140,000 for **Professional Services**, a decrease of \$21,000 or 13.0%, as compared to FY15 Actual Spending. The FY16 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

FY16 Final Current Expense Budget						
RISK MANAGEMENT						
LINE ITEM	FY13 Actual	FY14 Actual	FY15 Actual	FY16 Final	Change FY15 to FY16	
WAGES & SALARIES	\$ 364,317	\$ 397,081	\$ 402,420	\$ 421,019	\$ 18,599	4.6%
OVERTIME	23	-	-	-	-	-
FRINGE BENEFITS						
CHEMICALS						
UTILITIES						
ONGOING MAINTENANCE						
TRAINING & MEETINGS	-	-	-	-	-	-
PROFESSIONAL SERVICES	30,757	57,751	29,336	40,000	10,665	36.4%
OTHER MATERIALS	12	4	-	-	-	-
OTHER SERVICES	333	760	664	800	136	20.5%
TOTAL	\$ 395,442	\$ 455,597	\$ 432,420	\$ 461,819	\$ 29,399	6.8%

The **Risk Management Department** is responsible for all MWRA insurance programs 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/vendor 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.

FY16 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 exposures and establishing contract insurance requirements and monitoring contractors/vendors for compliance.
- Provide support to all MWRA Departments on all insurance, claims, litigation and risk management issues.

FY15 Accomplishments:

- Successfully procured MWRA's Insurance Program through a competitive bid process for all lines of coverage at a 3% reduction in program cost compared to FY14.
- Provided timely support to MWRA managers on all insurance, claims, litigation and risk management issues.

Budget Highlights:

- The FY16 Budget is \$462,000, an increase \$29,000 or 6.8%, as compared to FY15 Actual Spending.
- \$421,000 for **Wages & Salaries**, an increase of \$19,000 or 4.6%, as compared to FY15 Actual Spending mainly due to contractual increases. The budget funds four positions.
- \$40,000 for **Professional Services**, an increase of \$11,000 or 36.4%, as compared to FY15 Actual Spending which represents the average spending for the past three fiscal years.



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.

MONTH	ACTIVITY
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 FY2016 to FY2025

COMBINED UTILITIES										
	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025
EXPENSES										
Direct Expenses	\$222,834	\$228,739	\$235,557	\$242,031	\$248,476	\$254,990	\$261,901	\$269,463	\$276,359	\$283,886
Indirect Expenses	46,953	41,673	45,734	46,625	47,739	48,928	51,429	47,201	48,416	49,896
Capital Financing (before offsets)	<u>432,689</u>	<u>451,512</u>	<u>469,313</u>	<u>491,771</u>	<u>551,679</u>	<u>564,219</u>	<u>596,187</u>	<u>551,211</u>	<u>528,572</u>	<u>511,078</u>
Sub-Total Expenses	\$702,477	\$721,923	\$750,604	\$780,426	\$847,895	\$868,136	\$909,518	\$867,875	\$853,347	\$844,860
Debt Service Assistance	0	0	0	0	0	0	0	0	0	0
Bond Redemption Savings	0	0	0	0	(24,598)	(1,510)	0	0	0	0
Variable Rate Savings	0	0	0	0	0	0	0	0	0	0
Total Expenses	\$702,477	\$721,923	\$750,604	\$780,426	\$823,297	\$866,626	\$909,518	\$867,875	\$853,347	\$844,860
REVENUE & INCOME										
Non-Member and Other Revenue	\$20,684	\$15,314	\$15,719	\$16,025	\$16,219	\$16,799	\$17,134	\$16,926	\$17,063	\$17,149
Interest Income	9,353	8,003	9,095	10,483	13,298	13,221	13,423	13,634	13,917	14,279
Rate Stabilization	0	0	0	0	10,084	12,136	13,136	1,156	0	0
Total Other Revenue	\$30,037	\$23,317	\$24,814	\$26,509	\$39,601	\$42,156	\$43,692	\$31,716	\$30,980	\$31,428
Total Rate Revenue	\$672,440	\$698,606	\$725,790	\$753,918	\$783,697	\$824,471	\$865,825	\$836,159	\$822,366	\$813,431
Rate Revenue Increase	3.4%	3.9%	3.9%	3.9%	3.9%	5.2%	5.0%	-3.4%	-1.6%	-1.1%
Estimated Annual Household Charge **										
Based on water use of 61k gpy (weighted)	\$1,055	\$1,100	\$1,154	\$1,204	\$1,253	\$1,326	\$1,393	\$1,425	\$1,460	\$1,497
Based on water use of 90k gpy (weighted)	\$1,556	\$1,622	\$1,703	\$1,777	\$1,848	\$1,956	\$2,055	\$2,102	\$2,154	\$2,208
WASTEWATER UTILITY										
	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025
EXPENSES										
Direct Expenses	\$150,055	\$153,958	\$158,698	\$163,048	\$167,342	\$171,637	\$176,264	\$181,511	\$186,047	\$191,141
Indirect Expenses	12,998	9,126	11,177	11,292	11,610	11,972	12,420	12,899	13,180	13,695
Capital Financing (before offsets)	<u>293,405</u>	<u>316,677</u>	<u>317,386</u>	<u>337,149</u>	<u>379,865</u>	<u>370,988</u>	<u>390,496</u>	<u>337,532</u>	<u>317,587</u>	<u>310,897</u>
Sub-Total Wastewater Expenses	\$456,457	\$479,761	\$487,261	\$511,489	\$558,816	\$554,596	\$579,180	\$531,942	\$516,814	\$515,733
Debt Service Assistance	0	0	0	0	0	0	0	0	0	0
Bond Redemption Savings	0	0	0	0	(5,783)	0	0	0	0	0
Variable Rate Savings	0	0	0	0	0	0	0	0	0	0
Total Wastewater Expenses	\$456,457	\$479,761	\$487,261	\$511,489	\$553,033	\$554,596	\$579,180	\$531,942	\$516,814	\$515,733
REVENUE & INCOME										
Non-Member and Other Revenue	\$5,455	\$5,568	\$5,671	\$5,792	\$5,929	\$6,044	\$6,180	\$6,260	\$6,373	\$6,504
Interest Income	4,935	4,147	4,786	5,600	7,364	7,586	7,732	7,788	7,748	7,871
Rate Stabilization	0	0	0	0	3,923	0	0	0	0	0
Prior Year Utility Surplus/Deficit Transfer	0	0	0	0	0	0	0	0	0	0
Total Other Revenue	\$10,390	\$9,716	\$10,457	\$11,392	\$17,216	\$13,630	\$13,912	\$14,049	\$14,121	\$14,375
Wastewater Rate Revenue	\$446,067	\$470,045	\$476,804	\$500,096	\$535,817	\$540,967	\$565,268	\$517,893	\$502,693	\$501,358
Rate Revenue Increase	1.4%	5.4%	1.4%	4.9%	7.1%	1.0%	4.5%	-8.4%	-2.9%	-0.3%
Estimated Annual Household Charge **										
Based on water use of 61k gpy (weighted)	\$620	\$652	\$675	\$709	\$750	\$776	\$813	\$813	\$831	\$859
Based on water use of 90k gpy (weighted)	\$914	\$961	\$996	\$1,046	\$1,106	\$1,144	\$1,199	\$1,199	\$1,227	\$1,267
WATER UTILITY										
	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025
EXPENSES										
Direct Expenses	\$72,780	\$74,781	\$76,859	\$78,983	\$81,135	\$83,353	\$85,637	\$87,952	\$90,312	\$92,745
Indirect Expenses	33,955	32,547	34,557	35,333	36,129	36,956	39,009	34,303	35,235	36,201
Capital Financing (before offsets)	<u>139,285</u>	<u>134,834</u>	<u>151,927</u>	<u>154,623</u>	<u>171,815</u>	<u>193,231</u>	<u>205,691</u>	<u>213,679</u>	<u>210,985</u>	<u>200,180</u>
Sub-Total Water Expenses	\$246,020	\$242,162	\$263,343	\$268,938	\$289,079	\$313,540	\$330,338	\$335,933	\$336,532	\$329,127
Debt Service Assistance	0	0	0	0	0	0	0	0	0	0
Bond Redemption Savings	0	0	0	0	(18,815)	(1,510)	0	0	0	0
Variable Rate Savings	0	0	0	0	0	0	0	0	0	0
Total Water Expenses	\$246,020	\$242,162	\$263,343	\$268,938	\$270,264	\$312,030	\$330,338	\$335,933	\$336,532	\$329,127
REVENUE & INCOME										
Non-Member and Other Revenue	\$15,229	\$9,746	\$10,048	\$10,233	\$10,290	\$10,755	\$10,953	\$10,665	\$10,690	\$10,645
Interest Income	4,418	3,856	4,309	4,883	5,934	5,635	5,691	5,846	6,169	6,408
Rate Stabilization	0	0	0	0	6,161	12,136	13,136	1,156	0	0
Prior Year Utility Surplus/Deficit Transfer	0	0	0	0	0	0	0	0	0	0
Total Other Revenue	\$19,647	\$13,602	\$14,357	\$15,116	\$22,385	\$28,526	\$29,780	\$17,667	\$16,859	\$17,053
Water Rate Revenue	\$226,373	\$228,561	\$248,986	\$253,822	\$247,879	\$283,504	\$300,557	\$318,266	\$319,674	\$312,073
Rate Revenue Increase	7.7%	1.0%	8.9%	1.9%	-2.3%	14.4%	6.0%	5.9%	0.4%	-2.4%
Estimated Annual Household Charge **										
Based on water use of 61k gpy (weighted)	\$435	\$448	\$479	\$496	\$503	\$550	\$580	\$612	\$629	\$638
Based on water use of 90k gpy (weighted)	\$642	\$661	\$707	\$731	\$742	\$811	\$856	\$902	\$927	\$941

** 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 2014 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.

BWTF: William A. Brutsch Water Treatment Facility – Water treatment plant for the Chicopee Valley Aqueduct communities of Chicopee, South Hadley Fire District #1, and Wilbraham. The facility has a capacity of 24 mgd, and disinfects the water using a combination of UV light and chlorine.

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*.

Combined Sewer and Combined Sewer Overflow: While modern systems transport rainwater and sewage from homes and businesses through separate pipes, some older systems like Boston's have "combined" sewers that carry both flows together. During normal conditions flows are delivered to treatment plants. During very heavy rains, these systems become overloaded. Built-in overflows (called combined sewer overflows or "CSOs") must then act as relief points by releasing excess flows into the nearest body of water. This prevents sewage backups into homes and onto area streets, but the discharges can impact water quality.

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 46 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.

EOEEA: Executive Office of Energy and Environmental Affairs - The Massachusetts cabinet office that oversees state environmental agencies.

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, was 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.

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.

Geographic Information System (GIS) -- A geographic information system is a system designed to capture, store, manipulate, analyze, manage, and present all types of spatial or geographical data.

Green Energy: energy that comes from natural sources such as sunlight, wind, rain, tides, plants, algae and geothermal heat. These energy resources are renewable, meaning they're naturally replenished.

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 and 2 Rules 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, Carroll Water Treatment Plant, and the four Remote Headworks remove themselves from the grid. All six facilities 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.

Renewable Energy: energy from a source that is not depleted when used, such as wind or solar power

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. Now referred to as Wastewater GIS.

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 the Quabbin Disinfection Facility (now named the William A. Brutsch Water Treatment Facility) in Ware added UV (as a second disinfection in addition to chlorine) in 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.

Water Supply Trust: The legislature further enhanced the ability of the Department of Conservation and Recreation (DCR) Office of Watershed Management to protect the source waters of the MWRA drinking water supply by establishing a Water Supply Protection Trust in 2004. The trust provides a more efficient mechanism for MWRA's direct funding of the Office of Watershed Management. The Water Supply Protection Trust has a five person board of trustees responsible for approving the Annual Work Plan and Budget each spring for the following fiscal year.

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
FY16 Final Current Expense Budget - Capital Financing Detail (as of 6/30/2015)

	Outstanding as of 6/30/15	Total	Sewer	Water
SRF ¹				
Unrefunded (93A, 93D, 95A, 98C)	\$ 2,375,000	\$ 4,004	\$ 4,004	\$ -
1999E Sewer	10,409,169	391,127	391,127	-
1999E Water		578,443	-	578,443
1999F	232,560,000	19,211,797	19,211,797	-
2000E Sewer		2,838,831	2,838,831	-
2000E Water	55,183,026	573,347	-	573,347
2001C Water	2,030,000	248,383	-	248,383
2001D Sewer		383,036	383,036	-
2001D Water	3,514,805	81,729	-	81,729
2002H Sewer		3,142,663	3,142,663	-
2002H Water	81,215,000	1,548,645	-	1,548,645
2002I Sewer		103,978	103,978	-
2002I Water	1,819,144	1,464	-	1,464
2003A	727,704	70,445	-	70,445
2003B	1,834,287	223,186	-	223,186
2003C Sewer		1,353,315	1,353,315	-
2003C Water	35,038,393	972,159	-	972,159
2004C Sewer		537,916	537,916	-
2004C Water	8,833,239	87,722	-	87,722
2004D Sewer		2,694,163	2,694,163	-
2004D Water	51,040,000	643,314	-	643,314
2005C Sewer		417,193	417,193	-
2005C Water	5,832,516	69,209	-	69,209
2005D Sewer		3,047,451	3,047,451	-
2005D Water	57,920,943	802,697	-	802,697
2005E Sewer		24,961	24,961	-
2005E Water	297,915	5,479	-	5,479
2006C Sewer		484,025	484,025	-
2006D Sewer		3,655,283	3,655,283	-
2006D Water	66,917,225	1,609,623	-	1,609,623
2006E Sewer		22,883	22,883	-
2006E Water	350,722	10,281	-	10,281
2007C Sewer		307,948	307,948	-
2007C Water	4,726,045	183,852	-	183,852
2007D Sewer		1,149,044	1,149,044	-
2007E Sewer		3,290,993	3,290,993	-
2007E Water	61,708,226	1,261,066	-	1,261,066
2008G Sewer		403,545	403,545	-
2008G Water	4,913,245	82,202	-	82,202
2009C Sewer		5,747,270	5,747,270	-
2009C Water	91,348,916	1,887,087	-	1,887,087
2009D Sewer		648,355	648,355	-
2009D Water	9,918,151	85,706	-	85,706
2010C Sewer				
2010C Water	33,035,745			
2010D Sewer		1,424,210	1,424,210	-
2010D Water	42,303,071	1,438,215	-	1,438,215
2011A Sewer		383,538	383,538	-
2011A Water	9,294,058	369,125	-	369,125
2012C Sewer		524,243	524,243	-
2012C Water	10,396,955	254,701	-	254,701
2012D Sewer		2,856,878	2,856,878	-
2012D Water	48,253,166	532,330	-	532,330
2013B Sewer		2,214,037	2,214,037	-
2013B Water	36,878,768	533,634	-	533,634
2014C Sewer		283,332	283,332	-
2014C Water	10,241,920	385,057	-	385,057
2015A Sewer		2,821,783	2,821,783	-
2015A Water	63,740,399	1,043,084	-	1,043,084
2015B Sewer		295,018	295,018	-
2015B Water	5,581,278	188,005	-	188,005
Replacement Loan Sewer		382,017	382,017	-
Replacement Loan Water		360,893	-	360,893

APPENDIX F
FY16 Final Current Expense Budget - Capital Financing Detail (as of 6/30/2015)

	Outstanding as of 6/30/15	Total	Sewer	Water
Pool 19 Sewer		2,865,526	2,865,526	
Pool 19 Water		1,834,828	-	1,834,828
Total SRF Debt	\$ 1,076,000,218	81,876,276	63,910,363	17,965,914
MWRA Senior Debt				
1993C New/Refunding	\$ 10,065,000	\$ -	\$ -	\$ -
2002J New	281,030,000	47,256,475	42,530,828	4,725,648
2002J Refunding	1,000,000	50,000	25,000	25,000
2005A Refunding	307,050,000	40,799,050	18,359,573	22,439,478
2005B Refunding	80,290,000	4,014,500	1,338,033	2,676,467
2006A New	62,320,000	2,492,800	-	2,492,800
2006B Refunding	172,575,000	9,191,800	6,893,850	2,297,950
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	64,240,000	3,212,000	2,409,000	803,000
2009B Refunding	268,115,000	16,956,044	12,208,352	4,747,692
2010A New	85,150,000	4,169,000	2,918,300	1,250,700
2010B Refunding	165,235,000	17,117,000	9,927,860	7,189,140
2011B New	134,785,000	9,481,775	6,637,243	2,844,533
2011C Refunding	327,160,000	16,064,275	6,265,067	9,799,208
2012A New	132,620,000	6,702,375	3,351,188	3,351,188
2012B Refunding	86,775,000	4,240,325	890,468	3,349,857
2013A Refunding	169,825,000	31,137,250	17,436,860	13,700,390
2014D New	70,665,000	4,609,500	3,134,460	1,475,040
2014E Refunding	28,245,000	7,872,250	6,888,219	984,031
2014F Refunding	141,525,000	6,402,450	1,984,760	4,417,691
FY15 New Money (2015)		6,505,000	6,433,378	71,622
FY16 New Money (2016)		1,800,000	1,800,000	-
Potential Defeasance				
Total Senior	\$ 3,434,620,000	283,024,431	\$ 181,525,673	\$ 101,498,758
Subordinate Debt				
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	285,725,000	11,148,237	9,810,448	1,337,788
2008C Refunding	109,820,000	9,257,471	8,887,172	370,299
2008E Refunding	133,640,000	8,324,436	7,658,481	665,955
2008F Refunding	50,000,000	1,625,000	146,250	1,478,750
2012E Refunding	62,830,000	3,456,975	725,965	2,731,010
2012F Refunding	60,300,000	3,374,750	708,698	2,666,053
2012G Refunding	52,580,000	5,260,135	5,049,730	210,405
2014A Refunding	50,000,000	1,625,000	146,250	1,478,750
2014B Refunding	64,755,000	2,104,538	189,408	1,915,129
Potential Defeasance				
Total Subordinate Debt	\$ 963,370,000	49,222,442	\$ 34,845,531	\$ 14,376,911
Total SRF & MWRA Debt Service²	\$ 5,473,990,218	414,123,148	\$ 280,281,566	\$ 133,841,583
Other Capital				
Water Pipeline Commercial Paper	\$ 130,000,000	4,149,242	-	4,149,242
Current Revenue/Capital ³		11,200,000	11,200,000	-
Capital Lease		3,217,060	1,923,096	1,293,964
CORE Fund Deposit				
Total Other Capital	\$ 130,000,000	18,566,302	\$ 13,123,096	\$ 5,443,207
Total Capital Financing (before Debt Service Offsets)	\$ 5,603,990,218	432,689,451	\$ 293,404,662	\$ 139,284,789
Debt Service Offsets				
Debt Service Assistance		-	\$ -	\$ -
Bond Redemption			-	-
Total Debt Service Offsets		-	-	-
Total Capital Financing	\$ 5,603,990,218	432,689,451	\$ 293,404,662	\$ 139,284,789

¹ SRF debt service payments reflect net MWRA obligations after state and federal subsidies.

² Numbers may not add due to rounding.

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