

# **MASSACHUSETTS WATER RESOURCES AUTHORITY**



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## **Fiscal Year 2005 CURRENT EXPENSE BUDGET**

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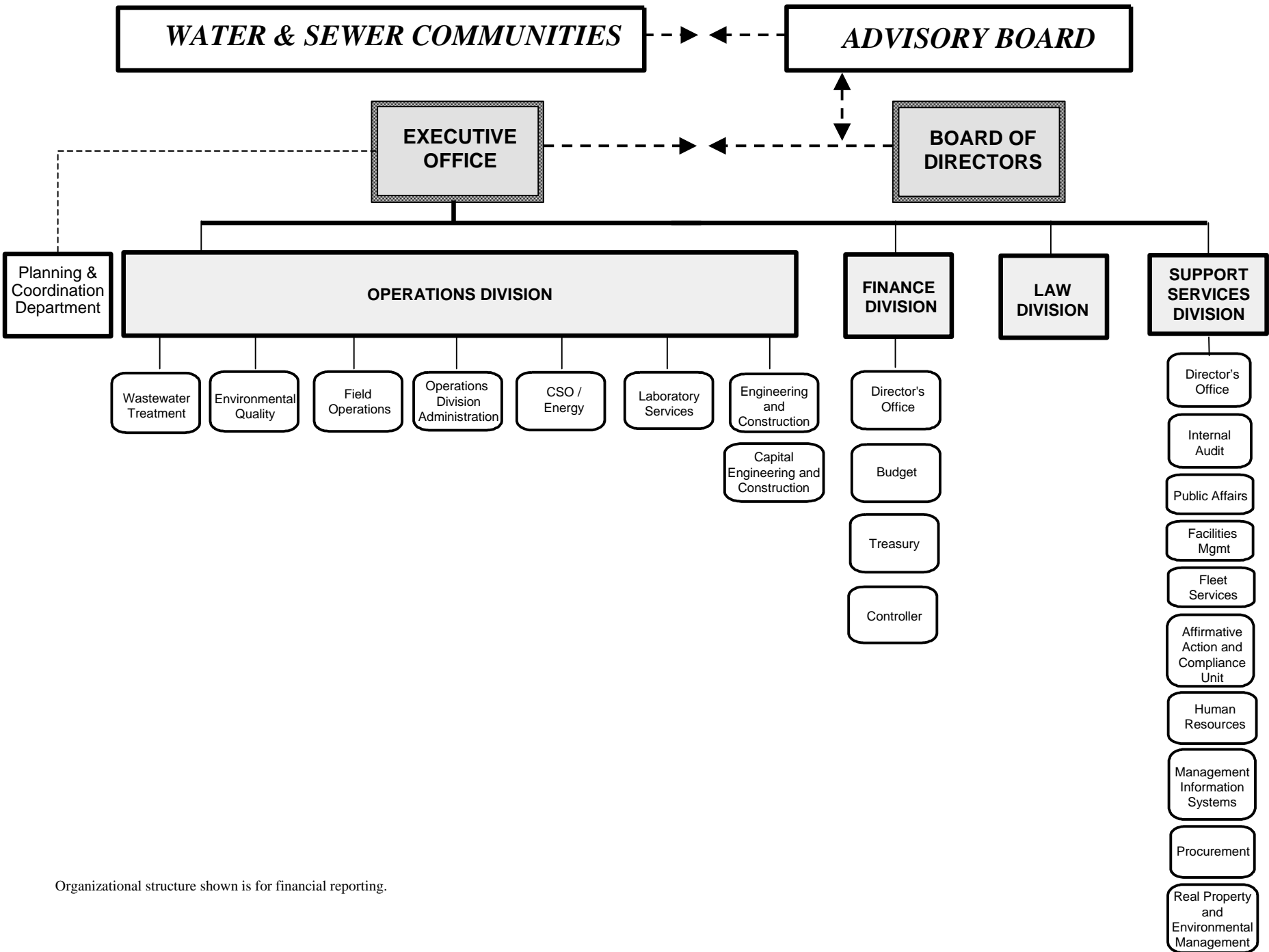
Antonia M. Pollak

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### **Prepared under the direction of**

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Laura Guadagno, Chief Financial Officer  
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**together with the participation of MWRA staff.**



Organizational structure shown is for financial reporting.



December 2004

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

Dear Chairwoman Dunphy:

This letter transmits to the Advisory Board MWRA's Fiscal Year 2005 Current Expense Budget (CEB). The CEB was approved by MWRA's Board of Directors at its June 23, 2004 meeting.

MWRA's budget for fiscal year 2005 includes \$501.4 million in total expenses before debt service offsets of \$8.8 million, for a net expense total of \$492.6 million. Total expenses include \$290.8 million or 59% for capital financing costs and \$210.6 million or 41% for operating expenses, of which \$176 million is for direct expenses and \$34.6 million is for indirect expenses.

The budget uses no rate stabilization in FY05. Non-rate revenue for FY05 totals \$39.6 million, of which 70% is from income MWRA earns by investing its reserves. The rate revenue requirement for FY05 is \$453 million, an increase of 3.9% over the FY04 budget. Subsequent to MWRA's approval of its budget, the Legislature overrode the veto for debt service assistance. MWRA expects its share of the statewide appropriation to be \$8.7 million, which reduces the FY05 rate increase from 3.9% to 1.9% as compared to the FY04 approved budget. MWRA has already reduced the bills to the member communities to reflect its expected share of the statewide appropriation.

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

Thank you for your continued support and comments and recommendations to the capital budget.

Sincerely,

Frederick A. Laskey  
Executive Director



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# Executive Summary

# The Budget-in-Brief

## MWRA Mission

The Massachusetts Water Resources Authority (MWRA) is an independent authority that provides wholesale water and sewer services to its customer 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 business 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 to its customer communities. The need to achieve and maintain a balance between these two goals continues to be the critical issue facing MWRA.

MWRA measures its performance compared to prior years and current year targets in a variety of areas. Progress in achieving performance targets is reported monthly in the Yellow Notebook and quarterly in the Orange Notebook. Quarterly reports are now available on MWRA's website. MWRA's business plan is also available online.

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

## Overview

Each year MWRA prepares a proposed budget that reflects the best available information about anticipated expenditures and revenues. Typically, MWRA transmits its proposed budget to its

Advisory Board in February. The Advisory Board has sixty days to review and comment on MWRA's proposed budget. In May, MWRA's Board of Directors holds hearings on the budget to review recommendations by the Advisory Board and new information available since the proposed budget was developed. Staff incorporates the Board's decisions from the hearings and presents a final budget for approval in June.

MWRA's budget for fiscal year 2005 includes \$501.4 million in total expenses before debt service offsets of \$8.8 million, for a net expense total of \$492.6 million. The \$8.8 million in debt service offsets is from variable rate debt savings of \$1.5 million rolled forward from FY04 and \$7.3 million assumed for FY05.

Total expenses include \$290.8 million or 59% for capital financing costs and \$210.6 million or 41% for operating expenses, of which \$176 million is for direct expenses and \$34.6 million is for indirect expenses. Total expenses increased by \$17.8 million over FY04 expenses; \$7.3 million for operating expenses and \$10.5 million for debt service.

The \$7.3 million increase in operating expenses includes \$4.5 million for direct expenses and \$2.8 million for indirect expenses. The increase in direct expenses includes utilities (mostly to support startup of the Walnut Hill Water Treatment Plant and Braintree-Weymouth Intermediate Pump Station), maintenance, and fringe benefits. The increase in indirect expenses includes additional funding for the insurance reserve fund; increased funding for watershed protection; and an increase for MWRA's retirement fund.

The \$10.5 million increase in debt service expenses reflects the full year costs of the \$165 million January 2004 borrowing and the \$130 million borrowing completed in June 2004, as well as SRF borrowings completed in FY04. The budget also includes a new \$100 million variable rate issue planned for the spring of 2005 and the



cost of \$42 million in SRF borrowing planned for FY05. As discussed above, the budget includes \$8.8 million in debt service offsets, \$1.5 million in prior year variable rate debt savings, and \$7.3 million variable rate savings assumed for FY05. The budget assumes approximately 3% interest rate for variable rate debt.

The rate revenue requirement for FY05 is \$453 million, an increase of 3.9% over the FY04 budget<sup>1</sup>. The budget uses no rate stabilization in FY05. MWRA utilized a portion of the FY04 surplus to defease outstanding debt due in fiscal years 2005 and 2006. This action, approved by the Board at its June 23, 2004 meeting, reduced the FY05 and FY06 rate revenue requirements by \$17.3 and \$6.5 million respectively.

FY05 non-rate revenue totals \$39.6 million, a decrease of \$5.3 million from actual FY04 non-rate revenue. The change is primarily the result of lower assumptions for investment income because of continued lower interest rates. The FY05 non-rate revenue budget includes \$28.6 million for investment income, of which \$4.6 million is from swap receipts; and \$10.8 million in other user charges and other revenue; including \$500,000 from the sale of renewable portfolio credits.

Table I-1 shows MWRA's FY05 budget for revenue and expenses by line item and includes a comparison with FY03 and FY04 spending. Line item changes from FY04 to FY05 are described in the Revenue and Expense section of the Executive Summary and in more detail in the division sections of this document.

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<sup>1</sup> Based on the Final FY05 CEB and planning estimates. Does not reflect the expected receipt of \$8.7 million of DSA in FY05. The net impact of DSA is to reduce the rate revenue percentage increase for FY05 from 3.9% to 1.9% as compared to the FY04 CEB.

Table I-1

**FY05 Current Expense Budget  
EXPENSES and REVENUE**

TOTAL MWRA	FY03 Actual	FY04 Actual	FY05 Final	Change	
				FY04 Actual to FY05 Final	
				\$	%
<b>EXPENSES</b>					
WAGES AND SALARIES	\$ 80,263,548	\$ 78,357,086	\$ 80,103,715	\$ 1,746,629	2.2%
OVERTIME	3,363,787	3,682,536	3,404,171	(278,365)	-7.6%
FRINGE BENEFITS	12,320,508	10,855,867	12,364,551	1,508,684	13.9%
WORKERS' COMPENSATION	3,195,119	1,687,057	1,600,000	(87,057)	-5.2%
CHEMICALS	6,674,253	6,190,167	6,913,154	722,987	11.7%
ENERGY AND UTILITIES	17,070,548	18,377,346	19,151,034	773,688	4.2%
MAINTENANCE	17,213,182	18,611,486	19,750,181	1,138,695	6.1%
TRAINING AND MEETINGS	132,329	197,897	286,537	88,640	44.8%
PROFESSIONAL SERVICES	7,003,807	6,330,626	6,777,586	446,960	7.1%
OTHER MATERIALS	2,985,980	4,871,254	4,167,307	(703,947)	-14.5%
OTHER SERVICES	24,887,671	22,347,683	21,532,570	(815,113)	-3.6%
<b>TOTAL DIRECT EXPENSES</b>	<b>\$175,110,732</b>	<b>\$171,509,005</b>	<b>\$176,050,806</b>	<b>\$ 4,541,801</b>	<b>2.6%</b>
INSURANCE	\$ 4,721,089	\$ 4,110,306	\$ 2,300,000	\$ (1,810,306)	-44.0%
WATERSHED/PILOT	19,943,370	17,678,358	21,811,900	4,133,542	23.4%
BECo PAYMENT	4,963,600	4,916,143	4,818,200	(97,943)	-2.0%
MITIGATION	1,398,584	1,223,152	1,237,000	13,848	1.1%
ADDITION TO RESERVES	-	-	1,000,000	1,000,000	100.0%
RETIREMENT FUND	2,560,052	3,881,637	3,407,532	(474,105)	-12.2%
<b>TOTAL INDIRECT EXPENSES</b>	<b>\$ 33,586,695</b>	<b>\$ 31,809,596</b>	<b>\$ 34,574,632</b>	<b>\$ 2,765,036</b>	<b>8.7%</b>
DEBT SERVICE	\$303,769,916	\$297,264,243	\$290,834,204	\$ (6,430,039)	-2.2%
Offsets:					
Bond Redemption	(14,334,060)	-	-	-	0.0%
Prior Variable Rate Savings	(19,374,985)	(5,988,996)	(1,538,424)	4,450,572	-74.3%
Current Year Variable Rate Savings	-	(15,685,593)	(7,314,515)	8,371,078	-53.4%
Debt Service Assistance	-	(4,063,296)	-	4,063,296	0.0%
<b>TOTAL DEBT SERVICE</b>	<b>\$270,060,871</b>	<b>\$271,526,358</b>	<b>\$281,981,265</b>	<b>\$ 10,454,907</b>	<b>3.9%</b>
<b>TOTAL EXPENSES</b>	<b>\$478,758,298</b>	<b>\$474,844,959</b>	<b>\$492,606,703</b>	<b>\$ 17,761,744</b>	<b>3.7%</b>
<b>REVENUE &amp; INCOME</b>					
RATE REVENUE	\$419,298,352	\$431,765,082	\$453,000,013	\$ 21,234,931	3.9% <sup>A</sup>
OTHER USER CHARGES	5,818,877	7,149,756	6,323,536	(826,220)	-11.6%
OTHER REVENUE	3,904,565	6,724,814	4,056,154	(2,668,660)	-39.7%
Revenue - Energy	457,598	1,237,504	500,000	(737,504)	-59.6%
RATE STABILIZATION	14,690,940	-	-	-	0.0%
INVESTMENT INCOME	31,388,383	23,603,890	24,134,000	530,110	2.2%
SWAP Receipts	5,317,518	5,816,765	4,593,000	(1,223,765)	-21.0%
<b>TOTAL REVENUE &amp; INCOME</b>	<b>\$480,876,233</b>	<b>\$476,297,811</b>	<b>\$492,606,703</b>	<b>\$ 16,308,892</b>	<b>3.4%</b>

<sup>A</sup> Based on the Final FY05 CEB and planning estimates. Does not reflect the expected receipt of \$8.7 million of DSA in FY05. The net impact of DSA is to reduce the rate revenue percentage increase for FY05 from 3.9% to 1.9% as compared to the FY04 CEB.

## FY05 Initiatives and Highlights

- Year-end FY05 staffing target of 1,298 filled positions, 17 positions less than the overall Black and Veatch target of 1,315 for FY05. The Black and Veatch target represents a decrease of 477 or 27% filled positions from peak staffing in 1997, an average reduction of 60 positions per year. During FY05, Walnut Hill Treatment Plant will be brought into service as the MWRA moves toward the culmination of \$1.7 billion in new water facilities. The Black and Veatch targets did not include staffing needs for these new facilities (suggesting that staffing needs be addressed separately) or additional security needs that were identified after the Black and Veatch study was completed.

Achieving the target assumed that 71 persons would participate in the early retirement program by June 30, 2004, several new hires would occur in preparation for startup of the Walnut Hill Water Treatment Plant, and other attrition would occur throughout the fiscal year.

- Startup of the Braintree-Weymouth Intermediate Pump Station and Tunnel in November 2004 and startup of the Walnut Hill Water Treatment Plant in April 2005.
- Continued optimization of energy use and revenues through the sale of renewable portfolio credits and Deer Island's participation in the regional energy load response program. The budget assumes \$0.5 million in revenues from the sale of renewable portfolio credits.
- Continued implementation of changes in Harbor and Outfall Monitoring Program. Funding for this program has been reduced by \$440,000 through scope reductions (subject to regulatory approval) and planned in-house work by the Department of Laboratory Services.
- Continued fleet optimization and replacement program by pooling vehicles in different facilities and replacing at-risk vehicles and equipment. The budget includes \$1 million for fleet replacement.
- Continued development and implementation of maintenance strategies for optimal protection of assets through the Facilities Asset Management Program, Reliability Centered Maintenance, and Maximo Maintenance Management software.

## SOURCES AND USES OF FUNDS

MWRA funds its operations primarily through member community assessments. No funds supporting the current expense budget are subject to appropriation, except debt service assistance from the Commonwealth of Massachusetts and minor reimbursements from the Commonwealth.

MWRA has only one operating fund. All operating fund expenses and revenues are allocated to water and sewer customers.

Table I-2 shows MWRA's sources and uses of funds for the FY05 proposed budget.

Table I-2

<b>SOURCES &amp; USES of Funds</b>		
<b>\$ Millions</b>		
<b>Sources</b>		
Other User Charges	6.3	1%
Other Revenue	4.6	1%
Rate Stabilization	-	0%
Investment Income	28.7	6%
Rate Revenue	453.0	92%
<b>TOTAL REVENUE</b>	<b>\$ 492.6</b>	<b>100%</b>
<b>Uses</b>		
<b>Total Expenses</b>		
<b>before Debt Service Offsets</b>	<b>\$ 501.4</b>	
Less:		
Prior Year Variable Savings	(1.5)	
Current Year Variable Savings	(7.3)	
<b>Sub-Total Net Expenses</b>	<b>\$ 492.6</b>	
Capital Financing	282.0	57%
Direct Expenses	176.0	36%
Indirect Expenses	34.6	7%
<b>TOTAL EXPENSES</b>	<b>\$ 492.6</b>	<b>100%</b>

## REVENUE

MWRA is required by its Enabling Act to balance its budget each year by establishing user assessments for water and sewer services which provide sufficient funds to recover the cost of

operations (excluding depreciation), maintenance and improvements, debt service, and reserves.

In the FY05 budget, 92% of the revenue (not including debt service offsets) is derived from rate revenue. The remaining 8% of revenue comes 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, reimbursements from the Commonwealth, penalties assessed to holders of sewer use permits, and other miscellaneous sources.

### Rate Revenue

In the FY05 budget MWRA will raise \$453 million of its total revenue requirements from water and sewer assessments to member communities. Of the \$453 million, \$319 million will fund the sewerage system, an increase of 2.1% over FY04 budget; and \$134.3 million will fund the water system, an increase of 8.5% over FY04 budget. The significant increase in the water rate revenue requirement reflects increased debt service to support drinking water system improvements in the treatment, transmission, and storage.

### Non-Rate Revenue

#### Other User Charges

Other User Charges primarily include revenues derived from the provision of water services to communities under special agreements. The FY05 budget includes approximately \$3.9 million for such revenues, relatively unchanged from the FY04 budget. Other User Charges also includes about \$1.2 million in water revenue collected from sewer ratepayers to offset the cost of water used for operation of the Deer Island Treatment Plant. The budget also reflects a \$500,000 appropriation by the Commonwealth for the Town of Clinton to enable the town to pay MWRA for part of the cost of operating and maintaining the Clinton

Wastewater Treatment Plant.

### **Permit Fees**

The FY05 budget includes \$1.8 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.

### **Penalties**

MWRA assesses fines as necessary to enforce its sewer use regulations. MWRA encourages violators to bring sewer discharges into compliance with their permits, and considers penalties and the lengthy adjudication process that follows as a last resort. The estimated income from penalties in the budget is \$250,000, the average for the past few years.

### **Reimbursements from the Commonwealth of Massachusetts**

The budget includes \$867,000 from the Commonwealth that MWRA is entitled to receive by statute as reimbursement for the cost of chemicals used in the wastewater treatment process.

### **Miscellaneous Revenue**

The FY05 budget includes about \$1.9 million in miscellaneous revenue: \$350,000 from hydropower generation at MWRA's Cosgrove facility; \$500,000 from the sale of renewable portfolio credits from the use of digester gas to generate power on Deer Island; \$432,000 for an entrance fee from the Town of Stoughton, which joined the waterworks system in FY04; \$176,000 from Fore River railroad management fees; and \$474,000 from sale of surplus equipment and other sources.

### **Investment Income**

MWRA earns income by investing reserves and fund balances in a variety of interest-yielding securities. The FY05 budget includes \$28.7 million in investment income, a decrease of \$0.7 million from FY04 actuals largely because of lower interest rate assumptions for SWAP investments.

### **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 transfers the unexpended amount to the rate stabilization reserve. Within certain limits, MWRA may use this money to reduce the rate reserve requirement in any subsequent year. Consistent with the requirements of its Enabling Act and its general bond resolution, MWRA treats transfers from rate stabilization as revenue in that fiscal year. The FY05 budget includes no withdrawal from MWRA's rate stabilization. Use of rate stabilization funds included in the proposed CEB has been offset by expense reductions (largely through the use of FY04 funds to defease debt due in FY05) and increases to non-rate revenue (investment income and swap receipts).

## **EXPENSES**

MWRA's annual Current Expense Budget includes direct program expenses, indirect or non-program costs, and debt service. Direct expenses cover all costs which MWRA divisions incur, including personnel expenses, facility operating costs, and support functions. Indirect expenses include payments to the Commonwealth for expenses of the Department of Conservation and Recreation's Water Supply Protection Division and to support watershed land purchases; additions to MWRA's retirement fund; insurance; mitigation costs; and any additions to reserves. The capital financing budget includes current debt service payments, debt service for planned borrowing, and contributions from current revenues to fund capital

expenditures.

As noted earlier, 59% of the total FY05 budget is for capital financing expenses and 41% is for operating expenses. Between FY90 and FY05, the capital financing share has grown from 36% to 59% of the total budget, while the share of operating expense has declined from 64% to 41% of the total budget (Figure I-1). Based on MWRA's most recent planning estimates, by FY10 the capital financing expenses share is expected to grow to about 64% of the total budget.

### **Capital Financing Expenses**

Capital financing expenses (before debt service offsets) increase by \$25.7 million to \$310.5 million, 9% more than the FY04 budget, primarily for payments on existing debt. Capital financing costs for FY05 include \$308.7 million in principal and interest payments on outstanding MWRA debt and SRF loans and \$1.8 million in debt service to support new MWRA debt issues. Also included in FY05 capital financing costs are \$5.9 million to fund capital expenditures from current revenues, \$3.2 million for the lease on the Chelsea Facility, and \$1 million for interest on tax-exempt commercial paper issued to support the Local Water Pipeline Assistance Program.

### **Operating and Maintenance Expenses**

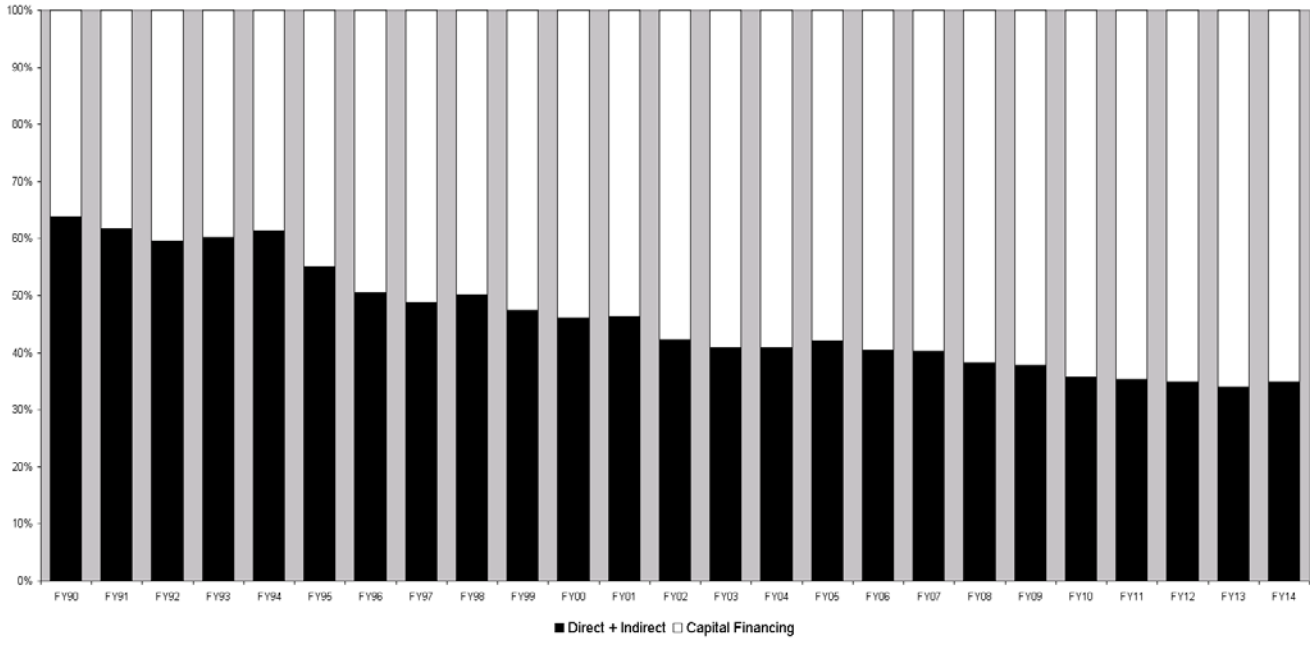
Annual operating and maintenance expenses account for 34% of the FY05 budget. Operating and maintenance expenses increase by \$4.1 million to \$177 million, 2.4% more than the FY04 budget. The increase is largely due to increases for maintenance (\$1.6 million) and utilities (\$2.1 million). Maintenance expenses increase by \$1.6 million reflecting MWRA's commitment to maintain its facilities. Of the \$2.1 million increase for utilities, \$1.4 million is for anticipated increased use of electricity and diesel fuel to support the startup of the Walnut Hill Water Treatment Plant and Braintree-Weymouth Intermediate Pump Station; and the remaining \$0.7 million is for anticipated price increases. The direct expenses budget is described further in the Direct Expenses section of the Executive Summary and in the division sections.

### **Indirect Expenses**

Indirect expenses account for 7.2% of the budget. Indirect expenses increase by \$5.1 million to \$36.4 million, 16.4% more than the FY04 budget. The increase in indirect expenses includes \$2.5 million for insurance, primarily for expected increases in premiums, a \$1 million addition to the insurance reserve, a \$785,000 increase for watershed protection, and \$719,000 increase in contribution to the retirement fund. The indirect expense budget is described further in the Indirect Expenses section of the Executive Summary.

Figure I - 1

Direct and Indirect Expenses vs. Capital Financing



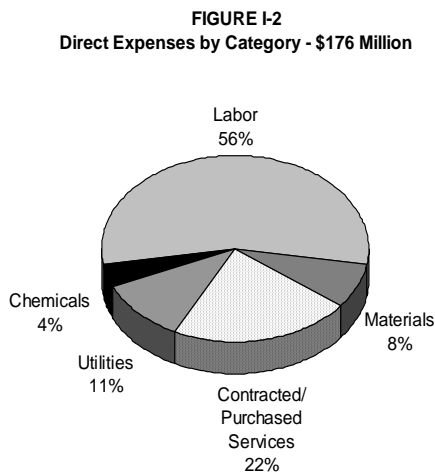
FY90-FY04 Actual; FY05 Budget; FY06 - FY14 Planning Estimates  
 For comparison purposes, Capital Financing does not include offsets.

## Direct Program Expenses

The FY05 direct program expense budget is \$176 million, an increase of \$4.5 million or 2.6% over FY04 spending. The increase includes higher costs for insurance and maintenance. Increases in utilities and chemicals are mostly to support startup of the Walnut Hill Water Treatment Plant and Braintree-Weymouth Intermediate Pump Station. Generally, the budget presents expenses by line item and program. The division sections of this document discuss program budget changes in greater detail.

### Line Item Budget Summary

Figure I-2 combines related direct expense line items into general cost categories and shows that labor costs (Wages and Salaries, Overtime, Fringe



Benefits, Workers' Compensation and Training and Meetings) are the largest component of the direct expense budget (56%). The second largest cost category is contracted and purchased services (22%), followed by chemicals and utilities (15%), and materials (8%).

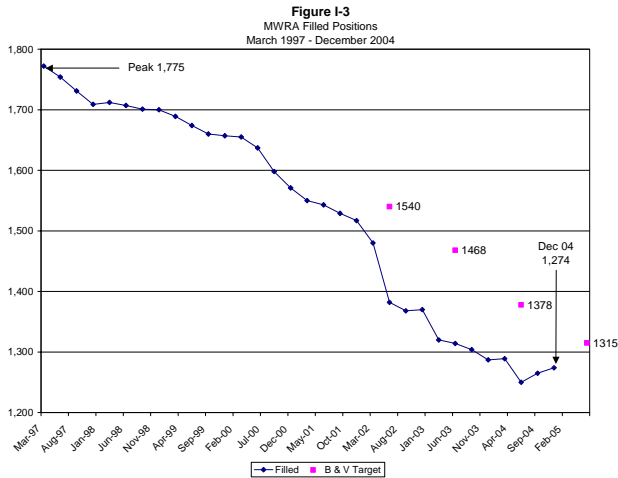
Within the labor cost category, wages and salaries account for \$80.1 million of the budget, 2.2% higher than FY04 spending. Of the \$80.1 million, \$78.8 million is for regular pay. Translation of the regular pay budget into a number of funded positions is always an imprecise exercise,

attempting to account for positions that are filled at salaries different from the most recent incumbent, collective bargaining settlements that may differ from budgeted assumptions, and vacancy rates that vary from estimates. MWRA estimates, subject to these inherent limits on precision, that the regular pay budget of \$78.8 million will support the FY05 year-end target of 1,298 filled positions. The regular pay budget reflects several key assumptions:

- The staffing target of 1,298 is lower than the Black & Veatch target of 1,315 positions for FY05.
- Achieving the target assumed that an additional 55 employees would participate in the early retirement program by June 30, 2004, several new hires will take place in preparation for startup of the Walnut Hill Water Treatment Plant, and other attrition will occur throughout the fiscal year.
- Backfilling of positions vacated through early retirement will be tracked during the fiscal year to ensure that backfills are within the limits set when the Board approved the program.



Figure I-3 shows how filled positions at MWRA has declined from a peak of 1,775 in March 1997 to the estimated staffing level of 1,298 for FY05. The number of filled positions remains below the target levels recommended in the Black & Veatch study and shown in the figure below.



Contracted and purchased services, the second largest direct expense cost category, includes professional, maintenance, and other services. The FY05 budget for contracted and purchased services is \$38.6 million - relatively unchanged from the FY04 budget - and \$1 million less than FY03 spending.

Major components of this cost category include \$10.8 million for MWRA's residuals processing contract, \$4.4 million for lease payments, \$10.3 million for maintenance services, \$3.4 million for harbor and outfall monitoring, \$1.3 million for telephone and lease line services, \$1.7 million for security, and \$1.1 million for grit and screenings removal.

The \$10.8 million budget for residuals processing is \$700,000 less than the FY04 spending, due to one-time settlement costs offset by higher expected sludge quantities with the start-up of the Braintree-Weymouth Tunnel. The maintenance services budget of \$10.3 million increases compared to FY04 spending primarily as a result of additions

for plant and machinery services and pipeline services. The \$4.4 million for lease payments is \$1.4 million less than the FY04 budget, reflecting MWRA's consolidation of its space in the Navy Yard. The \$3.4 million harbor and outfall monitoring budget is \$225,000 less than FY04 spending, reflecting further elimination of some discretionary services.

The FY05 budget for utilities is \$19.2 million; \$0.8 million more than the FY04 spending and \$2 million more than FY03 spending. The increases are for startup of the Walnut Hill Water Treatment Plant and Braintree-Weymouth Intermediate Pump Station, and expected price increases for all facilities.

The FY05 budget for chemicals is \$6.9 million; \$0.7 million more than the FY04 spending and \$0.2 million more than FY03 spending. About 48% of the chemical budget is for the treatment of wastewater and 52% is for water treatment. The FY05 increase includes \$0.3 million more for anticipated dosing increases for soda ash and carbon dioxide to meet EPA's lead and copper rule compliance limits, and \$0.3 million in additional chemical use to support operation of the new Walnut Hill Water Treatment Plant. These increases are offset by decreases in polymer use reflecting the startup of the Braintree-Weymouth tunnel, and lower usage of ferrous chlorite for struvite control at Deer Island.

The FY05 budget for materials, which includes maintenance materials, laboratory equipment, vehicles, and computer hardware items, is \$13.6 million; \$0.7 million more than the FY04 spending and \$0.8 million more than FY03 spending. The proposed increase is mostly for electrical materials and special equipment materials for Deer Island and FOD, including replacement of variable frequency drives for Deer Island and replacement of wastewater metering parts for FOD.

## Functional Area Budget Summary

For a broader perspective on MWRA's direct expense budget, Figure I-4 presents direct expenses by MWRA functional area and shows that 46% of the FY05 direct expense budget is for Wastewater Transport and Treatment costs, compared to 13% for Water Transmission, Treatment, and Distribution. Appendix A describes each MWRA functional area.

water and wastewater treatment and transport systems; 24% to administration and support and MIS functions, and 10% to facilities planning, design, and construction. Water and Wastewater Quality functions, particularly Boston Harbor and Massachusetts Bay monitoring activities and industrial discharge and enforcement programs, account for 9% of all staff.

**FIGURE I-4**  
Direct Expenses by Functional Area - \$176 Million

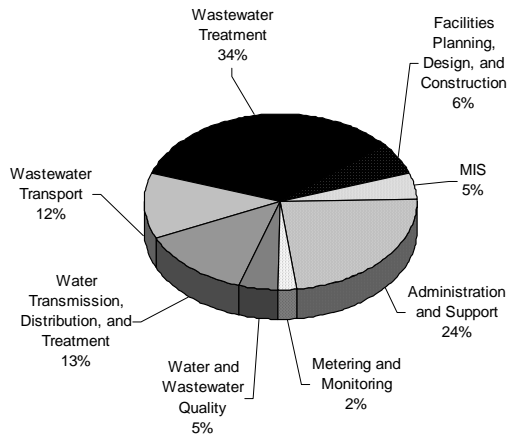
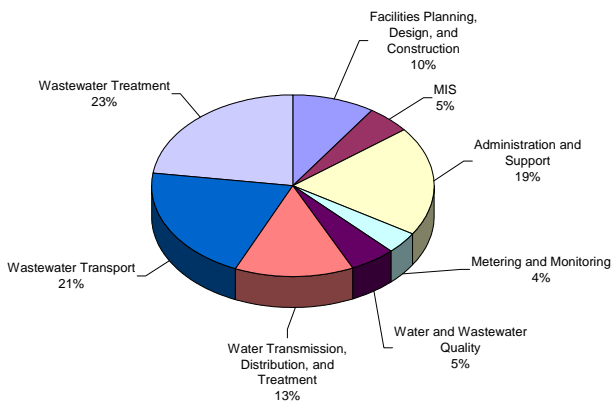


Figure I-5, Staffing by Functional Area as of December 2004 shows that of 1,274 filled positions, 57% are devoted to operating and maintaining the

**FIGURE I-5**  
Staffing by Functional Area



## Capital Financing

The FY05 capital financing budget, before debt service offsets, is \$290.8 million or 59% of the total \$492.6 million budget. (In FY04, MWRA utilized a portion of its reserves to defease debt service obligations due for FY05. This action reduced FY05 debt service by \$17.3 million.) FY05 debt service offsets of \$8.8 million result in a net capital financing budget of \$282 million. Debt service offsets include \$1.5 million in prior year variable rate debt savings, and \$7.3 million variable rate savings assumed for FY05. The budget assumes approximately a 3% interest rate for variable rate debt. If interest rates are less than budgeted in FY05, MWRA will use the savings to reduce rate revenue requirements in future years.

MWRA finances its capital improvement program primarily by issuing fixed rate 30- or 40-year revenue bonds. MWRA has also issued variable rate debt through a tax-exempt commercial paper program and a multi-modal (one, seven, and 35-day) borrowing program. As of July 2004, MWRA's revenue bonds outstanding totaled \$4.4 billion, including \$560 million in variable rate debt. MWRA also borrows from the Commonwealth's Water Pollution Abatement Trust, also known as the State Revolving Loan (SRF) Fund. As of July 2004, the gross amount of outstanding debt from the SRF was \$703 million. Outstanding commercial paper totaled approximately \$300 million. MWRA's unenhanced senior bonds are rated "AA-" by Fitch Ratings, and "Aa3" by Moody's Investor Service Inc., and "AA" by Standard & Poor's rating Service.

The FY05 capital financing budget, before offsets, decreases by \$6.4 million or 2.2% compared to FY04 spending, primarily for actions taken in FY04 to defease debt due in FY05. The budget includes:

- \$297.9 million in principal and interest payments on outstanding MWRA debt and

SRF loans.

- \$1.8 million in debt service for a new bond issue to support the capital program (a \$100 million variable rate issue planned for June 2005) and new SRF borrowing (\$42 million).
- \$1 million in interest payments related to the Local Water Pipeline Assistance Program.
- \$4.0 million to fund ongoing capital projects with current revenue and to meet coverage requirements.

The FY05 debt service budget does not include savings from future re-financing of debt because no debt refunding or restructuring is currently planned for FY05. If MWRA is able to take advantage of unforeseen opportunities during the year, any FY05 savings will roll forward into future years.

Subsequent to the approval of the FY05 Budget by MWRA's Board of Directors, the legislature overrode the Governor's veto for debt service assistance (DSA) and restored \$10 million for the state-wide appropriation. MWRA estimates its share of the state-wide appropriation at \$8.7 million, which would reduce the FY05 rate increase from 3.9% to 1.9% as compared to the FY04 budget.

Table I-3 provides detail on the FY05 capital financing line item. Table I-3 also illustrates how upgrading the sewerage system has dominated the capital program to date. Seventy-two percent of the FY05 capital financing costs (before debt service offsets) are for wastewater improvements. Current and future borrowing increasingly supports improvements to the water system.

**TABLE I-3  
FY05 Current Expense Budget - Capital Financing Detail**

	Amount Outstanding (\$ millions)	Interest Rate	Total	Water	Sewer
<b>SRF <sup>1</sup></b>					
Unrefunded	\$ 36		\$ 55,466	\$ -	\$ 55,466
1999E Sewer	10	-	394,513	-	394,513
1999E Water	10	-	585,603	585,603	-
1999F	368	-	15,989,521	-	15,989,521
2000E Sewer	70	-	2,889,781	-	2,889,781
2000E Water	11	-	575,510	575,510	-
2001C Water	5	-	250,076	250,076	-
2001D Sewer	8	-	386,790	-	386,790
2001D Water	2	-	82,369	82,369	-
2002H	122	-	4,690,979	1,551,916	3,139,063
2002I	3	-	102,422	1,491	100,931
2003A	1	-	71,870	71,870	-
2003B	4	-	223,897	223,897	-
2003C	54	-	2,367,026	973,954	1,393,072
FY05 New Sewer	35	-	773,932	-	773,932
FY05 New Water	12	-	652,338	652,338	-
<b>Sub-Total</b>	<b>\$ 751</b>		<b>\$ 30,092,093</b>	<b>\$ 4,969,024</b>	<b>\$ 25,123,069</b>
<b>MWRA Senior Debt</b>					
1990A (fixed)	\$ 21	7.67%	8,601,667	-	8,601,667
1992A (fixed)	388	6.98%	25,209,925	1,260,496	23,949,429
1993C Refunding/New (fixed)	285	5.66%	14,269,863	1,783,733	12,486,130
1994A (fixed)	-	6.15%	-	-	-
1995B (fixed)	224	5.34%	12,578,521	-	12,578,521
1996A (fixed)	25	5.78%	4,432,470	-	4,432,470
1997D Refunding (fixed)	133	5.40%	7,811,419	468,685	7,342,734
1998A (fixed)	190	5.04%	12,767,950	4,255,941	8,512,009
1998B Refunding (fixed)	105	5.04%	5,332,300	213,292	5,119,008
2000A Refunding/New (fixed)	279	6.11%	15,938,298	10,626,063	5,312,235
2002B (fixed)	178	5.23%	9,088,531	8,179,678	908,853
2002J Refunding (fixed)	391	4.71%	20,848,400	2,084,840	18,763,560
2002J New (fixed)	200	4.71%	10,000,000	5,000,000	5,000,000
2003D	165	4.63%	9,593,119	6,395,732	3,197,387
2004A	130	5.00%	7,446,118	3,337,569	4,108,549
<b>Sub-Total</b>	<b>\$ 2,715</b>		<b>\$ 163,918,581</b>	<b>\$ 43,606,030</b>	<b>\$ 120,312,551</b>
<b>MWRA Subordinate Debt</b>					
1997A (variable)	\$ 82	-	4,428,860	-	4,428,860
1997B (variable)	82	-	4,428,860	4,428,860	-
1998D Refunding (variable to fixed)	199	-	8,381,435	335,257	8,046,178
1999A (variable to fixed)	92	-	5,168,861	2,067,544	3,101,317
1999B (variable to fixed)	92	-	5,238,820	2,095,528	3,143,292
1999C (variable)	72	-	3,789,874	2,273,924	1,515,950
1999D (variable)	72	-	3,789,874	2,273,924	1,515,950
2000B Refunding (variable to fixed)	134	-	7,644,644	1,070,250	6,574,394
2000C Refunding (variable to fixed)	134	-	7,539,304	1,055,503	6,483,801
2000D (fixed to variable)	150	-	8,250,000	4,125,000	4,125,000
2001A (variable)	91	-	5,869,590	3,932,625	1,936,965
2001B (variable)	85	-	3,400,000	3,400,000	-
2002C Refunding (variable)	80	-	4,900,000	3,266,830	1,633,170
2002D-G Refunding (variable)	350	-	15,395,319	-	15,395,319
FY05 New (variable)	100	-	421,029	421,029	-
<b>Sub-Total</b>	<b>\$ 1,814</b>		<b>\$ 88,646,470</b>	<b>\$ 30,746,276</b>	<b>\$ 57,900,194</b>
<b>Total SRF &amp; MWRA Debt Service</b>	<b>\$ 5,281</b>		<b>\$282,657,144</b>	<b>\$ 79,321,330</b>	<b>\$203,335,814</b>
Water Pipeline Commercial Paper			\$ 950,000	\$ 950,000	\$ -
Current Revenue/Capital <sup>2</sup>			4,010,000	1,002,500	3,007,500
Capital Lease			3,217,060	1,125,971	2,091,089
<b>Sub-Total</b>			<b>\$ 8,177,060</b>	<b>\$ 3,078,471</b>	<b>\$ 5,098,589</b>
<b>Total Capital Financing (before Debt Service Offsets)</b>			<b>\$290,834,204</b>	<b>\$ 82,399,801</b>	<b>\$208,434,403</b>
Bond Redemption Savings			\$ -	\$ -	\$ -
Prior Year Variable Rate Savings			(1,538,424)	(604,167)	(934,257)
Budget Year Variable Rate Savings			(7,314,515)	(4,695,919)	(2,618,596)
Debt Service Assistance			-	-	-
<b>Total Capital Financing</b>			<b>\$281,981,265</b>	<b>\$ 77,099,715</b>	<b>\$204,881,549</b>

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

<sup>2</sup> Current Revenue/Capital is revenue used to fund ongoing capital projects. The amount is partly determined by MWRA's bond covenant requirements.

## **Indirect Expenses**

The FY05 budget includes \$34.6 million for indirect expenses, an increase of \$2.8 million or 8.7 % over FY04 spending. The increase includes \$4 million for watershed protection and a \$1 million addition to the insurance reserve; offset by lower than estimated claims due to one-time costs in FY04.

### **Insurance**

MWRA purchases property and casualty insurance from external insurance carriers and self-insures for the first \$2.5 million of property and general liability loss per occurrence. The FY05 budget includes \$2.3 million for premiums and fees. MWRA's three-year insurance policy expired at the end of FY04. The budget includes \$1.6 million for premiums based on new coverage procured for FY05. The budget also includes \$700,000 for the projected costs of claims made against the self-insured portion of MWRA coverage. MWRA mitigates the budgetary risk of self-insurance by maintaining an Insurance Reserve, currently funded at \$18 million. 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 latest consultant review recommends an increase of \$3 million in the reserve's funding level over the next three years. As a result, the FY05 budget includes an increase of \$1 million as the first of the three \$1 million additions to increase the reserve to \$21 million by FY07.

### **Watershed Reimbursement/PILOT**

The Enabling Act directs MWRA to pay the Commonwealth of Massachusetts for several statutory obligations: payments in lieu of taxes (PILOT) for Commonwealth-owned land in the watersheds, operating expenses of the Division of

Watershed Management (DWM)<sup>3</sup>, and debt service costs for purchases of land around the supply reservoirs to protect the watersheds. The FY05 budget includes \$6.4 million, \$10.2 million, and \$5.2 million respectively for these items. This represents an overall increase of \$4 million over FY04 spending. As part of the Commonwealth's fiscal year 2005 budget, a Watershed Supply Protection Pilot Program, to be administered by and through a separate trust known as the Water Supply Protection Trust ("The Trust") was created. The trustees of the Trust review and approve the operating plan, the operating and capital budgets, and other aspects of the annual work plan prepared jointly by DCR and MWRA pursuant to the memorandum of understanding (MOU) between the two respective agencies. This separate program will ensure that there is a commitment to the interests of MWRA and DCR in watershed protection.

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

Harbor Electric Energy Company (HEECo), a subsidiary of NStar, installed the cross harbor power cable and built the power substation to supply electric power for construction and operation of the Deer Island Treatment Plant. MWRA is repaying HEECo's capital investment on a 25-year schedule. The budget includes \$4.8 million for the estimated FY05 payment, comprising \$4.4 million for capacity charges and \$432,000 for maintenance expenses.

### **Mitigation**

MWRA disburses mitigation funds to communities affected by MWRA projects pursuant to MWRA's Statement of Mitigation Principles and/or specific agreements with communities. MWRA mitigation may include ameliorating direct construction impacts, meeting environmental/regulatory requirements, long-term operating agreements, or

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<sup>3</sup> Now the Division of Water Supply Protection in the Department of Conservation and Recreation.

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 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 FY05 CEB includes \$1.2 million for community compensation for impacts, including \$640,000 for the Town of Winthrop, based on a Memorandum of Agreement with the town, and \$600,000 for the City of Quincy. Although many of MWRA's obligations under a 1988 Memorandum of Understanding (MOU) with Quincy have been fulfilled, an agreement on a successive MOU has not been reached and some obligations still remain. MWRA pays Quincy \$250,000 annually, subject to inflation, for fire protection services for the FRSA.

### **Retirement System Contribution**

The FY05 budget includes a \$3.4 million contribution to MWRA's retirement fund commensurate with the goal to maintain a fully funded retirement system for employees, including approved cost-of-living increases. The contribution is based on the most recent (December 2003) actuarial valuation report, which recommends an increase in contribution over the next three years. The report recommends an increase of \$1.1 million for FY05 and \$1.3 and \$1.5 million, respectively for FY06 and FY07, compared to the FY04 contribution. About \$1.2 million was pre-funded in FY04, lessening the contribution amounts by about \$0.4 million each year for FY05, FY06, and FY07.

## **Community Profile and Assessments**

MWRA provides wholesale water and sewer services to 60 communities. Forty-seven communities purchase water supply services, and 45 communities purchase wastewater transport and treatment services. Thirty-one communities purchase both. Approximately 2.5 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 FY05 CEB, rate revenue from BWSC accounts for 32% of MWRA's total rate revenue. Table I-2, on page I-18, lists MWRA communities, the services received, and MWRA assessments for FY05.

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-3 presents the calculation of MWRA's FY05 rate revenue requirement. The tables show 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 FY05 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 revenue 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 flow, strength, and population. In FY02, MWRA started using three-year averaging of wastewater flows to calculate the flow-related components of wholesale sewer assessments. This averaging moderates year-to-year swings in individual community assessments.

## **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.
- 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.

**TABLE I-3**  
**Calculation of the FY05 Rate Revenue Requirement**  
(\$000s)

	<b>Sewer</b>	<b>Water</b>	<b>Total</b>
<b>Expenses</b>			
<b>Operations and Maintenance Costs:</b>			
Direct Sewer and Water Expenses	\$74,384	\$39,445	\$113,828
<b>PLUS</b>			
<b>Other Costs:</b>			
Allocated Direct Expenses	\$53,514	\$31,757	\$85,271
Allocated Indirect Expenses	9,130	2,395	11,526
<b>PLUS</b>			
<b>Capital Costs:</b>			
Debt Service (Less: Debt Offsets)	\$203,155	\$74,816	\$277,971
Current Revenue/Capital	3,008	1,003	4,010
<b>LESS</b>			
<b>Non-Rate Revenue:</b>			
Investment Income	(\$17,804)	(\$6,330)	(\$24,134)
Fees and Other Revenue	(3,411)	(6,265)	(9,676)
Non-Recurring Revenue	(3,301)	(2,497)	(5,797)
<b>EQUALS</b>			
<b>Rate Revenue Requirement</b>	<b>\$318,675</b>	<b>\$134,325</b>	<b>\$453,000</b>



Table I-2

## MWRA FY05 Water and Sewer Assessments

Combined Water and Sewer Customers	WATER		SEWER		COMBINED	
	Final FY05	% Change from FY04	Final FY05	% Change from FY04	Final FY05	% Change from FY04
ARLINGTON	\$2,865,992	10.8%	5,958,711	2.6%	\$8,824,703	5.1%
BELMONT	\$1,471,679	4.9%	3,549,309	-0.6%	\$5,020,988	1.0%
BOSTON	\$53,033,142	11.0%	91,215,157	3.0%	\$144,248,299	5.8%
BROOKLINE	\$3,955,382	9.4%	9,026,679	-0.6%	\$12,982,061	2.3%
CHELSEA	\$2,344,811	13.9%	4,512,104	-1.8%	\$6,856,915	3.1%
EVERETT	\$3,246,977	13.9%	5,718,406	0.5%	\$8,965,383	5.0%
FRAMINGHAM	\$4,996,070	7.3%	8,456,656	5.5%	\$13,452,726	6.2%
LEXINGTON	\$3,335,122	4.0%	5,178,609	6.6%	\$8,513,731	5.6%
MALDEN	\$3,949,860	14.9%	8,473,032	1.9%	\$12,422,892	5.7%
MEDFORD	\$3,554,923	13.3%	8,512,588	1.1%	\$12,067,511	4.4%
MELROSE	\$1,562,843	-8.5%	4,222,803	6.5%	\$5,785,646	2.0%
MILTON	\$1,888,731	22.3%	3,979,911	1.4%	\$5,868,642	7.3%
NEWTON	\$6,515,253	9.6%	13,938,429	0.4%	\$20,453,682	3.2%
NORWOOD	\$2,092,248	6.9%	4,979,751	4.8%	\$7,071,999	5.4%
QUINCY	\$6,475,002	15.9%	13,381,839	0.9%	\$19,856,841	5.3%
REVERE	\$3,014,714	14.4%	6,746,229	0.3%	\$9,760,943	4.3%
SOMERVILLE	\$4,260,524	9.5%	10,609,499	-0.7%	\$14,870,023	2.0%
STONEHAM	\$1,886,423	-10.9%	3,235,196	-4.7%	\$5,121,619	-7.1%
WALTHAM	\$5,178,280	13.0%	9,410,776	0.0%	\$14,589,056	4.2%
WATERTOWN	\$1,949,102	7.5%	4,315,022	0.3%	\$6,264,124	2.4%
WINTHROP	\$1,007,975	10.6%	2,236,657	0.7%	\$3,244,632	3.6%
<b>TOTAL</b>	<b>\$ 118,585,053</b>	<b>10.4%</b>	<b>\$ 227,657,364</b>	<b>1.9%</b>	<b>\$ 346,242,417</b>	<b>4.7%</b>
<b>Sewer and Partial Water Customers</b>						
CANTON	\$1,491,751	20.5%	2,900,677	0.0%	\$4,392,428	6.2%
NEEDHAM	\$793,683	-25.6%	4,717,014	0.5%	\$5,510,697	-4.4%
STOUGHTON	\$157,250	-40.9%	3,323,046	3.6%	\$3,480,296	0.2%
WAKEFIELD	\$1,234,887	2.8%	4,237,014	-0.1%	\$5,471,901	0.5%
WELLESLEY	\$248,346	6.0%	4,027,020	5.6%	\$4,275,366	5.6%
WINCHESTER	\$626,983	-22.9%	3,020,059	2.2%	\$3,647,042	-3.2%
WOBURN	\$1,311,029	-19.0%	7,798,033	4.0%	\$9,109,062	-0.1%
<b>TOTAL</b>	<b>\$ 5,863,928</b>	<b>-8.9%</b>	<b>\$ 30,022,863</b>	<b>2.4%</b>	<b>\$ 35,886,792</b>	<b>0.4%</b>
<b>Sewer-Only Customers</b>						
ASHLAND			1,472,805	9.6%	1,472,805	9.6%
BEDFORD			2,406,881	4.1%	2,406,881	4.1%
BRAINTREE			5,865,755	2.1%	5,865,755	2.1%
BURLINGTON			3,434,055	3.5%	3,434,055	3.5%
CAMBRIDGE			16,012,292	0.7%	16,012,292	0.7%
DEDHAM			4,354,879	4.4%	4,354,879	4.4%
HINGHAM			1,142,624	4.0%	1,142,624	4.0%
HOLBROOK			1,127,045	4.5%	1,127,045	4.5%
NATICK			3,877,294	5.6%	3,877,294	5.6%
RANDOLPH			4,018,759	2.5%	4,018,759	2.5%
READING			3,022,219	1.7%	3,022,219	1.7%
WALPOLE			2,468,695	3.7%	2,468,695	3.7%
WESTWOOD			1,919,721	4.1%	1,919,721	4.1%
WEYMOUTH			8,047,236	3.7%	8,047,236	3.7%
WILMINGTON			1,824,984	2.8%	1,824,984	2.8%
<b>TOTAL</b>			<b>\$ 60,995,244</b>	<b>2.9%</b>	<b>\$ 60,995,244</b>	<b>2.9%</b>
<b>Water-Only Customers</b>						
LYNNFIELD	\$265,953	-5.5%			\$265,953	-5.5%
MARBLEHEAD	\$1,267,613	6.0%			\$1,267,613	6.0%
NAHANT	\$248,721	12.1%			\$248,721	12.1%
SAUGUS	\$2,264,978	26.7%			\$2,264,978	26.7%
SOUTHBOROUGH	\$454,159	-16.4%			\$454,159	-16.4%
SWAMPSCOTT	\$1,367,427	18.0%			\$1,367,427	18.0%
WESTON	\$999,474	-1.4%			\$999,474	-1.4%
<b>TOTAL</b>	<b>\$ 6,868,326</b>	<b>10.7%</b>			<b>\$ 6,868,326</b>	<b>10.7%</b>
<b>Partial Water-Only Customers</b>						
LYNN	\$211,271	18.9%			\$211,271	18.9%
MARLBOROUGH	\$2,238,284	-14.0%			\$2,238,284	-14.0%
NORTHBOROUGH	\$207,798	48.0%			\$207,798	48.0%
PEABODY	\$349,881	-57.2%			\$349,881	-57.2%
<b>TOTAL</b>	<b>\$ 3,007,234</b>	<b>-19.6%</b>			<b>\$ 3,007,234</b>	<b>-19.6%</b>
<b>SYSTEMS TOTAL</b>	<b>\$ 134,324,541</b>	<b>8.5%</b>	<b>\$ 318,675,472</b>	<b>2.1%</b>	<b>\$ 453,000,013</b>	<b>3.9%</b>

Based on the Final FY05 CEB. Does not reflect the expected receipt of \$8.7 million of DSA in FY05. The net impact of DSA is to reduce the rate revenue percentage increase for FY05 from 3.9% to 1.9% as compared to the FY04 CEB.

## 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 increase in concert with the growth in expenses each year. Member community assessments are the largest source of funds; the amount required in any year is the difference between MWRA expenses and other revenue sources, most notably investment income and previously debt service assistance from the Commonwealth (which directly reduced debt service expense).

MWRA regularly updates its estimates of anticipated revenues and expenses over a multi-year planning horizon. These planning estimates provide a context for budget discussions and a planning tool for MWRA and those affected by its rate revenue requirements and also allows MWRA to consider multiple-year rates management implications and strategies as it evaluates alternative capital and operating budget decisions.

The table below and Appendix E (in more detail) present rate revenue requirements for FY06 through FY14 based on the rate increase for FY05.

improvements, for which there are fewer non-ratepayer sources of funding, and the impact of recent financing strategies will increase MWRA capital financing costs over the next several years.

MWRA employs rates management tools where available -- extended maturities on future borrowings, variable rate debt, and increased use of the 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 growth factor is inflation of base operating costs. The estimated \$48.8 million increase in direct expenses from FY05 to FY14 is primarily the result of an assumed inflation rate of 2.5% annually. In addition, over the next ten years there will be an increase in direct expenses as a result of capital improvement projects. The largest increase will be for operation of new facilities. The Walnut Hill Water Treatment Plant, scheduled to reach full operation in FY05, will have an estimated incremental cost of \$4 million in FY06. Startup and operation of the Union Park Detention and Treatment facility, the Reserved Channel CSO

	Estimates of Future Rate Revenue Requirements (\$ in Millions)									
	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14
<b>RATE REVENUE</b>	\$ 453.0	\$ 483.4	\$ 515.7	\$ 550.3	\$ 585.7	\$ 641.0	\$ 673.3	\$ 708.9	\$ 742.8	\$ 749.8
<b>RATE REVENUE INCREASE</b>	3.9%	6.7%	6.7%	6.7%	6.4%	9.4%	5.0%	5.3%	4.8%	0.9%

Increasing debt service to finance the Capital Improvement Program is the most important factor driving estimates of future budget increases. Over the past seven years MWRA's tax-exempt commercial paper program, debt refinancings, federal grants, SRF loans, and Commonwealth debt service assistance have mitigated the impact on ratepayers of new capital spending. However, new water system

facility, and associated remote odor control facilities have incremental impacts between FY06 and FY09. Improvements to increase remote monitoring and control of wastewater facilities are expected to result in decreased operating costs in FY06 and FY08. The anticipated increases and decreases in costs associated with these capital improvements are shown on Page I-29.

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

- Direct expense inflation rate of 2.5%.
- 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 40-year terms and 6% interest rates.

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 what rate increases will be; 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 ensure that MWRA rate increases will not be higher than projected. The use of conservative assumptions also helps communities plan for future payments to MWRA. Historically, MWRA rate increases have been lower than projected as MWRA and the Advisory Board focused on a particular year.

There are several areas where differences from planning estimate assumptions may reduce projected increases, or where MWRA will have opportunities to decrease costs:

- Lower than anticipated borrowing rates or higher than expected investment income rates.

- The planning estimates do not factor in any positive year-end variances.
- More opportunities for SRF borrowing than expected; a dollar borrowed through the SRF at 2% replaces the need to borrow a dollar long-term at an assumed 6%.
- Debt refinancing opportunities.
- Capital spending.
- Operating expenses.

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

## Capital Improvement Program

Each year MWRA prepares a three-year budget and a ten-year plan for capital spending. After review and comment by the Advisory Board, the Board approves the budget, which remains in effect for one year. MWRA divides the CIP into three program areas: Wastewater, Waterworks, and Business and Operations Support. Program categories are presented in greater detail within this document. MWRA's capital budget, including detailed expenditure forecasts and program descriptions, is available online at [www.mwra.com](http://www.mwra.com).

The FY05 CIP includes 110 ongoing and new projects with estimated costs of approximately \$4.0 billion in FY05 dollars, of which approximately \$2.2 billion was expended through the end of FY04. Projected future expenditures are estimated to be approximately: \$1.0 billion during Fiscal Years 2004 through 2008; \$850 million for Fiscal Years 2009 through 2013, and \$128 million beyond FY 2013.

The chart below presents the CIP budget by capital program areas and program category. Individual project summaries with changes from the Final FY04 CIP are provided later and available on-line at [www.mwra.state.ma.us](http://www.mwra.state.ma.us).

Capital Improvement Program Expenditure Summary											
FY05 CIP (June 2004)											
\$ in Millions											
Program Area	Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	5-Year FY04-08	5-year FY09-13	Beyond FY13
<b>Wastewater System Improvements</b>	1,734.6	664.3	1,070.2	91.6	116.9	116.8	111.5	103.8	540.7	415.8	113.7
Interception & Pumping	761.5	342.5	419.0	30.9	29.9	56.8	36.5	25.7	179.9	166.6	72.5
Treatment	135.7	10.2	125.6	3.2	13.0	14.9	14.6	12.2	57.8	53.4	14.3
Residuals	67.1	56.6	10.5	8.9	0.9	0.0	0.0	0.0	9.8	0.0	0.7
CSO	701.3	205.3	496.0	47.2	68.6	40.3	58.1	63.1	277.3	179.0	39.6
Other	68.9	49.7	19.1	1.4	4.5	4.8	2.4	2.8	15.8	16.8	-13.5
<b>Waterworks System Improvements</b>	<b>2,032.4</b>	<b>1,275.6</b>	<b>756.8</b>	<b>109.1</b>	<b>83.3</b>	<b>58.2</b>	<b>73.7</b>	<b>75.7</b>	<b>400.1</b>	<b>352.1</b>	<b>4.6</b>
Drinking Water Quality Improvements	609.3	386.3	223.0	57.0	32.4	19.3	16.5	10.4	135.7	69.2	18.2
Transmission	789.1	619.4	169.6	10.2	11.2	8.7	5.3	6.1	41.5	89.2	38.9
Distribution And Pumping	605.4	198.6	406.8	28.5	27.7	20.2	42.9	52.1	171.3	174.6	60.9
Other	28.6	71.3	-42.7	13.5	12.1	10.0	8.9	7.1	51.6	19.1	-113.3
<b>Business &amp; Operations Support</b>	<b>58.4</b>	<b>30.6</b>	<b>27.8</b>	<b>2.1</b>	<b>8.0</b>	<b>9.5</b>	<b>5.3</b>	<b>0.9</b>	<b>25.8</b>	<b>2.0</b>	<b>0.0</b>
<b>Total MWRA</b>	<b>3,825.3</b>	<b>1,970.6</b>	<b>1,854.8</b>	<b>202.9</b>	<b>208.2</b>	<b>184.5</b>	<b>190.5</b>	<b>180.4</b>	<b>966.6</b>	<b>769.9</b>	<b>118.4</b>
Contingency	155.0	0.0	155.0	0.0	15.4	14.8	17.3	18.1	65.5	80.0	9.5
<b>Total MWRA with Contingency</b>	<b>3,980.3</b>	<b>1,970.6</b>	<b>2,009.8</b>	<b>202.9</b>	<b>223.6</b>	<b>199.3</b>	<b>207.8</b>	<b>198.5</b>	<b>1,032.1</b>	<b>849.8</b>	<b>127.9</b>

## Wastewater System Improvements

The Wastewater System Improvements program area consists of 48 projects in the five program categories listed below.

capital improvements. The FY05 CIP includes \$135.7 million for these improvements, including \$65 million for equipment and system replacement and upgrades over the next ten years. These improvements are funded through

Program Area	Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	5-Year FY04-08	5-year FY09-13	Beyond FY13
Interception & Pumping	761.5	342.5	419.0	30.9	29.9	56.8	36.5	25.7	179.9	166.6	72.5
Treatment	135.7	10.2	125.6	3.2	13.0	14.9	14.6	12.2	57.8	53.4	14.3
Residuals	67.1	56.6	10.5	8.9	0.9	0.0	0.0	0.0	9.8	0.0	0.7
CSO	701.3	205.3	496.0	47.2	68.6	40.3	58.1	63.1	277.3	179.0	39.6
Other	68.9	49.7	19.1	1.4	4.5	4.8	2.4	2.8	15.8	16.8	-13.5
Wastewater System Improvements	1,734.6	664.3	1,070.2	91.6	116.9	116.8	111.5	103.8	540.7	415.8	113.7

**Interceptor Sewers and Pumping.** The Authority is undertaking, and in some cases has completed, several major projects to rehabilitate, extend and increase the capacity of the interceptor system and its supporting facilities. These projects are necessary because the assets are either approaching or in some cases have surpassed their useful lives, or because their capacity is not adequate to serve the existing or projected service area populations. As they are completed, the new facilities alleviate sewer surcharging and overflow problems. The interceptor sewer and pumping projects total approximately \$761.5 million, of which approximately \$342.5 million was expended through FY03 and approximately \$179.9 million is expected to be expended during the 5-year period ending FY08. The most significant project is the Braintree-Weymouth Relief Facilities project, which includes a deep rock tunnel, two new pump stations, and new interceptors. As of August 1, 2004, the tunnel is 100% complete and overall the project is 80% complete. When major portions of the project are completed in FY05, the project will provide capacity for peak flows from Braintree, Hingham, Holbrook, Randolph, Weymouth, and sections of Quincy. The entire project is expected to be completed in FY07.

**Treatment and Residuals.** As the new Deer Island treatment facilities have become operational, plant staff have assumed responsibility for maintenance and ongoing

the Deer Island Treatment Plant Asset Protection project. The \$65 million amount is an estimate that is refined annually, as additional operational and maintenance information becomes available. To accommodate increased sludge volumes generated by secondary treatment and to increase plant efficiency, the Authority has completed modification of four existing processing trains and added two new trains to its sludge processing facilities in Quincy. Final construction work at the processing plant was completed in December 2001.

**Combined Sewer Overflows.** Discharges of combined wastewater and storm water runoff from 63 CSO outfalls in the Authority's system and four of the service area community systems (Boston, Cambridge, Chelsea and Somerville) impact water quality in the Charles, Mystic and Neponset Rivers and in Boston Harbor. Pursuant to a 1987 stipulation entered in the Clean Water Act Case, the Authority has responsibility for developing and implementing a long-term plan for CSO control at all locations. In the most recent assessment, the Authority completed its Final CSO Facilities Plan and Environmental Impact Report based on the CSO Conceptual Plan. The Final CSO Facilities Plan comprises 25 site-specific projects, including such measures as sewer separation, interceptor improvements, upgrades of existing CSO treatment facilities, new CSO facilities and storage. Schedule Six in the Federal Court Order ("Schedule Six") includes more than 50

milestones directing the design and construction of the projects. The FY05 CIP includes \$701.3 million for planning, design and construction costs of these projects.

Fourteen of the 25 projects are complete, and five additional projects are well into construction. Portions of two of these additional projects, the Cambridge/Alewife Brook Sewer Separation project and the East Boston Branch Sewer Relief project, have been constructed, but the remaining portions are subject to ongoing engineering reassessments and regulatory review to determine the most appropriate approaches to complete the projects and attain CSO control goals, in light of significantly higher cost estimates.

The remaining six projects are in design. Three of these (North Dorchester Bay Conduit, Reserved Channel Conduit, and Reserved Channel CSO Treatment Facility) make up the South Boston CSO plan for which the Authority suspended design work in 2000 pending a full project reassessment due to community opposition to the siting of the CSO treatment facility. The Authority filed a Supplemental Facilities Plan/Environmental Impact Report in April 2004, which presented a new recommended plan for North Dorchester Bay and Reserved Channel. In July 2004, following a public review and comment period, the Massachusetts Secretary of Environmental Affairs issued a certificate on the recommended plan allowing the project to move forward.

## Waterworks System Improvements

Capital projects for the Waterworks System are designed to upgrade and extend the useful life of the water supply, transmission and distribution systems in order to assure a satisfactory and consistent level of water quality and distribution throughout the Waterworks System. There are currently 55 projects in the four program categories several of which are mandated by federal regulatory requirements. The total estimated expenditures for the Waterworks projects for FY04 through FY08, are approximately \$400.1 million. Approximately \$352.1 million in additional expenditures is forecast through FY13, reflecting significant capital investment in the Waterworks System. The major projects in the program are summarized below.

(including water transferred to the Wachusett Reservoir from the Quabbin Reservoir) through ozonation and chloramination. Construction of the treatment plant began in November 2000. When construction and testing are completed in 2005, the Walnut Hill Water Treatment Plant will be able to treat 405 mgd of drinking water.

Because existing uncovered distribution reservoirs are vulnerable to airborne contaminants and allow the growth of bacteria plants and algae, the Authority is eliminating the use of open distribution reservoirs by constructing covered storage facilities. These projects, which have been completed, replace active distribution storage of approximately 2.4 billion gallons of open reservoirs with more than 200 million gallons of covered storage downstream of the Walnut Hill Water Treatment Plant.

Program Area	Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	5-Year FY04-08	5-year FY09-13	Beyond FY13
Drinking Water Quality Improvements	609.3	386.3	223.0	57.0	32.4	19.3	16.5	10.4	135.7	69.2	18.2
Transmission	789.1	619.4	169.6	10.2	11.2	8.7	5.3	6.1	41.5	89.2	38.9
Distribution And Pumping	605.4	198.6	406.8	28.5	27.7	20.2	42.9	52.1	171.3	174.6	60.9
Other	28.6	71.3	-42.7	13.5	12.1	10.0	8.9	7.1	51.6	19.1	-113.3
Waterworks System Improvements	2,032.4	1,275.6	756.8	109.1	83.3	58.2	73.7	75.7	400.1	352.1	4.6

**Drinking Water Quality Improvements.** The Authority is implementing an Integrated Water Supply Improvement Program for drinking water improvement. This program consists of aggressive watershed protection, modernized treatment facilities, and distribution system improvements including construction of covered storage facilities and pipeline rehabilitation. This program is based on current engineering practices, up-to-date technology and drinking water standards established under state and federal laws. Pursuant to an administrative consent order entered into with DEP and DCR with respect to the enforcement of the SDWA and the rules promulgated thereunder, the Authority is constructing the new Walnut Hill Water Treatment Plant. The plant will treat water delivered from the Wachusett Reservoir

Total estimated costs for drinking water quality improvements in the FY05 CIP are approximately \$609.3, of which \$429.4 million is for water treatment, and \$179.9 million is for covered storage facilities and watershed protection. Approximately \$386.3 million was expended through FY03 for these projects, and approximately \$135.7 million is expected to be expended during FY04 through FY08.

**Transmission.** Critical needs of the Authority's aqueduct system include correction of structural conditions to reduce leakage, and provision of redundancy for critical sections of the transmission system, such as the Hultman Aqueduct and the Southborough Tunnel, where transmission has depended on a single conduit. The estimated costs for transmission projects included in the FY05 CIP total \$789.1 million, of

which approximately \$619.4 million was expended through FY03, and approximately \$41.5 million is expected to be expended during Fiscal Years 2004 through 2008.

The most significant of the Authority's transmission projects is the construction of the MetroWest Water Supply Tunnel, a 17.6-mile long, 14-foot diameter deep rock tunnel running from Marlborough to Weston. The MetroWest Water Supply Tunnel is critical to provide an appropriate level of transmission redundancy and is a key element of the planning, design and eventual operation of the water treatment plant and covered distribution storage projects described above. Construction of the tunnel, which began in June 1996, is complete and the tunnel was placed in service in November 2003.

**Distribution and Pumping.** The FY05 CIP identifies 27 separate projects for rehabilitation, upgrade or new construction of pipelines, pumping facilities, valves and meters. These projects total approximately \$605.4 million, of which approximately \$198.6 million was expended through FY03, and approximately \$171.3 million is expected to be expended during FY04 through FY08. Over the next 30 years, approximately 200 miles of unlined pipe will be rehabilitated or replaced at a rate of approximately seven miles of pipe each year. These projects will provide improved reliability and safety of water delivery.

**Other Waterworks Projects.** These projects include expansion of the Waterworks System's central monitoring system, various system rehabilitation projects and two local community waterworks assistance programs. The total cost of these projects as contained in the FY05 CIP is approximately \$28.6 million.

### **CIP Impact on the 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 and the residuals processing facility in Quincy resulted in significant increases in operating expenses. The largest future increase results from a full operating year for the new Walnut Hill Water Treatment Plant which is expected to start up in mid FY05. Other increases result from the cost of operating CSO facilities beginning in FY06 and again in FY07 and FY10. Startup of the Braintree-Weymouth Relief Facilities results in anticipated decreases starting in FY05 through FY10. Projects to automate wastewater central monitoring result in anticipated decreases in FY07 through FY09.

The table below summarizes, by program area, the estimated incremental costs and savings in MWRA's Current Expense Budget from FY06 through FY14 as a result of the capital program.



## **Capital Financing and Grant Revenues**

MWRA has used two primary sources of funds to finance its capital program: proceeds from borrowing and grant funds. Borrowing includes 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.

In the past, federal and state grant receipts were a significant source of funds, totaling an estimated \$1.1 billion through December 2003 or 20% of spending for the period. Grant receipts of \$4.6 million and \$1.1 million in FY03 and FY04, respectively; amount to less than 1% of budgeted spending for the two years. After netting out grant revenue, MWRA expects to finance \$688 million in capital projects through long-term debt, SRF loans, and commercial paper over the next three fiscal years.

## **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, retained ownership of real property, including the reservoirs and watersheds.

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

### **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 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 \$425 million per year over the last thirteen years (FY91 to FY03). 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 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. In FY03, with the elimination of debt service assistance, MWRA had a 6.9% rate increase as part of an overall strategy in response to the loss. The FY04 rate increase was 3.9% and the rate increase for FY05 is 3.9%. In the planning estimates included with the CEB the rate revenue requirement, assuming debt service assistance is not restored, increases by 6.7% annually for the next three years.

With the prospect of higher rate increases in the future, MWRA must ensure that its operating

and capital costs are kept to a minimum, and that every dollar adds to the value of water and sewer services. MWRA has taken several steps toward this end.

- First, MWRA works to limit increases in ongoing operating costs. The FY05 direct expense budget increases 2% compared to the FY04 budget, largely due to increases for maintenance and utilities. Maintenance expenses increase by \$1.6 million reflecting MWRA's commitment to maintain its facilities.
- Second, MWRA uses a variety of financing tools including variable rate debt, tax-exempt commercial paper, interest rate swaps, refundings, and tender offers to take advantage of particular market conditions, and appropriate maturity schedules to reduce annual debt service costs.
- Third, MWRA continues to aggressively seek additional SRF assistance.
- Fourth, MWRA uses rate stabilization funds and bond redemption funds in the context of its longer-term rate smoothing strategy.
- Fifth, MWRA seeks to maximize savings in the deregulated electricity market, and continues to explore reorganization opportunities.
- Finally, MWRA is working to reduce labor costs wherever appropriate. The proposed FY05 budget year-end staffing target is 1,298 filled positions, 17 positions less than the overall Black and Veatch target of 1,315 for FY05. Nonetheless, the target represents a decrease of 477 or 27% filled positions from peak staffing in 1997, an average reduction of 60 positions per year.

In addition to carefully managing operating costs, MWRA will continue to explore additional

financing strategies to manage assessment increases in a fiscally responsible manner.

## **MWRA Organization**

MWRA has five divisions. Each division provides operations or support services to carry out MWRA's activities under the direction of the Executive Office. The frontispiece of this document presents MWRA's organizational structure.

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. MWRA recently consolidated its planning functions into a new Planning and Coordination Department reporting to the Executive Office.

The ***Planning and Coordination Department*** provides decision support on planning, policy and operations matters, using a range of technical and analytic tools. It provides regulatory, public policy and public health advocacy for MWRA's drinking water and wastewater programs and administers financial assistance programs to improve the infrastructure of member communities.

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 **Finance Division** is responsible for budgeting, rate setting, accounting, grants

management, risk management, and treasury activities; and securing financing to support the capital improvement program.

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 **Support Services Division** oversees the central functions of communications and community relations, real property and environmental management, human resources, affirmative action, procurement, materials warehousing, facility security, occupational health and safety, internal audit, fleet services, computer system development and management, facilities and office supplies management, library and records management, and mail and employee shuttle services. The division also manages the Fore River Staging Area (FRSA) in Quincy, the Chelsea Facility and the Charlestown headquarters.

### **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 Acceptable Accounting Principles (GAAP) and, commencing with the annual reports for 1986, audited by independent certified public accountants. MWRA's audited financial statements at June 30, 2004 and 2003 are available online at [www.mwra.com](http://www.mwra.com).



Executive Office  
Budget

## EXECUTIVE OFFICE

Final FY05 Current Expense Budget EXECUTIVE DIVISION by Line Item						
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
WAGES & SALARIES	\$ 790,525	\$ 430,845	\$ 443,803	\$ 428,072	\$ (15,731)	-3.5%
OVERTIME	82	-	-	-	-	
TRAINING & MEETINGS	2,993	36	39	3,975	3,936	10092.3%
PROFESSIONAL SERVICES	286,188	196,597	152,867	157,590	4,723	3.1%
OTHER MATERIALS	4,567	2,031	1,818	2,460	642	35.3%
OTHER SERVICES	455,103	457,060	470,137	450,081	(20,056)	-4.3%
<b>TOTAL</b>	<b>\$ 1,539,458</b>	<b>\$ 1,086,569</b>	<b>\$ 1,068,664</b>	<b>\$ 1,042,178</b>	<b>\$ (26,486)</b>	<b>-2.5%</b>

Final FY05 Current Expense Budget EXECUTIVE DIVISION by Department						
DEPARTMENT	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
EXECUTIVE OFFICE / BOARD OF DIRECTORS	\$ 942,671	\$ 481,349	\$ 448,779	\$ 438,477	\$ (10,302)	-2.3%
ADVISORY BOARD / OTHER COMMITTEES	596,787	605,220	619,885	603,701	(16,184)	-2.6%
<b>TOTAL</b>	<b>\$ 1,539,458</b>	<b>\$ 1,086,569</b>	<b>\$ 1,068,664</b>	<b>\$ 1,042,178</b>	<b>\$ (26,486)</b>	<b>-2.5%</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 is also implementing a centralized MWRA-wide security program to preserve and protect MWRA facilities and systems and MWRA employees.

The Executive Office guides implementation of MWRA's Business Plan and ensures that all initiatives are in concert with MWRA's overall mission. At its September 17, 2003 meeting, the Board of Directors approved organizational changes to MWRA's planning functions. These changes consolidate separate planning activities mostly from the Operations and Finance divisions. The new unit will report to the Executive Director through a single Director of Planning and Coordination. Responsibility for the Combined Sewer Overflow (CSO) program, previously part of Operations Planning, will remain with the Operations Division.

Executive Office goals are to:

- 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.
- Foster regional economic development through the maintenance and upgrading of the area's water and sewer systems.

The Executive Office budget supports the Executive Director's Office (which includes the Board of Directors cost center) and the MWRA Advisory Board and Advisory Committees cost center. 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 proposed FY05 direct expense budget.

***Budget Highlights***

- *\$158,000 for **Professional Services**, level funded from FY04. The budget funds the Water Supply Citizens' Advisory Committee and the Wastewater Advisory Committee.*
- *\$446,000 for the MWRA Advisory Board staff and operating expenses, including space rental and general administrative office materials and supplies.*

## PLANNING DEPARTMENT

Final FY05 Current Expense Budget PLANNING DIVISION by Line Item					
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04
WAGES & SALARIES	\$ -	\$ -	\$ 1,202,514	\$ 1,692,358	\$ 489,844
OVERTIME	-	-	180	-	(180)
TRAINING & MEETINGS	-	-	4,183	20,304	16,121
PROFESSIONAL SERVICES	-	-	-	20,000	20,000
OTHER MATERIALS	-	-	1,348	164,975	163,627
OTHER SERVICES	-	-	251,692	166,303	(85,389)
<b>TOTAL</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,459,917</b>	<b>\$ 2,063,940</b>	<b>\$ 604,023</b>

As previously noted, MWRA recently consolidated its planning functions into a new Planning Department that reports to the Executive Office. The 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 analytic tools. Staff administer financial assistance programs to improve the infrastructure of member communities. 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 develop and maintain 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; provide demand analysis and forecasting of water and wastewater flows for master planning and system operations; model reservoir operations, perform drought forecasting and planning, and evaluate system expansion requests; and develop and maintain water and sewer system models in support of master planning, system operations, and optimization.

**System Planning and Renewal.** Staff with expertise in engineering, planning and finance are responsible for water and wastewater system master planning, infrastructure needs assessment, and capital project development. This work is done in coordination with staff across MWRA. Planning and Coordination staff review and process system expansion requests, water supply agreements, and emergency connection requests. Staff also provide assistance to 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 rule-setting that protects the environment and promotes public health in a cost-effective way. Senior staff members activity 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. Staff conduct public health research, including outreach and water quality reporting and the annual Consumer Confidence Report (CCR). Staff also coordinate with DCR to ensure water protection.

**Community Support Program.** Staff are responsible for inflow/infiltration (I/I) and sanitary sewer overflows (SSO) policy development, implementation, and reporting, provide oversight of and reporting on MWRA leak detection regulations and demand management programs, and reporting on the portions of MWRA’s NPDES permit related to demand management and flow limitation activities. Staff administer community assistance programs including sewer inflow/infiltration financial and technical assistance, water pipeline rehabilitation financial assistance, water distribution systems Best Management Practices technical assistance, and water leak detection technical assistance.



**Budget Highlights**

- \$1.7 million for **Wages and Salaries**, a decrease of \$470,000 or 21.7% from FY04 budget, due to the recent consolidation.
- \$165,000 for **Other Materials**, an increase of \$118,000 from the FY04 budget, primarily due to the mailing and distribution of the federally mandated Consumer Confidence Report (CCR), previously included in the Other Services line item.
- \$168,000 for **Other Services**, a decrease of \$90,000 from the FY04 budget due to the allocation of funds for the mailing and distribution of the CCR to Other Materials line item. The proposed FY05 budget includes \$123,000 for the production of the CCR, for combined funding of \$244,318.



Operations Division  
Budget

## OPERATIONS DIVISION

Final FY05 Current Expense Budget OPERATIONS DIVISION by Line Item						
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
WAGES & SALARIES	\$ 63,941,259	\$ 59,876,891	\$ 58,432,405	\$ 59,919,746	\$ 1,487,341	2.5%
OVERTIME	4,065,742	3,264,743	3,631,487	3,347,948	(283,539)	-7.8%
FRINGE BENEFITS	96,924	75,499	84,769	79,927	(4,842)	-5.7%
WORKERS' COMPENSATION	1,323,614	3,145,492	(244)	-	244	-
CHEMICALS	6,403,105	6,674,253	6,190,167	6,913,154	722,987	11.7%
UTILITIES	15,556,711	16,071,081	17,337,465	18,161,523	824,058	4.8%
ONGOING MAINTENANCE	12,477,204	13,878,580	14,953,854	15,838,562	884,708	5.9%
TRAINING & MEETINGS	192,326	75,998	134,060	193,204	59,144	44.1%
PROFESSIONAL SERVICES	5,310,055	5,493,100	4,797,618	4,841,022	43,404	0.9%
OTHER MATERIALS	3,209,664	2,284,366	3,852,233	3,301,794	(550,439)	-14.3%
OTHER SERVICES	15,314,685	15,106,669	15,627,752	15,165,695	(462,057)	-3.0%
<b>TOTAL</b>	<b>\$ 127,891,289</b>	<b>\$ 125,946,672</b>	<b>\$ 125,041,566</b>	<b>\$ 127,762,575</b>	<b>\$ 2,721,009</b>	<b>2.2%</b>

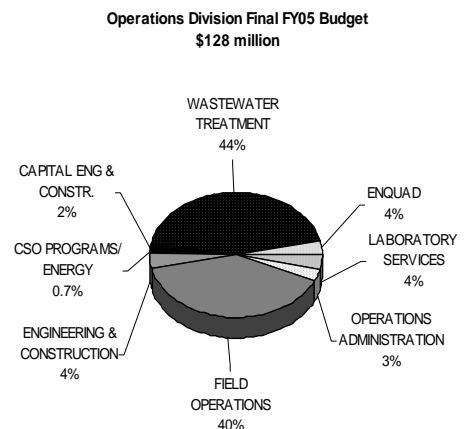
Final FY05 Current Expense Budget OPERATIONS DIVISION by Department						
DEPARTMENT	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
OPERATIONS ADMINISTRATION	\$ 5,854,183	\$ 6,528,592	\$ 4,388,375	\$ 3,715,982	\$ (672,393)	-15.3%
CSO PROGRAMS/ENERGY	3,060,091	2,803,473	1,401,931	950,968	(450,963)	-32.2%
WASTEWATER TREATMENT	54,127,719	53,838,758	55,923,448	55,833,130	(90,318)	-0.2%
FIELD OPERATIONS	45,753,462	45,562,263	46,608,310	50,475,116	3,866,806	8.3%
LABORATORY SERVICES	4,717,716	4,404,807	4,724,112	4,999,648	275,536	5.8%
ENQUAD	5,130,613	5,479,579	4,740,856	4,586,897	(153,959)	-3.2%
ENGINEERING & CONSTRUCTION	6,479,639	5,130,527	4,992,108	4,848,975	(143,133)	-2.9%
CAPITAL ENG & CONSTR.	2,346,803	2,198,673	2,262,426	2,351,861	89,435	4.0%
<b>TOTAL</b>	<b>\$ 127,891,289</b>	<b>\$ 125,946,672</b>	<b>\$ 125,041,566</b>	<b>\$ 127,762,575</b>	<b>\$ 2,721,009</b>	<b>2.2%</b>

FY02-FY04 Actuals for the CSO Programs/Energy represent the former Operation Planning Department.

The Operations Division integrates wastewater and water system operations and maintenance, treatment, laboratory services, and engineering and construction functions, including the Combined Sewer Overflow (CSO) plan. At its September 17, 2003 meeting, the Board of Directors approved organizational changes to MWRA's planning functions. The changes resulted in the consolidation of separate planning activities, mostly from Operations and Finance, into a newly formed department called the Planning Department; and also the formation of another department called CSO Program/Energy for managing CSO and energy related programs. The new Planning Department reports to the Executive Director through the Director of Planning; and the CSO Program/Energy Department, which is part of the Operations Division, reports to the Chief Operating Officer through the Manager of CSO Program/Energy.

The Final FY05 Current Expense Budget and existing structure of the Operations Division is shown in the pie chart to the right and described below.

The **Wastewater Treatment Department**, which accounts for 44% of the Operations Division budget, operates and maintains the Deer Island and Clinton wastewater treatment plants and the residuals processing facility at Fore River.



The **Field Operations Department**, which accounts for 40% 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.

Three departments in the Operations Division are responsible for the majority of the division's engineering and construction work. The **Engineering and Construction Department** manages and coordinates the planning, design, and construction of ongoing system improvements in the wastewater transport and treatment and water distribution systems. The **Capital Engineering and Construction Department (CECD)** is responsible for managing engineering, design and construction of the Integrated Water Supply Improvement Program (IWSIP), which includes the Walnut Hill Treatment Plant, the MetroWest Water Supply Tunnel, and seven covered storage facilities. CECD is also responsible for the planning, design, and construction of the program to rehabilitate MWRA's other water treatment, transmission and storage facilities as well as large water distribution mains. The **CSO/Energy Department** manages the CSO's, which includes long-term CSO central master planning and evaluation; CSO project permitting, community process, and engineering design; technical assistance during construction of MWRA managed CSO projects; oversight of community managed CSO design and construction activities; and start-up assistance for new CSO facilities. The department is also responsible for Authority-wide energy initiatives.

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, providing 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, personnel, and planning. The Administration Department budget also includes funds for MWRA vehicle purchases and certain division-wide memberships.

The Operations Division's goals are to:

- Plan, develop, implement, and operate efficient, reliable, and economical water treatment and delivery and wastewater transport and treatment systems.
- Ensure compliance with state and federal drinking water quality and wastewater discharge regulations including the 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.

## **Major FY04 Accomplishments**

### ***Deer Island:***

- Full compliance with NPDES permit since August 2002.
- Rehabilitation of grit facility: Nearly completed, it has resulted in 18 times more grit removal compared to FY03.
- Disinfection process improvements: Dosing for sodium hypochlorite and sodium bisulfate was reduced by 13% and 35%, respectively in comparison with FY03 as a result of installing new instrumentation equipment, which provides better one-line operational control.
- Energy management: Deer Island had earned \$871,000 in revenue from the sale of Renewable Portfolio Standard Credits for electricity. These credits are issued to environmentally friendly companies that use qualified bi-products of their operations as a source of energy. Deer Island's digester gas used to fuel the steam turbine generators to produce electricity qualifies for this program. The earned credits are sold on the open market to other power companies to balance their required portfolios. Deer Island is also participating in the Independent System Operators of New England (ISO/NE) price response program, which compensates large energy users for monitoring and controlling their electrical consumption in response to New England power grid demands and real-time market prices. By using its combustion turbine generators to produce electricity during high price events, Deer Island realized a net economic gain of \$413,000.
- Light preventive maintenance: One of Deer Island's productivity initiatives is to decrease overall maintenance backlog through preventive maintenance (PM), including light maintenance done by operations staff. Light maintenance performed by operations staff accounts for about 13% of total preventive maintenance, exceeding the 10% goal.
- Reliability Centered Maintenance (RCM) analysis: RCM continues to optimize the PM program for critical equipment. Forty-three RCM analyses have been completed with an estimated PM hour reduction of 10%.
- Condition Monitoring program: The program was expanded in FY04. Trade staff was trained in precision laser alignment, oil analysis, vibration monitoring, and acoustic ultrasonic use. Condition monitoring tasks have been added into Maximo and savings have been realized from preventing equipment failures.

### ***Field Operations Department:***

- Start-up and operation of the MetroWest Tunnel and completion of two cells of the Norumbega Covered Storage facilities in November 2003.
- Start-up of the Squantum Pump Station in September 2003
- Procurement and commencement of a new Wastewater metering system in November 2003.
- Implementation of the Wastewater Operation Control Center (OCC) staffing plan and start-up in December 2003.
- Advertising for the new design contract for the rehabilitation of five water pump stations in February 2004.
- Improved industry and municipal compliance regarding discharge of sulfite, sulfide and BOD into the sewer system.
- Shut down of Fore River Staging Area (FRSA) operations and consolidation of staff at Chelsea facility.

### ***Laboratory Services:***

- Brought in-house the bulk of the laboratory testing for the Harbor and Outfall Monitoring (HOM) program required for Deer Island's NPDES permit, including the collection of bacteria samples in Massachusetts Bay using the MWRA sampling boat. This is being accomplished without an increase in laboratory staffing.

## ***ENQUAD:***

- Environmental Protection Agency (EPA) and Department of Environmental Protection (DEP) approved modifications to the outfall monitoring plan design that will save MWRA more than \$2,000,000 over the term of the outfall monitoring contract.

## ***Capital Engineering and Construction:***

- Start-up of the MetroWest Water Supply Tunnel (MWWST) and two cells of the Norumbega Covered Storage facilities in November 2003.
- Completion of Cosgrove Tunnel Shaft C Connection to the Walnut Hill Water Treatment Plant (November 2003 to March 2004).
- Substantial completion of several construction contracts including Walnut Hill WTP Construction Package 1 (Rehabilitation at Cosgrove and Wachusett intake facilities), the last of the Weston Aqueduct Supply Main (WASM) 1 contracts, Chestnut Hill Connecting Mains project, and Micro Communication System-wide Backbone project.
- Completion of the Quabbin UV demonstration plant construction and start-up of the plant in January 2004.
- Completion of several studies and designs including AWWARF Red Water Control Strategy and UV/Ozone Disinfection Effectiveness studies, MWWST CP-6 Preliminary design, and WASM 3 Section 12 Rehabilitation design.

## **FY05 Initiatives**

### ***Deer Island:***

- Start-up of Braintree Weymouth sludge pumping scheduled for November 2004.
- Ancillary Modifications Projects: Winthrop screening, residuals area upgrades, south system pump station electrical modifications, and improvements to the secondary treatment process area.
- Implementation of new DEP air permit requirements.
- Continued implementation of the comprehensive energy management plan, including:
  - Procurement of electricity (current contract expires November 2004);
  - Continued participation in the Renewable Portfolio Standard program;
  - Continued participation in the ISO/NE Price Response program.
- Continued optimization of chemical and utility processes.
- Continued implementation of the Reliability Centered Maintenance (RCM) program.
- Continued expansion of the existing condition monitoring program and the addition of training and use of infrared thermography.
- Continuation of Safety and Security initiatives.
- Installation of permanent vibration and temperature monitoring for critical rotating equipment.

### ***Field Operations Department:***

- Start-up the Walnut Hill Treatment Plant in January 2005.
- Start-up of the Braintree Weymouth Intermediate Pump Station (IPS) scheduled for November 2004.
- Complete the Norumbega Covered Storage Facility (3<sup>rd</sup> cell).
- Complete installation of the new Wastewater Metering System.
- Create, train, and implement activities of the Emergency Response Unit
  - Install all emergency response water quality devices.

- Continue to implement wastewater SCADA program.
- Develop a more rigorous Field Operations process for identifying long-term capital improvements.
- Continued development of preventative maintenance program, staffing needs and reporting.

### ***Laboratory Services:***

- Subject to the approval of the proposed Memorandum of Understanding, bring in-house microbiology laboratory testing for the Department of Conservation and Recreation (DCR) - formerly the Metropolitan District Commission - including operating the DCR laboratory at Quabbin Reservoir. This includes performing at the MWRA Southborough laboratory the laboratory testing previously performed at the MDC West Boylston laboratory.
- Relocate the Somerville Laboratory to the Chelsea facility.
- Work with the Management Information Systems Department (MIS) to competitively bid a replacement for the 10-year old Laboratory Information Management System (LIMS).
- In July 2004, began to accept microbiology samples from the DCR to support the management of the Quabbin and Wachusett Reservoirs.

### ***ENQUAD:***

- Maintain compliance with the reporting requirements of MWRA's NPDES permits for the Deer Island and Clinton treatment plants.
- Ensure that the permit-required outfall monitoring meets NPDES requirements, is scientifically credible, and is cost-effective.
- Monitor the effects of the Boston Harbor Project and MWRA's CSO Plan and provide data and assistance for CSO planning and compliance with regulatory requirements.
- Communicate results of monitoring to MWRA management, scientists, regulators, and the public.
- Submit the application for a new Deer Island Treatment Plant (DITP) discharge permit. The current permit expires in August 2005.
- Release the Request For Proposals (RFP) for the next outfall monitoring contract, based on modified design.

### ***Capital Engineering and Construction:***

- Start-up the third cell of the Norumbega Covered Storage facilities and Walnut Hill Water Treatment Plant.
- Initiation of several construction contracts including Walnut Hill WTP Construction Package 6 (Final Site Work), Replacement of WASM 3 Section 12, CVA Redundancy Pipeline, the last of the WASM 2 and Spot Pond Supply Main pipeline projects, and Oakdale Power Station Phase 1 Rehabilitation project.
- Substantial completion of several construction contracts including the last of the WASM 4 contracts and Waterworks Microwave Communication Systems (Phase 2) project.
- Initiation of several study and design projects including the Sudbury Aqueduct Rehabilitation study, Quabbin Transmission Facilities study, Walnut Hill WTP Construction Package 7 (Modifications of Existing Waterworks Facilities) design, and Chestnut Hill Connecting Mains-Final Connections preliminary design.
- Completion of Blue Hills Reservoir wetland permitting and issuance of the Design Build RFP.

### ***CSO Program/Energy:***

- Commence CSO design plans for North Dorchester Bay and East Boston.
- Prepare and execute power procurement contracts for Walnut Hill, Deer Island and the Field Operations facilities.

## OPERATIONS ADMINISTRATION

Final FY05 Current Expense Budget OPERATIONS ADMINISTRATION							
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04		
WAGES & SALARIES	\$ 3,155,964	\$ 2,762,719	\$ 2,499,709	\$ 2,409,814	\$ (89,895)		-3.6%
OVERTIME	2,974	123	-	-	-		-
FRINGE BENEFITS	83	-	-	-	-		-
WORKERS' COMPENSATION	1,323,614	3,145,492	(244)	-	244		-
ONGOING MAINTENANCE	-	(3,452)	19,752	-	(19,752)		-100.0%
TRAINING & MEETINGS	8,571	1,736	1,803	10,904	9,101		504.8%
PROFESSIONAL SERVICES	277,396	9,854	4,088	-	(4,088)		-100.0%
OTHER MATERIALS	641,907	125,526	1,598,907	1,031,186	(567,721)		-35.5%
OTHER SERVICES	443,674	486,594	264,360	264,078	(282)		-0.1%
<b>TOTAL</b>	<b>\$ 5,854,183</b>	<b>\$ 6,528,592</b>	<b>\$ 4,388,375</b>	<b>\$ 3,715,982</b>	<b>\$ (672,393)</b>		<b>-15.3%</b>

The Operations Administration Department consists of the Chief Operating Officer, the Deputy Chief Operating Officer, and administrative staff who provide overall policy and program direction and support for Operations Division personnel, labor relations, finance, contract administration, and invoice processing functions. The Operations Administration budget also includes funding for division vehicle purchases and certain division-wide memberships.

### **Budget Highlights**

- \$2.4 million for **Wages and Salaries**, which represents 65% of the total FY05 budget. The \$90,000 or 4% decrease from the FY04 year-end actual reflects four fewer positions funded in FY05 based on estimated attrition.
- \$1,031,000 for **Other Materials**, a decrease of \$568,000 or 36% less than FY04 actual spending. Other Materials represents 28% of the total budget. The majority of the expenses are for the authority-wide vehicle replacement program (\$1,016,000). The past three years of actual vehicle and equipment purchases were:  
FY02: \$622,000  
FY03: \$120,000  
FY04: \$1,580,000

*From FY00 to FY03, MWRA limited replacement of vehicles pending completion of an extensive fleet review. In FY03 the active fleet was reduced by more than 10% (from 561 to 496 vehicles) as a result of this program. Staff identified opportunities to meet the needs of the new waterworks system facilities through redeployment of existing vehicles, rather than adding to the fleet. The \$1.6 million actual spending for FY04 includes accelerated purchase of 26 vehicles initially planned for FY05 at an estimated cost of \$560,000.*

- \$264,000 for **Other Services**, which is 7% of the total FY05 Administration budget, and includes \$263,000 for authority-wide memberships.



## CSO PROGRAMS/ENERGY

Final FY05 Current Expense Budget CSO PROGRAMS/ENERGY							
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04		
WAGES & SALARIES	\$ 2,612,671	\$ 2,266,275	\$ 1,330,025	\$ 883,744	\$ (446,281)		-33.6%
OVERTIME	3,135	1,905	988	1,900	912		92.3%
FRINGE BENEFITS	90	72	57	45	(12)		-21.1%
UTILITIES	16	41	-	-	-		-
ONGOING MAINTENANCE	16,222	74,587	-	-	-		-
TRAINING & MEETINGS	21,110	3,675	8,138	5,316	(2,822)		-34.7%
PROFESSIONAL SERVICES	74,809	30,849	17,916	50,000	32,084		179.1%
OTHER MATERIALS	39,565	33,112	26,134	3,184	(22,950)		-87.8%
OTHER SERVICES	292,473	392,957	18,673	6,779	(11,894)		-63.7%
<b>TOTAL</b>	<b>\$ 3,060,091</b>	<b>\$ 2,803,473</b>	<b>\$ 1,401,931</b>	<b>\$ 950,968</b>	<b>\$ (450,963)</b>		<b>-32.2%</b>

Budget and actuals for FY02-FY04 represent the former Operations Planning Department.

The CSO Program/Energy Department was formed in November 2003 as a result of Board of Directors approved organizational changes to MWRA's planning functions. The CSO Program/Energy Department, which was formerly part of the Operations Planning Department, comprises the following programs:

**Combined Sewer Overflows Program** is responsible for the \$645 million CSO control plan. Responsibilities include long-term CSO control master planning and evaluation; CSO project permitting; engineering design; technical assistance during construction of MWRA managed CSO projects; oversight of community managed CSO design and construction activities; and start-up assistance for new CSO facilities. It is anticipated that this program will phase-out upon completion of the CSO capital program with key functions integrated into the rest of the organization.

**Energy Program** is responsible for implementation of authority-wide energy improvement initiatives, a comprehensive energy strategy, and evaluation of various options for purchasing electricity.

### Budget Highlights

- \$884,000 for **Wages and Salaries**, which represents 93% of the total FY05 budget. The decrease from FY04 spending reflects the restructuring of the department in October 2003, when 21 people were transferred to the newly created Planning Division from the former Operations Planning Department. The FY04 actual includes four months (Jul-Oct 03) of salaries (\$450,000) for the transferred personnel.
- \$50,000 or 5.3% of the total FY05 budget for **Professional Services** for an energy consultant to support the resolution of authority-wide energy issues. This is a \$32,000 or 179% increase over FY04 actual.

## WASTEWATER TREATMENT

Final FY05 Current Expense Budget WASTEWATER TREATMENT						
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
WAGES & SALARIES	\$ 16,534,740	\$ 15,381,303	\$ 14,923,865	\$ 15,559,752	\$ 635,887	4.3%
OVERTIME	1,529,721	925,479	1,138,132	1,007,750	(130,382)	-11.5%
FRINGE BENEFITS	40,450	21,098	27,844	19,859	(7,985)	-28.7%
CHEMICALS	3,182,544	3,378,941	2,728,690	2,815,696	87,006	3.2%
UTILITIES	10,667,776	10,932,336	11,979,324	11,340,510	(638,814)	-5.3%
ONGOING MAINTENANCE	7,854,613	9,343,432	9,601,769	9,982,895	381,126	4.0%
TRAINING & MEETINGS	70,430	37,067	38,346	79,391	41,045	107.0%
PROFESSIONAL SERVICES	780,663	850,257	1,001,608	1,100,988	99,380	9.9%
OTHER MATERIALS	598,588	493,081	398,500	462,323	63,823	16.0%
OTHER SERVICES	12,868,194	12,475,764	14,085,370	13,463,965	(621,405)	-4.4%
<b>TOTAL</b>	<b>\$ 54,127,719</b>	<b>\$ 53,838,758</b>	<b>\$ 55,923,448</b>	<b>\$ 55,833,130</b>	<b>\$ (90,318)</b>	<b>-0.2%</b>

Final FY05 Current Expense Budget WASTEWATER TREATMENT by Facility						
FACILITY	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
DEER ISLAND	\$ 39,497,258	\$ 39,559,412	\$ 40,325,656	\$ 40,868,139	\$ 542,483	1.3%
RESIDUALS	13,700,725	13,360,145	14,602,892	13,924,323	(678,569)	-4.6%
CLINTON	929,736	919,201	994,900	1,040,668	45,768	4.6%
<b>TOTAL</b>	<b>\$ 54,127,719</b>	<b>\$ 53,838,758</b>	<b>\$ 55,923,448</b>	<b>\$ 55,833,130</b>	<b>\$ (90,318)</b>	<b>-0.2%</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 comprise 44% of the Operations Division's final FY05 budget and 32% of MWRA's final FY05 direct expense budget.

The **Deer Island Treatment Plant** budget accounts for 32% of the Operations Division's final FY05 budget. DITP has a primary treatment peak capacity of 1.27 billion gallons per day (bgd) and secondary treatment peak capacity of 495 million gallons per day (mgd).

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 therefore 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 barged to MWRA's residuals processing facility at Fore River. Methane, a by-product of anaerobic digestion, is used to fuel the plant's boilers, which produce steam to provide heat and generate electricity.

In FY05 major operational changes will occur regarding sludge processing at Deer Island, transportation of sludge to Fore River, and sludge processing at the third party contractor, the New England Fertilizer Company (NEFCo). The new Braintree Weymouth cross-harbor tunnel is scheduled to start-up in November 2004. Once the tunnel comes on-line, the current practice of thickening and barging sludge from Deer Island to Fore River will cease, and a much lower concentration of sludge (about half of the current 5.5% average total suspended solids) will be pumped from Deer Island to NEFCo for processing.

## Deer Island Operating Assumptions for Fiscal Year 2005

An average of 357 million gallons per day, based on a 5-year running average, is assumed for the combined flows of the north and south systems with secondary treatment capacity of 495 million gallons per day.

Sludge quantities for FY05 are assumed to average 98.8 tons per day of total solids (TS), which equals 95.6 tons per day of total suspended solids (TSS) of residuals processing. Sludge production is estimated to be 91.5 tons per day before the Braintree Weymouth tunnel is on-line and 97.7 tons per day after the tunnel is on-line. The assumed average solids content for digested sludge is 5.5% before the Braintree Weymouth tunnel comes on line, scheduled for November 1, 2004, and 2% - 3% after the tunnel is on-line.

### Budget Highlights

- \$15.0 million for **Wages and Salaries** represents 36.7% of the Deer Island FY05 budget, of which \$14.7 million is for regular pay to fund 249 positions. The budget includes \$53,000 for interns and \$27,000 for one temporary employee. The \$631,000 increase from the FY04 actual reflects the expected hiring of vacant positions.
- \$954,000 for **Overtime** represents 2.3% of the FY05 budget, and is a \$121,000 or 11.3% decrease from the FY04 actual. The decrease is due to the completion of the Performance Improvement Program (PIP) training in FY04 and a slight reduction in maintenance overtime.
- \$2.7 million or 6.6% of the FY05 budget is for **Chemicals**, including \$1.5 million for sodium hypochlorite for disinfection and odor control, \$397,000 for polymer for sludge thickening, \$238,000 for activated carbon for odor control, \$143,000 for ferrous chloride for struvite control, \$118,000 for sodium hydroxide for odor and oxidation prevention, and \$182,000 for hydrogen peroxide used for corrosion control.

The FY05 budget for chemicals is \$65,000 or 2.5% higher than the FY04 actual, primarily due to an \$88,000 increase in sodium hydroxide used for odor control, a \$166,000 increase in hydrogen peroxide used for corrosion control, an \$80,000 increase in ferrous chloride used for struvite control, and a \$47,000 increase in sodium bisulfite used for dechlorination, offset in part by a \$259,000 decrease for polymer, due to the Braintree Weymouth tunnel scheduled to start-up in November 2004, and a \$62,000 decrease in sodium hypochlorite.

- \$11.2 million or 27.3% of the FY05 budget is for **Utilities**, including \$9.3 million for electricity, \$1.2 million for water and \$652,000 for diesel fuel.

The FY05 budget for utilities is \$615,000 less than FY04 actual. A \$903,000 reduction in diesel fuel is offset in part by a \$207,000 increase for electricity, attributable to lower self-generation due to a major STG overhaul, and price contingency.

- \$8.9 million or 21.7% of the FY05 budget is for **Maintenance**. The \$431,000 or 5.1% increase for Deer Island includes \$1,000,000 for facility painting, \$350,000 for roof replacement, and \$500,000 for replacement of variable frequency drives. Staff anticipate that maintenance expenses will increase in the future due to the age of the plant and more need for on-going maintenance.
- \$77,000 for **Training and Meetings** represents a \$40,000 or a 108% increase from the FY04 actual. The increase is attributable to vendor training for RCM Condition Monitoring concepts implementation at Deer Island.
- \$1.1 million for **Professional Services** represents a \$94,000 or 9.4% increase from the FY04 actual. The FY05 budget includes \$965,000 for perimeter and access security contract at Deer Island, \$20,000 for permit required beach nourishment studies, and \$20,000 for computer support services. The majority of the increase, \$111,000, relates to the Deer Island security contract.

- \$397,000 for **Other Materials**, a \$50,000 or 14.3% decrease from the FY04 actual. The FY05 budget includes \$89,000 for work clothes, \$55,000 for vehicle expense, \$20,000 for miscellaneous materials, \$58,000 for health and safety materials, \$18,000 for equipment/furniture, \$31,000 for office supplies, and \$98,000 for computer hardware/software.
- \$600,000 for **Other Services**, a \$33,000 or 3.7% decrease from the FY04 actual. The FY05 budget includes \$319,000 for Health and Safety for an ambulance services contract and hazardous materials disposal service, \$53,000 for Telephone expenses, \$116,000 for Permit Fees and \$84,000 for miscellaneous services such as copier rentals, spill containment, and maintaining the radio network. The decrease from the FY04 actual is mainly due to a reduction of \$46,000 for telephone expenses and a \$25,000 decrease in printing and duplicating expense, offset in part by \$33,000 increase in health and safety services.

The **Residuals Management Program** manages the processing and disposal of sludge from the anaerobic digestion process at Deer Island, as well as the disposal of grit and screenings. MWRA seeks to dispose of all sludge and grit and screenings in a reliable, economical, and environmentally sensitive manner.

MWRA has a three-pronged approach to the processing and disposal of waste material:

- Grit and screenings from MWRA's transport system are disposed of in landfills.
- Liquid sludge from Deer Island is barged to the Fore River processing facility where it is dewatered, dried, and shipped by rail either for use as fertilizer or to appropriate disposal. MWRA is committed to the beneficial reuse of biosolids to the greatest extent practicable. MWRA contracts with the New England Fertilizer Company (NEFCo) to operate the processing facility and market and ship sludge products. A 15-year contract with NEFCo became effective March 1, 2001.
- Landfill capacity is reserved as a backup to the beneficial use efforts (per agreement with the Federal Court, EPA, and DEP) for disposal of all sludge produced.

#### **Budget Highlights**

- \$98,000 for **Wages and Salaries**, a \$33,000 reduction from FY04 actuals. The decrease reflects a one-position reduction from the FY04 actual, as a result of a promotion to the Finance Division in mid-year FY04.
- \$968,000 or 7% of the total FY05 budget is for **Maintenance**, in accordance with the NEFCo contract. FY05 costs are \$56,000 lower than FY04 actuals. The maintenance budget includes \$27,000 for inflation.
- \$10.8 million or 78% of the total FY05 budget is for **Sludge Pelletization**. The \$701,000 decrease from FY04 actual is the net result of a \$1,100,000 decrease for retroactive contractual settlement in FY04, offset by a \$300,000 increase for higher sludge quantities after the Braintree-Weymouth tunnel start-up and a \$152,000 increase as a result of lower excess quantity adjustment in FY04.
- \$1,080,000 or 8% of the total FY05 budget is for **Grit and Screening** disposal, a decrease of \$15,000 from the FY04 actual. \$55,000 of the decrease is attributable to lower projected quantities and \$38,000 is for price increase.
- \$817,000 or 6% for the East Carbon Development Corporation contract for reserved landfill space.
- \$75,000 for air permitting emissions testing at FRSA, which is required every two years.

The **Clinton Wastewater Treatment Plant** provides sewage treatment services to the Town of Clinton and the Lancaster Sewer District. 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 processing, trickling filters, aeration tanks, secondary tanks, and a chemical addition building. The plant treats an average of 2.5 mgd. Residual materials are pressed and transported to an MWRA owned landfill for disposal. Staff also perform regular monitoring of the landfill site.

***Budget Highlights***

- *\$455,000 or 44% of the FY05 budget is for **Wages and Salaries** to fund seven positions, the same number of positions as in FY04.*
- *\$54,000 for **Overtime**, a \$9,000 or 14% reduction compared to the FY04 actual. This reflects management's intent to minimize overtime expenses.*
- *\$180,000 for **Utilities** which represents 17% of the total FY05 budget, and is \$23,000 or 11% less than FY04 actual spending. The majority of the decrease relates to water expenses, which in FY04 included expenses from the prior year.*
- *\$126,000 or 12% of the FY05 budget is for **Chemicals**, a 21% increase from the FY04 actual. This is due to increased use of aluminum sulfate, soda ash, sodium hypochlorite, and polymer, to ensure permit compliance.*
- *\$146,000 or 14% of the FY05 budget is for **Maintenance**, a 5% increase from the FY04 actual. The FY05 budget includes \$20,000 for painting/coating the internal metal structures in the secondary clarifiers and \$25,000 for rehabilitating the fiberglass Hypochlorite tanks (in lieu of replacing the tanks which would require opening the wall structure). The plant will be 13 years old in FY05.*
- *\$63,000 for **Other Materials**, including \$33,000 for clean fill for the land filling operation and \$20,000 for six dumpsters to be used by a new hooklift truck that will be part of division-wide FY05 vehicle purchases budgeted under the Administration Department. This truck and its dumpsters will replace the two existing dump trucks.*

## FIELD OPERATIONS

Final FY05 Current Expense Budget FIELD OPERATIONS						
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
WAGES & SALARIES	\$ 28,728,824	\$ 28,123,992	\$ 28,261,648	\$ 29,625,575	\$ 1,363,927	4.8%
OVERTIME	2,274,653	2,216,695	2,372,201	2,179,293	(192,908)	-8.1%
FRINGE BENEFITS	52,165	52,218	54,749	56,270	1,521	2.8%
CHEMICALS	3,220,561	3,295,313	3,461,477	4,097,458	635,981	18.4%
UTILITIES	4,768,891	5,003,268	5,233,183	6,684,166	1,450,983	27.7%
ONGOING MAINTENANCE	4,188,746	4,130,814	4,931,775	5,344,054	412,279	8.4%
TRAINING & MEETINGS	57,491	19,969	75,224	64,641	(10,583)	-14.1%
PROFESSIONAL SERVICES	134,211	193,968	102,704	225,833	123,129	119.9%
OTHER MATERIALS	872,522	935,430	981,075	933,250	(47,825)	-4.9%
OTHER SERVICES	1,455,398	1,590,596	1,134,274	1,264,575	130,301	11.5%
<b>TOTAL</b>	<b>\$ 45,753,462</b>	<b>\$ 45,562,263</b>	<b>\$ 46,608,310</b>	<b>\$ 50,475,116</b>	<b>\$ 3,866,806</b>	<b>8.3%</b>

Final FY05 Current Expense Budget FIELD OPERATIONS by Program						
PROGRAM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
WASTEWATER OPERATIONS	\$ 12,872,534	\$ 12,796,990	\$ 12,126,032	\$ 12,711,796	\$ 585,764	4.8%
WATER OPERATIONS & MAINT	12,090,717	11,729,277	12,981,667	15,280,690	2,299,023	17.7%
METRO MAINTENANCE	13,608,589	13,802,342	14,138,631	14,694,420	555,789	3.9%
OPERATIONS SUPPORT	6,009,718	6,155,807	6,055,558	6,425,030	369,472	6.1%
FOD ADMIN	1,171,904	1,077,847	1,306,422	1,363,180	56,758	4.3%
<b>TOTAL</b>	<b>\$ 45,753,462</b>	<b>\$ 45,562,263</b>	<b>\$ 46,608,310</b>	<b>\$ 50,475,116</b>	<b>\$ 3,866,806</b>	<b>8.3%</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. Field Operations includes wastewater transport operations and maintenance, waterworks operations and maintenance, and Toxic Reduction and Control (TRAC). 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 and transport of wastewater flow from MWRA communities to the Deer Island Treatment Plant. Through TRAC, FOD manages MWRA's industrial pretreatment, permitting, and monitoring program. FOD consists of five operating units: Wastewater Operations, Metropolitan Maintenance, Water Operations and Maintenance, Operations Support, and Administration.

**Wastewater Operations** is comprised of Wastewater Operations and TRAC. Wastewater Operations operates MWRA's wastewater transport facilities, including 11 pumping stations (ten of which are unstaffed); four headworks facilities (all of which are continuously staffed); and five CSO facilities (all of which are unstaffed). This unit will commence operating the Braintree Weymouth Intermediate Pump Station in November 2004.

**Water Operations and Maintenance** is responsible for the treatment and delivery 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 Wakefield, Marblehead, and Norwood in the metropolitan area. Additionally, this unit maintains MWRA's western waterworks facilities, including the Ware Water Treatment Plant, the Interim Corrosion Control Facility in Marlborough, the Cosgrove Intake Facility, and the Norumbega Reservoir. This unit also oversees covered storage facilities, operates the MetroWest Tunnel, and will operate the Walnut Hill Treatment Plant scheduled to be on line in March 2005. 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), formerly in Chestnut Hill, is now located at MWRA's Chelsea facility. The Western Operations Center (WOC) is located at the Cosgrove Intake adjacent to the Wachusett Reservoir.

**Metropolitan Maintenance** is responsible for maintenance of MWRA's wastewater and water systems and facilities within the Route 128 area. Staff maintains pipelines, valves, interceptors, pumps, facility equipment, buildings, and grounds. Metropolitan Maintenance maintains a waterworks network of 275 miles of water mains, 3,500 valves, 18 miles of deep rock tunnels, ten pump stations, eight tunnel shafts, ten distribution storage tanks and reservoirs, and 240 miles of wastewater interceptors and appurtenances. In addition, this unit performs TV inspections of the wastewater interceptor system.

**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 150 community water meters, 16 contract community water meters, 14 master water meters, and 212 wastewater meters. 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 future wastewater SCADA systems.

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

***Budget Highlights***

- \$29.6 million for **Wages and Salaries**, of which \$29.0 million or 98% is for regular pay, to fund approximately 529 employees, including new hires for start-up of the Walnut Hill Treatment Plant. The budget also includes \$247,000 for stand-by pay to support operational and maintenance needs, \$91,000 for temporary employees and \$33,000 for interns. The Wages and Salary line item has been increased by \$1.4 million compared with the FY04 actual. The increase is for higher staffing levels for FY05 and wage increases.
- \$2.2 million for **Overtime**, including \$1,000,000 for operational coverage needs, \$400,000 for emergency related overtime, and \$695,000 for planned overtime, mostly for maintenance.

*The Overtime line item has been reduced by \$193,000 compared with FY04 actual spending. The primary reason for this decrease is the significant, one-time events that occurred in FY04 and resulted in approximately \$200,000 in additional spending. These events included the December blizzard and the major rainfall events and Deer Island shutdowns that occurred in April 2004. Further, additional decreases of \$52,000 for anticipated Wastewater Operations OCC efficiencies due to the new staffing configuration and \$50,000 for the elimination of security related funding in Western Operations that is no longer needed. These savings are offset by an increase of \$20,000 in equipment maintenance to support increased Metro Maintenance initiatives and by the addition of \$108,000 for OT reserves for wage increases.*

### **Budget Highlights (Cont.)**

- \$4.1 million for **Chemicals**, of which \$3.5 million is for water treatment and \$0.5 million is for wastewater treatment. The budget includes \$1.9 million for soda ash, \$854,000 for sodium hypochlorite, \$247,000 for hydrofluosilic acid, \$305,000 for other chemicals that primarily support nitrazyme for Framingham Extension Relief Sewer odor and corrosion control, \$274,000 for liquid oxygen, and \$333,000 for carbon dioxide.

The Chemicals line item has increased by \$636,000 compared with FY04 actual spending. The increase is primarily due to the inclusion of \$310,000 for anticipated dosing increases for soda ash and carbon dioxide to meet DEP mandated lead and copper levels in drinking water. Other increases include \$180,000 for soda ash unit price increases and \$274,000 for liquid oxygen that will be used in the new Walnut Hill Treatment Plant currently scheduled to come on-line in March 2005. The FY05 budget reflects four months of chemicals that will be needed to support this new plant. The above increases are partially offset by savings on other chemicals that are currently used in processes that will be eliminated once Walnut Hill comes on-line.

- \$6.7 million for **Utilities**, including \$5.2 million for electricity, \$897,000 for diesel fuel, \$250,000 for natural gas, and \$239,000 for water.

The Utility line item has increased by \$1.5 million compared with FY04 actual spending. Of this increase, \$1.3 million supports increased electricity needs attributable to two new facilities scheduled to come on line in FY05 (the Walnut Hill Treatment Plant (3/05) and the Braintree Weymouth IPS (11/04)), and correction for FY04 under budgeting of demand charges.

- \$5.3 million for **Maintenance**, including \$2.4 million for materials and \$2.9 million is for services.

The Maintenance line item has increased by \$412,000 compared with FY04 actual spending. The increase is primarily due to an increase of \$343,000 for the maintenance needs of the new Walnut Hill Treatment Plant and Braintree Weymouth IPS facilities and underspending of the FY04 maintenance budget by \$160,000 mainly due to slippage of the Headworks Window Replacement initiative. Other increases include \$160,000 for service contracts and \$100,000 for paving services. The increases are offset by a \$250,000 reduction for security and emergency related contingencies, a \$73,000 reduction in funding for IWS maintenance service contracts, and a \$50,000 reduction for grounds maintenance.

- \$65,000 for **Training and Meetings**, an \$11,000 reduction from FY04 actual spending.
- \$226,000 for **Professional Services**, including \$55,000 for engineering and \$141,000 for security.

The Professional Services line item has increased by \$123,000 compared with the FY04 actual spending. The increase is attributable to an increase of \$120,000 for four months of security services at the new Walnut Hill Treatment Plant after MWRA takes over this responsibility from the contractor.

- \$933,000 for **Other Materials**, including \$446,000 for vehicle expenses such as gas, tolls, and mileage reimbursements, \$150,000 for health and safety supplies, \$140,000 for work clothes, and \$85,000 for Lab and Testing Supplies. This represents a \$50,000 decrease from FY04 actual spending.
- \$1.3 million for **Other Services**, including \$538,000 for telephone and SCADA needs at various facilities, \$502,000 for required police details, and \$76,000 for various regulatory permitting needs.

The Other Services line item has increased by \$130,000 compared with FY04 actual spending. This increase largely supports revised and new telephone requests of \$116,000 and increased permitting needs of \$41,000, the majority of which are attributable to the new facilities coming on-line in FY05.



## LABORATORY SERVICES

Final FY05 Current Expense Budget LABORATORY SERVICES							
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04		
WAGES & SALARIES	\$ 3,215,667	\$ 3,267,086	\$ 3,391,346	\$ 3,572,289	\$ 180,943		5.3%
OVERTIME	65,828	61,291	61,066	74,062	12,996		21.3%
FRINGE BENEFITS	1,183	1,144	1,213	1,200	(13)		-1.1%
UTILITIES	120,028	135,436	124,958	136,846	11,888		9.5%
ONGOING MAINTENANCE	269,257	199,218	245,116	289,144	44,028		18.0%
TRAINING & MEETINGS	4,978	2,789	3,573	5,129	1,556		43.5%
PROFESSIONAL SERVICES	109,941	62,395	68,441	85,544	17,103		25.0%
OTHER MATERIALS	852,582	579,619	736,653	731,283	(5,370)		-0.7%
OTHER SERVICES	78,251	95,829	91,746	104,151	12,405		13.5%
<b>TOTAL</b>	<b>\$ 4,717,716</b>	<b>\$ 4,404,807</b>	<b>\$ 4,724,112</b>	<b>\$ 4,999,648</b>	<b>\$ 275,536</b>		<b>5.8%</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, and to conduct 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 the following five locations: Southborough, Somerville, Quabbin, the Central Laboratory at Deer Island, and the Clinton Wastewater Treatment Plant. Testing supports drinking water transmission and treatment processes, wastewater operations and control at Deer Island and Clinton, NPDES compliance, harbor and 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. The results are tracked and analyzed and compliance reports are regularly submitted to the Environmental Protection Agency and the Massachusetts Department of Environmental Protection.

Most MWRA laboratory testing is done in-house. Certain exceedingly specialized or low volume tests are outsourced, such as tests for dioxins and radioactivity. In January 2004, the bulk of the laboratory testing for the Harbor and Outfall Monitoring (HOM) was brought in-house, including the water column laboratory work and the monthly boat samples of Massachusetts Bay to collect bacteria samples.

### ***Budget Highlights***

- \$3.6 million or 72% of the budget is for **Wages and Salaries**, of which \$3.5 million is in regular pay for the funding of 62 positions.
- \$289,000 or 6% of the budget is for **Maintenance**. It includes \$160,000 for equipment service contracts and \$119,000 for building and grounds services, of which \$50,000 is for replacement of metal laboratory hoods and exhaust vents and \$10,000 for replacement of countertops.
- \$86,000 for lab and testing analysis, a \$17,000 or 25% increase from FY04 actual spending. Outside labs are used for emergencies, "second opinions", capacity constraints, unavailability of specialized equipment or economic justification.
- \$731,000 for **Other Materials**, a \$5,000 or 1% decrease from FY04 spending. The FY05 budget includes \$251,000 for equipment replacement and \$434,000 for laboratory supplies.

## ENVIRONMENTAL QUALITY

Final FY05 Current Expense Budget ENVIRONMENTAL QUALITY							
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04		
WAGES & SALARIES	\$ 1,065,250	\$ 1,086,720	\$ 1,112,367	\$ 1,157,247	\$ 44,880		4.0%
OVERTIME	4,449	2,354	421	2,625	2,204		523.5%
FRINGE BENEFITS	-	-	-	20	20		100.0%
ONGOING MAINTENANCE	369	819	3,400	3,000	(400)		-11.8%
TRAINING & MEETINGS	4,826	609	2,674	3,375	701		26.2%
PROFESSIONAL SERVICES	3,915,496	4,345,708	3,602,861	3,378,657	(224,204)		-6.2%
OTHER MATERIALS	10,404	11,615	11,787	19,790	8,003		67.9%
OTHER SERVICES	129,819	31,754	7,346	22,183	14,837		202.0%
<b>TOTAL</b>	<b>\$ 5,130,613</b>	<b>\$ 5,479,579</b>	<b>\$ 4,740,856</b>	<b>\$ 4,586,897</b>	<b>\$ (153,959)</b>		<b>-3.2%</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; data management and quality assurance; and compliance with the reporting requirements of MWRA's NPDES permits. These permit reports are submitted to state and federal regulators, the Outfall Monitoring Science Advisory Panel, its subcommittees, and several libraries. As required by the permits, ENQUAD also posts many of these reports on MWRA's web site. All technical reports and several reports on water quality in the harbor and the bay are also posted on the web site. The department also produces the State of Boston Harbor Report.

### **Budget Highlights**

- \$1.2 million for **Wages and Salaries** for 16 positions and one intern.
- \$3.4 million for outside laboratory testing and analysis, a reduction of \$224,000 (6%) from FY04 actual expenses. Most of the decrease is from reductions of the harbor and outfall monitoring contract with Battelle, the current contractor. Changes and reductions to the Ambient Monitoring Plan were accepted by EPA and DEP in spring 2004, enabling Environmental Quality to negotiate lower costs with Battelle. Contract costs were further lowered because the new scope of work has reduced the number of water chemistry analyses to a level that can be done by MWRA's DLS. The remaining funds are for Massachusetts Bay monitoring cost-shared with the U.S. Geological Survey; Gulf of Maine Ocean Observing System cost-shared with the Navy and others; permit-required water quality modeling cost-shared with UMass Boston; and permit-required biotoxicity testing for Clinton WWTP, CSO facilities, and DITP.

## ENGINEERING AND CONSTRUCTION

Final FY05 Current Expense Budget ENGINEERING AND CONSTRUCTION							
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04		
WAGES & SALARIES	\$ 6,070,138	\$ 4,958,936	\$ 4,832,438	\$ 4,639,530	\$ (192,908)		-4.0%
OVERTIME	184,997	56,864	58,678	82,318	23,640		40.3%
FRINGE BENEFITS	2,947	967	899	2,533	1,634		181.8%
ONGOING MAINTENANCE	22,470	10,320	8,948	9,469	521		5.8%
TRAINING & MEETINGS	14,042	7,949	771	8,921	8,150		1057.1%
PROFESSIONAL SERVICES	408	68	-	-	-		-
OTHER MATERIALS	162,484	80,837	72,928	87,504	14,576		20.0%
OTHER SERVICES	22,152	14,586	17,446	18,700	1,254		7.2%
<b>TOTAL</b>	<b>\$ 6,479,639</b>	<b>\$ 5,130,527</b>	<b>\$ 4,992,108</b>	<b>\$ 4,848,975</b>	<b>\$ (143,133)</b>		<b>-2.9%</b>

The Engineering and Construction Department (ECD) manages and coordinates the planning, design, and construction of system improvements that will ensure the reliable operation of the wastewater collection, transport, and treatment systems, and maintain and improve the waterworks infrastructure and physical plant to ensure a safe and adequate supply of water.

ECD is organized into two units. The **Engineering Unit** provides in-house engineering, consultant management (during the facilities planning, environmental review, and design stages of capital projects), drafting, surveying, and other technical assistance required for the maintenance, repair, and rehabilitation of the wastewater and waterworks systems. In addition, unit staff provide specialized technical services in the electrical, structural, mechanical, and civil engineering disciplines; maintain the Design Information Services Center (DISC); provide engineering and project management support, computer-aided design and drafting (CADD) services, and survey and design services; and manage construction document control. The **Construction Unit** provides contract management and resident inspection on water and wastewater construction and rehabilitation projects. Staff administer, oversee, and monitor construction projects to ensure timely, cost-effective, high quality construction for a variety of infrastructure improvement projects. Staff manages contractor activities to ensure projects are completed in accordance with approved plans and specifications with quality construction practices, timely project completion, and cost efficiency.

### **Budget Highlights**

- \$4.6 million for **regular pay**, which represents 96% of the total FY05 department budget and funds 65 positions. The decrease of \$193,000 is the result of a lower staffing level.
- \$82,000 for **Overtime**, mostly to cover resident inspection after regular work hours at construction sites to ensure monitoring of construction projects. Overtime is also used for unplanned design or survey needs, attendance at evening public meetings and meeting deadlines. The \$24,000 increase from FY04 is based on the number of construction jobs projected to be active in FY05.
- \$88,000 for **Other Materials**, a \$15,000 increase compared with FY04. The budget includes \$57,000 for vehicle expense for staff traveling to construction sites and \$23,000 for office supplies. The increase is based on anticipated travel to FY05 construction sites and the addition of \$6,000 associated with the change in accounting practices to charge back centrally purchased office supplies to each department.

## CAPITAL ENGINEERING AND CONSTRUCTION

Final FY05 Current Expense Budget							
CAPITAL ENGINEERING AND CONSTRUCTION							
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04		
WAGES & SALARIES	\$ 2,147,000	\$ 2,029,859	\$ 2,081,007	\$ 2,071,795	\$ (9,212)		-0.4%
OVERTIME	-	33	-	-	-		-
FRINGE BENEFITS	6	-	6	-	(6)		-100.0%
ONGOING MAINTENANCE	125,527	122,842	143,095	210,000	66,905		46.8%
TRAINING & MEETINGS	8,488	2,204	3,532	15,527	11,995		339.6%
PROFESSIONAL SERVICES	17,132	-	-	-	-		-
OTHER MATERIALS	26,163	25,146	26,249	33,275	7,026		26.8%
OTHER SERVICES	22,488	18,589	8,537	21,264	12,727		149.1%
<b>TOTAL</b>	<b>\$ 2,346,803</b>	<b>\$ 2,198,673</b>	<b>\$ 2,262,426</b>	<b>\$ 2,351,861</b>	<b>\$ 89,435</b>		<b>4.0%</b>

The Capital Engineering and Construction Department (CECD) is responsible for managing engineering, design, and construction of major waterworks facilities and pipelines, in particular MWRA's Integrated Water Supply Improvement Program (IWSIP). IWSIP is comprised of the Walnut Hill Water Treatment Plant, the MetroWest Water Supply Tunnel, and seven covered storage facilities. Together with the Planning and Field Operations departments, CECD assesses the condition of waterworks facilities and pipelines to determine and document the improvements needed to eliminate deficiencies and bring the water system up to current standards. These improvements are broken down into a series of design and construction contracts, which are prioritized and scheduled to allow safe and reliable operation of the system during construction.

The department also manages the engineering design, construction, start-up and training, and testing of other major waterworks capital projects. Staff defines scopes of work for consultant contracts and manages consultants conducting conceptual studies, preliminary designs, environmental reports and final designs. In addition, staff coordinates with cities and towns, regulatory agencies, and citizens groups to ensure acceptance of the projects by all stakeholders. The department monitors technical and regulatory standards to ensure that at completion facilities fulfill all of their essential functions in a cost-effective manner.

### ***Budget Highlights***

- \$2.1 million or 88% of the FY05 budget is for **Wages and Salaries** for 24 positions.
- \$210,000 or 9% is for **Maintenance**, including \$106,000 for operation of the temporary chloramination facilities and \$11,250 for community chlorine analyzers through March 2005 for the MetroWest communities. Also, \$92,000 for closing and taking away trailers at the temporary ammonia and feed facilities at eight chloramination sites after the Walnut Hill Water Treatment plant comes on line in March 2005.



Law Division  
Budget

## LAW DIVISION

Final FY05 Current Expense Budget LAW DIVISION by Line Item						
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
WAGES & SALARIES	\$ 2,057,038	\$ 1,817,314	\$ 1,532,656	\$ 1,459,135	\$ (73,521)	-4.8%
OVERTIME	165	402	40	-	(40)	-100.0%
TRAINING & MEETINGS	10,208	5,606	5,200	5,256	56	1.1%
PROFESSIONAL SERVICES	430,390	293,437	278,636	316,584	37,948	13.6%
OTHER MATERIALS	3,834	1,653	3,208	5,464	2,256	70.3%
OTHER SERVICES	70,021	54,027	31,453	67,405	35,952	114.3%
<b>TOTAL</b>	<b>\$ 2,571,655</b>	<b>\$ 2,172,439</b>	<b>\$ 1,851,193</b>	<b>\$ 1,853,844</b>	<b>\$ 2,651</b>	<b>0.1%</b>

The Law Division provides legal counsel to the Board of Directors and staff on compliance with federal and state laws; regulations; court and administrative orders; litigation matters; real estate matters; labor/employment issues; 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 provide or supervise through outside counsel the representation of MWRA in all litigation. The budget for the Division accounts for 1% of MWRA's FY05 direct expense budget.

Law Division goals include:

- 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 review and comment on new and developing regulatory issues.

### ***Budget Highlights***

- \$1.5 million for **regular pay**, a decrease of \$74,000 compared to FY04 spending. The FY05 budget included funding for one intern position to assist in legal research and litigation.
- \$317,000 for **Professional Services**, an increase of \$38,000 from FY04 spending. Litigation expenses for trial preparation, including expert witnesses, outside counsel, deposition and copying expense, are difficult to predict in advance because they depend on the nature and complexity of new litigation filed, on actions taken by litigants, and discovery and trial schedules set by the courts. The budget funds outside legal counsel to assist in handling cases that require special expertise (such as insurance, tax and, energy issues) or resources beyond those available in the Division, as well as representation in the Boston Harbor Case. In-house staff concentrate on cases that require a close understanding of MWRA.



Finance Division  
Budget

## FINANCE DIVISION

Final FY05 Current Expense Budget FINANCE DIVISION by Line Item						
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
WAGES & SALARIES	\$ 3,069,974	\$ 3,054,196	\$ 2,652,874	\$ 2,763,402	\$ 110,528	4.2%
OVERTIME	1,233	78	50	-	(50)	-100.0%
FRINGE BENEFITS	-	-	-	-	-	-
ONGOING MAINTENANCE	566	-	-	-	-	-
TRAINING & MEETINGS	3,788	5,796	1,717	4,675	2,958	172.3%
PROFESSIONAL SERVICES	212,256	221,528	288,609	311,920	23,311	8.1%
OTHER MATERIALS	1,586	984	3,056	6,084	3,028	99.1%
OTHER SERVICES	24,661	14,111	25,481	25,642	161	0.6%
<b>TOTAL</b>	<b>\$ 3,314,065</b>	<b>\$ 3,296,693</b>	<b>\$ 2,971,787</b>	<b>\$ 3,111,723</b>	<b>\$ 139,936</b>	<b>4.7%</b>

Final FY05 Current Expense Budget FINANCE DIVISION by Department						
DEPARTMENT	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
DIVISION DIRECTOR'S OFFICE	\$ 248,841	\$ 270,649	\$ 227,366	\$ 280,225	\$ 52,859	23.2%
PLANNING/COORDINATION	304,839	249,688	45,140	-	(45,140)	-100.0%
BUDGET	594,698	577,146	479,092	521,778	42,686	8.9%
TREASURY	2,165,687	998,270	830,900	808,173	(22,727)	-2.7%
CONTROLLER	-	1,200,940	1,389,289	1,501,547	112,258	8.1%
<b>TOTAL</b>	<b>\$ 3,314,065</b>	<b>\$ 3,296,693</b>	<b>\$ 2,971,787</b>	<b>\$ 3,111,723</b>	<b>\$ 139,936</b>	<b>4.7%</b>

The Finance Division is responsible for overseeing rates and revenue management, budgeting, capital financing, accounting, disbursements, investments, and grant and loan management. At its September 17, 2003 meeting, the Board of Directors approved organizational changes to MWRA's planning functions. The changes consolidated the separate planning activities of the Operations and Finance divisions under a single Director of Planning who reports to the Executive Director. The organization change is reflected in the FY05 Current Expense Budget.

In FY03, the separate payroll, claims and risk management, and insurance functions of the Operations and Finance divisions were consolidated in the Finance Division. As part of the organizational change, structural changes within the Finance Division were also implemented. Specifically, Treasury Department functions were reorganized and a new Controller Department was created.

The Controller Department consists of accounting, accounts payable, and payroll functions that were previously performed within the Treasury Department. The Controller has responsibility for ensuring financial system integrity and integration among the three functions. Department staff are also responsible for appropriate treatment and classification of MWRA revenues and expenditures in accordance with accounting principles generally accepted in the United States and prepare statements of MWRA's financial condition. The Controller Department also manages water and sewer assessments to communities and planning estimates of future rate projections.

The Treasury Department is responsible for securing funds for ongoing operations and capital programs, processing disbursements, and managing MWRA's insurance coverage and liability claims. Treasury Department staff collect revenue, disburse funds, and manage debt issuance and investments. As part of the division reorganization, the Grant and Loan Management Department was merged with the Treasury Department.



**The Finance Division goals are to:**

- Ensure the fiscal strength of MWRA through judicious, informed, and farsighted allocation of resources.
- Develop strategies for minimizing increases in community assessments and charges.
- Maintain favorable credit ratings for MWRA's revenue bonds.
- Provide financial planning, control, and accountability for MWRA.
- Ensure effective, coordinated operating and capital budget planning throughout MWRA.
- The FY05 budget for the Finance division accounts for less than 2% of MWRA's direct expense budget.

**DIVISION DIRECTOR’S OFFICE**

Final FY05 Current Expense Budget						
FINANCE DIVISION DIRECTOR'S OFFICE by Line Item						
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
WAGES & SALARIES	\$ 245,713	\$ 269,356	\$ 227,356	\$ 277,125	\$ 49,769	21.9%
OVERTIME	254	-	-	-	-	-
TRAINING & MEETINGS	-	-	-	1,500	1,500	100.0%
OTHER MATERIALS	96	10	10	-	(10)	-100.0%
OTHER SERVICES	2,778	1,283	-	1,600	1,600	100.0%
<b>TOTAL</b>	<b>\$ 248,842</b>	<b>\$ 270,649</b>	<b>\$ 227,366</b>	<b>\$ 280,225</b>	<b>\$ 52,859</b>	<b>23.2%</b>

The Division Director's Office oversees the centralized financial functions of rates development, revenue collection, budgeting, capital financing, accounting, disbursement and payroll processing, debt and investment management, and grant and loan management. The Director's Office provides advice and analysis to the Executive Director and the Board of Directors on all financial issues.

The division’s continuing challenge in FY05 will be maintaining agency-wide focus on balancing the competing needs to minimize rate increases while ensuring the provision of critical MWRA services. This challenge is heightened by the loss of state debt service assistance.

The Division Director’s Office’s goals are to:

- Guide and coordinate division activities to support MWRA and Finance Division objectives.
- Provide central and administrative support to the division's departments.

## BUDGET

Final FY05 Current Expense Budget BUDGET by Line Item						
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
WAGES & SALARIES	\$ 577,657	\$ 570,339	\$ 463,610	\$ 508,022	\$ 44,412	9.6%
TRAINING & MEETINGS	-	-	-	1,075	1,075	100.0%
PROFESSIONAL SERVICES	-	-	-	-	-	-
OTHER MATERIALS	391	58	41	481	440	1073.2%
OTHER SERVICES	16,650	6,749	15,441	12,200	(3,241)	-21.0%
<b>TOTAL</b>	<b>\$ 594,698</b>	<b>\$ 577,146</b>	<b>\$ 479,092</b>	<b>\$ 521,778</b>	<b>\$ 42,686</b>	<b>8.9%</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 coordinate development of the long-term Capital Improvement Program (CIP) and monitor the progress of capital projects compared to schedule and budget. Staff also coordinate development of MWRA's annual Current Expense Budget (CEB) and monitor spending compared to budget throughout the year. In addition, the department works closely with the Controller Department to forecast near- and long-term expense and revenue requirements.

### ***Budget Highlights***

- *Total budget of \$508,000 for **Wages and Salaries**, an increase of \$44,000 from FY04 spending primarily due to early retirement and backfill through FY04.*
- ***Other Services** include \$3,000 for a WEFA membership for inflation projections and \$8,000 to cover the costs of printing a limited number of budget documents and reports. The on-line availability of budget documents has reduced printing costs.*

**TREASURY and CONTROLLER**

Final FY05 Current Expense Budget TREASURY by Line Item						
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
WAGES & SALARIES	\$ 2,112,973	\$ 769,438	\$ 634,667	\$ 676,471	\$ 41,804	6.6%
OVERTIME	979	-	30	-	(30)	-100.0%
FRINGE BENEFITS	-	-	-	-	-	-
ONGOING MAINTENANCE	566	-	-	-	-	-
TRAINING & MEETINGS	(969)	835	831	500	(331)	-39.8%
PROFESSIONAL SERVICES	212,256	221,528	184,282	121,920	(62,362)	-33.8%
OTHER MATERIALS	623	770	2,257	850	(1,407)	-62.3%
OTHER SERVICES	4,905	5,699	8,833	8,432	(401)	-4.5%
<b>TOTAL</b>	<b>\$ 2,331,333</b>	<b>\$ 998,270</b>	<b>\$ 830,900</b>	<b>\$ 808,173</b>	<b>\$ (22,727)</b>	<b>-2.7%</b>

Final FY05 Current Expense Budget CONTROLLER by Line Item						
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
WAGES & SALARIES	\$ -	\$ 1,200,481	\$ 1,282,234	\$ 1,301,784	\$ 19,550	1.5%
OVERTIME	-	78	19	-	(19)	-100.0%
FRINGE BENEFITS	-	-	-	-	-	-
TRAINING & MEETINGS	-	-	823	1,600	777	94.4%
PROFESSIONAL SERVICES	-	-	104,327	190,000	85,673	82.1%
OTHER MATERIALS	-	-	679	4,753	4,074	600.0%
OTHER SERVICES	-	381	1,207	3,410	2,203	182.5%
<b>TOTAL</b>	<b>\$ -</b>	<b>\$ 1,200,940</b>	<b>\$ 1,389,289</b>	<b>\$ 1,501,547</b>	<b>\$ 112,258</b>	<b>8.1%</b>

Actuals for the recently eliminated Capital Grants Management Department are included in the above Treasury Department actuals.

The Treasury Department secures funds for ongoing operations and capital programs, processes disbursements, and manages MWRA's insurance coverage and liability claims. Department staff collect revenue, disburse funds, and manage debt issuance and investments.

The Controller Department consists of the Accounting, Accounts Payable, and Payroll units. This department was created in FY03 as part of an organizational change in Finance and Operations. The department has the responsibility for ensuring financial system integrity and integration among the three functions. The department also is responsible for appropriate treatment and classification of MWRA revenues and expenditures in accordance with accounting principles generally accepted in the United States and for preparing statements of MWRA's financial condition. The Controller Department also manages the annual process of establishing water and sewer assessments to be paid by MWRA's customer communities and planning estimates of future rate projections.

**Budget Highlights**

- \$2.3 million combined budget, an increase of \$90,000 from FY04 spending. The increase reflects an increase for audit services based on current prices, and the transfer of a rates position from the Budget Department to the Controller Department.
- \$312,000 for **Professional Services**, including \$190,000 for audit services, \$100,000 for trustee services, and \$20,000 for deposit services.



Support Services Division  
Budget

## SUPPORT SERVICES DIVISION

Final FY05 Current Expense Budget SUPPORT DIVISION by Line Item						
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
WAGES & SALARIES	\$ 16,282,700	\$ 15,083,467	\$ 14,092,833	\$ 13,840,999	\$ (251,834)	-1.8%
OVERTIME	66,284	98,564	50,779	56,215	5,436	10.7%
FRINGE BENEFITS	10,699,720	12,245,009	10,771,098	12,284,624	1,513,526	14.1%
WORKERS' COMPENSATION	39,500	49,627	1,687,301	1,600,000	(87,301)	-5.2%
CHEMICALS	-	-	-	-	-	-
UTILITIES	822,546	999,467	1,039,882	989,511	(50,371)	-4.8%
ONGOING MAINTENANCE	3,868,445	3,335,286	3,657,632	3,911,619	253,987	6.9%
TRAINING & MEETINGS	96,297	44,894	52,698	59,123	6,425	12.2%
PROFESSIONAL SERVICES	1,436,891	799,145	812,896	1,130,471	317,575	39.1%
OTHER MATERIALS	1,299,684	696,945	1,009,591	686,529	(323,062)	-32.0%
OTHER SERVICES	8,279,810	9,255,805	5,941,170	5,657,444	(283,726)	-4.8%
<b>TOTAL</b>	<b>\$ 42,891,877</b>	<b>\$ 42,608,209</b>	<b>\$ 39,115,880</b>	<b>\$ 40,216,535</b>	<b>\$ 1,100,655</b>	<b>2.8%</b>

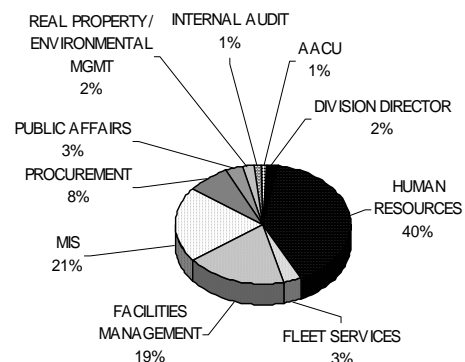
Final FY05 Current Expense Budget SUPPORT DIVISION by Department						
DEPARTMENT	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
DIVISION DIRECTOR	\$ -	\$ 444,099	\$ 429,759	\$ 737,661	\$ 307,902	71.6%
INTERNAL AUDIT	686,274	524,413	500,572	530,374	29,802	6.0%
PUBLIC AFFAIRS	2,182,485	1,704,957	1,364,023	1,385,456	21,433	1.6%
FACILITIES MANAGEMENT	10,792,349	11,538,026	7,915,969	7,516,021	(399,948)	-5.1%
FLEET SERVICES	1,413,540	1,144,995	1,085,856	1,317,658	231,802	21.3%
AACU	694,818	581,657	501,178	519,777	18,599	3.7%
HUMAN RESOURCES	13,130,531	14,247,134	14,289,480	16,089,191	1,799,711	12.6%
MIS	9,418,409	8,710,490	9,355,643	8,298,240	(1,057,403)	-11.3%
PROCUREMENT	3,748,856	2,987,067	3,070,600	3,095,841	25,241	0.8%
REAL PROPERTY / ENVIRONMENTAL MGMT	824,615	725,371	602,800	726,316	123,516	20.5%
<b>TOTAL</b>	<b>\$ 42,891,877</b>	<b>\$ 42,608,209</b>	<b>\$ 39,115,880</b>	<b>\$ 40,216,535</b>	<b>\$ 1,100,655</b>	<b>2.8%</b>

<sup>1</sup>The budget for Workers' Compensation was transferred from Operations to Human Resources in FY04.

The Support Services Division oversees the central functions of communications and community relations, real property and environmental management, human resources, affirmative action, procurement, materials warehousing, facility security, occupational health and safety, internal audit, fleet services, computer system development and management, facilities and office supplies management, library and records management, and mail and employee shuttle services. The division also manages the FRSA in Quincy, the Chelsea Facility and the Charlestown headquarters.

The division budget includes ten departments: Division Director, Internal Audit, Public Affairs, Facilities Management, Fleet Services, Affirmative Action and Compliance (AACU), Human Resources, Management Information Systems (MIS), Procurement, and Real Property and Environmental Management (RPEM). Internal Audit, AACU, and Public Affairs, funded as part of the Support Services budget, report to the MWRA's Executive Director. The \$40.2 million FY05 budget accounts for 23% of MWRA's direct expense budget. The

Support Division Final FY05 Budget  
\$40.2 million



division budget includes \$12.3 million for fringe benefits for all MWRA personnel, as well as \$4.3 million for lease, taxes and insurance, and operating and maintenance costs for the Charlestown Navy Yard (CNY) headquarters and the Chelsea facility, and \$1.6 million for workers' compensation claims and medical expenses. Net of these agency-wide expenses, the Support Services Division accounts for 13% of direct expenses.

## DIVISION DIRECTOR

Final FY05 Current Expense Budget DIVISION DIRECTOR							
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04		
WAGES & SALARIES	\$ -	\$ 438,896	\$ 424,503	\$ 379,608	\$ (44,895)	-10.6%	
OVERTIME	-	73	522	-	(522)	-100.0%	
FRINGE BENEFITS	-	-	44	-	(44)	-100.0%	
ONGOING MAINTENANCE	-	-	24	350,000	349,976	1458233.3%	
TRAINING & MEETINGS	-	248	49	1,300	1,251	2553.1%	
OTHER MATERIALS	-	2,166	1,693	4,293	2,600	153.6%	
OTHER SERVICES	-	2,716	2,924	2,460	(464)	-15.9%	
<b>TOTAL</b>	<b>\$ -</b>	<b>\$ 444,099</b>	<b>\$ 429,759</b>	<b>\$ 737,661</b>	<b>\$ 307,902</b>	<b>71.6%</b>	

The Division Director department consists of administrative and security/emergency response staff.

The division's goals are to:

- Provide comprehensive administrative, professional and technical support services to all divisions to create a cooperative framework within which MWRA can operate effectively.
- Develop and implement policies and programs to ensure facility and water/wastewater system security, public health and staff safety.
- Ensure proper and effective communication between MWRA and the communities served, other agencies, and state and local officials.

In FY04, Division Director accomplishments included:

- Coordinated re-bid of agency-wide security guard services, facilitating a seamless transition to a new vendor.
- Continued oversight of electronic security system installation at critical water sites.
- Implemented combined employee identification badge/facility access cards.

### ***Budget Highlights***

- *Total budget of \$738,000, an increase of \$308,000 or 71.6% over FY04 spending .*
- *This budget includes \$380,000 for **regular pay** to support 6 positions, a decrease of \$45,000 as compared to FY04 spending.*
- *Ongoing **Maintenance** includes \$350,000 for support and maintenance of MWRA's electronic security systems installed through the capital program. Routine support and maintenance are funded through the expense budget.*

**INTERNAL AUDIT**

Final FY05 Current Expense Budget						
INTERNAL AUDIT						
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
WAGES & SALARIES	\$ 671,364	\$ 511,926	\$ 489,795	\$ 514,819	\$ 25,024	5.1%
OVERTIME	-	29	-	-	-	-
TRAINING & MEETINGS	10,079	11,076	8,038	11,975	3,937	49.0%
OTHER MATERIALS	2,353	1,272	889	2,600	1,711	192.5%
OTHER SERVICES	2,478	110	1,850	980	(870)	-47.0%
<b>TOTAL</b>	<b>\$ 686,274</b>	<b>\$ 524,413</b>	<b>\$ 500,572</b>	<b>\$ 530,374</b>	<b>\$ 29,802</b>	<b>6.0%</b>

The Internal Audit Department monitors the efficiency and integrity of MWRA's operations and capital programs by auditing financial and program operations; reviewing compliance with accounting and management control systems, laws and regulations; and coordinating the formulation and revisions to MWRA policies and procedures. Internal Audit reports to MWRA's Executive Director.

The Internal Audit Department's goals are to:

- Encourage more economical and efficient operations, adherence to sound management procedures, and the use of controls designed to safeguard MWRA assets.
- Assure that automated and supporting manual management information systems have secure data control environments and provide accurate and useful management information.
- Assure that contractors and consultants doing business with MWRA have accounting and billing systems adequate to provide current, complete, and accurate cost and price information and project billings. In FY04, Internal Audit identified approximately \$1.7 million in savings, including \$780,000 related to consultant billings to MWRA, \$353,000 related to vendor audits and contract negotiation support, and \$548,000 related to construction change orders and claims.

***Budget Highlights***

- \$515,000 for **Wages and Salaries** for staff to perform internal audits, management advisory services, preliminary review and incurred cost audits, and consultant disclosure statement reviews.
- \$12,000 for **Training and Meetings**, of which 59% is for travel to consultant offices required to perform cost audits.



**PUBLIC AFFAIRS**

Final FY05 Current Expense Budget PUBLIC AFFAIRS						
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
WAGES & SALARIES	\$ 2,013,515	\$ 1,619,632	\$ 1,308,363	\$ 1,271,435	\$ (36,928)	-2.8%
OVERTIME	32	-	18	-	(18)	-100.0%
TRAINING & MEETINGS	8,375	4,273	4,561	3,030	(1,531)	-33.6%
PROFESSIONAL SERVICES	25,894	5,050	1,025	1,050	25	2.4%
OTHER MATERIALS	28,798	17,548	18,675	22,619	3,944	21.1%
OTHER SERVICES	105,871	58,454	31,381	87,322	55,941	178.3%
<b>TOTAL</b>	<b>\$ 2,182,485</b>	<b>\$ 1,704,957</b>	<b>\$ 1,364,023</b>	<b>\$ 1,385,456</b>	<b>\$ 21,433</b>	<b>1.6%</b>

The Public Affairs Department is the institutional link to all MWRA constituencies. 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 Department staff* to ensure compliance with the Massachusetts Environmental Policy Act (MEPA), the Massachusetts Historical Commission (MHC), DEP, local conservation commissions, and the Boston Landmarks Commission (BLC). 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 to all grade levels school education materials on water quality, water conservation, wastewater topics, and environmental issues. 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. Public Affairs reports to the Executive Director.

The goals of the Public Affairs Department are to:

- Enhance overall public understanding of MWRA’s mission, goals, and benefits to the public through aggressive 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, progress, and effective management.
- 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 in a cost-effective and efficient manner, and provide input to regulatory agencies in order to ensure MWRA interests are recognized during the development of regulations.

***Budget Highlights***

- *\$1.27 million for **Wages and Salaries**, a decrease of \$37,000 or 3% from FY04 spending, and \$348,000 less than FY03 spending, reflecting additional staff reductions*
- *\$110,000 for **Other Materials** and **Other Services**, including \$75,000 to fund services associated with the publication and distribution of MWRA's Annual Report, as well as production of materials to inform the public about MWRA activities and to educate school children about Boston Harbor and other environmental matters. With fewer staff in FY05, funding for printed materials decreased slightly compared to FY04 spending.*

## FACILITIES MANAGEMENT

Final FY05 Current Expense Budget FACILITIES MANAGEMENT						
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
WAGES & SALARIES	\$ 1,734,723	\$ 1,106,183	\$ 971,144	\$ 910,858	\$ (60,286)	-6.2%
OVERTIME	37,410	53,098	25,466	33,100	7,634	30.0%
FRINGE BENEFITS	803	1,014	549	50	(499)	-90.9%
UTILITIES	814,450	998,994	1,039,111	988,011	(51,100)	-4.9%
ONGOING MAINTENANCE	315,229	380,112	370,028	403,448	33,420	9.0%
TRAINING & MEETINGS	7,804	1,490	117	140	23	19.7%
PROFESSIONAL SERVICES	505,210	435,172	399,908	575,000	175,092	43.8%
OTHER MATERIALS	354,572	244,989	139,645	145,319	5,674	4.1%
OTHER SERVICES	7,022,148	8,316,974	4,970,001	4,460,095	(509,906)	-10.3%
<b>TOTAL</b>	<b>\$ 10,792,349</b>	<b>\$ 11,538,026</b>	<b>\$ 7,915,969</b>	<b>\$ 7,516,021</b>	<b>\$ (399,948)</b>	<b>-5.1%</b>

Final FY05 Current Expense Budget FACILITIES MANAGEMENT SUPPORT by Area						
AREA	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
FRSA	\$ 806,078	\$ 608,703	\$ 572,488	\$ 356,574	\$ (215,914)	-37.7%
FACILITIES MANAGEMENT	8,767,066	10,005,406	6,622,895	6,272,797	(350,098)	-5.3%
ADMINISTRATIVE SERVICES	1,219,205	923,917	720,586	886,650	166,064	23.0%
<b>TOTAL</b>	<b>\$ 10,792,349</b>	<b>\$ 11,538,026</b>	<b>\$ 7,915,969</b>	<b>\$ 7,516,021</b>	<b>\$ (399,948)</b>	<b>-5.1%</b>

The Facilities Management Department provides a wide range of support services to MWRA staff located at the CNY, Chelsea and FRSA facilities. The department previously comprised two sections: Facilities Management and Administrative Services. In FY05 all department personnel costs have been consolidated in the Administrative Services area. The FRSA and Facilities Management areas include all other costs associated with each of the three facilities managed by the department. These expenses include utility, maintenance, other operating costs and lease expenses for the FRSA, CNY and Chelsea Facilities. Non-personnel expenses that were previously included in the Administrative Services area, such as copier and mail costs, are now included in the facility budgets.

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

Staff are also responsible for the security, operation, and maintenance of the utilities and various structures and buildings located at FRSA. MWRA uses this facility for the operation of its sludge processing facility, the warehousing of records and geological samples and the Fore River Railroad Corporation's office, storage tracks and main rail line crossing the parcel. MWRA is continuing to pursue and execute options to surplus and sell those portions of FRSA not needed to support MWRA operations. To support this effort, Field Operations, confined space entry training and warehousing materials were relocated to other MWRA facilities in FY04.

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, copying and printing services, general office equipment repairs, transportation, mail and courier services, and receptionist coverage at CNY and the Chelsea facility. Staff are also responsible for initiating and managing an expanded recycling program.

The goals of the Facilities Management Department are to:

- Provide a safe and well-maintained working environment for all MWRA staff at the Chelsea Facility, CNY, and FRSA and provide appropriate space for staff by coordinating workspace planning, design, and furniture acquisitions.
- Maintain the Chelsea, CNY and FRSA facilities to prevent loss or deterioration of MWRA assets.
- Assist staff in their activities at FRSA and the Chelsea Facility by coordinating overall site development plans and monitoring the activities of operations at the site.
- Contain MWRA operating costs by carefully managing resources, implementing a cost effective maintenance program and removing recyclable materials from the waste stream.
- Provide efficient, cost-effective and customer-focused administrative services to support CNY, FRSA and Chelsea Facility staff.
- Support efforts to limit the fleet size while meeting operational needs by providing reliable motor pool and transportation services.

In FY04 Facilities Management accomplishments included:

- Completed relocation of staff from Building 34 in CNY and returned 15,000 square feet to the landlord for an annual saving of \$457,500 in rent expense.
- Completed construction and fit-out of the library space at the Chelsea Facility. Also coordinated the reconfiguration of space to better accommodate the Metering and Tech Base staff at the Chelsea Facility and Payroll and School Education staff in CNY.
- Reorganized staffing to maintain security services at FRSA while reducing 1 FTE.
- Added a second parking garage option for CNY employees and negotiated a reduction in the monthly rate charged by both facilities.
- Developed an expanded recycling program focusing on opportunities at the Chelsea Facility and FRSA. Applied for and received from the Commonwealth's State Sustainability Program recycling bins, totes and other materials valued at \$3,200 and necessary to implement a mixed paper recycling program to begin in FY05.
- Processed approximately 389,000 pieces of incoming and outgoing mail and filled 4,800 motor pool requests.
- Safely transported 9,800 shuttle passengers.

### ***Budget Highlights***

- *Total budget of \$7.5 million, a decrease of \$400,000 or 5.1% from FY04 spending reflecting lower utility costs at CNY and FRSA and a reduction in CNY lease payments. In April 2004, MWRA surrendered 15,000 square feet of space in CNY under the terms of our lease with Fulton Properties. The FY05 budget reflects a full-year of rent savings.*
- *\$33,000 for **Overtime** for coverage of facility maintenance and support services, an increase of \$7,600 or 30.0% from FY04 spending.*
- *\$988,000 for **Utilities**, a decrease of \$51,000 or 4.9% from the FY04 spending primarily due to the consolidation of CNY staff in Building 39, reduced occupancy at FRSA, and lower than anticipated costs for the Chelsea Facility.*
- *\$403,500 for **Maintenance**, an increase of \$33,400 over FY04 spending. This includes \$268,300 for building and grounds materials and services including janitorial and trash removal services, \$70,800 for HVAC and Electrical Materials and Services, and \$64,300 to service and maintain copier fax, security and card access equipment.*
- *\$575,000 for **Professional Services**, an increase of \$175,000 or 43.8% over FY04 spending, primarily for additional security services.*
- *\$4.5 million for **Other Services**, a decrease of \$510,000 from FY04 spending, primarily due to the one-time surrender of leased space in CNY as noted above.*

## FLEET SERVICES

Final FY05 Current Expense Budget						
FLEET SERVICES						
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
WAGES & SALARIES	\$ 653,692	\$ 559,326	\$ 543,768	\$ 554,928	\$ 11,160	2.1%
OVERTIME	10,497	34,399	18,720	20,000	1,280	6.8%
FRINGE BENEFITS	310	1,335	768	-	(768)	-100.0%
UTILITIES	421	473	771	1,500	729	94.6%
ONGOING MAINTENANCE	548,553	506,059	454,673	471,975	17,302	3.8%
TRAINING & MEETINGS	-	1,278	(75)	-	75	-
OTHER MATERIALS	73,597	41,656	63,706	264,946	201,240	315.9%
OTHER SERVICES	126,470	469	3,525	4,309	784	22.2%
<b>TOTAL</b>	<b>\$ 1,413,540</b>	<b>\$ 1,144,995</b>	<b>\$ 1,085,856</b>	<b>\$ 1,317,658</b>	<b>\$ 231,802</b>	<b>21.3%</b>

**Fleet Services** manages and maintains MWRA's motor vehicle and equipment fleet and the radio communications network that provides communications and emergency support services to MWRA headquarters and field personnel. Fleet Services staff also manage development and processing of specifications for new vehicles and equipment, and manage the gas card program and the fuel facility in Chelsea.

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.

In FY04, the accomplishments of the Fleet Services Department included:

- Implemented the MWRA Vehicle Committee's purchase and replacement plan, integrating 58 new units into the MWRA fleet while preparing for vehicle surplus disposal.
- Provided radio communications support to critical operations personnel during the DNC project.

### **Budget Highlights**

- *\$1.3 million total FY05 budget, an increase of \$232,000 over FY04 spending.*
- *\$20,000 for **Overtime**, an increase of \$1,280 over FY04 spending. Overtime is authorized only for emergency repair services during emergencies and extreme weather conditions.*
- *\$265,000 for **Other Materials**, an increase of \$201,000 over FY04 spending. This line includes \$233,650 for bulk fuel purchases as Fleet Services assumes responsibility for 80% of fuel consumption costs for MWRA vehicles and equipment utilizing the Chelsea fueling facility. Other smaller expenses included in this line are for tolls, health and safety items, staff uniforms, radio equipment and supplies and office supplies.*
- *The **Ongoing Maintenance** budget of \$472,000 includes funds for automotive materials and services to maintain MWRA's vehicle fleet. The majority of this line is spent for automotive materials (\$195,000), automotive services (\$215,000) and radio maintenance (\$50,000). Other smaller expenses covered are hazardous waste removal, software upgrades and shop cleaning materials.*

**AFFIRMATIVE ACTION and COMPLIANCE**

Final FY05 Current Expense Budget AFFIRMATIVE ACTION & COMPLIANCE UNIT						
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
WAGES & SALARIES	\$ 643,964	\$ 568,945	\$ 498,465	\$ 515,708	\$ 17,243	3.5%
OVERTIME	-	109	-	-	-	-
TRAINING & MEETINGS	3,800	-	1,400	1,450	50	3.6%
PROFESSIONAL SERVICES	45,415	11,500	-	-	-	-
OTHER MATERIALS	1,139	903	313	1,919	1,606	513.1%
OTHER SERVICES	500	200	1,000	700	(300)	-30.0%
<b>TOTAL</b>	<b>\$ 694,818</b>	<b>\$ 581,657</b>	<b>\$ 501,178</b>	<b>\$ 519,777</b>	<b>\$ 18,599</b>	<b>3.7%</b>

The Affirmative Action and Compliance Unit (AACU) develops, administers, and monitors compliance with all aspects of MWRA’s Affirmative Action Plan, programs, and policies of affirmative action, equal opportunity, and non-discrimination. The Special Assistant for AACU reports to the Board of Directors through the Executive Director.

The goals of AACU are to:

- 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 for its work force.
- Maintain internal audit and reporting systems adequate to measure accomplishments in areas of identified underutilization of minorities and females and to evaluate the effectiveness of MWRA's affirmative action program.
- Communicate to managers and supervisors MWRA's commitment to equal opportunity and affirmative action.
- Provide for the equitable participation of minority and women-owned businesses (MBE/WBE) in procurement opportunities and ensure that minorities and women are represented in the labor force on construction contracts.
- Assist divisions and departments in understanding MBE/WBE program policies and practices and monitor and report on contractor compliance.

**Budget Highlights**

- Total budget of \$519,777, an increase of \$18,599 or 3.7% over FY04 spending due to the back filling of the Special Assistant for Affirmative Action and Compliance position. The budget supports 8 positions.

## HUMAN RESOURCES

Final FY05 Current Expense Budget HUMAN RESOURCES						
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
WAGES & SALARIES	\$ 1,466,968	\$ 1,580,550	\$ 1,362,099	\$ 1,555,207	\$ 193,108	14.2%
OVERTIME	123	378	138	437	299	216.7%
FRINGE BENEFITS	10,698,306	12,242,555	10,769,692	12,284,574	1,514,882	14.1%
WORKERS' COMPENSATION	39,500	49,627	1,687,301	1,600,000	(87,301)	-5.2%
ONGOING MAINTENANCE	786	138	-	1,200	1,200	100.0%
TRAINING & MEETINGS	12,417	7,058	3,314	8,698	5,384	162.5%
PROFESSIONAL SERVICES	845,583	350,150	411,681	554,420	142,739	34.7%
OTHER MATERIALS	39,366	8,278	19,842	26,310	6,468	32.6%
OTHER SERVICES	27,482	8,400	35,413	58,345	22,932	64.8%
<b>TOTAL</b>	<b>\$ 13,130,531</b>	<b>\$ 14,247,134</b>	<b>\$ 14,289,480</b>	<b>\$ 16,089,191</b>	<b>\$ 1,799,711</b>	<b>12.6%</b>

Final FY05 Current Expense Budget HUMAN RESOURCES by Area						
AREA	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
EMPLOYEE/COMP/BEN	\$ 767,504	\$ 768,319	\$ 610,099	\$ 756,324	\$ 146,225	24.0%
LABOR RELATIONS	619,809	554,070	608,367	709,245	100,878	16.6%
TRAINING	983,846	607,775	585,776	706,061	120,285	20.5%
CENTRALIZED FRINGE BENEFITS	10,760,372	12,316,970	12,485,238	13,917,561	1,432,323	11.5%
<b>TOTAL</b>	<b>\$ 13,131,531</b>	<b>\$ 14,247,134</b>	<b>\$ 14,289,480</b>	<b>\$ 16,089,191</b>	<b>\$ 1,799,711</b>	<b>12.6%</b>

<sup>1</sup>The budget for Workers' Compensation was transferred from Operations to Human Resources in FY04.

The Human Resources Department is comprised of three units.

The **Employment, Compensation, and Benefits Unit** coordinates and oversees all external recruitment and selection activities including hiring, lateral transfers and promotions to meet the business needs of MWRA, and develops and coordinates MWRA compensation and benefits strategies and programs. 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 directed at the improvement of employee knowledge, skills, productivity, and the quality of workplace interaction. It is responsible for MWRA performance evaluation programs oversight and tracking, Employee Assistance, and Tuition Reimbursement programs. In addition, the Human Resources Department includes the **Centralized Fringe Benefits** cost center, which includes the budgets for fringe benefits for all MWRA employees as well as for mandatory payments for unemployment expenses and Medicare.

The goals of the Human Resources Department are to:

- Attract and retain a qualified high-performance workforce, hire and promote qualified minority and female employees, and offer a competitive total compensation (salary and benefits) package 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.

In FY04, the accomplishments of the Human Resources Department included:

- Filled 142 positions: 55 new hires (39%) and 87 transfers/promotions (61%).
- Delivered to 1,128 employees mandatory training on Recognizing and Preventing Workplace Harassment.
- Conducted Productivity Improvement Program courses.
- Trained 227 individuals in preparation for start-up of new water facilities.
- Supported a very challenging GIC open enrollment year, where 71% of participants (861 employees) were affected by GIC changes, most requiring health plan and system updates.
- Provided support to 70 individuals participating in our Early Retirement Incentive Program.

***Budget Highlights***

- *\$1.6 million for **Wages and Salaries**, an increase of \$193,000 or 14.2% over FY04 spending.*
- *\$12.3 million for **Fringe Benefits**, an increase of \$1,515,000 or 14.1% over FY04 spending. The budget includes \$10.3 million for MWRA's share of health insurance costs, \$989,000 for MWRA's share of Medicare taxes, \$840,000 for MWRA's share of dental insurance costs and union health and welfare fund contributions, \$90,000 for unemployment insurance payments, and \$36,000 for tuition reimbursement.*
- *\$1.6 million for **Workers' Compensation** expenses, a decrease of \$87,000 or 5.2% from FY04 spending. Human Resources is responsible for management of this program and coordination with the third-party administrator.*
- *\$554,000 for **Professional Services**, an increase of \$143,000 or 34.7% over FY04 spending. The FY05 budget includes \$162,000 for technical training, \$78,000 for professional development, \$53,000 for the Employee Assistance Program, \$60,000 for specialized investigation services and medical evaluation services 95,000 for Workers Compensation claims administration, \$63,000 for arbitration expenses, and \$40,000 for Labor Relations negotiations.*

## MANAGEMENT INFORMATION SYSTEMS (MIS)

Final FY05 Current Expense Budget							
MIS							
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04		
WAGES & SALARIES	\$ 5,355,510	\$ 5,111,419	\$ 4,871,640	\$ 4,693,222	\$ (178,418)	-3.7%	
OVERTIME	2,668	2,491	1,603	2,678	1,075	67.1%	
FRINGE BENEFITS	-	-	-	-	-	-	
ONGOING MAINTENANCE	2,486,568	2,502,857	3,027,277	2,684,996	(342,281)	-11.3%	
TRAINING & MEETINGS	42,947	13,986	26,817	15,490	(11,327)	-42.2%	
PROFESSIONAL SERVICES	-	(1,695)	-	-	-	-	
OTHER MATERIALS	788,579	374,648	658,762	119,054	(539,708)	-81.9%	
OTHER SERVICES	742,137	706,784	769,544	782,800	13,256	1.7%	
<b>TOTAL</b>	<b>\$ 9,418,409</b>	<b>\$ 8,710,490</b>	<b>\$ 9,355,643</b>	<b>\$ 8,298,240</b>	<b>\$ (1,057,403)</b>	<b>-11.3%</b>	

The MIS Department provides MWRA with the information processing capacity 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.

In FY05 MIS will continue to provide three categories of services:

- *Operational services* are day-to-day routine activities required for applications and systems to work, including preventive maintenance; replacement programs; minicomputer, server, network, and voice equipment availability; back-up and recovery; accounts payable and payroll generation; period closings; and scheduled report productions. Up-time goals based on industry norms have been established, as well as schedules for annual replacement programs. Cyber Security will continue to be a major work item in FY05.
- *Responsive services* are provided as a result of calls for assistance, training, troubleshooting, repair of systems or requests for materials, research, and records. A variety of performance measures have been adopted based on business impact and problem type. For example, the target response rate to close any of the aforementioned types of calls is 90% within three days, except for calls regarding system outages, the target for which is 100% within one business day. Staff also track backlogs, average closure rates, and rolling averages to ensure responsiveness.
- *Developmental services* respond to requests for new or enhanced products, services, reports, and applications. These requests are generally turned into projects with plans, defined deliverables, and agreed upon schedules. MIS-generated projects based on infrastructure limitations, changing technology, and expiration of leased equipment may also be included. All activities seek to balance business demands with costs and the desire to be neither leading nor lagging in the use of technology. Measurement is based on timely completion of milestones and a +/- 10% of budget and schedule target is established for all major projects. In addition, for projects with large capital or CEB requirements, a customization cap is established and reported on.

The goal of MIS is to support more than 1,200 MWRA users, including those at the Charlestown Navy Yard, Chelsea, Deer Island, Southboro and other remote sites, by ensuring that:

- Existing applications, hardware, and network resources are cost-effectively maintained, supported, upgraded, and replaced.
- Information system development efforts are consistent with the MWRA Business Plan, reflecting management priorities.

- System security and integrity are maintained.
- Flexible tools and system capabilities are provided consistent with industry standards and norms.

Key projects for FY05 include:

- Initiation of a multi-year project to replace obsolete systems including the Laboratory Information Management System and TRAC I/S.
- Migrating of the Lawson software (Finance, Procurement and HR/Payroll) to a new operating system so that maintenance support and security updates can continue.
- Re-licensing of Microsoft products.
- Expansion of disaster recovery services and the cyber security program.
- Maximo, SCADA/PI management reporting, GIS, wastewater meter reporting, network and email enhancements to keep pace with business requirements.

In FY04 MIS accomplishments included:

- **Services:** A total of 9,829 calls were received for the year of which 92% were closed within 3 business days (target is 90%).
- **Security:** Implemented a 24/7 intrusion detection monitoring system. Designed and implemented a new EOC and Blackberry secured communications for supervisory and management staff.
- **Infrastructure:** Implemented a new Private Branch Exchange (PBX) for DITP and Clinton. DITP, Chelsea, CNY, Southborough and Clinton can now use 4-digit dialing which reduces costs and allows for improved central support. Implemented Chelsea's Environmental Alarm Monitoring System; a system to enable monitoring of the uninterruptible power supplies and power situation of remote sites from Chelsea; and DSL services at Chelsea to provide 24/7 connectivity for Weather Data.
- **Operations Applications:** Continued to expand SCADA and PICS management information system; developed new modules for Water Quality; enhanced regulatory and permitting applications; and developed hundreds of reports, queries and data extracts for staff.
- **Administrative & Financial Applications:** Implemented CommBridge interface, new Contracts application, Lawson Employment and Training Modules, and Mass DOR interface via Citizens Bank. Upgraded Portia and Munease applications and developed numerous ad-hoc queries to support the HR, Payroll and Procurement departments.

**Budget Highlights**

- Total budget of \$8.3 million, a decrease of \$1,057,000 or 11.3% from FY04 spending, reflecting a reduction of staff and the decision to purchase FY05's replacement PCs and related equipment in FY04.
- \$2.7 million for license and maintenance fees to support administrative, operations, and database applications used by MWRA staff. This represents a decrease of 11.3% from FY04 spending resulting from discounts due to re-negotiating multi-year agreements and product changes.
- \$119,000 for **Other Materials**, a decrease of \$540,000 or 82 % from FY04 spending, reflecting the purchase of FY05's PCs and related equipment in FY04.
- \$783,000 for **Other Services**, an increase of \$13,000 or 1.7% over FY04 spending. The FY05 budget includes \$667,187 for MWRA network services to all staffed facilities, telephone services for Charlestown headquarters, the Chelsea facility, FRSA, Deer Island and Southborough and leased lines for security connectivity to key water facilities. The budget increase supports MWRA's security network, including blackberry devices.

**PROCUREMENT**

Final FY05 Current Expense Budget PROCUREMENT						
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
WAGES & SALARIES	\$ 3,145,862	\$ 2,970,520	\$ 3,090,184	\$ 2,919,452	\$ (170,732)	-5.5%
OVERTIME	15,554	7,987	4,312	-	(4,312)	-100.0%
FRINGE BENEFITS	301	93	45	-	(45)	-100.0%
CHEMICALS	-	-	-	-	-	-
ONGOING MAINTENANCE	517,308	(53,880)	(194,370)	-	194,370	-
TRAINING & MEETINGS	6,783	4,008	6,397	14,600	8,203	128.2%
PROFESSIONAL SERVICES	-	-	-	-	-	-
OTHER MATERIALS	9,850	3,044	105,077	97,531	(7,546)	-7.2%
OTHER SERVICES	53,198	55,295	58,955	64,258	5,303	9.0%
<b>TOTAL</b>	<b>\$ 3,748,856</b>	<b>\$ 2,987,067</b>	<b>\$ 3,070,600</b>	<b>\$ 3,095,841</b>	<b>\$ 25,241</b>	<b>0.8%</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 direct the bid, review, and selection process, and maintain 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 has consolidated existing inventory locations into four regional warehouses/distribution centers that will support all MWRA activities. The consolidation will result in better control, reduce inventory levels, and establish consistency across MWRA.

The goals of the Procurement Department are to:

- Procure materials, equipment, supplies, and 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.

In FY04 Procurement accomplishments included:

- Competitively bid and sold Renewable Portfolio Standard certificates, resulting in revenues of \$1.2 million.
- Completed procurement and contract for replacement of 220 sewer meters.
- Assisted development of and managed procurement of agency-wide insurance program.
- Timed purchase in January of 600,000 gallons of diesel fuel, saving \$24,000.

**Budget Highlights**

- Total budget of \$3.1 million, represents less than 1% increase from FY04 actual spending; includes \$2.9 million to support 49 positions and \$84,500 for agency-wide printer/copier paper.

## REAL PROPERTY and ENVIRONMENTAL MANAGEMENT

Final FY05 Current Expense Budget REAL PROPERTY / ENVIRONMENTAL MANAGEMENT						
LINE ITEM	FY02 Actual	FY03 Actual	FY04 Actual	FY05 Final	Change FY05 to FY04	
WAGES & SALARIES	\$ 597,103	\$ 616,072	\$ 532,870	\$ 525,763	\$ (7,107)	-1.3%
FRINGE	-	12	-	-	-	-
UTILITIES	7,675	-	-	-	-	-
ONGOING MAINTENANCE	-	-	-	-	-	-
TRAINING & MEETINGS	4,092	1,477	2,080	2,440	360	17.3%
PROFESSIONAL SERVICES	14,789	(1,033)	283	-	(283)	-100.0%
OTHER MATERIALS	1,430	2,441	989	1,938	949	96.0%
OTHER SERVICES	199,526	106,402	66,578	196,175	129,597	194.7%
<b>TOTAL</b>	<b>\$ 824,615</b>	<b>\$ 725,371</b>	<b>\$ 602,800</b>	<b>\$ 726,316</b>	<b>\$ 123,516</b>	<b>20.5%</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. Staff participate in selecting sites, negotiating acquisitions or easements, and managing the sale or lease of MWRA surplus real property. In addition, staff have developed and are maintaining the Real Property Database, the compilation of more than 100 years of easements and land rights for the water and sewer systems. Department staff manage environmental regulatory compliance at MWRA facilities and also provide special expertise and assistance to MWRA staff regarding air quality and hazardous material issues. Assistance includes air emission permits negotiation and preparation and submittal of monthly/quarterly monitoring reports.

The goals of the Real Property and Environmental Management Department are to:

- Acquire the real property needed to complete MWRA's major capital projects in a timely and cost-effective manner, and manage the disposition of surplus real property in an efficient manner, as well as to 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; and monitoring of and providing assistance in maintaining environmental regulatory compliance at MWRA facilities.

In FY04, the accomplishments of the Real Property and Environmental Management Department included:

- Completed the sale, for \$2.211 million, of a 12.2 acre parcel of land and water at FRSA to a private firm, thereby placing the land back on the Quincy tax rolls and generating revenue for the Authority.
- Negotiated the sale of 11.6 acres of land and water at FRSA to the MBTA for \$1.2 million, expected to close in the first half of FY05.
- Real Property and Environmental Management, in conjunction with other staff, completed the Sudbury Aqueduct Condition Assessment Report.

### ***Budget Highlights***

- *The total FY05 budget of \$726,000 is an increase of 20.5% from FY04 spending. The additional funding, \$195,000, is a one-time expense that will continue and complete the environmental remediation at Turkey Hill/Walnut Hill, work that began with the Clean State Initiative.*



## Appendices

## APPENDIX A

### DESCRIPTIONS OF FUNCTIONAL AREAS

**Facilities Planning, Design, and Construction** - Management of planning, design, and construction activities to repair, rehabilitate, and construct MWRA transport, treatment, distribution, and support facilities. Functions include in-house engineering, drafting, surveying, technical assistance, environmental review, management of consultants, and construction project management, including contract management and administration.

**Wastewater Transport** - The continuous transportation and delivery of an average of more than 350 million gallons per day of wastewater from user communities to the Deer Island and Clinton treatment plants. Includes operation and maintenance of a large network of interceptors, and numerous pump stations, CSOs, and headworks facilities, as well as regular inspection of interceptors and tidegates. System operation requires 1) very careful attention to wet weather flows which can double or even triple average daily flows, and 2) response to emergency conditions such as flooding, back-ups, and illegal sewer discharges.

**Wastewater Treatment** - The continuous treatment of wastewater to meet NPDES requirements at the Deer Island and Clinton treatment plants, as well as the conversion of wastewater residuals from the Deer Island plant into fertilizer pellets or sludge cake at the residuals processing facility in Quincy. Includes operation, maintenance, and technical and administrative support for all treatment facilities.



## DESCRIPTIONS OF FUNCTIONAL AREAS – CONTINUED

**Water Transmission, Distribution, and Treatment** - The transmission, pumping, treatment, and delivery of 250 million gallons per day of potable water from the Quabbin and Wachusett reservoirs to MWRA user communities. Includes operation and maintenance of aqueducts, tunnels, pipelines, pump stations, and treatment facilities. Also includes generation and sale of hydroelectric power.

**Water and Wastewater Quality** - Activities which work to ensure that the water MWRA delivers to user communities and that the wastewater discharged from MWRA treatment plants meet appropriate quality standards. Includes the Environmental Quality Department, which monitors sewage influent and effluent quality and the resulting impact on Boston Harbor; the Laboratory Services Department, which performs more than 150,000 analyses per year, including 30,000 tests to monitor and ensure the purity and quality of MWRA water at the system and community levels; and the TRAC Department, which operates a multi-faceted program to minimize and control the inflow of hazardous and toxic materials into the sewer system and includes permitting and monitoring of more than 800 industries.

**Metering and Monitoring** - Operation and maintenance of MWRA's 150 water meters, more than 200 wastewater meters, and a variety of instrumentation devices to ensure the accuracy and integrity of the meter systems and the information MWRA uses to support hydraulic modeling, planning, pipeline maintenance and rehabilitation, and customer assessments.

## DESCRIPTIONS OF FUNCTIONAL AREAS – CONTINUED

**Facilities and Equipment Management and Support** - Management and maintenance of approximately 500 MWRA vehicles and pieces of communications equipment; management of the Fore River Staging Area and MWRA headquarters, including more than \$5.75 million in leases for CNY and Linden Street; management of the new Chelsea Facility; provision of supply- and demand-side energy management services; office supplies and postage; and provision of library and records management services, copying and printing services, and other general office services.

**Administration** - Senior management and support staff in the offices of the Executive Director, Finance Division Director and Operations Division Administration; also includes funding for the Advisory Board and other MWRA advisory committees (WSCAC, WAC).

**Financial Management** - Management of budgeting, accounting and payments, payroll, rates and revenue, capital financing, investments, grants and loans, auditing, and review of compliance with accounting and management control systems related to MWRA's annual spending.

**Law** - Provision of legal analysis and counsel to MWRA's operating and support areas including environmental regulation, real estate, labor relations, and claims management, as well as representation of MWRA in all court-related matters.

## DESCRIPTIONS OF FUNCTIONAL AREAS – CONTINUED

**Human Resources** - Management and administration of human resources policies and programs for MWRA's employees, including recruitment and hiring; wage and salary compensation and fringe benefits of more than \$104 million; labor relations and collective bargaining for five bargaining units; development, implementation, and evaluation of occupational health and safety programs and practices; health screening and CDL testing; a \$1 million workers' compensation program; and annual provision of technical and non-technical training to MWRA employees.

**Procurement** - Management of the purchase of goods and professional and construction services needed to support MWRA's operating and capital programs and to ensure compliance with statutory, regulatory, and policy requirements, including MBE/WBE procurement goals. The Procurement Department annually manages the procurement of more than \$40 million of goods and materials as well as the procurement of an estimated 575 contracts, amendments, and change orders valued at approximately \$475 million.

**Public Affairs** - Activities to enhance public understanding of MWRA's mission, goals, and services through media outreach, public information, and educational initiatives. Responds to legislative inquiries from the 82 representatives and 26 senators representing the MWRA service area. Coordinates MWRA response to construction-related, operations, and financial issues in each of the 61 MWRA member communities.

## DESCRIPTIONS OF FUNCTIONAL AREAS – CONTINUED

**MIS** - Provides hardware, software, network/voice communications, systems training, and programming resources including telephones, personal computers, word processing and spreadsheet software, electronic mail, and communications between remote sites and CNY. Specific applications and technologies are provided to support financial (budget, receivables/payables, rates, investments), operational (flow/meter capture, maintenance, materials management, safety), engineering (modeling, mapping, geographical information systems, project planning, computer-aided design), regulatory (TRAC, NPDES, water and wastewater quality), and administrative/support (payroll, training, contracts, purchasing) activities. This function is supported by the MIS Department, the FIS group at Deer Island, and other staff.

**Planning** - Coordinates development of the MWRA Business Plan and prepares other short-term and long-term plans to guide MWRA development and increase the overall efficiency and effectiveness of MWRA operations, maintenance, and capital programs; also includes the Real Property and Environmental Management Department, which negotiates the purchase or lease of real estate and land needed to support MWRA capital projects and provides special environmental and policy expertise and assistance to MWRA staff.

## APPENDIX B

### DIRECT EXPENSE BUDGET LINE ITEMS

#### **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, and holiday pay for MWRA staff, as well as funds for interns and temporary staff.

**Overtime** - This line item includes funds for overtime related to operations, 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,

potassium permanganate, and hydrofluosilicic acid.

**Utilities** - This line item includes funds for electricity, fossil fuels, 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 – VI present summaries of the MWRA's five division budgets with a detailed description of program budgets and highlights within each division section.

## APPENDIX C

### 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 maintain an ongoing dialogue with the Board of Directors and Advisory Board to discuss issues, the status of budget development, and other concerns.

**September** Divisions receive budget targets, guidelines, and manuals for the development of budget requests, and can begin to access MWRA's interactive budgeting system.

**Nov-Dec** After the divisions return their budget requests, Rates and Budget Department staff compare the requests to the previous years' budgets and expenses, review the justifications for the requests, and meet with program staff to clarify resource needs and identify opportunities for efficiencies.

**January** The Executive Director, supported by senior management, determines proposed funding levels required to meet service priorities. 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. (FY04 was an exception to this timetable since there is a first-time Governor and the House 1 budget was released in February versus January).

**Mar-April** MWRA hosts public hearings to solicit comments on the proposed budget community assessments from citizens in its service area. The Board of Directors may hold briefing sessions on the proposed budget. The Advisory Board transmits comments and recommendations on the proposed budget to MWRA.

**May** The Board of Directors holds a hearing on the proposed budget and the Advisory Board's comments and recommendations.

**June** The Board of Directors adopts a final Current Expense Budget and a schedule of final wholesale water and sewer assessments.

## **APPENDIX D**

### **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. Use of rate stabilization and bond redemption fund amounts is carried out in furtherance of MWRA's budgeting objectives and in accordance with its financing agreements. MWRA consults with the Advisory Board concerning use of amounts in the 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.

- 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 effect 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.

Beginning in FY2001, 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 date MWRA levies an interest charge of one percent per month or 0.033 percent per day. Interest charges do not accrue until 45 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 MWRA that capitalization of expenditures conform with generally accepted accounting principles. Under such guidelines, MWRA has adopted the provisions of the Financial Accounting Standards Board's Statement No. 71, "Accounting for the Effects of Certain Types of Regulation," which is intended to assure that utility revenues are appropriately matched with incurred costs. Capital expenditures create assets or extend their useful lives. Assets are valued at their cost and provide benefits over an extended period of time. Sources of funds for capital expenditures include grants, proceeds of MWRA borrowing, loans, and current revenue.

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

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

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

## RESERVES FUNDED FROM CURRENT REVENUE

### **Operating Reserve**

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

### **Insurance Reserve**

The insurance reserve has been established to provide funds to restore, replace, or reconstruct lost or damaged property or facilities of the water or sewer system. It provides funds reserved against risks for which MWRA does not currently maintain insurance. This self-insurance reduces the cost MWRA might otherwise incur for purchased insurance policies. MWRA periodically evaluates the level of its insurance reserve and every three years a consulting engineer or an insurance consultant recommends an appropriate insurance reserve fund requirement. The latest consultant review recommends an increase of \$3 million in the reserve's funding level over the next three years. Between FY2005 and FY2007, the budget includes an increase of \$1 million per year to increase the reserve to \$21 million.

### **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 million from \$50 million.

## 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 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 and 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 prepare 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 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**

### **Capital Budget Spending Cap**

Every five years, beginning in June 2003 for the period FY04 through FY08, the Board will establish a five-year Capital Budget Spending cap and annual caps for each year of 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.



## **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.

## **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.

## **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.

**APPENDIX E**

**MWRA Planning Estimates FY2005 to FY2014**

	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014
<b>EXPENSES</b>										
Direct Expenses	\$176,051	\$184,929	\$189,707	\$194,054	\$198,409	\$203,566	\$208,805	\$214,025	\$219,376	\$224,860
Indirect Expenses	34,575	36,786	43,450	37,646	38,692	39,755	42,959	46,689	47,047	50,604
Capital Financing (before offsets)	<u>290,834</u>	<u>329,271</u>	<u>347,784</u>	<u>377,415</u>	<u>392,993</u>	<u>439,574</u>	<u>464,624</u>	<u>491,920</u>	<u>521,073</u>	<u>519,809</u>
Sub-Total Expenses	\$501,460	\$550,986	\$580,941	\$609,116	\$630,094	\$682,895	\$716,388	\$752,635	\$787,496	\$795,273
Debt Service Assistance	0	0	0	0	0	0	0	0	0	0
Bond Redemption Savings	0	(11,280)	(9,057)	(13,893)	0	0	0	0	0	0
Variable Rate Savings	(8,853)	0	0	0	0	0	0	0	0	0
Total Expenses	\$492,607	\$539,706	\$571,884	\$595,223	\$630,094	\$682,895	\$716,388	\$752,635	\$787,496	\$795,273
<b>REVENUE &amp; INCOME</b>										
<b>Non-Rate Revenue &amp; Income</b>										
Interest Income/Other Charges	\$39,607	\$40,671	\$39,351	\$39,891	\$40,434	\$41,891	\$43,038	\$43,691	\$44,740	\$45,498
Rate Stabilization	0	15,684	16,799	5,044	3,919	0	0	0	0	0
Total Non-Rate Revenue	\$39,607	\$56,355	\$56,150	\$44,935	\$44,353	\$41,891	\$43,038	43,691	44,740	45,498
Total Rate Revenue	\$453,000	\$483,351	\$515,734	\$550,288	\$585,741	\$641,003	\$673,350	\$708,944	\$742,756	\$749,775
Rate Revenue Increase	3.9%	6.7%	6.7%	6.7%	6.4%	9.4%	5.0%	5.3%	4.8%	0.9%
<b>Estimated Annual Household Charge **</b>										
Charge based on DEP data (weighted)	\$590	\$624	\$662	\$702	\$743	\$801	\$840	\$884	\$927	\$981
Charge based on 90,000 gal. (weighted)	\$871	\$921	\$976	\$1,036	\$1,097	\$1,181	\$1,239	\$1,304	\$1,368	\$1,401
<b>WASTEWATER</b>										
<b>EXPENSES</b>										
Direct Expenses	\$126,661	\$128,388	\$130,720	\$134,496	\$137,228	\$140,727	\$144,041	\$147,223	\$151,048	\$154,376
Indirect Expenses	10,367	10,019	9,983	9,290	8,584	8,366	8,743	9,218	9,620	9,471
Capital Financing (before offsets)	<u>208,434</u>	<u>229,780</u>	<u>244,521</u>	<u>261,391</u>	<u>272,649</u>	<u>305,810</u>	<u>311,971</u>	<u>339,663</u>	<u>362,167</u>	<u>356,808</u>
Sub-Total Wastewater Expenses	\$345,463	\$368,188	\$385,224	\$405,178	\$418,461	\$454,904	\$464,755	\$496,104	\$522,835	\$520,655
Debt Service Assistance	0	0	0	0	0	0	0	0	0	0
Bond Redemption Savings	0	(6,380)	(5,123)	(7,858)	0	0	0	0	0	0
Variable Rate Savings	(2,272)	0	0	0	0	0	0	0	0	0
Total Wastewater Expenses	\$343,191	\$361,808	\$380,102	\$397,320	\$418,461	\$454,904	\$464,755	\$496,104	\$522,835	\$520,655
<b>REVENUE &amp; INCOME</b>										
<b>Non-Rate Revenue &amp; Income</b>										
Interest Income/Other Charges	\$24,515	\$25,317	\$24,043	\$23,954	\$24,090	\$24,662	\$24,795	\$25,341	\$25,968	\$26,116
Rate Stabilization	0	11,575	12,520	2,636	0	0	0	0	0	0
Total Non-Rate Revenue	\$24,515	\$36,892	\$36,563	\$26,590	\$24,090	\$24,662	\$24,795	25,341	25,968	26,116
Wastewater Rate Revenue	\$318,675	\$324,916	\$343,539	\$370,730	\$394,371	\$430,242	\$439,960	\$470,763	\$496,867	\$494,540
Rate Revenue Increase	2.1%	2.0%	5.7%	7.9%	6.4%	9.1%	2.3%	7.0%	5.5%	-0.5%
<b>Estimated Annual Household Sewer Charge **</b>										
Charge based on DEP data (weighted)	\$359	\$369	\$389	\$417	\$442	\$477	\$491	\$523	\$551	\$575
Charge based on 90,000 gal. (weighted)	\$529	\$544	\$574	\$615	\$652	\$704	\$725	\$772	\$814	\$822
<b>WATER</b>										
<b>EXPENSES</b>										
Direct Expenses	\$49,390	\$56,541	\$58,987	\$59,558	\$61,181	\$62,838	\$64,764	\$66,803	\$68,328	\$70,484
Indirect Expenses	24,207	26,767	33,467	28,356	30,108	31,389	34,216	37,471	37,427	41,133
Capital Financing (before offsets)	<u>82,400</u>	<u>99,490</u>	<u>103,263</u>	<u>116,024</u>	<u>120,344</u>	<u>133,764</u>	<u>152,653</u>	<u>152,257</u>	<u>158,906</u>	<u>163,001</u>
Sub-Total Water Expenses	\$155,997	\$182,798	\$195,716	\$203,938	\$211,633	\$227,991	\$251,633	\$256,531	\$264,661	\$274,618
Debt Service Assistance	0	0	0	0	0	0	0	0	0	0
Bond Redemption Savings	0	(4,900)	(3,934)	(6,035)	0	0	0	0	0	0
Variable Rate Savings	(6,581)	0	0	0	0	0	0	0	0	0
Total Water Expenses	\$149,416	\$177,898	\$191,782	\$197,903	\$211,633	\$227,991	\$251,633	\$256,531	\$264,661	\$274,618
<b>REVENUE &amp; INCOME</b>										
<b>Non-Rate Revenue &amp; Income</b>										
Interest Income/Other Charges	\$15,091	\$15,354	\$15,308	\$15,937	\$16,345	\$17,230	\$18,244	\$18,350	\$18,772	\$19,383
Rate Stabilization	0	4,109	4,279	2,408	3,919	0	0	0	0	0
Total Non-Rate Revenue	\$15,091	\$19,463	\$19,587	\$18,345	\$20,264	\$17,230	\$18,244	\$18,350	\$18,772	\$19,383
Water Rate Revenue	\$134,325	\$158,435	\$172,195	\$179,558	\$191,369	\$210,761	\$233,390	\$238,181	\$245,889	\$255,235
Rate Revenue Increase	8.5%	17.9%	8.7%	4.3%	6.6%	10.1%	10.7%	2.1%	3.2%	3.8%
<b>Estimated Annual Household Water Charge **</b>										
Charge based on DEP data (weighted)	\$231	\$255	\$272	\$285	\$301	\$324	\$349	\$361	\$376	\$405
Charge based on 90,000 gal. (weighted)	\$341	\$377	\$402	\$421	\$445	\$477	\$514	\$533	\$555	\$579

\*\* 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. Estimated household charges based on DEP data are based on average residential consumption of 61,000 gallons per year. The ratio of MWRA to local charge is assumed to be 39% local, 61% MWRA in FY04.

## APPENDIX F

### GLOSSARY OF FINANCIAL AND OPERATING TERMS

**SM 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 oxygen.

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

**AOC:** 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.

**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.

**CAC:** Citizens' Advisory Committee.

**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 liquid 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.

**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.

**Commonwealth Reimbursements:** Income received from the Commonwealth of Massachusetts as reimbursement for certain chemical and operational costs in accordance with prevailing legislation.

**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, or other metals. Corrosion control can include adjustments to pH and alkalinity, as well as the addition of corrosion inhibitors such as phosphates.

**Coverage Requirement:** Requirement of MWRA's bond resolution which provides that pledged revenue available annually to pay debt service must exceed the annual debt service requirement by a certain percentage.

**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 63 CSOs that currently discharge into rivers or Boston Harbor.

**CSO Facilities**: MWRA has five facilities that intercept the flow from CSO pipes and provide limited wastewater treatment 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.

**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 federal government expects to issue this rule in draft form late in 2002 and promulgate the final rule in late 2003. The rule will further regulate 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.

**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, that disperses treated wastewater over a large area.

**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.

**Division of Watershed Management (DWM):** A division of the Metropolitan District Commission (MDC) responsible for watershed management activity. MWRA reimburses the Commonwealth for the cost of DWM's operations.

**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 defined 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 environment agencies.

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

**ESWTR:** Enhanced Surface Water Treatment Rule - A federal rule is being 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: The federal government expects to issue LT2ESWTR as a draft in late 2002, and to promulgate the final rule in late 2003. LT2ESWTR will further tighten 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.

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

**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 the Boston Edison Company 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.

**ICC:** Interim Corrosion Control Facility - A facility located in Marlborough near Walnut Hill, where MWRA adjusts pH and alkalinity to reduce the leaching of lead from home plumbing.

**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.

**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 and 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.

**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.

**MDC:** Metropolitan District Commission - Prior to 1985, the agency responsible for water and sewer services in metropolitan Boston, a responsibility MWRA assumed in July, 1985. MDC continues to oversee and manage parks and recreational areas, roadways in the metropolitan area, and the watershed system including the Quabbin, Wachusett, and Sudbury Reservoirs.

**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.

**NEFCo:** New England Fertilizer Company - The contractor responsible for the operation of barging and 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.

**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.

**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 place 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. MWRA is constructing a new water treatment plant at Walnut Hill that will use ozone 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 town 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.

**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 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.

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

**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.

**Safe Yield Model:** The equation used to determine the maximum dependable draft that can be made continuously on a source of supply 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.

**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.

**Sewer Jet Truck:** Vehicle used to clean and/or remove blockages from sewer lines by pushing fluids in the sewer.

**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 as the primary chemical in the disinfection and odor processes at the Deer Island Treatment Plant, and as the disinfectant at the Cosgrove and Ware water disinfection facilities. MWRA will also use sodium hypochlorite at the Walnut Hill water treatment plant.

**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.

**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.

**Wastewater:** The water carried by sewers serving residences and businesses that enters wastewater facilities for treatment.

**Wastewater Treatment Plant (WTP):** 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 Metropolitan District Commission (MDC) 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.