OPERATIONS DIVISION

In FY01 MWRA established the Operations Division to integrate wastewater and water system operations and maintenance, treatment, planning, laboratory services, and engineering and construction functions, including the Program Management Division (PMD). The proposed FY04 Current Expense Budget and structure of the Operations Division is shown and described below.

The Wastewater Treatment Department, which accounts for more than 40% of the Operations Division budget, operates and maintains the Deer Island and Clinton wastewater treatment plants and the residuals processing facility at Fore River.

The Field Operations Department, which accounts for more than 35% 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. Field Operations consolidates the former Transport, TRAC, and Water Operations departments, and the metering portion of the former Sewerage Facilities Development Department.
Two departments in the Operations Division are responsible for most of the Division's engineering and construction work. The *Engineering and Construction Department* manages and coordinates the planning, design, and construction of ongoing system improvements in the wastewater transport and treatment and water distribution and treatment systems. The *Capital Engineering and Construction Department (CECD)* is responsible for managing engineering, design (including water system hydraulic modeling), and construction of the Integrated Water Supply Improvement Program (IWSIP) which includes the Walnut Hill Treatment Plant, the MetroWest Water Supply Tunnel, and seven covered storage facilities. CECD is also responsible for the planning, design, and construction of the program to rehabilitate MWRA’s large water distribution mains.

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

The *Operations Planning Department* manages the planning activities for the water and wastewater systems and MWRA's energy program. The department provides central coordination and support in public health research and outreach, CSO control, technical and financial community support, Geographic Information Systems (GIS), watershed protection, environmental review, and master planning.

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

The *Operations Administration Department* provides oversight and general management support in the areas of finance, contract administration, personnel, and planning. The Administration Department budget also includes funds for MWRA vehicle purchases and certain division-wide memberships. The budget for MWRA's workers’ compensation program has been transferred to Human Resources, to better align the management and responsibility of the program and coordination with the third-party administrator.

The Operations Division’s goals are to:

- Plan, develop, implement, and operate efficient, reliable, and economical water 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.
The Operations Administration Department consists of the Chief Operating Officer, the Deputy Chief Operating Officer, and administrative staff who provide overall policy and program direction and support for Operations Division personnel, labor relations, finance, contract administration, and invoice processing functions. The Operations Administration budget also includes funding for division vehicle purchases and certain division-wide memberships. As part of the proposed FY04 budget, the workers' compensation budget has been transferred to the Human Resources Department, which is responsible for managing the program.

**Budget Highlights**

- **$2.5 million for regular pay for employees performing management, administrative, contract administration, labor relations, and financial management functions.**

- **Funding for Workers’ Compensation claims and medical payments has been transferred to the Human Resources Department.**

- **$1.1 million for non-domicile work crew vehicle purchases. Vehicle purchases totaled $622,000 and $120,000 in FY02 and FY03, respectively.**

- **$271,000 for Other Services of which $250,000 represents the cost of MWRA memberships, primarily in the American Water Works Research Foundation and the Association of Metropolitan Water and Sewer Agencies (AMWA/AMSA).**
OPERATIONS PLANNING

<table>
<thead>
<tr>
<th>LINE ITEM</th>
<th>FY01 Actual</th>
<th>FY02 Actual</th>
<th>FY03 Amended</th>
<th>FY04 Proposed</th>
<th>Change FY04 to FY03</th>
</tr>
</thead>
<tbody>
<tr>
<td>WAGES &amp; SALARIES</td>
<td>2,563,527</td>
<td>2,612,671</td>
<td>2,286,047</td>
<td>2,160,306</td>
<td>(125,741) -5.5%</td>
</tr>
<tr>
<td>OVERTIME</td>
<td>10,134</td>
<td>3,135</td>
<td>5,866</td>
<td>3,847</td>
<td>(2,019) -34.4%</td>
</tr>
<tr>
<td>FRINGE BENEFITS</td>
<td>309</td>
<td>90</td>
<td>156</td>
<td>-</td>
<td>(156) -100.0%</td>
</tr>
<tr>
<td>UTILITIES</td>
<td>764</td>
<td>16</td>
<td>-</td>
<td>-</td>
<td>0.0%</td>
</tr>
<tr>
<td>ONGOING MAINTENANCE</td>
<td>1,110</td>
<td>16,222</td>
<td>25,000</td>
<td>-</td>
<td>(25,000) -100.0%</td>
</tr>
<tr>
<td>Training &amp; Meetings</td>
<td>29,480</td>
<td>21,110</td>
<td>20,669</td>
<td>20,669</td>
<td>- 0.0%</td>
</tr>
<tr>
<td>PROFESSIONAL SERVICES</td>
<td>46,524</td>
<td>74,809</td>
<td>69,501</td>
<td>85,000</td>
<td>15,499 22.3%</td>
</tr>
<tr>
<td>OTHER MATERIALS</td>
<td>259,476</td>
<td>39,565</td>
<td>49,798</td>
<td>46,850</td>
<td>(2,948) -5.9%</td>
</tr>
<tr>
<td>OTHER SERVICES</td>
<td>204,675</td>
<td>292,473</td>
<td>503,065</td>
<td>260,900</td>
<td>(242,165) -48.1%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>3,115,999</td>
<td>3,060,091</td>
<td>2,960,102</td>
<td>2,577,572</td>
<td>(382,530) -12.9%</td>
</tr>
</tbody>
</table>

Actuals for FY01 represent the totals for the former Sewerage Facilities Development and Waterworks Planning departments.

The Operations Planning Department manages the planning activities for the water and wastewater systems and MWRA's energy program. The department provides central coordination and support in public health research and outreach, CSO control, technical and financial community support, Geographic Information Systems (GIS), watershed protection, environmental review, and master planning.

The Operations Planning Department is comprised of the following sections:

**Master Planning** is responsible for water and wastewater master plans, and capital project development. This unit is also responsible for public health research, including outreach and water quality reporting and the annual Consumer Confidence Report (CCR) and supports the Operations Division in environmental review and permitting of projects, including impacts on MWRA facilities from other agency projects; review and processing of system expansion requests, water supply agreements, and emergency connection requests; and coordination with MDC Division of Watershed Management on source water protection. Additionally this unit assists in the development of strategies for long-term emergency risk reduction and preparation for MWRA facilities and systems, and energy planning for MWRA operating facilities.

**Community Program Support** is responsible for inflow/infiltration (I/I) and sanitary sewer overflows (SSO) policy development, implementation, and reporting. It is also responsible for 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. In addition, this unit provides oversight of and reporting on MWRA leak detection regulations and demand management programs. The unit is also responsible for reporting on the portions of MWRA's NPDES permit related to demand management and flow limitation activities.

Through the I/I Financial Assistance Program MWRA has distributed grants and loans to member communities totaling $90.2 million since the program’s inception in FY93. The Proposed FY04-06 CIP includes $40 million for Phase IV, to be allocated to member communities at a 45% grant and 55% loan ratio. The Water Infrastructure Rehabilitation Financial Assistance Program distributed $30 million in grants and loans in FY98 and FY99. A new $250 million Local Pipeline Assistance Program was initiated in FY01 and 46.5 million of interest-free loans were distributed by March 2003.
**Mapping, Modeling, and Data Analysis** is responsible for the development and maintenance of GIS for both water and wastewater systems, including integration of field and engineering records into GIS for access by planning, engineering, and operations staff. It provides demand analysis and forecasting of water and wastewater flows for master planning and system operations, modeling of reservoir operations, drought forecasting and planning, and evaluation of system expansion requests. This unit is also responsible for the development and maintenance of water and sewer system models in support of master planning, system operations, and optimization. It provides statistical analysis for planning and operations, including pathogen risk analysis.

**Combined Sewer Overflows (CSO) Program** is responsible for the $650 million CSO control plan. Responsibilities include long-term CSO control master planning and evaluation; CSO project permitting, engineering design; technical assistance during construction of MWRA managed CSO projects; oversight of community managed CSO design and construction activities; and start-up assistance for new CSO facilities. It is anticipated that this section will phase out upon completion of the CSO capital program with key functions integrated into the rest of the organization.

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**Budget Highlights**

- **$2.2 million for Wages and Salaries,** a decrease of $126,000 from the amended FY03 budget.
- **$50,000 for Professional Services** to fund professional assistance regarding power suppliers for MWRA’s energy program.
- **$242,000 for the production and distribution of the federally mandated Consumer Confidence Report (CCR).**
WASTEWATER TREATMENT

The Deer Island Treatment Plant (DITP), the Residuals Management Program, and the Clinton Treatment Plant comprise the Wastewater Treatment Department. Together the budgets for these programs comprise 43% of the Operations Division’s FY04 proposed budget and 31% of MWRA’s proposed FY04 operating costs.

The Deer Island Treatment Plant budget accounts for more than 31% of the Operations Division's proposed FY04 budget. DITP has a primary treatment peak capacity of 1.27 billion gallons per day (bgd).

There are three headworks facilities which handle flows from MWRA’s north system communities. At these headworks, bricks, logs, sand, and large debris are removed from the wastewater prior to transport to Deer Island through one of two underground tunnels. At Deer Island, north system flows are pumped through a grit removal facility prior to entering the primary treatment process. The grit is hauled off-island and disposed of in a landfill.

South system flows are transported to the Nut Island Headworks for preliminary treatment. The flows are then transported to Deer Island through a cross-harbor tunnel. At Deer Island, south system flows are pumped directly to the primary treatment process, by-passing Deer Island’s on-island grit removal system because of the level of grit removal achieved at the Nut Island Headworks.

North and south system flows are combined in primary treatment which takes place in a series of stacked clarifiers where scum (fats, oils, grease) rises to the top and sludge (solids) settles to the bottom. The secondary process provides additional treatment, passing the wastewater through a series of reactors containing bacteria in a pure oxygen environment. These bacteria break down dissolved organics in the wastewater. The flow then moves on to a series of secondary clarifiers where the bacteria are allowed to
settle out in the form of secondary sludge. This secondary sludge, along with the primary sludge, is thickened, anaerobically digested, and barged to MWRA’s residuals processing facility in Quincy. Methane, a by-product of anaerobic digestion, is used as fuel for the Deer Island plant’s boilers, which produce steam to heat the facility and generate electricity.

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

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

- Grit and screenings from MWRA's transport system are disposed of in landfills.

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

- Landfill capacity is reserved as a backup to the beneficial use efforts (per agreement with the Federal Court, EPA, and DEP) for disposal of all sludge produced.

The Clinton Wastewater Treatment Plant provides sewage treatment services to the Town of Clinton and the Lancaster Sewer District. The plant treats an average of 2.5 mgd.
Budget Highlights

- $15.3 million for Wages and Salaries, a decrease of $96,000 or 0.6% from the FY03 amended budget. Regular pay is 98% of the wages and salaries budget. $74,000 for temporary employees, a $143,000 or 65.6% decrease from the amended FY03 budget.

- $1.1 million for Overtime, a $33,000 or 3.0% increase over the FY03 amended budget.

- $3.2 million for Chemicals, a decrease of $745,000 or 19.1% from the FY03 amended budget. Decreases for polymer, hydrogen peroxide, and sodium hypochlorite are partially offset by an increase for ferrous chloride to be used in the treatment and control of struvite. The chemicals budget includes $1.4 million for sodium hypochlorite, which is used for disinfection and odor control, and $535,000 for polymer, which is used to thicken sludge.

- $10.6 million for Utilities, a $1.1 million or 11.3% increase over the FY03 amended budget primarily due to price uncertainties in the cost of electricity and an increase in the wholesale water rate.

- $7.6 million for DITP and Clinton maintenance, a $237,000 or 3.0% decrease from the amended FY03 budget. The proposed FY04 budget includes $2.4 million for materials and $5.2 million for services. The proposed FY04 maintenance budget for the Residuals Management program is $1.1 million. Under the terms of the NEFCo contract, it will be used to cover the cost of all repairs with an individual cost of more than $10,000.

- $1.1 million for Professional Services, a $26,000 or 2.4% decrease from the FY03 amended budget. The proposed budget includes $931,000 for perimeter and access security at Deer Island, $34,000 for vibration analysis, and $20,000 for Maximo support services.

- $536,000 for Other Materials, a $10,000 or 1.8% decrease from the amended FY03 budget. The proposed budget includes $120,000 for materials, $93,000 for work clothes, $70,000 for vehicle expenses, $58,000 for health and safety materials, and $34,000 for fill for the Clinton Treatment Plant landfill.

- $13.2 million for Other Services, a $500,000 or 3.9% increase from the amended FY03 budget primarily due to price uncertainty for the electricity and natural gas components of the sludge pelletization contract.
FIELD OPERATIONS

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

Wastewater Operations and Maintenance is comprised of Wastewater Operations and TRAC. Wastewater Operations operates MWRA’s wastewater transport facilities, including 11 pumping stations, (nine of which are unstaffed), four headworks facilities which are continuously staffed, and five combined sewer overflow (CSO) facilities (four of which are unstaffed). TRAC manages MWRA’s regulatory program for industrial and commercial dischargers, provides analytical and technical support to other MWRA programs, conducts independent research on sources and impacts of toxics in the MWRA system, and provides education and outreach on toxics to MWRA sewer users.

Water Operations and Maintenance is responsible for the treatment and delivery of water from the Quabbin and Wachusett reservoirs to the community water systems. The water system encompasses a service area from Chicopee in the western part of the state to Wakefield, Marblehead, and Norwood in the metropolitan area. Additionally, this unit maintains MWRA’s western waterworks facilities, including the Ware Water Treatment Plant, the Interim Corrosion Control Facility in Marlborough, the Cosgrove Intake Facility, and the Norumbega Reservoir. This unit also oversees covered storage facilities and will operate the MetroWest Tunnel and the Walnut Hill Treatment Plant when those facilities come on line in 2003 and 2004, respectively. 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 new Chelsea facility. The Western Operations Center (WOC) is located at the Cosgrove Intake adjacent to the Wachusett Reservoir.

Metropolitan Maintenance is responsible for maintenance of MWRA’s wastewater and water systems and facilities within the Route 128 area. Staff maintain pipelines, valves, interceptors, pumps, facility

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### PROPOSED FY04 Current Expense Budget

<table>
<thead>
<tr>
<th>LINE ITEM</th>
<th>FY01 Actual</th>
<th>FY02 Actual</th>
<th>FY03 Amended</th>
<th>FY04 Proposed</th>
<th>Change FY04 to FY03</th>
</tr>
</thead>
<tbody>
<tr>
<td>WAGES &amp; SALARIES</td>
<td>$29,332,061</td>
<td>$28,728,824</td>
<td>$28,029,109</td>
<td>$29,320,113</td>
<td>$1,291,004 4.6%</td>
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<tr>
<td>OVERTIME</td>
<td>2,187,766</td>
<td>2,274,653</td>
<td>2,313,510</td>
<td>2,168,109</td>
<td>(145,401) -6.3%</td>
</tr>
<tr>
<td>FRINGE BENEFITS</td>
<td>52,839</td>
<td>52,165</td>
<td>53,000</td>
<td>54,420</td>
<td>1,420 2.7%</td>
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<tr>
<td>CHEMICALS</td>
<td>3,088,568</td>
<td>3,220,561</td>
<td>3,530,616</td>
<td>3,634,163</td>
<td>103,547 2.9%</td>
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<tr>
<td>UTILITIES</td>
<td>4,634,259</td>
<td>4,768,891</td>
<td>4,482,255</td>
<td>4,529,959</td>
<td>47,704 1.1%</td>
</tr>
<tr>
<td>ONGOING MAINTENANCE</td>
<td>5,028,179</td>
<td>4,188,746</td>
<td>3,841,220</td>
<td>5,581,948</td>
<td>1,740,728 45.3%</td>
</tr>
<tr>
<td>TRAINING &amp; MEETINGS</td>
<td>72,270</td>
<td>57,491</td>
<td>58,493</td>
<td>58,358</td>
<td>(135) -0.2%</td>
</tr>
<tr>
<td>PROFESSIONAL SERVICES</td>
<td>214,396</td>
<td>134,211</td>
<td>202,388</td>
<td>119,500</td>
<td>(82,888) -41.0%</td>
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<tr>
<td>OTHER MATERIALS</td>
<td>1,541,827</td>
<td>872,522</td>
<td>974,480</td>
<td>969,069</td>
<td>(5,411) -0.6%</td>
</tr>
<tr>
<td>OTHER SERVICES</td>
<td>1,101,897</td>
<td>1,455,398</td>
<td>1,565,239</td>
<td>1,316,304</td>
<td>(248,935) -15.9%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$47,254,062</td>
<td>$45,753,462</td>
<td>$45,050,310</td>
<td>$47,751,943</td>
<td>$2,701,633 6.0%</td>
</tr>
</tbody>
</table>

The proposed FY04 Current Expense Budget for Field Operations is shown above.
equipment, buildings, and grounds. Metropolitan Maintenance staff maintain a waterworks network of 275 miles of water mains, 3,500 valves, 18 miles of deep rock tunnels, ten pump stations, eight tunnel shafts, ten distribution storage tanks and reservoirs, and 240 miles of wastewater interceptors and appurtenances. In addition, this unit performs TV inspections of the wastewater system.

Operations Support provides technical support to FOD in the areas of engineering, quality assurance, data management, metering, and monitoring. Engineering staff coordinate all engineering issues related to the operation of the water and wastewater systems. The Quality Assurance Unit monitors water treatment effectiveness, identifies treatment issues, and develops recommendations for water treatment improvements. Data management activities include performance reporting on water quality, development and maintenance of water quality treatment and optimization models, and the tracking and analyzing of 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. This unit is also responsible for the maintenance of the water and future wastewater SCADA systems.

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

**Budget Highlights**

- $29.3 million for Wages and Salaries, an increase of $1.3 million or 4.6% from the amended FY03 budget. This budget includes $283,000 in funding for 16 new positions of which 13 are for the new Walnut Hill Water Treatment Plant and 3 are for the wastewater SCADA system.

- $2.2 million for Overtime, a decrease of $145,000 from the FY03 amended budget.

- $3.6 million for Chemicals, an increase of $104,000 or 2.9% from the amended FY03 budget. The proposed budget includes $1.6 million for soda ash, $818,000 for sodium hypochlorite, $319,000 for potassium permanganate, and $307,000 for carbon dioxide.

- $4.5 million for Utilities, an increase of $48,000 from the amended FY03 budget. The proposed budget includes $3.6 million for electricity and $562,000 for diesel fuel.

- $5.6 million for Maintenance, an increase of $1.7 million or 45.3% from the amended FY03 budget. The increase is primarily attributable to the inclusion of several facility rehabilitation projects in FY04 and additional services to cover upkeep of MWRA facilities in the western service area of the waterworks system. The proposed budget includes $2.3 million for maintenance materials and $3.3 million for maintenance services. These funds are also intended to cover unanticipated security initiatives and emergency situations such as pipeline breaks.

- $1.3 million for Other Services, a decrease of $249,000 or 15.9% from the amended FY03 budget. The decrease is primarily due to state police expenses at Norumbega, which are expected to be less in FY04 than in FY03. The proposed budget includes $617,000 for police details to insure public safety on roadways during MWRA work activities and for security coverage as-needed at selected facilities and $522,000 for telephone services.

- $969,000 for Other Materials, including $455,000 for vehicle expense, $172,000 for work clothes, $122,000 for health and safety materials, and $93,000 for lab testing supplies for TRAC and Quality Assurance.
LABORATORY SERVICES

<table>
<thead>
<tr>
<th>LABORATORY SERVICES</th>
<th>FY01 Actual</th>
<th>FY02 Actual</th>
<th>FY03 Amended</th>
<th>FY04 Proposed</th>
<th>Change FY04 to FY03</th>
</tr>
</thead>
<tbody>
<tr>
<td>WAGES &amp; SALARIES</td>
<td>$3,010,123</td>
<td>$3,215,667</td>
<td>$3,265,831</td>
<td>$3,420,535</td>
<td>$154,704 4.7%</td>
</tr>
<tr>
<td>OVERTIME</td>
<td>75,422</td>
<td>65,828</td>
<td>69,940</td>
<td>67,549</td>
<td>(2,391) -3.4%</td>
</tr>
<tr>
<td>FRINGE BENEFITS</td>
<td>1,331</td>
<td>1,183</td>
<td>1,200</td>
<td>1,200</td>
<td>0.0%</td>
</tr>
<tr>
<td>UTILITIES</td>
<td>133,752</td>
<td>120,028</td>
<td>134,731</td>
<td>139,470</td>
<td>4,739 3.5%</td>
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<tr>
<td>ONGOING MAINTENANCE</td>
<td>232,339</td>
<td>269,257</td>
<td>278,021</td>
<td>284,906</td>
<td>6,885 2.5%</td>
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<tr>
<td>TRAINING &amp; MEETINGS</td>
<td>8,322</td>
<td>4,978</td>
<td>7,093</td>
<td>7,070</td>
<td>(23) -0.3%</td>
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<tr>
<td>PROFESSIONAL SERVICES</td>
<td>142,459</td>
<td>109,941</td>
<td>76,075</td>
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<td>24,118 31.7%</td>
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<tr>
<td>OTHER MATERIALS</td>
<td>971,315</td>
<td>852,582</td>
<td>799,013</td>
<td>769,347</td>
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<tr>
<td>OTHER SERVICES</td>
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<td>78,251</td>
<td>89,246</td>
<td>100,883</td>
<td>11,637 13.0%</td>
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<tr>
<td>TOTAL</td>
<td>$4,647,654</td>
<td>$4,717,716</td>
<td>$4,721,150</td>
<td>$4,891,153</td>
<td>$170,003 3.6%</td>
</tr>
</tbody>
</table>

The Department of Laboratory Services (DLS) supports the laboratory sampling, testing, and consulting needs of various client groups in the Operations Division through its four locations: Southborough, Somerville, 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.

DLS monitors drinking water treatment effectiveness and provides laboratory services in support of in-depth studies of corrosion control, disinfectant residual decay, nitrification, biofilm, and treatment issues. DLS regularly tests reservoir and community water systems for regulatory compliance with bacterial levels, chemical parameters such as chlorine residuals, and algae.

Results are tracked and analyzed and compliance reports are regularly submitted to the Environmental Protection Agency and the Massachusetts Department of Environmental Protection.

Most MWRA laboratory testing is done in-house. Certain exceedingly specialized or low volume tests are outsourced, such as tests for dioxins and radioactivity. In addition, MWRA maintains contracts with outside laboratories for use when DLS capacity is exceeded.

The department’s goals are to provide high quality and responsive laboratory services to MWRA’s water and wastewater treatment programs, and to conduct timely and cost-effective laboratory tests to meet the strict testing guidelines required by all regulatory programs and permits, including the Safe Drinking Water Act (SDWA) and Clean Water Act NPDES permits.
Budget Highlights

- $3.4 million for Wages and Salaries, an increase of $155,000 or 4.7% from the amended FY03 budget to reflect filled positions.

- $68,000 for Overtime, a 3.4% decrease from the amended FY03 budget.

- $139,000 for Utilities, an increase of $5,000 or 3.5% from the amended FY03 budget.

- $285,000 for Maintenance, a $7,000 or 2.5% increase from the amended FY03 budget, of which $165,000 is for special equipment services and repair contracts for lab equipment.

- $100,000 for Professional Services to support outside lab testing, an increase of $24,000 or 31.7% from the amended FY03 budget but a decrease of $10,000 or 8.8% from FY02 actual spending.

- $769,000 for Other Materials, a decrease of $30,000 or 3.7% from the amended FY03 budget. The proposed budget includes $183,000 for equipment replacement and $539,000 for laboratory supplies.
ENVIRONMENTAL QUALITY

The Environmental Quality Department (ENQUAD) reports on environmental findings that may be linked to MWRA operations and projects. The department's main activities are monitoring sewage influent and effluent quality; monitoring the water quality of Boston Harbor, its tributary rivers, and Massachusetts Bay; data management and quality assurance; and compliance with the reporting requirements of MWRA's National Pollutant Discharge Elimination System (NPDES) permits. These permit reports go to state and federal regulators, the Outfall Monitoring Science Advisory Panel, its subcommittees, and several libraries. As required by the permits, ENQUAD also posts many of these reports on MWRA's web site. All technical reports and several reports on water quality in the harbor and the bay are also posted on the web site. The department also produces the State of Boston Harbor Report.

ENQUAD’s goals for FY04 are to:

- Maintain compliance with the reporting requirements of MWRA’s NPDES permits for the Deer Island and Clinton treatment plants;
- Ensure that the permit-required outfall monitoring meets NPDES requirements, is scientifically credible, and is cost-effective;
- Monitor the effects of the Boston Harbor Project and MWRA’s CSO Plan and provide data and assistance for CSO planning and compliance with regulatory requirements;
- Communicate results of monitoring to MWRA management, and to scientists, regulators, and the public.

Budget Highlights

- $1.1 million for Wages and Salaries, of which 99% is regular pay.
- $3.7 million for outside laboratory testing and analysis, a reduction of $600,000 from the amended FY03 budget reflecting the elimination of some discretionary spending and the completion of several studies in FY03. This line item includes $3.3 million for continued outfall monitoring required by EPA. The remaining funds are for studies related to Massachusetts Bay monitoring, performed in conjunction with the U.S. Geological Survey, and biotoxicity testing.
- $32,000 for Other Services, essentially level funded with the amended FY03 budget.
ENGINEERING AND CONSTRUCTION

PROPOSED FY04 Current Expense Budget
ENGINEERING AND CONSTRUCTION

<table>
<thead>
<tr>
<th>LINE ITEM</th>
<th>FY01 Actual</th>
<th>FY02 Actual</th>
<th>FY03 Amended</th>
<th>FY04 Proposed</th>
<th>Change FY04 to FY03</th>
</tr>
</thead>
<tbody>
<tr>
<td>WAGES &amp; SALARIES</td>
<td>$7,072,159</td>
<td>$6,070,138</td>
<td>$4,965,675</td>
<td>$4,914,062</td>
<td>($51,613) -1.0%</td>
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<tr>
<td>OVERTIME</td>
<td>214,994</td>
<td>184,997</td>
<td>148,032</td>
<td>180,015</td>
<td>31,983 21.6%</td>
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<tr>
<td>FRINGE BENEFITS</td>
<td>3,578</td>
<td>2,947</td>
<td>3,338</td>
<td>2,866</td>
<td>(472) -14.1%</td>
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<tr>
<td>ONGOING MAINTENANCE</td>
<td>26,337</td>
<td>22,470</td>
<td>23,269</td>
<td>10,417</td>
<td>(12,852) -55.2%</td>
</tr>
<tr>
<td>TRAINING &amp; MEETINGS</td>
<td>14,474</td>
<td>14,042</td>
<td>11,415</td>
<td>11,416</td>
<td>1 0.0%</td>
</tr>
<tr>
<td>PROFESSIONAL SERVICES</td>
<td>3,092</td>
<td>408</td>
<td>700</td>
<td>-</td>
<td>(700) -100.0%</td>
</tr>
<tr>
<td>OTHER MATERIALS</td>
<td>266,286</td>
<td>162,484</td>
<td>118,205</td>
<td>130,963</td>
<td>12,758 10.8%</td>
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<tr>
<td>OTHER SERVICES</td>
<td>46,577</td>
<td>22,152</td>
<td>32,200</td>
<td>23,500</td>
<td>(8,700) -27.0%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$7,647,497</td>
<td>$6,479,639</td>
<td>$5,302,834</td>
<td>$5,273,239</td>
<td>($29,595) -0.6%</td>
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</tbody>
</table>

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

ECD is organized into two units. The **Engineering Unit** provides in-house engineering, consultant management (during the facilities planning, environmental review, and design stages of capital projects), drafting, surveying, and other technical assistance required for the maintenance, repair, and rehabilitation of the wastewater and waterworks systems. In addition, unit staff provide specialized technical services in the electrical, structural, mechanical, and civil engineering disciplines; maintain the Design Information Services Center (DISC); provide engineering and project management support, computer-aided design and drafting (CADD) services, and survey and design services; and manage construction document control.

The **Construction Unit** provides contract management and resident inspection on water and wastewater construction and rehabilitation projects. Staff administer, oversee, and monitor construction projects to ensure timely, cost-effective, high quality construction for a variety of infrastructure improvement projects. Staff manage contractor activities to ensure projects are completed in accordance with approved plans and specifications with quality construction practices, timely project completion, and cost efficiency.

**Budget Highlights**

- $4.9 million for Wages and Salaries, a reduction of $52,000 or 1% from the amended FY03 budget.
- $180,000 for Overtime, an increase of $32,000 or 21.6% compared to the amended FY03 budget but $5,000 less than FY02 actual spending. Overtime is used primarily to ensure timely monitoring of construction projects when contractor activity extends beyond normal working hours. Overtime is also necessary to accommodate unplanned design or survey efforts, attendance at evening public meetings, or other work load requirements to meet project schedules.
- $87,000 for vehicle expenses, primarily for staff traveling to and from construction sites.
CAPITAL ENGINEERING AND CONSTRUCTION

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

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

**Budget Highlights**

- $2 million for regular pay, and increase of $28,000 or 1.4% from the amended FY03 budget.
- $158,000 for maintenance including $141,000 for operation of temporary chloramination facilities and $15,000 for community chlorine analyzers for the MetroWest communities.