

# MASSACHUSETTS WATER RESOURCES AUTHORITY



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## **Proposed Fiscal Year 2012 CURRENT EXPENSE BUDGET**



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





# MASSACHUSETTS WATER RESOURCES AUTHORITY

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Katherine Haynes Dunphy, Chairwoman  
MWRA Advisory Board  
11 Beacon Street  
Boston, MA 02108

March 2011

Dear Chairwoman Dunphy:

At the February 16, 2011 meeting the Board of Directors voted to transmit the FY12 Proposed Current Expense Budget to the Advisory Board for their review and comment.

The Proposed FY12 budget holds to the 3.9% rate increase commitment made during the development of the FY11 budget as part of a three year strategy to keep rates especially low during these difficult economic times for our communities. This rate increase is achieved by cutting spending, restructuring debt, temporarily suspending commitments to fund growing liabilities, and defeasing debt in targeted years using surplus funds created by unprecedented low interest rates.

Total expenses are \$621.7 million, a \$19.8 million or 3.3% increase over the FY11 budget of which \$17.6 million is for capital financing. Capital financing costs at \$371.9 million remain the largest portion of the budget, representing 59.8% of the total expenses. Operating expenses are \$249.7 million of which \$209.6 million is for direct expenses and \$40.2 million is for indirect expenses.

While acknowledging the demanding economic climate facing our communities, MWRA must recognize the massive debt obligations looming on the horizon. With depleted reserves, the unlikely restoration of Debt Service Assistance, shrinking surpluses and rising costs, there are limited tools available to address these obligations without impacting the core operations.

Staff will work collaboratively with the Advisory Board to develop a plan for the application of reserve releases, spending cuts and funding strategies for pension and OPEB liabilities to mitigate the impact of these obligations on future rate increases.

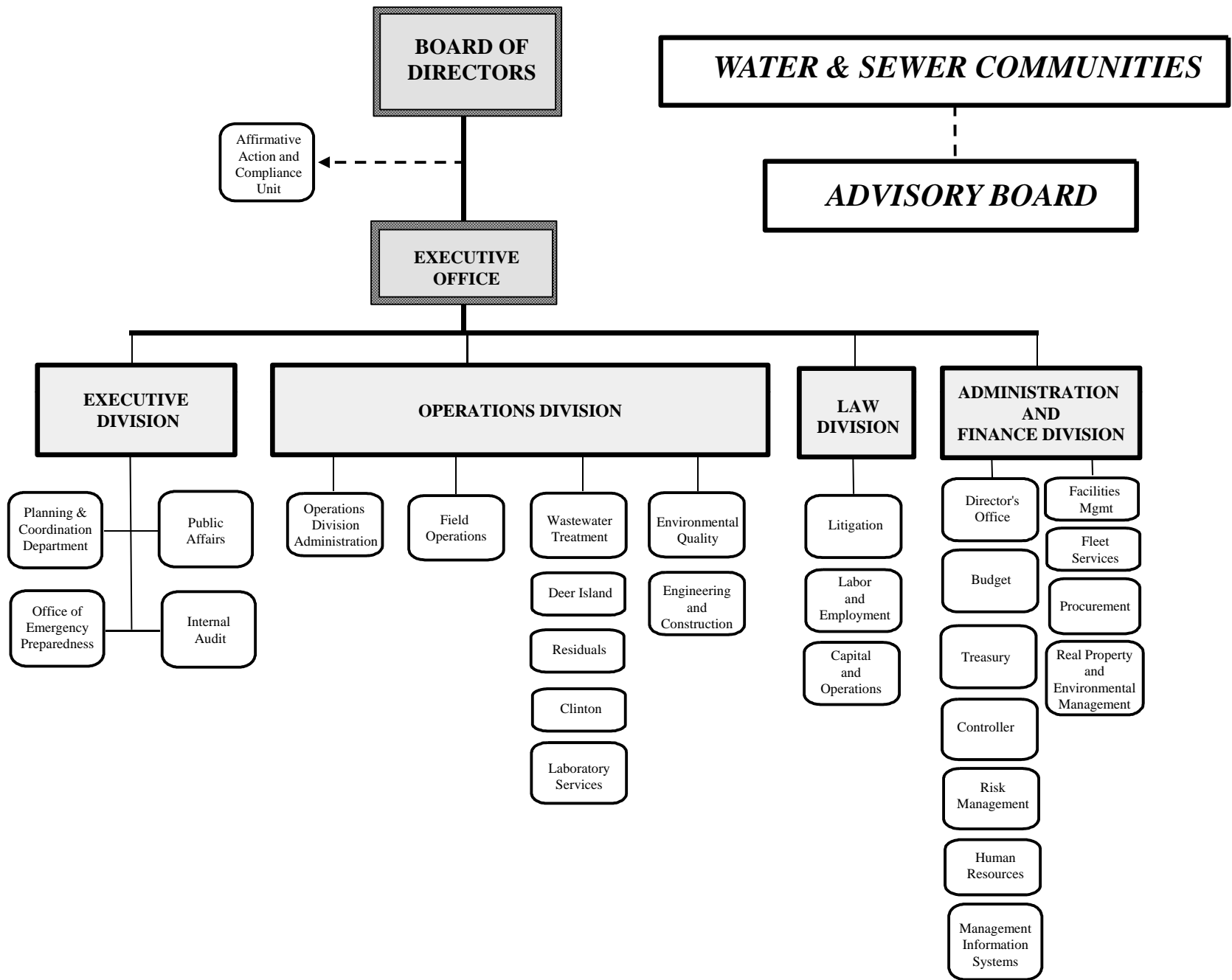
Additional budget information and a copy of this document are available online at [www.mwra.com](http://www.mwra.com). Questions or comments on this document should be directed to the MWRA Budget Department.

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 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 MWRA. A brief history and organizational summary of MWRA is included at the end of the Executive Summary.

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 FY12 Proposed Budget to the Advisory Board in February. The Advisory Board 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.

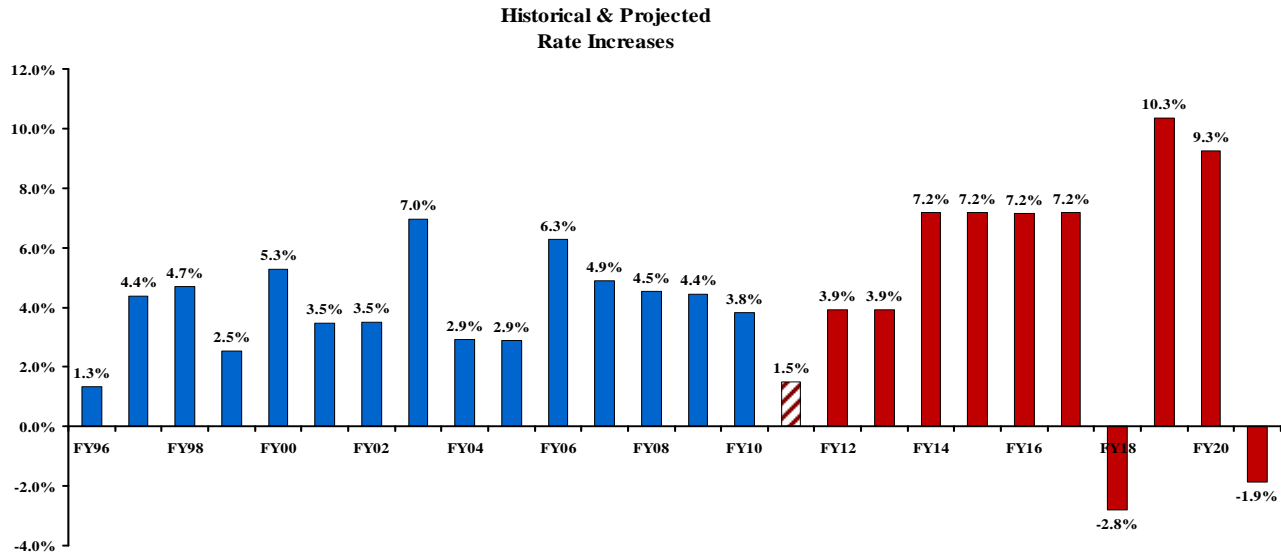
## FY12 Proposed Budget Summary

The FY12 budget holds to the 3.9% rate increase commitment made during the development of the FY11 budget as part of a three year strategy to keep rates especially low during these difficult economic times for our communities. This rate increase is achieved by continuing many of the actions started in FY11 including:

- Level funded directs with FY11 CEB
- No wage increases in FY12 for union and non-union staff
- Only required pension contribution
- Only nominal OPEB contribution
- Targeted defeasance
- Use of reserves

The budget decisions made in the near term will have a long term impact on the future. As MWRA rolls out year two of the three year strategy, it must keep to a multi-year rates management strategy and look beyond this three year snapshot to plan for what lies ahead.

Based on the FY12 Proposed Budget, projected future rate changes are depicted in the following chart:



Total expenses are \$621.7 million, \$19.8 million or 3.3% above the FY11 Budget. Capital financing costs remain the largest component of the budget and account for 59.8% of total expenses. There are no offsets from Debt Service Assistance (DSA) assumed for FY12. Debt Service Assistance was eliminated starting in FY09 in response to the State’s fiscal crisis and is unlikely to be restored in the near term. While capital financing costs remain the largest component of the budget, other escalating liabilities continue to put pressure on the operating budget.

Total expenses include \$371.9 million for capital financing costs, 59.8% of total costs, and \$249.8 million or 40.2% for operating expenses, of which \$209.6 million is for direct expenses and \$40.2 million is for indirect expenses. Total expenses increased by \$19.8 million over FY11 approved levels, \$17.6 million of which comes from increased capital financing expense and \$2.2 million for higher operating expenses.

The \$17.6 million or 5.0% increase in capital financing expenses reflects debt service associated with the projected issuances of \$150 million in May 2011 and the projected \$100.0 million in April 2012 as well as new State Revolving Fund (SRF) debt of \$85.0 million to be issued in April 2011 and an additional \$50.0 million in FY12. Offsetting these new issuances, are the impacts of the projected FY11 \$24.0 million defeasance, which is estimated to yield savings of approximately \$1.0 million in FY12 and FY13, respectively, and \$22.0 million in FY14.

The \$2.2 million increase in operating expenses from the FY11 Budget is due to the decision to make a nominal contribution towards the Authority’s mounting Other Post Employment Benefits (OPEB) obligation of \$1.9 million, increases for Maintenance of \$871,000 due to increased projects, Watershed of \$581,000 mainly due to increased Payment In Lieu of Taxes (PILOT) expense, Other Services of \$425,000 due to higher Space/Lease Rentals for contractual escalators and projected increases for property taxes, and Sludge Pelletization due to increased inflation indices. These increases are offset by decreases for Utilities of \$1.2 million mainly for favorable electricity pricing and higher self-

generation, Wages and Salaries of \$640,000 for a decreased funded headcount of 5 positions (from 1,210 in FY11 to 1,205 in FY12) and lower leave balance accruals, and lower Harbor Electric Energy Corporation (HEEC) contractual requirements of \$509,000.

Total revenues of \$621.7 million are budgeted for FY12. The FY12 Final Rate Revenue Requirement is \$592.2 million, an increase of \$22.4 million or 3.9% over the FY11 Rate Revenue Requirement. FY12 non-rate revenues total \$29.5 million, a decrease of \$2.6 million or 8.2% from the FY11 Approved Budget mainly due to a \$1.5 million reduction in the use of Rate Stabilization and a \$1.4 million reduction in Investment Income reflecting the lower prevailing interest rate environment. The FY12 Proposed non-rate revenue budget includes \$13.9 million for investment income, \$12.0 million in other user charges and other revenue - which includes an estimated \$1.2 million from the sale of renewable energy portfolio credits and participation in demand response programs, and the use of \$3.5 million in Rate Stabilization.

Table I-1 shows MWRA's FY12 Proposed Budget for revenue and expenses compared with FY11 Budget and FY10 actual spending. Changes from FY11 to FY12 are described in the Revenue and Expense section of the Executive Summary.

**Table I-1**

TOTAL MWRA	FY10 Actual	FY11 Approved Budget	FY12 Proposed	Change FY12 Proposed vs FY11 Approved Budget	
				\$	%
<b>EXPENSES</b>					
WAGES AND SALARIES	\$ 89,957,003	\$ 91,151,296	\$ 90,511,524	\$ (639,772)	-0.7%
OVERTIME	3,965,999	3,310,659	3,513,630	202,971	6.1%
FRINGE BENEFITS	15,995,517	17,995,660	18,133,683	138,023	0.8%
WORKERS' COMPENSATION	2,226,080	1,870,000	2,020,000	150,000	8.0%
CHEMICALS	8,998,799	9,797,118	10,017,545	220,427	2.2%
ENERGY AND UTILITIES	25,982,266	23,314,734	22,110,061	(1,204,673)	-5.2%
MAINTENANCE	25,561,320	28,759,673	29,631,132	871,459	3.0%
TRAINING AND MEETINGS	94,865	231,783	260,050	28,267	12.2%
PROFESSIONAL SERVICES	6,089,889	5,961,508	5,662,441	(299,067)	-5.0%
OTHER MATERIALS	4,811,574	4,612,316	4,688,647	76,331	1.7%
OTHER SERVICES	22,477,713	22,607,937	23,032,498	424,561	1.9%
<b>TOTAL DIRECT EXPENSES</b>	<b>\$ 206,161,025</b>	<b>\$ 209,612,684</b>	<b>\$ 209,581,213</b>	<b>\$ (31,471)</b>	<b>0.0%</b>
INSURANCE	\$ 3,453,720	\$ 2,586,000	\$ 2,400,000	\$ (186,000)	-7.2%
WATERSHED/PILOT	23,349,465	24,744,921	25,325,896	580,975	2.3%
SPECIAL PAYMENT OBLIGATION	-	-	-	-	
HEEC PAYMENT	3,895,850	4,174,256	3,665,499	(508,757)	-12.2%
MITIGATION	1,447,883	1,518,401	1,528,705	10,304	0.7%
ADDITIONS TO RESERVES	(653,254)	(407,581)	(94,998)	312,583	-76.7%
RETIREMENT FUND	5,621,259	5,342,856	5,488,792	145,936	2.7%
POSTEMPLOYMENT BENEFITS	800,000	-	1,851,646	1,851,646	
<b>TOTAL INDIRECT EXPENSES</b>	<b>\$ 37,914,923</b>	<b>\$ 37,958,853</b>	<b>\$ 40,165,540</b>	<b>\$ 2,206,687</b>	<b>5.8%</b>
DEBT SERVICE (before offsets)	\$ 363,937,694	\$ 354,326,676	\$ 371,917,522	\$ 17,590,846	5.0%
VARIABLE RATE DEBT/OTHER	(18,708,191)	-	-	-	
BOND REDEMPTION	-	-	-	-	
DEBT SERVICE ASSISTANCE	-	-	-	-	
<b>TOTAL DEBT SERVICE</b>	<b>\$ 345,229,503</b>	<b>\$ 354,326,676</b>	<b>\$ 371,917,522</b>	<b>\$ 17,590,846</b>	<b>5.0%</b>
<b>TOTAL EXPENSES</b>	<b>\$ 589,305,451</b>	<b>\$ 601,898,212</b>	<b>\$ 621,664,275</b>	<b>\$ 19,766,062</b>	<b>3.3%</b>
<b>REVENUE &amp; INCOME</b>					
RATE REVENUE	\$ 561,431,000	\$ 569,800,000	\$ 592,200,000	\$ 22,400,000	3.9%
OTHER USER CHARGES	7,786,906	7,065,350	7,509,026	443,676	6.3%
OTHER INCOME SPECIAL PMT	-	-	-	-	
OTHER REVENUE	5,079,438	4,693,216	4,525,038	(168,178)	-3.6%
RATE STABILIZATION	7,312,438	5,029,744	3,525,576	(1,504,168)	-29.9%
INVESTMENT INCOME	15,222,741	15,309,902	13,904,635	(1,405,267)	-9.2%
<b>TOTAL REVENUE &amp; INCOME</b>	<b>\$ 596,832,523</b>	<b>\$ 601,898,212</b>	<b>\$ 621,664,275</b>	<b>\$ 19,766,063</b>	<b>3.3%</b>



## **FY11 Mid-Year Accomplishments:**

- At Deer Island Treatment Plant, treated 99% of flow through secondary and met secondary permit limits at all times. Operated DITP without any NPDES Permit violations year-to-date FY11.
- Continue to leverage MWRA's self-generation assets and participation in the competitive energy markets 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) resulted in net savings of \$461,000 for the first six months of FY11. Deer Island also self-generated 19% of the plant's total required power during that period.
- Continued to manage FY11 budgetary spending to allow for an estimated \$23.6 million defeasance reducing future Rate Revenue Requirements.
- Successfully procured \$525.4 million in replacement Standby Bond Purchase Agreements increasing MWRA's diversity across banks.
- Continued to aggressively pursue any stimulus or grant funding opportunities. Applied to the Federal Emergency Management Agency (FEMA) for partial cost-recovery for the additional expense of the federally-declared disaster. FEMA awarded MWRA grants totaling approximately \$1.4 million.
- Execution of the consultant contract for an agency-wide staffing assessment study.
- Commenced replacing 7+ year old personal computers with energy efficient models which contributes to the green computing model. Additionally, began upgrading computers to Microsoft Office 2007.
- Developed a repair plan for the August 26<sup>th</sup> water leak adjacent to Shaft 5A in Weston. This included procurement of numerous contracts for pipe repair, field investigation, site restoration, and acceleration of the Hultman Aqueduct rehabilitation project.
- Completed audit of Southborough HVAC system and commenced audits in 14 more facilities.
- Procured new contract for the purchase of natural gas for the Carroll Water Treatment Plant (CWTP) and the Chelsea facility which resulted in approximate savings of \$100,000. Nearly 63% of natural gas demand is at fixed cost.
- The Operations Division spent \$11.4 million on maintenance of which \$5.8 million was for materials and \$6.6 million for services.
- In the water system, exercised 475 and replaced 11 mainline valves; exercised 228 blow-off valves; and surveyed 126 miles of water mains for leaks.
- In the wastewater system, inspected 16 miles and cleaned 18 miles of pipeline. Also inspected 336 structures and rehabilitated 91 manholes.

- Awarded the following major contracts in FY11 to date: Local Pipeline Assistance; Purchase and Supply of Electricity Interval Accounts; Remote Headworks Upgrade Design; Deer Island Treatment Plant (DITP) Thermal Power Plant Dump Condenser; Site Work and Excavation Shaft 5; Emergency Repair of 120 Inch Pipe Shaft 5; Prison Point CSO Facility HVAC and Odor Control Upgrade; Harbor and Outfall Monitoring; Lynnfield/Saugus Pipelines; and Section 36 Watertown Waltham Connection Design.
- Advertised or received bids/proposals/statements for the following: Spot Pond Storage Facility Design Build; DITP Human Machine Interface; DITP Metals Lab Fume Hood Replacement; DITP Concrete and Steel Restoration and Coating Phase II; CWTP Second Gaseous Oxygen Line; Staffing Study; Liquidity Facility for Variable Rate Bonds; Nut Island Headworks Electrical and Conveyor Improvements; NIH Redundant Pipeline Design; NDB Outfall Dredging Design; DITP Oxygen Facility Services; and Firewall Maintenance.
- The TRAC Department completed the following Environmental Protection Agency (EPA) required work for significant industrial users: 115 inspections, 148 monitoring events, and 279 samplings of connections. This department also issued or renewed 117 permits (significant industrial users SIU and non-SIU).
- Completed the security system installations at the Chelsea Headworks and Blue Hills Covered Storage Facilities.

### **FY12 Initiatives**

- Continue close monitoring of financial markets to better position the Authority to take advantage of any opportunities to maximize investment income and reduce debt financing obligations.
- Manage the process for negotiating successor collective bargaining agreements with all five unions. Upon Board ratification, implement collective bargaining agreements.
- Participate in the evaluation of the impact of the Staffing Study recommendations and work with senior management and collective bargaining units to implement as needed specific recommendations adopted by the Board of Directors.
- Manage the first full year operations for the North Dorchester Bay odor control facility.
- Continue to implement and optimize 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.
- Optimize staff resources, overtime, service contract scopes and use, and use of as-needed design contracts to complete routine and major maintenance projects.

- Pending approval by regulators, implement requirements of new NPDES Permits for DITP and Clinton Wastewater Treatment Plant.
- Implement revised harbor and outfall monitoring plan to reflect reduced scope.
- Initiate the development of a detailed Strategic Information Technology Plan to assess the MWRA's current business environment, system architecture, and strategic direction.

## 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 FY12 Proposed Budget.

**Table I-2**

SOURCES & USES OF FUNDS*		
\$ in Millions		
<i>Sources of Funds</i>		
Other User Charges	\$7.5	1.2%
Other Revenue	4.5	0.7%
Investment Income	13.9	2.2%
Rate Revenue	592.2	95.3%
Rate Stabilization	3.5	0.6%
<b>TOTAL REVENUE</b>	<b>\$621.7</b>	<b>100.0%</b>
<i>Uses of Funds</i>		
Total Expenses before Debt		
Service Offsets	\$621.7	
Less:		
Debt Service Assistance	0.0	
Bond Redemption	0.0	
Sub-Total Net Expenses	621.7	
Capital Financing	371.9	59.8%
Direct Expenses	209.6	33.7%
Indirect Expenses	40.2	6.5%
<b>TOTAL EXPENSES</b>	<b>\$621.7</b>	<b>100.0%</b>
<b>TOTAL EXPENSES Less Offsets</b>	<b>\$621.7</b>	
*May not add up due to rounding		

### Revenue

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

In the FY12 Proposed Budget, 95.3% of revenue is derived from rate revenue. The remaining 4.7% 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 FY12 Proposed Budget, MWRA will raise \$592.2 million of its total revenue requirements from water and sewer assessments to member communities. Of the \$592.2 million, \$409.6 million will fund the sewerage system, an increase of 5.13% as compared to FY11; and \$182.6 million will fund the water system, an increase of 1.34% as compared to FY11.

## **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 FY12 Proposed Budget total \$7.5 million, an increase of \$444,000 or 6.3% from the FY11 Budget and are composed of \$4.2 million paid by the Chicopee Valley Aqueduct communities, \$1.3 million in water revenue collected from sewer ratepayers to offset the cost of water used for operation 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, and \$489,000 in water revenue and \$347,000 in sewer revenue to contract communities and others.

### **Other Revenue**

Other Revenue is budgeted at \$4.5 million, a decrease of \$168,000 or 3.6% from the FY11 Budget. Other Revenue includes \$2.2 million in permit fees and penalties, in addition to \$1.2 million for the sale of Deer Island's Renewable Portfolio Credits and revenues for demand response programs.

#### *Permit Fees and Penalties*

The FY12 Proposed 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.

#### *Miscellaneous Revenue*

The FY12 Proposed Budget includes \$2.3 million in miscellaneous revenues of which \$1.2 million pertains to the Authority's energy programs for the sale of Renewable Portfolio Standard credits and participation in the demand response program, \$1.1 million in other revenue, and \$280,000 is for hydro-power generated at MWRA's facilities including the Cosgrove Intake facility.

### **Investment Income**

MWRA earns income by investing reserves and fund balances in a variety of interest-yielding securities. The FY12 Proposed Budget includes \$13.9 million in investment income, a decrease of \$1.4 million or 9.2% from the FY11 Budget. The FY12 Proposed short-term interest rate is 0.30%, 20 basis points less than the FY11 Budget rate of 0.50%.

### ***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 FY12 Proposed Budget, \$3.5 million in Rate Stabilization fund usage is assumed.

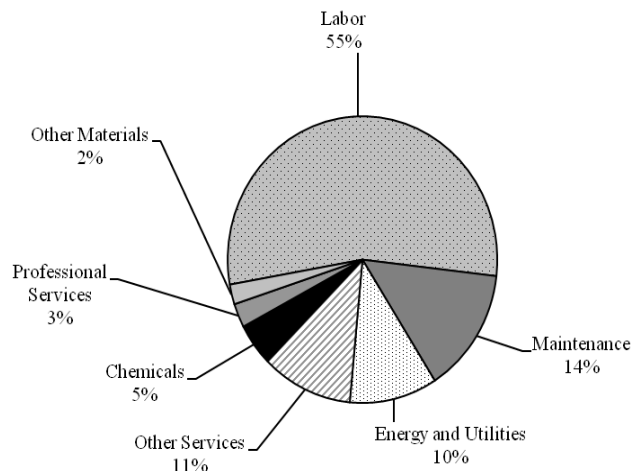
## Direct Program Expenses

The FY12 Proposed direct expense budget is \$209.6 million, essentially level funded with the FY11 Budget. Increased funding for Maintenance due to increased project level, Other Services due to increased Space/Lease Rental for contractual escalators and increased property tax assumptions, Chemicals due to new regulatory requirements primarily for enterococcus compliance at Deer Island and phosphorous removal at Clinton, and Overtime due to revised operating assumptions for wet weather response are offset by a projected \$1.2 million decrease in Utilities spending due to lower electricity pricing and increased self-generation, lower Wages and Salaries due to a reduced funded headcount and leave balance accrual assumptions, and lower Professional Services mainly due to the elimination of a one-time cost for professional support for a Water Break Expert Panel. To address rising direct costs, the MWRA has actively moved to consolidate operation and maintenance facilities, reorganized and automated facilities, reduced leased space, sold surplus assets, negotiated competitive purchase agreements for energy and chemicals, and increased self-generation and utilization of digester gas for energy production.

## 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 (14%), and other services (11%), and energy and utilities (10%).

FIGURE I-1  
Direct Expenses by Category - \$209.6 Million



Within the labor cost category, Wages and Salaries account for \$90.5 million, 0.7% below the FY11 Budget. Of the \$90.5 million, \$89.1 million is for regular pay. The FY12 Proposed Budget assumes a staffing level of 1,210, with an average funded level of 1,205, five fewer positions than funded in the FY11 Budget. New hires and backfills of vacant positions will be managed in the aggregate and addressed on a case-by-case basis by senior management.

Filled positions at MWRA have declined by 565 positions or 32% since the peak of 1,775 in March 1997 to 1,210 for FY12.

The FY12 Proposed Budget includes \$22.1 million for utilities, which is \$1.2 million or 5.2% lower than the FY11 Budget. The Authority has been proactive in managing its energy expense through increased self-generation at Deer Island due to improved Steam Turbine Generator (STG) operation and new green initiatives along with efficiency improvements in Field Operations. It is important to note that the Authority's operations are highly energy intensive and that higher energy prices, particularly natural gas through its impact on electricity prices would have a significant impact on this budget. The FY12 Proposed Budget assumes funding of \$17.0 million for electricity, \$2.6 million for diesel fuel, \$1.8 million for water and \$597,000 for natural gas. The FY12 Proposed energy and utilities budget reflects the most recent pricing outlook based on energy futures and on the latest power purchase contracts for Deer Island, Carroll Water Treatment Plant, and other large FOD facilities. As a result of projected increased self-generation at Deer Island due to improved Steam Turbine Operations and new green energy initiatives, along with efficiency improvements in Field Operations, and favorable bid pricing, the total spending for utilities is lower than the FY11 Budget. In May 2009, the Authority entered into a 2-year power purchase agreement for Deer Island where the Authority purchased a fixed 10 MW block of power and will purchase the remaining plant energy demand in the real-time market. In November 2010, a new 4 MW, 3-year, fixed block power purchase agreement for the Authority's larger electrical accounts went into effect whereby 80% of interval demand will be fixed. With the addition of this new contract, the MWRA has fixed pricing for over 60% of its electricity load, with remaining demand being purchased in the real-time market.

As the Authority's major mandated capital initiatives wind down, maintenance expenditures to preserve these operating assets and maintain its infrastructure will continue to grow. The FY12 Proposed Budget for maintenance is \$29.6 million, an increase of \$871,000 or 3.0%, compared to the FY11 Budget. This demonstrates the Authority's continued commitment to maintaining its core operation related to facilities and infrastructure.

The FY12 Proposed Budget includes \$23.0 million for other services, an increase of \$425,000 or 1.9% from FY11 Approved Budget mainly due to increased Space/Lease Rentals of \$201,000 for contract escalators and increased property tax liability and Sludge Pelletization of \$149,000 due to higher inflation assumptions. The Other Services budget is comprised of \$14.0 million for the Sludge pelletization contract, \$3.6 million for Space Lease/Rentals mainly for the CNY and Chelsea facilities, and \$1.4 million for voice and data services.

The FY12 Proposed Budget includes \$10.0 million for chemicals, an increase of \$220,000 or 2.2% from the FY11 Budget with the increase driven by nine months of higher sodium bisulfite and sodium hypochlorite usage for regulatory requirements of enterococcus compliance at Deer Island versus the three months included in the FY11 Budget.

## 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 FY12 Proposed 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 - \$209.6 Million

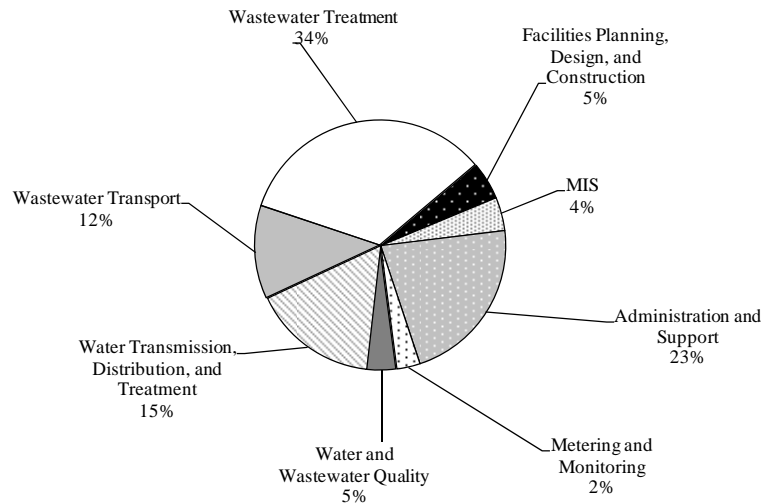
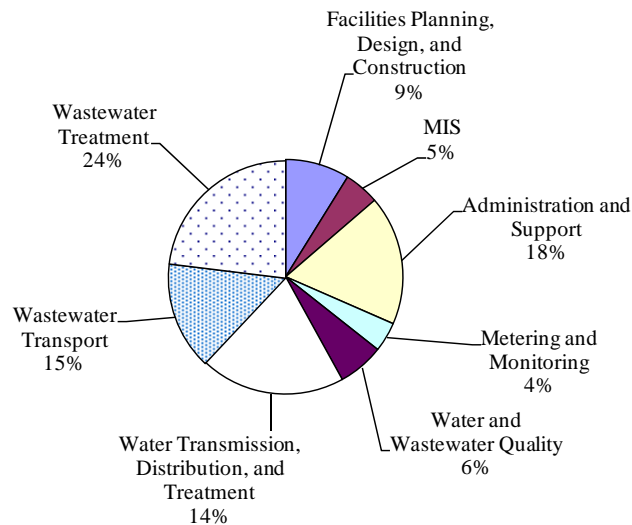


Figure I-3 illustrates staffing by Functional Area and shows the breakdown of the 1,198 filled positions as of December 2010. Of the 1,198 positions, 61% are devoted to operating and maintaining the water and wastewater treatment and transport systems; 23% to administration and support and MIS functions, 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



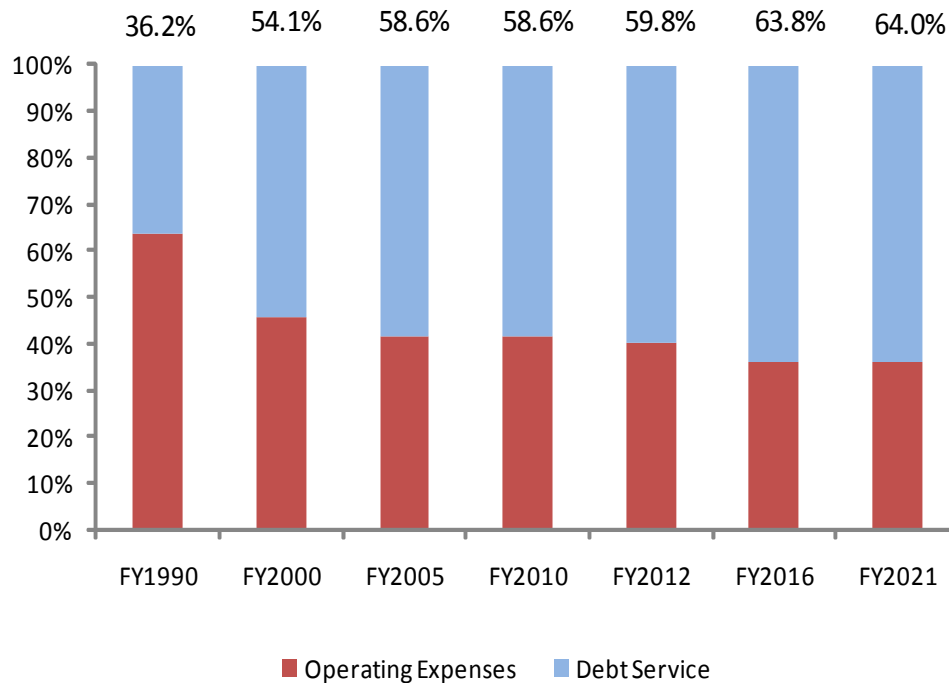
## Capital Financing

### Outstanding Debt and Debt Management

The \$7.3 billion spent on MWRA's modernization efforts to date, has relied heavily on debt financing. Total debt as of December 2010 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.

The Authority's debt service obligation as a percent of total expenses has increased from 36% in 1990 to 58.9% in the FY12 Proposed Current Expense Budget. Much of this debt service is for completed projects. MWRA's capital spending, from its inception, has been dominated by court-mandated projects, which in total have accounted for 80% of capital spending to date. Going forward, the majority of capital spending will be geared towards asset protection and water redundancy initiatives.

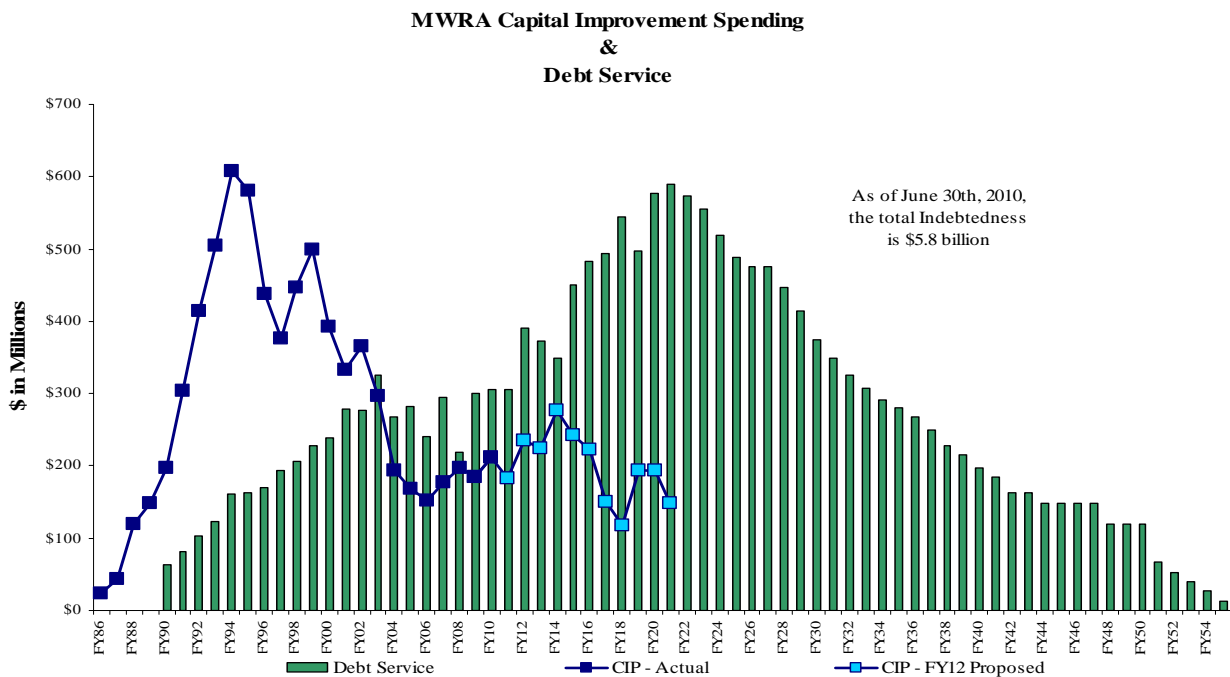
The following graph depicts the growing proportion of capital financing as a % of total expenses.



The MWRA expects to finance the capital expenditures identified in the FY12 Proposed Capital Improvement Program (CIP) through the issuance of revenue bonds as provided for in the Enabling Act, and from the proceeds of federal and state grants and operating revenues. As of December, 2010, the MWRA's indebtedness included \$3.3 billion of senior revenue bonds, nearly \$1.3 billion of subordinated revenue bonds, approximately \$1.1 billion of loans with the SRF and \$194 million of tax-exempt commercial paper notes.



The following graph illustrates the relationship between the MWRA's CIP and outstanding debt as of June 2010.



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 maximizing use of the subsidized State Revolving Fund (SRF) debt, issuance of variable rate debt, current and advanced refunding of outstanding debt, the use of surplus revenues to defease debt, and swap agreements. The MWRA also uses Tax Exempt Commercial Paper to minimize the financing cost of construction in process.

A \$23.6 million defeasance funded by the projected FY11 surplus is forecast to reduce future debt service by approximately \$1.0 million in FY12 and FY13, and \$22.0 million in FY14.

The FY12 Proposed capital financing costs increased by \$17.6 million or 5.0% compared to the FY11 Budget. This increase in the MWRA's debt service is the result of the new money issued in FY11 and projected FY12 issuances partially offset by the impact of the projected defeasance. The FY12 Proposed capital financing budget includes:

- \$187.2 million in principal and interest payments on MWRA's senior fixed rate bonds. This amount includes \$11.3 million to support issuances of \$150 million of new money in May 2011 and \$100 million in April 2012;
- \$96.7 million in principal and interest payments on subordinate bonds;
- \$73.1 million in principal and interest payments on SRF loans. This amount includes \$10.0 million to support issuances of \$85.0 million in April 2011 and \$50.0 million in 2012;

- \$8.2 million to fund ongoing capital projects with current revenue and to meet coverage requirements;
- \$3.5 million to fund the interest expense related to the Local Water Pipeline Assistance Program; and
- \$3.2 million for the Chelsea Lease.

The FY12 Proposed Budget assumes a 3.25% interest rate for variable rate debt which is level funded with the FY11 assumption. 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 20-year SIFMA interest rate average for variable rate debt is 2.86% and MWRA current average liquidity and remarketing costs are 75 basis points. The combination of these two costs results in an all-in average cost of approximately 3.61% which is 36 basis points higher than the budget assumption.

Table I-3 provides detail on the FY12 Proposed Budget capital financing line item. Table I-3 also illustrates how upgrading the sewerage system has dominated the capital program to date. Nearly 70% percent of the FY12 Proposed capital financing is for wastewater improvements. Current and future borrowing increasingly support improvements to the water system. A complete list of the Authority’s indebtedness by series is presented in Appendix F.

<b>TABLE I-3</b>				
<b>Proposed FY12 Current Expense Budget - Capital Financing Detail (as of 12/31/10)</b>				
<b>\$ in Millions</b>				
	<b>Amount Outstanding</b>	<b>Total</b>	<b>Sewer</b>	<b>Water</b>
Total SRF <sup>1</sup> Debt	\$1,060	\$73.1	\$58.1	\$15.0
Total Senior Debt	3,288	187.2	115.1	72.1
Total Subordinate Debt	1,253	96.7	79.3	17.4
<b>Total SRF &amp; MWRA Debt Service<sup>2</sup></b>	<b>\$5,601</b>	<b>\$357.0</b>	<b>\$252.5</b>	<b>\$104.5</b>
Water Pipeline Commercial Paper	194	3.5	0.0	3.5
Current Revenue/Capital <sup>3</sup>		8.2	6.2	2.1
Capital Lease		3.2	2.0	1.2
<b>Sub-Total</b>	<b>\$194</b>	<b>\$14.9</b>	<b>\$8.2</b>	<b>\$6.7</b>
<b>Total Capital Financing (before Debt Service Offsets)</b>	<b>\$5,795</b>	<b>\$371.9</b>	<b>\$260.7</b>	<b>\$111.2</b>
Debt Service Offsets:				
Debt Service Assistance		0	0	0
<b>Total Capital Financing</b>	<b>\$5,795</b>	<b>\$371.9</b>	<b>\$260.7</b>	<b>\$111.2</b>

<sup>1</sup> SRF debt service payments reflect net MWRA obligations after state and federal subsidies. Total outstanding does not include \$33.0 million of ARRA funding

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

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

## **Indirect Expenses**

Indirect Expenses for FY12 total \$40.2 million, an increase of \$2.2 million or 5.8% more than the FY11 Budget. Below are the highlights of major changes:

### **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 FY12 Proposed Budget includes \$2.4 million for Insurance, a decrease of \$186,000 or 7.2% from the FY11 Budget. The budget includes \$1.8 million for premiums and fees and \$600,000 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 current funding level of \$19.0 million has been determined to be acceptable and reasonable based on a FY07 Insurance Reserve Fund review performed by an outside insurance consultant. An updated Insurance Reserve adequacy review is currently underway.

### **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 FY12 Proposed Budget includes \$25.3 million for the Division of Water Supply Protection (formerly MDC Division of Watershed Management), an increase of \$581,000 or 2.3% over the FY11 Budget. The budget is comprised of \$12.4 million for reimbursement of operating expenses, \$7.3 million for Payment in Lieu of Taxes (PILOT), and \$5.6 million for debt service expenses on prior land purchases financed by the Commonwealth.

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

The FY12 Proposed Budget includes \$3.7 million for the Harbor Energy Electric Company (HEEC), a decrease of \$509,000 or 12.2% from the FY11 Budget. This funding is for the repayment of the capital investment of the Deer Island electric cable and substation which provides electric power to the treatment plant.

### **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 FY12 Proposed Budget includes \$1.5 million for community compensation for impacts, including \$800,000 for the City of Quincy and \$729,000 for the Town of Winthrop, based on Memoranda of Agreement with the communities.

### **Retirement System Contribution**

The FY12 Proposed Budget includes a contribution to MWRA's retirement fund of \$5.5 million, an increase of \$146,000 or 2.7% more than the FY11 Budget. The FY12 funding of \$5.5 million represents the minimum required contribution for FY12 based on the most recent actuarial evaluation of January 1, 2010.

### **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 included in the FY08, FY09, and FY10 Budgets but was eliminated in FY11 to obtain the 1.5% rate increase. In an effort to restore the Authority's long-term commitment for its liabilities, a \$1.9 million nominal amount is included for OPEB in the FY12 Proposed Budget.

### **Operating Reserves**

Funding for the Operating Reserve for FY12 is \$95,000 lower than the FY11 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 FY12 Proposed CEB, the required balance is \$37.1 million versus the \$37.2 million required in FY11.

### **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-four 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 FY12 Proposed 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 preliminary MWRA assessments for FY12.

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 FY12 proposed 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 FY12 Proposed 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. In April 2005, the MWRA installed a new wastewater metering system which has been used to generate sewer assessments since FY07.

**Table I-4**

**Massachusetts Water Resources Authority  
Preliminary FY12 Water and Sewer Assessments**

17-Feb-11

MWRA Fully Served Water and Sewer Customers	Final FY11 Water Assessment	Preliminary FY12 Water Assessment	Percent Change from FY11	Final FY11 Sewer Assessment	Preliminary FY12 Sewer Assessment	Percent Change from FY11	Final FY11 Combined Assessment	Preliminary FY12 Combined Assessment	Percent Change from FY11
ARLINGTON	\$3,993,340	\$4,080,393	2.2%	\$6,763,055	\$7,253,472	7.3%	\$10,756,395	\$11,333,865	5.4%
BELMONT	2,183,280	2,236,627	2.4%	4,234,838	4,530,535	7.0%	6,418,118	6,767,162	5.4%
BOSTON (BWSC)	67,381,413	66,078,017	-1.9%	109,888,745	116,181,319	5.7%	177,270,158	182,259,336	2.8%
BROOKLINE	5,310,862	5,136,757	-3.3%	11,279,012	12,162,571	7.8%	16,589,874	17,299,328	4.3%
CHELSEA	3,118,910	3,033,466	-2.7%	6,157,340	6,370,938	3.5%	9,276,250	9,404,404	1.4%
EVERETT	4,152,168	4,126,571	-0.6%	6,614,319	6,968,650	5.4%	10,766,487	11,095,221	3.1%
FRAMINGHAM	6,448,218	6,807,815	5.6%	9,983,704	10,455,532	4.7%	16,431,922	17,263,347	5.1%
LEXINGTON	4,745,093	5,012,091	5.6%	6,405,931	6,866,826	7.2%	11,151,024	11,878,917	6.5%
MALDEN	5,494,013	5,387,658	-1.9%	10,588,739	10,945,343	3.4%	16,082,752	16,333,001	1.6%
MEDFORD	5,061,181	5,025,257	-0.7%	10,350,919	10,925,974	5.6%	15,412,100	15,951,231	3.5%
MELROSE	2,093,320	2,261,475	8.0%	5,245,603	5,430,208	3.5%	7,338,923	7,691,683	4.8%
MILTON	2,290,290	2,476,082	8.1%	4,536,045	4,839,034	6.7%	6,826,335	7,315,116	7.2%
NEWTON	8,710,520	8,872,649	1.9%	18,034,955	19,722,652	9.4%	26,745,475	28,595,301	6.9%
NORWOOD	2,875,398	3,157,592	9.8%	5,561,031	5,821,946	4.7%	8,436,429	8,979,538	6.4%
QUINCY	9,387,744	9,236,681	-1.6%	17,150,548	17,816,425	3.9%	26,538,292	27,053,106	1.9%
READING	1,726,878	1,759,085	1.9%	3,922,082	4,164,476	6.2%	5,648,960	5,923,561	4.9%
REVERE	4,086,484	4,128,534	1.0%	9,553,669	9,284,906	-2.8%	13,640,153	13,413,440	-1.7%
SOMERVILLE	5,958,943	5,790,771	-2.8%	12,822,076	13,951,648	8.8%	18,781,019	19,742,419	5.1%
STONEHAM	2,710,209	2,855,799	5.4%	4,036,494	4,291,131	6.3%	6,746,703	7,146,930	5.9%
WALTHAM	7,639,702	7,643,428	0.1%	11,906,428	12,458,139	4.6%	19,546,130	20,101,663	2.8%
WATERTOWN	2,683,079	2,638,812	-1.6%	5,271,596	5,591,351	6.1%	7,954,675	8,230,163	3.5%
WINTHROP	1,239,532	1,230,989	-0.7%	2,871,107	3,153,150	9.8%	4,110,639	4,384,139	6.7%
<b>TOTAL</b>	<b>\$159,290,577</b>	<b>\$158,976,645</b>	<b>-0.2%</b>	<b>\$283,178,236</b>	<b>\$299,186,226</b>	<b>5.7%</b>	<b>\$442,468,813</b>	<b>\$458,162,871</b>	<b>3.5%</b>

MWRA Sewer and Partial Water Customers	Final FY11 Water Assessment	Preliminary FY12 Water Assessment	Percent Change from FY11	Final FY11 Sewer Assessment	Preliminary FY12 Sewer Assessment	Percent Change from FY11	Final FY11 Combined Assessment	Preliminary FY12 Combined Assessment	Percent Change from FY11
CANTON	\$2,245,811	\$2,198,633	-2.1%	\$3,240,704	\$3,280,257	1.2%	\$5,486,515	\$5,478,890	-0.1%
NEEDHAM	265,017	605,448	128.5%	5,043,945	5,337,491	5.8%	5,308,962	5,942,939	11.9%
STOUGHTON	560,611	623,476	11.2%	4,209,243	4,478,056	6.4%	4,769,854	5,101,532	7.0%
WAKEFIELD	1,519,711	1,466,686	-3.5%	5,033,655	5,463,351	8.5%	6,553,366	6,930,037	5.7%
WELLESLEY	1,039,510	1,035,399	-0.4%	4,801,042	5,043,767	5.1%	5,840,552	6,079,166	4.1%
WILMINGTON	100,782	489,671	385.9%	1,963,446	2,208,067	12.5%	2,064,228	2,697,738	30.7%
WINCHESTER	836,681	1,007,001	20.4%	3,465,522	3,640,174	5.0%	4,302,203	4,647,175	8.0%
WOBBURN	1,713,327	2,278,024	33.0%	9,292,091	9,125,716	-1.8%	11,005,418	11,403,740	3.6%
<b>TOTAL</b>	<b>\$8,281,450</b>	<b>\$9,704,338</b>	<b>17.2%</b>	<b>\$37,049,648</b>	<b>\$38,576,879</b>	<b>4.1%</b>	<b>\$45,331,098</b>	<b>\$48,281,217</b>	<b>6.5%</b>

MWRA Sewer-only Customers	Final FY11 Water Assessment	Preliminary FY12 Water Assessment	Percent Change from FY11	Final FY11 Sewer Assessment	Preliminary FY12 Sewer Assessment	Percent Change from FY11	Final FY11 Combined Assessment	Preliminary FY12 Combined Assessment	Percent Change from FY11
ASHLAND				\$1,942,553	\$2,013,448	3.6%	\$1,942,553	\$2,013,448	3.6%
BEDFORD				2,872,853	2,974,697	3.5%	2,872,853	2,974,697	3.5%
BRAINTREE				7,090,129	7,271,555	2.6%	7,090,129	7,271,555	2.6%
BURLINGTON				4,447,740	4,778,421	7.4%	4,447,740	4,778,421	7.4%
CAMBRIDGE				21,622,817	21,699,797	0.4%	21,622,817	21,699,797	0.4%
DEDHAM				4,715,220	4,851,692	2.9%	4,715,220	4,851,692	2.9%
HINGHAM SEWER DISTRICT				1,434,012	1,514,903	5.6%	1,434,012	1,514,903	5.6%
HOLBROOK				1,379,633	1,437,546	4.2%	1,379,633	1,437,546	4.2%
NATICK				4,346,280	4,493,588	3.4%	4,346,280	4,493,588	3.4%
RANDOLPH				4,910,670	5,244,167	6.8%	4,910,670	5,244,167	6.8%
WALPOLE				3,116,054	3,280,898	5.3%	3,116,054	3,280,898	5.3%
WESTWOOD				2,158,037	2,288,279	6.0%	2,158,037	2,288,279	6.0%
WEYMOUTH				9,316,303	9,954,136	6.8%	9,316,303	9,954,136	6.8%
<b>TOTAL</b>				<b>\$69,352,301</b>	<b>\$71,803,127</b>	<b>3.5%</b>	<b>\$69,352,301</b>	<b>\$71,803,127</b>	<b>3.5%</b>

MWRA Water-only Customers	Final FY11 Water Assessment	Preliminary FY12 Water Assessment	Percent Change from FY11	Final FY11 Sewer Assessment	Preliminary FY12 Sewer Assessment	Percent Change from FY11	Final FY11 Combined Assessment	Preliminary FY12 Combined Assessment	Percent Change from FY11
LYNNFIELD WATER DISTRICT	\$362,005	\$420,825	16.2%				\$362,005	\$420,825	16.2%
MARBLEHEAD	1,805,608	1,816,156	0.6%				1,805,608	1,816,156	0.6%
NAHANT	303,713	321,083	5.7%				303,713	321,083	5.7%
SAUGUS	2,972,346	2,874,794	-3.3%				2,972,346	2,874,794	-3.3%
SOUTHBOROUGH	625,916	722,312	15.4%				625,916	722,312	15.4%
SWAMPSCOTT	1,462,442	1,463,732	0.1%				1,462,442	1,463,732	0.1%
WESTON	1,367,778	1,738,750	27.1%				1,367,778	1,738,750	27.1%
<b>TOTAL</b>	<b>\$8,899,808</b>	<b>\$9,357,652</b>	<b>5.1%</b>				<b>\$8,899,808</b>	<b>\$9,357,652</b>	<b>5.1%</b>

MWRA Partial Water-only Customers	Final FY11 Water Assessment	Preliminary FY12 Water Assessment	Percent Change from FY11	Final FY11 Sewer Assessment	Preliminary FY12 Sewer Assessment	Percent Change from FY11	Final FY11 Combined Assessment	Preliminary FY12 Combined Assessment	Percent Change from FY11
DEDHAM-WESTWOOD WATER DISTRICT	\$781	\$46,883	5902.9%				\$781	\$46,883	5902.9%
LYNN (LWSC)	169,958	201,055	18.3%				169,958	201,055	18.3%
MARLBOROUGH	2,390,943	2,944,041	23.1%				2,390,943	2,944,041	23.1%
NORTHBOROUGH	793,981	741,904	-6.6%				793,981	741,904	-6.6%
PEABODY	392,317	661,250	68.5%				392,317	661,250	68.5%
<b>TOTAL</b>	<b>\$3,747,980</b>	<b>\$4,595,133</b>	<b>22.6%</b>				<b>\$3,747,980</b>	<b>\$4,595,133</b>	<b>22.6%</b>
<b>SYSTEMS TOTAL</b>	<b>\$180,219,815</b>	<b>\$182,633,768</b>	<b>1.3%</b>	<b>\$389,580,185</b>	<b>\$409,566,232</b>	<b>5.1%</b>	<b>\$569,800,000</b>	<b>\$592,200,000</b>	<b>3.9%</b>

## Retail Charges

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

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

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

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

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

TABLE I-5  
Calculation of the PFY12 Rate Revenue Requirement  
(000's)

	Sewer	Water	Total
Allocated Direct Expenses	\$147,139	\$62,442	\$209,581
Allocated Indirect Expenses	\$11,640	\$28,526	\$40,166
<b>PLUS</b>			
Capital Expenses:			
Debt Service (less offsets)	\$252,538	\$104,464	\$357,002
Current Revenue for Capital	\$6,150	\$2,050	\$8,200
Other Capital Expenses	\$2,020	\$4,695	\$6,715
<b>PLUS</b>			
Non-Rate Revenue:			
Investment Income	-\$9,238	-\$4,666	-\$13,905
Fees and Other Revenue	-\$3,978	-\$8,056	-\$12,034
Rate Stabilization	\$3,295	-\$6,821	-\$3,526
<b>EQUALS</b>			
Rate Revenue Requirement	\$409,566	\$182,634	\$592,200

## 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 FY12, community assessments will represent 95.3% of total revenue.

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 FY12 through FY21.

Rates & Budget Projections										
Proposed FY12 CEB	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021
Total Rate Revenue (\$ in Mil)	\$ 592,200	\$ 615,569	\$ 659,712	\$ 707,013	\$ 757,638	\$ 811,992	\$ 789,315	\$ 870,938	\$ 951,537	\$ 933,888
Rate Revenue Change from Prior Year (\$000)	\$ 22,400	\$ 23,369	\$ 44,143	\$ 47,300	\$ 50,625	\$ 54,354	\$ (22,677)	\$ 81,623	\$ 80,599	\$ (17,649)
Rate Revenue Increase	3.9%	3.9%	7.2%	7.2%	7.2%	7.2%	-2.8%	10.3%	9.3%	-1.9%
Use of Reserves (\$ in Mil)	\$ 3,526	\$ 2,596	\$ 15,871	\$ 24,550	\$ 8,511	\$ 14,756	\$ -	\$ -	\$ -	\$ -

### Estimated Household Bill

Based on water usage of 61,000 gallons per year	\$ 875	\$ 918	\$ 969	\$ 1,029	\$ 1,094	\$ 1,153	\$ 1,184	\$ 1,272	\$ 1,363	\$ 1,391
Based on water usage of 90,000 gallons per year	\$ 1,292	\$ 1,354	\$ 1,430	\$ 1,518	\$ 1,614	\$ 1,701	\$ 1,746	\$ 1,877	\$ 2,011	\$ 2,052

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 \$88.5 million increase in direct expenses from FY12 to FY21 is primarily the result of an assumed annual inflation rate of 4.0%. Also, over the next ten years, there will be increases in direct expenses as a result of capital improvement projects. The largest increases will be for the operation of new facilities such as the North Dorchester Bay CSO which has incremental impacts which are reflected in the FY12 Proposed Budget.



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:

- No Debt Service Assistance is projected;
- Direct expense inflation rate of 4.0% starting in FY13;
- 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;
- Long-term fixed rate debt issues with 30-year terms and 5.5% interest rates in FY12, 40-year terms and 5.75% rates in FY13, 40-year terms and 6.0% rates in FY14, and 40-year terms and 6.25% rates from FY15-30;
- Variable rate interest projected at 3.25% in FY12, 3.75% in FY13 and 4.0% thereafter.

MWRA uses the planning estimates to present a picture of what future rate increases might be and to test the impact of changes to assumptions. The planning estimates are not predictions of rate increases; rather, they provide the context and framework for the policy decisions that actually shape future Rate Revenue Requirements and increases.

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;
- 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.

Managing rate increases in the coming years may involve tradeoffs between smaller increases in the upcoming fiscal year and significantly larger increases in subsequent years.

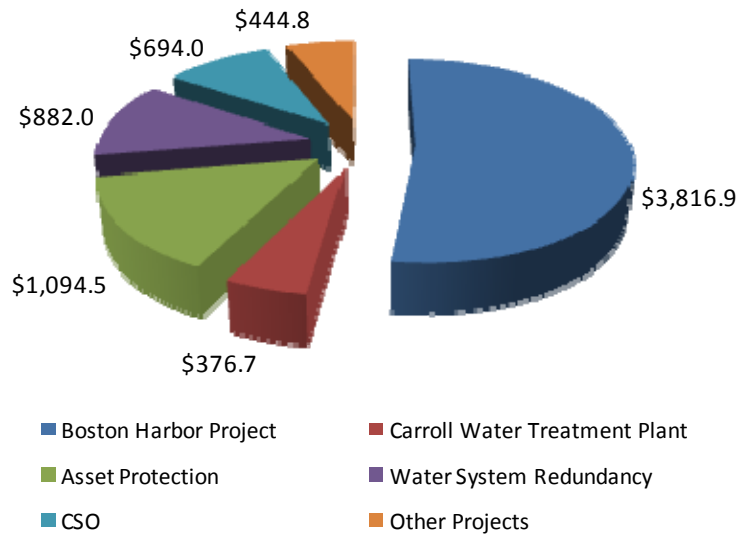
**FY12 Proposed Capital Improvement Program**

The FY12 Proposed Capital Improvement Program (CIP) budget totals \$5.5 billion, of which nearly \$3.3 billion has been expended through FY10 with a remaining balance of \$2.2 billion. The CSO program remains the largest remaining program initiative in terms of spending with an FY12 Proposed Budget of \$867.8 million of which \$710.9 million has been expended through FY10. The CSO Program represents \$320.3 million or 31% of Authority spending over the FY09-13 period.

The capital investment in the MWRA’s operating facilities has been primarily funded through long-term borrowings, and the debt service on these outstanding bonds is the largest portion of the Authority’s operating budget and is projected to grow even larger in future years.

Going forward, a greater proportion of the capital budget is designated for asset protection initiatives to preserve operating assets and critical long-term water redundancy projects. The long-term strategy for capital work is identified in the Authority’s Master Plan which was published in 2006 and serves as a road map for inclusion of projects in the CIP in every budget cycle.

The graphs below highlights capital spending from 1986 through June 2010 by major programs:



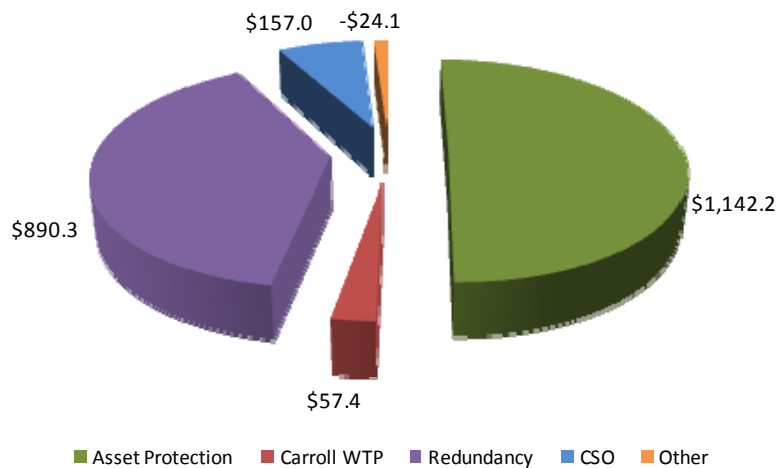
As indicated previously, of the total of \$7.3 billion expended through FY10, nearly 80% has funded court mandated projects such as the Boston Harbor Project, the MetroWest Supply Tunnel, the Carroll Water Treatment Plant (CWTP), and the Combined Sewer Overflow (CSO) program.

Going forward, additional capital investment will be required to upgrade and preserve the operating assets to ensure the efficiency of future operations. Barring new mandates, the MWRA will focus on asset preservation and water redundancy projects. While the Authority has been spending on asset protection and redundancy from the very start, these expenditures will represent a greater share of overall spending in the future as presented in the table below:

Spending \$ in millions

	Spending Thru FY10	FY09-13	FY14-18
Boston Harbor Project	\$3,816.9		
Carroll Water Treatment Plant	376.7	42.1	19.2
Asset Protection	1,094.5	367.2	577.7
Water System Redundancy	882.0	162.1	380.2
CSO	694.0	320.3	24.9
Other Projects	444.8	143.8	5.1
<b>Total</b>	<b>\$7,308.9</b>	<b>\$1,035.5</b>	<b>\$1,007.1</b>
Boston Harbor Project	52.2%		
Carroll Water Treatment Plant	5.2%	4.1%	1.9%
Asset Protection	15.0%	35.5%	57.4%
Water System Redundancy	12.1%	15.7%	37.8%
CSO	9.5%	30.9%	2.5%
Other Projects	6.1%	13.9%	0.5%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

The graph below illustrates the major program initiatives for the FY11 and beyond.



## *Asset Protection*

Asset protection and management projects are defined as the rehabilitation, repair, replacement, or upgrade of an existing asset or infrastructure to preserve good working condition and ensure efficient operation of the overall system.

Asset protection expenditures are projected to increase from 15.0% of spending through FY10, to 35.5% for the FY09-13 time period, and 57.4% for the FY14-18 time period.

It is important to recognize that in addition to asset protection being funded under the Capital Improvement Program, additional asset preservation funding comes from maintenance expenditures under the Current Expense Budget (CEB). Over the past five years, annual maintenance expenditures funded through the CEB have averaged \$25.0 million, representing approximately 14% of total direct expenses.

## *Water System Redundancy*

As demonstrated by events this year, redundancy is critical in achieving the desirable high degree of reliability of the water system both in the event of emergencies and to allow parts of the system to come off-line for regular inspection and rehabilitation. Redundancy is reflected in various ways depending on circumstances, but generally means eliminating or managing “single points of failure” within the system.

Initially, the Hultman Aqueduct was the main concern, being the single high service aqueduct which directly provided water for over two-thirds of the metropolitan Boston area. The redundancy for the Hultman became the highest priority of the Integrated Water Supply Improvement Program and was addressed by constructing the MetroWest tunnel which provides a parallel conduit from the Carroll Water Treatment Plant (CWTP) in Marlborough to the City Tunnel in Weston. The development of additional covered distribution storage and improvements to the transmission and distribution system was also undertaken.

As progress was being made on these projects, the Master Plan identified other pressing needs such as providing redundancy for the Cosgrove Tunnel (supplying water to the CWTP) and for all of the transmission system tunnels east of Weston including the City Tunnel, the City Tunnel Extension, the Dorchester Tunnel and other key components of the distribution system.

In September 2008, the Board approved a contract with the engineering firm of Fay, Spofford and Thorndike to study redundancy for the overall water transmission system. As a result of the study the Board approved the construction of an emergency pumping station which can supply an estimated 240-280 mgd of raw water to the CWTP from the Wachusett Aqueduct to allow planned and emergency shut-downs of the Cosgrove Tunnel. To address the Metropolitan tunnel system east of Weston, the consultant has also developed a preliminary plan that includes several elements: Sudbury Aqueduct pressurization; a new surface pipeline or tunnel segment to connect the Sudbury Aqueduct to the Metrowest Tunnel/Hultman Aqueduct systems; and, a series of distribution system improvements including replacement of portions of the Weston Aqueduct Supply Mains (WASM) 3 pipeline with a larger diameter pipe. These proposals were included in the Final FY11 Capital program, with the majority of spending forecasted for FY14-18 and beyond.

Water System Redundancy expenditures are projected to increase from 12.1% of spending through FY10, to 15.7% for the FY09-13 time period, and 37.8% for the FY14-18 time period.

## *Energy*

Building upon its track record in sustainable resource use – most notably dramatic system-wide reductions in water demand, 100% beneficial reuse of sludge, self-generation of approximately 25% of Deer Island’s power needs, and maximizing revenue through hydropower – MWRA continues to work aggressively to use its resources efficiently and reduce the environmental impacts of its daily operations. The FY11 Final Current Expense Budget (CEB) projects that Deer Island self-generation will grow to 29% mostly due to improved Steam Turbine Generation (STG) operation. The MWRA is on track to meet the Governor’s initiative that 30% of power demand be met by green sources by the year 2020. Including the avoided cost of diesel fuel due to utilizing methane generated to power the Steam Turbine Generators (STGs) for the plant heat demand at Deer Island, MWRA is self-generating approximately half of the total energy requirements.

Key initiatives now underway or planned include the following:

- Design/build to upgrade Deer Island STG generating an additional 5 million kwh/year of power from digester gas scheduled to go on-line March 2011.
- Second batteries of 180 kW solar panels at Deer Island were installed in March 2010.
- Installation of a 1.5 MW wind turbine in Charlestown with a start-up date of August 2011.
- Construction of 200 kW hydropower turbine/generator at Loring Road to generate 1.2 million kWh annually, start-up of April 2011.
- Continue design/permitting of Wachusett Hydropower.
- Conduct additional Wind Feasibility studies at various locations to assess if additional opportunities exist.
- Initial responses to comprehensive energy audits at the Carroll Water Treatment Plant, the Chelsea Facility, and Deer Island Treatment Plant facilities are already yielding energy savings.
- Conduct comprehensive energy audits of 15 MWRA pump stations and CSOs, and begin implementation of recommendations from audits of 13 pump stations and headworks completed in FY10.

As part of the American Recovery and Reinvestment Act (ARRA) signed by President Obama on February 17, 2009, MWRA was awarded \$9.2 million to support Green Infrastructure projects, specifically the Carroll Water Treatment Plant and Deer Island photovoltaic projects, Loring Road Hydroelectric generator and the Charlestown Wind Turbine. During FY10, MWRA entered into a Power Purchase Agreement with a third party provider of solar panels for Deer Island. The Department of Energy Resources of the Commonwealth of Massachusetts (DOER) made \$1.1 million available to MWRA to offset third party construction costs, thereby reducing the electricity price for this project.

MWRA staff have successfully negotiated with a third party provider (FloDesign) of a new technology wind turbine to install, operate, maintain, test and collect data from a 100kw demonstrator unit at Deer Island. Installation of this technology is underway. This unit could be replaced with a prototype unit after two years, at no cost to MWRA.

MWRA will continue to assign high priority in its Capital and Current Expense Budgets to projects which demonstrate its commitment to energy efficiency and environmental sustainability and will seek to maximize grant funding to improve the economic efficiency of green energy projects.

## Stimulus Funding

The MWRA was awarded \$33.0 million in stimulus funding based on the American Recovery and Reinvestment Act (ARRA) signed by President Obama on February 17, 2009. This funding was distributed through the State Revolving Fund (SRF) program and is being administered as principal forgiveness loans funding eligible drinking and clean water projects. This program is projected to save the Authority an estimated \$40.9 million in debt service payments. Of the \$33.0 million in stimulus funding, \$9.2 million will support Green Infrastructure projects, specifically the Carroll Water Treatment Plant, Deer Island photovoltaic projects, Loring Road Hydroelectric conduit, and the DeLauri Pump Station Wind Turbine initiative. To date, the MWRA has received \$29.5 million or 89% of this stimulus funding.

## FY12 Proposed CIP Spending

As shown in Table 1 below, the MWRA's total capital budget is \$5.5 billion with an estimated \$3.3 billion spent through FY10 and \$2.2 billion remaining to be expended beyond FY10. Wastewater System Improvements represent \$1.1 billion or 51.2% of remaining spending while Waterworks System Improvements are \$1.0 billion or 46.6% of future spending.

**Table 1**

	Total Contract Amount	Payments Thru FY10	Balance 6/30/10	FY11	FY12	FY13	5-Year Total FY09-13	Beyond FY13
<b>Wastewater System Improvements</b>	<b>\$2,632,546</b>	<b>\$1,494,038</b>	<b>\$1,138,508</b>	<b>\$105,992</b>	<b>\$122,408</b>	<b>\$126,965</b>	<b>\$631,733</b>	<b>\$783,144</b>
Interception & Pumping	807,171	497,510	309,660	9,248	22,644	40,998	82,233	236,771
Treatment	622,919	122,570	500,349	44,187	54,685	46,417	216,064	355,059
Residuals	211,741	64,170	147,570	504	1,211	2,522	4,597	143,333
CSO	867,850	710,893	156,957	54,522	42,031	35,091	320,320	25,313
Other	122,866	98,894	23,972	-2,469	1,838	1,937	8,519	22,666
<b>Waterworks System Improvements</b>	<b>2,742,236</b>	<b>1,705,376</b>	<b>\$1,036,861</b>	<b>61,046</b>	<b>97,402</b>	<b>90,991</b>	<b>352,400</b>	<b>787,425</b>
Drinking Water Quality Improvements	669,633	538,884	130,749	7,107	42,073	30,552	110,026	51,017
Transmission	1,142,682	694,900	447,782	22,875	25,758	27,611	98,259	371,538
Distribution and Pumping	886,758	341,331	545,427	16,087	15,602	15,710	83,279	498,030
Other	43,163	130,261	-87,097	14,976	13,969	17,118	60,835	-133,160
<b>Business &amp; Operations Support</b>	<b>104,687</b>	<b>57,274</b>	<b>47,413</b>	<b>15,953</b>	<b>15,153</b>	<b>5,967</b>	<b>51,416</b>	<b>10,340</b>
<b>Total MWRA</b>	<b>\$5,479,469</b>	<b>\$3,256,688</b>	<b>\$2,222,782</b>	<b>\$182,990</b>	<b>\$234,963</b>	<b>\$223,923</b>	<b>\$1,035,548</b>	<b>\$1,580,909</b>

## FY12 Proposed Capital Budget Highlights

The FY12 Proposed CIP is \$1.0 billion for FY09-13, and projects spending of \$1.6 billion beyond FY13. The FY14-18 spending forecast is \$1.0 billion, but this projection will be refined in future budget cycles as additional Master Plan projects are incorporated into the CIP.

## Highlights of Project Changes from the FY11 Final CIP to the FY12 Proposed CIP

The FY12 Proposed CIP represents updated spending and schedules for projects contained in the FY11 Final CIP and spending on 30 new water and wastewater projects and sub-phases which total \$117.1 million. These additional projects and sub-phases represent those capital projects with the highest priority rankings that staff recommends and most essential to assure reliable service to MWRA's customers.

The FY12 Proposed CIP increased \$146.7 million or 2.8% above the FY11 Final CIP approved by the Board in June 2010, however, spending on projects in the FY09-13 Cap period decreased by \$21.6 million. The overall increase is due to new project requests totaling \$117.1 million mainly for Asset Protection initiatives, updated cost estimates of \$41.6 million, and updated inflation estimates of \$20.3 million offset by lower project awards versus budget of \$25.0 million and eliminated projects totaling \$7.3 million.

The table below describes the dollar and percent changes by major program between the FY11 Final and the FY12 Proposed CIP for the total project level and for the FY09-13 timeframe.

	<b>FY11 Final</b>	<b>FY12 Proposed</b>	<b>\$ change</b>	<b>% change</b>	<b>FY09-13 \$ change</b>	<b>FY09-13 % change</b>
Wastewater Systems Improvements	\$2,574.7	\$2,632.5	\$57.8	2.2%	-\$12.8	-2.0%
Waterworks System Improvements	\$2,652.5	\$2,742.2	\$89.8	3.4%	-\$7.1	-2.0%
Business and Operations Support	\$105.6	\$104.7	-\$0.9	-0.8%	-\$1.7	-3.2%
<b>Total MWRA without contingency</b>	<b>\$5,332.8</b>	<b>\$5,479.5</b>	<b>\$146.7</b>	<b>2.8%</b>	<b>-\$21.6</b>	<b>-2.0%</b>

## Contingency

Contingency for each fiscal year is incorporated into the Capital Improvement Program to fund the uncertainties inherent in construction programs. MWRA uses a contingency budget to cover these costs in the event they exceed the approved budget. The contingency budget is calculated as a percentage of budgeted expenditure outlays. Specifically, contingency is 7% for non-tunnel projects and 15% for tunnel projects. The total contingency budget for the CIP (FY11-FY21) is \$146.1 million with \$34.5 million allocated to the FY09-13 timeframe.

	<b>Total Budget</b>	<b>FY11</b>	<b>FY12</b>	<b>FY13</b>	<b>FY09-13</b>	<b>Beyond FY13</b>
Contingency	\$146.1	\$9.6	\$11.8	\$13.1	\$34.5	\$111.6

## Major Planned Spending for Fiscal Year 2012

Capital spending in FY12 is estimated to be \$235.0 million. Spending will be driven by several large projects, including the ten projects listed below, which account for over 74.8% of budgeted FY12 spending:

	<b>Total Contract Amount</b>	<b>FY12 Spending</b>	<b>%</b>
S.206 DI Treatment Plant Asset Protection	\$574.6	\$51.1	21.7%
S.542 John J. Carroll Water Treatment Plant	\$669.6	\$21.6	9.2%
S.359 Reserved Channel Sewer Separation	67.2	18.1	7.7%
S.550 Spot Pond Storage Facility	71.7	17.2	7.3%
S.604 Metro West Tunnel (Hultman Aqueduct Rehabilitation)	710.3	14.8	6.3%
S.765 Local Water Pipeline Improvement Loan Program	0.0	12.7	5.4%
S.360 Brookline Sewer Separation	25.7	12.3	5.2%
S.104 Braintree Weymouth Relief Facilities	235.0	11.6	4.9%
S.145 Facility Asset Protections	163.6	10.1	4.3%
S.935 Alternative Energy Initiatives	25.8	6.3	2.7%
<b>Top 10 Spending in FY12</b>	<b>\$2,543.5</b>	<b>\$175.7</b>	<b>74.8%</b>
<b>FY12 Spending</b>	<b>\$5,479.5</b>	<b>\$235.0</b>	<b>100.0%</b>

Of the \$235.0 million projected to be spent in FY12, nearly 50% or \$116.4 million in spending comes from contracts already awarded. The FY12 CIP projects that an additional 29 construction contracts with future spending of \$139.8 million will be awarded in FY12.

### 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 \$840,000 and MIS program related maintenance initiatives are increasing operating costs by nearly \$783,000 by FY21. These increases will be more than offset by anticipated savings for energy initiatives at Deer Island, most notably the digester gas fueled Steam Turbine Generator (STG) upgrade 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 nine years, beginning in FY13.

Fiscal Year	CEB Impacts (000)									Total
	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	
DI Asset Protection	\$0	\$0	(\$210)	(\$175)	(\$153)	\$0	\$0	(\$164)	\$0	(\$703)
FERS Biofilter	0	0	0	(41)	0	0	0	0	0	(41)
Clinton Wastewater Treatment Plant/Aeration Efficiency Improvement	(36)	0	0	0	0	0	0	0	0	(36)
Wastewater Alternative Energy Projects	(785)	0	0	0	0	0	0	0	0	(785)
North Dorchester Bay	0	0	0	0	426	0	0	0	0	426
<b>Total Wastewater (inflated)</b>	<b>(\$822)</b>	<b>\$0</b>	<b>(\$210)</b>	<b>(\$216)</b>	<b>\$273</b>	<b>\$0</b>	<b>\$0</b>	<b>(\$164)</b>	<b>\$0</b>	<b>(\$1,140)</b>
Carroll Water Treatment Plant	\$0	\$216	\$84	\$0	\$0	\$0	\$0	\$0	\$0	\$301
Quabbin Water Treatment Plant	39	14	0	0	0	0	0	0	0	53
Wachusett Algae Treatment Facility	0	0	0	29	30	0	0	0	0	60
Alternative Energy	0	0	0	(154)	0	0	0	0	0	(154)
<b>Total Water (inflated)</b>	<b>\$39</b>	<b>\$230</b>	<b>\$84</b>	<b>(\$124)</b>	<b>\$30</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$259</b>
Phase II: TRAC Replacement	\$0	\$162	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$162
Phase V: LIMS Replacement, GIS & OMS	0	202	0	0	0	0	0	0	0	202
SAN II	0	0	112	0	0	0	0	0	0	112
SAN III	0	0	0	0	0	0	132	0	0	132
NET 2020	0	54	0	0	0	0	0	0	0	54
Telecommunications	0	0	0	0	0	0	33	0	0	33
NET 2020 DITP & Southborough	0	0	0	88	0	0	0	0	0	88
<b>Total Business and Operations Support (inflated)</b>	<b>\$0</b>	<b>\$418</b>	<b>\$112</b>	<b>\$88</b>	<b>\$0</b>	<b>\$0</b>	<b>\$164</b>	<b>\$0</b>	<b>\$0</b>	<b>\$783</b>
<b>TOTAL MWRA</b>	<b>(\$783)</b>	<b>\$648</b>	<b>(\$13)</b>	<b>(\$253)</b>	<b>\$303</b>	<b>\$0</b>	<b>\$164</b>	<b>(\$164)</b>	<b>\$0</b>	<b>(\$98)</b>

### 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 will continue 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 (DEP) mandating the steps necessary to achieve required improvements to the MWRA water system.

Since taking over operation and maintenance of the water and sewer systems from MDC, MWRA has increased annual investment in the system infrastructure from an average of \$11 million per year to an average of more than \$350 million per year between (FY90 to FY08). This investment has greatly improved the operating efficiency of the existing water and sewer systems, protecting fresh water sources and improving the water quality in Boston Harbor.

## 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. The Authority cut \$420.0 million from its capital improvement program and \$47.2 million from the current expense budget through various budget cuts including layoffs. Reductions in debt service assistance result in greater reliance on reserves, budget cuts or a combination of these two elements. In response to a strengthening local economy, debt service assistance was restored in FY05 at the level of \$8.0 million. In the following three years, the debt service allocation increased to \$9.6 million in FY06, \$19.0 million in FY07, and \$17.0 million in FY08. In light of the economic downturn in FY09, the Commonwealth was forced to eliminate the \$15.0 million appropriation in October 2008. The MWRA, after an aggressive budget cutting process, combined with favorable spending trends, was able to make-up this shortfall without a mid-year rate increase. For the FY12 Final Budget, no Debt Service Assistance is assumed.

Planning estimates for 2012 through 2021 forecast rate revenue requirement increases of 3.9% annually for the next two years, 7.2% for years FY14 through FY17, -2.8% in FY18, and 10.3%, 9.3% and -1.9% in years FY19, FY20, and FY21 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 \$141.0 million in reserves that can be used to mitigate future rate increases, but the release date is now projected to be closer to FY16 based on current borrowing projections. While this is a sizable release, it is not the panacea that will address an average growth in the rate revenue requirement of \$39.0 million over the next ten years.

### The FY12 Proposed 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;
- Responsibly restructures debt for relief; and
- Continues a multi-year strategy initiated in FY11 to promote moderate and predictable rate increases over the FY11-FY13 horizon.

## **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 four departments: Office of Emergency Preparedness; Public Affairs; Internal Audit; and Planning and Coordination.

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; and monitors water quality.

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, 2010 and 2009 are available online at [www.mwra.com](http://www.mwra.com).



Executive Office  
Budget



**EXECUTIVE OFFICE**

Proposed FY12 Current Expense Budget EXECUTIVE DIVISION						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 395,729	\$ 412,602	\$ 406,699	\$ 405,730	\$ (969)	-0.2%
OVERTIME	-	-	-	-	-	-
ONGOING MAINTENANCE	-	-	-	-	-	-
TRAINING & MEETINGS	-	-	700	700	-	0.0%
PROFESSIONAL SERVICES	165,949	160,031	163,587	154,932	(8,655)	-5.3%
OTHER MATERIALS	3,474	4,575	3,585	3,585	-	0.0%
OTHER SERVICES	452,881	457,955	457,824	455,318	(2,506)	-0.5%
<b>TOTAL</b>	<b>\$ 1,018,033</b>	<b>\$ 1,035,163</b>	<b>\$ 1,032,395</b>	<b>\$ 1,020,265</b>	<b>\$ (12,130)</b>	<b>-1.2%</b>

Proposed FY12 Current Expense Budget EXECUTIVE DIVISION by Department						
DEPARTMENT	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
EXECUTIVE OFFICE / BOARD OF DIRECTORS	\$ 402,381	\$ 420,340	\$ 413,996	\$ 413,428	\$ (568)	-0.1%
ADVISORY BOARD / OTHER COMMITTEES	615,652	614,823	618,399	606,837	(11,562)	-1.9%
<b>TOTAL</b>	<b>\$ 1,018,033</b>	<b>\$ 1,035,163</b>	<b>\$ 1,032,395</b>	<b>\$ 1,020,265</b>	<b>\$ (12,130)</b>	<b>-1.2%</b>

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

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

**FY12 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 to aggressively pursue renewable and sustainable energy resources to reduce the environmental impacts of daily operations, increase energy efficiencies and reduce overall operating costs.
- 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 a "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 FY12 Proposed Budget.

**Budget Highlights:**

- Total FY12 Proposed Budget of \$1,000,000, a decrease of \$12,000 or 1.2% from the FY11 Budget.
- \$406,000 for **Wages and Salaries** represents 40% of the Executive Office budget. The proposed budget includes funding for four positions.
- \$452,000 or 44% of the Executive Office proposed budget is for the MWRA Advisory Board staff. The proposed budget supports its operating expenses, including wages and salaries, space rental and general administrative office materials and supplies.
- \$155,000 or 15% of the Executive Office proposed budget is for **Professional Services** to fund the Water Supply Citizens' Advisory Committee and the Wastewater Advisory Committee.



**OFFICE OF EMERGENCY PREPAREDNESS**

Proposed FY12 Current Expense Budget OFFICE OF EMERGENCY PREPAREDNESS						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 335,281	\$ 401,615	\$ 441,264	\$ 441,936	\$ 672	0.2%
ONGOING MAINTENANCE	425,531	412,907	383,883	383,883	-	0.0%
TRAINING & MEETINGS	-	1,989	-	-	-	-
PROFESSIONAL SERVICES	1,838,392	1,526,557	1,616,610	1,605,947	(10,663)	-0.7%
OTHER MATERIALS	39,583	64,892	51,317	57,549	6,232	12.1%
OTHER SERVICES	9,305	13,477	21,252	22,020	768	3.6%
<b>TOTAL</b>	<b>\$ 2,648,092</b>	<b>\$ 2,421,437</b>	<b>\$ 2,514,326</b>	<b>\$ 2,511,335</b>	<b>\$ (2,991)</b>	<b>-0.1%</b>

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

The Director of Emergency Preparedness reports directly to the Executive Director with a matrix reporting relationship to the Chief Operating Officer and the Director of Administration and Finance. In addition, the Safety/Security Manager for Deer Island will continue to report to the Deer Island Director with a matrix reporting relationship to the Director of Emergency Preparedness to include this major facility in all Authority-wide emergency-planning efforts.

**FY12 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 system maintenance contracts.

**FY12 Initiatives:**

- Continue to enhance Emergency Response Plans for all Water and Wastewater facilities.
- Begin the procurement process for the new security services contract.
- Increase the Emergency Service Unit (ESU) and internal staff’s capabilities to respond to spills inside Water and Wastewater facilities by outfitting a spill control truck, expanding the Metro Boom Deployment teams, and offering the Environmental Protection Agency (EPA)/Coast Guard OPA-90 training and certification program.
- Complete work on changing the MWRA radio system to new frequencies as part of the national frequency reallocation program.

- Continue the process of ensuring that new construction and rehabilitation of facilities include an integrated security and surveillance system improvement component. This will affect the Gillis Pump Station, the new Stoneham tank, and the Headworks Upgrade projects.

**FY11 Mid-Year Accomplishments:**

- Completed new security gates at DITP and Chelsea facilities.
- Using one of two Department of Homeland Security (DHS) grants, built and fielded a mobile emergency laboratory, equipped with a Gas Chromatography/Mass Spectrometer Unit in order to support field water quality incident response and fielded new multi gas monitors, funded with a separate DHS grant that will replace current gas meters.
- Completed the procurement process for a new security systems maintenance contract.
- Completed the security system installations at the Chelsea Headworks and Blue Hills Covered Storage Facilities.
- Expanded the MWRA's boom deployment capability.

**Budget Highlights:**

- Total FY12 Proposed Budget of \$2.5 million, a decrease of \$3,000 or 0.1% from the FY11 Budget.
- \$442,000 for **Wages and Salaries**, level funded with the FY11 Budget. The budget includes funding for five positions.
- \$384,000 for **Ongoing Maintenance**, level funded to the FY11 Budget. The proposed budget includes funding of \$259,000 to cover the MWRA-wide security systems preventative maintenance and repair service, \$104,000 for MWRA-wide Security systems maintenance materials and equipment, including cameras, intrusion detection, card readers, and \$22,000 for the Intrusion alarm annual and semi-annual monitoring services contracts.
- \$1.6 million for **Professional Services**, a decrease of \$11,000 or 0.7% from the FY11 Budget. The FY12 Proposed Budget includes \$582,000 for security services contract for the Chelsea facility, \$634,000 for DITP facility, \$359,000 for the Carroll Water Treatment Plant, and \$31,000 for the CNY facility.
- \$58,000 for **Other Materials**, an increase of \$6,000 or 12.1% from the FY11 Budget. The proposed budget includes \$27,000 for Health and Safety equipment needs and \$25,000 for the annual operation and maintenance of equipment assigned to the Mobile Emergency Laboratory.
- \$22,000 for **Other Services**, an increase of \$768 or 3.6% over the FY11 Budget. The proposed budget includes \$20,000 for mandatory monthly testing and inspection of Self-Contained Breathing Apparatus (SCBA).

**PLANNING AND COORDINATION DEPARTMENT**

Proposed FY12 Current Expense Budget PLANNING AND COORDINATION						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 1,997,711	\$ 1,967,082	\$ 1,934,297	\$ 1,810,434	\$ (123,863)	-6.4%
OVERTIME	-	211	-	-	-	-
FRINGE BENEFITS	-	-	-	-	-	-
TRAINING & MEETINGS	11,046	4,841	6,175	6,000	(175)	-2.8%
PROFESSIONAL SERVICES	44,790	1,975	600	3,100	2,500	416.7%
OTHER MATERIALS	139,285	152,250	152,425	155,925	3,500	2.3%
OTHER SERVICES	181,344	77,336	141,984	99,977	(42,007)	-29.6%
<b>TOTAL</b>	<b>\$ 2,374,176</b>	<b>\$ 2,203,695</b>	<b>\$ 2,235,481</b>	<b>\$ 2,075,436</b>	<b>\$ (160,045)</b>	<b>-7.2%</b>

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 to ensure water protection.

**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 grant programs.

**FY12 Goals:**

- With staff from Engineering and Operations, draft the next iteration of the MWRA Master Plan and MWRA Business Plan.
- Continue to work toward advancing other hydro-electric projects toward design, and seek appropriate agreements and certifications to maximize revenue for existing hydro facilities.
- Continue work on implementing a MWRA water system expansion strategy.
- With staff from Engineering and Operations, procure a consultant and begin work on the North System Hydraulic Optimization study.
- In conjunction with Engineering and Operations staff, continue to advance concept planning, design and environmental review for capital projects, including storage, treatment and pipeline projects and development of long-term transmission and system redundancy options.
- Effectively communicate water quality information to customers and health officials.
- Continue to implement the Local Pipeline and Water System Assistance Program (new \$210 million phase added in FY11) to provide interest-free loans for local water projects. Continue outreach assistance for water conservation and water system leak detection and repair programs. Continue implementation of the Infiltration/Inflow (I/I) Local Financial Assistance Program to provide grants and interest-free loans for local I/I reduction and sewer system rehabilitation projects.

**FY11 Mid-Year Accomplishments:**

- Completed the Loring Road hydroelectric project.
- Provided information and worked with communities expressing interest in joining the Authority.
- With Engineering and Operations staff, developed a concept design for a pumping station alternative to provide redundancy for the Cosgrove Tunnel, advanced the Metropolitan Area Redundancy Plan, and advanced the concept plan for Northern Intermediate High (NIH) redundancy through the completed MEPA review process.
- Distributed \$8 million (grants and loans) for local sewer rehabilitation projects under the I/I Local Financial Assistance Program and \$13.3 million (loans) for local water quality projects under the Local Pipeline and Water System Assistance Program.
- With MWRA Operations and DCR staff, moved the successful Quabbin Boat Program (developed in response to the discovery of zebra mussels in Laurel Lake) into a well received and successful regular operating program.
- Continued to assist local communities to advance water conservation education and water system leak detection and repair.
- Effectively communicated water quality information to customers and health officials.
- In conjunction with Public Affairs, completed the Five Year Report process report.

**Budget Highlights:**

- \$1.8 million is for **Wages and Salaries**, a decrease of \$124,000 or 6.4% from the FY11 Budget, primarily due to the elimination of one position. The FY12 Proposed Budget includes funding for 22 positions.
- \$6,000 is for **Training and Meetings**, primarily level funded with the FY11 Budget.
- \$3,000 is for **Professional Services**, an increase of \$2,500 from the FY11 Budget for assistance in improving the GIS user interface.
- \$156,000 is for **Other Materials**, an increase of \$3,500 or 2.3%, mainly to fund the postage costs associated with the Consumer Confidence Report (CCR). The FY12 Proposed Budget includes \$129,000 for postage and mailing of the CCR, \$15,000 for water conservation kits, and \$10,000 for mapping supplies.
- \$100,000 is for **Other Services**, a decrease of \$42,000 or 29.6% from the FY11 Budget, primarily due to cost reduced pricing for printing the CCR and a decreased page count. The FY12 Proposed Budget includes \$76,000 for printing the CCR, \$10,000 for printing lead in tap water brochures, and \$10,000 for reprinting water conservation bill stuffers.

**AFFIRMATIVE ACTION and COMPLIANCE**

Proposed FY12 Current Expense Budget AFFIRMATIVE ACTION & COMPLIANCE UNIT							
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12		
WAGES & SALARIES	\$ 591,924	\$ 605,065	\$ 602,684	\$ 540,358	\$ (62,326)	-10.3%	
OVERTIME	-	-	-	-	-	-	
TRAINING & MEETINGS	180	0	2,000	2,000	-	0.0%	
OTHER MATERIALS	1,176	1,018	1,500	1,500	-	0.0%	
OTHER SERVICES	397	387	632	632	-	0.0%	
<b>TOTAL</b>	<b>\$ 593,677</b>	<b>\$ 606,470</b>	<b>\$ 606,816</b>	<b>\$ 544,490</b>	<b>\$ (62,326)</b>	<b>-10.3%</b>	

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

**FY12 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 internal audit and reporting systems adequate to monitor MWRA’s accomplishments of goal attainment in identified underutilized job groups for minorities and female 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 and women-owned businesses in procurement opportunities and 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 program policies and practices and monitor and report on contractor compliance and expenditures.

**FY11 Mid-Year Accomplishments:**

- Provided management guidance for all personnel selection committee hiring processes as part of a proactive strategy to ensure adherence to the Authority’s fair employment practices.
- Conducted oversight of 81 construction and professional projects including 107 site visits, and 7 compliance audits to ensure contractor compliance with the MWRA’s MBE/WBE Program.

**Budget Highlights:**

- Total FY12 Proposed Budget of \$544,000, a decrease of \$62,000 or 10.3%.
- \$540,000 is for **Wages and Salaries** a decrease of \$62,000 or 10.3% primarily due to the elimination of a vacant position. The proposed budget includes funding for seven positions.

## INTERNAL AUDIT

Proposed FY12 Current Expense Budget INTERNAL AUDIT						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 581,055	\$ 579,202	\$ 619,583	\$ 628,860	\$ 9,277	1.5%
OVERTIME	-	-	-	-	-	-
TRAINING & MEETINGS	3,306	3,872	7,738	7,738	-	0.0%
OTHER MATERIALS	2,050	2,157	2,400	2,400	-	0.0%
OTHER SERVICES	1,105	789	1,168	1,062	(106)	-9.1%
<b>TOTAL</b>	<b>\$ 587,516</b>	<b>\$ 586,020</b>	<b>\$ 630,889</b>	<b>\$ 640,060</b>	<b>\$ 9,171</b>	<b>1.5%</b>

The **Internal Audit Department** monitors the efficiency and integrity of MWRA operations by auditing financial and program operations; reviewing compliance with accounting and management control systems, laws and regulations; and coordinates the formulation and revisions to MWRA policies and procedures. Internal Audit also monitors MWRA contracts through its contract audit program, including approval of provisional consultant indirect cost rates and subsequent audit of consultant billings; performs labor burden reviews, construction change orders and claim audits, and vendor and other contract audits.

### **FY12 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.

### **FY11 Mid-Year Accomplishments:**

- Identified \$2.45 million in savings related to: contractor task order unit pricing \$1.7 million, Boston Water and Sewer Commission (BWSC) and City of Cambridge CSO force account billings \$470,000 and consultant audits \$280,000.
- Issued final audit reports on Warehouse Practices, BWSC, and City of Cambridge CSO Financial Assistance Agreement (FAA) force account billings, and completed six incurred cost assignments, four preliminary construction reviews, a true-up of CY2009 billings by Harbor Energy Electric Company (HEEC) and a review of New England Fertilizer Company's (NEFCo) financial results from its operation of the Pelletizing Plant.

### **Budget Highlights:**

- Total FY12 Proposed Budget of \$640,000, an increase of \$9,000 or 1.5% over the FY11 Budget.
- \$629,000 for **Wages and Salaries**, an increase of \$9,000 or 1.5% over the FY11 Budget, mostly due to the increase in the number of hours being worked by a part-time auditor. The proposed budget includes funding for eight positions.



**PUBLIC AFFAIRS**

<b>Proposed FY12 Current Expense Budget PUBLIC AFFAIRS</b>						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 1,024,857	\$ 1,098,755	\$ 1,205,243	\$ 1,092,568	\$ (112,675)	-9.3%
OVERTIME	-	27	-	-	-	-
TRAINING & MEETINGS	1,747	1,226	315	315	-	0.0%
PROFESSIONAL SERVICES	1,630	3,085	1,050	1,050	-	0.0%
OTHER MATERIALS	37,585	20,784	20,550	20,550	-	0.0%
OTHER SERVICES	51,796	35,323	59,831	59,399	(432)	-0.7%
<b>TOTAL</b>	<b>\$ 1,117,615</b>	<b>\$ 1,159,200</b>	<b>\$ 1,286,989</b>	<b>\$ 1,173,882</b>	<b>\$ (113,107)</b>	<b>-8.8%</b>

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

**FY12 Goals:**

- Enhance overall public understanding of MWRA’s mission, goals, and benefits to the public through extensive outreach and effective communication.
- Develop and implement proactive strategies for educating and informing key MWRA constituencies and the public at large about MWRA’s mission, projects and progress, and promote understanding for associated costs.
- Gain public support for MWRA programs and projects, 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.

**Budget Highlights:**

- Total FY12 Proposed Budget of \$1.2 million, a decrease of \$113,000 or 8.8% from the FY11 Budget primarily due to the reduced staffing level.
- \$1.1 million for **Wages and Salaries**, a decrease of \$113,000 or 9.3% from the FY11 Budget due to staffing reductions. The final budget includes funding for 13 positions.
- \$21,000 for **Other Materials** which is level funded with the FY11 Budget.
- \$59,000 for **Other Services** which is primarily level funded with FY11 and primarily supports the printing needs of the department.



Operations Division  
Budget



## OPERATIONS DIVISION

Proposed FY12 Current Expense Budget OPERATIONS DIVISION						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 66,546,039	\$ 67,744,764	\$ 68,724,406	\$ 68,533,609	\$ (190,797)	-0.3%
OVERTIME	2,932,713	3,893,234	3,252,181	3,455,152	202,971	6.2%
FRINGE BENEFITS	51,742	69,620	65,945	69,200	3,255	4.9%
CHEMICALS	9,867,555	8,998,799	9,797,118	10,017,545	220,427	2.2%
UTILITIES	24,294,274	25,855,089	23,164,142	21,971,535	(1,192,607)	-5.1%
ONGOING MAINTENANCE	23,025,086	22,575,229	24,655,400	25,842,021	1,186,621	4.8%
TRAINING & MEETINGS	106,025	48,987	172,000	180,500	8,500	4.9%
PROFESSIONAL SERVICES	3,401,482	3,451,755	2,843,883	2,644,036	(199,847)	-7.0%
OTHER MATERIALS	3,303,935	3,250,608	3,174,508	3,411,309	236,801	7.5%
OTHER SERVICES	19,162,518	19,006,986	18,859,027	19,339,175	480,148	2.5%
<b>TOTAL</b>	<b>\$ 152,691,369</b>	<b>\$ 154,895,071</b>	<b>\$ 154,708,610</b>	<b>\$ 155,464,082</b>	<b>\$ 755,472</b>	<b>0.5%</b>

Proposed FY12 Current Expense Budget OPERATIONS DIVISION by Department						
DEPARTMENT	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
OPERATIONS ADMINISTRATION	\$ 3,338,066	\$ 2,729,341	\$ 2,693,438	\$ 2,776,080	\$ 82,642	3.1%
WASTEWATER TREATMENT	67,870,718	68,821,837	67,116,197	67,209,551	93,354	0.1%
FIELD OPERATIONS	64,484,723	65,926,123	68,259,263	68,843,502	584,239	0.9%
LABORATORY SERVICES	5,094,203	5,272,058	5,531,010	5,533,900	2,890	0.1%
ENQUAD	3,805,918	3,822,093	3,001,051	3,023,284	22,233	0.7%
ENGINEERING & CONSTRUCTION	8,097,741	8,323,619	8,107,651	8,077,765	(29,886)	-0.4%
<b>TOTAL</b>	<b>\$ 152,691,369</b>	<b>\$ 154,895,071</b>	<b>\$ 154,708,610</b>	<b>\$ 155,464,082</b>	<b>\$ 755,472</b>	<b>0.5%</b>

The **Operations Division** integrates wastewater and water system operations and maintenance, treatment, laboratory services, and engineering and construction functions, including implementation of the Combined Sewer Overflow (CSO) plan.

The FY12 Proposed Budget and existing structure of the Operations Division is described below.

The **Wastewater Treatment Department**, which accounts for 43% of the Operations Division budget, operates and maintains the Deer Island (DITP) and Clinton wastewater treatment plants and the Residuals Processing Facility at Fore River Staging Area (FRSA).

The **Field Operations Department (FOD)**, which accounts for 44% of the Operations Division budget, is responsible for operating, maintaining, and metering the water and wastewater transport systems. The department also manages the water treatment and wastewater pretreatment functions, including the Carroll Water Treatment Plant (CWTP).

The **Engineering and Construction Department** provides in-house engineering, consultant management, drafting, surveying, construction management, and other technical assistance required for the maintenance, repair, and rehabilitation of wastewater and waterworks systems.

The **Environmental Quality Department (EnQuad)** manages the monitoring of Boston Harbor and Massachusetts Bay water quality and 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 Administration Department budget also includes funds for MWRA vehicle purchases and division-wide memberships.

#### **FY12 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 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.

#### **FY12 Initiatives:**

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

- First full year operations for the North Dorchester Bay odor control facility.
- Continue to implement and optimize 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 29% of Deer Island's required power through optimization of power generation assets, including the wind turbines and the STG back pressure system modifications.

##### **Engineering & Construction:**

- Award numerous contracts and/or issue Notice To Proceeds including the following major contracts:
  - Water System
    - Spot Pond Storage Facility Design/Build
    - WASM Supply Main 3 Design
    - MetroWest Tunnel CP6B Upper Hultman Rehabilitation
    - Winsor Dam Hydroelectric Shaft 1,2,9 & 12 Rehab and Improvements
    - Long Term Redundancy Sudbury Aqueduct Preliminary Design
    - CWTP CP7 Existing Facilities Modifications
    - Quabbin UVWTP Construction
    - Dam Projects Safety Modifications and Repairs, Construction

- Wastewater System
  - DITP Clarifier Rehab Phase 2
  - Facility Asset Protection Headworks Upgrade CM Services
  - DITP Asset Protection Cryogenics Plant – Equipment Replacement Construction
  - Residuals Asset Protection Residuals Facility Upgrade Design
- Substantially complete numerous CIP design and construction phases including the following:
  - Water System
    - Southern Spine Distribution Section 107 Ph2 Construction
    - New Connecting Mains Northeast Segment CP5
    - NIH Redundancy and Storage Reading/Stoneham Interconnections
    - CWTP Solar Construction
    - Central Monitoring System SCADA Implementation
    - Spot Pond Storage Facility Early Construction Water Connection
    - Waterworks Central Monitoring System Winsor Dam High Line Replacement
  - Wastewater System
    - DITP Asset Protection Primary and Secondary Clarifier Rehab Construction
    - Braintree-Weymouth Relief Facilities Design
    - Alternative Energy Initiatives Charlestown Wind Project Construction
    - Facility Asset Protection Prison Point HVAC Upgrades
    - Charles River CSO Controls Brookline Connection Controls Construction
    - DITP PICS Replacement Construction
    - Clinton Wastewater Treatment Plant Digester Cleaning and Rehab
    - DITP Expansion Joint Repair Construction 2

**Maintenance:**

- Optimize staff resources, overtime, service contract scopes and use, and use of 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, lighting equipment retrofits, Zurn boiler maintenance and repairs, electrical system maintenance, motor bearing overhauls, carbon absorber replacements, reactor gearbox rebuilds, and critical equipment maintenance.
- Work on numerous projects in Field Operations including meter inspection and repairs, Bellevue roof replacement, HVAC and lighting efficiency upgrades in metro facilities, dam appurtenances inspections, and water tank inspections.

**Environmental:**

- Pending approval by regulators, implement requirements of new NPDES Permits for DITP and Clinton Wastewater Treatment Plant.
- Implement revised harbor and outfall monitoring plan to reflect reduced scope. Carry out the required outfall, harbor, and river monitoring, implement additional in-house data management tasks, implement in-house preparation of interpretive reports, and deploy continuous monitoring instrumentation on the National Oceanic and Atmospheric Administration (NOAA) buoy.
- Continue to optimize the new environmental information systems in TRAC and the Central Laboratory.

- Plan and implement the new round of NPDES-required Local Limit testing in TRAC to reassess industrial discharge limits. This work can commence after EPA issues the new NPDES permits.
- Conduct invasive species removal and monitoring at water reservoirs.

### **FY11 Mid-Year Accomplishments:**

#### **Emergencies**

- ***Water Main Break and Leak:*** On August 26, MWRA discovered a leak adjacent to Shaft 5A in Weston. The leak appears to be related to the major water main break that occurred on May 1, 2010. Although MWRA successfully handled the water break and swiftly restored the pipe into service within 72 hours, management continued to investigate the cause of the break, accelerate the rehabilitation of the back-up Hultman Aqueduct, and monitor the operations of the repaired pipe. MWRA also stabilized the subsequent leak site, developed a repair plan, and implemented a monitoring program to ensure service reliability until the pipe could be taken out of service for repair. Work on both of these issues during the first six months of FY11 included;
  - Convened an expert panel charged with investigating the cause of the major water main break. Staff provided analysis and information to support the panel's work.
  - Procured numerous contracts to provide services for recovery and analysis of the broken coupling, site restoration, field investigations, and pipe repairs.
  - Developed and implemented plan to accelerate the rehabilitation of the Hultman Aqueduct. MWRA staff procured and executed several change orders to the existing construction contract to expedite the work.
  - Developed and launched a plan to recover the failed coupling.
- ***Spring 2010 Storms*** - MWRA's service area experienced an unprecedented rainfall total of more than 21 inches during a 36-day period between February 24 and April 1, 2010. MWRA incurred significant operating costs during the period to transport and treat the unusually high wastewater flow and to deal with localized system overflows. MWRA applied to the Federal Emergency Management Agency for partial cost-recovery for the additional expense of the federally-declared disaster. As a result of this effort, the Federal Emergency Management Agency (FEMA) awarded MWRA approximately \$1.4 million in grants.

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

- Completed audit of Southborough HVAC system and commenced audits in 14 more facilities. Staff continued to evaluate the audit reports and commence implementation of recommendations from previously completed audits.
- Assisted the Procurement Department with the procurement of contracts to supply and deliver chemicals including aqua ammonia and hydrofluosilicic acid for CWTP; sodium hypochlorite and ferric chloride for DITP; and Nitrazyme and VX456 for the Framingham Pump Station
- Generated revenue at two water hydroelectric facilities: \$658,000 at the Oakdale Station and \$155,000 at the Cosgrove 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) resulted in net savings of \$461,000 for the first six months of FY11. Deer Island also self-generated 19% of the plant's total required power during that period.



- Procured new contract for the purchase and supply of natural gas for the Carroll Water Treatment Plant (CWTP) and the Chelsea facility which resulted in approximate savings of \$80,000.
- Oversaw installation of hydroelectric turbine generator at Loring Road facility.
- Completed feasibility study of hydroelectric power at the Wachusett Dam.
- Completed feasibility study of photovoltaics at CWTP.
- Processed 104 average tons per day of sludge at the Pelletization Plant during first six months of FY11.

**Maintenance:**

- The Operations Division spent \$11.4 million on maintenance of which \$5.8 million was for materials and \$6.6 million for services.
- Completed numerous major maintenance projects including the following:
  - Procured and implemented numerous contracts for maintenance services including: combustion turbine generators service (DITP); instrumentation maintenance for water and wastewater facilities; electrical equipment maintenance (DITP); flow testing services for water meters; janitorial services for CWTP and other facilities; paving services; repair services for wastewater flow meters; crane maintenance services; electrical systems maintenance services for the CWTP; and elevator maintenance and repair services for numerous facilities.
  - Procured and implemented numerous contracts for maintenance projects including: Carbon Absorber Tank Repairs and Coating, Phase 1; Rebuilding of Pump Gearboxes 1, 2, and 3 at Cottage Farm; Quabbin Spillway Repointing; and Concrete/Steel Restoration Phase II for DITP.
  - Completed maintenance tasks for dam maintenance at the Norumbega Reservoir to continue to protect integrity of the structures.
  - Cleared water and wastewater easements in addition to clearing grounds at numerous MWRA facilities.
- In the water system, exercised 475 and replaced 11 mainline valves; exercised 228 blow-off valves; and surveyed 126 miles of water mains for leaks.
- In the wastewater system, inspected 16 miles and cleaned 18 miles of pipeline. Also inspected 336 structures and rehabilitated 91 manholes.

**Engineering, Construction, and Planning:**

- Award of contracts or Notice to Proceed for numerous contracts including the following major projects:
  - Water System
    - Lynnfield/Saugus Pipeline Construction 2
  - Wastewater System
    - CSO Reserved Channel Sewer Separation Contracts 1, 3A, and 7
    - Headworks Upgrades Design/Construction Administration
    - Prison Point HVAC Upgrades

- Substantially completed numerous projects including the following:
  - Water System
    - Wachusett Reservoir Spillway Improvements/Winsor Dam Repairs Phase 2 PCB Material Remediation
    - Northern Intermediate High Redundancy and Storage Concept Plan
  - Wastewater System
    - CSO East Boston Branch Relief Sewer, Sections 38 and 207 Replacement
    - CSO Bulfinch Triangle Sewer Separation Construction contract
    - CSO Cambridge Interconnections Relief and Floatables Control CSO
    - Fort Point Channel Sewer Separation
    - Melrose Sewer Construction
    - Wastewater Central Monitoring Design and Integration Services
    - Braintree-Weymouth Rehabilitation of Section 624

**Environmental:**

- The TRAC Department completed the following Environmental Protection Agency (EPA)-required work for significant industrial users: 115 inspections, 148 monitoring events, and 279 sampling of connections. This department also issued or renewed 117 permits (significant industrial users SIU and non-SIU).
- The TRAC Department submitted the Industrial Pretreatment Program Annual Report to the EPA for FY10.
- The TRAC Department commenced 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 year-to-date FY11.
- EnQuad carried out required environmental monitoring of Boston Harbor and Massachusetts Bay water column, sediments, fish and shellfish, and CSO receiving water quality, finalizing numerous technical reports and presenting results to the Outfall Monitoring Science Advisory Panel (OMSAP) and public.
- EnQuad staff continued to respond to requests and attend meetings with regulators and reviewers regarding MWRA's proposed monitoring revisions. On December 6, 2010, EPA and Department of Environmental Protection (DEP) issued formal approval of MWRA's revised monitoring plan.
- Awarded and implemented two contracts associated with the Harbor and Outfall Monitoring Program to provide environmental monitoring of outfall effects as required by MWRA's discharge permit for Deer Island Treatment Plant (DITP).
- Met all water quality and treatment standards for giardia and cryptosporidium in the drinking water system year-to-date during FY11.
- The Department of Lab Services (DLS) provided routine laboratory services and analysis for approximately 111,057 tests and also provided as-needed analytical support for numerous projects including the following: drinking water Lead and Copper Rule testing, Somerville Marginal CSO facility special project, NACWA review of EPA's proposed testing revisions, and DEP audit of MWRA's central lab.

## Budget Highlights:

- Total FY12 Proposed Budget is \$155.5 million, which is \$755,000 or 0.5% more than the FY11 CEB. The FY12 Budget continues to reflect efforts to contain rate increases by curtailing spending on less critical items or services wherever possible and implementing energy efficiency improvements that will result in long-term, sustainable reductions to the Operations Division's budget.
- Significant increases from the FY11 budget include:
  - Net increase of \$1.2 million or 4.8% for **Maintenance** primarily due to new service contracts; increases in the price and/or scope of several contracts to be re-bid before or during FY12; annual fluctuations in the maintenance component of the sludge pelletization contract; and additional projects required to rehabilitate aging facilities throughout the wastewater and water systems.
  - Net increase of \$480,000 or 2.5% for **Other Services** primarily due to increases for lease payments and taxes for the Chelsea office facility; the restoration of funds for membership in the American Water Works Association Research Foundation; and inflation adjustments for the Residuals processing contract as compared to FY11 levels. The FY12 Proposed Budget is based on an average of 106 tons of sludge per day (TPD) which is consistent with historical averages since the start-up of the Braintree-Weymouth Tunnel.
  - Net increase of \$237,000 or 7.5% for **Other Materials** primarily due to plans to replace more vehicles in FY12 than in FY11 to invest in an aging fleet. Approximately 50% of the active fleet will be seven years or older by FY12.
  - Net increase of \$220,000 or 2.2% for **Chemicals** primarily due to an increase of more than \$700,000 for new NPDES Permit requirements that will require additional chemicals for enterococcus treatment at Deer Island of \$650,000 and for phosphorous removal at the Clinton Plant of \$50,000. The FY12 CEB assumes commencement of the new DITP NPDES Permit at the beginning of FY12 Q4 (9 months) whereas the FY11 CEB assumed start-up in FY11 Q4 (approximately 2.5 months). The Clinton budget assumes the new permit will be in effect for all of FY12. These increases are offset by decreases for lower doses and quantities for hydrofluosilicic acid due to changes in regulatory requirements of approximately \$250,000, Deer Island sodium hypochlorite prices; and lower quantities for liquid oxygen due to actual history and preparation for UV start-up.
  - Net increase of \$203,000 or 6.2% for **Overtime** primarily due to the pre-staging of additional electricians, plumbers, and mechanics to ensure the operability of MWRA's critical facilities during severe storms.
- Significant decreases from the FY11 budget spending include:
  - Net decrease of \$1.2 million or 5.1% for **Utilities**. The \$22.0 million FY12 Proposed Utilities budget, which is 14% of the Operations Division's total budget, includes \$16.8 million for electricity, \$2.6 million for diesel fuel, and \$1.8 million for water. The decrease from the FY11 CEB is due to lower electricity of \$1.3 million and natural gas of \$69,000 offset by increases for diesel fuel of \$71,000 and water of \$48,000. Electricity decreases due to more favorable contract prices, expected wind and hydro self-generation, and savings from energy conservation initiatives.
  - Net decrease of \$200,000 or 7.0% for **Professional Services** primarily due to the discontinuation of \$150,000 in funding for services required to support the expert panel in their review of the May 2010 water pipeline break.
  - Net decrease of 191,000 or 0.3% for **Wages and Salaries** primarily due to salary adjustments to reflect recent retirements and hires. The decrease is offset by increased Stand-by Pay of \$65,000 to strengthen preparedness for major storms.
- The FY12 Budget is subject to risk in the following areas: timing of the implementation of Deer Island's new NPDES permit, chemical and utility usage and prices, potential impacts of the Deer Island cable relocation project, sludge quantities, and more than expected emergency-related maintenance and overtime needs

**OPERATIONS ADMINISTRATION**

<b>Proposed FY12 Current Expense Budget OPERATIONS ADMINISTRATION</b>						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 1,798,240	\$ 1,789,319	\$ 1,779,117	\$ 1,734,244	\$ (44,873)	-2.5%
OVERTIME	526	798	-	-	-	-
FRINGE BENEFITS	-	-	-	-	-	-
ONGOING MAINTENANCE	171	-	-	-	-	-
TRAINING & MEETINGS	-	468	2,200	3,700	1,500	68.2%
PROFESSIONAL SERVICES	23,844	6,500	215,453	50,000	(165,453)	-76.8%
OTHER MATERIALS	1,238,916	831,973	602,000	802,000	200,000	33.2%
OTHER SERVICES	276,369	100,283	94,668	186,136	91,468	96.6%
<b>TOTAL</b>	<b>\$ 3,338,066</b>	<b>\$ 2,729,341</b>	<b>\$ 2,693,438</b>	<b>\$ 2,776,080</b>	<b>\$ 82,642</b>	<b>3.1%</b>

The **Operations Administration Department** is comprised of the Office of the Chief Operating Officer and Division level support staff. The department goal is to oversee, manage, and implement MWRA policies and procedures pertaining to the following functions: labor relations, finance, contract administration and general administration.

**Budget Highlights:**

- \$1.7 million for **Wages and Salaries**, which represents 62% of the FY12 Proposed Current Expense Budget (CEB). The budget includes funding for 23 positions. The FY12 Proposed Budget is \$45,000 or 2.5% lower than the FY11 Budget and is due to the discontinuation of funding in FY12 for a temporary employee hired in FY11 to provide support for the expert panel reviewing the May 2010 water pipeline break.
- \$50,000 for **Professional Services** which covers energy consulting services to support energy procurements and evaluation of energy projects. The decrease from FY11 to FY12 is primarily due to the discontinuation of \$150,000 in funding for services required to support the expert panel in their review of the May 2010 water pipeline break.
- \$802,000 for **Other Materials**, of which \$800,000 is for replacement of aged vehicles in MWRA’s fleet. This funding level continues to reflect efforts to contain rate increases by curtailing purchases. The FY12 Proposed Current Expense Budget vehicle budget will allow MWRA to replace only the high priority vehicles that meet the eligibility criteria. Actual spending for vehicle purchases for FY02-FY10 is as follows:

FY02:	\$ 622,000	FY06:	\$ 717,381	FY10:	\$826,513
FY03:	\$ 120,000	FY07:	\$1,846,396		
FY04:	\$1,580,000	FY08:	\$1,425,758		
FY05:	\$1,237,289	FY09:	\$1,134,779		

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 10% (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.

- \$186,000 is for **Other Services** of which the majority is for Authority-wide memberships including the American Waterworks Association Research Foundation (AWWARF), National Association of Clean Water Agencies, Association of Metropolitan Water Agencies, American Waterworks Association, and the Boston

Harbor Association marine debris program. The significant increase from FY11 to FY12 is due to the restoration of funding for partial year costs of MWRA's membership in AWWARF.

**WASTEWATER TREATMENT**

Proposed FY12 Current Expense Budget WASTEWATER TREATMENT						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 17,114,724	\$ 17,553,076	\$ 17,725,977	\$ 17,598,130	\$ (127,847)	-0.7%
OVERTIME	798,752	1,379,720	1,057,873	1,002,886	(54,987)	-5.2%
FRINGE BENEFITS	15,664	28,799	19,300	20,300	1,000	5.2%
CHEMICALS	3,280,345	2,887,823	3,215,286	3,796,743	581,457	18.1%
UTILITIES	14,946,585	16,184,157	13,432,758	13,014,178	(418,580)	-3.1%
ONGOING MAINTENANCE	14,459,802	13,737,428	14,915,376	15,038,750	123,374	0.8%
TRAINING & MEETINGS	55,088	23,580	41,600	45,100	3,500	8.4%
PROFESSIONAL SERVICES	387,342	353,516	484,700	355,200	(129,500)	-26.7%
OTHER MATERIALS	403,706	515,596	552,962	562,891	9,929	1.8%
OTHER SERVICES	16,408,710	16,158,142	15,670,365	15,775,373	105,008	0.7%
<b>TOTAL</b>	<b>\$ 67,870,718</b>	<b>\$ 68,821,837</b>	<b>\$ 67,116,197</b>	<b>\$ 67,209,551</b>	<b>\$ 93,354</b>	<b>0.1%</b>

Proposed FY12 Current Expense Budget WASTEWATER TREATMENT by Facility						
FACILITY	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
DEER ISLAND	\$ 49,020,875	\$ 50,400,723	\$ 49,584,988	\$ 49,308,706	\$ (276,282)	-0.6%
RESIDUALS	17,315,291	16,918,753	15,982,671	16,235,090	252,419	1.6%
CLINTON	1,534,552	1,502,361	1,548,538	1,665,755	117,217	7.6%
<b>TOTAL</b>	<b>\$ 67,870,718</b>	<b>\$ 68,821,837</b>	<b>\$ 67,116,197</b>	<b>\$ 67,209,551</b>	<b>\$ 93,354</b>	<b>0.1%</b>

The **Deer Island Treatment Plant**, the **Residuals Management Program**, and the **Clinton Treatment Plant** comprise the Wastewater Treatment Department. Together, the budgets for these programs represent 43% of the Operations Division’s FY12 Proposed Current Expense Budget (CEB) and 32% of MWRA’s FY12 Proposed CEB direct expenses.

Incoming wastewater from MWRA customer communities is piped to several headworks facilities where bricks, logs, and other large objects are screened out before the influent is transmitted to Deer Island 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. 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**

Proposed FY12 Current Expense Budget DEER ISLAND TREATMENT PLANT						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 16,446,940	\$ 16,854,157	\$ 17,050,860	\$ 16,871,631	\$ (179,229)	-1.1%
OVERTIME	751,401	1,316,066	992,873	942,886	(49,987)	-5.0%
FRINGE BENEFITS	15,028	27,911	18,300	19,300	1,000	5.5%
CHEMICALS	3,042,991	2,710,193	2,974,594	3,506,718	532,124	17.9%
UTILITIES	14,618,424	15,887,447	13,126,804	12,754,285	(372,519)	-2.8%
ONGOING MAINTENANCE	12,854,386	12,300,411	13,881,053	13,881,032	(21)	0.0%
TRAINING & MEETINGS	55,088	22,999	40,000	40,000	-	0.0%
PROFESSIONAL SERVICES	362,425	263,157	470,500	320,500	(150,000)	-31.9%
OTHER MATERIALS	296,823	450,148	419,079	385,329	(33,750)	-8.1%
OTHER SERVICES	577,369	568,234	610,925	587,025	(23,900)	-3.9%
<b>TOTAL</b>	<b>\$ 49,020,875</b>	<b>\$ 50,400,723</b>	<b>\$ 49,584,988</b>	<b>\$ 49,308,706</b>	<b>\$ (276,282)</b>	<b>-0.6%</b>

**Program Description and Goals:**

The **Deer Island Treatment Plant** budget accounts for 32% of the Operations Division’s FY12 Proposed Current Expense Budget (CEB). DITP has a primary treatment peak capacity of 1.27 billion gallons per day (bgd) and secondary treatment peak 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. There are three pump stations. The pumping capacity at the Deer Island plant has dramatically increased the volume of wastewater that can be taken into the plant from the conveyance tunnels. This reduces back-ups and overflows throughout the system when wet weather causes peaking of system flows.

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 remains in the wastewater flow. Secondary treatment raises the level of pollution removal to over 85%. More than 150 tons of pure oxygen is manufactured each day at Deer Island's cryogenic facility to support the biological treatment process.

Sludge and scum from primary treatment are thickened in gravity thickeners. Sludge and scum from secondary treatment are thickened in centrifuges. Polymer is used in the secondary thickening process to increase its efficiency. Digestion occurs in 12 egg-shaped anaerobic digesters, each 90 feet in diameter and approximately 130 feet tall. 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 purchased energy. Digested sludge is pumped through the inter-island Braintree-Weymouth 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, perform minor preventative maintenance activities, and oversee plant functions 24 hours per day, seven days per week.
- Thermal Power Plant staff manages and operate 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, 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 improve 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 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 FY12 Proposed CEB assumes treatment of an average flow of 365 mgd based on ten years of historical data. The projected quantity of digested sludge to be pumped to FRSA (TSS basis) is 106 TPD. This is based on data from the six years after the discontinuation of the DSL centrifuges and the start-up of the Braintree-Weymouth tunnel.

Deer Island's FY12 Proposed CEB accounts for the impact of self-generation of electricity from the steam turbine generator, combustion turbine generators, hydroelectric generators, wind turbine generators, and photovoltaic panels. In total, these assets will meet approximately 29.3% of the total energy requirements resulting in net cost savings of approximately \$3.5 million.

Deer Island continues to comply with the conditions of the current NPDES Permit which expired in FY06. Given the uncertainty regarding the timing of the permit renewal from EPA, Deer Island's FY12 CEB assumes the new permit will not go into effect until the second quarter of FY12. When the new permit is issued, Deer Island's treatment process will be required to kill enterococcus in addition to fecal coliform to comply with the new regulations.

## Budget Highlights:

- \$16.9 million for **Wages and Salaries**, a decrease of \$179,000 or 1.1% from the FY11 budget. The FY12 Proposed CEB funds on average 233 filled permanent positions and one full time temporary employee in engineering support. The FY12 Proposed CEB also includes \$122,000 for stand-by pay to support operational and maintenance needs primarily during storms and emergencies.
- \$943,000 for **Overtime** for operational coverage, critical maintenance projects, and regulatory requirements (i.e. inspections). The FY12 Proposed CEB is \$50,000 or 5.0% less than the FY11 CEB
- \$3.5 million for **Chemicals**, which is \$532,000 or 17.9% more than the FY11 CEB. The FY12 Proposed CEB reflects management's expectation that the new NPDES permit will be in effect for DI at the start of the second quarter of FY12. The budget includes approximately \$987,000 for sodium bisulfite and sodium hypochlorite required to treat enterococcus when the new permit is in effect. This increase is partially offset by a price decrease for sodium hypochlorite.
- \$12.8 million for **Utilities**, a decrease of \$373,000 or 2.8% from the FY11 CEB. The FY12 Proposed CEB includes \$10.3 million for electricity, \$1.3 million for water, and \$1.1 million for diesel fuel. The decrease of \$472,000 in electricity is primarily due to a projected reduction in power purchases from FY11 to FY12. The FY12 Proposed CEB reflects several years of historic power usage and self-generation. It also assumes a 14.4% increase in renewable self-generation primarily from additional solar panels and the new back pressure STG.
- \$13.9 million for **Maintenance**, which is level funded with the FY11 CEB. The FY12 Proposed CEB includes \$5.2 million for materials and \$8.7 million for services. Of the total, 59% or \$8.2 million is for plant and machinery services and materials, \$3.1 million is for electrical system maintenance, and \$1.4 million is for building and grounds work.
- \$321,000 for **Professional Services**, a decrease of \$150,000 or 31.9% from the FY11 CEB due to a decrease in the budget for as-needed design contracts to support the development of major maintenance projects. The FY12 CEB reflects a more realistic estimate of as-needed engineering support required for the CEB projects planned for the next few years. In addition, the FY12 Proposed CEB does not include \$50k for a beach nourishment study because management is reevaluating the need for this work.

- \$385,000 for **Other Materials**, a decrease of \$34,000 or 8.1% from the FY11 CEB. The FY12 Proposed CEB includes \$114,000 for work clothes, \$110,000 for health and safety materials, and \$68,000 for vehicles expenses (tolls, mileage, and gas).
- \$587,000 for **Other Services**, a decrease of \$24,000 or 3.9% from the FY11 CEB. The FY12 Proposed Budget includes the ambulance service contract \$250,000, permit fees \$70,000, telephones \$48,000, fax/copier leasing and servicing \$42,000, HAZmat/safety services \$40,000, and freight charges \$20,000.

## RESIDUALS MANAGEMENT

Proposed FY12 Current Expense Budget RESIDUALS MANAGEMENT PROGRAM						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 103,200	\$ 119,702	\$ 109,532	\$ 109,676	\$ 144	0.1%
OVERTIME	-	-	-	-	-	-
FRINGE BENEFITS	-	-	-	-	-	-
UTILITIES	-	-	-	-	-	-
ONGOING MAINTENANCE	1,398,551	1,226,841	822,968	941,678	118,710	14.4%
TRAINING & MEETINGS	-	582	1,500	1,000	(500)	-33.3%
PROFESSIONAL SERVICES	-	-	7,500	13,000	5,500	73.3%
OTHER MATERIALS	-	-	300	80	(220)	-73.3%
OTHER SERVICES	15,813,540	15,571,628	15,040,871	15,169,656	128,785	0.9%
<b>TOTAL</b>	<b>\$ 17,315,291</b>	<b>\$ 16,918,753</b>	<b>\$ 15,982,671</b>	<b>\$ 16,235,090</b>	<b>\$ 252,419</b>	<b>1.6%</b>

### Program Description and Goals:

The **Residuals Management Program** manages the processing and disposal of approximately 106 dry tons per day (TSS) of sludge from the anaerobic digestion process at Deer Island, 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 FY05, major operational changes occurred regarding sludge processing at Deer Island. The Braintree-Weymouth cross-harbor tunnel came on-line in April 2005. The previous practice of thickening and barging sludge from Deer Island to Fore River ceased. Deer Island began pumping a much lower concentration of sludge (2.0% to 2.5% average total suspended solids) to the Residuals Processing Facility.

- In FY11, MWRA completed a third-party independent condition assessment of the NEFCo facility. The report found the facility in excellent condition and recommended only minor modifications to several control system devices.
- The budget is based on 106 tons per day (TPD based on TSS), consistent with historical actual annual tonnage since the start-up of the Braintree-Weymouth Tunnel.
- 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. The current two year contract will expire in May 2011. MWRA is in the process of procuring a replacement contract.

**Budget Highlights:**

- \$110,000 for **Wages and Salaries**, which is level funded with the FY11 Budget and supports 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.
- \$942,000 is for **Maintenance**, an increase of \$119,000 or 14.4% from the FY11 Budget. The maintenance 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 the FY11 to the FY12 Proposed Budget is due to a higher contractual amount for calendar year 2012 and also increases in inflation based on market indices.
- \$14.2 million or 87.4% of the FY12 Proposed Budget is for the **Sludge Pelletization** portion of the NEFCo contract. The FY12 Proposed Budget is \$149,000 or 1.1% more than the FY11 Budget due to inflation increases, primarily for maintenance and labor. The FY12 budget is based on an average of 106 tons per day (TPD) which is level funded with the FY11 budget and is consistent with historical trends since the start-up of the Braintree-Weymouth Tunnel.
- \$959,000 of the FY12 Proposed Budget is for **Grit and Screenings** disposal, an increase of \$27,000 or 2.9% from the FY11 budget.
- \$3,000 of the budget is for **Permit Fees**, as required by Department of Environmental Protection.

## CLINTON WASTEWATER TREATMENT PLANT

Proposed FY12 Current Expense Budget CLINTON WASTEWATER TREATMENT PROGRAM							
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12		
WAGES & SALARIES	\$ 564,583	\$ 579,217	\$ 565,586	\$ 616,823	\$ 51,237	9.1%	
OVERTIME	47,352	63,654	65,000	60,000	(5,000)	-7.7%	
FRINGE BENEFITS	636	888	1,000	1,000	-	0.0%	
CHEMICALS	237,353	177,630	240,692	290,024	49,332	20.5%	
UTILITIES	328,161	296,710	305,954	259,894	(46,060)	-15.1%	
ONGOING MAINTENANCE	206,865	210,176	211,355	216,040	4,685	2.2%	
TRAINING & MEETINGS	-	-	100	4,100	4,000	4000.0%	
PROFESSIONAL SERVICES	24,917	90,358	6,700	21,700	15,000	223.9%	
OTHER MATERIALS	106,884	65,448	133,582	177,482	43,900	32.9%	
OTHER SERVICES	17,801	18,280	18,569	18,692	123	0.7%	
<b>TOTAL</b>	<b>\$ 1,534,552</b>	<b>\$ 1,502,361</b>	<b>\$ 1,548,538</b>	<b>\$ 1,665,755</b>	<b>\$ 117,217</b>	<b>7.6%</b>	

### Program Description and Goals:

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

### Budget Highlights:

- \$617,000 for **Wages and Salaries**, an increase of \$51,000 or 9.1% from the FY11 Budget. Wages and Salaries represents 37% of the FY12 Proposed Budget. This funds eight positions and one part-time temporary contract clerical position. The increase from FY11 to FY12 is due to the addition of a position in Operations.
- \$60,000 for **Overtime**, a decrease of \$5,000 or 7.7% from the FY11 Budget. Overtime is used to meet the 24 hour, 7 day per week emergency coverage requirement and to provide increased maintenance resulting from an aging facility.
- \$290,000 for **Chemicals**, an increase of \$49,000 or 20.5% from the FY11 Budget. Of the chemical budget, \$134,000 is used for sludge processing and disposal and \$156,000 is used for wastewater treatment. The increase from FY11 to FY12 reflects projected increases in chemical use for wastewater treatment due to the additional requirements expected in the new NPDES permit.
- \$260,000 for **Utilities**, a decrease of \$46,000 or 15.1% from the FY11 Budget. Utilities represent 16% of the FY12 Proposed Budget. This includes \$200,000 for electricity, \$45,000 for fuel oil, and \$15,000 for water.

- \$216,000 for **Maintenance**, an increase of \$5,000 or 2.2% from the FY11 Budget. Maintenance represents 13% of the FY12 Proposed Budget. The budget includes \$65,000 for major projects and the remainder for routine services and maintenance.
- \$177,000 for **Other Materials**, an increase of \$44,000 or 32.9% from the FY11 Budget, The Other Materials budget includes \$166,000 for clean fill for the landfill operation. Clean fill quantities are expected to increase in FY12 due to the additional sludge quantities expected when the new NPDES permit goes into effect.

**FIELD OPERATIONS**

Proposed FY12 Current Expense Budget FIELD OPERATIONS						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 34,567,080	\$ 34,959,350	\$ 35,900,759	\$ 35,981,704	\$ 80,945	0.2%
OVERTIME	2,001,173	2,333,975	2,058,433	2,234,270	175,837	8.5%
FRINGE BENEFITS	35,498	39,919	44,945	47,200	2,255	5.0%
CHEMICALS	6,587,210	6,110,976	6,581,832	6,220,803	(361,029)	-5.5%
UTILITIES	9,327,360	9,654,098	9,708,200	8,933,724	(774,476)	-8.0%
ONGOING MAINTENANCE	8,341,580	8,606,906	9,416,260	10,507,969	1,091,709	11.6%
TRAINING & MEETINGS	35,326	23,160	116,800	122,300	5,500	4.7%
PROFESSIONAL SERVICES	458,458	618,254	487,060	581,500	94,440	19.4%
OTHER MATERIALS	767,292	943,143	975,254	962,542	(12,712)	-1.3%
OTHER SERVICES	2,363,746	2,636,342	2,969,720	3,251,490	281,770	9.5%
<b>TOTAL</b>	<b>\$ 64,484,723</b>	<b>\$ 65,926,123</b>	<b>\$ 68,259,263</b>	<b>\$ 68,843,502</b>	<b>\$ 584,239</b>	<b>0.9%</b>

Proposed FY12 Current Expense Budget FIELD OPERATIONS by Program						
PROGRAM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
TOXIC REDUCTION & CONTROL	\$ 3,410,288	\$ 3,436,145	\$ 3,533,818	\$ 3,550,460	\$ 16,642	0.5%
WASTEWATER OPERATIONS	11,399,949	11,624,424	11,452,944	11,635,309	182,365	1.6%
WATER OPERATIONS & MAINT	21,527,412	21,110,595	26,542,430	25,301,252	(1,241,178)	-4.7%
METRO MAINTENANCE	16,765,543	17,732,922	13,770,795	14,305,526	534,731	3.9%
OPERATIONS SUPPORT	7,235,436	7,803,765	8,216,073	9,173,088	957,015	11.6%
FOD ADMIN	4,146,095	4,218,272	4,743,203	4,877,867	134,664	2.8%
<b>TOTAL</b>	<b>\$ 64,484,723</b>	<b>\$ 65,926,123</b>	<b>\$ 68,259,263</b>	<b>\$ 68,843,502</b>	<b>\$ 584,239</b>	<b>0.9%</b>

The primary goal of the **Field Operations Department (FOD)** is to provide high quality, uninterrupted water delivery and wastewater collection services to MWRA communities. The department is responsible for the treatment, transmission, and distribution of water from the Quabbin and Wachusett reservoirs to community water systems. It also manages the collection, transport, and screening of wastewater flow from MWRA communities to the Deer Island Treatment Plant as well as MWRA's industrial pretreatment, permitting, and monitoring program. FOD consists of six operating units: Toxic Reduction and Control, Wastewater Operations, Metropolitan Maintenance, Water Operations and Maintenance, Operations Support, and Administration.

**The Toxic Reduction and Control (TRAC) Department** operates a multi-faceted program to minimize and control the inflow of hazardous or toxic materials into the MWRA sewer system. TRAC operates MWRA's 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, 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 six CSO facilities which are similarly un-staffed. 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 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 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, 4,900 valves, 18 miles of deep rock tunnels, ten pump stations, eight tunnel shafts, eleven distribution storage tanks; and a wastewater network of 240 miles of wastewater interceptors and appurtenances, 12 pump stations, four headworks, and five CSO facilities. In addition, this unit performs TV inspections of the wastewater interceptor system and leak detection.

**Operations Support** provides technical support to 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:**

- \$36.0 million is for **Wages and Salaries**, an increase of \$81,000 or 0.2% from the FY11 Budget. The Wages and Salaries line item accounts for 52% of the FY12 Proposed Budget of which \$35.4 million or 98% is for regular pay to fund 510 positions. Of the remaining budget, \$374,000 is for stand-by pay to support operational and maintenance needs; \$147,000 for temporary employees including two temporary SCADA Technicians, and \$43,000 is for interns for water quality analysis, grounds maintenance, and engineering assistance to augment engineering staff.
- \$2.2 million or 3% of the FY12 Proposed Budget is for **Overtime**, which includes \$1.0 million for emergency related overtime, \$588,000 for operational coverage needs, and \$580,000 for planned overtime for scheduled maintenance and training. The Overtime budget is \$176,000 or 8.5% more than the FY11 budget primarily due to the pre-staging of additional electricians, plumbers, and mechanics to ensure the operability of MWRA's critical facilities during severe storms.
- \$6.2 million or 9% of the FY12 Proposed Budget is for **Chemicals**, of which \$5.9 million is for water treatment and \$335,000 is for wastewater treatment. The budget includes \$3.2 million for soda ash for alkalinity control, \$986,000 for sodium hypochlorite and \$219,000 for aqua ammonia for disinfection, \$609,000 for



hydrofluosilicic acid for fluoridation, \$505,000 for liquid oxygen for the CWTP ozone generation, \$285,000 for carbon dioxide to control water pH, \$151,000 for Nitrazyme and VX-456 for Framingham Extension Relief Sewer odor and corrosion control, and \$175,000 for sodium bisulfite for dechlorination. The FY12 Proposed Budget reflects a decrease of \$361,000 or 5.5% from the FY11 budget primarily due to lower projected fluoride usage as a result of regulatory chances.

- \$8.9 million or 13% of the FY12 Proposed Budget is for **Utilities**, including \$6.4 million for electricity, \$1.4 million for diesel fuel, \$597,000 for natural gas, and \$435,000 for water. The FY12 Proposed Budget utility budget reflects a decrease of \$774,000 or 8.0% from the FY11 Budget primarily due to more favorable contract prices, expected wind and hydro revenue, savings from energy conservation initiatives, as well as reduced usage estimates based on historical spending over the past three fiscal years.
- \$10.5 million or 15% of the FY12 Proposed Budget is for **Maintenance**, including \$3.2 million in major projects, \$3.6 million in day-to-day projects, and \$3.3 million for services, and \$570,000 for energy initiatives. The FY12 Proposed Budget for Maintenance is \$1.1 million or 11.6% more than the FY11 Budget due mainly to a significant increase in planned maintenance projects and improved capacity to complete the work as a result of a reorganization of the Metro Maintenance Department. Some of the major projects planned for FY12 include rebuilding the pumps at Prison Point, \$450,000, switchgear modifications at Nut Island, \$350,000, Tree removal at the Wachusett Dikes, \$250,000, replacement of incline screws at Chelsea Creek, Ward Street, and Columbus Park, \$200,000, Channel modifications at the Headworks, \$175,000, Replacement of 10 Wastewater flow meters, \$150,000, replacement of surge control valves at the Commonwealth Avenue Pump Station, \$125,000, replacement of the roof at the Bellvue water tank, installation of variable frequency drives at Commonwealth Ave, \$100,000. The budget also includes \$570,000 for energy efficiency initiatives such as HVAC and lighting efficiency upgrades for Chelsea, Southboro, and various metropolitan facilities.
- \$122,000 for **Training and Meetings** primarily to cover training required for job duties, health and safety compliance, and job-related licensures and certifications. The FY12 Proposed Budget reflects an increase of \$5,500 or 4.7% from the FY11 Budget due to the inclusion of training on operating underground storage tanks.
- \$581,000 or 1% of the FY12 Proposed Budget is for **Professional Services**, including \$548,000 for engineering, which is made up of \$280,000 for as-needed engineering services; \$40,000 for the NPDES related Local Limits Study expected to be underway in FY11, but continuing into FY12; \$93,000 for dam inspection and engineering work related to dam repairs; and \$5,000 to develop an emergency response plan for invasives control. The budget also includes \$25,000 for energy audits at various metropolitan facilities; \$5,000 for lab and testing services related to water quality; and \$4,000 for the Dig Safe program. Professional Services increased by \$94,000 or 19.4% from the FY11 Budget primarily due to additional use of as-needed engineering contracts.
- \$963,000 or 1% of the budget is for **Other Materials**, including \$330,000 for vehicle expenses for gas, mileage reimbursements and tolls; \$235,000 for health and safety supplies; \$190,000 for work clothes; and \$125,000 for lab and testing supplies. Other Materials are \$13,000 or 1.3% less than the FY11 Budget.
- \$3.3 million or 5% is for **Other Services**, including \$1.7 million for annual lease payments for the Chelsea office building, \$577,000 for telephone and SCADA needs at various facilities, \$369,000 for Other Services of which the majority support Invasives control, and \$350,000 for police details. The FY12 Proposed Budget for Other Services is \$282,000 or 9.5% more than the FY11 Budget primarily due to increases in the Chelsea rent and taxes, the addition of \$120,000 in communications fees to support the new contaminant monitoring system at the reservoirs, and \$65,000 for deployment of an aquatic harvester to clear invasive growth from the Chestnut Hill Reservoir.

## LABORATORY SERVICES

Proposed FY12 Current Expense Budget LABORATORY SERVICES						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 3,853,465	\$ 4,000,086	\$ 4,021,138	\$ 4,046,536	\$ 25,398	0.6%
OVERTIME	51,864	64,595	70,242	50,443	(19,799)	-28.2%
FRINGE BENEFITS	387	423	1,200	1,200	-	0.0%
UTILITIES	20,329	16,834	23,184	23,633	449	1.9%
ONGOING MAINTENANCE	209,999	222,466	313,295	285,902	(27,393)	-8.7%
TRAINING & MEETINGS	832	989	2,000	2,000	-	0.0%
PROFESSIONAL SERVICES	112,729	118,528	96,670	89,936	(6,734)	-7.0%
OTHER MATERIALS	762,158	771,432	910,947	946,096	35,149	3.9%
OTHER SERVICES	82,440	76,705	92,334	88,154	(4,180)	-4.5%
<b>TOTAL</b>	<b>\$ 5,094,203</b>	<b>\$ 5,272,058</b>	<b>\$ 5,531,010</b>	<b>\$ 5,533,900</b>	<b>\$ 2,890</b>	<b>0.1%</b>

The **Department of Laboratory Services (DLS)** goals are 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 NPDES permits. The Department supports these functions at five locations: Chelsea, Southborough, Quabbin, the Central Laboratory at Deer Island, 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, TRAC, and wastewater residuals. DLS also conducts the Boston Harbor monitoring program, which 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 and the Massachusetts Department of Environmental Protection.

Most MWRA laboratory testing is done in-house. Certain highly specialized or low volume tests are outsourced, such as tests for dioxins and radioactivity. In January 2004, MWRA brought most of the laboratory testing for the Harbor and Outfall Monitoring (HOM) in-house including the water column laboratory work and the monthly boat sampling of Massachusetts Bay to collect bacteria samples. In July 2004, MWRA brought laboratory testing of Quabbin and Wachusett Reservoirs and their tributaries for the Department of Conservation and Recreation in-house, including operation of the Quabbin Laboratory. In December 2010 EPA and DEP approved reductions to the Harbor and Outfall Monitoring (HOM) program. These reductions were already reflected in the DLS CEB since FY10.

### Budget Highlights:

- \$4.0 million is for **Wages and Salaries**, an increase of \$25,000 or 0.6% from the FY11 Budget. Wages and Salaries account for 73% of the FY12 Proposed Current Expense Budget (CEB) of which \$3.8 million covers regular pay for 54 positions. The FY12 Proposed Budget also includes \$107,000 for up to three temporary employee positions primarily to cover peak workload and Harbor and Outfall Monitoring and Carroll Water Treatment Plant special testing.
- \$24,000 is for **Utilities**, which consists of gases and cryogenic liquids used for various lab instruments. The FY12 Proposed Budget for Utilities is level funded with the FY11 Budget.

- \$286,000 is for **Maintenance** which includes \$175,000 for equipment service contracts, \$80,000 for Laboratory modifications, and \$4,000 for HVAC services to annually certify the fume hoods. The FY12 Proposed Budget for Maintenance represents an decrease of \$27,000 or 8.7% from the FY11 Budget.
- \$90,000 is for **Professional Services** which covers lab and testing analysis services. The Lab contracts out a variety of complex and/or low volume tests. Outside labs are used for emergencies, “second opinions”, capacity constraints, and unavailability of specialized equipment or economic justification. The FY12 Proposed Budget is \$7,000 or 7.0% less than the FY11 Budget.
- \$946,000 is for **Other Materials** which includes \$573,000 for laboratory and testing supplies and \$330,000 for replacement of obsolete or older equipment. The FY12 Proposed Budget is \$35,000 or 3.9% higher than the FY11 Budget.
- \$88,000 is for **Other Services** and 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. The FY12 Proposed Budget represents a decrease of \$4,000 or 4.5% from the FY11 Budget.

## ENVIRONMENTAL QUALITY

Proposed FY12 Current Expense Budget ENVIRONMENTAL QUALITY							
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12		
WAGES & SALARIES	\$ 1,371,796	\$ 1,451,658	\$ 1,418,188	\$ 1,433,021	\$	14,833	1.0%
OVERTIME	2,400	1,233	2,633	2,633	\$	-	0.0%
FRINGE BENEFITS	-	-	-	-	\$	-	-
ONGOING MAINTENANCE	951	390	-	-	\$	-	-
TRAINING & MEETINGS	1,668	43	1,000	1,000	\$	-	0.0%
PROFESSIONAL SERVICES	2,418,808	2,354,958	1,560,000	1,567,400	\$	7,400	0.5%
OTHER MATERIALS	4,002	9,951	15,030	15,030	\$	-	0.0%
OTHER SERVICES	6,293	3,860	4,200	4,200	\$	-	0.0%
<b>TOTAL</b>	<b>\$ 3,805,918</b>	<b>\$ 3,822,093</b>	<b>\$ 3,001,051</b>	<b>\$ 3,023,284</b>	<b>\$</b>	<b>22,233</b>	<b>0.7%</b>

The **Environmental Quality Department (ENQUAD)** reports on environmental findings that may be linked to MWRA operations and projects. The department's main activities are monitoring sewage influent and effluent quality; monitoring the water quality of Boston Harbor, its tributary rivers, and Massachusetts Bay; managing data and entering quality data; and complying with the reporting requirements of MWRA's NPDES permits. MWRA submits these 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, MWRA posts many of these reports on its website. All technical reports and several reports on water quality in the harbor and the bay are also posted on the website.

### Budget Highlights:

- \$1.4 million or 47% of the FY12 Proposed Current Expense Budget (CEB) is for **Wages and Salaries** for 17 positions. The FY12 Proposed Budget is \$15,000 or 1.0% higher than the FY11 Budget.
- \$1.6 million or 52% is for **Professional Services** for outside laboratory testing and analysis associated with the Harbor and Outfall Monitoring (HOM) Program. This includes \$1.3 million for the HOM7 and HOM8 contracts, which will be completed by several vendors. The balance of the budget covers the following contracts. Except for the biotoxicity testing, these projects are co-funded through cost-sharing arrangements with other organizations:
  - o Biotoxicity testing for Deer Island Treatment Plant, Clinton Treatment Plant, and CSO facilities
  - o National Oceanic and Atmospheric Administration's National Data Buoy Center for required continuous monitoring
  - o University of Maine's buoy off Cape Ann
  - o Algae monitoring off Cape Ann on buoy
  - o Cape Cod Bay water quality monitoring
  - o Bays Eutrophication Model
  - o Study of trace organic chemicals (such as personal care products, pharmaceuticals, and endocrine disruptors).

The significant decrease from FY10 spending to the FY12 Proposed CEB reflects the reduction in scope of HOM monitoring based on the favorable findings of nine years of monitoring data and regulatory approval. MWRA will save approximately \$800,000 per year in monitoring costs due to the changes.

## ENGINEERING AND CONSTRUCTION

Proposed FY12 Current Expense Budget ENGINEERING AND CONSTRUCTION						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 7,840,735	\$ 7,991,274	\$ 7,879,227	\$ 7,739,975	\$ (139,252)	-1.8%
OVERTIME	77,998	112,912	63,000	164,920	101,920	161.8%
FRINGE BENEFITS	193	479	500	500	-	0.0%
ONGOING MAINTENANCE	12,583	8,039	10,468	9,400	(1,068)	-10.2%
TRAINING & MEETINGS	13,110	745	8,400	6,400	(2,000)	-23.8%
PROFESSIONAL SERVICES	300	-	-	-	-	-
OTHER MATERIALS	127,861	178,514	118,316	122,750	4,434	3.7%
OTHER SERVICES	24,961	31,656	27,740	33,820	6,080	21.9%
<b>TOTAL</b>	<b>\$ 8,097,741</b>	<b>\$ 8,323,619</b>	<b>\$ 8,107,651</b>	<b>\$ 8,077,765</b>	<b>\$ (29,886)</b>	<b>-0.4%</b>

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

The department provides in-house engineering, consultant management (during the facilities planning, environmental review, design, and engineering services during construction stages of capital projects), drafting, surveying, construction management, and other technical assistance required for the maintenance, repair, and rehabilitation of wastewater and waterworks systems. The Wastewater Engineering Unit manages all wastewater design and engineering projects including CSO engineering activities. The unit also maintains the Design Information Services Center (DISC), which provides computer-aided design and drafting (CADD) and 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.

### Budget Highlights:

- \$7.7 million for **Wages and Salaries** represents 96% of the FY12 Proposed Budget and includes funding for 86 positions. The FY12 Proposed Budget is 139,000 or 1.8% lower than the FY11 Budget.
- \$165,000 for **Overtime** to cover 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. FY12 Proposed Budget is \$102,000 higher than the FY11 Budget and includes additional funding to cover the accelerated construction schedule for the repair of the Hultman Aqueduct.
- \$9,000 for **Maintenance** which covers service contracts for the DISC Unit's specialized printers and plotters. The FY12 Proposed Budget reflects a decrease of \$1,000 or 10.2% from the FY11 Budget.
- \$123,000 for **Other Materials**, which includes \$104,000 for vehicle expense for staff traveling to construction sites, \$11,000 for office supplies, and \$4,000 for work clothes. The FY12 Proposed Budget is \$4,000 or 3.7% higher than the FY11 Budget.

- \$34,000 for **Other Services** which includes \$17,000 for printing of in-house design plans and specifications, \$8,200 for memberships and dues, \$8,000 for telephone expenses, and \$1,000 for police details. The FY12 Proposed Budget is \$6,000 or 21.9% higher than the FY11 Budget.



Law Division  
Budget





## LAW DIVISION

Proposed FY12 Current Expense Budget LAW DIVISION							
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12		
WAGES & SALARIES	\$ 1,657,976	\$ 1,653,543	\$ 1,621,412	\$ 1,619,012	\$ (2,400)	-0.1%	
OVERTIME	-	-	-	-	-	-	
TRAINING & MEETINGS	570	221	2,000	2,000	-	0.0%	
PROFESSIONAL SERVICES	126,256	23,882	146,000	146,000	-	0.0%	
OTHER MATERIALS	7,952	4,301	9,314	7,314	(2,000)	-21.5%	
OTHER SERVICES	22,294	26,042	29,147	29,147	-	0.0%	
<b>TOTAL</b>	<b>\$ 1,815,048</b>	<b>\$ 1,707,989</b>	<b>\$ 1,807,873</b>	<b>\$ 1,803,473</b>	<b>\$ (4,400)</b>	<b>-0.2%</b>	

The Law Division provides legal counsel to the Board of Directors, the Executive Director, and staff on compliance with federal and state laws, regulations, court cases, and administrative orders. Staff also handle and provide assistance with respect to litigation matters, real estate matters, labor/employment issues, procurement, and construction issues. The General Counsel interprets the MWRA Enabling Act and provides advice on conflict of interest and Code of Conduct issues. Division attorneys monitor the work of outside counsel when it is necessary to retain such services. The budget for the Division accounts for less than 1% of MWRA's FY12 Proposed Budget.

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 by MWRA design professionals. 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.

### FY12 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 FY12 Proposed Budget is \$1.8 million, a decrease of \$4,000 or 0.2% from the FY11 Budget.
- \$1.6 million for **Wages and Salaries**, a decrease of \$2,400 or 0.1% from FY11 Budget. The budget funds 18 positions.
- \$146,000 for **Professional Services**, level funded with the FY11 Budget.





Administration & Finance Division  
Budget



## ADMINISTRATION AND FINANCE DIVISION

<b>Proposed FY12 Current Expense Budget ADMINISTRATION AND FINANCE</b>						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 15,493,876	\$ 15,494,376	\$ 15,595,708	\$ 15,439,017	\$ (156,691)	-1.0%
OVERTIME	57,887	72,530	58,478	58,478	-	0.0%
FRINGE BENEFITS	16,527,910	15,925,897	17,929,715	18,064,482	134,767	0.8%
WORKERS' COMPENSATION	1,841,638	2,226,080	1,870,000	2,020,000	150,000	8.0%
UTILITIES	134,173	127,177	150,592	138,526	(12,066)	-8.0%
ONGOING MAINTENANCE	3,993,104	2,573,184	3,720,390	3,405,228	(315,162)	-8.5%
TRAINING & MEETINGS	34,641	33,728	40,855	60,797	19,942	48.8%
PROFESSIONAL SERVICES	778,629	922,605	1,189,778	1,107,376	(82,402)	-6.9%
OTHER MATERIALS	1,095,752	1,310,988	1,196,719	1,028,515	(168,204)	-14.1%
OTHER SERVICES	2,937,756	2,859,420	3,037,072	3,025,770	(11,302)	-0.4%
<b>TOTAL</b>	<b>\$ 42,895,366</b>	<b>\$ 41,545,985</b>	<b>\$ 44,789,307</b>	<b>\$ 44,348,189</b>	<b>\$ (441,118)</b>	<b>-1.0%</b>

<b>Proposed FY12 Current Expense Budget ADMINISTRATION AND FINANCE</b>						
DEPARTMENT	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
DIR OFFICE (FINANCE)	\$ 204,015	\$ 233,550	\$ 332,091	\$ 330,036	\$ (2,055)	-0.6%
BUDGET	698,082	746,584	744,216	740,774	(3,442)	-0.5%
TREASURY	986,388	1,099,772	939,981	940,984	1,003	0.1%
CONTROLLER	1,488,219	1,533,605	1,542,811	1,521,979	(20,832)	-1.4%
RISK MANAGEMENT	344,036	395,661	388,570	388,272	(298)	-0.1%
DIVISION DIR (SUPP SER)	238,307	174,138	-	-	-	-
HUMAN RESOURCES	20,372,112	20,142,549	22,077,649	22,349,000	271,351	1.2%
MIS	9,059,021	8,810,393	9,694,377	9,074,104	(620,273)	-6.4%
FACILITIES MANAGEMENT	2,514,224	2,438,926	2,684,390	2,667,654	(16,736)	-0.6%
FLEET SERVICES	1,883,704	1,770,528	1,948,107	1,867,116	(80,991)	-4.2%
PROCUREMENT	4,415,886	3,435,592	3,800,189	3,765,841	(34,348)	-0.9%
REAL PROPERTY / ENVIRONMENTAL MGMT	691,372	764,687	636,926	702,429	65,503	10.3%
<b>TOTAL</b>	<b>\$ 42,895,366</b>	<b>\$ 41,545,985</b>	<b>\$ 44,789,307</b>	<b>\$ 44,348,189</b>	<b>\$ (441,118)</b>	<b>-1.0%</b>

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

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

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

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

**FY12 Goals:**

- Ensure the fiscal strength of MWRA through judicious, informed, and farsighted allocation of resources.
- Develop strategies for minimizing increases in community assessments and charges.
- Ensure uniform contract language, standard safeguards, and competitive bids for the MWRA.
- Maintain favorable credit ratings for MWRA's revenue bonds.
- Provide upgrades and enhancements to the integrated Management Information Systems (MIS) to ensure efficiency.
- Ensure effective, coordinated operating and capital budget planning throughout MWRA.
- Maintain effective relationships with the unions representing the MWRA workforce while protecting and enhancing management flexibility.

**FY12 Initiatives**

- Continue implementation and documentation of new computer application to support the Capital Improvement Program.
- Continue close monitoring of financial markets to better position the Authority to take advantage of any opportunities to maximize investment income and reduce debt financing obligations.
- Continue assessment and evaluation of sustainable cost savings opportunities throughout the organization.
- Continue to streamline administrative and payroll related processes.
- Manage the process for negotiating successor collective bargaining agreements with all five unions. Upon Board ratification, implement collective bargaining agreements.
- Replace unsupported InfoStar Legacy System with a new Records Management System.
- Participate in the evaluation of the impact of the Staffing Study recommendations and work with senior management and collective bargaining units to implement as needed specific recommendations adopted by the Board of Directors.
- Initiate the development of a detailed Strategic Information Technology Plan to assess the MWRA's current business environment, system architecture, and strategic direction.

**FY11 Mid-Year Accomplishments**

- Continued providing more up-to-date, streamlined financial information to the Board of Directors and external constituencies on both the Current Expense Budget and Capital Improvement Program.
- Continued to manage FY11 budgetary spending to allow for an estimated \$23.6 million defeasance reducing future Rate Revenue Requirements.

- Managed MWRA investment portfolio to maximize returns in a low yield environment.
- Developed the FY12 Proposed Budget consistent with the multi-year rate strategy and the FY11 planning estimates.
- Successfully applied for and received \$1.4 million in reimbursement from the Federal Emergency Management Agency (FEMA) for expenses relating to the rain storms of mid and late March 2010.
- Successfully procured \$525.4 million in replacement Standby Bond Purchase Agreements increasing MWRA's diversity across banks.
- Commenced rolling out electronic time sheet approval functions to three Authority departments.
- Successfully supported Authority's efforts in defending itself in several personnel arbitration hearings.
- Successfully supported the procurement, selection, and execution of the consultant contract for an agency-wide staffing assessment study.
- Successfully negotiated a one year extension to the MWRA Dental Program with no increase in insurance premiums.
- Commenced replacing 7+ year old personal computers with energy efficient models which contributes to the green computing model. Additionally, began upgrading computers to Microsoft Office 2007.
- Completed Reverse 911 enhancements including creating three scenarios (all water communities, all wastewater communities, and all communities) for initiating Reverse 911 calls.
- Completed Phase I of the Green Data Center Initiatives using VMware's virtualization software to eliminate the need for 10 new development servers which reduced power consumption, cooling, and carbon footprint in the MIS datacenter.
- Completed implementation of energy efficiency improvements at CNY headquarters based on recommendations of NSTAR energy audits.
- Awarded the following major contracts in FY11 to date: Purchase and Supply of Electricity Interval Accounts; Remote Headworks Upgrade Design; Deer Island Treatment Plant (DITP) Thermal Power Plant Dump Condenser; Site Work and Excavation Shaft 5; Emergency Repair of 120 Inch Pipe Shaft 5; Prison Point CSO Facility HVAC and Odor Control Upgrade; Harbor and Outfall Monitoring; Lynnfield/Saugus Pipelines; and Section 36 Watertown Waltham Connection Design.
- Advertised or received bids/proposals/statements for the following: Spot Pond Storage Facility Design Build; DITP Human Machine Interface; DITP Metals Lab Fume Hood Replacement; DITP Concrete and Steel Restoration and Coating Phase II; CWTP Second Gaseous Oxygen Line; Staffing Study; Liquidity Facility for Variable Rate Bonds; Nut Island Headworks Electrical and Conveyor Improvements; Northern Intermediate High (NIH) Redundant Pipeline Design; North Dorchester Bay (NDB) Outfall Dredging Design; DITP Oxygen Facility Services; and Firewall Maintenance.

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

Proposed FY12 Current Expense Budget							
ADMINISTRATION AND FINANCE DIVISION DIRECTOR'S OFFICE							
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12		
WAGES & SALARIES	\$ 203,242	\$ 229,685	\$ 322,712	\$ 322,365	\$ (347)	-0.1%	
TRAINING & MEETINGS	75	2,228	2,344	2,286	(58)	-2.5%	
OTHER MATERIALS	465	1,204	5,500	3,500	(2,000)	-36.4%	
OTHER SERVICES	233	433	1,535	1,885	350	22.8%	
<b>TOTAL</b>	<b>\$ 204,015</b>	<b>\$ 233,550</b>	<b>\$ 332,091</b>	<b>\$ 330,036</b>	<b>\$ (2,055)</b>	<b>-0.6%</b>	

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

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

The division's continuing challenge in FY12 will be maintaining agency-wide focus on balancing the competing needs to minimize rate increases while ensuring the provision of critical MWRA services.

**FY12 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:**

- FY12 Proposed Budget includes \$322,000 for **Wages and Salaries**, which is level funded with the FY11 Budget. The FY12 Proposed Budget funds three positions.



## RATES & BUDGET

<b>Proposed FY12 Current Expense Budget</b>						
<b>BUDGET</b>						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 690,966	\$ 744,737	\$ 741,916	\$ 740,062	\$ (1,854)	-0.2%
TRAINING & MEETINGS	-	-	-	-	-	-
PROFESSIONAL SERVICES	0	0	0	0	-	-
OTHER MATERIALS	589	447	400	400	-	0.0%
OTHER SERVICES	6,527	1,400	1,900	312	(1,588)	-83.6%
<b>TOTAL</b>	<b>\$ 698,082</b>	<b>\$ 746,584</b>	<b>\$ 744,216</b>	<b>\$ 740,774</b>	<b>\$ (3,442)</b>	<b>-0.5%</b>

The **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 development of MWRA's annual Current Expense Budget (CEB) and monitors spending compared to 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.

### **FY12 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 and 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.

### **FY12 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.

### **FY11 Mid-Year Accomplishments:**

- Developed the FY12 Proposed Budget consistent with the FY11 planning estimates.
- Started the documentation of the new system application for the CIP.
- Developed new report for explaining the impacts of various elements of community assessments.

**Budget Highlights:**

- The FY12 Proposed Budget is \$741,000, a decrease of \$3,000 or 0.5% from the FY11 Budget.
- \$740,000 for **Wages and Salaries**, a decrease of \$2,000 or 0.2%, from the FY11 Budget. The FY12 Proposed budget funds eight positions.
- \$312 for **Other Services**, a decrease of \$2,000 or 83.6% from the FY11 Budget due to a reduction in Printing and Duplicating services. Duplication of the Budget documents is being done in-house instead of being sent out to a printing service.

## TREASURY

Proposed FY12 Current Expense Budget						
TREASURY						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 748,751	\$ 725,927	\$ 731,106	\$ 674,508	\$ (56,598)	-7.7%
OVERTIME	197	122	-	-	-	-
ONGOING MAINTENANCE	0	0	0	0	-	-
TRAINING & MEETINGS	33	0	0	0	-	-
PROFESSIONAL SERVICES	228,793	366,400	199,413	259,056	59,643	29.9%
OTHER MATERIALS	2,175	614	300	300	-	0.0%
OTHER SERVICES	6,439	6,709	9,162	7,120	(2,042)	-22.3%
<b>TOTAL</b>	<b>\$ 986,388</b>	<b>\$ 1,099,772</b>	<b>\$ 939,981</b>	<b>\$ 940,984</b>	<b>\$ 1,003</b>	<b>0.1%</b>

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

### FY12 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.

### FY11 Mid-Year Accomplishments:

- In cooperation with the Operations Division, successfully applied for and received \$1.4 million in reimbursement from the Federal Emergency Management Agency (FEMA) for the expenses relating to the rain storms during mid and late March 2010.
- Successfully procured \$525.4 million in replacement Standby Bond Purchase Agreements increasing MWRA's diversity across banks and further diversifying the expiration dates. The strong interest from proposers validates MWRA's strong credit quality.
- Managed MWRA's investment portfolio to maximize investment returns in a low yield environment given the necessary liquidity and security constraints.

### Budget Highlights:

- The FY12 Proposed Budget is 941,000 and is level funded with the FY11 Budget.
- \$675,000 for **Wages and Salaries**, a decrease of \$57,000 or 7.7% from FY11 Final. The proposed budget funds nine positions.
- \$259,000 for **Professional Services**, an increase of \$60,000 or 29.9% from the FY11 Budget due to the Triennial Consulting Engineer's Report required by Section 714 (c) of the General Revenue Bond Resolution.

## CONTROLLER

Proposed FY12 Current Expense Budget CONTROLLER							
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12		
WAGES & SALARIES	\$ 1,285,844	\$ 1,343,518	\$ 1,351,661	\$ 1,359,829	\$ 8,168	0.6%	
OVERTIME	-	-	-	-	-	-	
ONGOING MAINTENANCE	14	-	-	-	-	-	
TRAINING & MEETINGS	350	10	-	-	-	-	
PROFESSIONAL SERVICES	198,124	189,211	189,000	160,000	(29,000)	-15.3%	
OTHER MATERIALS	2,809	79	300	300	-	0.0%	
OTHER SERVICES	1,078	787	1,850	1,850	-	0.0%	
<b>TOTAL</b>	<b>\$ 1,488,219</b>	<b>\$ 1,533,605</b>	<b>\$ 1,542,811</b>	<b>\$ 1,521,979</b>	<b>\$ (20,832)</b>	<b>-1.4%</b>	

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

### FY12 Goals:

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

### FY12 Initiatives:

- Complete implementation of electronic timesheet approval to continue paperless initiative.
- Replace manually prepared employee leave calendar with automated product.

### FY11 Mid-Year Accomplishments:

- Rolled out electronic time sheet approval to three Authority departments.
- Converted 45 person department to self-service time entry.

### Budget Highlights:

- The FY12 Proposed Budget is \$1.5 million, a decrease of \$21,000 or 1.4%, from the FY11 Budget.
- \$1.4 million for **Wages and Salaries**, an increase of \$8,000 or 0.6% from FY11 Final mostly due to step increases. The final budget funds 19 positions.
- \$160,000 for **Professional Services**, a decrease of \$29,000 or 15.3% from FY11 Final due to a new contract for audit services at a reduced fee. The FY12 Proposed 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

Proposed FY12 Current Expense Budget						
RISK MANAGEMENT						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 315,369	\$ 338,558	\$ 358,120	\$ 357,822	\$ (298)	-0.1%
OVERTIME	-	147	-	-	-	-
TRAINING & MEETINGS	-	-	-	-	-	-
PROFESSIONAL SERVICES	28,145	56,032	30,000	30,000	-	0.0%
OTHER MATERIALS	53	21	-	-	-	-
OTHER SERVICES	469	903	450	450	-	0.0%
<b>TOTAL</b>	<b>\$ 344,036</b>	<b>\$ 395,661</b>	<b>\$ 388,570</b>	<b>\$ 388,272</b>	<b>\$ (298)</b>	<b>-0.1%</b>

The **Risk Management Department** is responsible for all MWRA insurance and risk management functions. Department staff manages all administrative functions relating to the initial reporting, processing, and resolution of construction contract claims and self-insured auto, general liability, and property damage claims. Department staff is responsible for annual procurement, renewals, and maintenance of all Authority-wide insurance policies and programs and also for managing all aspects of MWRA's Contractor Insurance Certificate program. Department staff serves as a liaison to insurance industry participants including brokers, insurers, insurance consultants, attorneys, and all MWRA departments.

### FY12 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 contracts.
- Minimize MWRA's exposure to financial loss stemming from contractor and vendor activities by establishing insurance requirements and monitoring compliance.

### Budget Highlights:

- The FY12 Proposed Budget is \$388,000 and is level funded with the FY11 Budget.
- \$358,000 is for **Wages & Salaries** and level funded with the FY11 Budget. The proposed budget funds four positions.
- \$30,000 for **Professional Services** includes funds for an insurance consultant and is level funded with the FY11 Budget.

## HUMAN RESOURCES

Proposed FY12 Current Expense Budget HUMAN RESOURCES						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 1,640,764	\$ 1,654,665	\$ 1,667,388	\$ 1,674,049	\$ 6,661	0.4%
OVERTIME	298	-	-	-	-	-
FRINGE BENEFITS	16,526,977	15,924,991	17,928,715	18,063,483	134,768	0.8%
WORKERS' COMPENSATION	1,841,638	2,226,080	1,870,000	2,020,000	150,000	8.0%
ONGOING MAINTENANCE	-	-	-	-	-	-
TRAINING & MEETINGS	4,886	2,692	3,963	3,963	-	0.0%
PROFESSIONAL SERVICES	323,567	310,962	570,865	557,820	(13,045)	-2.3%
OTHER MATERIALS	13,803	14,489	15,420	15,420	-	0.0%
OTHER SERVICES	20,179	8,670	21,298	14,265	(7,033)	-33.0%
<b>TOTAL</b>	<b>\$ 20,372,112</b>	<b>\$ 20,142,549</b>	<b>\$ 22,077,649</b>	<b>\$ 22,349,000</b>	<b>\$ 271,351</b>	<b>1.2%</b>

Proposed FY12 Current Expense Budget HUMAN RESOURCES by Area						
AREA	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
EMPLOYEE/COMP/BEN	\$ 593,013	\$ 628,993	\$ 806,055	\$ 813,012	\$ 6,957	0.9%
LABOR RELATIONS	992,591	995,472	1,010,728	1,025,110	14,382	1.4%
TRAINING	389,848	329,468	423,106	397,395	(25,711)	-6.1%
CENTRALIZED FRINGE BENEFITS	18,396,660	18,188,616	19,837,760	20,113,483	275,723	1.4%
<b>TOTAL</b>	<b>\$ 20,372,112</b>	<b>\$ 20,142,549</b>	<b>\$ 22,077,649</b>	<b>\$ 22,349,000</b>	<b>\$ 271,351</b>	<b>1.2%</b>

The **Human Resources Department** is comprised of the following 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 by 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 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.

### FY12 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.

**FY12 Initiatives:**

- Support the collective bargaining negotiation process with data analysis, costing analysis, and wage and benefit survey data collection and analysis.
- Conduct Harassment Prevention Training for all employees and supervisors.
- Provide additional training for Administrative Certificate Program (ACP) and Productivity Improvement Program (PIP) training. Provide supervisory training for employees seeking to develop and enhance their supervisory skills.
- Organize compliance with the bi-annual online State Ethics Training for all employees and maintain training compliance documentation as required by the State Ethics Commission.
- Continue to automate and streamline human resources processes including recruitment and hiring processes.
- Procure and select vendors for MWRA's Employee Assistance Program, medical services program, and the MWRA dental program.

**FY11 Mid-Year Accomplishments:**

- Successfully supported the Authority's efforts in defending itself in several arbitration hearings.
- Supported the procurement, selection, and execution of the consultant contract for an agency-wide staffing assessment study.
- Provided employees with seasonal flu vaccines utilizing a medical service vendor.
- Implemented a full enrollment of all employees for GIC Health Insurance.
- Performed the training, design, and testing activities needed to implement a new module in the Lawson System which allows for elimination of the standalone software package formerly used by the Training group.
- Communicate and process open enrollment changes for GIC benefits for all employees as per GIC requirements for 2011/2012 annual re-enrollment.
- Negotiated a one year extension of the MWRA Dental Program with no increase to insurance premiums.
- Delivered Administrative Certification Program (ACP) training and Productivity Improvement Program (PIP) training.
- Organized the procurement of vendor for flagger training and delivered flagger certification training.
- Working with MIS, collected the required acknowledgement of the State Ethics Commission's Summary of the Conflict of Interest Law from all employees.

### **Budget Highlights:**

- The FY12 Proposed Budget is \$22.3 million, an increase of \$271,000 or 1.2%, from the FY11 Budget.
- \$1.7 million for **Wages and Salaries**, an increase of \$7,000 or 0.4% from the FY11 Budget which includes funding for 21 positions.
- \$18.1 million for **Fringe Benefits**, an increase of \$135,000 or 0.8% as compared to the FY11 Budget. The budget includes \$15.7 million for health insurance costs an increase of \$94,000 or 0.6%. Additional funding of \$1.2 million for Medicare taxes, \$988,000 for dental insurance costs and union health and welfare fund contributions, \$200,000 for unemployment insurance payments, and \$31,000 for tuition reimbursement.
- \$2.0 million for **Workers' Compensation** budget reflects an increase of \$150,000 or 8.0% as compared to FY11 Budget. This increase is primarily based on the most recent 3-year trend for workers' compensation expenses. The Human Resource Department is responsible for the management of this program and the coordination with the third-party administrator and legal counsel.
- \$558,000 for **Professional Services**, a decrease of \$13,000 or 2.3%, as compared to the FY11 Budget. The FY12 Proposed Budget includes \$175,000 for MWRA's staffing study, as requested by the Board of Directors, \$155,000 for professional development and technical training, \$119,000 for workers' compensation claims administration and legal services, \$55,000 for arbitrators and arbitration expenses, \$30,000 for medical evaluation services, \$12,000 for the Employee Assistance Program, and \$12,000 for Specialized Investigation Services.



**MANAGEMENT INFORMATION SYSTEMS (MIS)**

Proposed FY12 Current Expense Budget MANAGEMENT INFORMATION SYSTEM							
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12		
WAGES & SALARIES	\$ 5,072,951	\$ 5,052,192	\$ 5,192,676	\$ 5,079,668	\$ (113,008)		-2.2%
OVERTIME	2,704	4,968	2,678	2,678	-		0.0%
FRINGE BENEFITS	-	6	-	-	-		-
ONGOING MAINTENANCE	2,736,556	2,201,339	2,915,240	2,635,578	(279,662)		-9.6%
TRAINING & MEETINGS	19,403	24,348	23,823	43,823	20,000		84.0%
PROFESSIONAL SERVICES	-	-	200,000	100,000	(100,000)		-50.0%
OTHER MATERIALS	395,277	687,062	512,484	389,882	(122,602)		-23.9%
OTHER SERVICES	832,130	840,478	847,476	822,475	(25,001)		-3.0%
<b>TOTAL</b>	<b>\$ 9,059,021</b>	<b>\$ 8,810,393</b>	<b>\$ 9,694,377</b>	<b>\$ 9,074,104</b>	<b>\$ (620,273)</b>		<b>-6.4%</b>

The **MIS Department** provides MWRA with the information processing services necessary to carry out its mission. Applications in use range from financial to operational, and enhance MWRA’s ability to access data and improve internal controls, reporting, and management performance. In addition to computing systems, the department also provides library and records management services.

**FY12 Goals:**

The goal of MIS 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:

- Existing applications, Operating Systems, hardware, and network resources are cost-effectively maintained, supported, upgraded, and replaced.
- Information system development efforts are consistent with the MWRA Master Plan, reflecting management priorities.
- System security and integrity is maintained.
- Flexible tools and system capabilities are provided consistent with industry standards and norms.

**FY12 Initiatives:**

- Continue to explore and implement new technologies for security of desktop and mobile devices; network infrastructure, operating systems and cyber security.
- Upgrade to Windows 7 Operating System
- Implement Lawson Mobile Supply Chain Module (MSCM). MSCM will be used by warehouse personnel to scan inventory items when they are received into and issued out of the warehouse, increasing staff efficiency.
- Continue to implement “green computing” initiatives including server consolidations through server virtualization and Storage Area Network (SAN) technology.

- 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.
- Implement enhancements/upgrades to existing applications including Maximo, GIS, CUES and Pre-treatment Information Management System (PIMS) and Lawson.
- Review Core Switches for Phase 2 of Net2020 Project; Implement Exchange 2010; Upgrade Sonicwall VPNs and Websense Gateway.
- Begin implementing Print Management Services.

### **FY11 Accomplishments:**

- Infrastructure:
  - Replaced 7+ year old PCs with energy efficient PCs contributing to the green computing model.
  - Upgraded PC's to Microsoft Office 2007.
  - Designed a LAN network solution as part of Phase I of Net2020 project. Researched, identified and proposed upgrade of infrastructure to Cisco equipment.
  - Upgraded LANDesk Software and trained staff. LANDesk is used for remote access, software pushes, and security and reporting.
  - Implemented Active Directory infrastructure to enable PCs to be managed through Group Policy Settings.
  - Completed Phase One of the Green Data Center Initiatives using VMware's virtualization software to eliminate the need for 10 new development servers which reduced power consumption, cooling and carbon footprints in the MIS datacenter.
  - Deployed new Virtual Hosts at Walnut Hill, Southborough and Clinton which will host Local Domain Controllers File and Print servers.
  - Networked the Advisory Board at CNY. Dismantled old network connectivity at previous location.
  - Upgraded Active Directory schema to Windows Server 2008 R2.
- Applications:
  - Time Entry Enhancements including Electronic Time Sheets approvals supporting a more paperless office.
  - Reverse 911 Enhancements including, creating three Scenarios (all water communities, all sewer communities, and all communities) for initiating Reverse 911calls.
  - Performed changes to reflect MWRA's new Divisional structure that impact Financial and HR system rollout; reports were implemented for new fiscal year.
  - Completed the implementation phase of the Pretreatment Information Management System after successfully running the Annual Reports and generating the incentive fees.

## **Budget Highlights:**

- The FY12 Proposed Budget of \$9.1 million, a decrease of \$620,000 or 6.4%, as compared to FY11 Budget.
- \$5.1 million for **Wages and Salaries**, a decrease of \$113,000 or 2.2%, as compared to the FY11 Budget. The FY12 Proposed Budget includes funds for 60 positions.
- \$2.6 million for **Ongoing Maintenance**, a decrease of \$280,000 or 9.6%, as compared to the FY11 Budget. Maintenance spending is for license and maintenance fees to support administrative, operations, and database applications used by MWRA staff. The decrease is mainly due to deleting the CIP budget impacts included in the FY11 CEB.
- \$44,000 for **Training and Meetings**, an increase of \$20,000, as compared to FY11 Budget.
- \$100,000 is budgeted for **Professional Services**, a decrease of \$100,000 or 50%, as compared to the FY11 Budget. The reduced funding supports the continuation of the development of an MIS Strategic Plan requested by the Board of Directors.
- \$390,000 for **Other Materials**, a decrease of \$123,000 or 23.9%, as compared to FY11 Budget primarily due to reduction of PC replacements.
- \$822,000 for **Other Services** includes a decrease of \$25,000 or 3.0%, as compared to FY11 Budget.

**FACILITIES MANAGEMENT**

<b>Proposed FY12 Current Expense Budget FACILITIES MANAGEMENT</b>						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 391,067	\$ 426,137	\$ 517,348	\$ 495,967	\$ (21,381)	-4.1%
OVERTIME	21,347	20,268	23,000	23,000	-	0.0%
FRINGE BENEFITS	301	162	-	-	-	-
UTILITIES	132,126	125,725	147,592	135,526	(12,066)	-8.2%
ONGOING MAINTENANCE	15,549	23,377	39,400	45,900	6,500	16.5%
TRAINING & MEETINGS	67	-	-	-	-	-
PROFESSIONAL SERVICES	-	-	-	-	-	-
OTHER MATERIALS	108,177	118,851	113,933	89,133	(24,800)	-21.8%
OTHER SERVICES	1,845,590	1,724,406	1,843,117	1,878,128	35,011	1.9%
<b>TOTAL</b>	<b>\$ 2,514,224</b>	<b>\$ 2,438,926</b>	<b>\$ 2,684,390</b>	<b>\$ 2,667,654</b>	<b>\$ (16,736)</b>	<b>-0.6%</b>

<b>Proposed FY12 Current Expense Budget FACILITIES MANAGEMENT SUPPORT by Area</b>						
AREA	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
FRSA	\$ -	\$ -	\$ -	\$ -	\$ -	-
FACILITIES MANAGEMENT	2,097,649	1,992,825	2,141,934	0	(2,141,934)	-100.0%
ADMINISTRATIVE SERVICES	416,575	446,101	542,456	2,667,654	2,125,198	391.8%
<b>TOTAL</b>	<b>\$ 2,514,224</b>	<b>\$ 2,438,926</b>	<b>\$ 2,684,390</b>	<b>\$ 2,667,654</b>	<b>\$ (16,736)</b>	<b>-0.6%</b>

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

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

In addition, staff provides administrative and office support services that facilitate 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 MBTA pass programs.

**FY12 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.

### **FY11 Mid-Year Accomplishments:**

- Completed implementation of energy efficiency improvements at CNY headquarters based on recommendations from NSTAR energy audit.
- Continued work with the landlord to implement facility improvements as provided in our lease agreements.
- Continued work with MIS and equipment providers to implement multi-function technology for copiers and printers which are due for replacement. By utilizing this technology it is 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 FY12 Proposed Budget is \$2.7 million, a decrease of \$17,000 or 0.6%, as compared to the FY11 Budget.
- \$496,000 for **Wages and Salaries**, a decrease of \$21,000 or 4.1%, as compared to the FY11 Budget. The budget supports eight positions.
- \$23,000 for **Overtime** for coverage of facility maintenance and support services. The budget is level funded with the FY11 Budget.
- \$136,000 for **Utilities**, a decrease of \$12,000 or 8.2%, as compared to the FY11 Budget. This budget is based on current pricing and average energy use for the past three years.
- \$46,000 for **Ongoing Maintenance**, an increase of \$7,000 or 16.5%, as compared to the FY11 Budget. This line item includes funding for facility and equipment maintenance and services including HVAC, plumbing and electrical services for the CNY headquarters and the Marlboro records center and warehouse.
- \$89,000 for **Other Materials**, a decrease of \$25,000 or 21.8%, as compared to the FY11 Budget. This line item includes funding for postage, supplies, furniture and equipment required to respond to Americans with Disabilities Act (ADA) requests and other medically required accommodations. The decrease is primarily due to savings in postage realized as a result of the Procurement Department's increased use of Comm-PASS for Purchase and Professional Services bids.
- \$1.9 million for **Other Services**, an increase of \$35,000 or 1.9%, as compared to the FY11 Budget. This item includes funding for rental and operating costs for CNY headquarters facility and the Marlboro Records Center and Warehouse space. The increase is due to escalation increases in the CNY lease agreements.

**FLEET SERVICES**

<b>Proposed FY12 Current Expense Budget</b>						
<b>FLEET SERVICES</b>						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 682,909	\$ 692,150	\$ 694,216	\$ 674,025	\$ (20,191)	-2.9%
OVERTIME	19,718	14,321	17,800	17,800	-	0.0%
FRINGE BENEFITS	401	136	1,000	1,000	-	0.0%
UTILITIES	1,857	1,337	3,000	3,000	-	0.0%
ONGOING MAINTENANCE	724,540	687,044	765,750	723,750	(42,000)	-5.5%
TRAINING & MEETINGS	-	-	-	-	-	-
OTHER MATERIALS	451,210	374,876	461,802	443,002	(18,800)	-4.1%
OTHER SERVICES	3,069	664	4,539	4,539	-	0.0%
<b>TOTAL</b>	<b>\$ 1,883,704</b>	<b>\$ 1,770,528</b>	<b>\$ 1,948,107</b>	<b>\$ 1,867,116</b>	<b>\$ (80,991)</b>	<b>-4.2%</b>

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

**FY12 Goals:**

- Continue to cost effectively maintain Authority fleet of vehicles and pieces of equipment.

**FY11 Mid-Year Accomplishments:**

- Developed specifications for 26 new replacement vehicles or pieces of equipment. Twelve (12) of these units are alternative fuel or hybrid models, consistent with the Authority's goal of purchasing environmentally friendly products.
- As part of the Authority's environmental goals, four large diesel powered units were retrofitted with Diesel Oxidation Catalyst (DOC) devices which reduce greenhouse gas emissions.
- MWRA is 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 the documentation for the surplus sale of 65 vehicles and pieces of equipment and worked with the Procurement Department for the auction and disposal of the vehicles.
- Worked with MIS staff on the Maximo system upgrade which includes a transportation module specifically designed for a fleet environment.
- Developed and implemented Federal Communications Commission (FCC) mandated frequency re-banding project with Motorola and Nextel.

**Budget Highlights:**

- The FY12 Proposed Budget of \$1.9 million, a decrease of \$81,000 or 4.2%, as compared to the FY11 Budget.
- \$674,000 for **Wages & Salaries**, a decrease of \$20,000 or 2.9%, as compared to the FY11 Budget. The budget supports 11 positions.
- **Ongoing Maintenance** budget of \$724,000, a decrease of \$42,000 or 5.5%, as compared to FY11 Budget. The budget includes funds for automotive materials and services to maintain MWRA's vehicle fleet. The decrease is made possible because we are performing more services using in-house resources, including towing, transporting vehicles and re-programming of vehicle computers.
- \$443,000 for **Other Materials**, a decrease of \$19,000 or 4.1%, as compared to the FY11 Budget. The FY12 Proposed Budget includes funds for vehicle/equipment fueling which is based on FY08, FY09, and FY10 fuel usage. Fleet Services procures bulk fuels from state contracts while continuing to meet all governmental alternative fuel directives. It is important to note that recent increases in fuel costs are likely to impact spending for this line item.

**PROCUREMENT**

<b>Proposed FY12 Current Expense Budget PROCUREMENT</b>						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 3,695,123	\$ 3,563,732	\$ 3,619,486	\$ 3,585,138	\$ (34,348)	-0.9%
OVERTIME	13,597	32,689	15,000	15,000	-	0.0%
FRINGE BENEFITS	231	602	-	-	-	-
UTILITIES	189	116	-	-	-	-
ONGOING MAINTENANCE	516,446	(338,576)	-	-	-	-
TRAINING & MEETINGS	7,184	3,066	7,725	7,725	-	0.0%
OTHER MATERIALS	118,932	112,590	84,608	84,608	-	0.0%
OTHER SERVICES	64,184	61,373	73,370	73,370	-	0.0%
<b>TOTAL</b>	<b>\$ 4,415,886</b>	<b>\$ 3,435,592</b>	<b>\$ 3,800,189</b>	<b>\$ 3,765,841</b>	<b>\$ (34,348)</b>	<b>-0.9%</b>

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

**FY12 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, 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.

**FY11 Mid-Year Accomplishments**

- Awarded the following major contracts in FY11 to date: Purchase and Supply of Electricity Interval Accounts; Remote Headworks Upgrade Design; Deer Island Treatment Plant (DITP) Thermal Power Plant Dump Condenser; Site Work and Excavation Shaft 5; Emergency Repair of 120 Inch Pipe Shaft 5; Prison Point CSO Facility HVAC and Odor Control Upgrade; Harbor and Outfall Monitoring; Lynnfield/Saugus Pipelines; and Section 36 Watertown Waltham Connection Design.
- Advertised or received bids/proposals/statements for the following: Spot Pond Storage Facility Design Build; DITP Human Machine Interface; DITP Metals Lab Fume Hood Replacement; DITP Concrete and Steel Restoration and Coating Phase II; CWTP Second Gaseous Oxygen Line; Staffing Study; Liquidity Facility for Variable Rate Bonds; Nut Island Headworks Electrical and Conveyor Improvements; Northern Intermediate High (NIH) Redundant Pipeline Design; North Dorchester Bay (NDB) Outfall Dredging Design; DITP Oxygen Facility Services; and Firewall Maintenance.



- Revised Authority's standard insurance terms for construction contracts.
- Began evaluation of alternative methods for procuring electricity (reverse auctions) and Renewable Portfolio Standard certificates (forward sales).
- Working with DITP, developed a program for testing emerging technologies for treatment of biosolids; issued Request for Letters of Interest.
- Prepared and issued an RFQ for Spot Pond Storage Facility Design Build and selected firms eligible to submit a proposals.
- Arranged for emergency and expedited contracts for MetroWest Shaft 5 and 5A repairs.
- Began posting professional service and energy procurement opportunities on Comm-PASS, the state's internet-based procurement system. In addition, all bids for goods and services are posted on Comm-PASS. These changes have contributed to a reduction in mailing expenses during FY11.
- Procured Authority's vehicle purchases at the beginning of Fiscal Year 2011, allowing for ample production and on-time delivery of 26 vehicles.
- Bid the annual copy paper contract and received a more favorable cost than that listed on the State Blanket contract.
- Processed 5,059 purchase orders in FY11 Q1 and Q2 for a total of \$19,315,437.
- Processed 151 competitive bids, 2 State blanket contracts, 6 contract amendments, 6 critical need and 16 sole source purchases for items and services valued over \$25,000.
- Working with the Recycling committee, Purchasing staff continues to seek out environmentally friendly products, among them recycled toners, batteries, copy paper, hybrid vehicles, and bio-fuels.
- Recycled 48 tons of papers, 154 tons of scrap metal, and 4,500 gallons of waste oil, generating \$55,000 in revenues.

**Budget Highlights:**

- The FY12 Proposed Budget of \$3.8 million, a decrease of \$34,000 or 0.9%, as compared to the FY11 Budget.
- **Wages and Salaries** funding of \$3.6 million, a decrease of \$34,000 or 0.9%, as compared to the FY11 Budget. The funding supports 47 positions.
- **Other Materials** budget of \$85,000 which is level funded with the FY11 Budget. This funding mainly supports centralized office supply purchases.
- **Other Services** budget of \$73,000 which is level funded with the FY11 Budget. This funding supports Advertising and Printing/Duplicating for contract documents and specifications.

**REAL PROPERTY and ENVIRONMENTAL MANAGEMENT**

Proposed FY12 Current Expense Budget						
REAL PROPERTY / ENVIRONMENTAL MANAGEMENT						
LINE ITEM	FY09 Actual	FY10 Actual	FY11 Budget	FY12 Proposed	Change FY11 to PFY12	
WAGES & SALARIES	\$ 529,345	\$ 549,584	\$ 399,080	\$ 475,583	\$ 76,503	19.2%
OVERTIME	26	13	-	-	-	-
TRAINING & MEETINGS	2,643	1,385	3,000	3,000	-	0.0%
PROFESSIONAL SERVICES	-	-	500	500	-	0.0%
OTHER MATERIALS	2,264	691	1,970	1,970	-	0.0%
OTHER SERVICES	157,094	213,014	232,376	221,376	(11,000)	-4.7%
<b>TOTAL</b>	<b>\$ 691,372</b>	<b>\$ 764,687</b>	<b>\$ 636,926</b>	<b>\$ 702,429</b>	<b>\$ 65,503</b>	<b>10.3%</b>

The **Real Property and Environmental Management Department** negotiates the purchase or lease of real estate and land necessary to support MWRA's capital projects and operations and manages the disposition of surplus real property. Staff participate in site selection, and negotiate 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 permits negotiations, and preparation and submittal of quarterly/annual monitoring reports.

**FY12 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.

**FY12 Initiatives**

- Review DEP requirements for underground storage tank operator training and coordinate with Operations staff to complete training and implement associated monitoring and recordkeeping requirements.
- Review new boiler and emergency generator air emissions regulations and coordinate implementation of monitoring, maintenance, and recordkeeping requirements.

**FY11 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, and Conley Terminal license.
- Managed nine (9) permit agreements (six at Turkey Hill and three at Walnut Hill). Coordinated with Operations for approval of equipment changes and improving invoicing system for maintenance reimbursements. Total revenue for the nine agreements is \$472,000 of which MWRA and the host community each receive half.

- Manage fee assessment for long term 8M permits on MWRA fee controlled land. Finalizing license in Quincy. Upon execution, collection will be approximately \$43,000 per year. Also provide 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, Rehabilitation of Braintree-Weymouth Interceptor, Lynnfield-Saugus Pipeline, Southern Spine Distribution System, and Meter 32. Provided real estate support on projects such as Cambridge CSOs
- Provided real estate support services including deed research and coordination with GIS and Law to develop comprehensive property maps for the Cochituate, Sudbury, Weston Aqueducts, and other projects, such as Shafts 5 and 5A, as they arise. Provide daily assistance in concert with Law and GIS to ongoing inquiries regarding MWRA real estate rights and ownership.
- Completed a 13-year assessment and remediation project for oil contamination at Prison Point CSO Facility. Closed out the project with DEP.
- Continued with remediation and assessment of oil contamination at the FRSA facility.
- Provided technical support for the assessment and remediation of PCBs at the Alewife Brook Pump Station and Remote Headworks facilities in conjunction with ongoing design of facility upgrades.
- Third party inspections of all MWRA underground storage tanks were completed in accordance with 527 CMR 9.00. Completed fuel tank monitoring system upgrades at seven facilities and coordinated with SCADA support staff to provide real-time fuel tank system monitoring at wastewater and water OCC.
- Provided technical support and regulatory liaison for preparation and follow-up response to information requests for the Carroll Water Treatment Plant NPDES annual maintenance discharge application.
- Completed updates to Spill Prevention, Control and Countermeasure (SPCC) Plans for eight MWRA facilities and coordinated with Operations and Consultant to complete training of applicable staff.
- Submitted registration applications to DEP for new dry wells for disposal of analyzer test water at Ludlow Monitoring Station and Ware Disinfection Facilities.
- Continued with DEP-required periodic groundwater monitoring around former waste water holding tank at the Clinton WWTP.
- Received from EPA the Hydroelectric Facility General Permit for the Cosgrove Intake Facility and Oakdale Power Station and coordinated with Quality Assurance (QA) and TRAC staff to implement monitoring and reporting requirements. In addition, as required by the new permits completed new Best Management Practices Plans for both facilities.
- 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, Water Pump Station and Remote Headworks Rehabilitation, East Boston Branch Sewer, North Dorchester Bay CSO Tunnel, Contract 6546 Arlington, Section 18, 50, and 51 water line rehabilitation, MWWST Shaft W soil and groundwater evaluation, Dam Repair and Safety Modifications, Quabbin Facility upgrades, Shaft 5 – Weston repair support projects, Deer Island Prototype Wind Turbines, Southern Spine Distribution Mains, West Roxbury Tunnel, Northern Intermediate High Short Term Improvements and

Redundancy projects, Section 36 Watertown-Waltham Connection, DITP Underground Storage Tank (UST) Removals, Oakdale Power Station Electrical Upgrade, Phase VII Valve Replacements, Lynnfield/Saugus Pipeline, Sudbury Cosgrove Transformer Replacement, and Cottage Farm Oil Spill Regulatory Follow-up and the related fuel system upgrade project, Section 156 Sewer Rehabilitation, Section 624 Sewer rehabilitation, and scope preparation for an Authority-wide emergency response contract.

- Completed air emissions source testing for the Deer Island North Main Pumping Odor Control facility and the FRSA Biosolids Processing Facility. Submitted comments to EPA and NACWA on the proposed air emissions requirements for boilers. Completed the biennial rideshare survey and annual rideshare report for Deer Island.

**Budget Highlights:**

- The FY12 Proposed Budget of \$702,000, an increase of \$66,000 or 10.3%, as compared to the FY11 Budget.
- **Wages and Salaries** of \$476,000, an increase of \$77,000 or 19.2%, as compared to the FY11 Budget due to a revised staffing configuration. The budget supports five positions.
- \$221,000 for **Other Services**, a decrease of \$11,000 or 4.7%, as compared to the FY11 Budget. This decrease is due to a one-time FY11 cost for the CVA intake PCB remediation activities.



## Appendices



## APPENDIX A

### DIRECT EXPENSE BUDGET LINE ITEM DESCRIPTIONS

#### **Introduction**

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

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

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

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

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

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

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

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

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

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

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

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

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

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



**APPENDIX B**

**BUDGET PROCESS AND TIMETABLE**

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

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



## APPENDIX C

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

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

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

#### ASSESSMENT POLICIES AND PROCEDURES

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

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

##### **Costs Recovered**

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

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

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

## **Coverage Requirements**

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

## **Budget Surpluses**

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

## **Budgeting and Assessment Objectives**

MWRA intends to follow prudent 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 immediately 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. Between FY2005 and FY2007, the budget included an increase of \$1.0 million to increase the reserve to \$19.0 million. The current funding level of \$19.0 million has been determined to be acceptable and reasonable based on a FY07 Insurance Reserve Fund review performed by an outside insurance consultant. The next Insurance Reserve Fund review is expected to be finalized in March 2011. The FY12 Final Budget will reflect a revised level, if appropriate.

### **Renewal and Replacement Reserve**

The renewal and replacement reserve has been established to fund a required capital improvement which is not provided for by moneys otherwise available. Amounts may not be withdrawn until MWRA has specified the project to which the amount will be applied and its estimated cost and estimated completion date. It must also certify that such expenditure is reasonably required for the continued operation of the systems or for maintenance of revenues and 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. During FY2000, based on the recommendation of its consulting engineer, MWRA reduced the size of the renewal and replacement reserve to \$35.0 million from \$50.0 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 December 2008, prepared and delivered in accordance with the General Resolution.

## 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 and Finance 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, with Board approval, 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 second five-year cap for the FY09-13 period at its June 2008 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 FY2012 to FY2021

	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021
<b>COMBINED UTILITIES</b>										
<b>EXPENSES</b>										
Direct Expenses	\$209,581	\$217,182	\$226,517	\$235,564	\$244,734	\$254,826	\$265,019	\$275,785	\$286,652	\$298,118
Indirect Expenses	40,166	45,754	47,847	47,945	47,267	50,954	50,058	52,466	57,027	54,819
Capital Financing (before offsets)	<u>371,918</u>	<u>384,850</u>	<u>434,035</u>	<u>488,033</u>	<u>515,341</u>	<u>563,459</u>	<u>517,344</u>	<u>587,649</u>	<u>654,843</u>	<u>628,683</u>
Sub-Total Expenses	\$621,664	\$647,786	\$708,399	\$771,542	\$807,342	\$869,240	\$832,421	\$915,899	\$998,521	\$981,619
Debt Service Assistance	0	0	0	0	0	0	0	0	0	0
Bond Redemption Savings	0	0	(9,000)	(15,783)	(500)	(7,571)	0	0	0	0
Variable Rate Savings	<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>	<u>0</u>
Total Expenses	\$621,664	\$647,786	\$699,399	\$755,760	\$806,842	\$861,669	\$832,421	\$915,899	\$998,521	\$981,619
<b>REVENUE &amp; INCOME</b>										
Non-Member and Other Revenue	\$12,034	\$12,672	\$12,994	\$13,400	\$13,859	\$14,148	\$14,540	\$15,082	\$15,650	\$15,763
Interest Income	13,905	16,949	19,822	26,580	27,334	28,343	28,565	29,879	31,335	31,968
Rate Stabilization	<u>3,526</u>	<u>2,596</u>	<u>6,871</u>	<u>8,767</u>	<u>8,011</u>	<u>7,185</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Other Revenue	\$29,464	\$32,217	\$39,687	\$48,747	\$49,204	\$49,677	\$43,106	\$44,961	\$46,985	\$47,731
Total Rate Revenue	\$592,200	\$615,569	\$659,712	\$707,013	\$757,638	\$811,992	\$789,315	\$870,938	\$951,537	\$933,888
Rate Revenue Increase	3.93%	3.9%	7.2%	7.2%	7.2%	7.2%	-2.8%	10.3%	9.3%	-1.9%
Estimated Annual Household Charge **										
Based on water use of 61k gpy (weighted)	\$875	\$918	\$969	\$1,029	\$1,094	\$1,153	\$1,184	\$1,272	\$1,363	\$1,391
Based on water use of 90k gpy (weighted)	\$1,292	\$1,354	\$1,430	\$1,518	\$1,614	\$1,701	\$1,746	\$1,877	\$2,011	\$2,052
<b>WASTEWATER UTILITY</b>										
<b>EXPENSES</b>										
Direct Expenses	\$147,139	\$152,215	\$158,578	\$164,788	\$171,224	\$178,341	\$185,474	\$193,001	\$200,560	\$208,582
Indirect Expenses	11,640	15,294	15,781	15,190	13,797	16,689	13,944	15,495	19,191	16,081
Capital Financing (before offsets)	<u>260,708</u>	<u>267,035</u>	<u>297,904</u>	<u>329,787</u>	<u>343,565</u>	<u>386,218</u>	<u>335,690</u>	<u>374,679</u>	<u>406,983</u>	<u>387,261</u>
Sub-Total Wastewater Expenses	\$419,488	\$434,544	\$472,263	\$509,765	\$528,586	\$581,247	\$535,109	\$583,174	\$626,734	\$611,924
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	<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>	<u>0</u>
Total Wastewater Expenses	\$419,488	\$434,544	\$472,263	\$503,983	\$528,586	\$581,247	\$535,109	\$583,174	\$626,734	\$611,924
<b>REVENUE &amp; INCOME</b>										
Non-Member and Other Revenue	\$3,978	\$4,078	\$4,204	\$4,326	\$4,450	\$4,603	\$4,677	\$4,835	\$4,996	\$5,112
Interest Income	9,238	10,199	11,918	15,973	16,536	17,350	17,196	17,643	18,195	18,426
Rate Stabilization	<u>(3,295)</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	\$9,921	\$14,278	\$16,122	\$20,299	\$20,986	\$21,953	\$21,873	\$22,478	\$23,190	\$23,538
Wastewater Rate Revenue	\$409,566	\$420,267	\$456,141	\$483,683	\$507,600	\$559,294	\$513,235	\$560,696	\$603,544	\$588,386
Rate Revenue Increase	5.13%	2.6%	8.5%	6.0%	4.9%	10.2%	-8.2%	9.2%	7.6%	-2.5%
Estimated Annual Household Charge **										
Based on water use of 61k gpy (weighted)	\$527	\$549	\$584	\$615	\$646	\$691	\$689	\$734	\$778	\$794
Based on water use of 90k gpy (weighted)	\$778	\$810	\$861	\$907	\$953	\$1,020	\$1,016	\$1,083	\$1,148	\$1,172
<b>WATER UTILITY</b>										
<b>EXPENSES</b>										
Direct Expenses	\$62,442	\$64,967	\$67,940	\$70,777	\$73,510	\$76,486	\$79,545	\$82,784	\$86,092	\$89,536
Indirect Expenses	28,526	30,460	32,065	32,754	33,470	34,265	36,113	36,971	37,836	38,737
Capital Financing (before offsets)	<u>111,209</u>	<u>117,815</u>	<u>136,131</u>	<u>158,246</u>	<u>171,776</u>	<u>177,241</u>	<u>181,654</u>	<u>212,970</u>	<u>247,860</u>	<u>241,422</u>
Sub-Total Water Expenses	\$202,177	\$213,241	\$236,136	\$261,777	\$278,756	\$287,992	\$297,313	\$332,725	\$371,787	\$369,695
Debt Service Assistance	0	0	0	0	0	0	0	0	0	0
Bond Redemption Savings	0	0	(9,000)	(10,000)	(500)	(7,571)	0	0	0	0
Variable Rate Savings	<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>	<u>0</u>
Total Water Expenses	\$202,177	\$213,241	\$227,136	\$251,777	\$278,256	\$280,421	\$297,313	\$332,725	\$371,787	\$369,695
<b>REVENUE &amp; INCOME</b>										
Non-Member and Other Revenue	\$8,056	\$8,593	\$8,790	\$9,073	\$9,409	\$9,545	\$9,863	\$10,246	\$10,655	\$10,652
Interest Income	4,666	6,750	7,904	10,607	10,798	10,993	11,369	12,236	13,140	13,542
Rate Stabilization	<u>6,821</u>	<u>2,596</u>	<u>6,871</u>	<u>8,767</u>	<u>8,011</u>	<u>7,185</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Other Revenue	\$19,543	\$17,939	\$23,565	\$28,448	\$28,218	\$27,724	\$21,232	\$22,482	\$23,794	\$24,194
Water Rate Revenue	\$182,634	\$195,302	\$203,571	\$223,329	\$250,038	\$252,698	\$276,080	\$310,242	\$347,993	\$345,502
Rate Revenue Increase	1.34%	6.9%	4.2%	9.7%	12.0%	1.1%	9.3%	12.4%	12.2%	-0.7%
Estimated Annual Household Charge **										
Based on water use of 61k gpy (weighted)	\$348	\$369	\$386	\$414	\$449	\$462	\$495	\$538	\$585	\$596
Based on water use of 90k gpy (weighted)	\$514	\$544	\$569	\$611	\$662	\$682	\$730	\$794	\$863	\$880

\*\* 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 MWRA Advisory Board's Annual Water and Sewer Retail Rate Survey dated December 2009.





## 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 in a combined sewer system that collects both sewage and storm water runoff for wastewater treatment. During rainstorms, systems can become overloaded, with the excess discharged directly into surface waters from CSO pipes. In the metropolitan Boston area there are approximately 57 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 add 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.

**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.

**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 the 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.

**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**  
**FY12 Proposed Current Expense Budget - Capital Financing Detail (as of 12/31/10)**

	<b>Projected Outstanding as of 12/31/10</b>	<b>Total</b>	<b>Sewer</b>	<b>Water</b>
<b>SRF<sup>1</sup></b>				
Unrefunded (93A, 93D, 95A,98C)	\$ 10,535,000	\$ 23,964	23,964	
1999E Sewer	14,254,959	394,191	394,191	-
1999E Water		581,601	-	581,601
1999F	293,815,000	16,943,566	16,943,566	-
2000E Sewer	65,976,196	2,785,658	2,785,658	-
2000E Water		564,572	-	564,572
2001C Water	3,170,000	250,394	-	250,394
2001D Sewer	5,880,400	387,343	387,343	-
2001D Water		81,611	-	81,611
2002H Sewer	97,395,000	3,122,257	3,122,257	-
2002H Water		1,542,897	-	1,542,897
2002I Sewer	2,142,830	100,737	100,737	-
2002I Water		1,453	-	1,453
2003A	1,026,192	71,408	-	71,408
2003B	3,098,355	223,806	-	223,806
2003C Sewer	42,329,130	1,350,877	1,350,877	-
2003C Water		965,860	-	965,860
2004C Sewer	10,360,034	539,474	539,474	-
2004C Water		92,473	-	92,473
2004D Sewer	62,864,045	3,836,536	3,836,536	-
2004D Water		645,997	-	645,997
2005C Sewer	7,010,199	418,611	418,611	-
2005C Water		69,418	-	69,418
2005D Sewer	69,066,316	3,393,581	3,393,581	-
2005D Water		806,975	-	806,975
2005E Sewer	373,309	24,961	24,961	-
2005E Water		5,479	-	5,479
2006C Sewer	7,655,642	486,989	486,989	-
2006D Sewer	82,347,736	3,744,274	3,744,274	-
2006D Water		1,618,159	-	1,618,159
2006E Sewer	450,293	22,883	22,883	-
2006E Water		10,281	-	10,281
2007C Sewer	6,241,786	311,439	311,439	-
2007C Water		195,120	-	195,120
2007D Sewer	21,782,140	1,152,283	1,152,283	-
2007E Sewer	72,974,220	3,300,782	3,300,782	-
2007E Water		1,265,908	-	1,265,908
2008G Sewer	6,371,071	407,810	407,810	-
2008G Water		82,525	-	82,525
2009C Sewer	111,967,652	5,766,912	5,766,912	-
2009C Water		1,894,183	-	1,894,183
2009D Sewer	11,816,138	650,828	650,828	-
2009D Water		86,035	-	86,035
2010D Sewer	49,420,599	1,428,283	1,428,283	-
2010D Water		1,443,401	-	1,443,401
Fiscal Year 2011 SRF Sewer		4,513,684	4,513,684	-
Fiscal Year 2011 SRF Water		1,542,246	-	1,542,246
Fiscal Year 2012 SRF Sewer		3,005,870	3,005,870	
Fiscal Year 2012 SRF Water		971,928		971,928
<b>Total SRF Debt<sup>2</sup></b>	<b>\$ 1,060,324,242</b>	<b>\$ 73,127,522</b>	<b>\$ 58,113,792</b>	<b>\$ 15,013,730</b>

**APPENDIX F**  
**FY12 Proposed Current Expense Budget - Capital Financing Detail (as of 12/31/10)**

	<b>Projected Outstanding as of 12/31/10</b>	<b>Total</b>	<b>Sewer</b>	<b>Water</b>
<b>MWRA Senior Debt</b>				
1993C New/Refunding	32,510,000.00	2,851,446	2,495,015	356,431
1997D Refunding	7,310,000.00	438,600	412,284	26,316
1998B Refunding	19,330,000.00	6,528,150	6,267,024	261,126
2002J Refunding	529,295,000.00	16,345,463	14,710,916	1,634,546
2002J New	113,340,000.00	10,000,000	5,000,000	5,000,000
2003D New	104,870,000.00	5,510,288	1,836,579	3,673,709
2004A New	49,390,000.00	5,249,419	393,706	4,855,712
2004B Refunding	371,590,000.00	2,469,500	2,160,813	308,688
2005A Refunding	80,290,000.00	19,088,488	8,589,819	10,498,668
2005B Refunding	200,000,000.00	4,014,500	1,338,033	2,676,467
2006A New	264,945,000.00	9,376,800	-	9,376,800
2006B Refunding	200,000,000.00	12,755,300	9,566,475	3,188,825
2007A New	647,950,000.00	9,033,188	1,535,642	7,497,546
2007B Refunding	98,000,000.00	34,017,375	28,574,595	5,442,780
2009A New	285,200,000.00	8,388,350	6,291,263	2,097,088
2009B Refunding	100,000,000.00	16,764,994	12,070,796	4,694,198
2010A New	183,570,000.00	4,790,200	3,353,140	1,437,060
2010B Refunding		9,178,500	5,323,530	3,854,970
Fiscal Year 2011 New		9,000,000	4,500,000	4,500,000
Fiscal Year 2012 New		2,291,667	1,145,834	1,145,834
Potential Defeasance/Restructuring		(889,163)	(426,798)	(462,365)
<b>Total Senior</b>	<b>\$ 3,287,590,000</b>	<b>\$ 187,203,062</b>	<b>\$ 115,138,664</b>	<b>\$ 72,064,398</b>
<b>Subordinate Debt</b>				
1999B (variable)	69,300,000	2,252,250	1,351,350	900,900
2002C Refunding (variable)	70,575,000	2,293,688	764,486	1,529,201
2002D Refunding (variable)	56,450,000	2,725,587	2,725,587	-
2008A Refunding	337,675,000	15,284,296	13,450,180	1,834,116
2008B Refunding	123,130,000	4,001,725	840,362	3,161,363
2008C Refunding	187,700,000	14,920,058	14,323,256	596,802
2008D Refunding	12,240,000	57,140	57,140	-
2008E Refunding	210,670,000	49,238,109	45,299,060	3,939,049
2008F Refunding	184,910,000	6,009,575	540,862	5,468,713
Potential Defeasanc/Restructuring		(110,550)	(66,330)	(44,220)
<b>Total Subordinate Debt</b>	<b>\$ 1,252,650,000</b>	<b>\$ 96,671,877</b>	<b>\$ 79,285,953</b>	<b>\$ 17,385,924</b>
<b>Total SRF &amp; MWRA Debt Service<sup>3</sup></b>	<b>\$ 5,600,564,242</b>	<b>\$ 357,002,461</b>	<b>\$ 252,538,409</b>	<b>\$ 104,464,052</b>
Water Pipeline Commercial Paper	\$ 194,000,000	\$ 3,498,000	\$ -	\$ 3,498,000
Current Revenue/Capital <sup>4</sup>		8,200,000	6,150,000	2,050,000
Capital Lease		3,217,060	2,019,855	1,197,205
<b>Sub-Total</b>	<b>\$ 194,000,000</b>	<b>\$ 14,915,060</b>	<b>\$ 8,169,855</b>	<b>\$ 6,745,205</b>
<b>Total Capital Financing (before Debt Service Offsets)</b>	<b>\$ 5,794,564,242</b>	<b>\$ 371,917,522</b>	<b>\$ 260,708,264</b>	<b>\$ 111,209,257</b>
Debt Service Offsets				
Debt Service Assistance		-	-	-
<b>Total Capital Financing</b>	<b>\$ 5,794,564,242</b>	<b>\$ 371,917,522</b>	<b>\$ 260,708,264</b>	<b>\$ 111,209,257</b>

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

<sup>2</sup> SRF total outstanding does not include \$33 million of ARRA funding

<sup>3</sup> Numbers may not add due to rounding.

<sup>4</sup> Current Revenue/Capital is revenue used to fund ongoing capital projects.