

MASSACHUSETTS WATER RESOURCES AUTHORITY



Fiscal Year 2008 CURRENT EXPENSE BUDGET

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

September, 2007

Dear Chairwoman Dunphy:

This letter transmits to the Advisory Board MWRA's Current Expense Budget (CEB) for Fiscal Year 2008. The CEB was approved by MWRA's Board of Directors at its July 2, 2007 meeting.

The rate revenue requirement for FY08 is \$517.8 million, an increase of 4.5% over FY07. It includes \$17.25 million of Debt Service Assistance, which represents MWRA's estimated share of the \$23 million statewide appropriation for FY08.

Total expenses are \$582.1 million (before offsets), representing an increase of \$10.8 million or 1.9% over FY07 actual expenses. Approximately 57% or \$331.0 million of expenses is for debt service, and 43% or \$251.1 million is for direct and indirect operating expenses. The majority of the increase is attributable to direct and indirect operating expenses of \$21.5 million or 9.4% and relates to the recognition of the GASB 45 liability related to the funding of retiree postemployment health care costs, increased wages and salaries, higher health care costs, and higher utility and chemical prices.

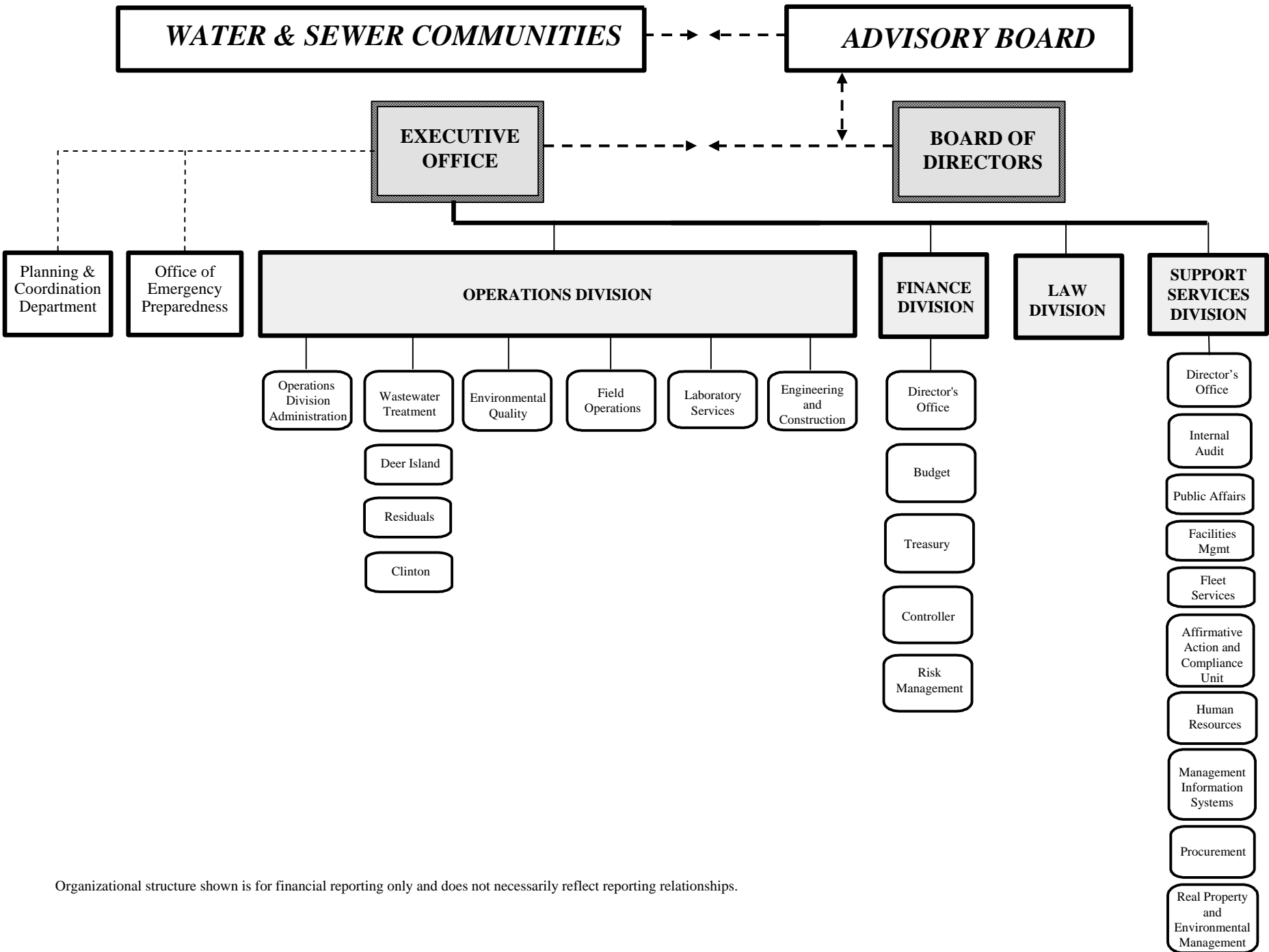
It is important to note the effect of the FY07 debt service restructuring, which was implemented in cooperation with the Advisory Board. It is designed to smooth debt service in years 2008 through 2017 and generate rate relief for member communities as part of an ongoing rate management strategy. Had the restructuring not been undertaken, FY08 debt service would have been approximately \$43 million higher and future annual debt service would have continued to grow significantly.

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

Thank you for your continued support, comments and recommendations to the Current Expense Budget.

Sincerely,

Frederick A. Laskey
Executive Director



Organizational structure shown is for financial reporting only and does not necessarily reflect reporting relationships.

TABLE OF CONTENTS

SECTION I: EXECUTIVE SUMMARY

MWRA Mission.....	I- 1
Community Profile and Assessments.....	I-15
Revenue and Expenditure Trends.....	I-18
Capital Improvement Program.....	I-20
MWRA Organization and History.....	I-25
Statement of MWRA Financial Position.....	I-28

SECTION II: EXECUTIVE DIVISION

Executive Office Budget Summary.....	II - 1
Office of Emergency Preparedness.....	II - 3
Planning and Coordination Department.....	II - 5

SECTION III: OPERATIONS DIVISION

Operations Division Budget Summary.....	III- 1
Operations Administration.....	III- 8
Wastewater Treatment.....	III- 9
Deer Island.....	III- 10
Residuals.....	III- 13
Clinton.....	III- 15
Field Operations.....	III- 17
Laboratory Services.....	III- 20
Environmental Quality.....	III- 22
Engineering and Construction.....	III- 23

SECTION IV: LAW DIVISION

Law Division Budget Summary.....	IV- 1
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SECTION V: FINANCE DIVISION

Finance Division Budget Summary.....	V-1
Division Director's Office.....	V-2
Budget.....	V-3
Controller.....	V-4
Risk Management.....	V-5
Treasury.....	V-6

SECTION VI: SUPPORT SERVICES DIVISION

Support Services Division Budget Summary.....VI- 1
Division Director.....VI- 2
Internal AuditVI- 3
Public Affairs.....VI- 4
Facilities Management.....VI- 6
Fleet Services.....VI- 8
Affirmative Action and Compliance Unit.....VI-10
Human Resources.....VI-11
Management Information Systems.....VI-14
Procurement.....VI-18
Real Property and Environmental Management.....VI-20

APPENDICES

- A. Descriptions of Direct Expense Budget Line Items
- B. Budget Timetable
- C. Budget and Assessment Policies and Procedures
- D. Planning Estimates - Detail Presentation, FY08 - FY17
- E. Glossary of Terms
- F. Capital Financing by Debt Series



Executive Summary

Executive Summary

MWRA Mission

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

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

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

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

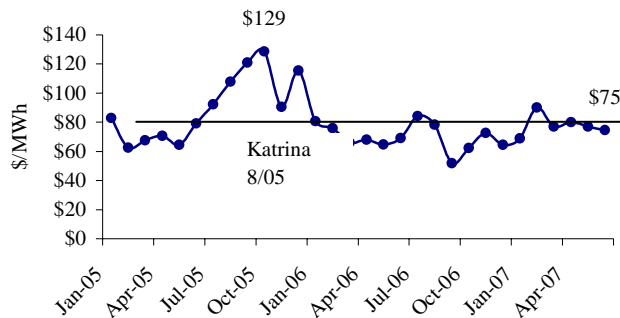
Overview

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

The Final FY08 Budget totals \$582.1 million before offsets of \$17.25 million in debt service assistance (DSA) and \$0.4 million in variable rate saving funds for a net total expense of \$564.5 million. This budget is \$16.4 million or 3.0% above FY07 actual results. The Final FY08 Budget increase primarily reflects the MWRA's adoption of GASB 45 covering post-employment benefits which will take effect in FY08, increased wages and salaries and rising healthcare costs. Additionally, the Authority refinanced approximately \$675 million in long-term borrowings to smooth debt service and to generate rate relief in years 2008 through 2017. FY08 debt service was reduced by \$43 million as a result of the refinancing.

Energy prices have returned to more historical levels as evidenced in the table below, but in periods of tight supply, price spikes remain a concern. In FY06, a spike in energy prices, due to Hurricane Katrina, pushed electricity prices to a high of \$129 MWh, 42% above today's level. This resulted in a projected \$5.6 million increase in FY06 energy and utility costs reflecting the energy demands of MWRA's facilities. Deer Island, Carroll Water Treatment Plant and other large Field Operations (FOD) facilities purchase blocks of power in the variable rate market. Approximately 77% of the Authority's energy requirement is purchased in the variable rate market. Some of this risk is mitigated by the Authority's power generating assets. Deer Island and Carroll Plant have 52 MW and 8 MW of generating capacity, respectively. Since FY02, Deer Island has purchased approximately 76% of its electricity requirement. The remaining 24% of the plant's electricity requirements are met through on-site generation. Of this amount, 62% is generated from the steam turbine generator (STG) through the burning of digester gas in the boilers, 25% from the combustion turbine generator (CTG), through a combination of exercise and load response, and 13% from the hydro power facility. The Authority is also investigating alternative energy sources including wind and solar power opportunities at several facilities to promote additional self-generation.

The MWRA's Final FY08 Budget is \$564.5 million after offsets. The final budget projects its allocation of the Commonwealth's Debt Service Assistance (DSA) to be \$17.25 million, \$1.7 million below the prior year's level. The MWRA, the Advisory Board, and its member communities will continue their efforts with the Legislature to restore the DSA appropriation to the FY07 level for FY09 and beyond.



Total expenses include \$331.0 million or 57% for capital financing costs and \$251.1 million or 43.1% for operating expenses, of which \$206.6 million is for direct expenses and \$44.5 million is for indirect expenses. Total expenses increased by \$16.4 million over FY07 actuals, \$21.5 million for operating expenses partially offset by a \$5.1 million reduction in capital financing expense.

The \$5.1 million decrease in capital financing expenses reflects a \$10.7 million decrease in debt service, reflecting the benefit of the \$675 million refinancing and amounts due on outstanding indebtedness in addition to \$75 million planned to be borrowed from the state revolving fund (SRF) in December 2007 and \$100 million in new fixed rate borrowings planned for February 2008. This decrease is offset by a \$3.9 million increase for higher variable interest rate assumption in FY08 versus FY07 actual and \$1.7 million for lower DSA receipt in FY08.

The \$21.5 million increase in operating expenses includes \$13.2 million for direct expenses and \$8.3 million for indirect expenses. The increase in direct expenses reflects increases in healthcare expenses, contractual labor agreements, maintenance, and chemicals. The increase in indirect expenses includes \$7.1 million in additional funding for adoption of GASB 45, *Accounting for Financial Reporting for Postemployment Benefits Other Than Pensions*.

The final rate revenue requirement for FY08 is \$517.8 million, an increase of 4.5% over the approved FY07 rate revenue requirement.

The final FY08 non-rate revenue totals \$46.7 million, a decrease of \$8.7 million from FY07 actuals. The change, as indicated above, primarily results from a \$6.4 million decrease in projected investment earnings due to lower interest rate assumptions and less money invested long-term. It is important to note that \$12.6 million in rate stabilization funds were projected to be used in FY07, but preserved for use in future budget cycles, reflecting lower utility prices, favorable interest rates, and other economically favorable factors. The final FY08 non-rate revenue budget includes \$33.9 million for investment income, \$7.6 million in other user charges, \$2.1 million in permit fees and penalties, \$1.4 million from the sale of renewable energy portfolio credits and participation in energy load reduction programs, and \$0.9 million from the Commonwealth,

Table I-1 on the following page shows MWRA's Final FY08 Budget for revenue and expenses by line item and includes a comparison with FY06 and FY07 actuals. Line item changes from FY07 to FY08 are described in the Revenue and Expense section of the Executive Summary and in more detail in the divisional sections of this document.

Table I-1

**Final FY08 Current Expense Budget
EXPENSES and REVENUES**

TOTAL MWRA	FY06 Actual	FY07 Actuals	FY08 Final Budget	Change FY08 Final to FY07 Actuals	
				\$	%
EXPENSES					
WAGES AND SALARIES	\$ 82,135,835	\$ 83,034,216	\$ 88,091,461	\$ 5,057,245	6.1%
OVERTIME	3,511,461	3,832,439	3,864,290	31,851	0.8%
FRINGE BENEFITS	14,193,552	15,120,537	16,271,444	1,150,907	7.6%
WORKERS' COMPENSATION	1,823,356	1,235,814	1,400,000	164,186	13.3%
CHEMICALS	6,878,847	7,266,880	8,702,932	1,436,052	19.8%
ENERGY AND UTILITIES	28,656,007	24,228,522	26,532,695	2,304,173	9.5%
MAINTENANCE	19,484,784	25,914,704	25,768,810	(145,894)	-0.6%
TRAINING AND MEETINGS	162,873	275,433	222,252	(53,181)	-19.3%
PROFESSIONAL SERVICES	6,603,951	5,864,009	7,869,287	2,005,278	34.2%
OTHER MATERIALS	4,203,959	5,516,242	5,022,858	(493,384)	-8.9%
OTHER SERVICES	22,011,737	21,123,105	22,893,395	1,770,290	8.4%
TOTAL DIRECT EXPENSES	\$ 189,666,362	\$ 193,411,901	\$ 206,639,424	\$ 13,227,523	6.8%
INSURANCE	\$ 2,056,004	\$ 2,454,247	\$ 2,500,000	\$ 45,753	1.9%
WATERSHED/PILOT	21,816,009	20,900,539	23,207,147	2,306,608	11.0%
HEEC PAYMENT	4,660,934	4,221,585	4,347,200	125,615	3.0%
MITIGATION	2,151,122	1,383,482	1,419,223	35,741	2.6%
ADDITIONS TO RESERVES	866,000	3,118,693	1,654,655	(1,464,038)	-46.9%
RETIREMENT FUND	3,604,106	4,094,362	4,233,329	138,967	3.4%
POST EMPLOYMENT BENEFITS			7,098,896	7,098,896	
TOTAL INDIRECT EXPENSES	\$ 35,154,175	\$ 36,172,908	\$ 44,460,450	\$ 8,287,542	22.9%
DEBT SERVICE BEFORE OFFSETS	\$ 309,251,618	\$ 341,693,795	\$ 331,002,700	\$ (10,691,095)	-3.1%
VARIABLE RATE DEBT	(4,862,251)	(4,295,441)	(375,000)	3,920,441	
BOND REDEMPTION	-	-	-	-	
DEBT SERVICE ASSISTANCE	(9,630,649)	(18,937,082)	(17,250,000)	1,687,082	-8.9%
TOTAL DEBT SERVICE	\$ 294,758,718	\$ 318,461,272	\$ 313,377,700	\$ (5,083,572)	-1.6%
TOTAL EXPENSES	\$ 519,579,255	\$ 548,046,081	\$ 564,477,574	\$ 16,431,493	3.0%
REVENUE & INCOME					
RATE REVENUE	\$ 472,219,800	\$ 495,358,764	\$ 517,797,832	\$ 22,439,068	4.5%
OTHER USER CHARGES	10,309,461	8,870,839	7,565,475	(1,305,364)	-14.7%
OTHER REVENUE	8,454,738	6,245,992	5,241,223	(1,004,769)	-16.1%
RATE STABILIZATION	10,739,948	-	-	-	
INVESTMENT INCOME	43,762,390	40,262,125	33,873,044	(6,389,081)	-15.9%
TOTAL REVENUE & INCOME	\$ 545,486,337	\$ 550,737,720	\$ 564,477,574	\$ 13,739,854	2.5%

FY08 Highlights and Initiatives

- Complete the first full year of operation of Union Park CSO Detention/Treatment facility in conjunction with the Boston Water and Sewer Commission as stipulated in the joint operating agreement, which became operational on April 26, 2007.
- Complete the first year of operation of the BOS019 CSO storage conduit project which became operational on March 30, 2007.
- Building upon its track record of sustainable resource use – most notably dramatic system-wide reductions in water demand, 100% beneficial reuse of biosolids, self-generation of approximately 25% of Deer Island’s power needs, and maximizing revenue through hydropower – MWRA continues to work aggressively to use its resources efficiently, respond appropriately to climate change, and reduce the environmental impacts of its daily operations. Key initiatives now underway or planned for FY08 include:
 - A comprehensive “green energy” initiative that is expected to bring solar, wind and hydroelectric power either alone or in combination to a number of MWRA facilities.
 - Retrofitting of diesel-powered vehicles and equipment and continued purchase of alternative fuel vehicles.
 - Comprehensive energy audits at the Carroll Water Treatment Plant, the Chelsea Facility, and Deer Island Treatment Plant.
 - A feasibility study to replace the existing steam turbine generator on Deer Island with a more efficient unit.

MWRA will continue to assign high priority in its capital and current expense budgets to projects which demonstrate its commitment to energy efficiency and environmental sustainability and will seek to maximize grant funding to improve the economic efficiency of renewable energy projects.

- Continue optimization of chemical and energy usage at the Carroll Plant including conducting an energy assessment of the plant.
- Competitively procure electricity purchase for the smaller profile accounts, including the Charlestown Navy Yard.
- Implement the requirements of a new Deer Island Treatment Plant discharge permit that will replace the permit that expired in August 2005.
- Real Property and Environmental Management will continue to work with Deer Island staff on compliance with two new air quality regulations, the Clean Air Interstate Rule and the Regional Greenhouse Gas Initiative.

- MIS will focus on several major projects including: LIMS and TRAC system replacements, Lawson upgrade, storage/server consolidations, cyber-security enhancements and Maximo, SCADA/PICS, GIS and engineering drawing application/data integration.
- Implement Authority-wide security systems maintenance service contracts, including programming and systems integrations and installation of security equipment.
- Competitively procure an Authority-wide consolidated three-year security guard services contract to include Deer Island Treatment Plant, Chelsea Facility, the Carroll Plant, Charlestown Navy Yard Office and various wastewater and water facilities.

SOURCES AND USES OF FUNDS

MWRA funds its operations primarily through member community assessments. Funds supporting the current expense budget are not subject to appropriation with the exception of debt service assistance and minor reimbursements from the Commonwealth of Massachusetts.

Table I-2 shows MWRA's sources and uses of funds for the Final FY08 Budget.

Table I-2

SOURCES & USES OF FUNDS*		
\$ in Millions		
<i>Sources of Funds</i>		
Other User Charges	\$7.6	1.3%
Other Revenue	5.2	0.9%
Investment Income	33.9	6.0%
Rate Revenue	517.8	91.7%
Rate Stabilization	0.0	0.0%
TOTAL REVENUE	\$564.5	100.0%
<i>Uses of Funds</i>		
Total Expenses before		
Debt Service Offsets	\$331.0	
Less:		
Debt Service Assistance	(17.3)	
Variable Rate Debt	(0.4)	
Bond Redemption	0.0	
Sub-Total Net Expenses	313.4	
Capital Financing	331.0	56.9%
Direct Expenses	206.6	35.5%
Indirect Expenses	44.5	7.6%
TOTAL EXPENSES Before Offset	\$582.1	100.0%
Offsets	(17.6)	
TOTAL EXPENSES Less Offsets	\$564.5	
*May not add up due to rounding		

REVENUE

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

In the Final FY08 Budget, 92% of revenue is derived from rate revenue. The remaining 8% of revenue will come from interest on investments, charges to other water and sewer customers, non-recurring revenue, annual charges to sewer system users with permits issued by MWRA's Toxic Reduction and Control Department, reimbursements from the Commonwealth, penalties assessed to holders of sewer use permits, and other miscellaneous sources.

Rate Revenue

Under the Final FY08 Budget, MWRA will raise \$517.8 million of its total revenue requirements from water and sewer assessments to member communities. Of the \$517.8 million, \$349.5 million will fund the sewerage system, an increase of 7.8% as compared to FY07; and \$168.3 million will fund the water system, an increase of 3.6% as compared to FY07.

Non-Rate Revenue

Other User Charges

Other User Charges include revenues derived from the provision of water and sewer services to communities under special agreements. Other User Charges in the Final FY08 Budget totals \$7.6 million and is composed of \$1.9 million in water revenue collected from sewer ratepayers to offset the cost of water used for operation of the Deer Island, \$3.4 million paid by the Chicopee Valley Aqueduct communities, \$1.5 million in water revenue to contract communities, and \$793,000 in entrance fees paid by Stoughton, the Dedham-Westwood Water District, and anticipated fees for several smaller entities seeking to join the MWRA sewer system.

Other Revenue

Other Revenue is budgeted at \$5.2 million. This includes permit fees, penalties, hydro-power revenues, Commonwealth reimbursements, and other miscellaneous revenues.

Permit Fees and Penalties

The Final FY08 Budget includes \$2.1 million in fees charged to industries that discharge toxic materials into the MWRA sewer system. These permit fees partially offset the annual costs of permitting, inspecting, and monitoring these industries.

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 Final FY08 Budget includes \$2.2 million in miscellaneous revenues of which \$1.4 million pertains to Deer Island's energy programs for the sale of Renewable Portfolio Standard Credits and participation in the demand response program; \$184,000 is for hydropower generation at the MWRA's Cosgrove Intake facility, and \$639,000 in other revenue.

Investment Income

MWRA earns income by investing reserves and fund balances in a variety of interest-yielding securities. The Final FY08 Budget includes \$33.9 million in investment income, a decrease of \$6.4 million from FY07 actuals due to the combined impact of a \$2.4 million one time gain from the maturity of an investment in FY07 and less money invested long-term in FY08. The FY08 short-term interest rate is at 4.5% which is the same level as the FY07 budget.

Non-Recurring Revenue

Non-Recurring Revenue is one-time revenue used in a given fiscal year to reduce assessments to member communities. In any fiscal year when annual revenues exceed expenses, MWRA may transfer the unexpended amount to the rate stabilization reserve. Within certain limits, MWRA may use this money to reduce the rate revenue requirement in any subsequent year. Consistent with the requirements of its enabling act and its general bond resolution, MWRA treats transfers from the rate stabilization reserve as revenue in that fiscal year.

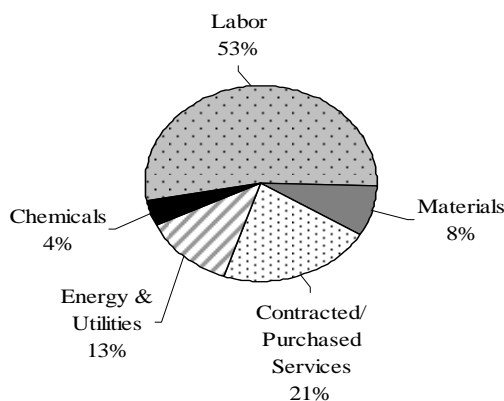
Direct Program Expenses

The Final FY08 direct program expense budget is \$206.6 million, an increase of \$13.2 million or 6.8% over FY07 actuals. The increase includes higher costs for wages and salaries, health insurance, energy and utilities, and chemicals. To address rising direct costs, the MWRA has actively moved to consolidate operation and maintenance facilities, reorganized and automated facilities, reduced leased space, sold surplus assets, negotiated competitive purchase agreements for energy and chemicals, and increased self-generation and utilization of digester gas for energy production. Generally, the budget presents expenses by line item and program. The divisional sections of this document discuss program budget changes in greater detail.

Line Item Budget Summary

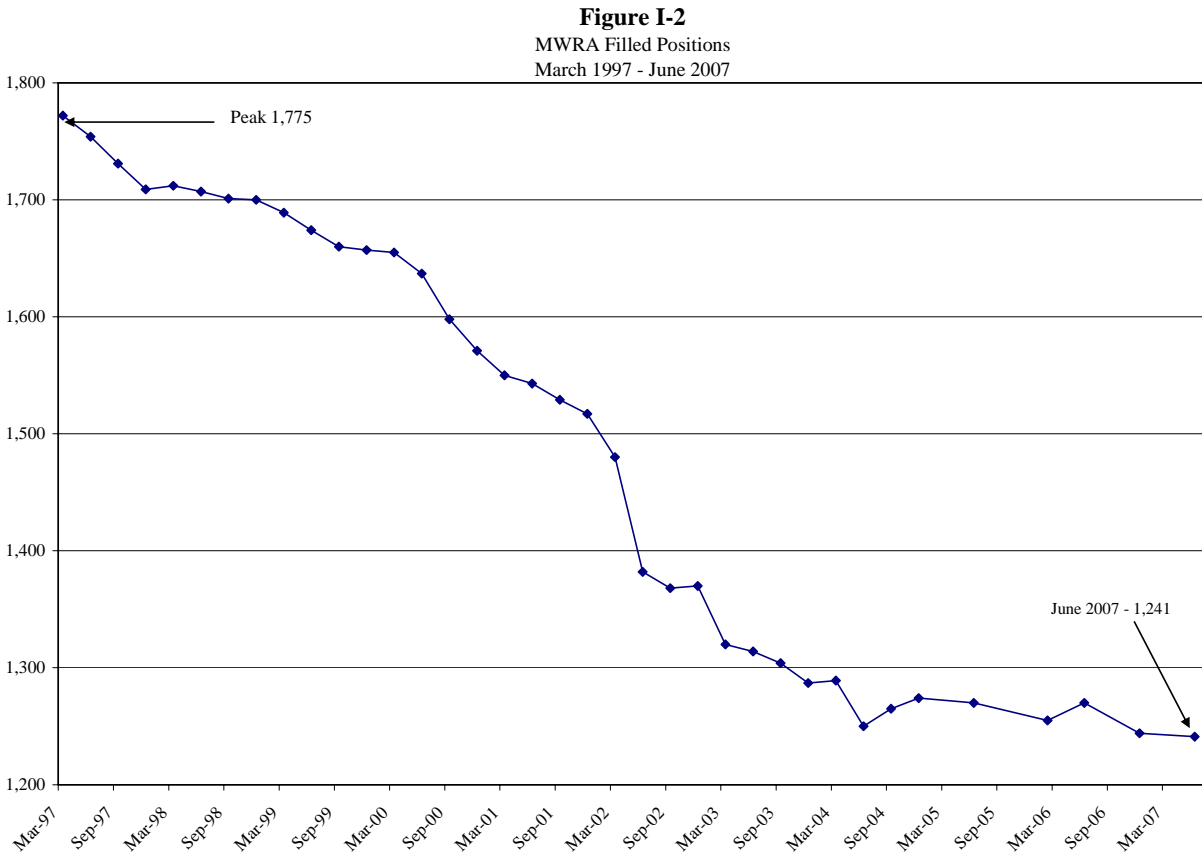
Figure I-1 combines related direct expense line items into general cost categories and shows that labor costs (wages and salaries, overtime, fringe benefits, and workers' compensation) are the largest component of the direct expense budget (53%), followed by contracted/purchased services (21%) and then by energy and utilities (13%).

FIGURE I-1
Direct Expenses by Category - \$206.6 Million



Within the labor cost category, wages and salaries account for \$88.1 million, 6.1% higher than FY07 actuals. Of the \$88.1 million, \$86.7 million is for regular pay. MWRA estimates that the regular pay budget of \$86.7 million will support the FY08 target of 1,255 filled positions which is the same as the Fiscal Year 2007 budget. The FY07 actual filled positions at year-end were at 1,241. New hires and backfills of vacant positions will be managed in the aggregate and addressed on a case-by-case basis by senior management.

Figure I-2 shows how filled positions at MWRA have declined from a peak of 1,775 in March 1997 to the target staffing level of 1,255 for FY08.



Contracted and purchased services, the second largest direct expense cost category, includes professional, maintenance, and other services. The Final FY08 Budget for contracted and purchased services is \$44.4 million, \$3.8 million or 9.1% above FY07 actuals. This increase was driven by a \$2.0 million increase in professional services expense and a \$1.1 million increase in sludge pelletization expenditures due to higher sludge quantities.

Major components of this cost category include \$14.4 million for MWRA’s residuals processing contract, \$2.9 million for lease payments, (consisting of \$1.6 million for the Charlestown Navy Yard and \$1.3 million for the Chelsea facility), \$13.6 million for maintenance services, \$3.3 million for harbor and outfall monitoring, \$1.4 million for telephone and lease line services, \$2.1 million for security, and \$1.0 million for grit and screenings removal.

The Final FY08 Budget for energy and utilities is \$26.5 million, \$2.3 million above FY07 actuals, reflecting higher budgeted energy prices. The \$2.3 million or 9.5% increase is primarily due to a \$2.2 million or 12.3% increase in electricity cost reflecting higher pricing estimates for FY08. The FY08 energy and utilities budget reflects the most recent pricing outlook based on energy futures and on the latest bids for contracts renewed in May for Deer Island, the Carroll Water Treatment Plant and other

large FOD facilities. Seventy-seven (77%) of the Authority's power requirement is purchased on the variable rate market, exposed to the fluctuations of the market.

The Final FY08 Budget includes \$8.7 million for chemicals, an increase of \$1.4 million or 19.8% over FY07 actual spending. The majority of the variance is the result of price increases, but some dosing changes are projected to impact FY08. The significant price increase of \$820,000 for soda ash and \$218,000 for higher prices for liquid oxygen is offset by lower prices for sodium bisulfite of \$270,000 and \$500,000 for a net decrease for lower sodium hypochlorite prices for both Deer Island and Field Operations and updated usage estimates.

The Final FY08 Budget for materials, which includes maintenance materials, laboratory equipment, vehicles, and computer hardware items, is \$17.2 million, \$1.1 million less than FY07 actuals. The majority of the decrease reflects the effect of additional vehicle replacements made in FY07.

Functional Area Budget Summary

For a broader perspective on MWRA's direct expense budget, Figure I-3 presents direct expenses by MWRA functional area and shows that 46% of the Final FY08 direct expense budget is for Wastewater Transport and Treatment costs, compared to 15% for Water Transmission, Treatment, and Distribution.

Figure I-4, Staffing by Functional Area as of June 2007 shows that of 1,241 filled positions, 56% are devoted to operating and maintaining the water and wastewater treatment and transport systems; 23% to administration and support and MIS functions, and 9% to facilities planning, design, and construction. Water and Wastewater Quality functions, and metering and monitoring, particularly Boston Harbor and Massachusetts Bay monitoring activities and industrial discharge and enforcement programs, account for 10% of all staff.

FIGURE I-3
Direct Expenses by Functional Area - \$206.6 Million

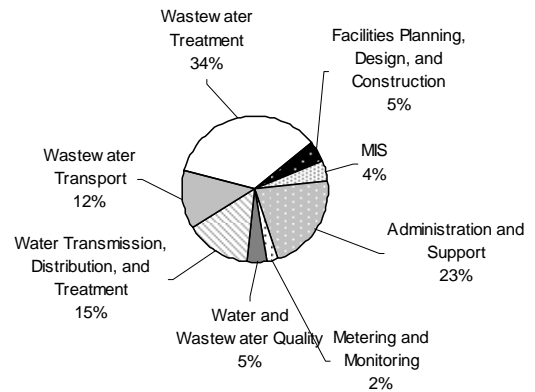
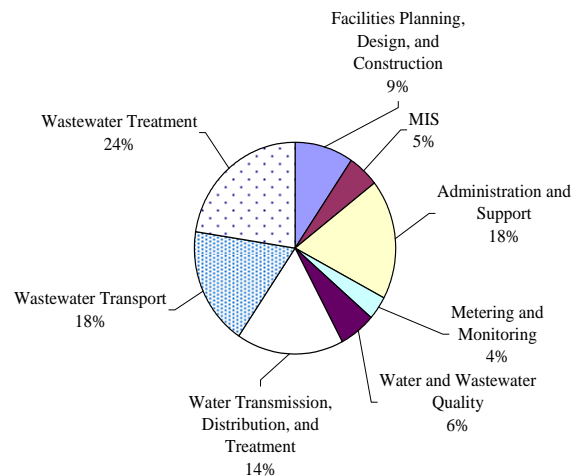


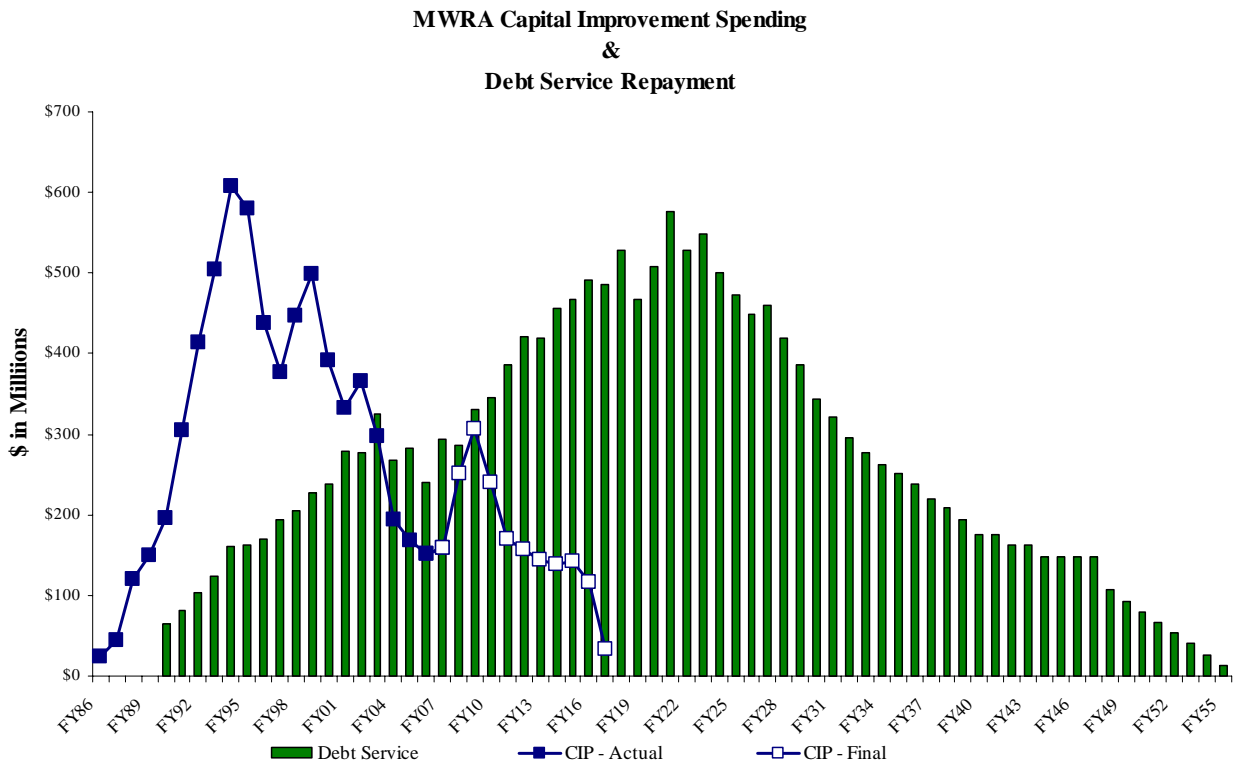
FIGURE I-4
Staffing by Functional Area



Capital Financing

The \$6.8 billion spent on MWRA's modernization efforts has relied heavily on debt financing. Total debt as of June 2007 reached \$5.6 billion consisting of senior and subordinated debt in addition to tax-exempt commercial paper. The Authority is significantly leveraged with long-term debt representing 70.5% of total assets, but the stability and predictability of operating cashflows can support a leveraged capital structure. The MWRA enjoys strong unenhanced debt ratings of Aa2, AA, and AA from Moody's, S&P, and Fitch, respectively.

The graph included below illustrates the relationship between the MWRA's Capital Improvement Program and outstanding debt as of June 2007.



Under the Authority's capital improvement program, debt service as a percent of total expenses has increased steadily from 36% in 1990 to 57% in the FY08 Current Expense Budget. Much of this debt service is for completed projects. MWRA's capital spending, from its inception, has been dominated by projects mandated by court order or regulatory requirements, which in total account for 80% of capital spending to date.

The Authority has actively managed its debt profile to take advantage of favorable interest rate environments, using swaps, advanced refundings, bond redemptions, and defeasance strategies to the advantage of its member communities. As part of its ongoing rate management initiatives in FY07, the MWRA and its financial advisors identified the opportunity to refund approximately \$675 million in long-term borrowings to generate rate relief for member communities. The restructuring generated both present value savings and budget relief in future years. In May 2007, the Authority defeased approximately \$41 million in bonds, reducing future debt service payments.

The Final FY08 debt service budget includes savings realized from the refinancing of existing debt. Staff will continue to monitor the municipal bond market for any additional refunding opportunities. If MWRA is able to take advantage of any additional opportunities to refund outstanding debt during FY08, any savings will be used to reduce rate revenue requirements in future years.

FY08 capital financing costs total \$331 million, which reflects the recent restructuring of MWRA's debt. Had the restructuring not been undertaken, FY08 debt service would have been approximately \$43 million higher. Debt service remains the largest portion of the MWRA's operating expenses, accounting for 57% of total expenses before debt service offsets of \$17.625 million. The debt service offsets include \$17.25 million assumed as MWRA's share of statewide appropriation for debt service assistance based on a \$23 million statewide program and \$0.4 million in variable rate debt adjustments.

Table I-3 provides detail on the Final FY08 capital financing line item. Table I-3 also illustrates how upgrading the sewerage system has dominated the capital program to date. Sixty-six percent of the Final FY08 capital financing costs (before debt service offsets) are for wastewater improvements. Current and future borrowing increasingly supports improvements to the water system. A complete list of the Authority's indebtedness by series is presented in Appendix F.

TABLE I-3				
\$ in Millions				
	Amount Outstanding	Total	Sewer	Water
Total SRF ¹ Debt	\$992	\$48.2	\$39.4	\$8.7
Total Senior Debt	3,183	172.4	109.5	63.0
Total Subordinate Debt	1,526	98.6	68.0	30.6
Total SRF and Debt Service²	\$5,701	\$319.2	\$216.9	\$102.3
Water Pipeline Commercial Paper		4.1	0.0	4.1
Current Revenue/Capital ³		4.5	3.4	1.1
Capital Lease		3.2	2.2	1.1
Sub-Total		\$11.8	\$5.5	\$6.3
Total Capital Financing (before Debt Service Offsets)		\$331.0	\$222.4	\$108.6
Debt Service Offsets:				
Variable Rate Savings		(0.4)	(0.3)	(0.0)
Debt Service Assistance		(17.3)	(15.4)	(1.9)
Total Capital Financing	\$5,701	\$313.4	\$206.7	\$106.6

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

² Numbers may not add due to rounding.

³ Current Revenue/Capital is revenue used to fund ongoing capital projects. The amount is partly MWRA's bond covenant requirements.

For FY08, the budget assumes a 4.7% interest rate for variable rate debt compared to 4.75% for FY07. If interest rates increase to levels higher than anticipated throughout the year, offsetting adjustments will have to be achieved elsewhere in the budget. If interest rates during the year are lower, the savings will be used to reduce rate revenue requirements in future years.

FY08 capital financing costs decrease by \$5.1 million or -1.6% compared to FY07 actuals. The majority of this decrease in MWRA's debt service requirement is the result of the FY07 defeasance. The FY08 capital financing budget includes:

- \$313.5 million in principal and interest payments on outstanding MWRA debt and SRF loans.
- \$5.7 million in debt service to support a \$75 million in SRF borrowings in October 2007, and \$100 million fixed rate issue in April, 2008.
- \$4.5 million to fund ongoing capital projects with current revenue and to meet coverage requirements.
- \$4.1 million to fund the interest expense related to the Local Water Pipeline Assistance Program.
- \$3.2 million for the Chelsea Lease.

Indirect Expenses

The Final FY08 Budget includes \$44.5 million for indirect expenses, an increase of \$8.3 million or 22.9% over FY07 actuals. The increase includes a \$7.1 million payment to meet liability requirements under GASB 45, *Accounting for Financial Reporting for Postemployment Benefits Other Than Pensions*. (See explanation of GASB 45 on the following page)

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 Final FY08 Budget includes \$2.5 million for premiums and fees, level funded at the FY07 level. The budget includes \$1.9 million for premiums and \$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. The reserve, which was established as part of the Bond Resolution, requires that an independent insurance consultant review the funding level every three years and provide recommendations as to its adequacy. The current funding level of \$19.0 million has been determined to be acceptable and reasonable based on a FY07 Insurance Reserve Fund review performed by an outside insurance consultant. No changes to the insurance reserve are planned for FY08.

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 Water Supply Protection, and debt service costs for purchases of land around the supply reservoirs to protect the watersheds. The Final FY08 Budget includes \$6 million,

\$12.2 million, and \$4.9 million respectively for these items. Collectively these represent an increase of \$2.3 million over FY07 actuals; however, FY07 actuals benefited from accrual adjustments of \$1.2 million and a \$0.7 million reduction in debt expense due to refinancing.

Harbor Electric Energy Company (HEEC)

Harbor Electric Energy Company (HEEC), 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 HEEC's capital investment on a 25-year schedule. The budget includes \$4.3 million for the estimated FY08 payment, comprised of \$3.6 million for capacity charges and \$779,000 for maintenance expenses.

Mitigation

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

Mitigation expenses are funded in the capital budget and in the current expense budget. The Final FY08 Budget includes \$1.4 million for community compensation for impacts, including \$736,000 for the City of Quincy and \$683,000 for the Town of Winthrop, based on Memoranda of Agreement with the communities.

Retirement System Contribution

The Final FY08 Budget includes a \$4.2 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 (January 2005) actuarial valuation report and is \$139,000 greater than the FY07 contribution.

GASB 45 – Postemployment Benefits Other than Pensions

The Authority was required to adopt GASB 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other than Pensions*. Based on recommendations from the actuarial report received in April 2007, this liability is being pre-funded at \$7.1 million. As recommended by the Advisory Board, the Authority will establish a working committee to evaluate funding options and develop a long-term strategy to manage this liability.

Operating Reserves

The Operating Reserve funding for FY08 of \$1.7 million is in compliance with the requirement of the MWRA General Bond Resolution which requires a balance of one-sixth of annual operating expenses. Based on the Final FY08 Budget, the required balance is \$37.7 million at the end of FY08.

Community Profile and Assessments

MWRA provides wholesale water and sewer services to 61 communities or local bodies. Forty-nine local bodies purchase water supply services, and 45 local bodies purchase wastewater transport and treatment services. Thirty communities purchase both. Final FY08 Assessments include new members Dedham-Westwood Water District and the Town of Reading. Approximately 2.6 million people, or 42% of the population of Massachusetts, live and work in the communities that purchase water and/or wastewater services from MWRA.

MWRA's largest single customer is the Boston Water and Sewer Commission (BWSC), which provides retail services in the City of Boston. In the Final FY08 Current Expense Budget, rate revenue from BWSC will account for 31% of MWRA's total rate revenue. Table I-4, on page I-17, lists MWRA communities, the services received, and MWRA assessments for FY08.

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

Table I-5 presents the calculation of MWRA's FY08 rate revenue requirement. The table shows that most of MWRA's current expenses are directly attributable to either water or sewer service costs, or to investment in the water or sewer systems. Expenses that support both systems are allocated to water or sewer assessments based on generally accepted cost allocation principles. The allocation methodology used in preparing the Final FY08 Budget was revised prior to FY02 to more accurately estimate the division of support costs between the water and sewer programs. Investment income and other revenues offset water and sewer expenses. The resulting net cost of water and sewer services is the amount MWRA recovers through water and sewer assessments.

Wholesale Assessment Methodology

MWRA calculates separate user assessments for water and sewer services. Budgeted water operating and capital costs are allocated based on each community's share of total water use for the most recent calendar year. The sewer assessment methodology allocates budgeted operating and maintenance costs based on share of wastewater flow and strength parameters, and capital costs based on proportion of maximum flow, strength, and population. MWRA uses three-year averaging of wastewater flows to calculate the flow-related components of wholesale sewer assessments. This averaging moderates year-to-year swings in individual community assessments. Beginning in FY07, MWRA sewer assessments was allocated in part on flow data from the Authority's new wastewater metering system. MWRA began using flow data from the new metering system in April 2005.

Table I-4

Massachusetts Water Resources Authority
 Attachment 1 - Final FY08 Water and Sewer Assessments
 Includes \$17.25M in Debt Service Assistance

29-Jun-07

MWRA Combined Water and Sewer Customers	Final FY07 Water Assessment	Final FY08 Water Assessment	Percent Change from FY07	Final FY07 Sewer Assessment	Final FY08 Sewer Assessment	Percent Change from FY07	Final FY07 Combined Assessment	Final FY08 Combined Assessment	Percent Change from FY07
ARLINGTON	\$3,527,387	\$3,635,597	3.1%	\$6,143,299	\$6,383,391	3.9%	\$9,670,686	\$10,018,988	3.6%
BELMONT	1,821,894	1,820,717	-0.1%	3,705,621	3,853,748	4.0%	5,527,515	5,674,465	2.7%
BOSTON (BWSC)	62,704,517	63,979,766	2.0%	94,101,847	98,687,572	4.9%	156,806,364	162,667,338	3.7%
BROOKLINE	4,692,491	4,843,966	3.2%	9,606,833	10,011,208	4.2%	14,299,324	14,855,174	3.9%
CHELSEA	2,657,451	2,622,102	-1.3%	4,439,053	4,746,257	6.9%	7,096,504	7,368,359	3.8%
EVERETT	3,668,354	4,149,900	13.1%	5,815,528	6,103,714	5.0%	9,483,882	10,253,614	8.1%
FRAMINGHAM	6,108,149	6,135,546	0.4%	8,427,956	8,690,797	3.1%	14,536,105	14,826,343	2.0%
LEXINGTON	4,032,517	4,117,775	2.1%	5,633,833	5,630,863	-0.1%	9,666,350	9,748,638	0.9%
MALDEN	4,933,009	5,197,166	5.4%	8,710,730	9,284,922	6.6%	13,643,739	14,482,088	6.1%
MEDFORD	4,382,521	4,637,124	5.8%	8,648,228	9,335,845	8.0%	13,030,749	13,972,969	7.2%
MELROSE	2,017,068	2,073,594	2.8%	4,515,809	4,638,409	2.7%	6,532,877	6,712,003	2.7%
MILTON	2,263,683	2,196,171	-3.0%	4,154,293	4,368,070	5.1%	6,417,976	6,564,241	2.3%
NEWTON	7,606,834	7,744,282	1.8%	15,154,185	16,011,280	5.7%	22,761,019	23,755,562	4.4%
NORWOOD	2,580,986	2,664,525	3.2%	5,303,808	5,416,848	2.1%	7,884,794	8,081,373	2.5%
QUINCY	8,052,624	8,675,891	7.7%	14,186,030	15,225,088	7.3%	22,238,654	23,900,979	7.5%
REVERE	3,497,276	3,711,064	6.1%	6,922,399	7,237,597	4.6%	10,419,675	10,948,661	5.1%
SOMERVILLE	5,179,472	5,416,384	4.6%	10,830,035	11,802,980	9.0%	16,009,507	17,219,364	7.6%
STONEHAM	2,517,547	2,570,311	2.1%	3,386,652	3,623,787	7.0%	5,904,199	6,194,098	4.9%
WALTHAM	6,287,763	6,518,480	3.7%	9,867,844	10,567,428	7.1%	16,155,608	17,085,908	5.8%
WATERTOWN	2,448,358	2,551,548	4.2%	4,412,383	4,627,713	4.9%	6,860,741	7,179,261	4.6%
WINTHROP	1,249,283	1,206,885	-3.4%	2,261,781	2,454,240	8.5%	3,511,064	3,661,125	4.3%
TOTAL	\$142,229,183	\$146,468,794	3.0%	\$236,228,150	\$248,701,757	5.3%	\$378,457,332	\$395,170,551	4.4%

MWRA Sewer and Partial Water Customers	Final FY07 Water Assessment	Final FY08 Water Assessment	Percent Change from FY07	Final FY07 Sewer Assessment	Final FY08 Sewer Assessment	Percent Change from FY07	Final FY07 Combined Assessment	Final FY08 Combined Assessment	Percent Change from FY07
CANTON	\$1,622,912	\$1,752,541	8.0%	\$3,073,080	\$3,342,320	8.8%	\$4,695,992	\$5,094,861	8.5%
NEEDHAM	804,107	958,624	19.2%	4,878,286	4,911,005	0.7%	5,682,394	5,869,629	3.3%
READING ¹	0	1,536,924	100.0%	3,171,403	3,410,216	7.5%	3,171,403	4,947,140	56.0%
STOUGHTON	400,150	429,813	7.4%	3,521,058	3,620,218	2.8%	3,921,208	4,050,031	3.3%
WAKEFIELD	1,534,817	1,465,661	-4.5%	4,358,332	4,643,094	6.5%	5,893,149	6,108,755	3.7%
WELLESLEY	678,369	505,698	-25.5%	4,341,937	4,453,740	2.6%	5,020,306	4,959,438	-1.2%
WINCHESTER	890,279	692,181	-22.3%	3,071,919	3,140,264	2.2%	3,962,198	3,832,445	-3.3%
WOBURN	2,093,459	1,979,251	-5.5%	8,426,290	9,106,235	8.1%	10,519,749	11,085,486	5.4%
TOTAL	\$8,024,094	\$9,320,693	16.2%	\$34,842,306	\$36,627,092	5.1%	\$42,866,400	\$45,947,785	7.2%

MWRA Sewer-only Customers	Final FY07 Water Assessment	Final FY08 Water Assessment	Percent Change from FY07	Final FY07 Sewer Assessment	Final FY08 Sewer Assessment	Percent Change from FY07	Final FY07 Combined Assessment	Final FY08 Combined Assessment	Percent Change from FY07
ASHLAND				\$1,618,656	\$1,651,164	2.0%	\$1,618,656	\$1,651,164	2.0%
BEDFORD				2,565,613	2,662,238	3.8%	2,565,613	2,662,238	3.8%
BRAINTREE				6,234,886	6,564,038	5.3%	6,234,886	6,564,038	5.3%
BURLINGTON				3,650,224	3,845,017	5.3%	3,650,224	3,845,017	5.3%
CAMBRIDGE				16,822,068	18,475,398	9.8%	16,822,068	18,475,398	9.8%
DEDHAM				4,681,204	4,682,605	0.0%	4,681,204	4,682,605	0.0%
HINGHAM SEWER DISTRICT				1,263,977	1,274,442	0.8%	1,263,977	1,274,442	0.8%
HOLBROOK				1,164,235	1,209,004	3.8%	1,164,235	1,209,004	3.8%
NATICK				4,006,468	3,993,641	-0.3%	4,006,468	3,993,641	-0.3%
RANDOLPH				4,268,513	4,482,219	5.0%	4,268,513	4,482,219	5.0%
WALPOLE				2,586,581	2,809,378	8.6%	2,586,581	2,809,378	8.6%
WESTWOOD				1,973,685	1,996,235	1.1%	1,973,685	1,996,235	1.1%
WEYMOUTH				8,556,370	8,762,733	2.4%	8,556,370	8,762,733	2.4%
WILMINGTON				1,770,873	1,768,169	-0.2%	1,770,873	1,768,169	-0.2%
TOTAL				\$61,163,355	\$64,176,281	4.9%	\$61,163,355	\$64,176,281	4.9%

MWRA Water-only Customers	Final FY07 Water Assessment	Final FY08 Water Assessment	Percent Change from FY07	Final FY07 Sewer Assessment	Final FY08 Sewer Assessment	Percent Change from FY07	Final FY07 Combined Assessment	Final FY08 Combined Assessment	Percent Change from FY07
LYNNFIELD WATER DISTRICT	\$364,527	\$362,549	-0.5%				\$364,527	\$362,549	-0.5%
MARBLEHEAD	1,631,484	1,629,117	-0.1%				1,631,484	1,629,117	-0.1%
NAHANT	313,556	332,081	5.9%				313,556	332,081	5.9%
SAUGUS	2,590,216	2,715,030	4.8%				2,590,216	2,715,030	4.8%
SOUTHBOROUGH	689,683	602,437	-12.7%				689,683	602,437	-12.7%
SWAMPSCOTT	1,633,133	1,348,647	-17.4%				1,633,133	1,348,647	-17.4%
WESTON	1,377,593	1,281,195	-7.0%				1,377,593	1,281,195	-7.0%
TOTAL	\$8,600,193	\$8,271,056	-3.8%				\$8,600,193	\$8,271,056	-3.8%

MWRA Partial Water-only Customers	Final FY07 Water Assessment	Final FY08 Water Assessment	Percent Change from FY07	Final FY07 Sewer Assessment	Final FY08 Sewer Assessment	Percent Change from FY07	Final FY07 Combined Assessment	Final FY08 Combined Assessment	Percent Change from FY07
DEDHAM-WESTWOOD WATER DISTRICT ¹	\$0	\$34	100.0%				\$0	\$34	100.0%
LYNN	194,583	219,006	12.6%				194,583	219,006	12.6%
MARLBOROUGH	2,386,661	2,738,567	14.7%				2,386,661	2,738,567	14.7%
NORTHBOROUGH	762,171	790,421	3.7%				762,171	790,421	3.7%
PEABODY	928,069	484,131	-47.8%				928,069	484,131	-47.8%
TOTAL	\$4,271,484	\$4,232,159	-0.9%				\$4,271,484	\$4,232,159	-0.9%
SYSTEMS TOTAL	\$163,124,954	\$168,292,702	3.2%	\$332,233,810	\$349,505,130	5.2%	\$495,358,764	\$517,797,832	4.5%

¹ The Dedham-Westwood Water District and the Town of Reading became MWRA water communities as of FY07.

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.

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

TABLE I-5
Calculation of the FY08 Rate Revenue Requirement
(000's)

	Sewer	Water	Total
Allocated Direct Expenses	\$153,139	\$53,500	\$206,639
Allocated Indirect Expenses	\$17,120	\$27,340	\$44,460
PLUS			
Capital Expenses:			
Debt Service (less offsets)	\$203,367	\$105,511	\$308,878
Current Revenue for Capital	\$3,375	\$1,125	\$4,500
PLUS			
Non-Rate Revenue:			
Investment Income	-\$22,010	-\$11,863	-\$33,873
Fees and Other Revenue	-\$5,486	-\$7,321	-\$12,807
Non-Recurring Revenue	0	0	\$0
EQUALS			
Rate Revenue Requirement	\$349,505	\$168,293	\$517,798

Revenue and Expenditure Trends

Because MWRA is required by its enabling act to balance its budget and to establish annual assessments to cover all expenses, revenue must change in concert with the changes in expenses each year. 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 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 allow MWRA to consider multiple-year rates management implications and strategies as it evaluates alternative capital and operating budget decisions.

The table below and Appendix D (in more detail) present future rate revenue requirements for FY08 through FY17.

	Estimates of Future Rate Revenue Requirements (\$ millions)									
	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17
Total Rate Revenue	517.8	547.9	579.4	612.8	648.1	685.6	725.1	757.7	778.3	845.5
\$ Change from prior year	22.4	30.1	31.5	33.4	35.3	37.5	39.5	32.5	20.7	67.2
Rate Revenue Change %	4.5%	5.8%	5.8%	5.8%	5.8%	5.8%	5.8%	4.5%	2.7%	8.6%

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

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

The second largest budget factor is projected growth of base operating costs. The estimated \$90.9 million increase in direct expenses from FY08 to FY17 is primarily the result of an assumed inflation rate of 4.0% annually. In addition, in order to account for anticipated increases in expenses for FY08, labor is projected to grow by 3.1%, while chemicals and maintenance and materials are forecast to rise by 3.2% and by 7.6%, respectively. Also, over the next ten years there will be an increase in direct expenses as a result of capital improvement projects. The largest increases will be for operation of new facilities.

Start-up and operation of the Braintree-Weymouth Replacement Pump Station and the South Boston CSO Tunnel project dewatering and odor control facility will have incremental impacts between FY08 and FY12. Also, \$1.5 million inflated in additional costs projected in FY14 for the Carroll Plant for ultraviolet technology licensing fees.

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:

- Debt Service Assistance projected to be level funded at \$17.25 million;
- Direct expense inflation rate of 4.0%;
- 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;
- Variable rate interest projected at 4.7% in FY08 and 4% in outer years;

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

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

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

- Changes in anticipated borrowing rates or expected investment income rates;
- The planning estimates do not factor in any positive year-end variances;
- 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;
- Growth in direct expenses, greater than current assumptions of 4.0% is an area of increased concern. Increases in utilities, chemicals, maintenance and health care are reflected in the Final FY08 Budget. Many of the savings in prior years through staffing reductions, optimization of operations, and scope revisions to professional services are already reflected in the budget. More importantly, going forward the MWRA is faced with a growing need to maintain its facilities and ensure that adequate funding is available.

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

FY08 Capital Improvement Program

Overview

MWRA was created by the Massachusetts legislature in 1985 and since that time has invested over \$6.8 billion to modernize and improve the wastewater and waterworks systems serving its member communities. Of the total expenditures to date, nearly three-fourths have supported improvements to the wastewater treatment, interceptor, pumping, and combined sewer overflow systems. The remaining fourth has supported waterworks treatment, transmission, distribution, and water supply protection improvements. The Final FY08 CIP budget totals \$4.7 billion with projected spending of \$250.7 million for FY08, including contingency.

MWRA's sewage treatment system has undergone a nearly complete transformation under the federally mandated, 11-year, \$3.8 billion Boston Harbor Project. Now complete, the project included: a new Deer Island Treatment Plant with primary and secondary treatment capabilities; a new 5-mile Inter-Island Tunnel that combined two separate sewer systems into one; a sludge-to-fertilizer facility; and a 9.5-mile Effluent Outfall Tunnel to discharge treated wastewater away from shallow Boston Harbor waters into deeper waters and the stronger currents of Massachusetts Bay.

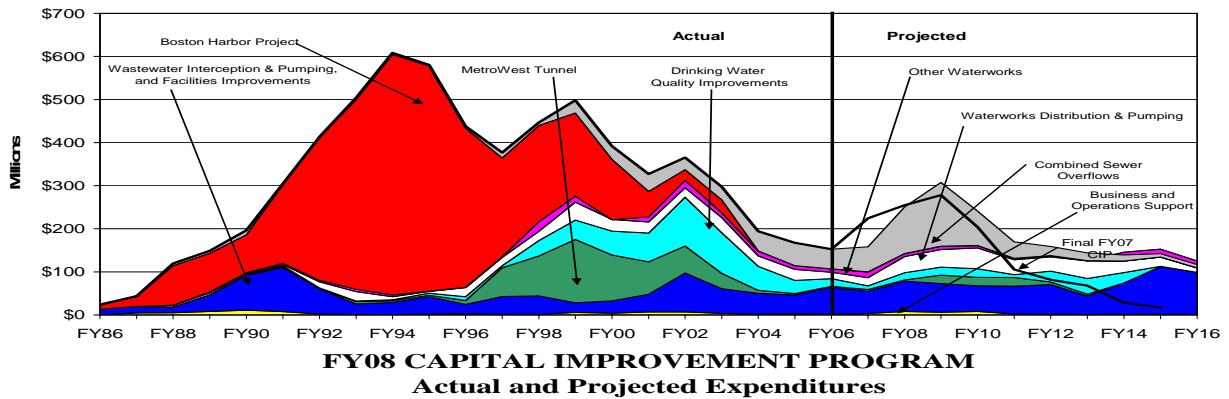
MWRA's Integrated Water Supply Improvement program is a 10-year, \$1.7 billion series of projects that consists of aggressive watershed protection, modernized water treatment facilities and distribution system improvements including construction of covered storage facilities and pipeline rehabilitation projects. This program is nearly complete and includes the \$437 million Carroll Water Treatment Plant, a state-of-the-art ozonation facility with capacity to treat 405 mgd of drinking water, which was completed in 2005 pursuant to the Safe Drinking Water Act (SDWA). The plant treats water delivered from the Wachusett Reservoir with ozonation and chloramination. The plan also includes the 17.6-mile MetroWest Supply Tunnel which was placed in service in November 2004 and runs parallel to the Mass Turnpike. The new tunnel greatly enhances the security, capacity and reliability of MWRA's entire water transmission system. Prior to 2004, the MWRA relied on a single 1940's-era surface aqueduct, the Hultman Aqueduct, to serve all of metropolitan Boston. With its leaks and aging valves, the Hultman had to be taken off-line for major repairs. Before the MetroWest Tunnel, failure of the Hultman could have caused nearly complete interruption of Boston's water supply. This would have been a disaster for the region's public health, safety and economy.

With the completion of Deer Island and the winding down of the Water Supply Improvement program, the MWRA now spends a proportionately large part its CIP budget on the Combined Sewer Overflow ("CSO") projects mandated by state and federal agencies. The CSO program encompasses 25 projects with a total budget of \$811.4 million with spending of \$408.7 million through FY07. In 1987, MWRA entered a stipulation in the Federal District Court Order in the Boston Harbor Case by which it accepted responsibility for developing and implementing a long-term CSO control plan for all combined sewer overflows hydraulically connected to MWRA's system, including the outfalls owned and operated by the communities of Boston, Cambridge, Chelsea, Somerville, and a small section of Brookline. Since then, MWRA has conducted site-specific and watershed-based planning to meet short-term control requirements pursuant to federal regulations and developed a long-term control plan to bring the Boston area CSOs into compliance with the Federal Clean Water Act and State Water Quality Standards.

As the MWRA matures as an agency, a greater proportion of its capital budget will be designated for Asset Protection and Maintenance initiatives, absent new regulatory mandates, to preserve these operating assets. The design of this long-term strategy for capital work is identified in the Authority’s recently completed Master Plan.

The graph below highlights major capital improvement spending by program categories, both completed (actual) and remaining (projected).

MWRA CAPITAL PROGRAM FY86-16



Expended To-Date	Projected Expenditures Beyond FY06
\$6.8 billion	\$2.2 billion

FINAL FY08 CIP

As shown in Table 1 below, the MWRA’s total capital budget is \$4.7 billion, including contingency, of which \$2.2 billion remains to be expended. Budgeted spending for FY08, including contingency, is \$250.7 million. The CSO program represents the largest program initiative in terms of remaining spending of \$96.6 million in FY08, and \$277.9 million, or 30.0% of total spending during the FY09-13 period.

Table 1

Fiscal Year 2008 CAPITAL IMPROVEMENT PROGRAM (\$ in 000'S)									
	Total Contract Amount	Total \$ Thru FY06	Balance 6/30/06	FY2007 Estimate	FY2008	Sub-Total 5-Year FY04-08	Sub-Total 5-Year FY09-13	Sub-Total Beyond FY13	Total 10-Year FY04-13
Wastewater System Improvements	2,209,563	951,887	1,257,676	101,177	143,646	527,864	510,708	502,146	1,038,572
Interception & Pumping	673,875	429,095	244,780	33,664	27,812	148,082	71,125	112,180	219,207
Treatment	425,019	35,601	389,418	7,435	18,163	51,045	138,320	225,501	189,365
Residuals	212,381	63,811	148,570		318	7,510	6,252	141,999	13,762
CSO	811,413	350,411	461,002	58,319	96,623	300,013	277,908	28,151	577,921
Other	86,875	72,969	13,906	1,759	730	25,714	17,104	-5,685	42,818
Waterworks System Improvements	2,278,329	1,500,457	777,872	53,835	77,001	355,663	403,264	243,771	758,927
Drinking Water Quality Improvements	640,372	490,171	150,201	8,303	15,273	127,493	96,868	29,758	224,361
Transmission	977,797	644,181	333,616	13,073	20,348	58,161	106,858	193,337	165,019
Distribution And Pumping	630,134	262,615	367,519	18,846	34,437	117,288	179,822	134,414	297,110
Other	30,027	103,490	-73,463	13,614	6,943	52,722	19,716	-113,737	72,438
Business & Operations Support	68,382	36,786	31,596	3,184	7,295	16,664	17,541	3,576	34,205
SUB-TOTAL	4,556,274	2,489,130	2,067,144	158,196	227,942	900,191	931,513	749,493	1,831,704
Contingency	159,014		159,014		22,795	22,795	89,078	47,141	111,873
Total MWRA w/ Contingency	4,715,288	2,489,130	2,226,158	158,196	250,737	922,986	1,020,591	796,634	1,943,577

FY08 Capital Highlights

The Final FY08 CIP, including contingency and inflation to FY08 dollars, is \$923.0 million for fiscal years 2004-2008, \$1,020.6 million for fiscal years 2009-2013 and net projected spending of \$796.6 million for fiscal years 2014 and beyond which is primarily driven by spending on new projects from the Master Plan. A number of the Master Plan projects incorporated into the Final FY08 include spending long into the future - well beyond FY17. The FY14-18 estimated spending will grow in future budget cycles as additional Master Plan projects are incorporated. The total contract spending in the Final FY08 CIP is \$4.7 billion (in FY08 dollars), including contingency, of which \$2.5 billion has been spent through FY06. The Final FY08 CIP commences the inclusion of projects from the Master Plan with the highest priority ratings with a budget of \$955.0 million.

Highlights of Project Changes from the Final FY07 CIP to the Final FY08 CIP

The Final FY08 CIP represents updated spending and schedules for projects contained in the FY07 CIP and new spending on 67 water and wastewater projects and subphases from the Master Plan. These additional projects and subphases represent those capital initiatives outside of the FY07 CIP that staff recommends as most essential to assure reliable service to MWRA's customers. The Final FY08 CIP increased \$1.0 billion above the Final FY07 CIP approved by the Board in June 2006 with the majority of the increased spending occurring beyond FY13. The total MWRA CIP budget, excluding contingency, increased by \$986.9 million of which approximately \$955 million represents new project spending from the Master Plan. The Master Plan identified new projects in all major program categories.

Table 2

MWRA Capital Program <i>\$ in Millions</i>	Final FY07 CIP	Final FY08 CIP	\$ Chge.	% Chge.	FY09-13 \$ Chge.	Beyond FY13 \$ Chge.
Wastewater System Improvements	\$1,618.9	\$2,209.6	\$590.7	36.5%	\$138.6	\$474.1
Waterworks System Improvements	1,889.9	2,278.3	388.4	20.6%	109.1	298.4
Business & Operations Support	60.5	68.4	7.9	13.0%	9.6	3.6
Total MWRA	3,569.3	4,556.3	986.9	27.7%	257.3	776.1
Contingency	113.5	159.0	45.5	40.1%	26.9	38.0
Total MWRA w/Contingency	\$3,682.8	\$4,715.3	\$1,032.5	28.0%	\$284.2	\$814.1

Contingency

There are costs associated with the FY08 CIP that are difficult to predict with any degree of certainty. These costs include legal fees, claims settlements, acquisition of land, and a variety of study, design, and construction change orders and contract amendments. MWRA uses a contingency budget to cover these costs in the event they exceed the approved budget. The contingency budget is calculated as a percentage of expected capital expenditure cash outlays (15% for tunnel construction and approximately 10% for all other projects).

The total contingency budget for the ten-year CIP is \$159.0 million. The contingency budget remaining within the FY04-08 cap period is \$22.8 million and the contingency planned from FY08 to FY17 is \$136.2 million.

Master Plan and the FY08 CIP Process

In October and November of 2006, the MWRA presented its updated Master Plan to the Board of Directors which identified over \$3.1 billion in system needs over the FY07-48 timeframe. The Master Plan identified approximately \$2.0 billion in wastewater needs and \$1.1 billion in waterworks needs.

An evaluation process, driven by the prioritization of projects developed during master planning, organizational capacity, and financial feasibility, was conducted to determine which projects would be incorporated into the Final FY08 CIP and the next five-year cap period. All Master Plan projects were prioritized on a scale from 1 to 5, with 1 being projects considered critical and 5 considered desirable.

As a result, the projects contained in the Final FY08 CIP and resulting schedules are designed to reflect these primary considerations. Using these metrics, 67 projects or new subphases with a contract value of \$955.0 million were added during this budget cycle; however over 78% of new project spending occurs beyond FY13.

It is important to note that much of the future spending outlined in the Master Plan is for the repair or replacement of existing infrastructure (water distribution lines, wastewater interceptors, and facility equipment), although water system redundancy is also a major theme.

Highlights of New Capital Projects Added to the Final FY08 CIP by Priority

The Final FY08 Budget reflects new initiatives estimated at \$955.0 million of which 22.8% or \$217.8 million is projected to be expended within the FY09-13 period. These new initiatives, representing the highest rated projects from the Master Plan, were evaluated in conjunction with existing FY07 CIP projects and ultimately integrated into the Final FY08. A sampling of new projects with the top priority ratings are highlighted below in projected spending level sequence:

FY04-FY08 Spending Cap Overview and Analysis

In June 2003, the Board of Directors adopted the Final FY04 CIP, established a capital spending cap of \$1.134 billion for fiscal years 2004-2008. The FY08 CIP complies with both the total spending cap limit as well as the annual spending limits for the 5-year cap period (FY04-08) as presented in Table 3 on the next page.

Projected capital spending for Fiscal Year 2008, based on the cap calculation is \$248.6 million including contingency. Spending for the FY04-08 period is projected to reach \$913.7 million or \$220.8 million below the base cap estimate. Some of this underspending can be attributed to unused contingency funds of approximately \$68.8 million and a Boston Harbor Project credit in FY05 of \$4.5 million in addition to the shifting of project spending.

Table 3

Spending Cap Analysis FY04-08 (\$000)						
	FY04 Actual	FY05 Actual	FY06 Actual	FY07	FY08	Total FY04-08
Projected Expenditures ¹	\$194.0	\$167.7	\$152.3	\$158.2	\$227.9	\$900.2
Contingency	0.0	0.0	0.0	0.0	22.8	22.8
Inflation on Unawarded Construction	0.0	0.0	0.0	0.0	0.0	0.0
Less: Chicopee Valley Aqueduct Projects	(0.4)	(0.5)	(2.4)	(3.9)	(2.1)	(9.3)
FY08 Final CIP FY04-08 CAP	\$193.6	\$167.2	\$150.0	\$154.3	\$248.6	\$913.7
FY04 Baseline Cap	\$250.9	\$203.5	\$215.2	\$250.1	\$214.8	\$1,134.5
Change (FY04 Baseline to Proposed FY08)						
FY04-08 CAP (\$ Change)	-\$57.4	-\$36.3	-\$65.2	-\$95.7	\$33.8	-\$220.8
FY04-08 CAP (% Change)	-22.9%	-17.9%	-30.3%	-38.3%	15.7%	-19.5%
Final FY07 CIP						
FY07 FY04-08 CAP	\$193.6	\$167.2	\$145.3	\$219.3	\$254.8	\$980.2
Change (FY07 Final Cap to FY08 Final)						
FY04-08 CAP (\$ Change)	\$0.0	\$0.0	\$4.7	-\$65.0	-\$6.2	-\$66.4
FY04-08 CAP (% Change)	0.0%	0.0%	3.2%	-29.6%	-2.4%	-6.8%

¹Includes \$4.5 million credit to BHP in FY05. Chicopee Valley Aqueduct excluded from cap conformity due to separate and distinct MWRA assessment.

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, John J. Carroll Water Treatment Plant, and the residuals processing facility in Quincy resulted in significant increases in operating expenses. The largest increase over the next five year period results from a full operating year for the new Braintree-Weymouth RPS which is scheduled to be substantially complete by March 2008. This new facility will increase annual operating costs by \$458,000 in FY09, but this increase will be partially offset by annual cost savings of \$183,000 due to the decommissioning of Fox Point and Commercial Point CSO’s before the end of FY08 for a net increase in operating expenses of \$275,000. The following table summarizes projected CIP impact by project over the next 10 years.

Table 4

FISCAL YEAR	Impacts of CIP Projects (\$ in 000's)										Cumulative Total	
	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18		
Braintree-Weymouth RPS and IPS	\$458	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$458
North Dorchester Bay CSO	0	0	71	365	0	0	0	0	0	0	0	436
So. Dorchester Bay CSO Sewer Separation (Fox Pt.)	-99	0	0	0	0	0	0	0	0	0	0	-99
So. Dorchester Bay CSO Sewer Separation (Commercial Pt.)	-84	0	0	0	0	0	0	0	0	0	0	-84
TOTAL WASTEWATER (inflated)	\$275	\$0	\$71	\$365	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$710
JJ Carroll Water Treatment Plant (UV Licensing)	\$0	\$0	\$0	\$0	\$0	\$1,524	\$0	\$0	\$0	\$0	\$0	\$1,524
Quabbin Water Treatment Plant	0	0	0	0	61	139	0	0	0	0	0	200
JJ Carroll Water Treatment Plant (Wachusett Algae Treatment)	0	0	0	0	0	0	24	25	0	0	0	48
NIH Storage	0	0	0	0	0	0	0	0	0	0	296	296
TOTAL WATER (inflated)	\$0	\$0	\$0	\$0	\$61	\$1,663	\$24	\$25	\$0	\$296	\$0	\$2,068
Phase II: TRAC Replacement	\$0	\$0	\$169	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$169
Phase II: SAN & CPU's for TRAC and LIMS	0	0	101	0	0	0	0	0	0	0	0	101
Phase V: LIMS Replacement, GIS & OMS	0	0	28	0	0	0	0	0	0	0	0	28
Phase VI: Lawson, MS Licensing & Carroll Water Treatment Plant	0	0	70	0	0	0	0	0	0	0	0	70
NET 2020	0	0	0	0	0	63	0	0	0	0	0	63
TOTAL BUSINESS AND OPERATIONS SUPPORT (inflated)	\$0	\$0	\$368	\$0	\$0	\$63	\$0	\$0	\$0	\$0	\$0	\$431
TOTAL	\$275	\$0	\$439	\$365	\$61	\$1,727	\$24	\$25	\$0	\$296	\$0	\$3,210

Capital Financing and Grant Revenues

In the past, MWRA was able to finance approximately 20 percent of capital spending with grant receipts totaling approximately \$1.1 billion through FY03. However, EPA grant awards have slowed significantly. Since FY03, grant receipts for capital projects have been limited to \$2.6 million and mostly the result of grant awards made prior to FY03.

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

MWRA Organization and History

The MWRA Enabling Act

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

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

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

History and Accomplishments

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

MWRA achieved all of the milestones in the schedule related to the construction of treatment facilities on Deer Island, and is working to achieve milestones with respect to implementation of its long term 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 \$375 million per year between (FY90 to FY05). This investment has greatly improved the operating efficiency of the existing water and sewer systems, protecting fresh water sources and improving the water quality in Boston Harbor.

MWRA Rates Management

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

As debt service cost resulting from mandated capital investment has steadily increased, MWRA's dependence on rising debt service assistance allocations have similarly increased. DSA reached a high of \$52.9 million in FY02. In FY03, in response to a state-wide recession, debt service assistance was eliminated and as a result, MWRA was forced to have an unprecedented mid-year rate adjustment, increasing the rate increase from 2.9% to 6.9% as part of an overall strategy in response to cover the loss. The Authority cut \$420 million from its capital improvement program and \$47.2 million from the current expense budget through various budget cuts including layoffs. Reductions in debt service assistance result in greater reliance on reserves, budget cuts or a combination of these two elements. In response to a strengthening local economy, debt service assistance was restored in FY05 at the level of \$8 million. This allocation increased over the next two fiscal years, rising to \$10 million in FY06 and \$18.75 million in FY07. The Authority is projected to receive a net allocation of \$17.25 million in FY08.

Planning estimates for FY09 through 2017 forecast rate revenue requirement increases of 5.8% annually for the next six years, 4.5%, 2.7% and 8.6% in 2015, 2016, and 2017, respectively. With the prospect of higher rate increases in the future, the MWRA, the Advisory Board, and its member communities have aggressively pursued rate relief in the form of larger debt service assistance payments from the State Legislature and will continue this effort to secure future rate relief.

In FY06, the MWRA formed a Rates Management Committee to evaluate the Authority's debt portfolio and credit structure to propose recommendations that deliver responsible short-term solutions for mitigating imminent rate spikes and long-term strategies for achieving predictable and sustainable rates. In line with the Board of Directors' strategy to deliver long-term predictable and sustainable rates for our 61 ratepayer communities, the MWRA initially preserved the scheduled use of its reserves for future years when projected rate increases are more significant.

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.

- MWRA continues to limit increases in ongoing operating costs. The Final FY08 direct expense budget is only \$23.6 million more than spending in FY00. This represents annual increases of 2.0%, well below inflation. When adjusted for inflation, direct expenses have declined by more than \$36 million since FY00. Costs to operate new facilities, higher utility costs, healthcare costs and increased maintenance have been offset by reduction in the workforce, controlling and optimizing chemical use, and other materials.
- MWRA seeks to maximize savings in the deregulated electricity market, and now competitively procures most of its power needs.
- MWRA is working to reduce labor costs wherever appropriate. The budget assumes a staffing level of 1,255 for Fiscal Year 2008. This staffing level represents a decrease of more than 500 filled positions (over 29%) from peak staffing levels in 1997.
- 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.
- MWRA continues to aggressively seek additional SRF assistance.
- Finally, MWRA uses rate stabilization funds and bond redemption funds in the context of its longer-term rate smoothing strategy.

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. MWRA's organizational structure is included in the document before the Table of Contents.

The **Executive Office** provides centralized MWRA management, direction, and policy development. The budget includes funds for the Office of the Executive Director, the Office of Emergency Preparedness, the Board of Directors, the Advisory Board, and other advisory committees.

The MWRA created the **Office of Emergency Preparedness** in November 2005 by consolidating its security and emergency response functions throughout the agency. The Department is responsible for oversight of the security and emergency response policies and procedures, implementation of the Emergency Response Plan, and training of the Site Characterization Team.

The **Planning and Coordination Department** provides decision support on planning, policy and operations matters. 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, occupational health and safety, internal audit, fleet services, computer system development and management, library and records management, and mail and employee shuttle services.

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 Accounting Principles Generally Accepted in the United States of America (GAAP) and, commencing with the annual reports for 1986, audited by independent certified public accountants. MWRA's audited financial statements at June 30, 2006 and 2005 are available online at www.mwra.com.



Executive Office
Budget

EXECUTIVE OFFICE

Final FY08 Current Expense Budget EXECUTIVE DIVISION by Line Item						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 401,698	\$ 366,704	\$ 376,563	\$ 393,509	\$ 16,946	4.5%
OVERTIME	15	31	-	-	-	-
TRAINING & MEETINGS	100	-	129	2,030	1,901	1473.6%
PROFESSIONAL SERVICES	157,106	162,172	160,597	170,340	9,743	6.1%
OTHER MATERIALS	700	2,625	2,354	1,777	(577)	-24.5%
OTHER SERVICES	449,321	428,876	436,934	438,107	1,173	0.3%
TOTAL	\$ 1,008,940	\$ 960,408	\$ 976,577	\$ 1,005,763	\$ 29,186	3.0%

Final FY08 Current Expense Budget EXECUTIVE DIVISION by Department						
DEPARTMENT	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
EXECUTIVE OFFICE / BOARD OF DIRECTORS	\$ 405,834	\$ 372,349	\$ 382,213	\$ 400,340	\$ 18,127	4.7%
ADVISORY BOARD / OTHER COMMITTEES	603,106	588,059	594,364	605,423	11,059	1.9%
TOTAL	\$ 1,008,940	\$ 960,408	\$ 976,577	\$ 1,005,763	\$ 29,186	3.0%

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

The Executive Office includes the Office of Emergency Preparedness and Planning and Coordination Department, and has direct oversight of the Public Affairs, Internal Audit and AACU Department, which are funded as part of the Support Services budget.

The goals of the Executive Office 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), the MWRA Advisory Board and Advisory Committees cost centers. The Board of Directors formulates policies to guide MWRA actions and is responsible for major policy and fiscal decision-making. The MWRA Advisory Board was established by the Enabling Act to serve as a “watchdog” for MWRA’s customer communities. The Advisory Board makes recommendations to MWRA on annual expense budgets and capital improvement programs. The Advisory Board has also, at various times, been charged by the Massachusetts State

Legislature to advise the Legislature and the MWRA Board of Directors with policy initiatives relative to system expansion and rate methodology. In addition, the Advisory Board reviews and comments on MWRA reports, hold hearings on related matters, and makes recommendations to the Governor and the Legislature. The other advisory committees supported by this budget are the Water Supply Citizens' Advisory Committee and the Wastewater Advisory Committee. The Executive Office budget accounts for less than 1% of the Final FY08 direct expense budget.

Budget Highlights:

- Total Final FY08 Budget of \$1.0 million, an increase of \$29,000 or 3.0% over FY07 actual spending, primarily due to planned wage and salary increases.
- \$394,000 for **Wages and Salaries** represents 39% of the Executive Office budget. The final budget includes funding for four positions.
- \$433,000 or 43% of the Executive Office final budget is for the MWRA Advisory Board staff. The final budget supports its operating expenses, including wages and salaries, space rental and general administrative office materials and supplies.
- \$170,000 or 17% of the Executive Office final budget is for **Professional Services** to fund the Water Supply Citizens' Advisory Committee and the Wastewater Advisory Committee.

OFFICE OF EMERGENCY PREPAREDNESS

Final FY08 Current Expense Budget OFFICE OF EMERGENCY PREPAREDNESS						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ -	\$ 200,328	\$ 298,277	\$ 310,732	\$ 12,455	4.2%
ONGOING MAINTENANCE	-	-	185,006	457,632	272,626	147.4%
TRAINING & MEETINGS	-	-	5,371	1,300	(4,071)	-75.8%
PROFESSIONAL SERVICES	-	-	-	2,141,148	2,141,148	-
OTHER MATERIALS	-	-	2,165	46,716	44,551	2057.8%
OTHER SERVICES	-	-	1,452	22,656	21,204	1460.3%
TOTAL	\$ -	\$ 200,328	\$ 492,271	\$ 2,980,184	\$ 2,487,913	505.4%

The Office of Emergency Preparedness (OEP) was created in November 2005. The creation of this department allows for the consolidation of Authority-wide security and emergency response functions into one unit. It is responsible for oversight of MWRA’s security and emergency response policies and procedures; implementation and training for the Emergency Response Plan; and management, training, and outfitting of the Site Characterization Team, which will respond to any intentional or accidental contamination of the water supply.

The Director of Emergency Preparedness reports directly to the Executive Director with a matrix reporting relationship to the Chief Operating Officer and the Managing Director. The positions of Manager of Security and Emergency Planning and the Security Administrator have been transferred from the Support Services Division to this new Office and report to the Director of Emergency Preparedness. In addition, the Safety/Security Manager for Deer Island will continue to report to the Deer Island Director with a matrix reporting relationship to the Director of Emergency Preparedness to include this major facility in all Authority-wide emergency planning efforts.

The goals of the Office of Emergency Preparedness Department are to:

- Develop and implement policies and programs to ensure facility and water/wastewater system security, public health and staff safety.

Highlights of FY08 Initiatives

- First fiscal year to project future spending and consolidate funding from other departments.
- Maintain and operate security alarm services for the MWRA’s wastewater facilities.
- Continue to maintain and support DITP security technology infrastructure, as well as the needs of the Emergency Service Unit (ESU).
- Implement Authority-wide security systems maintenance service contracts, including programming and systems integrations and installation of security equipment.
- Competitively procure an Authority-wide consolidated three-year security guard services contract to include Deer Island Treatment Plant (DITP), Chelsea Facility, the Carroll Water Treatment Plant (CWTP), Charlestown Navy Yard Office (CNY), and various wastewater and water facilities.

Budget Highlights:

- Total Final FY08 Budget of \$3.0 million, an increase of \$2.5 million or 505% over FY07 actual spending, primarily due to the consolidation of funding from other departments. To better control expenses with regard to centralization of security functions, security-related expenses such as security guard services contracts for facilities, security camera maintenance, intrusion alarm services, etc. formally budgeted in Operations and Support Services Divisions have been transferred to the OEP department.
- \$311,000 for **Wages and Salaries**, an increase of \$12,000 or 4.2% over FY07 actual spending, primarily due to planned wages and salary increases. The final budget includes funding for four positions.
- \$458,000 for **Ongoing Maintenance**, an increase of \$273,000 or 147% over FY07 actual spending, primarily due to underspending of \$165,000 in the purchase and installation of security equipment. The final budget includes \$250,000 for security systems maintenance service contracts, programming and systems integrations services. In addition, \$50,000 is for replacements of existing equipment such as head-end systems, multi-plex routers, digital recorders and security monitors, and \$50,000 for purchase and installations of additional equipment such as cameras, intrusion detections, card access, motion sensors and cables. The Final FY08 Budget is more than FY07 actual spending, partly due to the transfer of \$75,000 from **DITP** for maintenance and support of DITP security technology infrastructure, \$18,000 from **FOD** to maintain and operate security intrusion alarm services for the Authority's wastewater facilities, and \$15,000 from **FOD** for fencing supplies and locks for the water and wastewater facilities.
- \$2.1 million for **Professional Services** is the largest increase in the OEP's Final FY08 Budget, primarily due to the consolidation of the Authority's security guard budgetary responsibilities with a new three-year guard services contract. This newly consolidated contract has been expanded to include \$119,000 for the CNY facility, \$81,000 for the Account Manager, and \$119,000 for one additional Roving Guard to provide security services at various facilities during construction projects, vehicles, and other equipments. \$1.8 million of this budget, which includes the Account Manager's hours, has been transferred from the **Operations and Support Services Divisions**. The final budget also includes \$47,000 for the purchase of Light Trucks for Guards site and area monitoring and patrols of the four MWRA facilities. These vehicles will be turned over to MWRA at the end of the three-year service contracts.
- \$47,000 for **Other Materials**, a \$45,000 increase over FY07 actual spending. The final budget includes \$38,000, transferred from **FOD** for replenishment of safety materials and supplies after each use by the Emergency Service Unit Team (ESU).
- \$23,000 for **Other Services**, an increase of \$21,000 over FY07 actual spending. The final budget includes \$20,000 transferred from **FOD** for the monthly, mandatory testing, inspections and programming of the self-contained breathing apparatus (SCBA) units by the Intermediate Pump Station (IPS) Company. In previous fiscal years, the ESU was funded from the FOD Safety budget.

PLANNING AND COORDINATION DEPARTMENT

Final FY08 Current Expense Budget PLANNING DIVISION by Line Item						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 1,736,206	\$ 1,822,172	\$ 1,880,699	\$ 1,939,772	\$ 59,073	3.1%
OVERTIME	4	66	393	-	(393)	-100.0%
TRAINING & MEETINGS	9,833	11,192	18,113	22,756	4,643	25.6%
PROFESSIONAL SERVICES	18,335	10,412	7,109	11,600	4,491	63.2%
OTHER MATERIALS	22,102	130,921	129,290	141,875	12,585	9.7%
OTHER SERVICES	246,248	147,597	141,195	158,516	17,321	12.3%
TOTAL	\$ 2,032,728	\$ 2,122,360	\$ 2,176,799	\$ 2,274,519	\$ 97,720	4.5%

The Planning and Coordination Department provides regulatory, public policy and public health advocacy for MWRA’s drinking water and wastewater programs. It provides decision support on planning, policy and operations matters, using a range of technical and analytic tools. Staff administers 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 and planning is responsible for water and wastewater system master planning, infrastructure needs assessment, and capital project development. This work is done in coordination with staff across MWRA. Planning and Coordination staff review and process system expansion requests, water supply agreements, and emergency connection requests. Staff also provides 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 cost-effective rule-setting that protects the environment and promotes public health. Senior staff members actively work with industry associations and other groups with interests and agendas consistent with MWRA’s to advance water and wastewater regulations that make environmental and economic sense. Senior staff conducts strategic policy research on a broad range of topics and staff conducts public health research, including outreach and water quality reporting and the annual Consumer Confidence Report (CCR). Staff also coordinates with DCR to ensure water protection.

Community Support Program - Staff are responsible for inflow/infiltration (I/I) 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 report on the portions of MWRA’s NPDES permit related to demand management and flow limitation activities. Staff administers community assistance programs including sewer inflow/infiltration financial and technical assistance, water pipeline rehabilitation financial

assistance, water distribution systems Best Management Practices technical assistance, and water leak detection technical assistance.

Highlights of FY08 Initiatives

- Develop an updated MWRA strategic business plan, continue research and analysis related to long-range water supply planning, advance concept planning for capital projects in collaboration with Engineering staff, and work to influence EPA's new "Distribution System Rule" and to support efforts to reduce lead in brass plumbing fixtures.

Budget Highlights:

- \$1.9 million for **Wages and Salaries**, an increase of \$59,000 or 3.1% over FY07 actual spending. The Final FY08 Budget includes funding for 24 positions.
- \$23,000 for **Training and Meetings**, an increase of \$5,000 or 26% over FY07 actual spending, reflecting the assumption of national organization leadership posts by the department's two senior managers and increases in travel costs.
- \$142,000 for **Other Materials**, an increase of \$13,000 or 9.7% over FY07 actual spending, primarily due to costs associated with the Consumer Confidence Report. The Final FY08 Budget includes \$109,000 for postage and mailing of the Consumer Confidence Report (CCR), \$15,000 for mapping supplies, and \$15,000 for water conservation kits.
- \$159,000 for **Other Services**, an increase of \$17,000 or 12.3% over FY07 actual spending, primarily due to CCR printing costs. The Final FY08 Budget includes \$137,000 for printing the CCR, \$6,000 for printing lead in tap water brochures, and \$10,000 for reprinting water conservation bill stuffers.



Operations Division
Budget

OPERATIONS DIVISION

Final FY08 Current Expense Budget OPERATIONS DIVISION by Line Item						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 59,227,760	\$ 61,728,182	\$ 62,236,988	\$ 66,188,235	\$ 3,951,247	6.3%
OVERTIME	3,672,896	3,437,562	3,738,312	3,771,175	32,863	0.9%
FRINGE BENEFITS	78,472	68,256	76,965	73,345	(3,620)	-4.7%
WORKERS' COMPENSATION	-	-	-	-	-	-
CHEMICALS	6,579,778	6,878,847	7,266,880	8,702,929	1,436,049	19.8%
UTILITIES	20,397,582	27,494,449	23,877,201	26,344,028	2,466,827	10.3%
ONGOING MAINTENANCE	16,434,371	16,116,685	22,206,985	22,037,718	(169,267)	-0.8%
TRAINING & MEETINGS	145,553	107,264	190,922	138,874	(52,048)	-27.3%
PROFESSIONAL SERVICES	4,491,663	5,076,587	5,066,978	4,382,979	(683,999)	-13.5%
OTHER MATERIALS	3,704,188	3,300,461	4,175,795	3,648,785	(527,010)	-12.6%
OTHER SERVICES	15,277,148	16,175,850	18,185,623	19,254,326	1,068,703	5.9%
TOTAL	\$ 130,009,411	\$ 140,384,143	\$ 147,022,649	\$ 154,542,394	\$ 7,519,745	5.1%

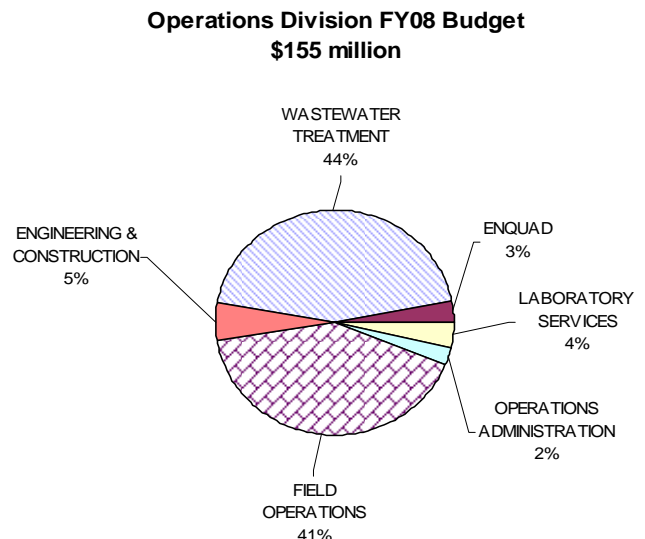
Final FY08 Current Expense Budget OPERATIONS DIVISION by Department						
DEPARTMENT	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
OPERATIONS ADMINISTRATION	\$ 3,892,259	\$ 3,315,764	\$ 3,911,975	\$ 3,848,601	\$ (63,374)	-1.6%
CSO PROGRAMS/ENERGY	890,733	380,828	(886)	-	886	-100.0%
WASTEWATER TREATMENT	58,795,534	64,302,817	65,900,649	68,363,903	2,463,254	3.7%
FIELD OPERATIONS	50,251,602	55,194,617	60,031,796	64,003,129	3,971,333	6.6%
LABORATORY SERVICES	4,779,422	4,824,456	5,244,556	5,475,046	230,490	4.4%
ENQUAD	4,413,216	4,755,487	4,084,769	4,706,014	621,245	15.2%
ENGINEERING & CONSTRUCTION	4,861,895	6,673,887	7,849,790	8,145,701	295,911	3.8%
CAPITAL ENG & CONSTR.	2,124,750	936,287	-	-	-	-
TOTAL	\$ 130,009,411	\$ 140,384,143	\$ 147,022,649	\$ 154,542,394	\$ 7,519,745	5.1%

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

The FY08 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 (DITP) and Clinton wastewater treatment plants and the Residuals Processing Facility at Fore River Staging Area (FRSA).

The **Field Operations Department**, which accounts for 41% 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.



During the past few years, there have been three departments in the Operations Division responsible for engineering and construction work. These include: Capital Engineering and Construction, Engineering and Construction and the CSO/Energy departments. On November 16, 2005, MWRA consolidated these three departments into one department called **Engineering and Construction** under the direction of the Deputy Chief Operating Officer to provide in-house engineering, consultant management, drafting, surveying, construction management, and other technical assistance required for the maintenance, repair, and rehabilitation of wastewater and waterworks systems.

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

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

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

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 FY07 Accomplishments

Operations, Energy, and New Facilities Start-ups:

- Continued second year of operation of the new Carroll Water Treatment Plant (CWTP) (start-up on July 27, 2005) and commenced energy usage optimization initiatives.
- Deer Island continued to implement strategies for optimizing secondary treatment and successfully reached 700 mgd capacity on a sustained basis.
- Deer Island continued to implement recommendations from the comprehensive Electrical System Study to ensure power reliability at the plant and successfully performed a 'dead start' test on the South System Pump Station.
- Field Operations Department (FOD) continued with the final stages of the implementation of the new Wastewater Meter System including reviewing new meter data and working with meter manufacturers to resolve system issues.

- Participated in a multi-department effort to finalize, procure, and initiate the contract to jointly operate the new Union Park facility with the Boston Water and Sewer Commission. The facility was placed into service in December 2006 to provide storage of overflows within the new detention basins, with pump-back to the collection system after storms. Treatment systems were brought on-line in April 2007 to minimize the impacts of overflows exceeding the storage capacity of the basins or the water quality of Fort Point Channel.
- Assisted the Procurement Department with the procurement of contracts to supply and deliver chemicals including sodium hypochlorite at CWTP and Ware Disinfection Facility and soda ash at CWTP.
- Competitively procured and executed electricity contracts for the CWTP and DITP.
- Deer Island continued to leverage its self-generation assets and participation in the competitive energy market to offset operating costs. The combined impact of participation in the Independent System Operators of New England (ISO-NE) price response program and the non-rate revenue from the sale of Renewable Portfolio Standards Program (RPS) resulted in net savings of \$1,670,000 in FY07. Deer Island also self-generated 23.5% of the plant's total required power in FY07.
- The Pelletization Plant processed an average of 110 tons per day of sludge during FY07.
- Procured and awarded grit and screenings hauling and disposal contract.
- Submitted CSO discharge estimates in April 2007 at all outfalls for storms in 2006, in compliance with NPDES and CSO variances requirements.
- Conducted a study to optimize operation of the Prison Point CSO facility to minimize treated discharges to the inner harbor; commenced implementation and performance tracking of recommended operational changes.

Maintenance:

- The Operations Division spent \$22.2 million on maintenance of which \$9.9 million was for materials and \$12.3 million for services.
- FOD submitted 13 dam Emergency Action Plans for MWRA-owned facilities to the DCR Dam Safety Office and continued to implement dam inspection recommendations through in-house maintenance work and consultant task orders.
- Completed numerous major maintenance projects including the following:
 - Procured and implemented new grounds contract for numerous Field Operations facilities.
 - Repaired high voltage/high frequency conductors in Ozone Generator 1 at CWTP.
 - Completed maintenance on Treatment Train A, including tank cleaning at CWTP.
 - Completed mainline valve replacement at water Section 70 Northern High Service (NHS) and Section 69 NHS.
 - Retrofitted water blow-off valve at Section 97 NHS.
 - Replaced surge valves at Newton Street Pump Station.
 - Replaced 30 feet of grit pipe at Chelsea Headworks.
 - Replaced South Main Pump Station flow meters, variable frequency drives, and expansion joints.
 - Repaired the hydropower units at Deer Island.
 - DI digester mixer replacements.
- Procured and awarded roof replacement contract for Deer Island facilities (\$1.2 million).

- Exercised 741 mainline water valves and replaced 21.

Engineering & Construction:

- Awarded the following major construction contracts: North Dorchester Bay CSO Storage Tunnel (\$145.7 million); rehabilitation of Water Pumping Stations (\$18.2 million); Upper Neponset Valley Replacement Sewer Section 687 (\$8.3 million); Blue Hills Covered Storage Design/Build (\$37.8 million); Southern Spine Distribution Mains Section 107 Phase 1 (\$5.5 million); and Wachusett Reservoir Spillway Improvements/Quabbin Drain and Spillway Repairs (\$5.4 million).
- Awarded the following major professional services contracts: Cottage Farm/Brookline Connection Design and Construction Administration (\$1.3 million); Section 28, Suction to Brattle Court Pump Station Design, Construction, and Inspection (\$908,000); North Dorchester Bay CSO Facilities Design and Construction Administration (\$3.4 million); Heat Loop Replacement Construction II (\$1.5 million); and East Boston Branch Sewer Relief Design 2 (\$3.0 million).
- Provided oversight for community CSO projects including Morrissey Boulevard construction, professional services for Reserved Channel Sewer Separation (BWSC), Bulfinch Triangle Sewer Separation (BWSC), and Brookline Sewer Separation (Town of Brookline).
- Completed the following major professional services contracts: Weston Aqueduct Supply Mains (WASMs) Design WASMs 1, 2, & 4; CWTP Construction Management; CWTP Plant Design; Sudbury Aqueduct Inspection; and Sluice Gate Rehabilitation Design.
- Achieved substantial completion of the following construction projects: Spot Pond Supply Mains Rehab-Middle Segment; Stony Brook Sewer Separation (by BWSC); MetroWest Tunnel – Hultman Rehab CP 9; South Dorchester Bay Sewer Separation (Fox Point) (by BWSC); Union Park Detention Treatment Facility; Braintree-Weymouth Fore River Siphon Construction; Deer Island Electrical Equipment Upgrade Construction 2; BOS019 CSO Storage Conduit Construction; and CSO Fort Point Channel Sewer Separation (by BWSC).
- Assisted the Planning Department in updating MWRA’s 20-year Master Plan for the wastewater and water systems.

Environmental:

- Assisted MIS with award of the Pretreatment Information Management System (PIMS) contract to upgrade the Toxic Reduction and Control (TRAC) department’s information systems (TRAC-IS).
- Complied with the lead and copper rule required by Department of Environmental Protection (DEP) and Environmental Protection Agency (EPA), which required dosage increases for soda ash and carbon dioxide.
- Compliance with the National Pollutant Discharge Elimination System (NPDES) permit at the Deer Island Wastewater Treatment Plant was met for all parameters except one (one month violation of chronic toxicity level for inland silverside).
- The TRAC department completed the following EPA-required work for significant industrial users: 220 inspections, 184 monitoring events, and sampling of 531 connections. This department also issued or renewed approximately 290 permits including significant industrial users (SIU), non-SIU, and municipal permits.
- Awarded jointly-funded Cooperative Research Agreement between MWRA and National Data Buoy Center for Augmentation of Buoy 44013 to Observe Additional Oceanographic Variables.

- Submission on time of all NPDES-required deliverables (discharge monitoring reports (DMRs) and environmental monitoring reports).
- The Lab provided routine laboratory services and analysis for approximately 265,000 tests and also provided as-needed analytical support for numerous projects on topics such as the harbor and outfall monitoring water column survey and cyanide in treated drinking water.

FY08 Operations Division Budget Highlights:

- The total Final FY08 Budget for the Operations Division is \$154.5 million, which is \$7.5 million or 5.1% more than FY07 spending. The Operations Division's Final FY08 Budget does not include approximately \$1.9 million for security costs that were included in FY07 spending. Due to an agency-wide consolidation of program oversight, the budget for security-related contracts and resources will shift to the Office of Emergency Preparedness (OEP) in the Executive Division in FY08. With this transfer, the Operations Division's Final FY08 Budget for all programs except security increased by \$9.4 million or 6.5% from FY07 spending of \$147 million.
- New facilities-related increases include approximately \$675,000 for chemicals, utilities, and maintenance for operation of the Union Park CSO facility (MWRA will share costs with BWSC) and \$40,000 for utilities for the BOS019 CSO Storage Conduit.
- Other significant increases from FY07 spending include:
 - Wage increases primarily due to a greater number of filled positions in FY08 versus FY07 actual and collective bargaining agreements (+\$3.7 million).
 - Chemicals (+\$1.4 million) primarily due to price increases (i.e. soda ash) and usage estimates (based on historical averages).
 - Utilities (+\$2.0 million excluding new facilities impacts) primarily due to higher price projections for FY08, mostly for electricity.
 - Residuals Processing/Other Services +\$850,000 for inflation adjustments per the residuals processing contract (net +\$277,000), greater grit quantities (FY07 lower than historical averages) and prices (new contract), and the reversal of a landfill settlement accrual (\$400k) in FY07 that will not be required again in FY08.
- Significant decreases from FY07 spending include:
 - Professional Services (-\$684,000) primarily due to the shift of the security contract to Office of Emergency Preparedness (OED), offset by increases in lab and testing analysis (EnQuad work delayed from FY07 to FY08) engineering services, and several new initiatives such as facilities energy audits.
 - Other Materials (-\$527,000) primarily due to fewer vehicle replacements planned for in FY08 versus purchased in FY07.
- The Final FY08 Budget is also subject to risk in the following areas: timing of the implementation of Deer Island's new NPDES permit (Final FY08 Budget assumes start-up in FY09), chemical and utility usage and prices, potential impacts of the Deer Island cable relocation project, and more than expected emergency-related maintenance and overtime needs.

Highlights of FY08 Initiatives

Operations, Energy, and New Facilities Start-ups:

- Complete the first full year of operation at the new Union Park CSO Detention Treatment Facility (start-up in Q3 FY07) and BOS019 CSO facility (start-up by the end of FY07).

- Deer Island will continue to implement strategies for optimizing secondary treatment capacity pending agreement with the EPA.
- Continue struvite remediation and prevention efforts at Deer Island by monitoring and controlling orthophosphate levels in the waste-stream through the usage of ferrous chloride and/or ferric chloride.
- Competitively procure electricity as-needed for MWRA facilities, including the Deer Island Treatment Plant, the CWTP and various accounts in Field Operations.
- Continue optimization of chemical and energy usage at the CWTP including conducting an energy assessment of the plant.
- Complete feasibility study and start implementation of recommendations on the use of wind-power at MWRA facilities.
- Complete project to install solar panels on roof at Deer Island.
- Provide 23% of Deer Island's power requirements through self-generation.
- At Clinton, implement operations of new soda ash delivery system, secondary stand-by generator, and sodium hypochlorite storage tanks.
- In Residuals, evaluate and implement recommendations from the Infrastructure Reliability Study.
- Develop CSO discharge estimates at all CSO outfalls for all storms in 2007 for submission to EPA and DEP in April 2008, in compliance with NPDES and CSO variance requirements.
- First year of implementation of recommendations to optimize operation of the Prison Point CSO facility to minimize treated discharges to the inner harbor.

Engineering & Construction:

- Award numerous professional services contracts including the following:
 - Wastewater System – Remote Headworks concept design; FRSA Pier Rehabilitation Design; DI as-needed design contracts; DI Asset Management Primary Sludge Pump Replacement Design; DI North Main Pump Station VFD Replacement Design; Residuals Plant System Reliability Study; Alewife Brook Pump & Screen Replacement Design; Charles River Interceptor Optimization Engineering/Design; West Roxbury Tunnel Design; and design services for elements of the Alewife Brook CSO control plan (by Cambridge).
 - Water System - CWTP Ancillary Modifications Design; Sudbury Aqueduct Repairs Design; CWTP Ultra Violet Disinfection Design; Quabbin Ultra Violet Design; WASM 3 Design; Lynnfield Pipeline Design; Metropolitan Tunnel Loop Redundancy Study; and Quabbin Release Pipeline Design.
- Award numerous construction contracts including the following:
 - Wastewater System – DI Digester Module 1&2 Pipe Replacement; DI Centrifuge Backdrive Replacement; DI Electrical Equipment Upgrade; DI Heat Loop Pipe Replacement Construction 3; DI Sodium Hypochlorite Tanks Relining; Clinton Soda Ash Replacement; North Main Pump Station VFD Replacement Design; East Boston Branch Relief Sewer Microtunneling; Cottage Farm/Brookline Connection; Morrissey Boulevard Storm Drain–Contract 2 (by BWSC); and Charles River CSO Floatables Control (by Cambridge).
 - Water System - CWTP Ancillary Modifications; MetroWest Tunnel CP6A Lower Hultman Rehab; Wachusett Reservoir Spillway Improvements/Winsor Dam Repair PCB Source Removal; Walnut and

Fisher Hill Pipeline Rehab Construction 1; Northern Low Service Section 97A Construction; and New Connecting Mains Northeast Segment (CP5) and South Segment (CP3).

o Both systems – Alternative Energy Initiatives.

- Completion by BWSC of the MWRA-funded South Dorchester Bay Sewer Separation (Commercial Point) project.
- Completion of Braintree-Weymouth Replacement Pump Station; Wachusett Reservoir Spill Improvement/Winsor Dam Repair Phase 1; Heath Hill Section 52 Rehabilitation; Upper Neponset Valley Replacement Sewer Sections 685 and 686; and Upper Neponset Valley Replacement Sewer Section 687.

Maintenance:

- Continue work on numerous major projects in FOD including implementation of the grounds contracts, purchase of additional water quality sensors, Bridge Crane repairs, meter batteries replacements, and Shaft 8 boiler rehabilitation.
- Continue with repairs to the Rutland-Holden sewer line using both in-house and contractor services.
- Continue work on numerous major projects at Deer Island including facility repainting, building roof replacement, reactor mixer gearbox rebuilding, motor repairs, pier maintenance, and motor bearing overhauls.
- Continue work on multi-year initiative of replacing surge valves in water pump station facilities.

Environmental:

- Review and redesign harbor and outfall monitoring plan based on five years of post-outfall data.
- Ensure the permit-required outfall monitoring meets NPDES requirements, is scientifically credible, and is cost-effective.
- Implement the new TRAC-IS and Laboratory Information Management System (LIMS) in conjunction with MIS.
- Commence new round of NPDES- required Local Limit testing in TRAC to reassess industrial discharge limits.

OPERATIONS ADMINISTRATION

Final FY08 Current Expense Budget OPERATIONS ADMINISTRATION						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 2,365,950	\$ 2,301,551	\$ 1,912,784	\$ 1,995,658	\$ 82,874	4.3%
OVERTIME	-	268	16	-	(16)	-100.0%
FRINGE BENEFITS	-	-	-	-	-	-
WORKERS' COMPENSATION	-	-	-	-	-	-
ONGOING MAINTENANCE	17,797	22,786	(231)	-	231	-100.0%
TRAINING & MEETINGS	6,708	523	625	3,529	2,904	464.6%
PROFESSIONAL SERVICES	-	-	-	200,000	200,000	-
OTHER MATERIALS	1,253,941	730,465	1,855,134	1,380,650	(474,484)	-25.6%
OTHER SERVICES	247,863	260,171	143,647	268,764	125,117	87.1%
TOTAL	\$ 3,892,259	\$ 3,315,764	\$ 3,911,975	\$ 3,848,601	\$ (63,374)	-1.6%

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

Budget Highlights:

- \$2.0 million for **Wages and Salaries**, which represents 52% of the Final FY08 Budget. The budget includes funding for 29 positions, which is two more positions than were actually filled at FY07 year-end.
- **Professional Services** includes \$200,000 for energy audits of the division's facilities.
- \$1.4 million for **Other Materials**, a decrease of \$474,000 compared to FY07 spending primarily due to fewer vehicle replacements planned for FY08 versus purchased in FY07. Actual spending for vehicle purchases for FY02-FY07 is as follows:

FY02:	\$ 622,000
FY03:	\$ 120,000
FY04:	\$1,580,000
FY05:	\$1,237,289
FY06:	\$ 717,381
FY07:	\$1,846,396
FY08 CEB:	\$1,367,000

From FY00 to FY03, MWRA limited replacement of vehicles pending completion of an extensive fleet review. In FY03 MWRA reduced the active fleet by more than 10% (from 561 to 496 vehicles) as a result of this initiative. For example, staff identified opportunities to meet the needs of the new waterworks system facilities through redeployment of existing vehicles rather than adding to the fleet. Analysis as of FY07 year-end indicates that approximately half of MWRA's active, operable fleet will be seven years or older during FY08.

- \$269,000 for **Other Services** of which \$268,000 is for Authority-wide memberships including the American Waterworks Research Foundation and the National Association of Clean Water Agencies. The increase of \$125,000 for this line item is primarily due to a one-time \$175,000 credit (funds transferred to the insurance claims line item in June 2007) in FY07 associated with the close-out of a third-party environmental clean-up settlement that involved MWRA. Excluding this credit, the department's membership budget decreases compared to FY07 spending due to the shift in funding for the Water Environment Research Foundation to the Environmental Quality Department in FY08.

WASTEWATER TREATMENT

Final FY08 Current Expense Budget WASTEWATER TREATMENT						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 15,235,247	\$ 15,893,391	\$ 16,132,014	\$ 17,241,621	\$ 1,109,607	6.9%
OVERTIME	1,049,301	1,134,334	1,177,058	1,109,883	(67,175)	-5.7%
FRINGE BENEFITS	22,279	22,643	25,282	22,260	(3,022)	-12.0%
CHEMICALS	2,697,738	2,135,041	2,353,539	2,570,648	217,109	9.2%
UTILITIES	14,165,306	18,747,498	14,959,308	16,263,963	1,304,655	8.7%
ONGOING MAINTENANCE	10,284,866	10,307,277	14,542,271	14,251,895	(290,376)	-2.0%
TRAINING & MEETINGS	66,280	53,157	84,074	68,618	(15,456)	-18.4%
PROFESSIONAL SERVICES	1,001,047	915,251	981,675	272,188	(709,487)	-72.3%
OTHER MATERIALS	470,153	553,653	423,512	437,091	13,579	3.2%
OTHER SERVICES	13,803,317	14,540,572	15,221,916	16,125,736	903,820	5.9%
TOTAL	\$ 58,795,534	\$ 64,302,817	\$ 65,900,649	\$ 68,363,903	\$ 2,463,254	3.7%

Final FY08 Current Expense Budget WASTEWATER TREATMENT by Facility						
FACILITY	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
DEER ISLAND	\$ 43,523,952	\$ 48,178,045	\$ 48,202,995	\$ 49,816,261	\$ 1,613,266	3.3%
RESIDUALS	14,282,939	15,094,148	16,460,289	17,229,677	769,388	4.7%
CLINTON	988,643	1,030,625	1,237,365	1,317,964	80,599	6.5%
TOTAL	\$ 58,795,534	\$ 64,302,818	\$ 65,900,649	\$ 68,363,902	\$ 2,463,253	3.7%

The Deer Island Treatment Plant, the Residuals Management Program, and the Clinton Treatment Plant comprise the Wastewater Treatment Department. Together, the budgets for these programs represent 44% of the Operations Division's Final FY08 Budget and 33% of MWRA's FY08 direct expense budget.

Incoming wastewater from MWRA customer communities is piped to several headworks facilities where bricks, logs, and other large objects are screened out before the influent is transmitted to Deer Island through underground tunnels. At Deer Island, wastewater from the north system is pumped through chambers that remove grit and detritus for disposal in an off-island landfill. South system flows undergo preliminary treatment at the Nut Island headworks and are then pumped directly into the primary treatment facility, bypassing the grit removal chambers. The primary treatment facility consists of stacked clarifiers where scum rises to the top and the sludge settles to the bottom. Secondary reactors and clarifiers remove organic matter through biological and gravity treatment. Primary and secondary sludge and scum are thickened, anaerobically digested, and further thickened to reduce the volume of sludge before it was barged (through March 2004) and pumped through the Braintree-Weymouth tunnel (starting April 2005) to MWRA's Residuals Processing Facility at Fore River. Methane, a byproduct of anaerobic digestion, is used to fuel the plant's boilers, which produce steam to provide heat and generate electricity.

DEER ISLAND TREATMENT PLANT

Final FY08 Current Expense Budget DEER ISLAND TREATMENT PLANT by Line Item						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 14,731,138	\$ 15,354,260	\$ 15,585,586	\$ 16,654,073	\$ 1,068,487	6.9%
OVERTIME	991,988	1,087,636	1,123,069	1,060,342	(62,727)	-5.6%
FRINGE BENEFITS	21,342	21,925	24,474	21,432	(3,042)	-12.4%
CHEMICALS	2,590,624	2,007,219	2,187,772	2,414,633	226,861	10.4%
UTILITIES	13,934,125	18,495,331	14,705,747	16,004,988	1,299,241	8.8%
ONGOING MAINTENANCE	9,173,625	9,202,941	12,629,991	12,441,889	(188,102)	-1.5%
TRAINING & MEETINGS	64,294	53,457	84,074	66,018	(18,056)	-21.5%
PROFESSIONAL SERVICES	999,383	913,583	966,959	140,500	(826,459)	-85.5%
OTHER MATERIALS	436,359	525,545	376,989	396,155	19,166	5.1%
OTHER SERVICES	581,073	516,148	518,335	616,231	97,896	18.9%
TOTAL	\$ 43,523,951	\$ 48,178,045	\$ 48,202,996	\$ 49,816,261	\$ 1,613,265	3.3%

Program Description and Goals:

The Deer Island Treatment Plant budget accounts for 32% of the Operations Division's Final FY08 Budget. DITP has a primary treatment peak capacity of 1.27 billion gallons per day (bgd) and secondary treatment peak capacity of 700 million gallons per day (mgd). MWRA may revisit this capacity depending on the results of the secondary capacity experiment conducted in FY07.

Wastewater "influent" from MWRA customer communities arrives at the plant through four underground tunnels. Pumps then lift the influent 80 to 150 feet, depending on the tunnel, to the head of the plant. There are three pump stations. The pumping capacity at the Deer Island plant has dramatically increased the volume of wastewater that can be taken into the plant from the conveyance tunnels. This reduces back-ups and overflows throughout the system when wet weather causes peaking of system flows.

After pumping, north system flows pass through grit chambers that remove grit for disposal in an off-island landfill. South system flows are pre-treated for grit at the remote headworks on Nut Island. Flow is routed to primary treatment clarifiers, which remove about half of the pollutants brought to the plant in typical wastewater (removes 50-60% of total suspended solids and up to 50% of pathogens and toxic contaminants). In the clarifiers, gravity separates sludge and scum from the wastewater.

In secondary treatment, reactors and clarifiers remove non-settleable solids through biological and gravity treatment. The biological process is a pure oxygen-activated sludge system, using microorganisms to consume organic matter that remains in the wastewater flow. Secondary treatment raises the level of pollution removal to over 85%. More than 150 tons of pure oxygen is manufactured each day at Deer Island's cryogenic facility to support the biological treatment process.

Sludge and scum from primary treatment are thickened in gravity thickeners. Sludge and scum from secondary treatment are thickened in centrifuges. Polymer is used in the secondary thickening process to increase its efficiency. Digestion occurs in 12 egg-shaped anaerobic digesters, each 90 feet in diameter and approximately 130 feet tall. Microorganisms naturally present in the sludge work to break sludge and scum down into methane gas, carbon dioxide, solid organic byproducts, and water. Digestion significantly reduces sludge quantity. The methane gas produced in the digesters is used in the plant's on-site power generating facility to save operating costs by reducing consumption of purchased energy. Digested sludge is pumped through the inter-island Braintree-Weymouth tunnel directly to the MWRA's Pelletizing Facility at Fore River, where it is further processed into a fertilizer product.

Organizational Structure:

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

- Operations manage the day-to-day operation of plant processing units, perform minor preventative maintenance activities, and oversee plant functions 24 hours per day, seven days per week.
- Thermal Power Plant staff manage and operate the Deer Island generation and thermal systems. Power Plant personnel provide 24 hour operation of the high-pressure, high temperature steam power plant. This facility is capable of producing up to 70 emergency megawatts of electrical power.
- Process Control manages and maintains the following programs in support of plant operations; real-time process instrumentation and control system (PICS), operational data system (OMS), plant performance monitoring and reporting programs, regulatory compliance programs including all plant permits, water quality, and air quality. The Process Control Unit provides the technical expertise for plant unit operations and routinely performs process optimization studies to help increase performance and reduce operating costs.
- Maintenance performs preventive and predictive maintenance and corrective repairs on all equipment, utilizing a computerized maintenance management system (CMMS) to coordinate scheduling with Operations. Staff has developed the Reliability Centered Maintenance (RCM) program, which has improved plant performance by applying maintenance resources where they are most effective. RCM analyzes the operating systems with the objective of ensuring that critical functions operate as required. Implementation of a preventive maintenance program using RCM may reduce the cost of maintaining the plant and improve efficiency by anticipating when maintenance will be required. An on-island warehouse, managed by Procurement Department staff, ensures that there is adequate stock for maintenance repairs and plant operations.
- Capital Planning provides technical support services for both the Operations and Maintenance Units. Staff is responsible for developing, procuring, and implementing all service contracts, consultant designs, and capital improvement projects at Deer Island. This group also manages the on-island Technical Information Center, which provides services to the DITP community and external constituents, and ensures quick access to plant drawings and technical information for operational and maintenance needs.
- O&M Support Section is responsible for supporting the business needs of the plant. The Administration and Finance Unit provides financial and administrative support to meet daily operational needs of the plant. The Safety/Security Unit is responsible for ensuring a safe and healthful work environment for employees and minimizing MWRA's exposure to liability and property loss or damage.

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

Operating Assumptions

Deer Island's Final FY08 Budget assumes treatment of an average flow of 364 mgd based on eight years of historical data. Sludge production is projected to be an average of 108 TPD of digested sludge shipped to FRSA (TSS basis) through the Braintree-Weymouth tunnel. This estimate is based on seven years of historical data adjusted to account for the discontinuation of the DSL centrifuges after start-up of the Braintree-Weymouth Tunnel.

Deer Island's Final FY08 Budget accounts for the impact of self-generation of electricity from the steam turbine generator, combustion turbine generators, and the hydroelectric facility. In total, use of these assets will meet approximately 23% of the total energy requirements resulting in an avoided cost savings of approximately \$4.1 million.

Budget Highlights:

- \$16.3 million for **Regular Pay**, a \$1,091,000 or 7.2% increase from FY07 spending. The Final FY08 Budget includes 245 funded positions, five more positions than filled at FY07 year-end.
- \$76,000 for **Temporary Employees** to meet temporary needs in areas such as process control and maintenance.
- \$1.1 million for **Overtime**, a \$63,000 or 5.6% decrease from the FY07 actual spending.
- \$2.4 million for **Chemicals**, a \$227,000 or 10.4% increase from FY07 spending. The Final FY08 Budget includes a \$132,000 increase in polymer and a \$125,000 increase in ferrous chloride due to higher unit prices. Sodium hypochlorite and sodium bisulfite will reflect increased usage if a new NPDES permit is issued during FY08. However, Deer Island's Final FY08 Budget does not include funding for this additional expense due to the uncertainty regarding the timing of the permit renewal. Regulatory revisions will require the treatment process to kill enterococcus in addition to fecal coliform upon renewal of the Plant's NPDES permit (expired in FY06).
- \$16.0 million for **Utilities**, a \$1.3 million or 8.8% increase from FY07 spending. The Final FY08 Budget includes \$12.4 million for electricity and \$1.5 million for diesel fuel. The final budget assumes a full year of electricity unit pricing under a spot market contract. In addition, the final budget includes \$1.9 million for water, which represents a \$159,000 or 8.9% increase over the FY07 spending primarily due to the wholesale rate increase.
- \$12.4 million for **Maintenance**, a \$188,000 or 1.5% decrease from FY07 spending. The Final FY08 Budget includes \$5.0 million for materials and \$7.4 million for maintenance services.
- \$141,000 for **Professional Services**, an \$826,000 or 85.5% decrease from FY07 spending due to the transfer of the security services contract to the Office of Emergency Preparedness.
- \$396,000 for **Other Materials**, a \$19,000 or 5.0% increase from FY07 spending primarily due to the planned purchase of a fluid imaging flo-cam for \$5,000 to better analyze the health of the secondary process.
- \$616,000 for **Other Services**, a \$98,000 or 18.8% increase over FY07 actual spending. The variance is mainly due to \$34,000 for as-needed permit services, \$21,000 for increased telephone costs, \$20,000 for increased fax and copier rental / service costs for additional equipment and end of warranties, and \$16,000 for as-needed printing services.

RESIDUALS MANAGEMENT

Final FY08 Current Expense Budget RESIDUALS by Line Item						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 92,622	\$ 97,494	\$ 100,796	\$ 103,561	\$ 2,765	2.7%
OVERTIME	-	-	-	-	-	-
ONGOING MAINTENANCE	984,682	990,575	1,660,085	1,631,334	(28,751)	-1.7%
TRAINING & MEETINGS	1,986	(300)	-	2,500	2,500	-
PROFESSIONAL SERVICES	-	-	13,028	-	(13,028)	-
OTHER MATERIALS	-	-	318	402	84	-
OTHER SERVICES	13,203,649	14,006,379	14,686,062	15,491,880	805,818	5.5%
TOTAL	\$ 14,282,939	\$ 15,094,148	\$ 16,460,289	\$ 17,229,677	\$ 769,388	4.7%

Program Description and Goals:

The Residuals Management Program manages the processing and disposal of approximately 108 dry tons per day (TSS) of sludge from the anaerobic digestion process at Deer Island, as well as the disposal of grit and screenings from all MWRA facilities. MWRA seeks to dispose of all sludge and grit and screenings in a reliable, economical, and environmentally sensitive manner.

- MWRA contracts with the New England Fertilizer Company (NEFCo) to operate the sludge processing facility, and to market and distribute sludge products. A 15-year contract with NEFCo became effective March 1, 2001. Liquid sludge from Deer Island is pumped through the Braintree-Weymouth cross-harbor tunnel to the Fore River processing facility where it is dewatered, dried, and shipped by either rail or truck for use as fertilizer or to other appropriate disposal. MWRA is committed to the beneficial reuse of biosolids to the greatest extent practicable.

In FY05, major operational changes occurred regarding sludge processing at Deer Island. The Braintree-Weymouth cross-harbor tunnel came on-line in April 2005. The previous practice of thickening and barging sludge from Deer Island to Fore River ceased. Deer Island began pumping a much lower concentration of sludge (2.0% to 2.5% average total suspended solids) to the Residuals Processing Facility.

- The average dry tons per day (TSS) is budgeted at 108 tons per day in the FY08 CEB vs. 110 tons per day in FY07.
- Grit and screenings (minor residuals) from MWRA's headworks and certain pump stations are collected and disposed of in landfills. MWRA contracts with a third party operator for this service. Minor residuals are by-products of wastewater pre-treatment and primary/secondary treatment processes and include grit, screenings and scum screenings. A new contract with the same vendor started in May 2007.
- Historically MWRA had a long term (30 year) contract required by law to provide reserve landfill capacity for disposal of sludge as a back-up in the event of any problems with the primary disposal methods. During FY06 MWRA applied for and was granted permission by the Federal District Court to terminate this contract effective March 31, 2006 on the basis of demonstrated reliability of its primary residuals program. This resulted in an \$817,000 annual savings for the Authority. NEFCo remains contractually obligated to provide back-up disposal capability, and will meet this obligation by maintaining a list of disposal sites.

Budget Highlights:

- \$104,000 for **Wages and Salaries**, which funds one position. This department also receives on-going management oversight and staff support from other departments of the MWRA including Deer Island, Treasury, and Operations Administration.
- \$1.6 million or 9% of the Final FY08 Budget is for **Maintenance**, in accordance with the NEFCo contract, which includes a specific level per year adjusted to account for inflation. The FY08 costs are \$29,000 or 1.7% less than the FY07 spending because NEFCo's contract includes a decrease in maintenance spending for calendar year 2008, of which six months fall within fiscal year 2008.
- \$14.4 million or 84% of the Final FY08 Budget is for **Sludge Pelletization**. The \$277,000 or 2.0% increase from FY07 spending is the net effect of inflationary adjustments per NEFCo's contract (inflation linked to current indexes) offset by a slight decrease (two tons per day) in expected sludge tonnage.
- \$1.0 million or 6.0% of the Final FY08 Budget is for **Grit and Screening** disposal, an increase of \$157,000 or 17.8% from FY07 spending. The final budget reflects 6,050 tons vs. 5,400 tons in FY07 and a 10% price increase from the present contract. The decrease in tonnage is due to less scum disposal as a result of process improvements at Deer Island.
- \$1,500 of the Final FY08 Budget is for **Permits**, a decrease of \$38,000 from FY07 actual spending. FY07 spending included \$35,000 for sludge dryer stack testing of two trains required by DEP to be performed every two years.

CLINTON WASTEWATER TREATMENT PLANT

Final FY08 Current Expense Budget						
CLINTON WASTEWATER TREATMENT PLANT by Line Item						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 411,487	\$ 441,637	\$ 445,633	\$ 483,988	\$ 38,355	8.6%
OVERTIME	57,312	46,698	53,988	49,541	(4,447)	-8.2%
FRINGE BENEFITS	937	718	808	828	20	2.5%
CHEMICALS	107,114	127,823	165,767	156,014	(9,753)	-5.9%
UTILITIES	231,182	252,166	253,562	258,975	5,413	2.1%
ONGOING MAINTENANCE	126,559	113,761	252,196	178,672	(73,524)	-29.2%
TRAINING & MEETINGS	-	-	-	100	100	-
PROFESSIONAL SERVICES	1,664	1,668	1,688	131,688	130,000	7701.4%
OTHER MATERIALS	33,793	28,108	46,205	40,534	(5,671)	-12.3%
OTHER SERVICES	18,594	18,046	17,519	17,625	106	0.6%
TOTAL	\$ 988,642	\$ 1,030,625	\$ 1,237,366	\$ 1,317,965	\$ 80,599	6.5%

Program Description and Goals:

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

The plant provides secondary treatment using an activated sludge process in combination with advanced nutrient removal and dechlorination. The major facilities include a headworks, primary settling tanks, digesters, sludge processes, trickling filters, aeration tanks, secondary tanks, and a chemical addition building. The plant discharges its effluent into the South Nashua River in accordance with the discharge limits of the facility's NPDES permit which limits effluent flow to 3.01 mgd. The plant has a potential peak flow rate of 12 mgd and a 6 mgd peak 24 hour rate. Residual materials are pressed and transported to an MWRA-owned landfill for disposal. Staff also performs regular monitoring of the landfill site.

Budget Highlights:

- \$484,000 for **Wages and Salaries** represents 37% of the Final FY08 Budget. This funds six positions and one part-time temporary clerical position.
- \$50,000 for **Overtime**, a \$4,000 or 8% decrease compared to FY07 spending. Overtime is required to meet the 24 hour, 7 day per week emergency coverage requirement.
- \$156,000 for **Chemicals** represents 12% of the Final FY08 Budget. This is a \$10,000 or 6% decrease from FY07 spending, primarily due to a price decrease for sodium bisulfite.
- \$259,000 for **Utilities** represents 20% of the Final FY08 Budget. This is \$5,000 or 2% more than FY07 spending.
- \$179,000 for **Maintenance** represents 14% of the Final FY08 Budget, a \$74,000 decrease from FY07 spending primarily because FY07 spending included \$95,000 for the completed sodium tank replacement project. The final budget includes \$20,000 for sealcoat of plant roadways and \$25,000 for painting of tank internal structures.

- \$132,000 for **Professional Services**, an increase of \$130,000 over FY07 spending. The Final FY08 Budget includes \$100,000 for a Landfill Closure Plan and \$30,000 for an Arsenic Study/Evaluation.
- \$41,000 for **Other Materials**, including \$25,000 for clean fill for the landfill operation.

FIELD OPERATIONS

Final FY08 Current Expense Budget FIELD OPERATIONS						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 29,575,047	\$ 31,122,959	\$ 31,787,874	\$ 33,799,814	\$ 2,011,940	6.3%
OVERTIME	2,479,307	2,195,710	2,441,917	2,511,855	69,938	2.9%
FRINGE BENEFITS	54,325	44,758	50,685	49,300	(1,385)	-2.7%
CHEMICALS	3,882,039	4,743,805	4,913,341	6,132,281	1,218,940	24.8%
UTILITIES	6,121,114	8,620,737	8,765,861	10,054,282	1,288,421	14.7%
ONGOING MAINTENANCE	5,714,598	5,401,063	7,222,109	7,414,859	192,750	2.7%
TRAINING & MEETINGS	54,659	39,700	90,698	41,000	(49,698)	-54.8%
PROFESSIONAL SERVICES	213,164	601,686	1,166,442	548,360	(618,082)	-53.0%
OTHER MATERIALS	1,049,259	1,163,076	902,493	853,700	(48,793)	-5.4%
OTHER SERVICES	1,108,090	1,261,123	2,690,376	2,597,678	(92,698)	-3.4%
TOTAL	\$ 50,251,602	\$ 55,194,617	\$ 60,031,796	\$ 64,003,129	\$ 3,971,333	6.6%

Final FY08 Current Expense Budget FIELD OPERATIONS by Program						
PROGRAM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
TRAC	\$ 2,792,043	\$ 3,124,184	\$ 3,180,877	\$ 3,555,173	\$ 374,296	11.8%
WASTEWATER OPERATIONS	10,420,956	10,914,643	10,408,746	12,021,723	1,612,977	15.5%
WATER OPERATIONS & MAINT	14,183,116	17,998,459	19,389,090	20,612,163	1,223,073	6.3%
METRO MAINTENANCE	15,309,686	14,555,866	15,480,625	16,387,686	907,061	5.9%
OPERATIONS SUPPORT	6,414,840	7,142,829	7,108,356	7,573,969	465,613	6.6%
FOD ADMIN	1,130,959	1,458,635	4,464,103	3,852,415	(611,688)	-13.7%
TOTAL	\$ 50,251,600	\$ 55,194,616	\$ 60,031,797	\$ 64,003,129	\$ 3,971,332	6.6%

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

The Toxic Reduction and Control (TRAC) Department operates a multi-faceted program to minimize and control the inflow of hazardous or toxic materials into the MWRA sewer system. TRAC operates MWRA's EPA approved Industrial Pretreatment Program and is responsible for all associated activities which include conducting inspections (about 700 annually), issuing permits (300 annually), conducting sampling (more than 2,000 events annually), and carrying out enforcement activities (about 400 annually). The program tracks over 1,400 permitted facilities and 4,000 gas/oil separators. TRAC uses a software application, TRAC-IS, to manage an extensive amount of industrial data on analytical test results, compliance status, and facility sampling and permitting requirements. A replacement system is under development and should be fully functional during FY08.

Wastewater Operations operates MWRA's wastewater transport facilities, including four continuously staffed headworks facilities; 12 fully automated pumping stations; and seven CSO facilities which are similarly unstaffed. During FY06, the current Braintree-Weymouth pumping facility went off-line and all remaining staff transferred to the Chelsea facility during construction of the new Braintree-Weymouth Replacement Pump Station. A contractor will provide by-pass pumping until the new facility is operational in FY09. Additionally, during FY07 the new Union Park and BOS019 CSOs came on line.

Water Operations and Maintenance is responsible for the treatment and delivery of approximately 220 mgd of water from the Quabbin and Wachusett reservoirs to the community water systems. The water system encompasses a service area from Chicopee in the western part of the state to Lynnfield, Wakefield, Marblehead, Norwood and Canton in the metropolitan area. Additionally, this unit maintains MWRA's western waterworks facilities, including the Ware Water Treatment Plant, the Cosgrove Intake Facility, and the Norumbega Reservoir. This unit also oversees covered storage facilities and operates the MetroWest Tunnel and Carroll Water Treatment Plant (CWTP) which came on-line in July 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 moved to the CWTP in July 2005.

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 staff maintains a waterworks network of approximately 300 miles of water mains, 4,700 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, 12 pump stations, four headworks, and seven CSO facilities. In addition, this unit performs TV inspections of the wastewater interceptor system and leak detection.

Operations Support provides technical support to FOD in the areas of engineering, quality assurance, data management, metering, and monitoring. Engineering staff coordinates all engineering issues related to the operation of the water and wastewater systems. The Quality Assurance Unit monitors water treatment effectiveness, identifies treatment issues, and develops recommendations for water treatment improvements. Data management activities include performance reporting on water quality, development and maintenance of water quality treatment and optimization models, and tracking and analyzing chemical and hydraulic flow data. The Metering and Monitoring unit maintains 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 Supervisory Control and Data Acquisition (SCADA) systems.

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

Budget Highlights:

- \$33.8 million or 53% of the Final FY08 Budget is for **Wages and Salaries** of which \$33.1 million or 98% is for regular pay to fund 519 positions consistent with the number of filled positions at FY07 year-end. The final budget also includes \$277,000 for stand-by pay to support operational and maintenance needs, \$20,000 for interns primarily for quality assurance support in Waterworks, and \$87,000 for temporary employees for Maximo (maintenance software) implementation, TRAC document coordination and Nut Island landscaping. The wages and salaries line item is \$2.0 million above FY07 spending primarily due to wage reserves of \$1.5 million and the timing of hiring in FY07 which resulted in underspending.
- \$2.5 million is for **Overtime**, including \$1.0 million for operational coverage needs, \$1.0 million for emergency related overtime, \$378,000 for planned overtime for scheduled maintenance and \$65,000 for planned training. Overtime is \$70,000 more than FY07 spending primarily due to wage increases.
- \$6.1 million or 9.6% of the total budget is for **Chemicals**, of which \$5.5 million is for water treatment and \$632,000, is for wastewater treatment. The final budget includes \$2.9 million for soda ash, \$1.0 million for sodium hypochlorite, \$645,000 for liquid oxygen for the CWTP ozone generation, \$275,000 for carbon dioxide to control the water pH, \$571,000 for hydrofluosilicic acid (fluoride) and \$264,000 for nitrazyme for Framingham Extension Relief Sewer odor and corrosion control.

Chemicals increased by \$1.2 million, or 25% from FY07 spending. Of this increase, approximately \$59,000 is due to the full year operation of the new Union Park facility versus the four months reflected in FY07 spending, \$706,000 is due to a 7% dosage increase and 20% price increase for soda ash, \$194,000 is due to the 8% dosing increase and 30% price increase for hydroflousilic acid, and \$145,000 is due to the 13% dosing increase and 12% price increase for liquid oxygen over FY07 actuals.

- \$10.0 million or 16% of the Final FY08 Budget is for **Utilities**, including \$7.3 million for electricity, \$1.5 million for diesel fuel, \$918,000 for natural gas, and \$280,000 for water. Utilities increased \$1.3 million compared with FY07 spending. Of the increase, \$423,000 reflects the full year operation of the new Union Park and BOS019 CSO facilities utilities versus the four months reflected in FY07 spending (of this amount, \$377,000 is for electricity and \$43,000 is for natural gas). The remaining increases of \$575,000 for electricity, \$264,000 for diesel fuel, and \$80,000 for Natural Gas primarily reflect projected increases in prices based on analysis of market indicators.
- \$7.4 million or 12% of the Final FY08 Budget is for **Maintenance**, including \$2.5 million for materials and \$4.9 million for services. Maintenance increased \$193,000 as compared to FY07 spending due to the \$229,000 increase for Union Park to reflect a full year operation in FY08 versus the four months of spending in FY07.
- \$548,000 is for **Professional Services**, including \$430,000 for engineering, \$58,000 for lab and testing, \$50,000 to fund an energy assessment at the CWTP, and \$10,000 for a pilot Dig Safe program. Professional Services decreased \$618,000 in comparison with FY07 spending primarily due to the shift of \$955,000 in security funding to the Office of Emergency Preparedness as part of an agency-wide effort to consolidate the program.
- \$854,000 is for **Other Materials**, including \$262,000 for vehicle expenses for gas, mileage reimbursements and tolls, \$240,000 for work clothes, \$182,000 for health and safety supplies, and \$125,000 for lab and testing supplies. Other Materials decreased by (\$49,000) from FY07 spending largely due to accelerated purchases of equipment such as radios in FY07.
- \$2.6 million is for **Other Services**, including \$1.3 million for Chelsea annual lease payments, \$549,000 for telephone and SCADA needs at various facilities, \$377,000 for required police details, and \$32,000 for permit fees. The Other Services line item decreased by (\$93,000) from FY07 spending mostly due to the significant police detail activity in FY07 for such projects as the Melrose valve installation and WASM 4 supply main projects which are not envisioned in FY08.

LABORATORY SERVICES

Final FY08 Current Expense Budget LABORATORY SERVICES						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 3,360,258	\$ 3,479,699	\$ 3,573,983	\$ 3,858,884	\$ 284,901	8.0%
OVERTIME	62,265	58,628	52,746	87,125	34,379	65.2%
FRINGE BENEFITS	1,128	469	486	1,200	714	146.9%
UTILITIES	111,162	126,214	152,032	25,783	(126,249)	-83.0%
ONGOING MAINTENANCE	262,634	276,001	435,303	360,679	(74,624)	-17.1%
TRAINING & MEETINGS	3,435	460	1,029	5,977	4,948	480.9%
PROFESSIONAL SERVICES	66,267	57,508	79,639	167,434	87,795	110.2%
OTHER MATERIALS	820,128	740,980	866,336	858,329	(8,007)	-0.9%
OTHER SERVICES	92,145	84,497	83,002	109,635	26,633	32.1%
TOTAL	\$ 4,779,422	\$ 4,824,456	\$ 5,244,556	\$ 5,475,046	\$ 230,490	4.4%

The Department of Laboratory Services (DLS) goals are to provide high quality and responsive laboratory services to MWRA's water and wastewater treatment programs, including the Department of Conservation and Recreation and the MWRA member water and wastewater communities. This includes timely and cost-effective laboratory tests to meet the strict testing guidelines required by all regulatory programs and permits, including the Safe Drinking Water Act (SDWA), Clean Water Act, and NPDES permits. The Department supports these functions at five locations: Chelsea, Southborough, Quabbin, the Central Laboratory at Deer Island, and the Clinton Wastewater Treatment Plant. Testing supports drinking water transmission and treatment processes, wastewater operations and 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. Laboratory staff track and analyze results and regularly prepare compliance reports for submission to the Environmental Protection Agency and the Massachusetts Department of Environmental Protection.

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

Budget Highlights:

- \$3.9 million or 70% of the Final FY08 Budget is for **Wages and Salaries**, of which \$3.7 million is regular pay for the funding of 54 positions, the same level as FY07. The regular pay increase of \$145,000 is primarily the result of contractual wage increases. The FY08 Budget also includes \$169,000 for five temporary employees to cover work during peak periods and to ensure adequate staffing for routine work when permanent employees are on vacation, leave, or completing special projects. The FY08 Budget for temporary employees is \$29,000 more than FY07 spending because there is a need for an additional contract employee to help cover workload during implementation of the Laboratory Information Management System (LIMS).
- \$26,000 is for **Utilities**, which consists of gases and cryogenic liquids used for various lab instruments. The budget for the Laboratory diesel fuel and electricity is included in DITP's budget in FY08 versus in the Laboratory budget in FY07 as the Lab shares a building with the Deer Island Plant.

- \$361,000 is for **Maintenance** which includes \$143,000 for Laboratory modifications, \$187,000 for equipment service contracts and \$17,000 for HVAC services performed twice per year for certification. The decrease from FY07 maintenance spending is due to the transfer of the building and cleaning budget to the DITP budget since the work is performed under the same contract for all facilities on Deer Island.
- The **Professional Services** budget of \$167,000 is \$88,000 greater than FY07 actual spending and includes lab and testing analysis services. The Lab will bring a majority of residuals testing in-house and will contract out petroleum hydrocarbons (PHC) \$45,000 and fats, oils and grease (FOG) \$35,000 testing for TRAC and Enquad/DITP. Outside labs are used for emergencies, “second opinions”, capacity constraints, and unavailability of specialized equipment or economic justification.
- \$858,000 is for **Other Materials** including \$557,000 for laboratory supplies and \$255,000 for equipment replacement.
- \$110,000 for **Other Services**, an increase of 27,000 or 32.1% from FY07 actual spending. The increase reflects \$27,000 for hazardous waste removal based on the new contract. The FY08 budget also includes \$8,000 for boat rental service on an as-needed basis and increased cost for boat dockage for two boats, and higher cost for courier service due to increased gas prices and frequency of service.

ENVIRONMENTAL QUALITY

Final FY08 Current Expense Budget ENVIRONMENTAL QUALITY							
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08		
WAGES & SALARIES	\$ 1,182,212	\$ 1,234,453	\$ 1,233,001	\$ 1,366,324	\$ 133,323	10.8%	
OVERTIME	6,404	2,567	3,281	4,000	719	21.9%	
FRINGE BENEFITS	-	6	-	-	-	-	
ONGOING MAINTENANCE	16,305	3,751	1,639	-	(1,639)	-100.0%	
TRAINING & MEETINGS	4,835	2,480	2,585	7,050	4,465	172.7%	
PROFESSIONAL SERVICES	3,195,096	3,499,485	2,840,422	3,194,997	354,575	12.5%	
OTHER MATERIALS	2,889	3,240	977	6,030	5,053	517.2%	
OTHER SERVICES	5,475	9,505	2,864	127,613	124,749	4355.8%	
TOTAL	\$ 4,413,216	\$ 4,755,487	\$ 4,084,769	\$ 4,706,014	\$ 621,245	15.2%	

The Environmental Quality Department (ENQUAD) reports on environmental findings that may be linked to MWRA operations and projects. The department's main activities are monitoring sewage influent and effluent quality; monitoring the water quality of Boston Harbor, its tributary rivers, and Massachusetts Bay; managing data and entering quality data; and complying with the reporting requirements of MWRA's NPDES permits. MWRA submits these permit reports to state and federal regulators, the Outfall Monitoring Science Advisory Panel and its subcommittees, and several libraries; and, as required by the permits, MWRA posts many of these reports on its 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 periodically produces the printed State of Boston Harbor Report.

Budget Highlights:

- \$1.4 million or 29% of the Final FY08 Budget is for **Wages and Salaries** for 17 positions plus two contractors to assist with database management. The Final FY08 Budget of \$81,000 for the two contract employees is \$69,000 more than total FY07 actual spending for temporary and intern employees. This is due to the increased workload associated with bringing the harbor and outfall monitoring data management in-house and the need to analyze water quality data to provide the foundation for modifying MWRA's ambient water monitoring programs.
- \$3.2 million or 68% of the Final FY08 Budget is for **Professional Services** for outside laboratory testing and analysis. The final budget provides total funding of \$2.7 million for the Harbor and Outfall Monitoring (HOM) Program including HOM5 and the start-up of the next contract, HOM6. The incremental cost of HOM6 in FY08 is offset by the completion of HOM4 in FY07. The companies carrying out the three contracts for HOM5 include Battelle, ENSR, and Normandeau. The increase from FY07 spending to the Final FY08 Budget is primarily due to expected price increases for the next Harbor and Outfall monitoring contract (will commence in FY08) and implementation of the next phase of the Mass Bay Modeling contract which was delayed from FY07 and FY08.

The remaining funds are for Massachusetts Bay monitoring, cost-shared with the U.S. Geological Survey, which ends in 2008, and a smaller follow-on cost-shared contract for required continuous monitoring with the National Oceanic and Atmospheric Administration's National Data Buoy Center. Also funded is the MA Bays Eutrophication Model, membership in the Gulf of Maine Ocean Observation System monitoring program, and permit-required biotoxicity testing for Clinton WWTP, CSO facilities, and DITP.

- \$128,000 for **Other Services** of which \$110,000 is for an Authority-wide membership in the Water Environment Research Foundation, which was previously charged to the Operations Administration Department in FY07. The Final FY08 Budget also funds the permit fees for MWRA's NPDES Permit renewal process.

ENGINEERING AND CONSTRUCTION

Final FY08 Current Expense Budget ENGINEERING AND CONSTRUCTION						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 4,681,359	\$ 6,496,401	\$ 7,597,332	\$ 7,925,934	\$ 328,602	4.3%
OVERTIME	75,106	45,969	63,295	58,313	(4,982)	-7.9%
FRINGE BENEFITS	734	380	512	584	72	14.1%
ONGOING MAINTENANCE	9,637	31,010	5,893	10,285	4,392	74.5%
TRAINING & MEETINGS	1,900	2,777	11,911	12,700	789	6.6%
PROFESSIONAL SERVICES	-	1,421	(750)	-	750	-100.0%
OTHER MATERIALS	82,727	84,810	127,780	112,985	(14,795)	-11.6%
OTHER SERVICES	10,432	11,119	43,817	24,900	(18,917)	-43.2%
TOTAL	\$ 4,861,895	\$ 6,673,887	\$ 7,849,790	\$ 8,145,701	\$ 295,911	3.8%

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

The department provides in-house engineering, consultant management (during the facilities planning, environmental review, design, and engineering services during construction stages of capital projects), drafting, surveying, construction management, and other technical assistance required for the maintenance, repair, and rehabilitation of wastewater and waterworks systems. The Wastewater Engineering Unit manages all wastewater design and engineering projects including CSO engineering activities. The unit also maintains the Design Information Services Center (DISC), which provides computer-aided design and drafting (CADD) and services. The Water Engineering Unit manages all water design and engineering projects as well as specialized technical services in electrical, structural, mechanical, and civil engineering disciplines. The Construction Unit provides contract management and resident inspection on all MWRA water and wastewater construction and rehabilitation projects, with the exception of Deer Island.

Budget Highlights:

- \$7.9 million for **Wages and Salaries** represents 97% of the total Final FY08 Budget and includes funding for 94 positions.
- \$58,000 for **Overtime**, mainly to cover resident inspection at construction sites after regular work hours to ensure monitoring of construction projects. Overtime is also used for unplanned design or survey needs, attendance at evening public meetings and meeting deadlines.
- \$10,000 for **Maintenance** which covers service contracts for the DISC Unit's specialized printers and plotters.
- \$113,000 for **Other Materials**, which includes \$86,000 for vehicle expense for staff traveling to construction sites, \$15,000 for office supplies and \$8,000 for work clothes. The Final FY08 Budget is lower than the FY07 actuals due to the purchase of two fireproof file safes for the DISC Unit and a one-time purchase of jackets for the engineering and construction staff in FY07.
- \$25,000 for **Other Services** which includes \$10,000 for memberships and dues, \$6,000 for printing of in-house design plans and specifications, \$5,000 for cell phones, and \$2,000 for police details. The Final FY08 Budget is lower than FY07 actual spending due to the unbudgeted printing of construction transmittal forms, waterproof field work journals, the CSO Report combined with the need to send out a construction field unit PC for data recovery.



Law Division
Budget

LAW DIVISION

Final FY08 Current Expense Budget LAW DIVISION by Line Item						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 1,553,854	\$ 1,679,360	\$ 1,649,990	\$ 1,706,055	\$ 56,065	3.4%
OVERTIME	93	2,850	40	-	(40)	-100.0%
TRAINING & MEETINGS	4,390	4,543	2,788	3,748	960	34.4%
PROFESSIONAL SERVICES	211,672	94,374	150,409	176,000	25,591	17.0%
OTHER MATERIALS	4,140	3,645	7,347	5,539	(1,808)	-24.6%
OTHER SERVICES	29,210	31,663	29,779	36,500	6,721	22.6%
TOTAL	\$ 1,803,359	\$ 1,816,435	\$ 1,840,353	\$ 1,927,842	\$ 87,489	4.8%

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 FY08 direct expense budget.

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

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 new and developing regulatory issues.

Budget Highlights:

- \$1.7 million for **Wages and Salaries**, an increase of \$56,000 or 3.4% due to contractual increases.
- \$176,000 for **Professional Services** an increase of \$26,000 or 17% due to several cases being settled before the scheduled court dates.
- The Law Division continues to exhaust all opportunities to shift the cost of legal representation to insurers and indemnitors and to litigate insurance coverage disputes as they arise, all in the interest of cost savings.



Finance Division
Budget

FINANCE DIVISION

Final FY08 Current Expense Budget FINANCE DIVISION by Line Item						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 2,672,016	\$ 2,739,596	\$ 2,920,430	\$ 3,165,710	\$ 245,280	8.4%
OVERTIME	63	5,939	486	-	(486)	-100.0%
TRAINING & MEETINGS	3,918	2,572	2,650	6,350	3,700	139.6%
PROFESSIONAL SERVICES	405,016	455,495	129,631	502,300	372,669	287.5%
OTHER MATERIALS	7,025	7,442	8,547	10,138	1,591	18.6%
OTHER SERVICES	22,563	8,860	17,768	24,755	6,987	39.3%
TOTAL	\$ 3,110,601	\$ 3,219,904	\$ 3,079,512	\$ 3,709,253	\$ 629,741	20.4%

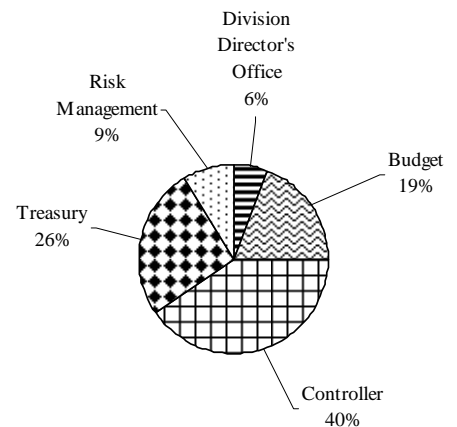
FY08 Current Expense Budget FINANCE DIVISION by Department						
DEPARTMENT	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
DIVISION DIRECTOR'S OFFICE	\$ 214,456	\$ 218,681	\$ 213,436	\$ 214,921	\$ 1,485	0.7%
PLANNING/COORDINATION	499	196	110	-	(110)	-100.0%
BUDGET	382,787	375,378	680,218	710,927	30,709	4.5%
TREASURY	986,497	1,078,168	502,745	961,646	458,901	91.3%
CONTROLLER	1,526,362	1,412,624	1,393,264	1,497,883	104,619	7.5%
RISK MANAGEMENT	-	134,857	289,739	323,876	34,137	11.8%
TOTAL	\$ 3,110,601	\$ 3,219,904	\$ 3,079,512	\$ 3,709,253	\$ 629,741	20.4%

The Finance Division is responsible for overseeing rates and revenue management, budgeting, capital financing, accounting, disbursements, investments, grant and loan management and the processing and resolution of insurance claims. The Finance Division is comprised of four independent but related functions. These are Budget, Controller, Risk Management, and Treasury. The Finance Division performs critical financial support functions that ensure the daily operations of the Authority and improvements to its capital assets, including: timely and accurate processing of payments for goods and services, annual issuance of debt to fund essential capital projects, weekly distribution of payroll, and regular reporting on expenditures to MWRA management, the Advisory Board, and the Board of Directors. The Finance Division is also responsible for developing and implementing forward thinking, long-range investment and budget strategies that ensure adequate funding for capital projects and on-going operations while mitigating financial impact to ratepayers and ensuring the Authority's strong bond rating.

The Final FY08 Budget for the Finance division accounts for less than 2% of MWRA's direct expense budget.

Goals:

- Ensure the fiscal strength of MWRA through judicious, informed, and farsighted allocation of resources.
- Develop strategies for minimizing increases in community assessments and charges.
- 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.



DIVISION DIRECTOR'S OFFICE

Final FY08 Current Expense Budget							
FINANCE DIVISION DIRECTOR'S OFFICE by Line Item							
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08		
WAGES & SALARIES	\$ 213,548	\$ 216,676	\$ 210,527	\$ 211,991	\$ 1,464	0.7%	
TRAINING & MEETINGS	898	1,306	2,288	1,400	(888)	-38.8%	
OTHER MATERIALS	10	179	170	20	(150)	-88.2%	
OTHER SERVICES	-	520	451	1,510	1,059	234.8%	
TOTAL	\$ 214,456	\$ 218,681	\$ 213,436	\$ 214,921	\$ 1,485	0.7%	

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, grant and loan management, and risk management. The Director's Office ensures that all financial transactions are conducted in compliance with the Authority's policies, procedures and contract terms and that the investment of all funds are consistent with the bond resolutions and regulations. The Director's Office manages the development and implementation of financial policy to uphold the efficient utilization of resources and control of all monies. The Director's Office provides advice and analysis to the Executive Director and the Board of Directors on all financial issues.

The division's continuing challenge in FY08 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 a significant reduction in the amount of state debt service assistance received by the MWRA since 2002.

Goals:

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

Budget Highlights:

- Total Final FY08 Budget of \$212,000 for **Wages and Salaries**, an increase of \$1,500 from FY07 actual spending due to partial year vacant CFO position offset by wage increases. The final budget funds three positions.

BUDGET

Final FY08 Current Expense Budget BUDGET by Line Item							
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08		
WAGES & SALARIES	\$ 371,573	\$ 374,813	\$ 669,306	\$ 699,987	\$ 30,681	4.6%	
TRAINING & MEETINGS	262	125	-	450	450	-	
OTHER MATERIALS	70	440	5,409	460	(4,949)	-91.5%	
OTHER SERVICES	10,882	-	5,503	10,030	4,527	82.3%	
TOTAL	\$ 382,787	\$ 375,378	\$ 680,218	\$ 710,927	\$ 30,709	4.5%	

The Budget Department provides the financial analysis that allows MWRA to translate its goals, and legal and financial commitments into cost-effective annual and multi-year programs and budgets. Department staff works closely with divisions' staff to coordinate development of the long-term Capital Improvement Program (CIP) and monitor the progress of capital projects compared to schedule and budget. Staff also coordinates development of MWRA's annual Current Expense Budget (CEB) and monitors spending compared to budget throughout the year.

Goals:

- Continually enhance processes and the management of resources to deliver the proposed and final Capital Improvement Program and Current Expense Budgets timely and accurately.
- Adhere to all MWRA policies, procedures and administrative practices as well as all relevant statutory and regulatory authority and accounting and budgeting principles.
- Improve the quality and presentation of budget documents and regularly required reports while working to develop new reports that will aid the Authority's management and staff as well as the MWRA Advisory Board.

Budget Highlights:

- Total Final FY08 Budget of \$700,000 for **Wages and Salaries**, an increase of \$31,000 or 4.6% from FY07 actual spending. The final budget funds nine positions.
- \$10,000 is for **Other Services**, an increase of \$5,000 or 82.3% from FY07 actual spending. The other services Final FY08 Budget includes \$3,000 for forecasting services from Global Insight for inflation projections and \$6,000 to cover the costs of printing a limited number of budget documents and reports.

Initiatives:

- Redesign both the CIP and CEB Internet applications to facilitate easier navigation, enhance search capabilities and provide interactive functionality.

CONTROLLER

Final FY08 Current Expense Budget CONTROLLER by Line Item						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 1,332,597	\$ 1,305,300	\$ 1,176,542	\$ 1,299,730	\$ 123,188	10.5%
OVERTIME	-	4,992	-	-	-	-
TRAINING & MEETINGS	573	500	313	1,000	687	219.5%
PROFESSIONAL SERVICES	190,000	99,000	215,500	189,000	(26,500)	-12.3%
OTHER MATERIALS	1,656	2,493	629	4,608	3,979	632.6%
OTHER SERVICES	1,536	339	280	3,545	3,265	1166.1%
TOTAL	\$ 1,526,362	\$ 1,412,624	\$ 1,393,264	\$ 1,497,883	\$ 104,619	7.5%

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

Goals:

- Produce accurate and timely financial reports.
- Process invoices within terms and conditions.

Budget Highlights:

- \$1.3 million for **Wages and Salaries**, an increase of \$123,000 or 10.5% from FY07 actual spending for contractual increases and one vacant position in FY07. The final budget funds 20 positions.
- \$189,000 for **Professional Services**, a decrease of \$27,000 or 12.3% from FY07 actual spending due to the GASB 45 study that was performed in FY07. The FY08 Budget reflects anticipated costs associated with the annual financial statement audit, the A-133 Single Audit related to the receipt of federal funds, and the actuarial services related to GASB 45 Other Post Employment Benefits.

RISK MANAGEMENT

Final FY08 Current Expense Budget RISK MANAGEMENT by Line Item						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ -	\$ 134,857	\$ 266,119	\$ 277,451	\$ 11,332	4.3%
TRAINING & MEETINGS	-	-	-	500	500	-
PROFESSIONAL SERVICES	-	-	23,261	45,000	21,739	93.5%
OTHER MATERIALS	-	-	59	-	(59)	-100.0%
OTHER SERVICES	-	-	300	925	625	208.3%
TOTAL	\$ -	\$ 134,857	\$ 289,739	\$ 323,876	\$ 34,137	11.8%

The Risk Management Department formerly included in Treasury was established as a stand alone department during FY06.

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

Goals:

- Process claims in an efficient and timely manner.
- Secure the timely, cost effective renewal of Authority-wide insurance contracts.
- Minimize MWRA's exposure to financial loss stemming from contractor and vendor activities by establishing insurance requirements and monitoring compliance.

Budget Highlights:

- Total Final FY08 Budget is \$324,000 of which \$277,000 is for **Wages & Salaries**. The final budget funds three positions.
- \$45,000 for **Professional Services** includes funds for an insurance consultant. The increase of \$22,000 or 93.5% reflects underspending in FY07 due to a reduced level of effort required during the insurance program renewal process.

TREASURY

Final FY08 Current Expense Budget TREASURY by Line Item						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 754,298	\$ 707,948	\$ 597,935	\$ 676,551	\$ 78,616	13.1%
OVERTIME	63	947	486	-	(486)	-100.0%
TRAINING & MEETINGS	2,185	641	50	3,000	2,950	5900.0%
PROFESSIONAL SERVICES	215,016	356,495	(109,130)	268,300	377,430	345.9%
OTHER MATERIALS	4,790	4,136	2,170	5,050	2,880	132.7%
OTHER SERVICES	10,145	8,001	11,234	8,745	(2,489)	-22.2%
TOTAL	\$ 986,497	\$ 1,078,168	\$ 502,745	\$ 961,646	\$ 458,901	91.3%

The Treasury Department secures funds for ongoing operations and capital programs in addition to processing cash disbursements. Department staff collects revenue, disburse funds, and manage grant and loan programs in addition to debt issuance and investments. The Treasury Department also manages the annual process of establishing water and sewer assessments to be paid by MWRA's member communities and planning estimates of future rate projections.

Goals:

- Manage MWRA's debt portfolio to achieve sustainable and predictable rate increases.

Budget Highlights:

- \$677,000 for **Wages and Salaries**, an increase of \$79,000 or 13.1% from FY07 actual spending, due to partial year vacant treasurer position in FY07 and prorated wage increases. The final budget funds nine positions.
- \$268,000 for **Professional Services**, an increase of \$377,000 or 345.9% as compared to FY07 actual spending. FY07 actual includes a reversal of \$328,000 overaccrual for bank fees, and \$50,000 for energy consulting services.



Support Services Division
Budget

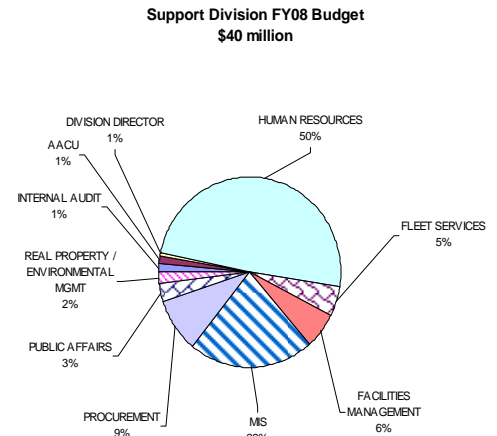
SUPPORT SERVICES DIVISION

Final FY08 Current Expense Budget SUPPORT DIVISION by Line Item						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 13,736,162	\$ 13,599,492	\$ 13,671,269	\$ 14,387,448	\$ 716,179	5.2%
OVERTIME	57,103	65,014	93,209	93,115	(94)	-0.1%
FRINGE BENEFITS	12,197,305	14,125,296	15,043,560	16,198,100	1,154,540	7.7%
WORKERS' COMPENSATION	1,038,298	1,823,355	1,235,814	1,400,000	164,186	13.3%
UTILITIES	975,625	1,161,558	351,321	188,667	(162,654)	-46.3%
ONGOING MAINTENANCE	3,734,642	3,368,100	3,522,714	3,273,456	(249,258)	-7.1%
TRAINING & MEETINGS	73,794	37,301	55,459	47,194	(8,265)	-14.9%
PROFESSIONAL SERVICES	927,672	804,911	349,285	484,920	135,635	38.8%
OTHER MATERIALS	437,074	758,865	1,190,744	1,168,028	(22,716)	-1.9%
OTHER SERVICES	5,678,773	5,218,892	2,810,354	2,958,535	148,181	5.3%
TOTAL	\$ 38,856,448	\$ 40,962,784	\$ 38,323,729	\$ 40,199,463	\$ 1,875,734	4.9%

Final FY08 Current Expense Budget SUPPORT DIVISION by Department						
DEPARTMENT	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
DIVISION DIRECTOR	\$ 473,916	\$ 548,601	\$ 223,882	\$ 231,190	\$ 7,308	3.3%
INTERNAL AUDIT	525,367	532,496	550,914	577,417	26,503	4.8%
PUBLIC AFFAIRS	1,330,809	1,305,265	1,219,403	1,290,536	71,133	5.8%
FACILITIES MANAGEMENT	7,375,557	6,711,567	2,835,483	2,439,105	(396,378)	-14.0%
FLEET SERVICES	1,144,995	1,675,339	1,596,618	2,002,574	405,956	25.4%
AACU	519,847	514,664	555,273	576,492	21,219	3.8%
HUMAN RESOURCES	14,949,226	17,596,471	18,143,093	19,696,119	1,553,026	8.6%
MIS	8,329,376	7,970,819	8,727,087	8,910,798	183,711	2.1%
PROCUREMENT	3,334,042	3,505,265	3,841,264	3,660,107	(181,157)	-4.7%
REAL PROPERTY / ENVIRONMENTAL MGMT	807,160	602,297	630,712	815,125	184,413	29.2%
TOTAL	\$ 38,790,295	\$ 40,962,784	\$ 38,323,729	\$ 40,199,463	\$ 1,875,734	4.9%

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, occupational health and safety, internal audit, fleet services, computer system development and management, library and records management, and mail and employee shuttle services. The division also manages the Charlestown Navy Yard headquarters.

The division budget includes ten departments: Division Director, Internal Audit, Public Affairs, Facilities Management, Fleet Services, Affirmative Action and Compliance Unit (AACU), Human Resources, Management Information Systems (MIS), Procurement, and Real Property and Environmental Management (RPEM). Internal Audit, Public Affairs, and AACU, funded as part of the Support Services budget, report to the MWRA's Executive Director. The \$40 million FY08 Budget accounts for 19.4% of MWRA's direct expense budget. The division budget includes \$16.2 million for fringe benefits for all MWRA personnel; \$1.6 million for lease, taxes insurance, and operating and maintenance costs for the Charlestown Navy Yard (CNY) headquarters; and \$1.4 million for workers' compensation claims and medical expenses. Net of these agency-wide expenses, the Support Services Division budget accounts for 10.2% of direct expenses.



DIVISION DIRECTOR

Final FY08 Current Expense Budget						
DIVISION DIRECTOR						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 385,909	\$ 268,740	\$ 222,590	\$ 229,836	\$ 7,246	3.3%
OVERTIME	1,579	54	-	-	-	-
ONGOING MAINTENANCE	81,062	267,543	221	-	(221)	-100.0%
TRAINING & MEETINGS	834	659	-	-	-	-
OTHER MATERIALS	1,948	9,990	368	450	82	22.3%
OTHER SERVICES	2,584	1,615	703	904	201	28.6%
TOTAL	\$ 473,916	\$ 548,601	\$ 223,882	\$ 231,190	\$ 7,308	3.3%

The Division Director Department consists of management and administrative staff.

The goals of the Division Director's Department are to:

- Provide comprehensive administrative, professional and technical support services to all divisions to create a cooperative framework within which MWRA can operate effectively.
- Ensure proper and effective communication between MWRA and the communities served, other agencies, and state and local officials.

Budget Highlights:

- Total Final FY08 Budget of \$231,000 is an increase of \$7,000 or 3.3% as compared to FY07 actual spending. The majority of the increase is for FY08 **Wages and Salaries** due to contractual increases. This budget includes funding for two positions.

INTERNAL AUDIT

Final FY08 Current Expense Budget INTERNAL AUDIT						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 512,994	\$ 525,051	\$ 539,094	\$ 564,209	\$ 25,115	4.7%
TRAINING & MEETINGS	9,903	3,887	9,118	9,738	620	6.8%
OTHER MATERIALS	1,455	2,208	2,217	2,400	183	8.3%
OTHER SERVICES	1,015	1,350	485	1,070	585	120.6%
TOTAL	\$ 525,367	\$ 532,496	\$ 550,914	\$ 577,417	\$ 26,503	4.8%

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

The Internal Audit Department's goals are to:

- Encourage more economical and efficient operations, adhere to sound management procedures, and use controls designed to safeguard MWRA assets.
- Assure that automated and supporting manual management information systems have secure data control environments and to provide accurate and useful management information.
- Assure that contractors and consultants doing business with MWRA have adequate accounting and billing systems to provide current, complete, and accurate cost and price information and project invoicing.

Budget Highlights:

- Total Final FY08 Budget of \$577,000, an increase of \$27,000 or 4.8% over FY07 actual spending.
- \$564,000 for **Wages and Salaries**, an increase of \$25,000 or 4.7% over FY07 actual spending, for staff to perform internal audits, management advisory services, preliminary review and incurred cost audits, and consultant disclosure statement reviews. The final budget supports eight positions.
- \$10,000 for **Training and Meetings**, of which 46% is for travel to consultant offices to perform incurred cost audits of billings for design and engineering services.

FY07 Accomplishments:

- Identified \$1,180,000 in savings related to its incurred cost audits of \$23 million in consultant billings (\$358,000), contractors and vendors (\$638,000), and internal assignments (\$184,000).
- Completed numerous internal audits and management advisory services, including the issuance of reports on property controls and prevailing wage compliance, and true-ups of annual Harbor Energy Electric Company (HEEC) support agreement charges, and Boston Water and Sewer Commission (BWSC) force account billings for the CSO program.

PUBLIC AFFAIRS

Final FY08 Current Expense Budget PUBLIC AFFAIRS						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 1,272,436	\$ 1,230,576	\$ 1,148,137	\$ 1,188,613	\$ 40,476	3.5%
OVERTIME	147	1,070	-	-	-	-
TRAINING & MEETINGS	2,651	2,875	1,045	3,600	2,555	244.5%
PROFESSIONAL SERVICES	1,050	1,934	1,683	1,050	(633)	-37.6%
OTHER MATERIALS	20,193	22,414	15,433	15,750	317	2.1%
OTHER SERVICES	34,332	46,396	53,105	81,523	28,418	53.5%
TOTAL	\$ 1,330,809	\$ 1,305,265	\$ 1,219,403	\$ 1,290,536	\$ 71,133	5.8%

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 and Coordination Department staff to ensure compliance with the Massachusetts Environmental Policy Act (MEPA), the Massachusetts Historical Commission (MHC), Department of Environmental Protection (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:

- Total Final FY08 Budget of \$1.3 million, an increase of \$71,000 or 5.8% from FY07 actual spending.
- \$1.2 million for **Wages and Salaries**, an increase of \$40,000 or 3.5% from FY07 actual spending, primarily due to contractual adjustments to regular pay. The final budget supports 15 positions.
- \$97,000 for **Other Materials** and **Other Services** includes \$63,000 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, teachers and environmental organizations about Boston Harbor and other environmental matters.

FACILITIES MANAGEMENT

Final FY08 Current Expense Budget FACILITIES MANAGEMENT						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 995,985	\$ 628,221	\$ 370,907	\$ 392,502	\$ 21,595	5.8%
OVERTIME	25,059	20,011	30,320	35,000	4,680	15.4%
FRINGE BENEFITS	253	521	126	-	(126)	-100.0%
UTILITIES	974,175	1,153,669	349,873	187,167	(162,706)	-46.5%
ONGOING MAINTENANCE	312,151	302,472	86,715	37,320	(49,395)	-57.0%
TRAINING & MEETINGS	38	-	-	-	-	-
PROFESSIONAL SERVICES	586,796	538,687	(1)	-	1	-100.0%
OTHER MATERIALS	77,351	23,800	87,935	121,961	34,026	38.7%
OTHER SERVICES	4,403,749	4,044,186	1,909,608	1,665,155	(244,453)	-12.8%
TOTAL	\$ 7,375,557	\$ 6,711,567	\$ 2,835,483	\$ 2,439,105	\$ (396,378)	-14.0%

Final FY08 Current Expense Budget FACILITIES MANAGEMENT SUPPORT by Area						
AREA	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
FRSA	\$ 337,090	\$ 281,636	\$ 217,332	\$ -	\$ (217,332)	-100.0%
FACILITIES MANAGEMENT	6,022,429	5,780,804	2,216,599	2,009,167	(207,432)	-9.4%
ADMINISTRATIVE SERVICES	1,016,038	649,127	401,552	429,938	28,386	7.1%
TOTAL	\$ 7,375,557	\$ 6,711,567	\$ 2,835,483	\$ 2,439,105	\$ (396,378)	-14.0%

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

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

In addition, staff provides administrative and office support services that facilitate efficient use of MWRA resources. These responsibilities include providing and managing the motor pools at Chelsea and CNY, copying and printing services, general office equipment repairs, transportation, mail and courier services, and receptionist coverage at CNY.

The goals of the Facilities Management Department are to:

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

Budget Highlights:

- Total Final FY08 Budget of \$2.4 million, a decrease of \$396,000 or 14.0% as compared to FY07 spending.
- \$393,000 for **Wages and Salaries**, an increase of \$22,000 or 5.8% from FY07 actual spending due to contractual increases, longevity and sick leave buyback. The final budget supports eight positions.
- \$35,000 for **Overtime** for coverage of facility maintenance and support services, an increase of \$5,000 or 15.4% from FY07 actual spending. Funds are used to provide coverage of daily services, such as shuttles and reception services during vacations or other periods when staff are away.
- \$187,000 for **Utilities**, a decrease of \$163,000 or 46.5% from FY07 actual spending. The decrease reflects a reduction in consumption due to the sale of the final FRSA parcel(s) during FY07.
- \$122,000 for **Other Materials**, an increase of \$34,000 or 38.7% from FY07 actual spending due to the full reinstatement of funding for postage and delivery services which was partially deferred during FY07. In FY07, postage was not fully funded because postage was purchased in large quantities and also there was postage remaining from prior years. In FY08, funds for postage and delivery services have been reinstated to a more typical level.
- \$1.7 million for **Other Services**, a decrease of \$244,000 or 12.8%, as compared to FY07 actual spending. The savings reflects the reduction in space occupied at CNY.

FLEET SERVICES

Final FY08 Current Expense Budget FLEET SERVICES							
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08		
WAGES & SALARIES	\$ 600,409	\$ 633,183	\$ 650,257	\$ 699,384	\$ 49,127	7.6%	
OVERTIME	20,078	18,172	13,774	40,000	26,226	190.4%	
FRINGE BENEFITS	1,044	537	598	2,100	1,502	251.2%	
UTILITIES	1,450	1,306	1,331	1,500	169	12.7%	
ONGOING MAINTENANCE	506,201	585,215	666,280	742,050	75,770	11.4%	
TRAINING & MEETINGS	-	-	-	-	-	-	
OTHER MATERIALS	78,224	435,076	462,616	513,002	50,386	10.9%	
OTHER SERVICES	3,742	1,850	(198,238)	4,538	202,776	-102.3%	
TOTAL	\$ 1,211,148	\$ 1,675,339	\$ 1,596,618	\$ 2,002,574	\$ 405,956	25.4%	

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

Budget Highlights:

- The Final FY08 Budget of \$2.0 million reflects an increase of \$406,000 or 25.4% as compared to FY07 actual spending.
- \$699,000 for **Wages & Salaries**, an increase of \$49,000 or 7.6% over FY07 actual spending. Funds support 12 positions. The increase is attributed to contractual increases and underspending during FY07 while a mechanic was "on loan" to Wastewater Operations for five months.
- **Ongoing Maintenance** budget of \$742,000, an increase of \$75,000 or 11.4% over FY07 actual spending. The budget includes funds for automotive materials & services to maintain MWRA's vehicle fleet. The increase supports the unavoidable increasing maintenance and repair demands on an aging fleet. More than 50 percent of the active operable fleet is seven years or older. Historical review of maintenance budgets shows yearly increases in this category.
- \$513,000 for **Other Materials**, an increase of \$50,000 or 10.9% as compared to FY07 actual spending. The Final FY08 Budget includes funds for vehicle/equipment fueling which are based on FY07 fueling costs. Fleet Services procures bulk fuels from state contracts while continuing to meet all governmental alternative fuel directives.
- \$4,600 for Other Services, a decrease of \$203,000 or -102.3%. Fleet Services has for many years carried an accrual of \$916,000 for projected fees for MWRA's use of the DCR and State Police radio communications network. The credit of \$200,000 has been posted against this accrual leaving \$700,000 to remain on the books for this purpose.

FY07 Accomplishments

Fleet Services

- Developed specifications and purchased 65 new / replacement vehicles / equipment. Thirty one (31) of these units are alternative fuel or hybrid models which is consistent with the Authority's goal of purchasing environmentally friendly products. One emergency service unit was purchased with a grant from the Department of Homeland Security.
- As part of the Authority's environmental goals, 15 large diesel vehicles were outfitted with Diesel Oxidation Catalyst (DOC) devices which reduce greenhouse gas emissions.
- Fleet Services and Procurement have worked together to add 27 hybrid, four flex fuel and 12 additional diesel vehicles (which will use bio-diesel fuel).
- Fleet Services and Procurement have replaced diesel fuel purchases for vehicles with purchases of bio-diesel fuel, becoming the second largest procurer of bio-diesel fuel in Massachusetts.
- Prepared the documentation for the surplus sale of 46 vehicles and/or equipment of which 30 were sold at public bid to-date.
- Continued working with MIS staff on the design and implementation of a Maximo system upgrade which includes a transportation module specifically designed for a fleet environment.
- Development and implementation of FCC mandated frequency re-banding project with Motorola and Nextel is underway.

AFFIRMATIVE ACTION and COMPLIANCE

Final FY08 Current Expense Budget AFFIRMATIVE ACTION & COMPLIANCE UNIT						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 517,460	\$ 513,217	\$ 552,953	\$ 572,498	\$ 19,545	3.5%
OVERTIME	94	-	-	-	-	-
TRAINING & MEETINGS	1,345	3	1	1,794	1,793	179300.0%
OTHER MATERIALS	448	944	2,119	1,500	(619)	-29.2%
OTHER SERVICES	500	500	200	700	500	250.0%
TOTAL	\$ 519,847	\$ 514,664	\$ 555,273	\$ 576,492	\$ 21,219	3.8%

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

The goals of the Affirmative Action and Compliance Unit 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 into its work force.
- Maintain internal audit and reporting systems adequate to monitor MWRA’s accomplishments of goal attainment in identified underutilized job groups for minorities and female representation.
- Communicate to managers and supervisors MWRA's commitment to its equal opportunity policies and affirmative action programs.
- Provide for the equitable participation of minority and women-owned businesses in procurement opportunities and ensure that minorities and women are represented in the labor force on construction contracts, and coordinate with other public entities regarding state and federal requirements.
- Assist divisions and departments in the understanding and implementation of MBE/WBE program policies and practices and monitor and report on contractor compliance and expenditures.

Budget Highlights:

- Total Final FY08 Budget of \$576,000, an increase of \$21,000 or 3.8% over FY07 actual spending is primarily due to contractual adjustments to regular pay. The final budget supports eight positions.

HUMAN RESOURCES

Final FY08 Current Expense Budget HUMAN RESOURCES						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 1,320,455	\$ 1,335,022	\$ 1,484,995	\$ 1,543,492	\$ 58,497	3.9%
OVERTIME	344	1,092	69	437	368	533.3%
FRINGE BENEFITS	12,195,892	14,123,974	15,042,497	16,196,000	1,153,503	7.7%
WORKERS' COMPENSATION	1,038,298	1,823,355	1,235,814	1,400,000	164,186	13.3%
ONGOING MAINTENANCE	52	807	28	1,000	972	3471.4%
TRAINING & MEETINGS	3,711	3,146	3,820	7,514	3,694	96.7%
PROFESSIONAL SERVICES	338,910	262,552	347,875	483,370	135,495	38.9%
OTHER MATERIALS	22,312	16,672	25,156	26,460	1,304	5.2%
OTHER SERVICES	29,252	29,851	2,839	37,846	35,007	1233.1%
TOTAL	\$ 14,949,226	\$ 17,596,471	\$ 18,143,093	\$ 19,696,119	\$ 1,553,026	8.6%

Final FY08 Current Expense Budget HUMAN RESOURCES by Area						
AREA	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
EMPLOYEE/COMP/BEN	\$ 610,445	\$ 611,512	\$ 567,473	\$ 648,262	\$ 80,789	14.2%
LABOR RELATIONS	691,158	676,213	862,639	951,221	88,582	10.3%
TRAINING	388,832	325,880	387,848	472,586	84,738	21.8%
CENTRALIZED FRINGE BENEFITS	13,258,791	15,982,866	16,325,133	17,624,050	1,298,917	8.0%
TOTAL	\$ 14,949,226	\$ 17,596,471	\$ 18,143,093	\$ 19,696,119	\$ 1,553,026	8.6%

The Human Resources Department is comprised of the following three units:

The **Employment, Compensation, Benefits and HRIS Unit** coordinates and oversees all external recruitment and selection activities including hiring, lateral transfers and promotions to meet the business needs of MWRA; develops and coordinates MWRA compensation and benefits strategies and programs; and ensures the proper processing and recording of personnel actions. The compensation function also ensures that all MWRA employees possess the necessary licenses and certifications required by their positions. The **Labor Relations Unit** is responsible for fulfilling MWRA's collective bargaining and contract administration obligations under Massachusetts' public sector collective bargaining law, its workers' compensation responsibilities, and its responsibilities for employee occupational safety and health. The **Training Unit** develops, coordinates, delivers, and evaluates MWRA technical and professional development training programs and other programs designed to improve employee knowledge, skills, productivity, and the quality of workplace interaction. It is responsible for oversight and tracking of MWRA performance evaluation programs, Employee Assistance, and Tuition Reimbursement programs. In addition, the Human Resources Department includes the **Centralized Fringe Benefits** cost center, which includes the 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 package (salary and benefits) to all employees.
- Maintain effective relationships with the unions representing the MWRA workforce while protecting and enhancing management flexibility. Ensure that collective bargaining objectives are met, support MWRA initiatives by designing and implementing appropriate labor relations strategies, create an environment that

fosters safety consciousness and productive work, maximize the number of early returns to work by employees who have incurred on-the-job injuries or illnesses, and aggressively manage the Workers' Compensation Program to reduce costs.

Budget Highlights:

- \$1.5 million for **Wages and Salaries**, an increase of \$58,000 or 3.9% over FY07 actual spending, includes funding for 20 positions.
- \$16.2 million for **Fringe Benefits**, an increase of \$1.2 million or 7.7% over FY07 actual spending. The budget includes \$14.0 million for MWRA's share of health insurance costs, \$1.3 million for MWRA's share of Medicare taxes, \$904,000 for MWRA's share of dental insurance costs and union health and welfare fund contributions, \$60,000 for unemployment insurance payments, and \$31,000 for tuition reimbursement.
- Health insurance budget increased 6.0%. This increase is driven primarily by higher GIC health insurance rates. Dental insurance is 12% more than the FY07 actual spending due to a projected increase in dental insurance premiums. Medicare is higher to reflect estimated expenses of contractual salary increases. Unemployment insurance and tuition reimbursement for FY08 are both slightly higher than FY07 actual spending.
- \$1.4 million for the **Workers' Compensation** budget, an increase of \$164,000 or 13.3% over FY07 actual spending. This increase is primarily due to higher insurance reserves needed for indemnity expenses. Human Resources is responsible for the management of this program as well as coordination with the third-party administrator.
- \$483,000 for **Professional Services**, an increase of \$135,000 or 38.9% over FY07 actual spending. The Final FY08 Budget includes \$219,000 for professional development and technical training, \$26,000 for the Employee Assistance Program, \$53,000 for medical evaluation services, specialized investigation services, unemployment claims administration and salary surveys, \$130,000 for workers' compensation claims administration and \$56,000 for arbitration expenses.

FY07 Accomplishments

Human Resources

In FY07, the accomplishments of the Human Resources Department included:

- Implemented employment background check procedures for all external new hires.
- Negotiated a uniform agreement with all five unions.
- Provided supervisory development training for recently promoted/hired supervisors.
- Provided training, guidance and management reporting for managers to improve leave of absence management.
- Provided agency-wide harassment prevention training.
- Reviewed employment processes and developed improvements in paper flow and procedures.
- Revamped and rolled out the Transport Training Program for Transport Operators.
- Resolved grievances from collective bargaining units.
- Prepared the Authority for labor negotiations with the five collective bargaining units.
- Provided the Budget Department with wage and salary data for use in budget projections and plans.

FY08 Initiatives

- Successfully conclude negotiations for successor collective bargaining agreements with Units 3 and 6.
- Implement new contract settlements for all collective bargaining units.
- Develop and conduct Ethics Training for MWRA managers.
- Provide drug and alcohol recognition training for supervisors of CDL drivers.
- Continue to provide necessary technical and license preparation training to MWRA employees.
- Implement with MIS an upgrade to HRIS software.
- Provide training, guidance and management reporting for managers to improve leave of absence management.
- Continue to automate hiring process forms and paperwork in an effort to expedite the process.
- Continue to expand upon recruitment sources used to find qualified applicants including women and minorities
- Develop employment selection training for hiring managers.
- Procure a new three-year contract for Medical Services for pre-placement evaluations, medical monitoring, and alcohol and controlled substance testing.
- Develop and implement an inventory control system to track and manage all emergency response equipment and other equipment used by the Site Characterization Team.

MANAGEMENT INFORMATION SYSTEMS (MIS)

Final FY08 Current Expense Budget MANAGEMENT INFORMATION SYSTEMS						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 4,677,687	\$ 4,923,033	\$ 4,983,333	\$ 5,174,576	\$ 191,243	3.8%
OVERTIME	1,943	2,937	1,112	2,678	1,566	140.8%
FRINGE BENEFITS	4	10	-	-	-	-
ONGOING MAINTENANCE	2,636,929	1,955,248	2,392,647	2,493,086	100,439	4.2%
TRAINING & MEETINGS	49,122	18,092	34,522	13,823	(20,699)	-60.0%
OTHER MATERIALS	133,109	152,584	489,177	386,067	(103,110)	-21.1%
OTHER SERVICES	830,582	918,915	826,296	840,568	14,272	1.7%
TOTAL	\$ 8,329,376	\$ 7,970,819	\$ 8,727,087	\$ 8,910,798	\$ 183,711	2.1%

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 FY08 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 FY08.
- 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 tracks 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 budget requirements, a customization cap is established and reported on.

The goal of MIS is to support more than 1,000 MWRA users, including those at the Charlestown Navy Yard, Chelsea, Deer Island, Southboro, John J. Carroll Water Treatment Plant 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 Master Plan, reflecting management priorities.

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

Major focus areas and key projects for FY08 include:

- Business continuity and disaster recovery services (planning, SOPs, emergency notification system drills, information security/document support for classified documents, and new EOC applications).
- Implementing the first Storage Area Network (SAN) by collapsing approximately 32 mission-critical and high-volume applications to the new environment.
- Improving cyber and network security with intrusion detection device appliance upgrades and identity management enhancements.
- Implementing scheduled MAXIMO improvements such as wireless access for field users and database consolidation efforts.
- Implementing sound PC technology advances by continuing “green computing” replacements, and beginning multi-year rollouts of Microsoft Vista and Office 2007.
- Continuing PI enhancements for Water, Transport and Deer Island.
- Completing the implementation of the new Pretreatment Information Management System (PIMS) replacing the obsolete TRAC I/S and three in-house developed solutions.
- Continuing multi-year CIP projects including LIMS system replacements and Lawson conversion to a new platform.
- Addressing GIS & Record Drawing Steering Committee system and process improvements.
- Implementing planned upgrades and continued improvement with storage management, clustering, and unattended operations solutions to expand services, reduce costs and improve management of growing data and resources.
- Programming support for the over 400 annual reports and development requests.
- Removing SONET and Frame Relay Telecommunications Services and converting to MPLS (Multiple Protocol Layer Switch) Network. The conversion will provide a higher level of support for Internet Access and is expected to save approximately \$10,000 in telecommunications costs, when project is completed.

Budget Highlights:

- The total Final FY08 Budget of \$8.9 million reflects an increase \$184,000 or 2.1% as compared to FY07 actual spending, primarily due to changes in **Wages and Salaries, Ongoing Maintenance** and **Other Materials** as described below.
- The Final FY08 Budget includes funding for 64 positions (a reduction of one from FY07 levels) resulting in a 3.8% increase in **Wages and Salaries** as compared to FY07 actual spending.

- \$2.5 million for **Ongoing Maintenance** for license and maintenance fees to support administrative, operations, and database applications used by MWRA staff. This represents an increase of \$100,000 or 4.2% as compared to FY07 actual spending primarily due to vendor maintenance increases (major drivers include Compaq/HP, Lawson, Maximo, LANDesk and OCE) and business requests for new products (major drivers include Smart UPSs for Laboratory Services Department, new software for Engineering & Construction Technical Information Center group, and 24 by 7 Weather Services).
- \$386,000 for **Other Materials** reflects a decrease of \$103,000 or -21.1% as compared to FY07 actual spending primarily due to delays in the delivery of laptops and server purchases.
- \$841,000 for **Other Services**, an increase of \$14,000 or 1.7% from FY07 spending primarily due to telecommunications cost increase.

FY07 Accomplishments

Management Information Systems (MIS)

- **Business Continuity/Disaster Recovery:** Implemented emergency notification system (partially funded by a Department of Homeland Security grant); designed a backup/mini EOC at the Carroll Water Treatment Plant (CWTP); implemented e-911 services for Charlestown, Chelsea and Western Operations; completed upgrade of the Mxtreme Mail gateway; completed both the installation of the disaster recovery Internet circuit and the implementation of a mail cluster solution at Deer Island; completed 51 planned UPS replacements in CNY, Chelsea, Southborough, Cosgrove, Nut Island and Clinton facilities; and implemented improvements on the Chelsea Environmental Alarm System.
- **Cyber Security:** No unplanned downtime was experienced. MWRA's email gateway received 3,494,319 messages of which it blocked 775,614 year-to-date (114% increase from FY06). Additionally, 737,227 messages were quarantined year-to-date of which, less than 1% were incorrectly categorized as spam (and sent on to their recipients). Updates to MWRA spam filters continue to catch a significant majority of all spam email (accounting for over 18% of all incoming email messages), including "phishing" scams. Staff pushed out monthly security updates/fixes to PCs/servers, replaced intrusion detection appliances, adopted new SOPs and responded immediately to several critical bulletins throughout the year.
- **SCADA, PICS & Metering:** Integrated numerous CWTP's and Water SCADA and DITP PICS tags into PI for management trending/reporting; continued to support the DITP ISO New England 5 Minute Marginal Prices data transfer program; and updated the OMMS Website for communities to provide near real-time sewer meter data including flow, level, and velocity (water flow, pressure and chlorine residual information is also available).
- **MAXIMO, LIMS, TRAC and ENQUAD:** Completed DITP MAXIMO upgrade; began the PIMS CIP implementation; issued LIMS replacement RFQ/P (Q2target); and completed ENQUAD harbor monitoring database project (Q4 target).
- **A&F applications:** Completed numerous reports, program changes, patches and PC product upgrades; provided technical assistance with annual permit, W2 and 1099 productions; and completed the upgrade of the Lawson environment objects from 8.0.1.2. to 8.0.3 to meet the vendor's May deadline (April 30 target).

- Infrastructure: Addressed the Daylight Savings change by installing operating system and required application patches; released competitive bid for the first Storage Attached Network to provide modular scalability, high availability, increased fault tolerance, centralized storage management and reduced energy consumption; upgraded voice mail and PBX firmware (Q4 target); replaced 500 CRT monitors with energy saving LCD monitors (Q4 target); replaced ENQUAD, GIS and a subset of SCADA PCs (Q4 target); provided network connectivity for several wastewater facilities including Columbus Park and Ward Street; and addressed approximately 10,000 user calls within benchmark and completed a variety of server, switching and network improvements.
- In order to implement additional PC technology advances with “green computing” MIS has purchased Verdiem Surveyor Software Package. The software supports energy conservation efforts. The system monitors power consumption for computer hardware and powers off selected equipment as appropriate. NStar provides a credit for approximately 40% of the software cost for each license used at sites that receive power from NStar. An additional 50 licenses were purchased at the regular rate for sites that are not serviced by NStar. ASAP Software Inc. (State Blanket Licenses provider) estimates that the MWRA will receive a credit of approximately \$12,500 from NStar. The credit is contingent on a complete assessment by NStar of all computers located at service areas listed in the application.

PROCUREMENT

Final FY08 Current Expense Budget PROCUREMENT						
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08	
WAGES & SALARIES	\$ 2,948,357	\$ 3,052,874	\$ 3,210,896	\$ 3,477,538	\$ 266,642	8.3%
OVERTIME	7,587	19,543	47,422	15,000	(32,422)	-68.4%
FRINGE BENEFITS	112	254	339	-	(339)	-100.0%
UTILITIES	-	6,582	117	-	(117)	-100.0%
ONGOING MAINTENANCE	198,247	256,816	376,824	-	(376,824)	-100.0%
TRAINING & MEETINGS	4,847	7,375	5,635	7,725	2,090	37.1%
OTHER MATERIALS	101,093	94,117	103,596	98,474	(5,122)	-4.9%
OTHER SERVICES	73,799	67,704	96,435	61,370	(35,065)	-36.4%
TOTAL	\$ 3,334,042	\$ 3,505,265	\$ 3,841,264	\$ 3,660,107	\$ (181,157)	-4.7%

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

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.

Budget Highlights:

- Total Final FY08 Budget of \$3.7 million, represents a 4.7% decrease as compared to FY07 actual spending. Includes \$3.5 million to support **Wages and Salaries** for 51 positions. One position (Project Manager, Asset Control) was added for partial year in February 2007.

FY07 Accomplishments

- Competitively bid CY06 Renewable Portfolio Standard certificates, resulting in revenues of \$1,349,442.
- Awarded North Dorchester Bay CSO Tunnel contract and North Dorchester Bay CSO Pump Station, Force Main and Odor Control design contract.
- Awarded Union Park Pump Station joint (with BWSC) operating contract.

- Rebid purchase order contracts for supply of sodium hypochlorite to the Carroll Water Treatment Plant (CWTP) and to various wastewater facilities, with projected savings of about \$600,000 compared to previous pricing.
- Added 27 hybrid, 4 flex fuel and 12 additional diesel vehicles (which will use bio-diesel fuel). Purchased a diesel truck through a Federal Homeland Security Office grant.
- Replaced diesel fuel purchases with purchases of bio-diesel fuel for vehicles, becoming the second largest procurer of bio-diesel fuel in Massachusetts.
- Implemented first phase of an asset management program.
- Competitively bid electric power for Field Operations Department facilities (profile accounts), for John J. Carroll Water Treatment Plant (and other interval accounts), and for Deer Island Treatment Plant.
- Competitively bid agency-wide insurance program for FY08.
- Competitively bid procurement of a new Pretreatment Information Management System.

REAL PROPERTY and ENVIRONMENTAL MANAGEMENT

Final FY08 Current Expense Budget							
REAL PROPERTY / ENVIRONMENTAL MANAGEMENT							
LINE ITEM	FY05 Actual	FY06 Actual	FY07 Actual	FY08 Final	Change FY07 to FY08		
WAGES & SALARIES	\$ 504,471	\$ 489,576	\$ 508,106	\$ 544,800	\$ 36,694	7.2%	
OVERTIME	271	2,135	511	-	(511)	-100.0%	
TRAINING & MEETINGS	1,343	1,263	1,318	3,000	1,682	127.6%	
PROFESSIONAL SERVICES	916	1,739	(272)	500	772	-283.8%	
OTHER MATERIALS	942	1,060	2,128	1,964	(164)	-7.7%	
OTHER SERVICES	299,217	106,524	118,921	264,861	145,940	122.7%	
TOTAL	\$ 807,160	\$ 602,297	\$ 630,712	\$ 815,125	\$ 184,413	29.2%	

The Real Property and Environmental Management Department negotiates the purchase or lease of real estate and land necessary to support MWRA's capital projects and operations and manages the disposition of surplus real property. Staff participate in site selection, and negotiate acquisitions or easements. In addition, staff 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 manages environmental regulatory compliance at MWRA facilities and also provide special expertise and assistance to MWRA staff regarding air quality and hazardous material issues. Assistance includes management of oil and hazardous materials site assessment and remediation, and air emission permits negotiation and preparation and submittal of quarterly/annual 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; manage the disposition of surplus real property in an efficient manner; and provide staff and others with current information regarding MWRA's real property rights.
- Manage the centralized environmental management program, providing technical assistance regarding hazardous waste management, air quality compliance, and related issues during all phases of MWRA projects; monitor and provide assistance in maintaining environmental regulatory compliance at MWRA facilities.

Budget Highlights:

- The total Final FY08 Budget of \$815,000 represents an increase of \$184,000 or 29.2% as compared to actual FY07 spending.
- **Wages and Salaries** budget of \$545,000 includes funding for six positions. The increase of \$37,000 or 7.2% is primarily due to contractual wage increases.
- \$265,000 for **Other Services** is an increase of \$146,000 or 123% as compared to FY07 actual spending. This increase is due to the transfer of funding for the Gillis Pump Station Long-Term Monitoring Project from the CIP (Gillis Pump Station Rehabilitation) to the current expense budget, as well as underspending for the UST Maintenance Contract due to a later than anticipated start of the contract, and underspending for the FRSA Oil Plume due to extended review of site conditions which delayed and altered planned site work.

FY07 Accomplishments

- Finalized the sale of Lot 7C1 at FRSA.
- Scanned and added 235 (over 2,300 pages) property acquisitions to the Real Property database.
- Acquired property rights for the Upper Neponset Valley Replacement Sewer Project, Spot Pond, Section 80 Sewer, North Dorchester Bay CSO Tunnel, Section 160 Sewer, Southern Spine Water Supply Mains. Staff anticipates acquiring additional property rights in FY08 in support of the Hultman Interconnections, East Boston Branch Sewer Relief Project, Northern Intermediate High Storage Tank, Randolph Trunk Sewer and Section 97A Water Main Replacement Projects, WASM 3 to Section 7 Connecting Mains, Lynnfield Pipeline, and Section 28 to Brattle Court.
- Completed the Gillis Pumping Station Remediation at the Spot Pond Brook Outfall with annual monitoring in lieu of sediment excavation and disposal.
- Executed the Maintenance and Inspection Contract for MWRA underground storage tanks.
- Completed training for and transitioned to electronic reporting of annual air emissions statements to Department of Environmental Protection (DEP).
- Provided technical support, including regulatory liaison, for the ongoing investigation and remediation of PCBs at the Wachusett Dam and Cosgrove Intake Facility.
- Provided updates to senior management on the development of the Clean Air Interstate Rule and the Regional Greenhouse Gas Initiative.



Appendices

APPENDIX A

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

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

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

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

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

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

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

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

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

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

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

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

APPENDIX B

BUDGET PROCESS AND TIMETABLE

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

MONTH	ACTIVITY
September – November	Divisions receive budget targets, guidelines, and manuals for the development of budget requests, and can begin to access MWRA’s interactive budgeting system.
December	After the divisions return their budget requests, Rates and Budget Department staff begin the financial management process by consolidating the authority-wide budgets, developing briefing materials for senior management and identifying major budget issues.
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.
March – May	MWRA hosts public hearings to solicit comments on the proposed budget and community assessments from citizens in its service area. The Advisory Board reviews the proposed budget and transmits comments and recommendations to the MWRA.
June	The Board of Directors holds a hearing on the proposed budget and the Advisory Board’s comments and recommendations. The Board of Directors adopts a final Current Expense Budget and a schedule of final wholesale water and sewer assessments.

APPENDIX C

MASSACHUSETTS WATER RESOURCES AUTHORITY BUDGET AND ASSESSMENT POLICIES AND PROCEDURES

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

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

ASSESSMENT POLICIES AND PROCEDURES

Basis of MWRA Assessments

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

Costs Recovered

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

Sources of Current Revenue

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

Coverage Requirements

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

Budget Surpluses

In any year in which current revenue exceeds both current expenses on a budget basis and amounts required to meet bond coverage tests, the amount of over-recovery is deposited first to reserve funds, if any, which are below the level specified in any financing agreements, and second into MWRA's rate stabilization fund or bond redemption fund. Amounts deposited in these funds are used to offset rate requirements in subsequent years. 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 affect the allocation of assessments among wholesale customers, and because of differences between MWRA's proposed and final budgets as approved by the Board of Directors.

Review and Dispute Resolution Process

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

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

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

If after an initial review a community believes that specific data used to calculate assessments should be reevaluated, a community may submit a written objection to the Executive Director with a copy to the Rates Manager or their designee. The objection must be signed by the local

official on record with MWRA as responsible for water or sewer services in the city, town, or district. The objection should state the community's concern with the data used to calculate community assessments, and should also include information and technical data to support the community's objection.

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

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

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

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

Water and Sewer Assessment Payment Schedule

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

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 due 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 recommended an increase of \$3 million in the reserve's funding level between FY05 and FY07. Between FY2005 and FY2007, the budget included an increase of \$1 million to increase the reserve to \$19 million. The next consulting engineer or insurance consultant review should be done in FY07.

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. The most recent review by the consulting engineer was prepared in December 2005. The recommended reserve remained at \$35 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 to be included in the monthly budget allocation process described below. The Administration and Finance Committee will be notified of all budget contingency holdback amounts.

Monthly Allocation of the Annual Current Expense Budget

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

B. Budget Variance Monitoring and Analysis

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

Variance Analysis

Division directors and staff review variance reports and explain variances between planned and actual expenditures as requested by the Rates and Budget Department. Variance explanations are prepared as needed, usually at the end of each quarter of the fiscal year. At least twice each year MWRA staff 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's budget.

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

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

C. Budget Amendments

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

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

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

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

CAPITAL BUDGET MANAGEMENT POLICIES AND PROCEDURES

General Guidelines

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

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

Capital Budget Contingency

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

Capital Budget Monitoring and Reporting

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

Capital Budget Spending Cap

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.

Expenditures in Excess of the Spending Cap

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

APPENDIX D

MWRA Planning Estimates FY2008 to FY2017

	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017
EXPENSES										
Direct Expenses	\$206,639	\$215,180	\$223,787	\$233,177	\$242,869	\$252,644.57	\$264,477	\$275,080	\$286,107	\$297,552
Indirect Expenses	44,460	45,712	46,450	50,404	52,669	53,069.812	55,000	55,449	59,783	61,496
Capital Financing (before offsets)	<u>330,628</u>	<u>352,069</u>	<u>386,983</u>	<u>423,158</u>	<u>419,450</u>	<u>456,503</u>	<u>470,258</u>	<u>492,204</u>	<u>498,734</u>	<u>554,494</u>
Sub-Total Expenses	\$581,728	\$612,960	\$657,221	\$706,739	\$714,988	\$762,218	\$789,734	\$822,732	\$844,624	\$913,542
Debt Service Assistance	(17,250)	(17,250)	(17,250)	(17,250)	(17,250)	(17,250)	(17,250)	(17,250)	(17,250)	(17,250)
Bond Redemption Savings	0	0	(1,300)	(25,700)	0	(8,410)	0	0	0	0
Variable Rate Savings	0	0	0	0	0	0	0	0	0	0
Total Expenses	\$564,478	\$595,710	\$638,671	\$663,789	\$697,738	\$736,558	\$772,484	\$805,482	\$827,374	\$896,292
REVENUE & INCOME										
Non-Rate Revenue & Income										
Interest Income/Other Charges	\$46,680	\$42,621	\$42,446	\$43,166	\$44,283	\$45,378	\$46,462	\$47,786	\$49,027	\$50,754
Rate Stabilization	0	5,179	16,797	7,832	5,315	5,546	875	0	0	0
Total Non-Rate Revenue	\$46,680	\$47,800	\$59,243	\$50,998	\$49,598	\$50,925	\$47,337	\$47,786	\$49,027	\$50,754
Total Rate Revenue	\$517,798	\$547,910	\$579,428	\$612,791	\$648,140	\$685,633	\$725,147	\$757,696	\$778,347	\$845,538
Rate Revenue Increase	4.5%	5.8%	5.8%	5.8%	5.8%	5.8%	5.8%	4.5%	2.7%	8.6%
Estimated Annual Household Charge **										
Charge based on 61,000 gpy (weighted)	\$695	\$734	\$773	\$814	\$862	\$910	\$961	\$1,006	\$1,040	\$1,119
Charge based on 90,000 gpy (weighted)	\$1,025	\$1,083	\$1,141	\$1,201	\$1,272	\$1,343	\$1,418	\$1,484	\$1,535	\$1,651
WASTEWATER										
	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017
EXPENSES										
Direct Expenses	\$153,139	\$159,534	\$165,916	\$172,874	\$180,150	\$187,355.58	\$194,893	\$202,689	\$210,796	\$219,228
Indirect Expenses	17,120	17,364	17,366	18,055	19,518	19,069.544	19,864	19,738	20,585	21,340
Capital Financing (before offsets)	<u>222,100</u>	<u>231,314</u>	<u>267,181</u>	<u>296,898</u>	<u>286,601</u>	<u>308,269</u>	<u>314,241</u>	<u>325,348</u>	<u>323,033</u>	<u>370,909</u>
Sub-Total Wastewater Expenses	\$392,359	\$408,212	\$450,463	\$487,827	\$486,269	\$514,694	\$528,998	\$547,775	\$554,415	\$611,477
Debt Service Assistance	(15,358)	(15,409)	(15,541)	(15,639)	(15,487)	(15,602)	(15,583)	(15,615)	(15,596)	(15,795)
Bond Redemption Savings	0	0	0	(2,000)	0	(6,339)	0	0	0	0
Variable Rate Savings	0	0	0	0	0	0	0	0	0	0
Total Wastewater Expenses	\$377,001	\$392,803	\$434,922	\$470,189	\$470,782	\$492,753	\$513,415	\$532,160	\$538,819	\$595,682
REVENUE & INCOME										
Non-Rate Revenue & Income										
Interest Income/Other Charges	\$27,496	\$24,589	\$24,058	\$24,319	\$24,490	\$24,576	\$24,754	\$25,190	\$25,684	\$26,384
Rate Stabilization	0	3,147	10,407	5,642	3,246	727	0	0	0	0
Total Non-Rate Revenue	\$27,496	\$27,736	\$34,465	\$29,960	\$27,736	\$25,302	\$24,754	\$25,190	\$25,684	\$26,384
Wastewater Rate Revenue	\$349,505	\$365,066	\$400,457	\$440,228	\$443,046	\$467,450	\$488,661	\$506,970	\$513,136	\$569,298
Rate Revenue Increase	5.2%	4.5%	9.7%	9.9%	0.6%	5.5%	4.5%	3.7%	1.2%	10.9%
Estimated Annual Household Sewer Charge **										
Charge based on 61,000 gpy (weighted)	\$415	\$434	\$472	\$514	\$522	\$550	\$575	\$599	\$611	\$670
Charge based on 90,000 gpy (weighted)	\$613	\$641	\$696	\$758	\$770	\$811	\$849	\$883	\$901	\$988
WATER										
	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017
EXPENSES										
Direct Expenses	\$53,500	\$55,645	\$57,871	\$60,302	\$62,719	\$65,289.00	\$69,584	\$72,391	\$75,311	\$78,323
Indirect Expenses	27,340	28,349	29,085	32,349	33,151	34,000.268	35,136	35,711	39,198	40,156
Capital Financing (before offsets)	<u>108,528</u>	<u>120,755</u>	<u>119,802</u>	<u>126,261</u>	<u>132,848</u>	<u>148,234</u>	<u>156,017</u>	<u>166,856</u>	<u>175,701</u>	<u>183,586</u>
Sub-Total Water Expenses	\$189,369	\$204,749	\$206,758	\$218,912	\$228,719	\$247,524	\$260,736	\$274,957	\$290,209	\$302,065
Debt Service Assistance	(1,892)	(1,841)	(1,709)	(1,611)	(1,763)	(1,648)	(1,667)	(1,635)	(1,654)	(1,455)
Bond Redemption Savings	0	0	(1,300)	(23,700)	0	(2,071)	0	0	0	0
Variable Rate Savings	0	0	0	0	0	0	0	0	0	0
Total Water Expenses	\$187,476	\$202,908	\$203,749	\$193,601	\$226,956	\$243,805	\$259,069	\$273,322	\$288,555	\$300,610
REVENUE & INCOME										
Non-Rate Revenue & Income										
Interest Income/Other Charges	\$19,184	\$18,032	\$18,387	\$18,847	\$19,794	\$20,803	\$21,708	\$22,595	\$23,344	\$24,370
Rate Stabilization	0	2,031	6,390	2,191	2,069	4,820	875	0	0	0
Total Non-Rate Revenue	\$19,184	\$20,064	\$24,778	\$21,038	\$21,862	\$25,622	\$22,584	\$22,595	\$23,344	\$24,370
Water Rate Revenue	\$168,293	\$182,844	\$178,971	\$172,563	\$205,094	\$218,183	\$236,486	\$250,727	\$265,211	\$276,240
Rate Revenue Increase	3.2%	8.6%	-2.1%	-3.6%	18.9%	6.4%	8.4%	6.0%	5.8%	4.2%
Estimated Annual Household Water Charge **										
Charge based on 61,000 gpy (weighted)	\$279	\$300	\$301	\$300	\$340	\$360	\$386	\$408	\$430	\$449
Charge based on 90,000 gpy (weighted)	\$412	\$442	\$444	\$443	\$502	\$531	\$569	\$601	\$634	\$663

** 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 average residential use of 61,000 gallons per year. The ratio of MWRA to local charge is assumed to be 28% local, 72% MWRA in FY07.

APPENDIX E

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.

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

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

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

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

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.

CP (Construction Package): Major construction projects such as the John J. Carroll Water Treatment Plant or the North Dorchester Bay CSO project will package individual construction contracts for particular areas of work.

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 six facilities that intercept the flow from CSO pipes and provide 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.

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

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

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

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

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

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

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

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

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

Department: A sub-unit of an MWRA division.

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

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

Diffusers: A system of shafts, rising from the end of MWRA's effluent outfall tunnel to the seabed, 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.

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

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

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

Effluent: Treated wastewater discharged from a treatment plant.

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

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

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

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

EOC: Emergency Operations Center

EOEA: Executive Office of Environmental Affairs - The Massachusetts cabinet office that oversees state 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: further tightens the standards for the operation of filtration plants and add requirements for 99% inactivation of *cryptosporidium* and the use of two primary disinfectants for unfiltered systems. The concept of proportional treatment, with less treatment required for cleaner sources, will be implemented as part of the rule.

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

Expenditures: Payments for goods and services received.

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

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

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

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

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

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

FOD (Field Operations Department): Department within the Operations Division created to provide high quality, uninterrupted water delivery and wastewater collection services to MWRA communities. The department is responsible for the treatment, transmission, and distribution of water from the Quabbin and Wachusett reservoirs to community water systems. It also manages the collection, transport, and screening of wastewater flow from MWRA communities to the Deer Island Treatment Plant as well as MWRA's industrial pretreatment, permitting, and monitoring programs.

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

FRSA (Fore River Staging Area): The site of the Sludge-Fertilizer Plant.

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

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

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

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

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

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

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

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

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

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

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

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.

ISO - NE (Independent System Operator of New England): Non-profit wholesale operator of the regional grid system. The MWRA receives payment from ISO-NE when Deer Island removes itself from the grid. Deer Island participates in the Load Response Program offered by ISO-NE which is a program that pays larger commercial and industrial electricity consumers to “shed load” during grid peaks. There are several programs available such as price, demand response and load response. Deer Island constantly evaluates the options and participates in the most advantageous program.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

MGD: Million gallons per day.

MIS: Management Information Systems

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

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

Molybdenum (Mo): A metallic element that resembles chromium and tungsten in many properties, and is used in strengthening and hardening steel. Mo is a trace element in plant and animal metabolism.

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

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

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

NHS (Northern High Service): Project that involves a series of pipeline improvements in the Northern High Service Area.

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

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

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

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

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

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

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

Outfall: The 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. The new Carroll Water Treatment Plant (CWTP) employs the ozonation process to inactivate pathogens, including *cryptosporidium*, with lower levels of DBPs.

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

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

Payments in Lieu of Taxes (PILOT): Amounts which MWRA pays each fiscal year to cities and 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.

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

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

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

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

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

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

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

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

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

RCM (Reliability Centered Maintenance): A maintenance strategy adopted in 2000 for critical systems. RCM is a failure modes and effects process that involves maintenance, operations and engineering staff in the development of preventative maintenance and operation plans for plant systems.

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

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

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

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

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

RPS (Renewable Portfolio Standards): State policies which mandate a state to generate a percent of its electricity from renewable resources. The MWRA enrolled the steam turbine generator (STG) in the Massachusetts RPS program. The electricity produced is derived from digester gas burned in the boilers. The MWRA is issued electronic certificates for each megawatt hour of electricity produced from the digester gas, which is considered renewable energy. RPS credits are a source of revenue for the MWRA.

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

SCBA: Self-contained breathing apparatus.

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

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

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

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

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

Seeding: The initial filling of sludge into digesters.

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

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

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

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

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

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

Sodium Hypochlorite (NaOCl): A liquid form of chlorine that MWRA uses 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 currently uses sodium hypochlorite at the John J. Carroll Water Treatment Plant (JJCWTP) and other wastewater Field Operations facilities.

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

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

Suspended Solids: The particulate matter contained in wastewater.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

WERF (Water Environment Research Foundation): WERF is a not for profit organization that seeks to promote the development and application of sound science to water quality issues. WERF subscribers include municipal and regional water and wastewater utilities, industrial corporations, and environmental engineering firms that share a commitment to cost-effective water quality solutions.

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.

APPENDIX F
FY08 Current Expense Budget - Capital Financing Detail (as of 6/30/07)

	Amount Outstanding & Anticipated Issuances	Total	Sewer	Water
SRF¹				
Unrefunded	\$ 23,480,000	\$ 39,604	\$ 39,604	\$ -
1999E Sewer	9,022,410	384,296	384,296	-
1999E Water	8,614,523	571,526	-	571,526
1999F	340,710,000	15,734,028	15,734,028	-
2000E Sewer	65,714,657	2,763,495	2,763,495	-
2000E Water	9,664,847	568,100	-	568,100
2001C Water	4,161,823	248,129	-	248,129
2001D Sewer	6,278,632	376,003	376,003	-
2001D Water	1,217,554	80,403	-	80,403
2002H Sewer	83,875,000	3,127,283	3,127,283	-
2002H Water	28,020,000	1,537,270	-	1,537,270
2002I Sewer	2,399,860	101,687	101,687	-
2002I Water	25,010	1,473	-	1,473
2003A	1,292,846	71,663	-	71,663
2003B	3,756,848	222,855	-	222,855
2003C Sewer	30,049,440	1,392,878	1,392,878	-
2003C Water	18,970,184	981,099	-	981,099
2004C Sewer	10,202,930	556,682	556,682	-
2004C Water	1,527,441	92,755	-	92,755
2004D Sewer	61,027,572	3,923,794	3,923,794	-
2004D Water	12,400,383	656,152	-	656,152
2005C Sewer	7,210,625	496,507	496,507	-
2005C Water	990,762	70,867	-	70,867
2005D Sewer	65,214,160	3,403,099	3,403,099	-
2005D Water	14,231,390	811,177	-	811,177
2005E Sewer	386,354	24,872	24,872	-
2005E Water	86,503	5,569	-	5,569
2006C Sewer	8,646,434	501,373	501,373	-
2006D Sewer	66,785,953	3,755,479	3,755,479	-
2006D Water	29,922,480	1,626,548	-	1,626,548
2006E Sewer	374,495	22,883	22,883	-
2006E Water	167,787	10,281	-	10,281
FY08 New SRF Sewer	50,000,000	2,789,094	2,789,094	-
FY08 New SRF Water	25,000,000	1,170,000	-	1,170,000
FY08 New SRF	410,000	33,164	24,541	8,623
Total SRF Debt	\$ 991,838,903	\$ 48,152,088	\$ 39,417,599	\$ 8,734,490
MWRA Senior Debt				
1993C Refunding/New	\$ 51,285,000	4,899,867	4,287,383	612,483
1997D Refunding	128,815,000	7,814,069	7,345,225	468,844
1998A New	100,355,000	4,766,863	3,177,924	1,588,938
1998B Refunding	103,550,000	5,330,800	5,117,568	213,232
2002B New	74,415,000	3,809,031	380,903	3,428,128
2002J Refunding	353,080,000	24,081,862	21,673,676	2,408,186
2002J New	200,000,000	10,000,000	5,000,000	5,000,000
2003D New	113,340,000	5,510,288	1,836,579	3,673,709
2004A New	104,870,000	5,249,419	393,706	4,855,712
2004B Refunding	49,390,000	2,469,500	2,160,813	308,688
2005A Refunding	410,675,000	27,597,113	16,229,862	11,367,251
2005B Refunding	80,290,000	4,014,500	1,338,033	2,676,467
2006A New	200,000,000	9,376,800	-	9,376,800
2006B Refunding	264,945,000	12,755,300	9,566,475	3,188,825
2007A New	200,000,000	9,033,188	1,535,642	7,497,546
2007B Refunding	647,950,000	34,017,375	28,574,595	5,442,780
FY08 New Money (April 2008)	100,000,000	1,700,000	850,000	850,000
Total Senior	\$ 3,182,960,000	\$ 172,425,972	\$ 109,468,383	\$ 62,957,589

APPENDIX F
FY08 Current Expense Budget - Capital Financing Detail (as of 6/30/07)

	Amount Outstanding & Anticipated Issuances	Total	Sewer	Water
1997A (variable)	76,600,000	6,033,833	6,033,833	-
1997B (variable)	76,600,000	6,033,833	-	6,033,833
1998D Refunding (variable to fixed)	198,895,000	11,845,938	11,372,100	473,838
1999A (variable)	87,600,000	5,689,750	3,413,850	2,275,900
1999B (variable)	87,600,000	5,689,750	3,413,850	2,275,900
1999C (variable)	67,900,000	4,307,833	1,723,133	2,584,700
1999D (variable)	67,900,000	4,307,833	1,723,133	2,584,700
2000B Refunding (variable to fixed)	133,300,000	6,265,100	5,387,986	877,114
2000C Refunding (variable to fixed)	133,300,000	6,265,100	5,387,986	877,114
2001A (variable)	84,900,000	6,323,500	2,086,755	4,236,745
2001B (variable)	85,000,000	4,037,500	-	4,037,500
2002C Refunding (variable)	76,300,000	6,459,287	2,152,880	4,306,407
2002D-G Refunding (variable to fixed)	350,000,000	25,323,323	25,323,323	-
Total Subordinate Debt	\$ 1,525,895,000	\$ 98,582,580	\$ 68,018,830	\$ 30,563,750
Total SRF & MWRA Debt Service²	\$ 5,700,693,903	\$ 319,160,641	\$ 216,904,812	\$ 102,255,828
Water Pipeline Commercial Paper		\$ 4,125,000	\$ -	\$ 4,125,000
Current Revenue/Capital ³		4,500,000	3,375,000	1,125,000
Capital Lease		3,217,060	2,152,852	1,064,204
Sub-Total		\$ 11,842,060	\$ 5,527,852	\$ 6,314,204
Total Capital Financing (before Debt Service Offsets)		\$ 331,002,700	\$ 222,432,664	\$ 108,570,032
Debt Service Offsets				
Variable Rate Savings		\$ (375,000)	\$ (333,864)	\$ (41,136)
Debt Service Assistance		(17,250,000)	(15,357,680)	(1,892,320)
Total Capital Financing		\$ 313,377,700	\$ 206,741,120	\$ 106,636,576

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

² Numbers may not add due to rounding.

³ Current Revenue/Capital is revenue used to fund ongoing capital projects. The amount is partly determined by MWRA's bond covenant requirements.