

MASSACHUSETTS WATER RESOURCES AUTHORITY



Fiscal Year 2024 CURRENT EXPENSE BUDGET



GOVERNMENT FINANCE OFFICERS ASSOCIATION

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For the Fiscal Year Beginning

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MASSACHUSETTS WATER RESOURCES AUTHORITY

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October 16, 2023

John Sanchez, Chairman
MWRA Advisory Board
2 Griffin Way
Chelsea, MA 02150

Dear Chairman Sanchez:

This letter transmits to the Advisory Board MWRA's Current Expense Budget (CEB) for Fiscal Year 2024. The CEB was approved by the MWRA's Board of Directors on June 21, 2023.

The Final FY2024 Budget resulted in a combined assessment increase of 2.4%, which is lower than the 3.4% increase projected for FY2024 last year. The FY2024 total expenses are \$874.1 million, of which 55.8% or \$487.8 million is for capital financing costs, \$316.0 million for direct expenses, and \$70.4 million for indirect expenses. The overall expenses increased by \$34.0 million or 4.0% over the FY2023 budget.

When establishing expense projections, the main emphasis was on the FY2024 budget, but with the goal of continuing to utilize MWRA's multi-year rate management strategy to provide sustainable and predictable assessment increases to our member communities for the long term. To achieve this goal again this year, MWRA has continued to employ conservative budgeting and fiscal discipline which includes controlled spending, capital project prioritization, and use of historical variable rate assumptions. The combination of these measures resulted in assessment increase projections of 3.4% for the next three years.

The FY2024 budget continues to address the smoothing of rate revenue changes at the water and sewer utility level.

Additional budget information and a copy of this document are available online at www.mwra.com. Questions or comments on this document should be directed to the MWRA Budget Department at (617) 788-2206. Thank you for your continued support.

Sincerely,

A handwritten signature in blue ink that reads "Fred a Laskey".

Frederick A. Laskey
Executive Director

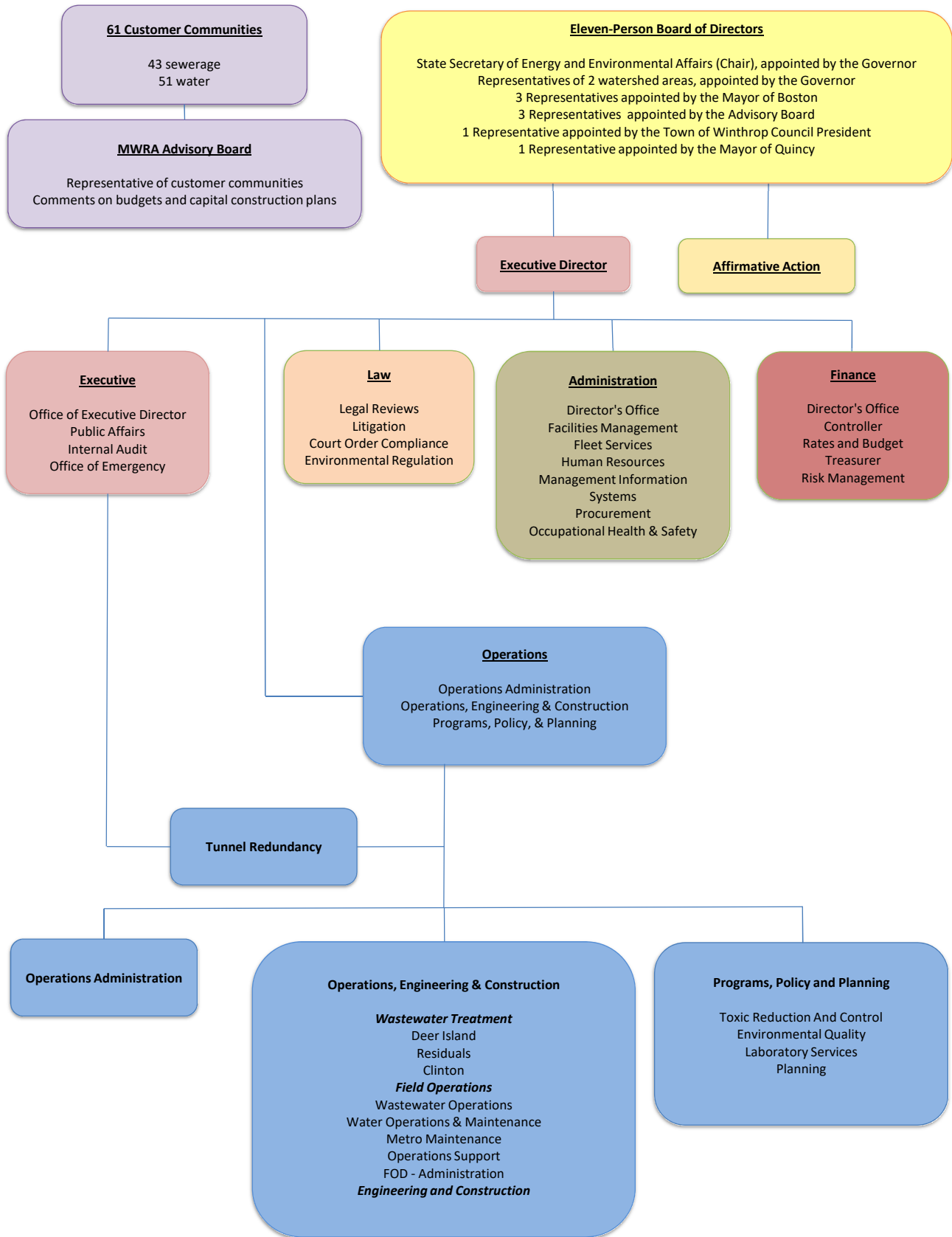


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MWRA AT A GLANCE

Purpose

Provide wholesale water and sewer services to customer communities, funded primarily through rates and charges

Legal Status

Massachusetts public authority established by an enabling act in 1984 – Chapter 372 of the Acts of 1984 as most recently amended November 2019

Management

- 11-member Board of Directors (3 Governor appointees, 3 Mayor of Boston appointees, 1 City of Quincy appointee, 1 Town of Winthrop appointee, and 3 Advisory Board appointees)
- 1 Executive Director (5 divisions: Office of the Executive Director, Operations, Finance, Administration, Law)

Advisory Board

Established by the enabling act to make recommendations to the MWRA on the MWRA budget and programs and to serve as liaison to the customer communities

Service Area

- 61 customer communities (43 sewerage, 54 water)
- 3.0 million people (44% of MA population)
- 5,500 businesses

FY24 Operating Budget (\$ in millions)

Direct Expenses	\$316.0
Indirect Expenses	\$70.4
Capital Finance	\$487.8
Total Operating Budget	\$874.2
Revenues*	\$874.2

*95.4% of Revenues raised from rate assessments

Bond Ratings - General Revenue Bonds (senior/subordinate)

Moody's -	Aa1/Aa2
S&P -	AA+/AA
Fitch -	AA+/AA

Capital Improvement Program

- Total CIP spending: \$9.1 billion since 1984
- Total Current Indebtedness: \$4.4 billion
- FY24 CIP Planned Spending: \$302.6 million

Water System

- 2 protected reservoirs
 - Quabbin
 - Wachusett
- 2 water treatment facilities
 - John J. Carroll
 - William A. Brutsch
- 350 miles of distribution infrastructure including aqueducts, deep rock tunnels, and pipeline
- 14 active storage reservoirs and standpipes
- 11 active pumping stations
- Average Daily flow: 200 mgd
- Safe yield: 300 mgd
- Treatment Capacity: 405 mgd
- Percentage of capacity utilized: 67%*
**based on safe yield*

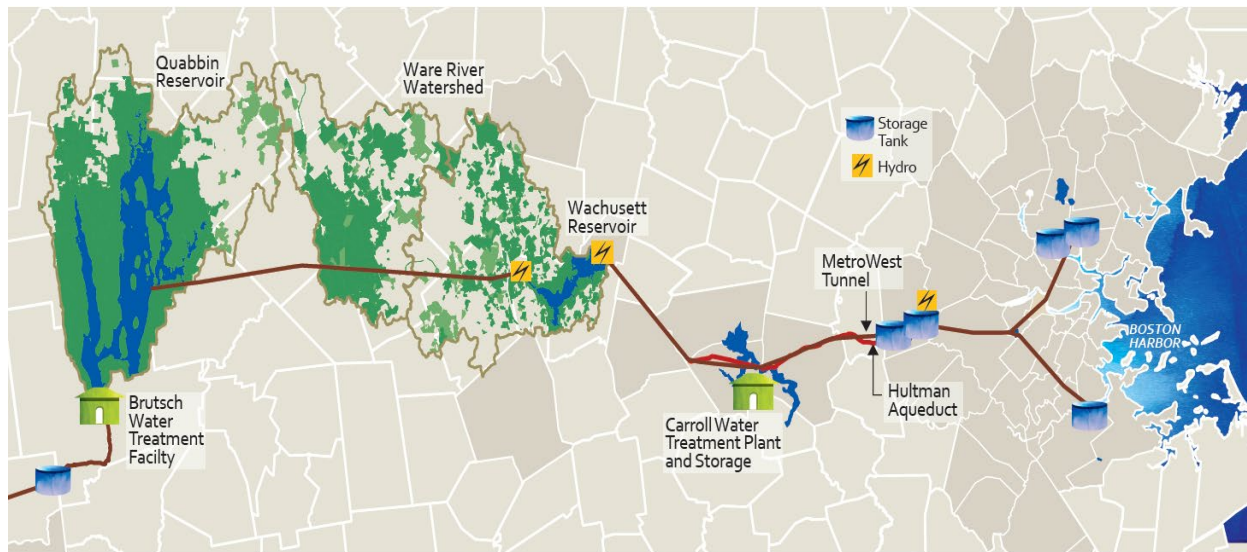
Wastewater System

- 240 miles of sewer pipelines and cross-harbor tunnels
- 13 pump stations
- 1 screening facility/gate house
- 6 CSO treatment/storage facilities
- 2 wastewater treatment plants
 - Deer Island Treatment Plant
 - Clinton Wastewater Treatment Plant
- 4 remote headworks
- 1 Pellet Plant for residuals processing
- Average daily flow: 360 mgd
- Peak wet weather capacity: 1,270 mgd

Renewable Energy

Approximately 30% of MWRA's energy requirement is self-generated from renewable sources (biomass, hydro, wind, & solar assets).

MWRA is voluntarily purchasing New England sourced renewable energy certificates to meet 100% of its purchased electricity needs.



MWRA's water comes from the Quabbin Reservoir, 65 miles west of Boston, and the Wachusett Reservoir, 35 miles west of Boston. The Quabbin alone holds a 4-year supply of water.

The reservoirs are filled naturally. Rain and snow fall onto watersheds (protected land around the reservoirs) and eventually turn into streams that flow into the reservoirs. This water comes into contact with soil, rock, plants and other material as it follows its path. This process helps to clean the water.

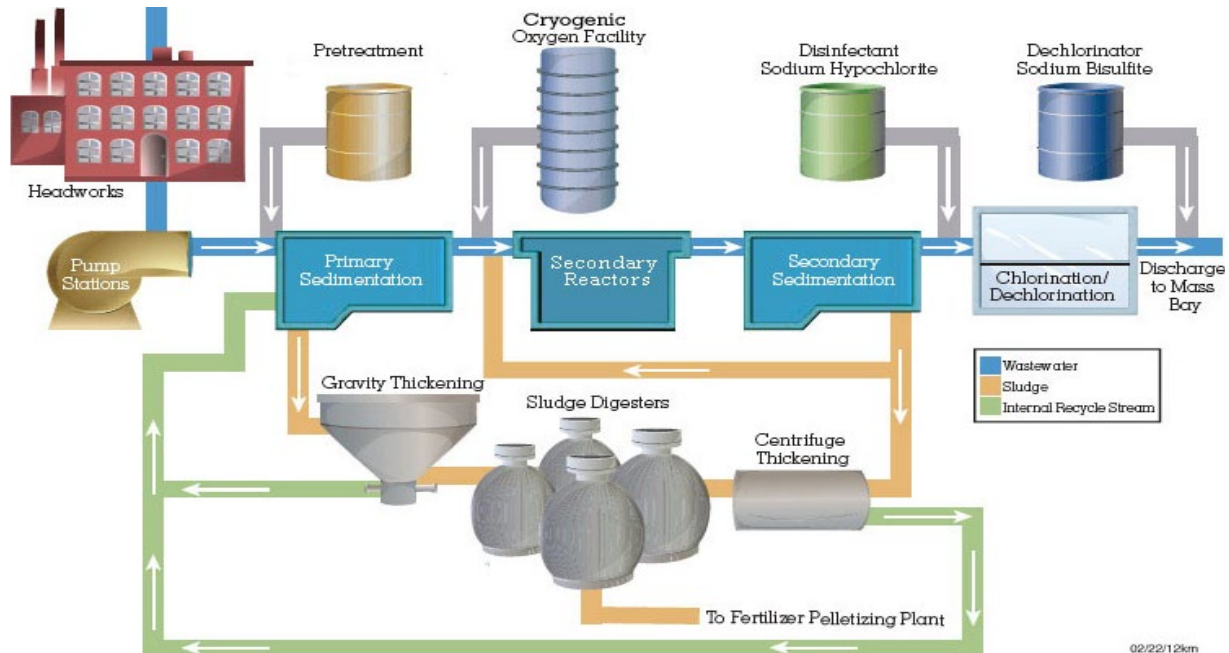
The Quabbin and Wachusett Reservoirs are protected. Over 85% of the watershed lands that surround the reservoirs are covered in forest and wetlands. About 75% of the total watershed land cannot be built on. The natural undeveloped watersheds help to keep MWRA water clean and clear. Because they are well-protected, the water in the Quabbin and Wachusett Reservoirs is of very high quality. The MWRA has won numerous awards for quality, taste, and sustainability.

Water for most MWRA communities is treated at the Carroll Water Treatment Plant in Marlborough, Massachusetts. Water from the Quabbin and Wachusett Reservoirs enters the plant through the Cosgrove or Wachusett Aqueduct. The treated water leaves the plant through the MetroWest Water Supply Tunnel and the Hultman Aqueduct. Water from the Quabbin Reservoir for Chicopee, South Hadley Fire District #1 and Wilbraham is treated at the Brutsch Water Treatment Facility in Ware, Massachusetts, and leaves the plant through the Chicopee Valley Aqueduct.

For MetroWest and Metro Boston communities, treated water is sent through the MetroWest Water Supply Tunnel and the Hultman Aqueduct and is stored in covered tanks. From there it is drawn into distribution mains and many smaller community pipes. For Chicopee Valley Area Communities, treated water is sent through the Chicopee Valley Aqueduct to the local distribution mains and smaller community pipes. Water meters log the water entering each community.

Local pipes serve each street in the customer communities and eventually carry water into buildings. Meters installed by the local communities measure the amount of water delivered to each home or business.

To maintain and measure water quality, MWRA tests over 1,600 water samples per month, from the reservoirs all the way to household taps.



Water is flushed through a building's pipes into customer community sewers. These 5,100 miles of local sewers transport the wastewater into 227 miles of MWRA interceptor sewers. The interceptor sewers, ranging from 8 inches to 11 feet in diameter, carry the region's wastewater to two MWRA treatment plants. Most communities' wastewater flows to the Deer Island Treatment Plant with the Clinton Wastewater Treatment Plant serving the town of Clinton and the Lancaster Sewer District.

The following describes the Deer Island treatment process:

Collection and Pumping: Sewage is piped to headworks where bricks, logs and other large objects are screened out. Pumps draw the screened sewage through deep-rock tunnels under Boston Harbor to Deer Island.

Preliminary Treatment: Mud and sand settle in a tank called a grit chamber. This material, known as grit and screenings, is taken to a landfill for environmentally safe disposal.

Primary Treatment: The sewage then flows to primary settling tanks where up to 60% of the solids in the waste stream settle out as a mixture of sludge and water.

Secondary Treatment: Plant oxygen is added to the wastewater to speed up the growth of micro-organisms. These microbes then consume the wastes and settle to the bottom of the secondary settling tanks. After secondary treatment, 80-90% of human waste and other solids have been removed.

The treated wastewater is disinfected before it is discharged to the Massachusetts Bay. The treated wastewater, known as effluent, travels through a 9.5-mile Outfall Tunnel bored through solid rock more than 250 feet below the ocean floor. The tunnel's last mile and a quarter include 55 separate release points known as "diffusers." With water depths up to 120 feet, this outfall provides a much higher rate of mixing and/or dilution than possible with discharges into the shallow waters of Boston Harbor.

Sludge from primary and secondary treatment is processed further in sludge digesters, where it is mixed and heated to reduce its volume and kill disease-causing bacteria. It is then transported through the Inter-Island Tunnel to the pelletizing plant in Quincy, Massachusetts where it is dewatered, heat-dried and converted to a pellet fertilizer for use in agriculture, forestry and land reclamation.



Executive Summary

Executive Summary

MISSION

The Massachusetts Water Resources Authority (MWRA) is an independent public authority of the Commonwealth of Massachusetts that provides wholesale water and sewer services to its member communities and funds its operations primarily through member community assessments and charges. MWRA's mission is to provide reliable, cost-effective, high-quality water and sewer services that protect public health, promote environmental stewardship, maintain customer confidence, and support a prosperous economy.

HISTORY

Created by the Massachusetts legislature in 1985 (Chapter 372 of the Acts of 1984), MWRA assumed possession and control of the water and sewer systems, including facilities, properties, and the right to utilize water withdrawn from system reservoirs that had formerly been the Sewerage and Waterworks Divisions of the Commonwealth of Massachusetts Metropolitan District Commission (MDC). 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 maintenance of which are included in MWRA's operating budget.

In 1985, responsibility for water distribution for 46 municipalities and sewage collection and treatment for 43 municipalities was transferred to the MWRA. In 1987, the legislature also transferred responsibility to operate and maintain the Clinton Wastewater Treatment Plant from the Commonwealth to the MWRA. New communities have the opportunity to join the MWRA water and sewer systems, and, over the years, the number of member communities has increased. Since 1985, the MWRA has invested over \$9.1 billion to modernize and improve the wastewater and waterworks systems serving its 61 member communities. MWRA's facilities span from the Quabbin Reservoir in western Massachusetts to the Deer Island Treatment Plant in Boston Harbor. In Fiscal Year 2023, the system served approximately 3.0 million people and more than 5,500 businesses.

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.

MWRA ORGANIZATION

The MWRA has five separate divisions and the Affirmative Action and Compliance Unit Department (AACU). Each division provides operations or support services to carry out MWRA's activities under the direction of the Executive Office. MWRA's organizational structure is included in the document immediately preceding this page.

The **Executive Office** provides centralized MWRA management, direction, and policy development. The budget includes funds for the Office of the Executive Director, the Board of Directors, the Advisory Board, and other advisory committees. It includes the following departments: Office of Emergency Preparedness; Public Affairs; and Internal Audit.

The **Operations Division** operates the water and wastewater treatment systems; the water transmission and distribution system; the wastewater collection, transport, and combined sewer overflow (CSO) systems; and the residuals processing facility. It also provides laboratory and engineering and construction services; enforces sewer use regulations and seeks to limit the discharges of toxic materials; manages environmental studies of Boston Harbor and Massachusetts Bay; monitors water quality; and includes the Planning and Coordination Department.

The **Administration Division** is responsible for managing the support services functions of the Authority. The Administration is comprised of seven departments: Director's Office; Facilities; Fleet Services; Human Resources; Management Information Systems (MIS); Procurement; and Occupational Health and Safety (OHS). The Administration Division performs a multitude of functions that support the daily operations and ensure the implementation of the Authority's long-term goals and strategies.

The **Finance Division** is responsible for managing the finance functions of the Authority. Finance Division is comprised of five departments: Director's Office; Rates and Budget; Treasury; Controller; and Risk Management. The Finance Division ensures that a variety of fiscal management systems are in place to monitor and control the Current Expense Budget (CEB) and Capital Improvement Program (CIP).

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

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

GOALS AND PERFORMANCE MEASURES

The MWRA Business Plan was first implemented in 1997 as a strategic road map to present specific steps for the organization to undertake to improve customer service, upgrade operations and maintenance and pursue aggressive rates management. In 2000, MWRA adopted a five-year Strategic Business Plan. Since then, some of the goals have been completed, and new ones have been added. MWRA's current five-year Strategic Business Plan FY2021-2025 was adopted in early 2021 and emphasized improvements in service and systems and included performance targets for operating the water and wastewater systems and maintaining new and existing facilities. The FY2021-2025 Business Plan can be found at <https://www.mwra.com/publications/businessplan/2021-2025mwrabp.pdf>. MWRA's Water System Master Plan and Wastewater System Master Plan present a long-term vision of the capital development needs of the water and wastewater systems and the actions planned to meet those needs. The Master Plan can be found at <http://www.mwra.com/02org/html/masterplan.htm>. Both the Master Plan and the

Business Plan are integral components to MWRA 's goal of carrying out its operating programs and capital projects while providing sustainable, predictable and reasonable assessments to its customer communities. To that end, the MWRA applies a multi-year rates management strategy to provide sustainable and predictable assessment increases to its member communities. The need to achieve and maintain a balance between these two goals is a critical issue in the development of both MWRA's operating and capital budgets.

During the year, MWRA measures actual performance on a monthly basis using various reporting tools. The monthly Financial Staff Summary reports on actual spending versus both the operating and capital budgets and provides summary explanations of the variances at the line item level. At least twice a year staff prepares projections for the fiscal year-end with a similar level of explanations. These reports are The performance indicator reports (published by MWRA as the Orange Notebook) captures a variety of parameters regarding performance of each major functional area of the Authority, on a quarterly basis. It can be found at <http://www.mwra.com/quarterly/orangenotebook/orangenotebook.htm>. Please see Appendix I for the FY2023 year-end report.

BUDGET PROCESS OVERVIEW

Each year, MWRA prepares a Current Expense Budget (CEB) that reflects the best available information for anticipated expenditures and revenues. In parallel, MWRA prepares a Capital Improvement Program (CIP) Budget.

The MWRA operates on a fiscal year that runs from July 1 through June 30. The budget process for both budgets begins in the fall with formal kick-off meetings in September where MWRA staff are given guidelines and targets for their budget requests. After review by the Budget Department and MWRA senior staff, a Proposed CIP Budget is typically presented to the Board of Directors in December. The Capital Financing portion of the Current Expense Budget is determined based on existing debt service and projected borrowing needs. Typically in February, after further review with MWRA senior staff, the Budget Department presents the Proposed CEB to the Board of Directors, after which the Proposed CEB is then transmitted to the Advisory Board, with the projected assessment increase Authority-wide and for each customer community. The Advisory Board then has sixty days to review, comment, and provide recommendations on both budgets. MWRA also hosts a public hearing to solicit comments on the budgets and community assessments from citizens in its service area. Typically in May, the Advisory Board transmits its comments to the MWRA to which written responses are provided.

Typically at its May meeting, MWRA's Board of Directors holds hearings on the budget to review recommendations by the Advisory Board and new information available since the budget was developed. Staff incorporates Board decisions from the hearings and presents a final budget and final assessments for approval at the June Board of Directors meeting.

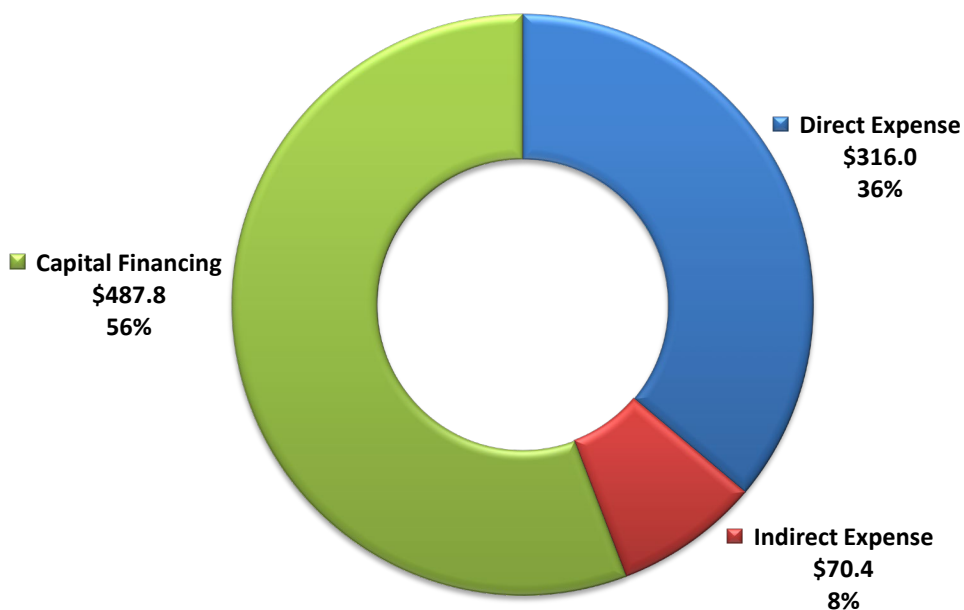
FY24 BUDGET SUMMARY

The Final FY24 Budget recommends a combined increase in rate revenue and charges of 2.4%. Total expenses are \$874.1 million, an increase of \$34.0 million or 4.0% over the FY23 Approved Budget. Capital Financing costs remain the largest component of the CEB and account for 55.8% of total expenses. The Final FY24 Budget assumes an offset of \$1.2 million for Debt Service Assistance (DSA) received in April 2023, consistent with the Advisory Board's recommendation. The Final FY24 Rate Revenue Requirement is \$834.3 million, an increase of \$19.6 million, and 2.4% over the FY23 Approved Budget.

Total expenses include \$487.8 million for Capital Financing costs and \$386.4 million for operating expenses, of which \$316.0 million is for Direct Expenses and \$70.4 million is for Indirect Expenses. The \$34.0 million increase in total expenses is due to higher Direct Expenses of \$42.3 million, Indirect Expenses of \$9.9 million, and lower Capital Financing costs of \$18.2 million.

The FY24 Final Budget revenues, excluding rate revenue, total \$39.9 million, an increase of \$14.3 million or 56.1% over the FY23 Budget. The FY24 Final Budget non-rate revenue estimates include \$16.2 million in Other User Charges and Other Revenue, \$23.3 million for Investment Income, and \$0.3 million in Rate Stabilization.

FY24 Final Current Expense Budget



MWRA continues to pursue a rate management strategy which promotes sustainable and predictable assessments. The FY24 Final has a combined utilities assessment increase of 2.4% with Rate Revenues totaling \$834.3 million, accounting for 95.4% of projected FY24 revenues.

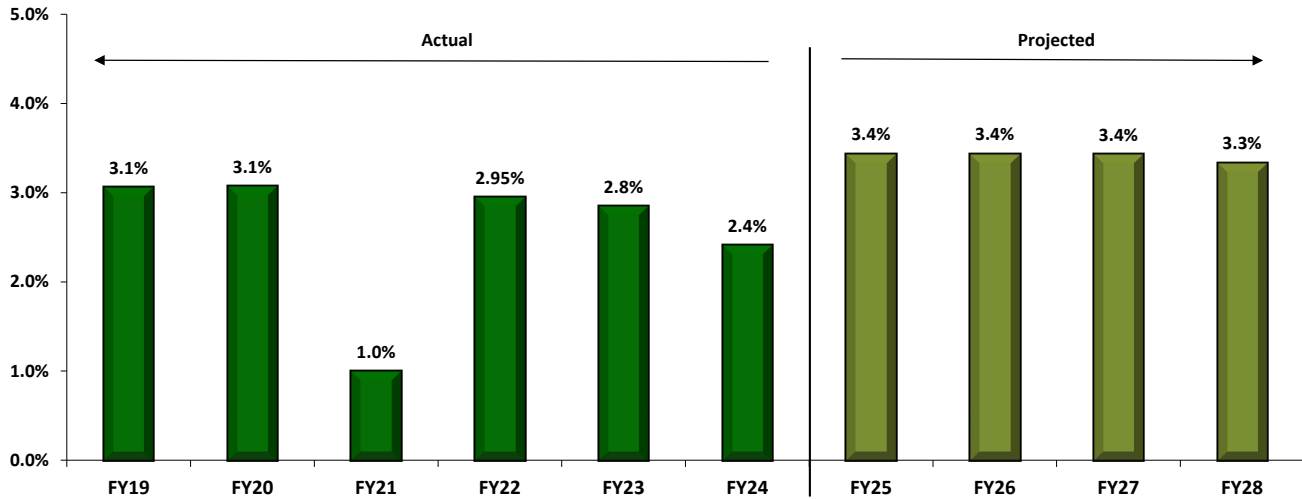
The table below shows MWRA's FY24 Approved Budget for revenue and expenses compared with the FY23 Approved Budget. Changes from FY23 to FY24 are described in the Revenue and Expense section of the Executive Summary.

FY24 Draft Final Budget vs. FY24 Proposed Budget vs. FY23 Approved Budget

TOTAL MWRA	FY23 Approved Budget	FY24 Proposed Budget	FY24 Draft Final Budget	Change FY24 Draft Final Budget vs FY23 Approved Budget		Change FY24 Draft Final Budget vs FY24 Proposed Budget	
				\$	%	\$	%
EXPENSES							
WAGES AND SALARIES	\$ 118,980,689	\$ 123,095,429	\$ 127,828,242	\$ 8,847,552	7.4%	\$ 4,732,813	3.8%
OVERTIME	5,337,896	5,575,588	5,727,593	389,697	7.3%	152,005	2.7%
FRINGE BENEFITS	23,961,641	25,365,846	25,823,383	1,861,742	7.8%	457,537	1.8%
WORKERS' COMPENSATION	2,519,751	2,144,395	2,144,395	(375,356)	-14.9%	-	0.0%
CHEMICALS	14,994,036	28,340,408	28,269,124	13,275,088	88.5%	(71,284)	-0.3%
ENERGY AND UTILITIES	30,896,365	33,097,598	31,064,893	168,528	0.5%	(2,032,705)	-6.1%
MAINTENANCE	33,241,022	36,521,085	38,574,255	5,333,233	16.0%	2,053,170	5.6%
TRAINING AND MEETINGS	492,197	498,597	498,597	6,400	1.3%	-	0.0%
PROFESSIONAL SERVICES	8,197,575	10,146,844	10,410,484	2,212,909	27.0%	263,640	2.6%
OTHER MATERIALS	6,728,862	7,309,691	7,167,398	438,536	6.5%	(142,293)	-1.9%
OTHER SERVICES	28,372,237	37,900,991	38,494,660	10,122,423	35.7%	593,669	1.6%
TOTAL DIRECT EXPENSES	\$ 273,722,272	\$ 309,996,472	\$ 316,003,024	\$ 42,280,752	15.4%	\$ 6,006,552	1.9%
INSURANCE	\$ 3,916,002	\$ 4,265,380	\$ 4,065,380	\$ 149,378	3.8%	\$ (200,000)	-4.7%
WATERSHED/PILOT/DEBT	28,890,762	29,332,594	\$ 30,358,187	1,467,425	5.1%	1,025,593	3.5%
HEEC PAYMENT	6,225,566	7,445,441	\$ 7,500,650	1,275,084	20.5%	55,209	0.7%
MITIGATION	1,735,694	1,779,086	\$ 1,779,086	43,392	2.5%	-	0.0%
ADDITIONS TO RESERVES	2,418,452	6,884,074	\$ 7,861,035	5,442,582	225.0%	976,960	14.2%
RETIREMENT FUND	12,555,203	15,972,805	\$ 15,972,805	3,417,602	27.2%	-	0.0%
POSTEMPLOYMENT BENEFITS	4,754,061	2,849,365	\$ 2,849,365	(1,904,696)	-40.1%	-	0.0%
TOTAL INDIRECT EXPENSES	\$ 60,495,741	\$ 68,528,745	\$ 70,386,507	\$ 9,890,767	16.3%	\$ 1,857,762	2.7%
STATE REVOLVING FUND	\$ 96,342,495	\$ 95,120,996	\$ 90,798,263	\$ (5,544,232)	-5.8%	\$ (4,322,733)	-4.5%
SENIOR DEBT	302,169,940	301,278,236	294,055,644	(8,114,296)	-2.7%	(7,222,592)	-2.4%
SUBORDINATE DEBT	75,491,975	68,763,592	69,931,072	(5,560,903)	-7.4%	1,167,480	1.7%
LOCAL WATER PIPELINE CP	6,233,882	7,744,625	7,744,625	1,510,743	24.2%	-	0.0%
CURRENT REVENUE/CAPITAL	18,200,000	19,200,000	19,200,000	1,000,000	5.5%	-	0.0%
CAPITAL LEASE	3,217,060	3,217,060	3,217,060	-	0.0%	-	0.0%
DEBT PREPAYMENT	5,500,000	6,000,000	4,000,000	(1,500,000)	-27.3%	(2,000,000)	-33.3%
DEBT SERVICE ASSISTANCE	(1,182,494)	-	(1,187,297)	(4,803)	0.4%	(1,187,297)	0.0%
TOTAL DEBT SERVICE	\$ 505,972,858	\$ 501,324,509	\$ 487,759,367	\$ (18,213,491)	-3.6%	\$ (13,565,142)	-2.7%
TOTAL EXPENSES	\$ 840,190,871	\$ 879,849,726	\$ 874,148,898	\$ 33,958,027	4.0%	\$ (5,700,828)	-0.6%
REVENUE & INCOME							
RATE REVENUE	\$ 814,648,000	\$ 842,545,600	\$ 834,268,000	\$ 19,620,000	2.4%	\$ (8,277,600)	-1.0%
OTHER USER CHARGES	9,836,508	10,244,658	10,390,434	553,926	5.6%	145,777	1.4%
OTHER REVENUE	6,139,104	5,860,303	5,838,903	(300,201)	-4.9%	(21,400)	-0.4%
RATE STABILIZATION	980,000	305,482	305,482	(674,518)	-68.8%	-	0.0%
INVESTMENT INCOME	8,587,259	20,893,685	23,346,079	14,758,820	171.9%	2,452,394	11.7%
TOTAL REVENUE & INCOME	\$ 840,190,871	\$ 879,849,727	\$ 874,148,898	\$ 33,958,027	4.0%	\$ (5,700,829)	-0.6%
Rate Revenue Increase over FY23		3.4%	2.4%				

The following graph represents historical and projected assessment changes based on the FY24 Final Budget. The planning estimates project assessment increases at 2.4% in FY24, 3.4% in years FY25 through FY27, and then dropping to 3.3% in FY28.

**MWRA Combined Utilities
Historical and Projected Rate Revenue Changes**



FY24 GOALS AND MAJOR INITIATIVES

Ensuring a safe and reliable source of drinking water to MWRA customers, and wastewater discharges that meet all applicable regulations drives both capital and current expense budget costs. The MWRA has identified Authority-wide major initiatives to support the five strategic priorities integral to MWRA’s mission that were identified for action in MWRA’s Five-Year Strategic Business Plan FY2021-2025 accepted by the Board of Directors in early 2021. The Five-Year Strategic Business Plan FY2021-2025 can be found at <https://www.mwra.com/publications/businessplan/2021-2025mwrabp.pdf>. At the Division and Department-level, additional and more specific goals and initiatives are identified.

FY24 Goals and Initiatives:

I. Drinking Water Quality and System Performance

- ***Compliance with Regulatory Requirements and Public Health Standards:*** Maintain drinking water quality to protect public health, and continue to ensure that MWRA water meets all applicable regulations.
- ***Technical Assistance for Water Communities:*** Assist member communities to improve local water distribution systems through ongoing financial, technical and operational support programs to maximize long-term water quality benefits.

II. Wastewater Quality and System Performance

- ***Compliance with Regulatory Requirements:*** Meet or surpass environmental compliance standards at both MWRA treatment facilities and throughout the wastewater collection system.
- ***Regulatory Changes:*** Continue to initiate plans and studies to prepare for regulatory changes; identify opportunities to refine monitoring requirements; and improve effluent quality. Special initiatives include:

- **Wastewater Infrastructure:** Move forward with design and construction of major wastewater infrastructure rehabilitation and renewal projects.
- **CSO Plan Compliance:** Complete all CSO milestones and demonstrate that the CSO Plan meets its performance objectives.
- **Technical Assistance for Wastewater Communities:** Assist member communities to improve their wastewater collection systems through ongoing technical, financial, and operational support programs.

III. Infrastructure Management and Resilience

- **System Maintenance and Enhancement:** Maintain and enhance water and wastewater system assets over the long term at the lowest possible life cycle cost and acceptable risk, consistent with customer, community, and regulatory support levels.
 - The FY24 Capital Improvement Program forecasts \$302.6 million in spending in FY24, of which \$137.6 million supports Wastewater System Improvements and \$141.7 million supports Waterworks System Improvements.
 - For FY24, the FY24 Final CIP includes 215 active contracts of which 79 are for design of Wastewater and Waterworks Systems Improvements and 55 are for construction, with projected spending of \$54.0 million for design and \$166.2 million for construction. In addition, there are 81 active other contracts with total spending of \$82.4 million.
- **Emergency Preparedness:** Prepare for catastrophic events and malicious acts that could affect the water and wastewater systems.

IV. Environmental Sustainability

- **Energy Optimization:** Continue to maximize energy efficiency of MWRA operations, renewable energy production, and revenue generation opportunities using MWRA's energy assets.
- **Climate Change Adaptation:** Continue to monitor climate change research and move forward with plans to reduce impacts of projected sea level rise and storm surge events on MWRA infrastructure. Initiatives include:
- **Water System Expansion:** Advance reasonable water system expansion.

FY23 Year-End Accomplishments:

I. Drinking Water Quality and System Performance

- Met water quality and treatment standards in the drinking water system during FY23.
- Water Loan Program – Local Water System Assistance Program - Through June 2023, distributed \$28.9 million in Local Water System Assistance Program interest-free loans, plus an additional \$3.9 million under the Lead Service Line Replacement Loan Program in FY23. In total, MWRA has distributed \$527.6 million in loans to fund 519 local projects with participation from 43 of the 47 eligible water communities. Since 1998, MWRA has replaced or cleaned and lined 603 miles of local water main (about 8% of the regional system) via projects funded by MWRA financial

assistance. In addition, MWRA has loaned \$35.3 million (via 39 distributions) to 14 member communities for Lead Water Service Line Replacement projects.

II. Wastewater Quality and System Performance

- Deer Island received the Platinum Peak Performance Award for calendar year 2022 from the National Association of Clean Water Agencies (NACWA) for the 16th continuous year. The award recognizes facilities for outstanding compliance with their National Pollutant Discharge Elimination System (NPDES) permit limits. DITP has had no permit violations for over 16 years.
- Deer Island met secondary permit limits at all times, treating on average 99.3% of flows with full secondary treatment.
- Processed 93.2 average tons per day of sludge at the Pelletization Plant and disposed of 5,064 tons of grit and screenings through a contracted vendor.
- Met all NPDES reporting requirements including routine monthly, quarterly, and annual reports, and required notifications under Part II of permits, Contingency Plan, DITP blending order.
- Sewer Grant/Loan Program – Through June 2023, the Program distributed \$21.7 million in grants and interest-free loans to member sewer communities for Infiltration/Inflow reduction and sewer system rehabilitation projects in FY23. In total, MWRA has distributed \$531.5 million in grants and loans to fund 664 local projects with participation from all 43-sewer member communities.

III. Infrastructure Management and Résilience

Maintenance

- For FY23, the Operations Division spent \$27.8 million on maintenance of which \$11.4 million was for materials and \$16.4 million was for services.
- In water system through June 2023, exercised 582 and replaced 2 mainline valves; exercised 484 and replaced 15 blow-off valves.
- In the wastewater system through June 2023, inspected 34 miles and cleaned 38 miles of MWRA pipeline. Inspected 652 structures and rehabilitated 38 manholes. Also inspected 49 and cleaned 46 inverted siphon barrels.

Capital Improvements

- Capital spending for FY23 totaled \$171.2 million broken out by category as follows: \$57.6 million for Wastewater System projects, \$89.5 million for Water System projects, and \$24.1 million for Business and Operations Support projects.

IV. Finance and Management

- Maintained MWRA's strong credit ratings, Aa1, AA+, AA+ from Moody's, Standard & Poor's and Fitch respectively. MWRA's credit ratings from all three major agencies are only one ratings step below the highest rating of AAA. The credit report from Moody's noted that for the rates management and Compliance and Capital Planning key ratings indicators, MWRA was assigned the highest Aaa rating. These high credit ratings enable MWRA to borrow at very advantageous interest rates minimizing debt service expense.
- Developed the FY24 Budget consistent with the FY23 planning estimates, for both the Current Expense Budget and the Capital Improvement Program.

- Completed a \$234.3 million refunding and new money Green Bond transaction on April 27, 2023. The overall transaction carried an All-in True Interest Cost of 3.35% with an average life of 10.4 years. MWRA has issued a total of \$2.6 billion in Green Bonds.
- Executed a \$27.2 million and a \$28.8 million defeasance of outstanding senior principal in September 2022 and June 2023 respectively. These defeasances reduced the debt service requirement between FY24 and FY28 by a total of \$63.5 million.
- Prepared submission of MWRA’s Comprehensive Annual Financial Report (CAFR) to the Government Finance Officers Association
- Held Budget Briefings with the MWRA Advisory Board to communicate FY24 departmental budgets and initiatives and how they relate to the MWRA’s Master Plan.
- Prepared submission of MWRA’s Comprehensive Annual Financial Report (CAFR) to the Government Finance Officers Association

VI. Environmental Sustainability

- Received a total of \$1.1 million in revenue for energy generated at numerous facilities including hydroelectric from Oakdale Station, Cosgrove Station, and Loring Road; wind from Charlestown Wind Pump Station; and solar from Carroll Water Treatment Plant.
- Continue to leverage MWRA’s self-generation assets and participation in the competitive energy market to offset operating costs. The combined impact of participation in the Independent System Operators of New England (ISO-NE) load response program, non-rate revenue from the sale of Renewable Portfolio Standards Program (RPS) credits, and receipt of utility rebates for CEB-funded efficiency projects resulted in \$1.5 million in revenue year to date in FY23. MWRA also avoided more than \$1.4 million in capacity charges through operation of self-generation assets during peak load events as called by the regional transmission organization (ISO New England).
- Deer Island self-generated 24.8% of the plant’s total required power FY23.
- Energy Conservation - Approved to participate in Eversource’s EV Make Ready program. Under this program, Eversource will provide all of the electrical infrastructure for 20 new EV charging stations at the Chelsea Facility. Purchased five additional electric vehicles. Installed facility-wide energy efficient LED lighting at the Carroll Water Treatment Plant, Clinton WWTP, as well as at various locations on Deer Island and Nut Island Headworks. Installed energy efficient Variable Frequency Drives on three pumps at Deer Island. Applied for and received grant funding to do an assessment of the hydroelectric turbines at Deer Island to review ways to optimize their generation.

SOURCES AND USES OF FUNDS

Funds supporting the Current Expense Budget are not subject to appropriation (with the exception of State debt service assistance). The table on the following page shows MWRA's sources and uses of funds for the FY24 Final Budget.

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, among other things, recover the cost of operations (excluding depreciation), maintenance and improvements, and debt service, as well as meeting required reserve levels.

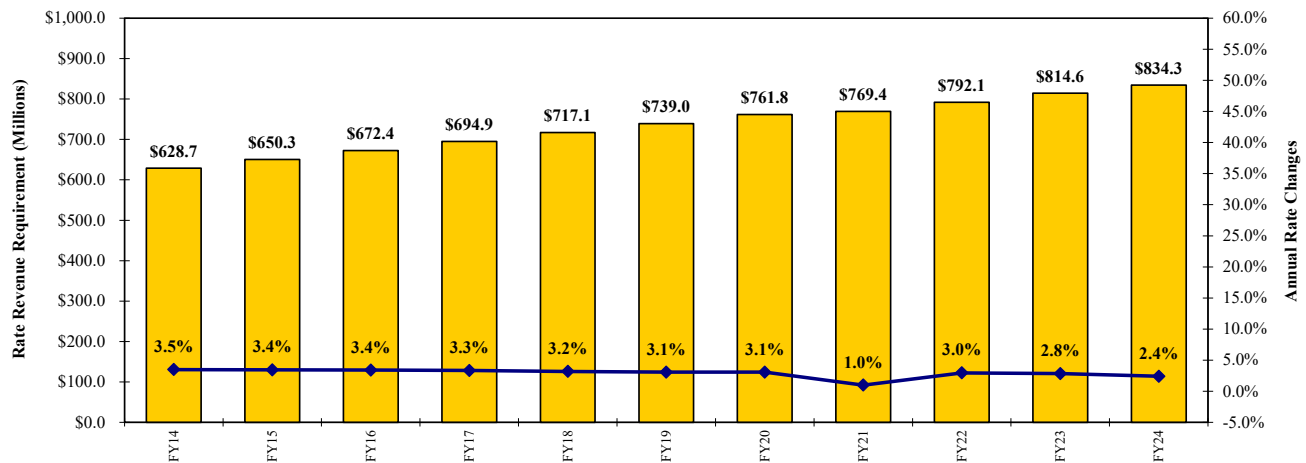
In the FY24 Final Budget, 95.4% of revenue is raised from rate revenue that is assessed to the member communities. The remaining 4.6% of revenue will come from interest on investments, Rate Stabilization Reserve Funds, charges to other water and sewer customers (including Chicopee Valley Aqueduct (CVA) communities), non-recurring revenue, annual charges to sewer system users with permits issued by MWRA's Toxic Reduction and Control Department (TRAC), penalties assessed to holders of sewer use permits, and other miscellaneous sources.

SOURCES & USES OF FUNDS*		
\$\$ in Millions		
Sources of Funds		
Other User Charges	\$10.4	1.2%
Other Revenue	5.8	0.7%
Investment Income	23.3	2.7%
Rate Revenue	834.3	95.4%
Rate Stabilization	0.3	0.0%
TOTAL REVENUE	\$874.1	100.0%
Uses of Funds		
Total Expenses before Debt		
Service Offsets	\$875.3	
Less:		
Debt Service Assistance	(1.2)	
Bond Redemption	-	
Sub-Total Net Expenses	\$874.1	
Capital Financing	\$488.9	55.9%
Direct Expenses	316.0	36.1%
Indirect Expenses	70.4	8.0%
TOTAL EXPENSES	\$875.3	100.0%
TOTAL EXPENSES Less Offsets	\$874.1	
<i>*may not add up due to rounding</i>		

Rate Revenue

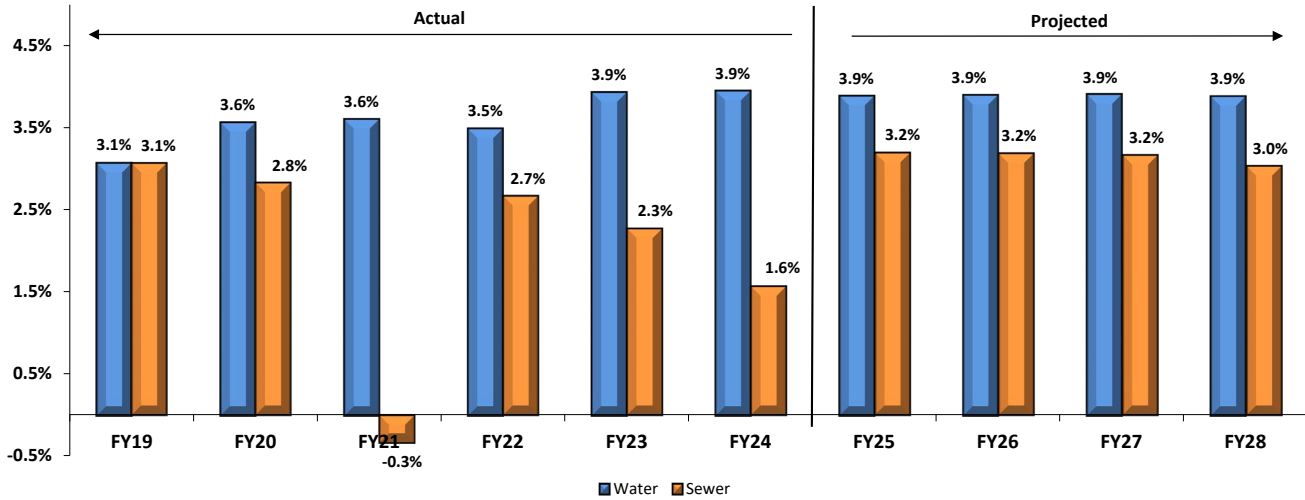
Under the FY24 Final Budget, the MWRA will raise \$834.3 million of its total revenue requirements from water and sewer assessments to member communities. Of the \$834.3 million, \$534.6 million will fund the sewerage system, an increase of 1.6% as compared to FY23; and \$299.7 million will fund the water system, an increase of 3.9% as compared to FY23. The following chart illustrate the historical rate revenue requirements at the combined utility level for the past eleven years.

MWRA: Combined Water & Sewer Assessments



Beginning in FY17, the MWRA successfully implemented a rate smoothing methodology that allows the rate revenue requirement to be smoothed at the utility level, eliminating annual volatility mostly driven by debt service payments for capital projects. The chart below show the historical percent increase for the last six years and the projected increases for the next four years.

**MWRA Water & Sewer Utilities
Historical and Projected Rate Revenue Changes**



Non-Rate Revenue

FY24 non-rate revenue totals \$39.9 million, which is an increase of \$14.3 million or 56.1% versus the FY23 Budget. This increase was driven primarily by higher projected investment earnings which increased by \$14.8 million. The FY24 non-rate revenue budget includes the following:

Other User Charges

Other User Charges include revenues derived from the provision of water and sewer services to communities and other entities under special agreements. Other User Charges in the FY24 Final Budget total \$10.4 million, including \$5.6 million for the Chicopee Valley Aqueduct (CVA) communities, \$2.1 million for Deer Island water usage, \$500,000 for the Commonwealth’s partial reimbursement for Clinton Wastewater Treatment Plant expenses, and \$426,000 for entrance fees payments from existing member communities. Other User Charges are \$554,000 or 5.6% higher than the FY23 Budget.

Other Revenue

Other Revenue is budgeted at \$5.8 million, a decrease of \$300,000 or 4.9% from the FY23 Budget. Other Revenue includes \$1.4 million from the sale of the Authority’s Renewable Portfolio Credits, revenue from participating in load response programs, and the sale of generated power to the grid. Energy related revenue decreased by \$717,000 reflecting decreased power sales revenue and reduced pricing for Renewable Portfolio Credits. The balance of Other Revenue includes \$2.7 million in permit fees and penalties, an increase of \$220,000 over the FY23 Budget.

Investment Income

MWRA earns interest income by investing funds in both long and short-term investments vehicles governed by Sections 522 and 523 of the General Bond Resolution. The FY24 Budget includes \$23.3 million in Investment Income, an increase of \$14.8 million or 171.9% over the FY23 Budget. The budget

reflects the increased short-term interest rates as a result of the actions of the Federal Reserve Open Market Committee.

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 Fund. Within certain limits, MWRA may use this money to reduce the Rate Revenue Requirement in any subsequent year. Consistent with the requirements of its enabling act and its General Bond Resolution, MWRA treats transfers from the Rate Stabilization Reserve as revenue in that fiscal year. For the FY24 Final, \$0.3 million in Rate Stabilization Reserve usage is included as it relates to funds set aside in FY18 to be utilized when the HEEC cable came on line.

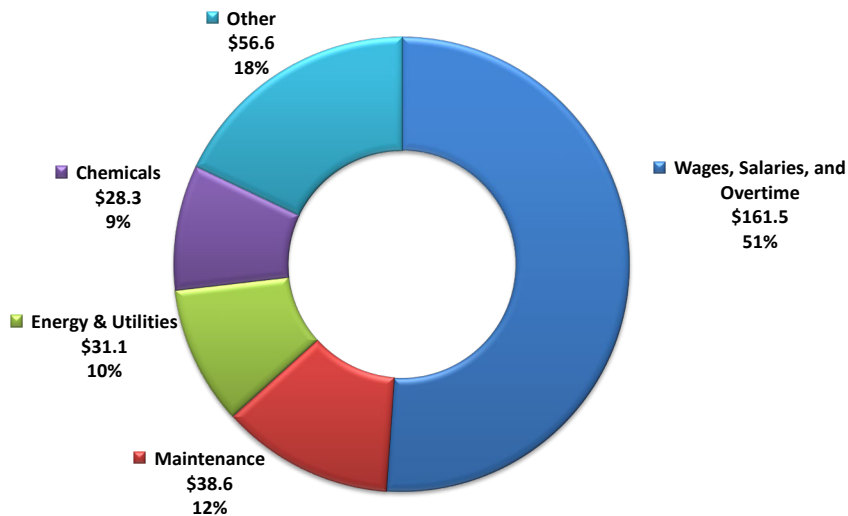
The Rate Revenue Requirement for FY24 is \$834.3 million, an increase \$19.6 million or 2.4% over the FY23 Budget. The Rate Revenue Requirement is the difference between total expenses of \$874.1 million and non-rate revenue of \$39.9 million.

DIRECT EXPENSES

FY24 Direct Expenses total \$316.0 million, an increase of \$42.3 million, or 15.4%, over the FY23 Budget. The primary drivers of the Direct Expenses increases are Chemicals, Other Services, Wages and Salaries, and Maintenance.

The chart below combines related direct expense line items into general cost categories. Personnel costs (wages and salaries, overtime, fringe benefits, and workers' compensation) are the largest component of the direct expense budget at 51%, followed by other expenses (training and meetings, professional services, other materials, and other services) at 18%, maintenance at 12%, energy & utilities at 10%, and chemicals at 9%.

Direct Expenses by Category
(*\$s in millions*)

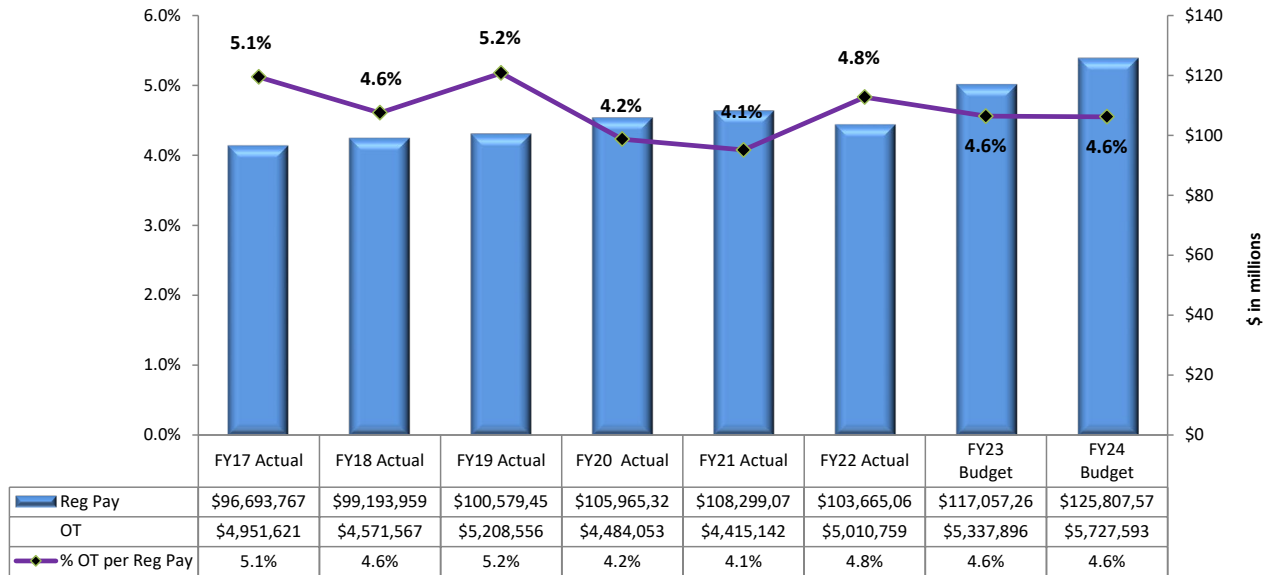


FY24 Final Current Expense Budget						
MWRA Direct Expenses by Line Item						
LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
WAGES & SALARIES	\$ 109,857,067	\$ 105,394,954	\$ 118,980,689	\$ 127,828,242	\$ 8,847,553	7.4%
OVERTIME	4,415,142	5,010,758	5,337,896	5,727,593	389,697	7.3%
FRINGE BENEFITS	21,694,636	21,714,918	23,961,641	25,823,383	1,861,742	7.8%
WORKERS' COMPENSATION	1,842,853	1,665,017	2,519,751	2,144,395	(375,356)	-14.9%
CHEMICALS	11,652,051	11,788,437	14,994,036	28,269,124	13,275,088	88.5%
UTILITIES	21,887,023	29,352,756	30,896,365	31,064,891	168,526	0.5%
MAINTENANCE	30,660,795	28,842,198	33,241,022	38,574,255	5,333,233	16.0%
TRAINING & MEETINGS	150,787	232,056	492,197	498,597	6,400	1.3%
PROFESSIONAL SERVICES	7,377,648	7,373,709	8,197,577	10,410,484	2,212,907	27.0%
OTHER MATERIALS	6,272,621	5,039,043	6,728,862	7,167,400	438,538	6.5%
OTHER SERVICES	23,656,949	25,243,013	28,372,237	38,494,660	10,122,423	35.7%
TOTAL	\$ 239,467,572	\$ 241,656,859	\$ 273,722,273	\$ 316,003,024	\$ 42,280,751	15.4%

Wages and Salaries – The budget includes \$127.8 million for Wages and Salaries as compared to \$119.0 million in the FY23 Budget, an increase of \$8.8 million or 7.4%. Regular Pay makes up \$125.8 million or 98.4% of the total Wages and Salaries. The FY24 Budget includes 1,168.0 FTE's which is 0.6 more than the FY23 Budget. As always, new hires and backfilling of vacant positions will be managed at the agency level and addressed on a case-by-case basis by senior management. A vacancy adjustment (reduction) of \$4.0 million is factored in to the FY24 Final Budget.

Division	FY20	FY21	FY22	FY23	FY24
Executive	5.0	5.0	5.0	5.0	4.0
Emergency Preparedness	7.0	4.0	4.0	4.0	5.0
Affirmative Action	7.0	7.0	7.0	7.0	7.0
Internal Audit	6.7	6.7	6.7	6.7	7.0
Public Affairs	11.9	11.9	11.9	11.9	11.0
Tunnel Redundancy	8.0	13.0	16.0	16.0	16.0
Operations	916.0	918.0	918.0	903.0	903.0
Law	13.6	13.6	11.6	12.0	14.0
Administration	145.7	146.7	149.7	149.7	149.0
Finance	37.0	37.0	37.0	52.0	52.0
Authority Total	1,158.0	1,163.0	1,167.0	1,167.4	1,168.0

MWRA: % Overtime vs. Regular



Overtime – The budget includes \$5.7 million for Overtime, an increase of \$390,000 or 7.3% over the FY23 Budget. Overtime was increased to reflect wage increases and recent trends in planned overtime for off-hours maintenance, emergency, coverage, and planned projects that include construction.

Fringe Benefits – The budget includes \$25.8 million for Fringe Benefits, an increase of \$1.9 million or 7.8% over the FY23 Budget. Health Insurance premiums total \$22.2 million, an increase of \$1.7 million or 6.3% over the FY23 Budget largely due to an increase in the health plans rates.

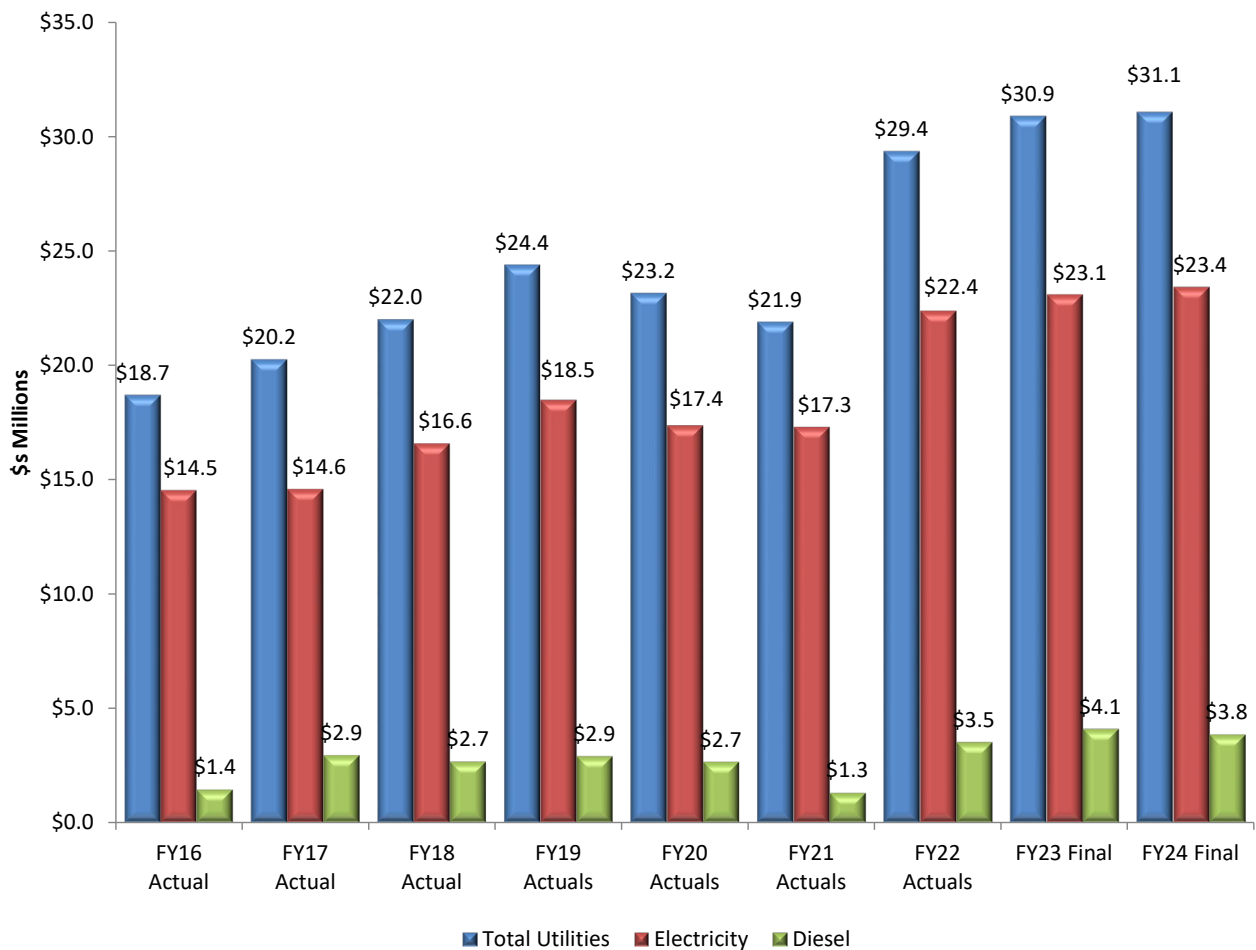
Fringe Benefits				
Line Item	FY22 Actuals	FY23 Budget	FY24 Budget	Difference
Health Insurance	\$ 18,525,318	\$ 20,484,396	\$ 22,183,120	\$ 1,698,724
Dental Insurance	1,061,934	1,115,162	1,115,162	0
Unemployment Insurance	59,112	140,000	140,000	-
PFML	399,223	458,403	468,491	10,088
Medicare	1,545,079	1,589,640	1,731,526	141,886
Overtime Meals	113,313	119,040	130,083	11,043
Tuition Reimbursement	10,939	55,000	55,000	-
Total Fringe Benefits	\$ 21,714,918	\$ 23,961,641	\$25,823,383	\$ 1,861,742

Workers' Compensation – The budget includes \$2.1 million for Workers' Compensation. This is \$375,000 or 14.9% less than the prior year's level and is based on a three-year historical average spending for Worker's Compensation.

Chemicals – The budget includes \$28.3 million for Chemicals, an increase of \$13.3 million or 88.5% over the FY23 Budget. Higher prices drove the budget increase. Several chemicals increased including Sodium Hypochlorite by \$7.0 million or 135.4%, Ferric Chloride by \$3.4 million or 143.8%, Carbon Dioxide by \$727,000 or 166.4%, Sodium Bisulfite by \$479,000 or 108.7%, Aqua Ammonia by \$413,000 or 142.0%, Liquid Oxygen by \$413,000 or 84.6%, and Hydrofluosilic Acid by \$327,000 or 87.8%. The FY24 Budget includes \$489,000 for the anticipated Deer Island National Pollutant Discharge Elimination System (NPDES) permit, which is projected to have more stringent requirements for enterococcus treatment compliance.

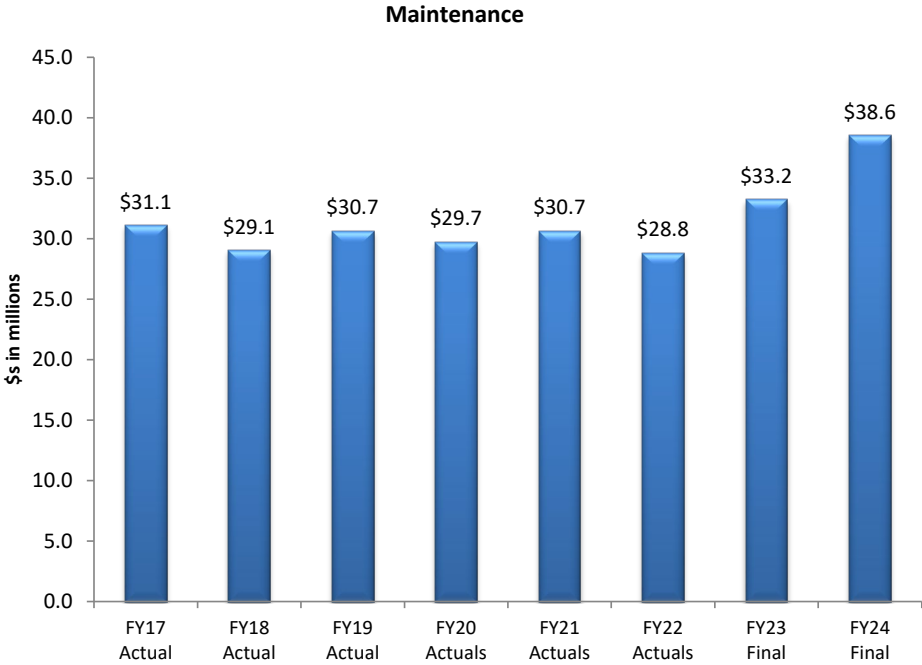
Utilities – The budget includes \$31.1 million for Utilities, which is an increase of \$168,000 or 0.5% over the FY23 Budget. The budget funds \$23.4 million for Electricity, an increase of \$333,000 or 1.4% over the FY23 budget primarily due to higher pricing. Natural Gas budget of \$1.1 million is \$277,000 or 33.1% greater than the FY23 Budget primarily due to higher pricing in Wastewater Operations and Western Facilities. The Diesel Fuel budget of \$3.8 million is \$247,000 or 6.1% lower than the FY23 Budget primarily due to decrease in price and volume at DITP and Nut Island Headworks.

Utilities



Maintenance – The budget includes \$38.6 million for Maintenance projects, an increase of \$5.3 million or 16.0% over the FY23 budget. The increase is driven by Special Equipment Materials of \$2.0 million

primarily for hatch cover replacement at Loring Road and Fells, flow meter at Nut Island Headworks, and for PLC’s, cards and parts; Plant and Machinery Services of \$1.7 million for Norumbega and Nash Hill Tank cleaning, Spare Parts for Alewife Brook Pump Station, DITP spare disinfection gearbox and spare ALP blower overhauls and coating of centrifuge bases; Computer Software Licenses of \$684,000 for updated costs including Microsoft Office Upgrade, Financial Management System Maintenance, AutoCAD subscriptions, MAXIMO maintenance, and Oracle DBMS maintenance amongst others; Building and Grounds Services of \$530,000 for updated cost for CVA Intake Repointing and work for Dam Asset Maintenance Plan at Goodnough Dike drain cleaning and relief well redevelopment at Sudbury Dam, and shift of work from FY23 to FY24 for the Eastern Ave traffic signal; and HVAC Materials of \$304,000 at DITP for glycol feeders, isolation valves for hot water loop, and HEX plates for the mechanical room in the Admin/Lab Bldg and Plant & Machinery Materials of \$207,000 for Prison Point CSO transfer switch, reactor gearboxes and polymer pumps that shifted from FY23 to FY24, and thermal air dryer, partially offset by materials that were purchased or completed in FY23 including the replacement of disinfection instrument air compressor, and spare mixer gearbox and other reductions to as-needed items. These increases are partially offset by Computer Services of \$264,000 primarily for updated cost and solution to monitor SCADA systems.



Training and Meetings – The budget includes \$499,000 for Training and Meetings, an increase of \$6,000 or 1.3% over the FY23 Budget.

Professional Services – The budget includes \$10.4 million for Professional Services, an increase of \$2.2 million or 27.0% over the FY23 Budget. The increase is driven by Affirmative Action’s Disparity Study of \$800,000 (with the remaining portion to be budgeted in FY25), MIS for Managed Security Service Provider (MSSP)/Security Information and Event Management (SIEM) monitoring of \$462,000, additional Legal services for NPDES permit of \$450,000, Security of \$287,000 for updated rates, and Lab & Testing Analysis of \$284,000 primarily for updated costs including PFAS testing of \$187,000.

Other Materials – The budget includes \$7.2 million for Other Materials, an increase of \$439,000 or 6.5% over the FY23 Budget. The increase reflects \$406,000 in Other Materials largely due to office space modifications costs for Phase 3 fit-out for the CNY to Chelsea and DITP move that is not funded in the CIP contract. Also, increase in Equipment/Furniture of \$152,000 due to upgrades to the Operations Control Center. This is partially offset by Vehicle Expense decrease of \$306,000 primarily due to electric chargers purchases in FY23 instead of FY24 partially offset by increase in fuel costs, and a reduction in Computer Software of \$103,000 driven by SCADA Maintenance software driven by SCADA Maintenance software.

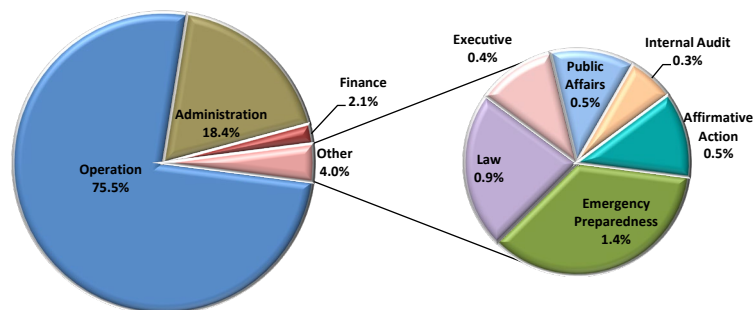
Other Services – The budget includes \$38.5 million for Other Services, an increase of \$10.1 million or 35.7% over the FY23 Budget. Sludge Pelletization increased by \$9.6 million or 56.3%. This increase reflects \$6.2 million for 6 months of potential landfill disposal costs due to PFAS issues and \$3.4 million due mainly to the projected cost increase of the pellet plant contract primarily due to inflation. Also, Grit & Screenings Removal of \$1.1 million due to updated costs for new contract. This increase was partially offset by lower Space/Lease Rentals of \$1.0 million due to the termination of the Charlestown Navy Yard (CNY) lease, partially offset by an increase in cost for Rock Core Shed Lease, and increase in cost of the Chelsea Facility lease.

Functional Area Budget Summary

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

FY24 Final Current Expense Budget MWRA Direct Expenses by Division						
DIVISION	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
EXECUTIVE	\$ 6,916,380	\$ 6,882,325	\$ 8,281,404	\$ 9,780,186	\$ 1,498,782	18.1%
ADMINISTRATION	49,969,000	49,563,904	55,446,985	58,088,755	2,641,770	4.8%
FINANCE	4,340,471	3,931,402	6,044,910	6,597,913	553,003	9.1%
LAW	1,664,788	1,743,373	2,028,248	2,837,856	809,608	39.9%
OPERATIONS/PLANNING	176,576,933	179,535,855	201,920,726	238,698,314	36,777,588	18.2%
TOTAL	\$ 239,467,572	\$ 241,656,869	\$ 273,722,273	\$ 316,003,024	\$ 42,280,751	15.4%

MWRA Direct Expense Budget by Division

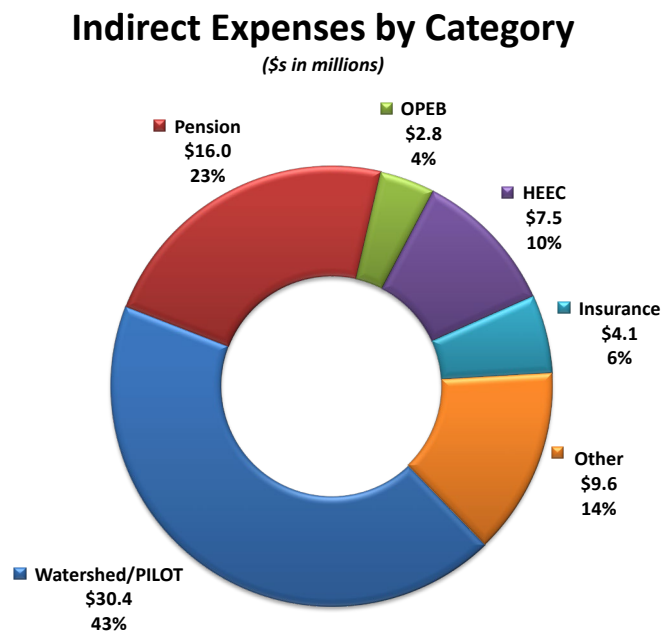


Detailed summaries for each Division budget are provided following the Executive Summary.

INDIRECT EXPENSES

Indirect Expenses for FY24 total \$70.4 million, an increase of \$9.9 million or 16.3% over the FY23 Budget.

The following graph combines related indirect expense line items into the general cost categories and shows that Watershed/PILOT expenses are the largest component of the indirect expense budget at 43%, followed by the Pension Fund at 23%, HEEC at 10%, Insurance at 6%, OPEB at 4%, and Other (for items such as Mitigation and Additions to Reserves) at 14%.



Insurance

MWRA purchases property and casualty insurance from external insurance carriers with a self-insured retention of \$2.5 million dollars and Worker's Compensation Excess insurance with a self-insured retention of \$1,000,000 per claim. The budget includes \$4.1 million for Insurance, an increase of \$149,000 or 3.8% over the FY23 Budget. Insurance Premiums increased 5.7% based on proposals received. Claims decreased based on a 5-year average. This also reflects a 10% property insurance premium credit. The budget consists of two components, self-insured claim costs and insurance premiums. Self-insured claim cost are estimated based on actual average spending over the past 5 years (FY18-22). Premium costs are estimated based on current costs adjusted for inflation and potential increases due to insurance market conditions. MWRA mitigates the budgetary risk of self-insurance by maintaining an Insurance Reserve. The reserve, which was established as part of the General Bond Resolution, requires that an independent insurance consultant review the funding level every three years and provide recommendations as to its adequacy. The current recommended funding level is \$10-\$13 million. The Insurance Reserve is currently funded at \$14 million par value. The next independent review is scheduled for February 2026.

Watershed Reimbursement/PILOT

The Enabling Act directs MWRA to pay the Commonwealth of Massachusetts for several statutory obligations: Payment in Lieu of Taxes (PILOT) for Commonwealth-owned land in the watersheds and operating expenses of the Division of Water Supply Protection. The budget includes \$30.4 million for the Watershed Management budget, an increase of \$1.5 million or 5.1% above the FY23 Budget. The budget includes \$21.5 million for reimbursement of operating expenses net of revenues, and \$8.9 million for Payment in Lieu of Taxes (PILOT). The budget increase is driven by contractual wage increases and health care costs. A vacancy adjustment of \$353,000 (based on 3 FTEs) has been applied to reflect the actual timing of hiring.

Category	FY23 Budget	FY24 Budget	\$ Change	% Change
Operating Expenses	19,610,471	20,883,187	1,272,716	6.5%
Major Projects	1,397,000	1,585,000	188,000	13.5%
Revenues	(1,020,000)	(1,010,000)	10,000	-1.0%
Net	19,987,471	21,458,187	1,470,716	7.4%
PILOT	8,903,291	8,900,000	(3,291)	0.0%
Total	28,890,762	30,358,187	1,467,425	5.1%

Harbor Electric Energy Company (HEEC)

The budget includes \$7.5 million for the Harbor Energy Electric Company (HEEC), an Increase of \$1.3 million or 20.5% over the FY23 Budget. The budget reflects the latest cost estimates and true up payment due for prior calendar year. The final costs will be determined by the Massachusetts Department of Public Utilities (DPU) once it has completed its review of the project. In FY18, \$6.5 million was set aside to mitigate the impact of the HEEC cost associated with construction of a new power cable to Deer Island Treatment Plant, and is projected to be used between FY22-25. In FY24, \$0.3 million of Rate Stabilization/HEEC Reserve will be used.

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 budget includes \$1.8 million for Mitigation payments to the City of Quincy and Town of Winthrop in accordance with mitigation agreements, which expire in FY25.

Operating Reserves

Funding for the Additions to the Operating Reserve for FY24 is \$7.9 million. The Operating Reserve balance is in compliance with MWRA's General Bond Resolution which requires a balance of one-sixth of annual Operating Expenses. Based on the FY24 Final Budget, the required balance is \$57.6 million versus the \$49.7 million required in FY23.

Retirement System Contribution

The budget includes \$16.0 million for the Retirement Fund, an increase of \$3.4 million or 27.2% over the FY23 budget. The increase to the required contribution of \$1.5 million is based on the January 2023 actuarial valuation combined with the addition of OPEB savings of \$1.9 million. Staff recommended allocating the \$1.9 million reduction to the required OPEB contribution to the Pension, and the Board approved. MWRA's pension fund is at the 88.4% funding level and projected to be fully funded by June 30, 2030.

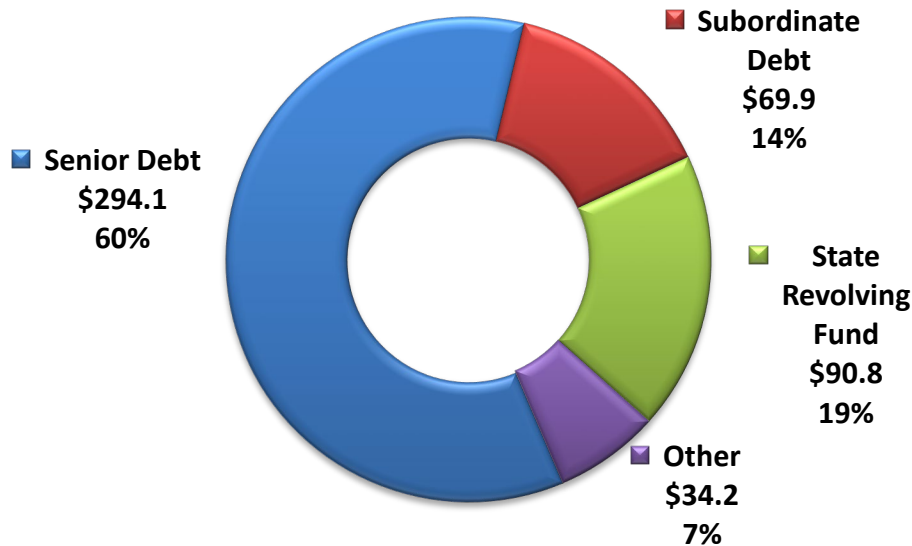
GASB 45 – Accounting and Reporting by Employers for Postemployment Benefits Other than Pensions (OPEB)

In the FY24 Final Budget the Authority funds its OPEB liability at \$2.8 million, continuing the Authority's long-term commitment to address its liabilities. The Authority has complied with the GASB 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other than Pensions (OPEB)*, by disclosing this liability in the year-end Financial Statements. As part of the multi-year strategy to address its unfunded liabilities for OPEB and pension holistically, the Board approved a plan to pay down the pension liability and upon reaching full funding, move to address the OPEB obligation. To maximize the benefits in terms of returns and accounting treatment, an irrevocable OPEB Trust was established with Board approval and funding started on April 23, 2015. The OPEB Trust balance was \$63.5 million (59.6% funded) as of December 31, 2022. Starting in FY18, GASB 75 is the governing regulation for employee OPEB contributions. The \$2.8 million budget is based on 50% of the contribution determined in the December 31, 2021 actuarial report. This is a \$1.9 million reduction from FY23.

CAPITAL FINANCING

The FY24 Final Budget capital financing costs total \$487.8 million and remains the largest portion of the MWRA's budget at 55.8% of the Operating Budget. Financing costs decreased by \$18.2 million or 3.6% compared to the FY23 Budget. This decrease in the MWRA's debt service is the result of projected FY24 borrowings, the structure of the existing debt, and by the impact of the June 2023 defeasance. The FY24 Final Budget includes the impact of a defeasance of \$28.8 million in outstanding bonds executed in June 2023. The defeasance reduced future debt service by \$5.8 million in FY24, \$12.0 million in FY25, \$679,750 in FY26, \$10.1 million in FY27, and \$4.3 million in FY28.

Capital Financing (\$s in millions)



The Authority has actively managed its debt structure to take advantage of favorable interest rates. Tools used by MWRA to lower borrowing costs and manage rates include current and advanced refunding of outstanding debt, bond tenders, maximizing the use of the subsidized State Revolving Fund (SRF) debt, issuance of variable rate debt, swap agreements, and the use of surplus revenues to defease debt. MWRA also uses short-term borrowing vehicles like tax exempt commercial paper to minimize the financing cost of construction in process

The FY24 Final Budget assumes a 4.75% interest rate for variable rate debt which is 1.25% greater than the FY23 assumed rate. The Authority's variable rate debt assumption is comprised of three separate elements: the interest rate for the daily and weekly series; liquidity fees for the Standby Bond Purchase Agreement, Letter of Credit, and Direct Purchase providers; and remarketing fees. Since March of 2022, the Federal Reserve Open Market Committee has raised interest rates by over 5.0% resulting in higher short-term variable interest costs.

The FY24 capital financing budget includes:

- \$294.1 million in principal and interest payments on MWRA's senior fixed rate bonds. This amount includes \$9.0 million to support a new money issuance of \$200.0 million in May 2024;
- \$69.9 million in principal and interest payments on subordinate variable rate bonds;
- \$90.8 million in principal and interest payments on SRF loans. This amount includes \$9.0 million to support an issuances of \$105.0 million during fiscal 2024;
- \$19.2 million to fund ongoing capital projects with current revenue and to meet coverage requirements;

- \$4.0 million in debt prepayment to be used for a defeasance of future debt service at fiscal year end;
- \$7.7 million to fund the interest expense related to the Local Water Pipeline Assistance Program; and,
- \$3.2 million for the Chelsea Lease, and
- \$1.2 million offset to Debt Service for the Debt Service Assistance received in FY23.

Outstanding Debt and Debt Management

The \$9.1 billion spent on MWRA’s modernization efforts since the Authority was established in 1985, has relied heavily on debt financing. Total debt as of June 30, 2023 was \$4.4 billion consisting of senior and subordinated debt, SRF debt, and a revolving loan. The total debt was \$169.8 million lower than the MWRA’s total debt as of June 30, 2022. The MWRA enjoys strong unenhanced senior debt ratings of Aa1, AA+, and AA+ from Moody’s, Standard & Poor, and Fitch, respectively.

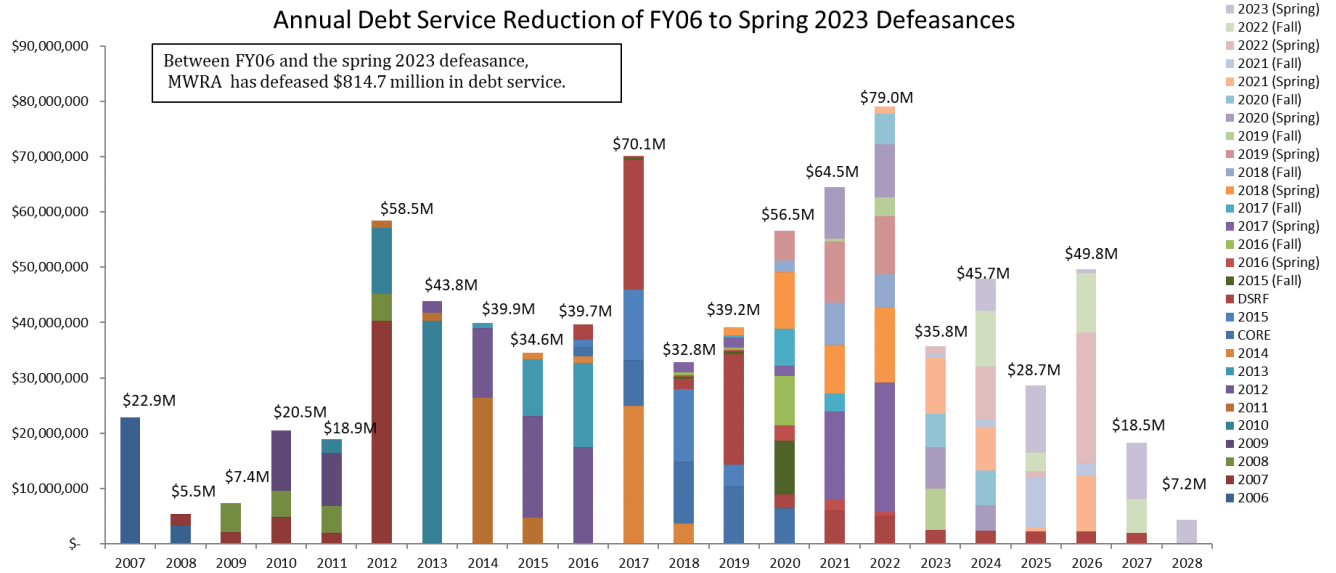
Type	Principal Outstanding June 30, 2023	% of Total
Senior General Revenue Bonds	\$ 3,080,305,000	69.6%
Massachusetts Clean Water Trust	\$ 808,831,462	18.3%
Subordinate General Revenue Bonds	\$ 435,622,000	9.8%
Tax Exempt Commercial Paper/Revolving Loan	\$ 100,000,000	2.3%
Total	\$ 4,424,758,462	100.0%

87.9% of MWRA's Debt is Fixed Rate

As a result of the Authority’s Capital Improvement Program, capital financing as a percent of total expenses (before offsets) has increased from 36% in 1990 to 55.8% in the FY24 Current Expense Budget. Much of this debt service is for completed projects, primarily the Boston Harbor Project and the Integrated Water Supply Improvement Program. The MWRA’s capital spending, from its inception, had been dominated by projects mandated by court ordered or regulatory requirements, which in total have accounted for ~72% of capital spending to date. Going forward, and as the Combined Sewer Overflow (CSO) projects reached substantial completion in December 2015, the majority of spending will be focused on asset protection and water redundancy initiatives. Overall, MWRA anticipates its outstanding debt to continue to decline.

The Authority has actively managed its debt structure to take advantage of favorable interest rates. Tools used by the MWRA to lower borrowing costs and manage rates include current and advanced refunding of outstanding debt, bond tenders, maximizing the use of the subsidized debt, issuance of variable rate debt, swap agreements, and the use of surplus revenues to defease debt. The MWRA also uses short-term borrowing instruments such as tax exempt commercial paper to minimize the financing cost of construction in process.

Since 2006, MWRA has defeased \$814.9 million in debt service to reduce future year rate revenue requirements. The following chart details the multi-year impact of those defeasances.



Grant Revenues

In the past, MWRA has been able to finance approximately 20 percent of its capital spending with grant receipts, totaling approximately \$1.1 billion through FY03. However, since FY03, the MWRA has only received \$4.9 million in capital grants. In addition to participating in federal and state grant programs, the MWRA benefitted from the American Recovery and Reinvestment Act of 2009 which forgave approximately \$33.0 million in State Revolving Fund loan principal. In 2023, MWRA was awarded \$3.4 million in principal forgiveness loans from the Massachusetts Clean Water Trust. These principal forgiveness loans were funded through proceeds from the American Rescue Plan Act of 2021. The Authority continues to pursue grant funding and take advantage of any possible program available to maximize grant funding opportunities.

MWRA expects to borrow the majority of funds necessary for future capital spending. Borrowing may include the issuance of fixed and variable rate revenue bonds; borrowing from the Massachusetts Clean Water Trust (also known as the State Revolving Loan Fund or SRF), and a through MWRA's short-term borrowing program (Tax-Exempt Commercial Paper/Revolving Loan). The following table details the FY24 budget capital financing line item. It also shows how upgrading the sewerage system has dominated the capital program to date. Current and future borrowings increasingly support improvements to the water system. A complete list of the Authority's indebtedness by series is presented in Appendix E.

TABLE I-3
FY24 Current Expense Budget - Capital Financing Detail (as of 6/30/23)
\$ in Millions

	Amount Outstanding	Total Capital Finance Costs	Sewer	Water
Total SRF ¹ Debt	\$808.8	\$90.8	\$68.4	\$22.4
Total Senior Debt	\$3,080.3	294.1	185.5	108.6
Total Subordinate Debt	\$435.6	69.9	40.5	29.4
Total SRF and Debt Service²	\$4,324.8	\$454.8	\$294.3	\$160.5
Water Pipeline Commercial Paper	0.0	7.7	0.0	7.7
Current Revenue/Capital ³		19.2	18.8	0.4
Capital Lease		3.2	1.9	1.3
Debt Prepayment ⁴		4.0	3.9	0.1
	0.0	\$34.2	\$24.7	\$9.5
Total Capital Financing (before Debt Service Offsets)	4,324.8	\$488.9	\$319.0	\$170.0
Debt Service Offsets:				
Debt Service Assistance		(1.2)	(1.1)	(0.1)
Bond Redemption		0.0	0.0	0.0
Short-term borrowings	100.0	0.0	0.0	0.0
Total Capital Financing	4,424.8	\$487.8	\$317.9	\$169.8

CIP Impact on Current Expense Budget

In addition to the annual financing costs included in the Current Expense Budget, the Capital Improvement Program affects the annual operating budget when capital facilities come on-line and require adjustments to operating budgets. In prior years, completion of the Deer Island Treatment Plant, the Carroll Water Treatment Plant, and the residuals processing facility in Quincy resulted in significant increases in operating expenses.

The following table summarizes the projected CIP impact on the operating budget by project over the next ten years.

Fiscal Year	CEB Impacts (000)										
	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	Total
DI Treatment Plant Asset Protection (not including Co-Digestion or Combined Heat and Power Plant)	(\$21)	(\$21)	\$0	\$0	\$0	(\$48)	(\$49)	(\$101)	(\$65)	(\$67)	(\$373)
DI Treatment Plant Asset Protection - Hydroturbine Replacements	0	0	0	0	(58)	0	0	0	65	0	7
Unsustained Budget Impacts - Moving Expenses	(206)	0	0	0	0	0	0	0	0	0	(206)
South Boston CSO Tunnel Inspection/Cleaning and Outfalls Inspection	0	0	546	(563)	0	0	0	0	0	0	(16)
Total Wastewater (inflated)	(\$227)	(\$21)	\$546	(\$563)	(\$58)	(\$48)	(\$49)	(\$101)	\$0	(\$67)	(\$588)
Metro Tunnel Redundancy	\$206	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$206
Watershed Div CIP - Quabbin Admin Building Renovations	0	0	109	0	0	(119)	0	0	0	0	(10)
Wachusett Algae Treatment Facility	0	0	0	0	0	0	123	0	0	0	123
Unsustained Budget Impacts - Moving Expenses	(206)	0	0	0	0	0	0	0	0	0	(206)
Total Business and Operations Support (inflated)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
TOTAL MWRA	(\$227)	(\$21)	\$656	(\$563)	(\$58)	(\$167)	\$74	(\$101)	\$0	(\$67)	(\$475)

Rock storage costs for the Metropolitan Tunnel Redundancy project are projected to increase by \$206,000 in FY25. This will be offset by Deer Island Treatment Plant Asset Protection initiatives that will reduce operating costs by \$366,000 through FY34.

In total, the impact of capital projects and initiatives are projected to decrease operational costs by \$475,000 over the next ten years.

RATE ASSESSMENT AND METHODOLOGY

Community Profile and Assessments

MWRA provides wholesale water and sewer services to 61 communities or local bodies. Fifty-four local bodies purchase water supply services, and 43 local bodies purchase wastewater transport and treatment services. Thirty-seven local bodies purchase both. Approximately 3.0 million people, or 44% 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 FY24, rate revenue from BWSC will account for 30% of MWRA's total rate revenue.

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

The following table presents the calculation of MWRA's FY24 Rate Revenue Requirement. The table shows that most of MWRA's current expenses are directly attributable to either water or sewer service costs, or to investment in the water or sewer systems. Expenses that support both systems are allocated to water or sewer assessments based on generally accepted cost allocation principles. Investment Income and Other Revenues offset water and sewer expenses. The resulting net cost of water and sewer services is the amount MWRA recovers through water and sewer assessments.

**Calculation of the Final FY24 Rate Revenue Requirement
(000's)**

	Sewer	Water	Total
Allocated Direct Expenses	\$206,680	\$109,323	\$316,003
Allocated Indirect Expenses	\$29,332	\$41,054	\$70,387
PLUS			
Capital Expenses:			
Debt Service	\$294,316	\$160,469	\$454,785
Debt Service Assistance	-\$1,072	-\$115	-\$1,187
Current Revenue for Capital	\$18,818	\$382	\$19,200
Other Capital Expenses	\$5,857	\$9,105	\$14,962
PLUS			
Non-Rate Revenue:			
Investment Income	-\$13,876	-\$9,470	-\$23,346
Fees and Other Revenue	-\$5,464	-\$10,766	-\$16,229
Rate Stabilization	\$0	-\$305	-\$305
EQUALS			
Rate Revenue Requirement	\$534,592	\$299,676	\$834,268

Wholesale Assessment Methodology

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

Massachusetts Water Resources Authority
FINAL FY24 Water and Sewer Assessments

MWRA Fully Served Water and Sewer Customers	Final FY23 Water Assessment	Final FY24 Water Assessment	Percent Change from FY23	Final FY23 Sewer Assessment	Final FY24 Sewer Assessment	Percent Change from FY23	Final FY23 Combined Assessment	Final FY24 Combined Assessment	Dollar Change from FY23	Percent Change from FY23
ARLINGTON	\$5,648,095	\$5,723,767	1.3%	\$9,392,520	\$9,375,412	-0.2%	\$15,040,615	\$15,099,179	\$58,564	0.4%
BELMONT	3,134,847	3,281,643	4.7%	5,677,771	5,652,772	-0.4%	8,812,618	8,934,415	121,797	1.4%
BOSTON (BWSC)	99,390,501	101,284,742	1.9%	149,691,865	148,321,901	-0.9%	249,082,366	249,606,643	524,277	0.2%
BROOKLINE	8,018,472	8,536,286	6.5%	14,277,393	13,902,081	-2.6%	22,295,865	22,438,367	142,502	0.6%
CHELSEA	5,460,876	5,466,192	0.1%	9,362,781	9,640,943	3.0%	14,823,657	15,107,135	283,478	1.9%
EVERETT	6,422,774	6,179,040	-3.8%	10,050,691	10,045,294	-0.1%	16,473,465	16,224,334	(249,131)	-1.5%
FRAMINGHAM	9,531,024	9,526,952	0.0%	13,631,754	14,213,653	4.3%	23,162,778	23,740,605	577,827	2.5%
LEXINGTON	8,493,467	8,832,742	4.0%	8,432,789	8,861,891	5.1%	16,926,256	17,694,633	768,377	4.5%
MALDEN	8,758,033	8,565,543	-2.2%	14,707,651	14,777,974	0.5%	23,465,684	23,343,517	(122,167)	-0.5%
MEDFORD	7,666,268	7,823,249	2.0%	13,036,799	13,530,297	3.8%	20,703,067	21,353,546	650,479	3.1%
MELROSE	3,499,715	3,520,729	0.6%	7,179,811	7,002,292	-2.5%	10,679,526	10,523,021	(156,505)	-1.5%
MILTON	4,022,582	4,176,564	3.8%	6,075,110	6,314,438	3.9%	10,097,692	10,491,002	393,310	3.9%
NEWTON	14,157,661	14,430,518	1.9%	22,803,614	23,540,735	3.2%	36,961,275	37,971,253	1,009,978	2.7%
NORWOOD	4,502,690	4,646,813	3.2%	8,789,271	9,252,685	5.3%	13,291,961	13,899,498	607,537	4.6%
QUINCY	13,856,502	14,041,679	1.3%	22,536,756	23,052,419	2.3%	36,393,258	37,094,098	700,840	1.9%
READING	2,807,828	2,826,508	0.7%	5,378,343	5,245,406	-2.5%	8,186,171	8,071,914	(114,257)	-1.4%
REVERE	6,348,919	6,411,786	1.0%	12,301,606	12,448,042	1.2%	18,650,525	18,859,828	209,303	1.1%
SOMERVILLE	9,471,778	9,500,557	0.3%	17,021,568	17,759,770	4.3%	26,493,346	27,260,327	766,981	2.9%
STONEHAM	3,289,382	3,617,722	10.0%	5,652,234	5,906,212	4.5%	8,941,616	9,523,934	582,318	6.5%
WALTHAM	11,044,210	11,996,268	8.6%	14,787,236	14,796,930	0.1%	25,831,446	26,793,198	961,752	3.7%
WATERTOWN	4,147,401	4,202,656	1.3%	6,800,255	7,004,552	3.0%	10,947,656	11,207,208	259,552	2.4%
WINTHROP	1,918,276	1,865,387	-2.8%	3,970,824	3,978,407	0.2%	5,889,100	5,843,794	(45,306)	-0.8%
TOTAL	\$241,591,301	\$246,457,343	2.0%	\$381,558,642	\$384,624,106	0.8%	\$623,149,943	\$631,081,449	\$7,931,506	1.3%

MWRA Sewer and Partial Water Customers	Final FY23 Water Assessment	Final FY24 Water Assessment	Percent Change from FY23	Final FY23 Sewer Assessment	Final FY24 Sewer Assessment	Percent Change from FY23	Final FY23 Combined Assessment	Final FY24 Combined Assessment	Dollar Change from FY23	Percent Change from FY23
ASHLAND	\$0	\$0	-	\$2,886,179	\$2,924,453	1.3%	\$2,886,179	\$2,924,453	\$38,274	1.3%
BURLINGTON	1,253,355	1,668,047	33.1%	6,021,745	6,153,342	2.2%	7,275,100	7,821,389	546,289	7.5%
CANTON	2,022,211	2,490,180	23.1%	4,862,293	5,085,296	4.6%	6,884,504	7,575,476	690,972	10.0%
NEEDHAM	1,464,186	1,887,130	28.9%	6,780,857	7,084,841	4.4%	8,225,043	8,971,971	746,928	9.1%
STOUGHTON	118,822	103,566	-12.8%	5,471,765	5,714,438	4.4%	5,590,587	5,818,004	227,417	4.1%
WAKEFIELD	2,617,209	3,337,730	27.5%	6,848,039	6,826,973	-0.3%	9,465,248	10,164,703	699,455	7.4%
WELLESLEY	3,325,451	4,211,496	26.6%	6,273,591	6,630,804	5.7%	9,599,042	10,842,300	1,243,258	13.0%
WILMINGTON	716,510	1,145,370	59.9%	3,230,781	3,173,321	-1.8%	3,947,291	4,318,691	371,400	9.4%
WINCHESTER	1,943,817	2,356,818	21.2%	4,592,965	4,875,271	6.1%	6,536,782	7,232,089	695,307	10.6%
WOBBURN	5,385,782	5,851,127	8.6%	9,810,353	10,478,117	6.8%	15,196,135	16,329,244	1,133,109	7.5%
TOTAL	\$18,847,343	\$23,051,464	22.3%	56,758,568	58,946,856	3.9%	\$75,605,911	\$81,998,320	\$6,392,409	8.5%

MWRA Sewer-only Customers	Final FY23 Water Assessment	Final FY24 Water Assessment	Percent Change from FY23	Final FY23 Sewer Assessment	Final FY24 Sewer Assessment	Percent Change from FY23	Final FY23 Combined Assessment	Final FY24 Combined Assessment	Dollar Change from FY23	Percent Change from FY23
BEDFORD				\$3,696,476	\$3,784,242	2.4%	\$3,696,476	\$3,784,242	\$87,766	2.4%
BRAINTREE				10,873,607	10,766,148	-1.0%	10,873,607	10,766,148	(107,459)	-1.0%
CAMBRIDGE				28,578,466	30,213,141	5.7%	28,578,466	30,213,141	1,634,675	5.7%
DEDHAM				6,153,063	6,409,056	4.2%	6,153,063	6,409,056	255,993	4.2%
HINGHAM SEWER DISTRICT				2,132,148	2,172,503	1.9%	2,132,148	2,172,503	40,355	1.9%
HOLBROOK				1,936,897	2,028,551	4.7%	1,936,897	2,028,551	91,654	4.7%
NATICK				6,287,053	6,408,947	1.9%	6,287,053	6,408,947	121,894	1.9%
RANDOLPH				6,940,976	7,144,574	2.9%	6,940,976	7,144,574	203,598	2.9%
WALPOLE				4,449,490	4,614,313	3.7%	4,449,490	4,614,313	164,823	3.7%
WESTWOOD				3,274,618	3,249,150	-0.8%	3,274,618	3,249,150	(25,468)	-0.8%
WEYMOUTH				13,703,131	14,230,541	3.8%	13,703,131	14,230,541	527,410	3.8%
TOTAL				\$88,025,925	\$91,021,166	3.4%	\$88,025,925	\$91,021,166	\$2,995,241	3.4%

MWRA Water-only Customers	Final FY23 Water Assessment	Final FY24 Water Assessment	Percent Change from FY23	Final FY23 Sewer Assessment	Final FY24 Sewer Assessment	Percent Change from FY23	Final FY23 Combined Assessment	Final FY24 Combined Assessment	Dollar Change from FY23	Percent Change from FY23
LYNNFIELD WATER DISTRICT	\$865,543	\$945,917	9.3%				\$865,543	\$945,917	\$80,374	9.3%
MARBLEHEAD	2,941,372	3,130,039	6.4%				2,941,372	3,130,039	188,667	6.4%
NAHANT	578,355	592,489	2.4%				578,355	592,489	14,134	2.4%
SAUGUS	5,020,868	5,446,924	8.5%				5,020,868	5,446,924	426,056	8.5%
SOUTHBOROUGH	984,014	1,202,081	22.2%				984,014	1,202,081	218,067	22.2%
SWAMPSCOTT	2,552,649	2,610,031	2.2%				2,552,649	2,610,031	57,382	2.2%
WESTON	2,456,156	2,867,622	16.8%				2,456,156	2,867,622	411,466	16.8%
TOTAL	\$15,398,957	\$16,795,103	9.1%				\$15,398,957	\$16,795,103	\$1,396,146	9.1%

MWRA Partial Water-only Customers	Final FY23 Water Assessment	Final FY24 Water Assessment	Percent Change from FY23	Final FY23 Sewer Assessment	Final FY24 Sewer Assessment	Percent Change from FY23	Final FY23 Combined Assessment	Final FY24 Combined Assessment	Dollar Change from FY23	Percent Change from FY23
DEDHAM-WESTWOOD WATER DISTRICT	\$256,078	\$670,890	162.0%				\$256,078	\$670,890	\$414,812	162.0%
LYNN (LWSC)	187,732	133,677	-28.8%				187,732	133,677	(54,055)	-28.8%
MARLBOROUGH	6,733,069	7,138,193	6.0%				6,733,069	7,138,193	405,124	6.0%
NORTHBOROUGH	1,508,715	1,476,411	-2.1%				1,508,715	1,476,411	(32,304)	-2.1%
PEABODY	3,781,670	3,952,791	4.5%				3,781,670	3,952,791	171,121	4.5%
TOTAL	\$12,467,264	\$13,371,962	7.3%				\$12,467,264	\$13,371,962	\$904,698	7.3%
SYSTEMS TOTAL	\$288,304,865	\$299,675,872	3.94%	\$526,343,135	\$534,592,128	1.57%	\$814,648,000	\$834,268,000	\$19,620,000	2.41%

Retail Charges

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

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

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

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

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

Revenue and Expenditure Trends

Because MWRA is required by its enabling act to balance its budget and to establish annual assessments to cover all expenses, revenue must change as expenses are changing each year. The Rate Revenue Requirement in any year is the difference between MWRA expenses and other revenue sources, most notably non-rate revenue, investment income, and debt service assistance from the Commonwealth (which directly reduces debt service expense). For FY24, community assessments are projected to represent 95.4% of total revenue.

MWRA's planning estimates are projections based on a series of assumptions about future spending (operating and capital), interest rates, inflation, and other factors. MWRA uses the planning estimates to model and project what future rates and assessments might be based upon these assumptions, as well as to test the impact of changes to assumptions on future rates and assessments. The planning estimates are not predictions of what rates and assessments will be but rather they provide the context and framework for guiding MWRA financial policy and management decision making that ultimately determine the level of actual rate change on an annual basis. Conservative projections of future rates and assessments benefit the MWRA by providing assurance to the rating agencies that MWRA anticipates to raise revenues sufficient to pay for its operations and outstanding debt obligations now and over the long-term. Additionally, conservative forecasts of rates and assessments enable member communities to adequately plan and budget for future payments to MWRA.

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

The table below and Appendix D (in more detail) present the combined estimated future rate revenue requirements through FY28.

Rates & Budget Projections						
Fianl FY24 CEB	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028
Total Rate Revenue (\$000)	\$ 814,648	\$ 834,268	\$ 862,953	\$ 892,629	\$ 923,248	\$ 954,061
Rate Revenue Change from Prior Year (\$000)	\$ 22,564	\$ 19,620	\$ 28,685	\$ 29,676	\$ 30,619	\$ 30,812
Rate Revenue Increase	2.8%	2.4%	3.4%	3.4%	3.4%	3.3%
Use of Reserves (\$000)	\$ 980	\$ 305	\$ 917	\$ 809	\$ 780	\$ 782

Estimated Household Bill

Based on annual water usage of 61,000 gallons	\$ 1,331	\$ 1,385	\$ 1,445	\$ 1,509	\$ 1,575	\$ 1,644
Based on annual water usage of 90,000 gallons	\$ 1,963	\$ 2,043	\$ 2,132	\$ 2,226	\$ 2,324	\$ 2,425

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

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

The second largest budget factor is the projected growth of base operating costs. The estimated \$37.4 million increase in direct expenses from FY24 to FY28 is primarily the result of an assumed annual inflation rate.

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

- Direct expense inflation rate of 2.7% for salaries and 3.0% for other direct expenses starting in FY24;
- CIP inflation rate of 2.5%;
- Capital spending based on the latest CIP expenditure forecast.
- Long-term fixed rate debt issues with a 25-year term and 5.25% interest rates in FY24, and 30 year terms and 6.0% rates from FY25 and beyond;
- Variable rate interest projected at 4.75% in FY24, and 4.0% from FY25 and beyond.

The planning estimates generally use conservative assumptions to help communities plan for future payments to MWRA. There are several areas where differences from planning estimate assumptions may alter projected increases:

- Changes in anticipated borrowing rates or expected investment income rates;
- The planning estimates do not factor in any positive year-end variances which may be used to defease debt or reserved to offset Rate Revenue Requirements in future years;
- Fewer opportunities for SRF borrowing than expected due to Federal Budget cuts; a dollar borrowed through the SRF at 2.15% replaces the need to borrow a dollar long-term at an assumed 6% rate;
- Overall inflationary pressures;
- Debt refinancing opportunities;
- Capital spending; and
- Growth in direct expenses, greater than current assumptions.

MWRA Rates Management

Planning estimates for 2024 through 2028 forecast rate revenue requirement increases of 2.4% in FY24, 3.4% from FY25 to FY27, and 3.3% in FY28.

The FY24 Budget:

- Continues to refine planning estimates assumptions to provide greater predictability of future assessments;
- Judiciously uses reserves to lower rate increases, but maintain adequate balances;
- Continues the Authority's multi-year rates management strategy of providing sustainable and predictable assessment increases to our member communities; and
- Continues the smoothing strategy to even out the rate revenue requirement and rate changes caused by fluctuations in debt service at the utility level.

Net Position

The statement of net position (or net assets) provides the information on the assets and liabilities of the Authority, with net position being the difference between total assets and total liabilities. The Authority's net position for FY23 is \$1.8 billion based on the FY23 draft financials. The most recent six fiscal years can be seen in the following table:

\$s in 000

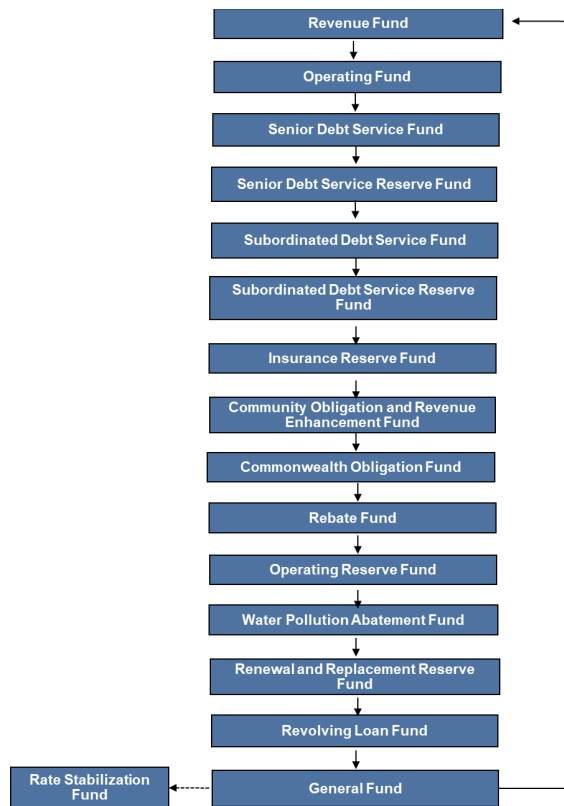
	2023 Draft	2022	2021	2020	2019	2018
Current Assets	\$ 958,172	\$ 903,848	\$1,015,387	\$ 109,747	\$ 100,271	\$ 95,963
Capital Assets (Net)	5,525,902	5,569,082	5,658,876	5,755,377	5,840,416	5,948,350
Other Assets	428,243	399,217	470,823	1,413,757	1,614,475	1,529,221
Total Assets	\$ 6,912,318	\$6,872,147	\$7,145,086	\$ 7,278,881	\$ 7,555,162	\$ 7,573,534
Current Liabilities	438,428	428,672	482,637	473,853	362,949	350,382
Non-Current Liabilities	4,682,677	4,878,438	5,176,425	5,279,049	5,626,126	5,617,753
Total Liabilities	\$ 5,121,105	\$5,307,110	\$5,659,062	\$ 5,752,902	\$ 5,989,075	\$ 5,968,135
Net Position						
Net Investment in Capital Assets	1,184,479	1,057,624	957,356	894,437	827,050	759,757
Restricted	497,686	450,765	461,566	420,009	368,532	357,767
Unrestricted	109,048	56,648	67,102	211,533	370,505	487,875
Total Net Position	\$ 1,791,213	\$1,565,037	\$1,486,024	\$ 1,525,979	\$ 1,566,087	\$ 1,605,399

When both restricted and unrestricted funds are available for use, it is the Authority's policy to use restricted funds first, then unrestricted funds as needed. Restricted funds include construction, debt service, and operating revenue.

General Bond Resolution Funds

The Authority's General Bond Resolution requires that it maintain certain funds related to its operations and as security for its bondholders. The General Bond Resolution establishes the required balances and allocation of all moneys controlled by the Authority. A copy of the General Bond Resolution can be found at <https://www.mwra.com/finance/documents/general-revenue-bond-resolution/amended-restated-general-resolution-MWRA-05-15-2023.pdf>

General Bond Resolution Flow of Funds



Fund Balances

Revenue Fund – MWRA shall deposit all income, revenue, receipts, and other moneys derived by the Authority from its operation of the Systems and engaging in other activities authorized by the enabling act into the Revenue Fund. The Revenue Fund is the top in the flow of funds under the General Revenue Bond Resolution. Moneys in the Revenue Fund are transferred on a monthly basis for operating, debt service and other costs of the Authority as required by the General Bond Resolution. As of June 30, 2023, the Revenue Fund had \$57.5 million available.

Operating Fund – All of the Operating Expenses of the Authority as defined in the General Revenue Bond Resolution are paid out of the Operating Fund. The Authority is required to maintain the Operating Fund at a balance equal to the next three months of Operating Expenses. On a monthly basis moneys are moved from the Revenue Fund to the Operating Fund to maintain the required balance. As of June 30, 2023, the Operating Fund had a balance of \$79.0 million.

Debt Service Fund – The principal and interest costs associated with MWRA’s outstanding senior lien debt is paid out of the Debt Service Fund. On a monthly basis funds are transferred from the Revenue Fund to the Debt Service Fund equal to 1/6th of the next interest payment or 1/12th of the next principal payment for each series of bonds. The schedule for principal and interest transfers is such that the

payments are funded a month and one day ahead of the next payment date as required by the General Revenue Bond Resolution. The balance in the Debt Service Fund as of June 30, 2023 was \$233.0 million.

Subordinated Debt Service Fund – The principal and interest associated with MWRA’s outstanding subordinate lien debt. On a monthly basis funds are transferred from the Revenue Fund to the Subordinated Debt Service Fund equal to 1/6th of the next interest payment or 1/12th of the next principal payment for each series of bonds. The schedule for principal and interest transfers is such that the payments are funded a month and one day ahead of the next payment date as required by the General Revenue Bond Resolution. The balance in the Subordinated Debt Service Fund as of June 30, 2023 was \$52.0 million.

Water Pollution Abatement Fund – This fund is used for payments on the debt service due to the Massachusetts Clean Water Trust (formerly the Massachusetts Water Pollution Abatement Trust). The Water Pollution Abatement Fund is funded from the Revenue Fund. The Balance in the Water Pollution Abatement Fund was \$71.0 million on June 30, 2023.

Commonwealth Obligation Fund – This Fund is utilized to pay Commonwealth Obligations as defined under the General Revenue Bond Resolution. Primarily Commonwealth Obligations are amounts payable to the Commonwealth of Massachusetts including Watershed Trust expenses, Payments in Lieu of taxes and other state government charges. The Commonwealth Obligation Fund. The Commonwealth Obligation Fund balance is based of payments due to the Commonwealth and is funded on a regular basis from the Revenue Fund. The balance in the Commonwealth Obligation Fund on June 30, 2023 was \$0.0 million.

Construction Fund – The Construction Fund is primarily funded through the proceeds of debt issuances, and some current revenue. Moneys in the Construction Fund are utilized to pay the cost of the Authority’s capital projects and related costs as defined in the General Revenue Bond Resolution. The Construction Fund had a balance of \$150.0 million on June 30, 2023.

The following table shows a three-year history of fund balances as well as a projection for June 30, 2024. The FY24 year-end projection is based upon General Bond Resolution requirements, projected debt issuances, and projected interest rates. Year-end projected balances for FY24 are subject to change and may vary from the projection.

Fund Balances - \$s in Millions				
Funds	6/30/2021	6/30/2022	6/30/2023	Projected 6/30/2024
Revenue Fund	\$50.0	\$50.0	\$57.5	\$78.4
Operating Fund	\$83.0	\$83.0	\$79.0	\$75.3
Debt Service Fund	\$183.0	\$183.0	\$233.0	\$231.8
Subordinate Debt Service Fund	\$65.0	\$65.0	\$52.0	\$47.7
Water Pollution Abatement Fund	\$73.0	\$73.0	\$71.0	\$58.8
Commonwealth Obligation Fund	\$0.0	\$0.0	\$0.0	\$0.0
Construction Fund	\$228.0	\$228.0	\$150.0	\$52.1
Total	\$682.0	\$682.0	\$642.5	\$544.1

Reserves

Under the terms of its General Bond Resolution, MWRA maintains various reserve funds. Two of MWRA's reserves, Rate Stabilization and Bond Redemption, are used to smooth rate increases. Moneys in the funds are funded from year-end CEB budget surpluses. The amounts in the funds as of June 30, 2023, and the permitted and planned uses are discussed below:

Rate Stabilization - Under the terms of the General Bond Resolution, the annual use of Rate Stabilization monies cannot exceed 10% of the year's senior debt service. Rate stabilization is funded by CEB surpluses and is one of two funds available to smooth rate increases. This reserve balance was \$39.3 million as of June 30, 2023. The FY15 through FY20 Final CEB did not include the use of Rate Stabilization Funds. The FY24 CEB includes the use of \$0.3 million in the HEEC reserve and a projected yearend balance of \$39.0 million. Planning estimates based on the FY24 Budget assumes use of \$3.6 million in Rate Stabilization associated with the HEEC cable between FY24 and FY28.

Bond Redemption - Monies in the Bond Redemption Fund can be used only to retire or prepay outstanding debt. Like Rate Stabilization, Bond Redemption is funded by CEB surpluses and is also available to smooth rate increases by reducing debt service. There is no annual limit on the amount of Bond Redemption funds used in a year. However, there are constraints based on bond maturity dates. The FY16, through FY23 CEB assumed no use of Bond Redemption. The balance as of June 30, 2023 was \$26.1 million and is projected to remain unchanged in FY24.

In addition to the Rate Stabilization and Bond Redemption funds, MWRA maintains four funded reserves required by the terms of the General Bond Resolution: Debt Service, Operating, Insurance, and Renewal and Replacement. The amount in each reserve, the basis for determining the funding requirement and when a reserve can be used to reduce rate revenue requirements are discussed below:

Debt Service Reserve - This is MWRA's largest reserve, and is funded from bond proceeds. The funding of this reserve is based on the lesser of four tests, and is currently funded at 50% of the maximum annual

debt service. The fund can be used to pay debt service when the amount in the reserve is greater than the remaining debt service. The balance of this reserve fund as of June 30, 2023, was \$169.6 million and projected to remain unchanged in FY24.

Operating Reserve - The required balance is one-sixth of operating expenses for a year, as defined in the Bond Resolution. The balance of this reserve fund as of June 30, 2023, was \$49.7 million and based on FY24 CEB the required balance by the end of FY24 will be \$57.6 million.

Insurance Reserve - 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 adequacy of the funding level every three years. This reserve fund balance as of June 30, 2023, was \$14.0 million and is projected to remain unchanged in FY24. The \$14 million level has been determined to be acceptable and reasonable based on the last review completed in FY23.

Renewal and Replacement Reserve – The required balance is set at \$35 million with the difference between the \$10 million in cash and the required balance based on the triennial recommendation of a consulting engineer being available in short-term borrowing capacity. MWRA’s consulting engineer completed its triennial review of this reserve balance in 2020.

The following table shows a three-year history of reserve balances as well as projections for June 30, 2023. The FY24 year-end projections are based upon General Bond Resolution requirements and projected debt issuances. Year-end projected balances for FY24 are subject to change and may vary from the projection.

Reserve Balances - \$s in Millions				
Reserves	6/30/2021	6/30/2022	6/30/2023	6/30/2024 Projection
Rate Stabilization	\$41.5	\$40.3	\$39.3	\$39.0
Bond Redemption	\$26.1	\$26.1	\$26.1	\$26.1
Debt Service Reserve - 50% of max Debt Service	\$156.6	\$156.6	\$169.6	\$169.6
Operating Reserve - 1/6 of annual operating expenses	\$45.9	\$47.3	\$49.7	\$57.6
Insurance Reserve - Est. by independent consultant, as of 2023	\$14.0	\$14.0	\$14.0	\$14.0
Renewal & Replacement Reserve - \$10 million required balance	\$10.0	\$10.0	\$10.0	\$10.0
Total	\$294.1	\$294.3	\$308.7	\$316.3

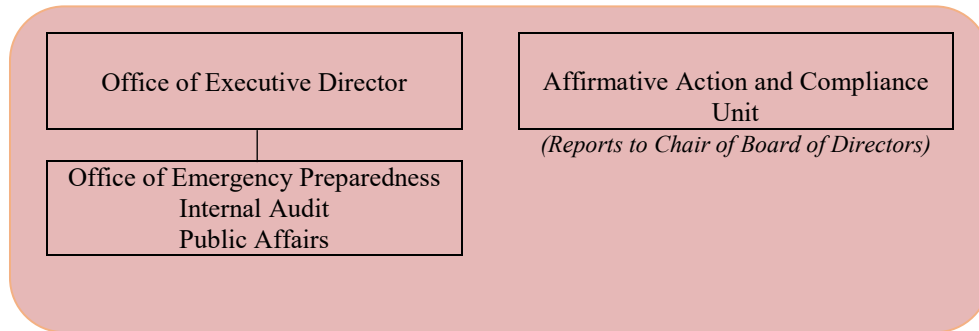
STATEMENT OF FINANCIAL POSITION

In accordance with its enabling act, each year MWRA submits annual reports to the Governor, the President of the State Senate, the House of Representatives, the Advisory Board, and the Chairs of the State Senate and House Committees on Ways and Means containing financial statements relating to its operations maintained in accordance with Generally Accepted Accounting Principles in the United States of America (GAAP) and, commencing with the annual reports for 1986, audited by independent certified public accountants. MWRA's audited financial statements at June 30, 2022 are available online at www.mwra.com.



Executive Office
Budget

EXECUTIVE DIVISION



The **Executive Division** 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 Division also oversees a centralized MWRA-wide security program to preserve and protect MWRA facilities, systems and employees.

The Executive Division includes the Office of Executive Director, Office of Emergency Preparedness, Internal Audit, Public Affairs, and the Affirmative Action and Compliance Unit (AACU). Each of these Departments is accounted for separately in the MWRA budget. In addition, the Director of the Tunnel Redundancy Program reports to the Executive Director. However, the Tunnel Redundancy Program is budgeted under the Operations Division budget.

The **Office of the Executive Director** includes the Board of Directors' cost center as well as 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 "fiscal watchdog" for MWRA's customer communities. The Advisory Board makes recommendations to MWRA on annual expense budgets and capital improvement programs. In addition, the Advisory Board reviews and comments on MWRA reports, holds hearings on related matters, and makes recommendations to the Governor and the Legislature. The other advisory committees supported by this budget are the Water Supply Citizens' Advisory Committee (WSCAC) and the Wastewater Advisory Committee (WAC). (A description of the Advisory Board,

FY24 Final Current Expense Budget OFFICE OF THE EXECUTIVE DIRECTOR

DEPARTMENT	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
EXECUTIVE OFFICE	\$ 607,849	\$ 554,816	\$ 602,571	\$ 600,171	\$ (2,400)	-0.4%
BOARD OF DIRECTORS	805	127	99,663	98,762	(901)	-0.9%
ADVISORY BOARD / OTHER COMMITTEES	762,184	758,545	798,592	711,248	(87,344)	-10.9%
TOTAL	\$ 1,370,838	\$ 1,313,488	\$ 1,500,826	\$ 1,410,181	\$ (90,645)	-6.0%

WSCAC and WAC is set forth in Appendix E). The Executive Office budget accounts for less than 1% of the MWRA FY23 Direct Expense Budget.

FY24 Goals and Initiatives:

Ensuring a safe and reliable source of drinking water to MWRA customers, and wastewater discharges that meet all applicable regulations drives both capital and current expense budget costs. Five strategic priorities integral to MWRA’s mission were identified for action in MWRA’s FY2021-FY2025 Five-Year Strategic Business Plan.

- I. Drinking Water Quality and System Performance**
- II. Wastewater Management & System Performance**
- III. Infrastructure Management & Resilience**
- IV. Finance & Management**
- V. Environmental Sustainability**

Under each of these priorities, MWRA identified goals and initiatives to guide the Authority’s action. The Executive Department uses the Business Plan to provide the framework for MWRA staff to manage and measure performance. The Office of the Executive Director has also identified core initiatives that support MWRA’s mission and strategic priorities.

- Ensure delivery of reliable and cost-effective water and sewer services to customer communities.
- Ensure that water supply and wastewater collection and treatment preserve public health and protect natural resources.
- Provide overall management of the agency and ensure adherence to all applicable policies and regulations.
- Continue to aggressively pursue renewable and sustainable energy resources to reduce the environmental impacts of daily operations, increase energy efficiencies, and reduce overall operating costs.
- Manage communication and garner support from key constituents for MWRA programs.

FY24 Final Current Expense Budget							
OFFICE OF THE EXECUTIVE DIRECTOR							
LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23		
WAGES & SALARIES	\$ 592,551	\$ 552,839	\$ 693,598	\$ 690,297	\$ (3,301)	-0.5%	
OVERTIME	-	-	-	-	-	-	
TRAINING & MEETINGS	-	-	850	850	-	0.0%	
PROFESSIONAL SERVICES	162,437	163,583	197,122	209,295	12,173	6.2%	
OTHER MATERIALS	14,712	1,374	3,450	3,450	-	0.0%	
OTHER SERVICES	601,138	595,693	605,806	506,289	(99,517)	-16.4%	
TOTAL	\$ 1,370,838	\$ 1,313,489	\$ 1,500,826	\$ 1,410,181	\$ (90,645)	-6.0%	

Budget Highlights:

The FY24 Budget is \$1.4 million, a decrease of \$91,000 or 6.0%, as compared to the FY23 Budget.

- \$690,000 for **Wages and Salaries**, a decrease of \$3,000 or 0.5%, as compared to the FY23 Budget. The FY23 Budget includes funding for four FTEs, one fewer than the FY24 Budget.

OFFICE OF THE EXECUTIVE DIRECTOR	FY23 FTEs	FY24 FTEs
EXECUTIVE OFFICE	5.0	4.0
TOTAL	5.0	4.0

- \$209,000 for **Professional Services**, 6.2% above the FY23 Budget. This budget funds the Water Supply Citizens’ Advisory Committee (WSCAC) and the Wastewater Advisory Committee (WAC). This budget includes a 7.5% increase in health insurances and a 6.1% increase in hourly salary expense.
- \$506,000 for **Other Services**, a decrease of \$100,000 or 16.4%, as compared to the FY23 Budget. The primary component of this line item is the MWRA Advisory Board operating expenses, which are under the FY23 Budget mainly in rentals/leases.



Fells Reservoir

OFFICE OF EMERGENCY PREPAREDNESS

The **Office of Emergency Preparedness (OEP)** was created in November 2005 to consolidate Authority-wide security and emergency response functions. It is responsible for oversight of the MWRA’s security and emergency response plans, policies, and procedures; implementation and training for the Emergency Response Plan; and management, training, and outfitting of the Emergency Service Unit (ESU), which will respond to any intentional or accidental contamination of the water supply. In April 2019, the MWRA bifurcated OEP, creating a separate Security Department. ESU was transferred to the Department of Planning and Sustainability. The Security Department continues to work in close coordination with the Division of Planning and Sustainability to accomplish the overall goals of security and preparedness on behalf of the MWRA and the community it serves.

FY24 Final Current Expense Budget OFFICE OF EMERGENCY PREPAREDNESS

LINE ITEM	FY21	FY22	FY23	FY24	Change	
	Actuals	Actuals	Final Budget	Final Budget	FY24 vs. FY23	
WAGES & SALARIES	\$ 341,226	\$ 491,008	\$ 488,686	\$ 613,923	\$ 125,237	25.6%
OVERTIME	5,895	5,360	-	-	-	-
MAINTENANCE	554,117	499,855	784,598	817,639	33,041	4.2%
TRAINING & MEETINGS	595	395	7,100	7,500	400	5.6%
PROFESSIONAL SERVICES	2,137,119	2,306,740	2,366,804	2,654,139	287,335	12.1%
OTHER MATERIALS	8,812	3,051	2,500	3,250	750	30.0%
OTHER SERVICES	201,481	102,744	381,032	393,124	12,092	3.2%
TOTAL	\$ 3,249,245	\$ 3,409,153	\$ 4,030,720	\$ 4,489,575	\$ 458,855	11.4%

FY24 Goals and Initiatives:

I. Drinking Water Quality and System Performance

- ***Goal#1 – Maintain drinking water quality to protect public health, and continue to ensure that MWRA water meets all applicable regulations***
 - Develop implement, and review existing policies and programs to provide security, and critical infrastructure protection the MWRA’s water systems.
 - Continue ensuring that new construction and rehabilitation of facilities include an integrated security and surveillance system improvement component. Continue task order security enhancement designs for selected water and wastewater critical sites, fencing and gate installation, guardrails, pipe gates, bollards, barbed wire and other facility hardening initiatives.
 - Establish a backup security monitoring center and communications head end at Norumbega.
 - Conduct facility security audits and implement the resulting enhancement and remedial work recommendations.
 - Improve the cyber security of the MWRA’s Physical Security Network.

II. Wastewater Management & System Performance

- Develop, implement, and review existing policies and programs to provide security, and critical infrastructure protection, for the MWRA’s wastewater systems. While this initiative is not specifically addressed under the goals of the Wastewater Management & System Performance Strategic Priority, security of the system is a key objective of the Office of Emergency Preparedness. All initiatives set forth in Section I above for MWRA’s water systems apply to MWRA’s wastewater systems as well, unless they address a specific water system location.

III. Infrastructure Management & Resilience

- **Goal #10 – Prepare for catastrophic events or threats that could affect the water and wastewater delivery systems**
 - Manage and direct security guard, security monitoring, and security maintenance contracts.
 - Develop and maintain strong liaison relationships with law enforcement and other external stakeholders to ensure that threat intelligence is received, reviewed, reported and if appropriate, acted upon.

FY23 Year-End Accomplishments:

- Updating Emergency Response Plans, which is the second phase of America’s Water Infrastructure Act (AWIA).
- Completed 60 training events or drills.

FY23		
Type	Number	Comment
Tower/Turbine climbing	1	T1 turbine at DI breaking and removal
Spill Field Drills and Training	5	Wachusett hazardous waste operations and emergency response, Quabbin terrestrial spill response, sewage/manganese flow into Wachusett event
Ops Equipment deployment	3	Exercise mobile pumping equipment at Linden St. Pumping Station, Spot Pond Overflow
Large tabletop/field drill	2	Loss of disinfection drill for CA communities, multi-agency boom deployment at DI
DI ERT drills	10	Various
Community ERP trainings	2	ERP training – half day sessions via Webex and in-person
Community Drinking Water Sampling training	11	Coliform training, drinking water sampling with BWSC
Community Distribution Water Quality Training	5	Reviewed chloramination, addressing low Cl residuals, and monitoring plans
Laboratory Right-To-Know and Health and Safety Training	5	
ESU Training	1	ESU/SCA training at Arlington Covered Storage
Misc.	1	Potential boil water order in Somerville
CMS Alarms	12	
Cybersecurity/SCADA	2	SCADA Cybersecurity Desktop drill, SCADA failure in western water ops
Total	60	

- Completed four new security and cybersecurity policies which were approved by the Executive Director and promulgated to the staff via Pipeline. Continued efforts to review and revise existing policies and established a procedure for ensuring that security and cybersecurity policies are reviewed on an at least annual basis.
- Continued work on formalizing Security policies and metrics as an outcome of AWIA.
- Issued five (5) Cybersecurity and/or Physical Security Situational Awareness/Training alerts to MWRA employees via Email, Toolbox Talks or Pipeline during FY23.

- Provided Physical Security and Cybersecurity awareness training to all new employees during the onboarding process.

Budget Highlights:

The FY24 Final Budget is \$4.5 million, an increase of \$459,000 or 11.4% as compared to the FY23 Budget.

- \$614,000 for **Wages and Salaries**, an increase of \$125,000 or 25.6% as compared to the FY23 Budget, due primarily for wage increases associated with collective bargaining agreements as well as the addition of one new position. The FY24 Budget includes funding for five FTEs, one over the FY23 Budget.

OFFICE OF EMERGENCY PREPAREDNESS	FY23 FTEs	FY24 FTEs
EMERGENCY PREPAREDNESS	4.0	5.0
TOTAL	4.0	5.0

- \$818,000 for **Ongoing Maintenance**, an increase of \$33,000 or 4.2% over the FY23 Budget. This budget includes funding of \$150,000 to cover the MWRA-wide security systems preventative maintenance materials and equipment, including cameras, intrusion detection and card readers; \$620,000 for MWRA-wide security systems preventative maintenance services, and \$48,000 for the intrusion alarm annual and semi-annual monitoring services contracts.
- \$2.7 million for **Professional Services**, a \$2,000 or 18.4% over prior year’s Budget. The budget includes \$2.7 million for the Security Guard Services contract for all MWRA facilities: Chelsea, Deer Island Wastewater Treatment Plant (DITP), and Carroll Water Treatment Plant (CWTP). This security contract accounts for the budget increase.
- \$393,000 for **Other Services**, \$12,000 over the FY23 Budget as this includes funds to cover Verizon billing for security costs associated with telecommunication lines for Alarm and CCTV systems at the various MWRA facilities.



Nut Island Headworks

AFFIRMATIVE ACTION AND COMPLIANCE UNIT

Under section 7(g) of MWRA’s enabling act, the **Affirmative Action and Compliance Unit (AACU)** is established to “report directly to the chairman of the Authority and provide for the enforcement of affirmative action plans for employment, procurement and contracting activities of the Authority.” The AACU develops, administers, and monitors compliance of Affirmative Action Plan programs and policies by ensuring equal opportunity and non-discrimination in employment and equitable access of Minority Business Enterprises (MBE), Women Business Enterprises (WBE), and Disadvantaged Business Enterprises (DBE) in Authority procurement activities.

FY24 Final Current Expense Budget AFFIRMATIVE ACTION & COMPLIANCE UNIT

LINE ITEM	FY21	FY22	FY23	FY24	Change	
	Actuals	Actuals	Final Budget	Final Budget	FY24 vs. FY23	
WAGES & SALARIES	\$ 652,780	\$ 580,189	\$ 689,304	\$ 713,787	\$ 24,483	3.6%
OVERTIME	-	-	-	-	-	-
TRAINING & MEETINGS	2,490	2,949	6,790	6,790	-	0.0%
PROFESSIONAL SERVICES	-	-	-	800,000	800,000	-
OTHER MATERIALS	814	628	1,625	4,425	2,800	172.3%
OTHER SERVICES	1,707	1,693	2,340	2,340	-	0.0%
TOTAL	\$ 657,791	\$ 585,459	\$ 700,059	\$ 1,527,342	\$ 827,283	118.2%

FY24 Goals and Initiatives:

In performing its core goals, the AACU undertakes the following initiatives on an on-going basis:

- Utilize a network of external partners to assist divisions and departments with affirmative action compliance and promote MWRA's non-discrimination policy for all individuals in or recruited into its workforce.
- Communicate to managers and supervisors MWRA's commitment to its equal opportunity policies and affirmative action programs.
- Provide assistance to the Human Resources Department in the coordination and oversight of all external/internal recruitment and selection activities, including interviews, hiring, transfers, and promotions of candidates, including members of protected classes.
- Provide for the equitable participation of minority/women and disadvantaged-owned businesses in procurement opportunities, ensure that minorities and women are represented in the labor force on construction contracts, and coordinate with other public entities regarding state and federal requirements.
- Support divisions and departments in understanding and implementing MBE/WBE/DBE policies, practices, as well as monitoring and reporting contractor compliance and expenditures.

- Maintain a DEI workgroup with the mission to improve diversity, inclusion, equity, and respect in the workplace, and to implement workgroup recommendations.

FY23 Year-End Accomplishments:

- Provided management assistance to the Human Resources Department in the overall recruitment and selection process for qualified candidates for eighty-three 83 new hires and one hundred and eleven 111 promotions.
- Conducted oversight of 98 construction and professional projects, including monitoring the minority and women workforce as well as MBE/WBE/DBE compliance.

Budget Highlights:

The FY24 Budget is \$1.5 million, an increase of \$827,000 or 118.2% over the FY23 Budget.

- \$800,000 increase to **Professional Services** for AACU’s Disparity Study, which is expected to begin in FY24 and conclude in FY25.

AFFIRMATIVE ACTION & COMPLIANCE UNIT	FY23 FTEs	FY24 FTEs
AACU	7.0	7.0
TOTAL	7.0	7.0

- \$714,000 for **Wages and Salaries**, an increase of \$25,000 or 3.6% over the FY23 Budget. The FY24 Budget includes funding for seven FTEs, matching the FY23 Budget.



Baffle Dams Quabbin Reservoir

INTERNAL AUDIT

The **Internal Audit Department** is prescribed under section 7(h) of the MWRA’s enabling act to “monitor the quality, efficiency and integrity of the Authority’s operating and capital programs and make periodic recommendations and reports to the Executive Director and the Board of Directors.” **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 construction labor burden reviews, construction change orders and claim audits, and vendor and other contract audits.

FY24 Final Current Expense Budget INTERNAL AUDIT

LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
WAGES & SALARIES	\$ 634,550	\$ 577,746	\$ 781,452	\$ 823,104	\$ 41,652	5.3%
MAINTENANCE	-	7	-	-	-	-
TRAINING & MEETINGS	65	144	7,800	7,800	-	0.0%
OTHER MATERIALS	750	518	2,025	2,027	2	0.1%
OTHER SERVICES	2,419	2,073	3,711	5,671	1,960	52.8%
TOTAL	\$ 637,784	\$ 580,488	\$ 794,988	\$ 838,602	\$ 43,614	5.5%

FY24 Goals and Initiatives:

In addition to its statutory core functions, the Department has set the following goals for FY24:

- 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 provide accurate and useful management information.
- Assure that contractors, consultants and vendors doing business with MWRA have adequate accounting and billing systems to provide current, complete and accurate cost and price information and project invoicing.

FY23 Year-End Accomplishments:

- Identified \$2,361,841 in savings through the fourth quarter related to: internal audits, management advisory services, consultant audits, preliminary consultant reviews, construction labor burden reviews, vendor reviews, facility lease agreements; the HEEC agreement for the new cable, the true-up of the capacity charge and O&M costs for 2022 for the new cable, and on-going savings from the lease of the engine house by the Fore River Railroad Corporation.

- Issued final audit reports on Confined Space Entry training, Water/Wastewater Licenses and Certifications, Navy Yard lease. Issued four incurred cost audits, three preliminary consultant reviews, twelve preliminary labor burden reviews on construction contracts, and forty-eight cost rate letters to professional service consultants.
- Provided management advisory analysis services dealing with MWRA overhead rates, unemployment compensation, HEEC tariff filings, and various contract, amendment and change order negotiations. Completed a physical inventory of MWRA’s fleet.
- Provided support to the Law Division in the matter of HEEC filings of the tariff with the Department of Public Utilities on the proposed new cross-harbor electrical cable and for the existing cable.
- Five audit recommendations have been closed during the period.

Budget Highlights:

The FY24 Budget is \$839,000, an increase of \$44,000 or 5.5% as compared to the FY23 Budget.

- \$823,000 for **Wages and Salaries**, an increase of \$42,000 or 5.3% as compared to the FY23 Budget, primarily for wage increases associated with collective bargaining agreements. The FY24 Budget includes funding for 7.0 FTE up from the 6.7 FTEs in FY23.

INTERNAL AUDIT DEPARTMENT	FY23 FTEs	FY24 FTEs
INTERNAL AUDIT	6.7	7.0
TOTAL	6.7	7.0



Alewife Brook Wastewater Pump Station

PUBLIC AFFAIRS

The **Public Affairs Department** is the institutional link to the public and government. The Department’s responsibilities are spread over five separate sections.

The **Legislative Section** of the Department works for passage of legislation necessary to carry out MWRA’s mission, monitors legislation, responds to inquiries by elected and appointed officials, and pursues funding from the state legislature for MWRA projects. MWRA’s highest legislative priority continues to focus on the need for a robust “Commonwealth Rate Relief Package” to help offset anticipated rate increases over the next several years.

The **Community Relations Section** deals directly with cities and towns in the MWRA service area, responds to inquiries about MWRA, proactively incorporates community concerns into MWRA project work, coordinates outreach and education initiatives to highlight MWRA programs, and provides technical expertise for specific projects and initiatives. Community Relations staff also work in conjunction with Planning Department staff to ensure compliance with state and local regulations and restrictions.

The **Communications Section** manages media relations, issues press releases and responds to information requests, oversees the design and distribution of MWRA publications, manages the internal and external web sites and social media platforms, and provides design, editorial, and graphics services for other sections of MWRA.

The **Education Section** is responsible for curriculum development, teacher training workshops, as well as providing school education materials on water quality, water conservation, wastewater topics, and environmental issues.

The Communications and Education Sections are led by the Special Assistant to the Executive Director, located in the Executive Office.

FY24 Final Current Expense Budget							
PUBLIC AFFAIRS							
LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23		
WAGES & SALARIES	\$ 963,191	\$ 957,993	\$ 1,167,639	\$ 1,427,314	\$ 259,675	22.2%	
OVERTIME	365	1,492	500	500	-	0.0%	
FRINGE BENEFITS	-	-	-	-	-	-	
MAINTENANCE	64	496	-	-	-	-	
TRAINING & MEETINGS	-	445	9,061	9,061	-	0.0%	
PROFESSIONAL SERVICES	-	-	1,300	1,300	-	0.0%	
OTHER MATERIALS	17,700	19,057	25,941	25,941	-	0.0%	
OTHER SERVICES	19,402	14,253	50,370	50,370	-	0.0%	
TOTAL	\$ 1,000,722	\$ 993,736	\$ 1,254,811	\$ 1,514,486	\$ 259,675	20.7%	

FY24 Goals and Initiatives:

The core function of the Public Affairs Department is to support the MWRA's achievement of all five key strategic priorities set forth in the FY21-FY25 Five-Year Strategic Business Plan. To that end, the Department has set the following initiatives:

- Work with the Massachusetts Legislature to advocate on behalf of member communities regarding issues that are crucial to the Authority's core mission. The Executive Director and Director of Intergovernmental Affairs routinely meet with House and Senate leaders to discuss issues that are crucial to the Authority and its customers. All newly filed legislation and regulations that could impact the Authority from an operational and administrative perspective are analyzed and monitored, and appropriate responses are formulated in concert with the Office of the Executive Director (OED).
- Enhance overall public understanding of MWRA's mission, goals, and benefits to the public through extensive outreach and effective communication.
 - Develop and implement proactive strategies for educating and informing key MWRA constituencies and the public at large about MWRA's mission, projects and progress, and promote understanding for associated costs.
 - Gain public support for MWRA programs and projects while responding to the needs and concerns of elected, appointed public officials, and the public.
 - Continue to grow the user population of MWRA's Everbridge communication platform in order to reach as many residents as possible, keeping them up to date on meetings, reports, infrastructure projects, and CSO Notifications
 - Continue to expand the presence of MWRA's portable water fountain at public events in service communities.
- Maintain and update MWRA's Community Contact Database. This Community Contacts tracking application is used to notify MWRA's communities of any operational issues or emergencies affecting them or surrounding communities.
- Continue to provide accurate and timely information to the public through the MWRA's website and social media accounts, e.g., Twitter, Flickr and Instagram.
- A major initiative for FY24 will be the completed refresh of MWRA's website.
- Continue to respond to media requests in a timely and accurate fashion.
- Continue to develop presentations and graphics for use in a wide range of MWRA programs.
- Communications staff now has responsibility for the MWRA's drone program and will continue to take baseline photos of MWRA facilities and infrastructure, in addition to other requests for drone footage, in compliance with FAA regulations.
- Continue to design and produce Annual Water Quality Report for every household within the MWRA service area.

- Continue to provide educational support through classroom visits, teacher training, educational material development, and facility tours. With classroom visits uncertain for the coming school year, School Program staff will continue to provide remote presentations and additional materials on the website.
- Provide technical support to 14 cities and towns that host MWRA's emergency back-up aqueducts as part of the Public Access Aqueduct Program.
- Continue to work with cities and towns to implement the Public Access Initiative on the Wachusett, Weston, Sudbury, and Cochituate Aqueducts.
- Provide support to MWRA staff to ensure that MWRA projects meet regulatory requirements, and provide input to regulatory agencies in order to ensure MWRA interests are recognized during the development of regulations.

FY24 Year-End Accomplishments:

- Governor Healey's House 1 Budget did not include a statewide appropriation for the Sewer Rate Relief Fund. However, the House Ways and Means Committee budget included a \$1,500,000 appropriation. Governor Healey vetoed this appropriation because it was not consistent with the House 1 recommendation. The Legislature overrode this veto to restore the funding. Historically, MWRA has received approximately 75% of that total appropriation.
- Successfully grew the Everbridge communication platform to over 1450 public opt-in subscription in an effort to keep community members informed of construction project updates, service notices, and public meetings. Sent critical updates for construction projects, Monthly Water Quality Updates and Board Meeting notifications. Continued efforts will be made to increase public opt-in subscriptions and expand MWRA utilization of this platform, including the newly developed CSO Public Notification effort.
- MWRA has shifted to both virtual and in-person public meetings and meetings with local officials to keep our communities and their residents updated on upcoming and ongoing infrastructure investments in our local communities.
- Aqueduct Trails: To date, MWRA staff has issued Section 8 (m) Permits to most communities hosting the Wachusett, Wachusett Open Channel, Weston, Sudbury, and Cochituate Aqueducts as part of the Public Access Aqueducts Program. To date, MWRA has authorized approximately 27 miles of Aqueduct Trails, including a small portion in Sherborn that was opened this year. MWRA estimates that approximately 20 miles are currently open. MWRA has also received applications for new trail segments in the towns of Northborough.

Wachusett Aqueduct and Open Channel

Northborough: 4.7 miles permitted, of which 4.2 miles opened to the public
Southborough: 2.2 miles opened to the public along the Open Channel
Marlborough: .5 miles permitted along the Open Channel

Bay Circuit Trail Connector

Framingham: 0.1 miles open to the public
Southborough: 0.4 miles open to the public

Weston Aqueduct

Framingham: 4.3 miles permitted, of which 3.0 miles opened to the public
Weston^[1]: 1.5 miles opened to the public and 500' alternative trail opened on private Pine Brook Country Club property to link public trail
Wayland: 4.3 miles opened to the public

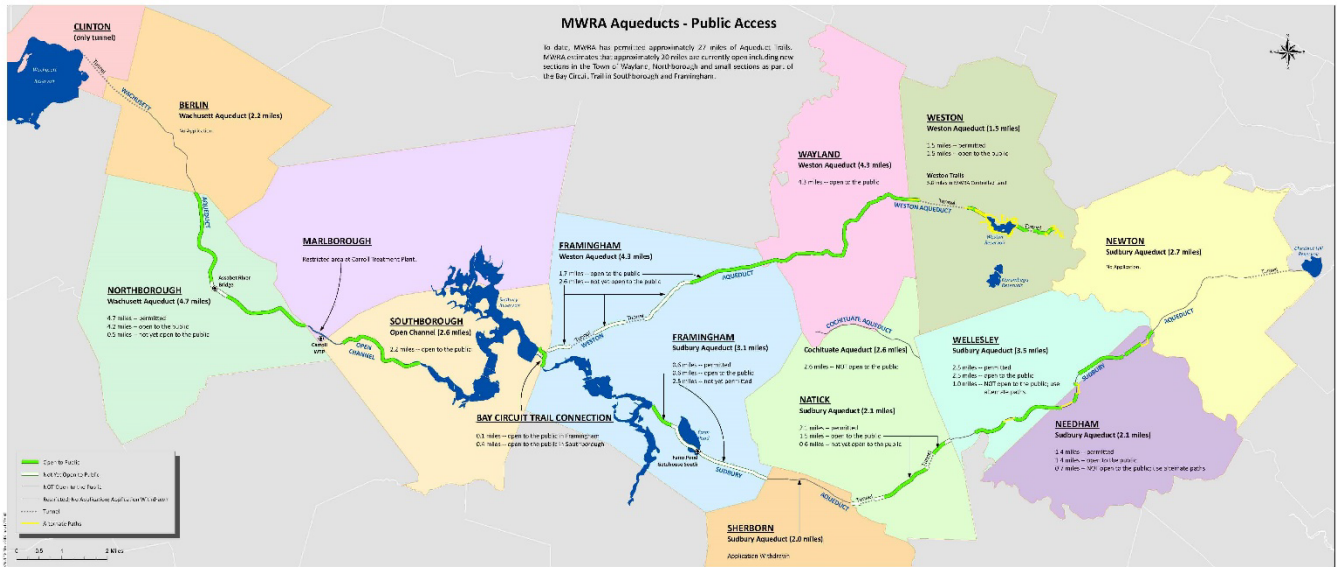
Sudbury Aqueduct

Framingham: .6 miles open to the public
Natick: 2.1 miles permitted, of which 1.5 miles opened to the public
Wellesley: 2.5 miles opened to the public
Needham: 1.4 opened to the public and an additional .5-mile trail opened on private Olin/Babson College property to link public trail
Newton: .3 miles open to the public
Sherborn: 2.0 miles permitted

Cochituate Aqueduct

Natick: 2.6 miles permitted (0 miles opened to the public)

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



- The Annual Water Quality Report was mailed out to all households in MWRA water service communities in June in accordance with the EPA mandate.
- Staff have continued to provide monthly updates on construction projects on MWRA’s website.
- The School Education staff continues to conduct daily classroom visits within the MWRA service area to educate elementary school children on the importance of water and sewer infrastructure on their daily lives. The theme for the FY2024 annual poster and essay contest is “Jobs at the MWRA”. This program provides an important opportunity for the students, teachers and parents to learn together about MWRA’s mission.

Budget Highlights:

The FY24 Budget is \$1.5 million, an increase of \$260,000 or 20.7%, as compared to the FY23 Budget.

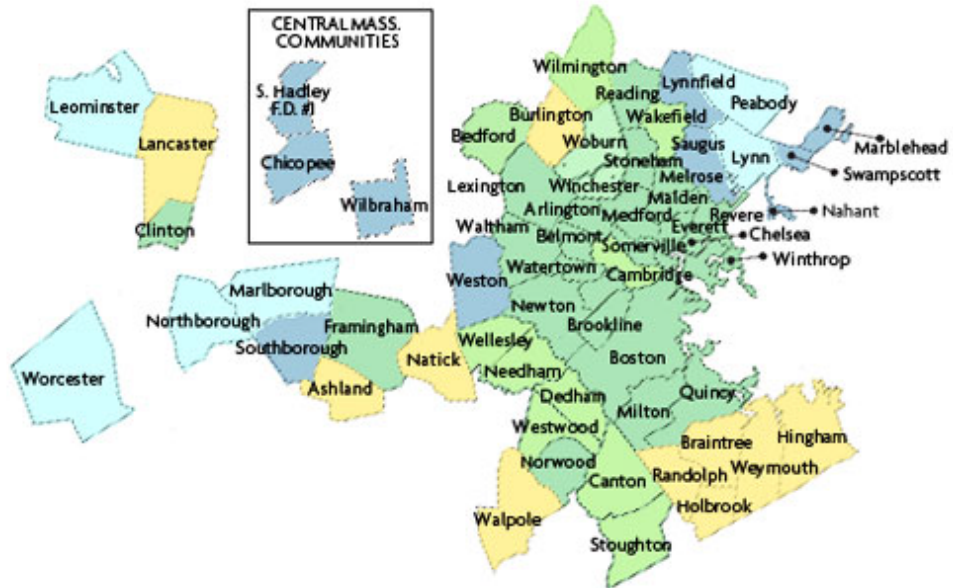
- \$1.4 million for **Wages and Salaries**, an increase of \$260,000 or 22.2%, as compared to the FY23 Budget primarily for wage increases associated with collective bargaining agreements and the reclassification of two positions. The FY24 Budget includes funding for 11.0 FTEs.

PUBLIC AFFAIRS DEPARTMENT	FY23 FTEs	FY24 FTEs
PUBLIC AFFAIRS	11.9	11.0
TOTAL	11.9	11.0



MWRA SERVICE AREA

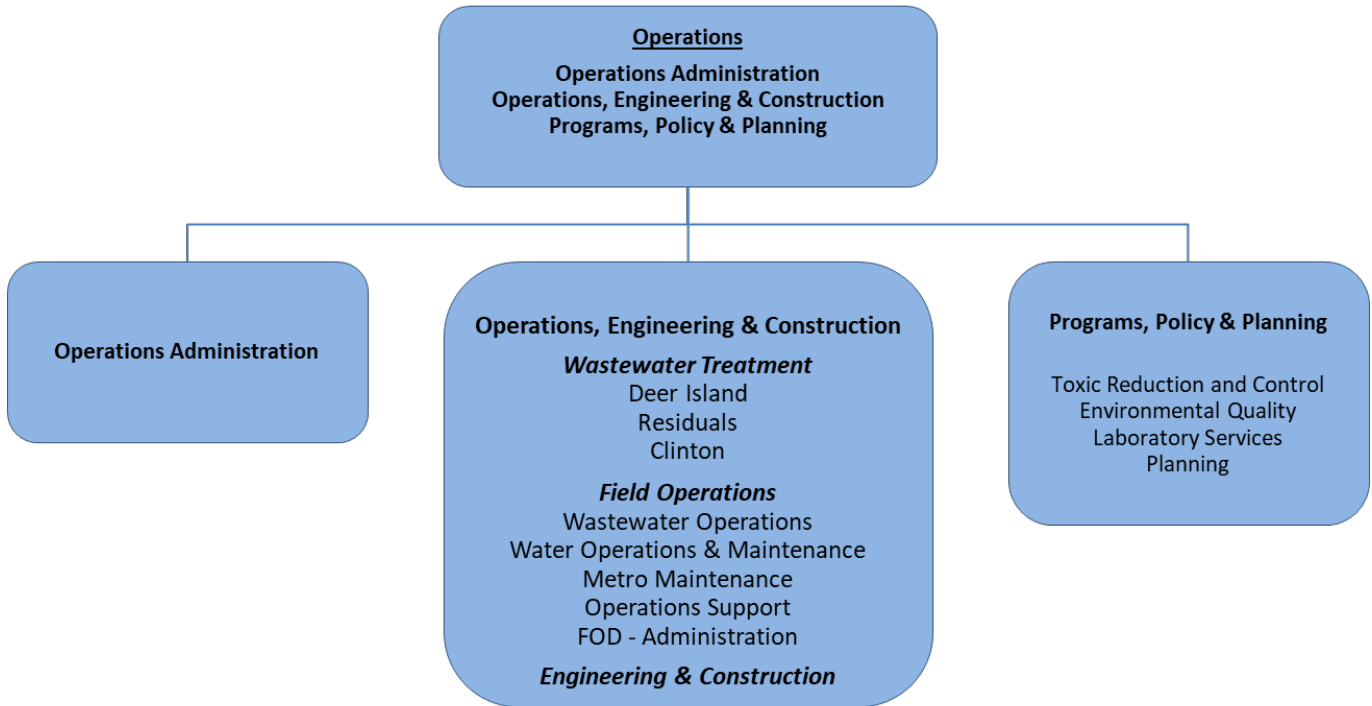
- Water only
- Full sewer, partial/emergency water only
- Sewer only
- Partial/emergency water only
- Water and sewer





Operations Division
Budget

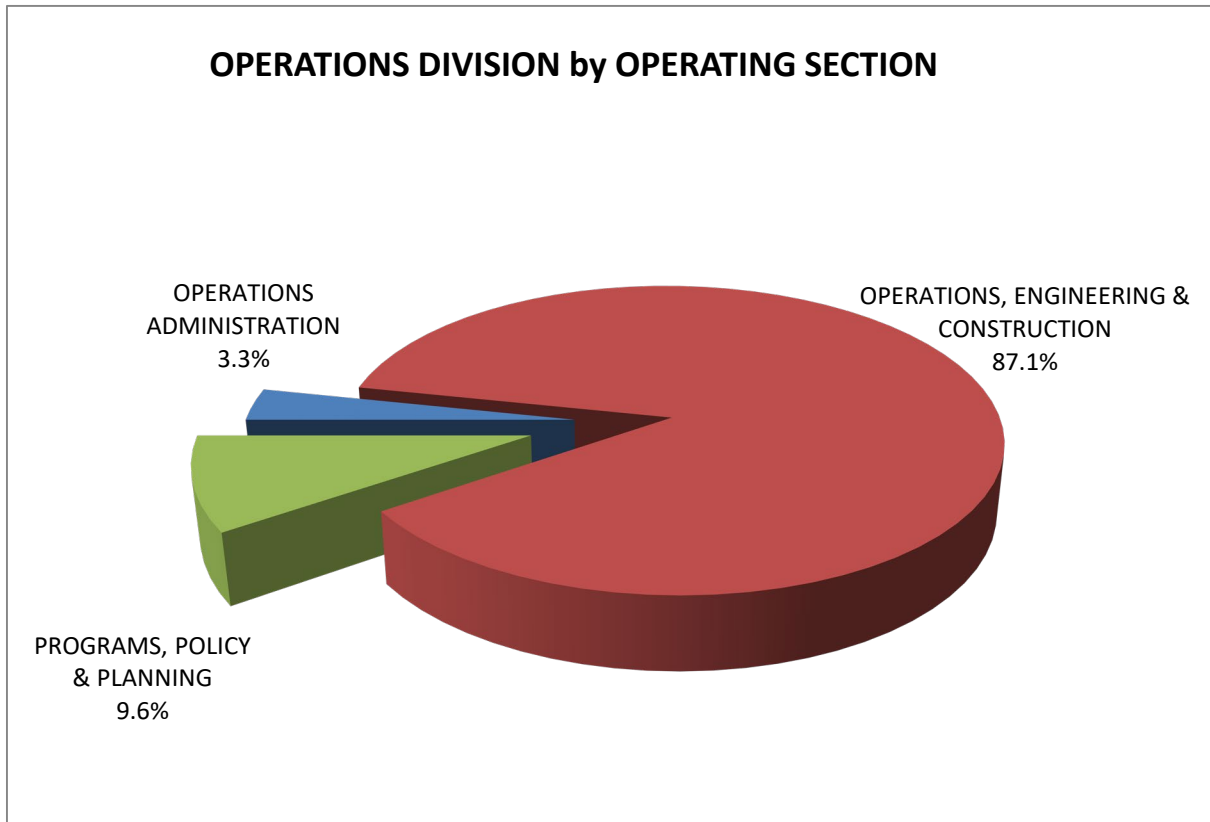
OPERATIONS DIVISION



The **Operations Division** provides MWRA’s wastewater and water system services including operations, maintenance, and treatment; environmental monitoring and laboratory testing and analyses; and engineering, construction, planning, and administration. MWRA’s Chief Operating Officer (COO) leads this division.

FY24 Final Current Expense Budget						
OPERATIONS DIVISION						
LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
WAGES & SALARIES	\$ 87,116,373	\$ 83,222,451	\$ 92,665,280	\$ 98,934,471	\$ 6,269,191	6.8%
OVERTIME	4,316,953	4,907,881	5,200,714	5,587,383	386,669	7.4%
FRINGE BENEFITS	98,682	111,060	118,015	128,158	10,143	8.6%
CHEMICALS	11,652,051	11,788,437	14,994,036	28,269,124	13,275,088	88.5%
UTILITIES	21,801,305	29,261,640	30,805,517	31,062,391	256,874	0.8%
MAINTENANCE	25,054,068	23,790,036	26,527,677	31,412,930	4,885,253	18.4%
TRAINING & MEETINGS	74,579	113,322	212,054	206,054	(6,000)	-2.8%
PROFESSIONAL SERVICES	2,661,148	2,039,908	2,829,716	3,024,657	194,941	6.9%
OTHER MATERIALS	4,571,634	3,421,101	5,255,764	5,077,282	(178,482)	-3.4%
OTHER SERVICES	19,230,140	20,880,019	23,311,953	34,995,864	11,683,911	50.1%
TOTAL	\$ 176,576,933	\$ 179,535,855	\$ 201,920,726	\$ 238,698,314	\$ 36,777,588	18.2%

The Operations Division is composed of the Operations Administration Department and four operating sections, led by the Deputy Chief Operating Officer (DCOO), Chief Engineer, Director of Wastewater and Director of Water. In addition to managing the operating sections, the managers provide support to the Chief Operating Officer on key MWRA operations, technical, policy, community coordination, permitting and public constituency matters.



The **Operations Administration Department** provides division-level oversight and general management support in the following areas: administration, personnel, finance, contract administration, comprehensive energy planning and management, regulatory affairs and environmental management, and general management. The Operations Administration Department budget represents 3.3% of the Operations Division budget and includes funds for MWRA vehicle purchases and division-wide professional memberships.

The Department’s budget also covers the Tunnel Redundancy Program that oversees and manages the upcoming multi-decade \$1.4 billion water system Tunnel Redundancy Program, expected to be active from FY18 through FY42. Given the complexity of the project, the group is independent of existing engineering and construction departments and reports directly to the Executive Director. However, the department’s CEBS is included within the Operations Division budget to allow for sufficient administrative support.

The **Programs, Policy & Planning Section** is composed of the Toxic Reduction and Control, Environmental Quality, Laboratory Services, and Planning departments. In total, the budgets for these departments represent 9.6% of the Operations Division’s budget. Brief descriptions of the departments in this section are as follows:

- The **Toxic Reduction and Control (TRAC) Department** operates a multi-faceted program to minimize and control the inflow of hazardous or toxic materials into the MWRA sewer system. TRAC operates MWRA's Environmental Protection Agency (EPA-approved) Industrial Pretreatment Program and oversees implementation of MWRA's 8-M Permits processes.
- The **Environmental Quality Department (EnQual)** has two units: EnQual-Water and EnQual-Wastewater. EnQual-Water manages compliance with the reporting requirements of the MassDEP Drinking Water Regulations, as well as conducts and oversees the drinking water quality-monitoring program. EnQual-Wastewater manages compliance with the reporting requirements of MWRA's National Pollutant Discharge Elimination System (NPDES) permits. This unit analyzes environmental data and prepares reports on the quality of sewage influent and effluent and the water quality of Boston Harbor and its tributary rivers and Massachusetts Bay.
- The **Laboratory Services Department** supports various client groups in the Operations Division, the Massachusetts Department of Conservation and Recreation (DCR), and the MWRA member communities; providing field sampling, laboratory testing, and reporting services. Most of the testing is required to meet the strict guidelines of regulatory programs and permits including the Safe Drinking Water Act (SDWA) and MWRA's NPDES permits.
- The **Planning Department** provides planning, advocacy, and decision support services on policy, public health, regulatory, and operations matters regarding MWRA's potable water and wastewater systems.

The **Operations, Engineering & Construction Section** is composed of the Wastewater Treatment, Field Operations, and Engineering & Construction departments. In total, the budgets for these departments represent 87.1% of the Operations Division's budget. Brief descriptions of the departments in this section are as follows:

- The **Wastewater Treatment Department** operates and maintains the Deer Island Treatment Plant (DITP), Clinton Wastewater Treatment Plant, and Residuals Processing Facility (pelletization plant) in Quincy.
- The **Field Operations Department (FOD)** manages the following functions: wastewater pretreatment, wastewater collection and transport, water distribution, and water treatment including the Carroll Water Treatment Plant (CWTP). This department is responsible for operating, maintaining, and metering both the water and wastewater systems.
- The **Engineering and Construction Department** supports the maintenance, repair, and rehabilitation of the wastewater and water systems by providing in-house engineering, drafting, surveying, consultant management, construction management, and other technical assistance. The department is also responsible for implementation and monitoring of the Combined Sewer Overflow (CSO) plan.

FY24 Final Current Expense Budget						
OPERATIONS DIVISION by OPERATING SECTION						
OPERATING SECTION	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
OPERATIONS ADMINISTRATION	\$ 6,128,458	\$ 5,492,532	\$ 6,954,890	\$ 7,868,375	\$ 913,485	13.1%
OPERATIONS, ENGINEERING & CONSTRUCTION	149,125,859	154,624,623	172,972,312	207,905,185	34,932,873	20.2%
PROGRAMS, POLICY & PLANNING	21,322,616	19,418,700	21,993,524	22,924,754	931,230	4.2%
TOTAL	\$ 176,576,933	\$ 179,535,855	\$ 201,920,726	\$ 238,698,314	\$ 36,777,588	18.2%

FY24 Goals and Initiatives:

The Operations Division core function is to plan, develop, implement, and operate efficient, reliable, and economical water treatment/delivery and wastewater transport/treatment systems in an environmentally sound manner. Accordingly, the Division takes the lead on the following MWRA goals included in the FY21-FY25 Five-Year Strategic Business Plan:

I. Drinking Water Quality and System Performance

- **Goal #1- Compliance with Regulatory Requirements and Public Health Standards:** Maintain drinking water quality to protect public health, and continue to ensure that MWRA water meets all applicable regulations. Special initiatives include:
 - Identify and evaluate the impact of different treatment strategies and scenarios on the mitigation of transportation related contaminants into the source water.
 - Evaluate new water quality monitoring equipment and testing techniques to monitor and maintain high quality water all the way to the ends of the community systems.
 - Participate with other nationwide water utilities in Water Research Foundation studies, specifically research opportunities pertaining to algae monitoring and mitigation strategies in source water.
 - Collaborate with CVA communities to modify chlorine-dosing strategy to minimize the formation of disinfection byproducts.
 - Increase water quality monitoring at the Quabbin Reservoir by the installation of a seasonal water quality-profiling buoy. Implement routine and automatic data transfers to ensure data is proactively reviewed and managed.
 - Evaluate data from UCMR4 2018-2020 monitoring and compare against nationwide occurrence data.
 - Advocate for responsible and reasonable new and revised state and federal drinking water regulations, and provide training and technical support to communities for new regulations.
- **Goal #2 – Water Quality Public Communications:** Continue to effectively report and communicate water quality information to our customers and public officials. Special initiatives include:
 - Regulatory communicate routine TCR monitoring data to Water Departments and assist with water quality sampling or training, as needed.
 - Continue to strengthen planning and emergency response documents for Boil Water Order (BWO) events. Work with departments to create, disseminate and train staff on materials that can be used during a BWO event or at a public information call center.

- **Goal #3 – Technical Assistance for Water Communities:** Assist member communities to improve local water distribution systems through ongoing financial, technical and operational support programs to maximize long-term water quality benefits. Special initiatives include:
 - Enhance outreach and technical assistance within the existing Lead Service Line Replacement program to support communities in response to EPA’s revisions to the Lead and Copper Rule.
 - Develop the capability to evaluate potential changes to corrosion control treatment using a pipe loop system constructed using “harvested” lead service lines.

II. Wastewater Quality and System Performance

- **Goal #4 – Compliance with Regulatory Requirements:** Meet or surpass environmental compliance standards at both MWRA treatment facilities and throughout the wastewater collection system. Initiatives include:
 - Continue to carry out the Pretreatment Program to protect receiving water quality, maximize the beneficial reuse of wastewater residuals, and protect workers and MWRA’s wastewater treatment plants and receiving waters.
 - Continue to monitor DITP processes to ensure high quality treated effluent, optimizing plant performance to ensure all applicable NPDES permit limits continue to be attained.
 - Operate the newly installed enhanced phosphorus control systems at the Clinton Wastewater Treatment Plant to ensure compliance with its new NPDES permit.
- **Goal #5 – Regulatory Changes:** Continue to initiate plans and studies to prepare for regulatory changes; identify opportunities to refine monitoring requirements; and improve effluent quality. Special initiatives include:
 - Develop strategies to address emerging contaminants, such as PFAS, micro plastics, etc. as they are identified, and frame an approach to respond to the public’s concerns about these contaminants.
 - Assess thresholds for annual nitrogen loading, including evaluating the existing thresholds and the environmental impact of nitrogen, as well as whether these thresholds developed over 20 years ago are valid or should be modified.
 - Review new waste treatment technologies as they arise to continuously improve treatment performance and efficiency.
 - Continue to work with researchers investigating the use of wastewater as an indicator of the presence of the Covid-19 virus.
- **Goal #6 – Wastewater Infrastructure:** Move forward with design and construction of major wastewater infrastructure rehabilitation and renewal projects. Initiatives include:
 - Continue to design and implement facility rehabilitation projects for various pump stations, headworks, CSO facilities and the Deer Island Treatment Plant.
 - Continue to implement an ongoing program to review, prioritize and accelerate interceptor renewal projects.
- **Goal #7 – CSO Plan Compliance:** Complete all CSO milestones by 2021 and demonstrate that the CSO Plan meets its performance objectives. Special initiatives include:
 - Conduct an evaluation of the CSO treatment processes to determine potential opportunities to better meet permit limits. Confirm or reassess treatment processes as part of CSO facility rehabilitation projects.

- Implement a subscriber-based CSO Public Notification Program. Provide notification of a CSO overflow within 4 hours of start of the discharge.
- Implement near real-time SSO reporting system to provide public information and ensure reporting timeframes meet regulatory requirements.
- **Goal #8 – Technical Assistance for Wastewater Communities:** Assist member communities to improve their wastewater collection systems through ongoing technical, financial, and operational support programs. Initiatives include:
 - Provide technical and operational support including TV inspections, fieldwork assistance, or other targeted assistance, as needed.
 - Promote and manage MWRA’s Inflow/Infiltration Local Financial Assistance Program to facilitate reduced I/I in local community infrastructure.

III. Infrastructure Management and Resilience

- **Goal #9 – System Maintenance and Enhancement:** Maintain and enhance water and wastewater system assets over the long term at the lowest possible life cycle cost and acceptable risk, consistent with customer, community, and regulatory support levels.
 - The FY24 Capital Improvement Program forecasts \$302.6 million in spending in FY24, of which \$137.6 million supports Wastewater System Improvements and \$141.7 million supports Waterworks System Improvements.
 - For FY24, the FY24 Final CIP includes 215 active contracts of which 79 are for design of Wastewater and Waterworks Systems Improvements and 55 are for construction, with projected spending of \$54.0 million for design and \$166.2 million for construction. In addition, there are 81 active other contracts with total spending of \$82.4 million.

Special initiatives include:

- Continue use of Condition Monitoring for all Water and Wastewater sites. Expand Condition Monitoring techniques to provide earlier indication of asset degradation.
- Conduct an updated benchmarking analysis in order to identify gaps and sustain the goal of maximizing asset protection while potentially identifying new best practices in the industry.
- Update the wastewater metering system and evaluate new technologies to ensure continued accurate flow accounting and to enhance its usefulness for operational and evaluation purposes by adding additional monitoring locations.
- Continue to research and develop Key Performance Indicators (KPI) to compare our performance internally and against the industry.
- Enhance and monitor water pipeline protection to maximize pipeline lifetime.
- Expand integration between the MWRA’s Authority-wide Enterprise Asset Management (EAM) system Maximo with Lawson (Infor), Process Information (PI) and Automated Vehicle Location (AVL) systems to expand the use of Predictive Management (PdM) tasks, increasing functionality, asset tracking and improved workflow to reduce equipment downtime and control budget spikes. Utilize updated MAXIMO to increase opportunities for paperless work.
- Continue to upgrade and improve upon the Supervisory Control and Data Acquisition (SCADA) and Process Information and Controls System (PICS) hardware and software to meet the current industry standard and to address cyber security concerns.
- **Goal #10 – Emergency Preparedness:** Prepare for catastrophic events and malicious acts that could affect the water and wastewater systems. Operations Division initiatives include:

- Continue to improve and incorporate redundancy and operational flexibility within the water system to ensure uninterrupted service.
- Design and implement projects including those that eliminate or mitigate single points of failure within MWRA's water transmission and distribution system.
- Continue to train staff on various potential emergency scenarios and participate in broader Massachusetts Emergency Management Agency (MEMA) and other training exercises.
- Complete the Preliminary Design and Environmental Impact Report for the Metropolitan Tunnel Redundancy Program and initiate final design.
- Update MWRA's earthquake preparedness to bring our facilities up to current standards as they are rehabilitated.
- Move forward with Wastewater Facility Emergency Response Planning to identify potential measures to minimize disruptions from failures of facilities, including development of a comprehensive Emergency Response Plan for each facility.
- Create and implement a predetermined schedule of review for facility risk assessments.
- Participate in Lower Mystic Resiliency Planning as an abutter to the Lower Mystic.

VI. Environmental Sustainability

- **Goal #17 – Energy Optimization:** Continue to maximize energy efficiency of MWRA operations, renewable energy production, and revenue generation opportunities using MWRA's energy assets.
 - Self-generate ~ 28.5% of the Deer Island Treatment Plant's (DITP) required power through optimization of power generation assets, including the wind turbines, Steam Turbine Generation (STG) back pressure system, photovoltaic panels, and Combustion Turbine Generators (CTGs).
 - Contribute ~ \$3.2 million in energy revenue to MWRA's ratepayers through optimization of power generation assets and participation in energy revenue programs such as demand response, energy credits, power sales, and utility rebates. Also, avoid at least \$1.4 million in capacity charges through use of self-generation assets during peak load events.

Special initiatives include:

- Incorporate employee education on energy efficiency in MWRA training outlets, e.g. tool box talks.
 - Design new gas turbine combined heat and power equipment to take advantage of the higher power and thermal efficiencies of new equipment, maximizing the production of additional electric power for on-site use at Deer Island as well as cost savings while reducing maintenance spending on aging equipment.
 - Evaluate and implement where feasible combined heat and power technology in plant operations to improve energy efficiency (e.g. pellet plant, Clinton)
 - Continue to develop the battery storage projects and work with the utility and its contractor to optimize demand savings. Evaluate opportunities for future battery storage projects. Explore community solar opportunities that will stimulate large-scale remote solar installations and save money on our electric bills.
 - Expand our fleet of electric vehicles and charging stations.
 - Explore a new MWRA-wide building/plant information management system that includes a comprehensive energy management system.
- **Goal #18 – Climate Change Adaptation:** Continue to monitor climate change research and move forward with plans to reduce impacts of projected sea level rise and storm surge events on MWRA infrastructure. Initiatives include:

- Continue to incorporate design modifications into facility renovations and maintenance activities to address sea level rise and storm surge.
- Plan and install flood protection barriers at water and wastewater sites which fall below expected elevations of flood waters under condition of a FEMA 100 year storm plus 2 ½ feet to minimize damage and still provide service.
- **Goal #19 – Water System Expansion:** Advance reasonable water system expansion. Initiatives include:
 - Continue to provide assistance to communities seeking admission to the MWRA’s water system or seeking emergency withdrawals.
 - Work with prospective communities to inform them of the benefits of admission.

The strategic priorities and goals that apply to each department within the Operations Division are presented in departmental budget sections. For more information about MWRA’s Business Plan, please refer to the Business Plan section of the Transparency page on MWRA’s website at mwra.com.

FY23 Year-End Accomplishments:

For more information about this topic, please refer to the Performance Indicator section of the Transparency page on MWRA’s website at mwra.com.

I. Drinking Water Quality and System Performance

- Met water quality and treatment standards in the drinking water system during FY23.
 - MWRA’s algae monitoring season is complete. DCR continued to collect occasional algae samples on Wachusett Reservoir once ice-cover dissipated. Staff performed algal toxin and taste and/or odor compound sampling at treated water taps through November; this sampling coincided with UCMR4 community entry-point cyanotoxin monitoring. Results revealed no cyanotoxin detections during any routine or UCMR4 sampling events.
 - Completed contract with UMass Amherst, under an Interdepartmental Service Agreement, to investigate possible contamination from a railroad contamination event in Wachusett Reservoir.
 - Successfully procured and deployed a new profiling water quality monitoring buoy onto Quabbin Reservoir. Hand-cast and buoy sondes were also procured to provide parameter data throughout the water column. Staff facilitated inclusion of buoy data onto our buoy server and into OMMS and PI Processbook.
- Performed reservoir level management control at all metropolitan reservoirs to maintain normal operating levels.
- The Laboratory Services Department performed 135,000 tests (including data entry of field tests) related to drinking water quality including the annual Lead and Copper Rule testing.
- The Laboratory Services Department performed numerous tests in support of community efforts to identify and reduce lead service lines in schools.
- Water Loan Program – Local Water System Assistance Program: Through June 2023, distributed \$28.9 million in Local Water System Assistance Program interest-free loans, plus an additional \$3.9 million under the Lead Service Line Replacement Loan Program in FY23. In total, MWRA has distributed \$527.6 million in loans to fund 519 local projects with participation from 43 of the 47 eligible water communities. Since 1998, MWRA has replaced or cleaned and lined 603 miles of local water main (about 8% of the regional system) via projects funded by MWRA financial

assistance. In addition, MWRA has loaned \$35.3 million (via 39 distributions) to 14 member communities for Lead Water Service Line Replacement projects.

- Community Leak Detection Program: Through June 2023, the Program has assisted six (6) municipalities within the MWRA’s service area with leak detection in their systems in FY23 (via task-order contracts).

II. Wastewater Quality and System Performance

- Deer Island received the Platinum Peak Performance Award for calendar year 2022 from the National Association of Clean Water Agencies (NACWA) for the 16th continuous year. The award recognizes facilities for outstanding compliance with their National Pollutant Discharge Elimination System (NPDES) permit limits. DITP has had no permit violations for over 16 years.
- Deer Island met secondary permit limits at all times, treating on average 99.3% of flows with full secondary treatment. More detailed information about DITP’s NPDES Permit compliance is available on the Transparency/Performance Indicator section of MWRA’s website.
- Eversource completed the second annual maintenance on the new 115-kVA cross-harbor marine power cable to Deer Island during October/November 2022. Eversource worked on one side at a time so we remained on the grid for most of the work. All flows received disinfection and met numerical effluent standards.
- Processed 93.2 average tons per day of sludge at the Pelletization Plant and disposed of 5,064 tons of grit and screenings through a contracted vendor.
- Year to date through February, the TRAC Department completed the following Environmental Protection Agency (EPA)-required work for significant industrial users (SIUs): 189 inspections, 159 monitoring events, and 382 sampling of connections. TRAC also issued or renewed 514 permits to SIUs and non-SIUs.
- The Department of Laboratory Services (DLS) performed 268,064 tests during FY23 including 130,000 tests for the wastewater system including the MA Bay water column testing for the Harbor and Outfall Monitoring program.
- Met all NPDES reporting requirements including routine monthly, quarterly, and annual reports, and required notifications under Part II of permits, Contingency Plan, DITP blending order. Missed no reporting deadlines, even with the impacts of COVID-19.
- Performed testing in-house PFAS Testing for MWRA and community compliance testing as requested. Arranged for contract testing of wastewater samples by a newly revised and expanded EPA Method for the new Clinton permit and as requested by TRAC.
- Sewer Grant/Loan Program – I/I Local Financial Assistance Program: Through June 2023, the Program distributed \$21.7 million in grants and interest-free loans to member sewer communities for Infiltration/Inflow reduction and sewer system rehabilitation projects in FY23. In total, MWRA has distributed \$531.5 million in grants and loans to fund 664 local projects with participation from all 43-sewer member communities.

III. Infrastructure Management and Résilience

Maintenance

- For FY23, the Operations Division spent \$27.8 million on maintenance of which \$11.4 million was for materials and \$16.4 million was for services.
- Issued Notice to Proceeds for Asset Protection Program contracts including the following:
 - Deer Island Radio Repeater System Upgrade Phase 2 (Sep-2022)
 - Deer Island Clarifier Rehabilitation Phase 2 Construction (Feb-2023)

- DITP - Completed numerous maintenance projects including the following representative work:
 - Deer Island Replace Odor Control Dampers (Jan-2023)
 - Deer Island Equipment Replacement Projections (Jun-2023)
 - Deer Island As-Needed Design 9-1 (Jun-2023)
 - Deer Island As-Needed Design 9-2 (Jun-2023)

- **Clinton Wastewater Treatment Plant** - Completed numerous maintenance projects at the including the following representative work:
 - Maintenance staff replaced tubing on the phosphorus system with hard piping.
 - Maintenance staff replaced motor on the #2 polymer pump.
 - Maintenance staff replaced the drive motor and gear box on the soda ash mixing tank.
 - Staff rebuilt both the #1 and #2 Penn Valley Pumps for the soda ash system.

- **Water System** - Completed numerous maintenance projects including the following representative work:
 - Completed the CWTP half plant maintenance.
 - Staff continued to acclimate the lead pipes to the MWRA water system for the Corrosion Control Pipe Rig Project and met with the expert panel to map out the next phase of the study.
 - Managed the design and coordination of Cell #2 of the Norumbega Covered Storage Tank cleaning. The tank had not been cleaned since its activation in 2004. Norumbega is a 115MG tank with three cells, approximately 42MG each. The remaining cells will be cleaned, one a year, over the next two years
 - Metropolitan Operations crews successfully cleaned two of the three cells of the 20 MG Fells Reservoir Covered Storage Tank.
 - All MWRA Significant Hazard and High Hazard Class dam regulatory Phase 1 inspections completed.
 - Invasive species removal work continued at the Shaft 8 Intake Pool, the Wachusett, Sudbury, Foss, Ware River, Weston and Chestnut Hill Reservoirs. Detail invasive plant surveys were completed at all MWRA reservoirs.
 - Completed successful winter drawdowns at Foss Reservoir and Chestnut Hill Reservoir.
 - River Road Slope Stabilization Improvements work completed and Certificate of Completion request submitted to Clinton Conservation Commission.
 - Managed the consultant for the CWTP SCADA System Upgrades contract and provided SCADA support for the replacement of all PLCs.
 - Successfully maintained all instrumentation, network, and communications infrastructure for the MWRA Water and Wastewater systems.
 - Completed the inspections of 13 MWRA water storage tanks.
 - In water system through June 2023, exercised 582 and replaced 2 mainline valves; exercised 484 and replaced 15 blow-off valves.

- **Wastewater System** - Completed numerous maintenance projects including the following representative work:
 - Electricians replaced a VFD unit at Braintree Weymouth Intermediate Pump Station.
 - Mechanics replaced the influent gate stem and actuator at New Neponset Pump Station.

- Mechanics and Plumbers replaced Pump #2 and its isolation plug valve at Houghs Neck Pump Station.
- Replaced the VFD units at Hingham Pump Station and Caruso Pump Station.
- Mechanics replaced both channel grinders in the pumping station at Braintree Weymouth Pump Station.
- Plumbers and Welders replaced Grit Pod #4 at Columbus Park Headworks.
- Mechanics and Welders replaced the grit collector flights at Columbus Park Headworks.
- Mechanics replaced the belt, as well as worn rollers, shafts, and bearings at NIHW. Dewatering pump also replaced.
- In the wastewater system through June 2023, inspected 33.6 miles and cleaned 37.8 miles of MWRA pipeline. Inspected 652 structures and rehabilitated 38 manholes. Also inspected 49 and cleaned 46 inverted siphon barrels.

Capital Improvements

- Capital spending for FY23 totaled \$171.2 million broken out by category as follows: \$57.6 million for Wastewater System projects, \$89.5 million for Water System projects, and \$24.1 million for Business and Operations Support projects.
- Awarded or Issued Notices to Proceed for numerous contracts including the following:
 - Wastewater System:
 - Braintree Weymouth Improvements Construction
 - Braintree Weymouth Improvements Resident Inspection Services
 - Remote Headworks Shaft Access Improvements Construction
 - Fuel Oil Tank Replacement Construction Phase 2
 - Braintree Weymouth Intermediate Pump Station Transformer Replacement
 - Chelsea Creek Headworks Microwave Equipment
 - Fort Point Channel and Mystic Community Managed CSO work
 - Water System:
 - Shaft 7 New Connection Mains Section 24 & 25 Construction Phase 2
 - Corrosion Control Pipe Loop Study
 - Wachusett Lower Gate House Pipe & Boiler Replacement Construction
 - Wachusett Lower Gate House Pipe & Boiler Replacement Resident Inspection
 - Carroll Water Treatment Plant Soda Ash and Fluoride Resident Inspection
- Substantially completed numerous design and construction phases including the following:
 - Wastewater System:
 - Chelsea 008 Pipe Connection
 - East Boston Sewer Separation Community Managed Construction
 - Water System:
 - Carroll Water Treatment Plant Sodium Hypochlorite System Modifications
 - Marlboro Pump Station Construction
 - Quabbin Water Supply Construction
 - Cosgrove Storage Building & Intake Improvements
 - Wachusett Bastion Rehab Construction
 - Wachusett Bastion Rehab Design/ESDC

- Weston Aqueduct Supply Mains 3 (WASM 3) Construction 1
- New Roofs At Water Pump Stations Construction

For more information about projects in the Capital Improvement Program, please refer to the Fiscal Year 2024 Capital Improvement Program document located on the Budget page of the MWRA's website at mwra.com.

Emergency Preparedness

- Assisted with implementation of MWRA's Pandemic Emergency Action Plan to meet requirements of America's Water Infrastructure Act (AWIA). Issued regular internal reports on the status and prevailing guidance regarding the COVID19 pandemic in Massachusetts. Also worked with the current vendor, Biobat, to monitor and report the presence of the virus in MWRA's wastewater.
- Completed and certified compliance with the Emergency Response Planning requirements of America's Water Infrastructure Act. Initiated major staff training exercise related to potential railroad spills at Wachusett Reservoir.
- In July and August, staff presented at MWRA's Community Emergency Response Planning Training on building flushing after lengthy shutdowns due to COVID19 and proper coliform sampling technique. Provided a virtual presentation to the Chelsea sampling staff on proper coliform sampling technique and chlorine residual measurement.
- Coordinated the design, procurement and installation training for flood protection equipment to be installed at key MWRA wastewater facilities. Participated in Metro Mayors' Climate Change Coalition Task Force and continued to monitor new research related to the effects of climate change in the service area. Co-chaired and participated in multi-agency Mystic River Regional Infrastructure exercise.

VI. Environmental Sustainability

- Received a total of \$1.1 million in revenue for energy generated at numerous facilities including hydroelectric from Oakdale Station and Cosgrove Station; wind from Charlestown Pump Station; and solar from Carroll Water Treatment Plant.
- Continue to leverage MWRA's self-generation assets and participation in the competitive energy market to offset operating costs. The combined impact of participation in the Independent System Operators of New England (ISO-NE) load response program, non-rate revenue from the sale of Renewable Portfolio Standards Program (RPS) credits, and receipt of utility rebates for CEB-funded efficiency projects resulted in \$1.5 million in revenue in FY23. MWRA also avoided more than \$1.4 million in capacity charges through operation of self-generation assets during peak load events as called by the regional transmission organization (ISO New England).
- Deer Island self-generated 24.8% of the plant's total required power FY23.
- Continued to operate and optimize the phosphorous treatment system and natural gas lines at the Clinton Wastewater Treatment Plant; third full year of operation for both.

Budget Highlights:

The FY24 Budget is \$238.7 million which is \$37.0 million, or 18.2%, more than the FY23 Budget.

- The FY24 Budget of \$98.9 million for **Wages and Salaries** is an increase of \$6.3 million or 6.8% from the FY23 Budget primarily due to wage increases associated with collective bargaining agreements. The FY24 Budget funds 903 full-time equivalent positions for the Operations Division departments, including Tunnel Redundancy staffing, matching the FY23 position level.

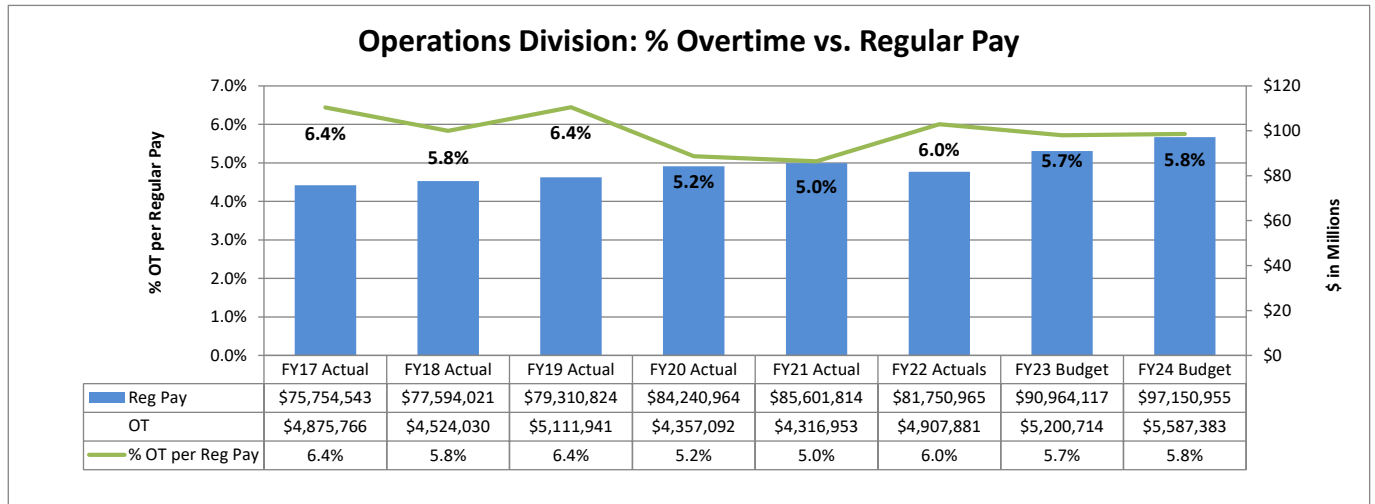
FTEs Operations by Department		
DEPARTMENT	FY23 FTEs	FY24 FTEs
OPERATIONS ADMINISTRATION*	34.0	34.0
OPERATIONS, ENGINEERING & CONSTRUCTION	709.6	710.0
PROGRAMS, POLICY & PLANNING	159.4	159.0
TOTAL	903.0	903.0

*includes Tunnel Redundancy

Staffing for the water system Tunnel Redundancy Program remains at 16 positions in the FY24 Budget. The MWRA currently plans to add FTEs over the next few fiscal years to support this project.

The Wages and Salaries line also includes \$811,000 for Stand-by Pay to ensure staffing availability and response during emergencies, \$307,000 for Interns, and \$93,000 for Temporary Employees to assist with lead testing in schools.

- The FY24 Budget of \$5.6 million for **Overtime** is a net increase of \$387,000 or 7.4% from the FY23 Budget primarily due to collective-bargaining wage increases and resizing estimates based on trends. The budget includes \$2.4 million for emergencies and storms; \$1.5 million for planned work primarily required on off-shifts and during periods of lower flows; and \$1.4 million for routine coverage of operations per prevailing collective bargaining agreements.



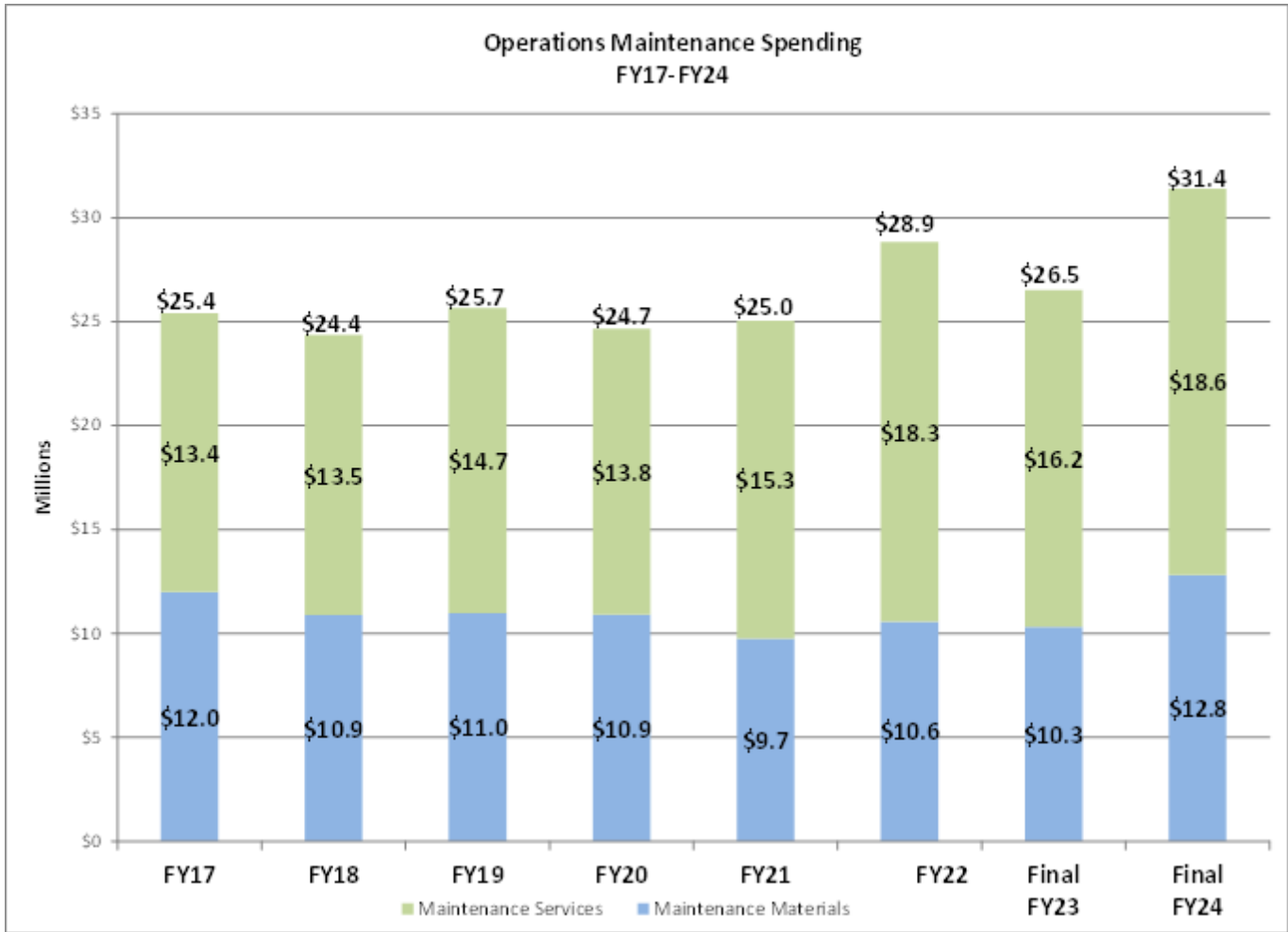
- The FY24 Budget of \$28.3 million for Chemicals is an increase of \$13.3 million or 88.5% over the FY23 Budget, due to the supply chain issues impacting recent contractual prices and market projections. The FY23 Budget includes \$12.0 million for disinfection and treatment in the water system and \$16.3 million for disinfection, treatment, and odor control in the wastewater system. The budget includes \$3.3 million for soda ash, \$12.1 million for sodium hypochlorite, \$5.8 million for ferric chloride, \$1.2 million

for carbon dioxide, \$920,000 for sodium bisulfite, , \$903,000 for polymer, \$901,000 for liquid oxygen, \$872,000 for hydrogen peroxide, \$703,000 for aqua ammonia, \$699,000 for hydrofluosilicic acid, \$378,000 for activated carbon, and \$202,000 for sodium hydroxide.

- The FY24 Budget of \$31.1 million for **Utilities** includes \$23.4 million for electricity, \$3.8 million for diesel fuel, \$2.5 million for water, \$1.1 million for natural gas, and \$149,000 for propane and other utilities. The utility budget is \$16.4 million for the Deer Island Treatment Plant, \$6.6 million for Wastewater Operations, \$6.7 million for Water Operations, \$1.0 million for the Chelsea office and maintenance facilities, and \$370,000 for the Clinton Wastewater Treatment Plant. The utilities budget is \$257,000 or 0.8% more than the FY23 budget.



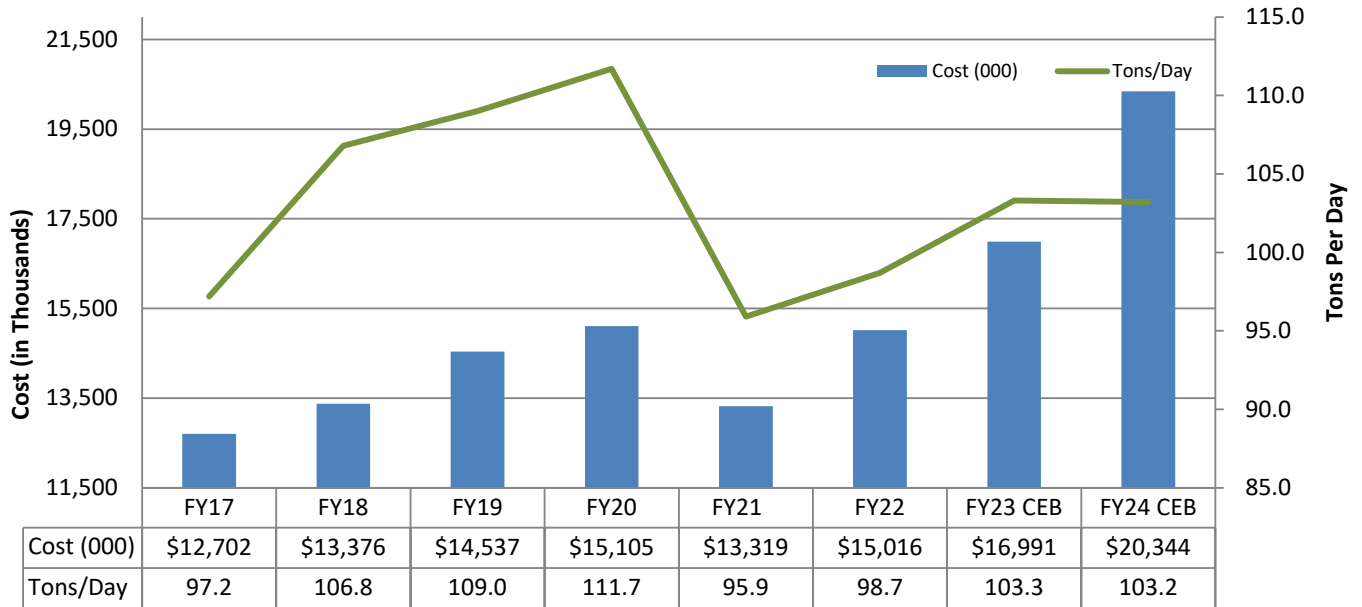
- The FY24 Budget for **Maintenance** is \$31.4 million, a net increase of \$4.9 million or 18.4% from the FY23 Budget primarily due to changes in project priorities from year to year. The FY24 Budget includes \$18.6 million for services and \$12.8 million for materials. By maintenance area, the largest categories of spending for materials and services include \$12.1 million for plant and machinery; \$6.6 million for building and grounds; \$5.3 million for specialized equipment; \$3.6 million for electrical; \$1.7 million for pipeline; and \$1.6 million for HVAC systems. The budget also funds special initiatives such as energy conservation projects at DITP and in the Field Operations Department facilities; invasive plant control in the water reservoirs; painting and coating upkeep at the wastewater treatment plants; and easement clearing on MWRA’s aqueducts. As shown below, the range of maintenance spending has been fairly consistent over the last few fiscal years.



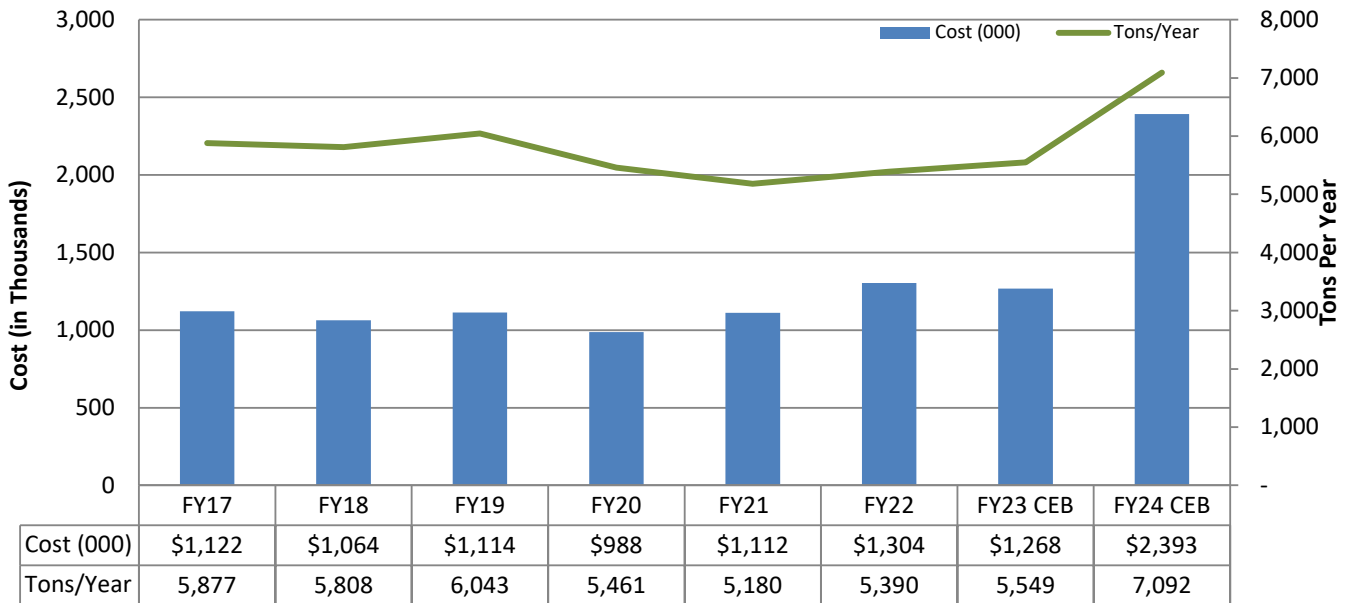
Norumbega Covered Storage Tank and Norumbega Open Reservoir (now a backup supply)

- The FY24 Budget of \$206,000 for **Training and Meetings** covers specialized training, attendance at industry conferences, and site visits as required to vendors and other plants. It specifically funds training for topics such as spill response and boom deployment; spill control and prevention; trenchless technology; cyber security; and electrical voltage. The budget also continues to include funds to support workforce development efforts as part of MWRA's succession planning initiative. The FY24 Budget is \$6,000 less than the FY23 Budget.
- The FY24 Budget for Professional Services is \$3.0 million, including \$2.2 million for lab and testing services, \$483,000 for engineering services, and \$306,000 for all other services. Major items in the budget include \$1.5 million for Harbor and Outfall Monitoring; \$250,000 for Backup Battery System for Deer Island, \$175,000 for as-needed engineering services to support CEB-funded projects; \$187,000 for PFAS monitoring, \$150,000 for site remediation inspection services; \$100,000 for continuation of a research study on controlling algae and cyanobacteria at Wachusett and Quabbin reservoirs.; \$94,000 for a comprehensive reservoir-wide plant survey in the water system; and \$53,000 for invasive species control services in the reservoirs. The FY24 Budget is \$195,000 or 6.9% above the FY23 Budget primarily due to the inclusion of new contract for HOM water column monitoring.
- The FY24 Budget of \$5.1 million for **Other Materials** includes \$1.5 million for Vehicle Replacements; \$1.2 million for Lab and Testing Supplies; \$297,000 for Vehicle Expenses (gas, mileage reimbursement); \$401,000 for Health and Safety Supplies; \$606,000 for Equipment and Furniture; \$428,000 for Work Clothes; and \$294,000 for other materials. The budget decreased \$178,000 or 3.4% from the FY23 Budget.
- The FY24 Budget for **Other Services** is \$35.0 million, including \$26.6 million for sludge pelletization; \$3.3 million for building space leases and rentals (including the Chelsea office facility); \$2.4 million for grit and screenings removal and disposal; \$683,000 for telecommunications services; \$703,000 for dues, memberships, and subscriptions; \$489,000 for police details; and \$272,000 for other services. The FY24 Budget increase of \$11.7 million or 50.1% from the FY23 Budget is primarily due to the net effect of increases in the contractual prices for grit and screenings removal and sludge pelletization contracts, memberships and dues, offset by resizing of budgets for other items based on trends and needs.

Sludge



Grit & Screenings





Alewife Brook Wastewater Pump Station

OPERATIONS ADMINISTRATION

Operations Administration funds the CEBs for two departments including Operations Administration and Tunnel Redundancy Program Management.

The **Operations Administration Department** includes the Office of the Chief Operating Officer (COO); the Office of the Deputy Chief Operating Officer (DCOO); and division-level support staff. The department's primary goal is to oversee, manage, and implement MWRA policies and procedures pertaining to the following functions: administration, labor relations, finance, contract administration, comprehensive energy planning and management, regulatory affairs, environmental management, and general management.

The **Tunnel Redundancy Program Management Department** was created by MWRA's Board of Directors on February 15, 2017 to oversee the planning, design, and construction of a northern and a southern deep rock tunnel that will provide redundancy for the Metropolitan Tunnel system (waterworks). This \$1.5 billion CIP-funded project will take more than a decade to complete. Also, given the complexity of the project, the group is independent of existing engineering and construction departments and reports directly to the Executive Director. However, the department's CEB is included within the Operations Division budget to allow for sufficient administrative support.

FY24 Final Current Expense Budget OPERATIONS ADMINISTRATION

LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
WAGES & SALARIES	\$ 3,998,384	\$ 4,081,703	\$ 4,042,113	\$ 4,422,240	\$ 380,127	9.4%
OVERTIME	2,151	2,097	5,000	5,000	-	0.0%
FRINGE BENEFITS	-	-	360	360	-	0.0%
MAINTENANCE	1,693	2,107	-	-	-	-
TRAINING & MEETINGS	25,740	18,955	62,300	52,300	(10,000)	-16.1%
PROFESSIONAL SERVICES	-	8,905	161,002	161,002	-	0.0%
OTHER MATERIALS	1,469,724	641,684	1,555,000	1,545,000	(10,000)	-0.6%
OTHER SERVICES	630,766	737,081	1,129,115	1,682,473	553,358	49.0%
TOTAL	\$ 6,128,458	\$ 5,492,532	\$ 6,954,890	\$ 7,868,375	\$ 913,485	13.1%

FY24 Final Current Expense Budget OPERATIONS ADMINISTRATION by Programs

PROGRAM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
OPERATIONS ADMINISTRATION	\$ 5,049,769	\$ 4,103,329	\$ 4,678,687	\$ 4,875,132	\$ 196,445	4.2%
WATER REDUNDANCY PGR MGMT	1,078,689	1,389,203	2,276,203	2,993,243	717,040	31.5%
TOTAL	\$ 6,128,458	\$ 5,492,532	\$ 6,954,890	\$ 7,868,375	\$ 913,485	13.1%

FY24 Final Current Expense Budget
WATER REDUNDANCY PROGRAM MANAGEMENT

LINE ITEM	FY21	FY22	FY23	FY24	Change	
	Actuals	Actuals	Final Budget	Final Budget	FY24 vs. FY23	
WAGES & SALARIES	\$ 1,046,280	\$ 1,360,061	\$ 1,746,343	\$ 1,985,608	\$ 239,265	13.7%
OVERTIME	433	727	5,000	5,000	-	0.0%
FRINGE BENEFITS	-	-	360	360	-	0.0%
MAINTENANCE	555	2,107	-	-	-	-
TRAINING & MEETINGS	4,925	4,614	40,000	30,000	(10,000)	-25.0%
PROFESSIONAL SERVICES	-	-	1,000	1,000	-	0.0%
OTHER MATERIALS	18,174	9,028	50,500	40,500	(10,000)	-19.8%
OTHER SERVICES	8,322	12,666	433,000	930,775	497,775	115.0%
TOTAL	\$ 1,078,689	\$ 1,389,203	\$ 2,276,203	\$ 2,993,243	\$ 717,040	31.5%

FY24 Goals and Initiatives:

The Operations Administration Department’s purview and function supports all the goals of the Operations Division set forth in the department budgets in the Operations, Engineering & Construction section and the Program, Policy and Planning section.

Key FY23 initiatives include:

- **Tunnel Redundancy Program** – Plans for FY23 include hiring additional staff, raising awareness of the project in the engineering and construction communities, and developing detailed plans for all phases of implementation including procurement, design, engineering, and construction.
- **Energy** – Continue to refine and implement MWRA’s comprehensive energy management strategy, primarily with a focus on expanding solar energy sites and securing grant funding from relevant programs; increasing the use of electric vehicles in MWRA’s fleet; optimizing energy generation assets for ‘behind the meter’ use and revenue from power sales and market-based incentive programs; implementing MOUs with two utility companies for energy conservation projects at numerous facilities; and consolidating energy data management to support decision-making.
- **Regulatory** – Continue to advocate for MWRA during the regulatory review processes for key issues including implementation of the CSO Program assessment phase and development of the requirements for the new NPDES permit for the Deer Island Treatment Plant.
- **Organizational succession** – Continue to develop and implement succession plans to ensure efficient and effective organizational continuity as a significant portion of MWRA’s workforce retires in the next few years. Key aspects of this initiative include documenting institutional policies and practices; identifying and developing employees qualified for promotion into key positions; hiring additional qualified employees to ensure ‘depth of bench’ in staffing in critical functions; and in general, providing programs to the overall MWRA workforce for learning and development.

Budget Highlights:

The FY23 Budget is \$7.0 million, a decrease of \$415,000 or 5.6%, compared to the FY22 Final Budget.

- \$4.0 million for **Wages and Salaries**, a decrease of \$846,000 or 17.3%, as compared to the FY22 Final Budget. The FY23 Budget supports 33.6 full-time equivalents (FTEs), eight (8) few than FY22 due to the transfer of 8 finance related positions to Finance Division. That total includes 16 positions from the

Tunnel Redundancy Management Unit as the program ramps up. The FY23 Budget also funds wage increases associated with collective bargaining agreements.

- \$47,000 for **Training & Meetings** to fund attendance at conferences for the COO, DCOO, and department staff as well as division-wide attendance at major industry professional conferences held annually. The budget also funds attendance by tunnel redundancy program staff at industry conferences to stay current on relevant technical topics and to educate potential engineering and construction vendors about the upcoming projects.
- \$161,000 for **Professional Services** for inspection of MWRA's underground storage tanks.
- \$1.6 million for **Other Materials**; \$10,000 above the FY22 Final Budget. The major item in this budget line is \$1.5 million for vehicle purchases for replacement of vehicles valued at less than \$100,000, MWRA's minimum threshold for funding from the Capital Improvement Program (CIP). The FY23 Budget supports replacement of up to 35 vehicles or approximately 6% of the active fleet. This line item also includes \$35,000 for purchase of geotech software for the Tunnel Redundancy Program.
- \$1.1 million for **Other Services** which includes \$400,000 for Rock Core Shed, \$150,000 for fuel tank storage maintenance services and \$538,000 for memberships and dues, primarily in industry associations for MWRA and departmental staff. MWRA continues to fund annual memberships in organizations such as the National Association of Clean Water Agencies (NACWA), Association of Metropolitan Water Agencies (AMWA), American Water Works Association (AWWA), and Boston NOW (focused on Boston Harbor).



OPERATIONS, ENGINEERING & CONSTRUCTION

Operations, Engineering & Construction

Wastewater Treatment

Deer Island

Residuals

Clinton

Field Operations

Wastewater Operations

Water Operations & Maintenance

Metro Maintenance

Operations Support

FOD - Administration

Engineering & Construction

The work of this section is directed by a team of three senior managers including the Director of Wastewater, Director of Waterworks, and Chief Engineer; each of whom report to the Chief Operating Officer (COO). The purview of this section is as follows:

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

**FY24 Final Current Expense Budget
OPERATIONS, ENGINEERING & CONSTRUCTION**

LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
WAGES & SALARIES	\$ 66,708,817	\$ 63,965,697	\$ 71,594,303	\$ 76,964,992	\$ 5,370,689	7.5%
OVERTIME	4,060,883	4,627,092	4,940,788	5,263,964	323,176	6.5%
FRINGE BENEFITS	95,932	108,129	114,326	124,316	9,990	8.7%
CHEMICALS	11,652,051	11,788,437	14,994,036	28,269,124	13,275,088	88.5%
UTILITIES	21,755,123	29,204,766	30,765,890	31,022,767	256,877	0.8%
MAINTENANCE	24,687,373	23,362,356	25,985,140	30,882,213	4,897,073	18.8%
TRAINING & MEETINGS	42,550	84,431	115,600	118,600	3,000	2.6%
PROFESSIONAL SERVICES	525,118	421,525	724,850	635,505	(89,345)	-12.3%
OTHER MATERIALS	1,358,822	1,337,439	1,948,972	1,713,051	(235,921)	-12.1%
OTHER SERVICES	18,239,190	19,724,751	21,788,407	32,910,653	11,122,246	51.0%
TOTAL	\$ 149,125,859	\$ 154,624,623	\$ 172,972,312	\$ 207,905,185	\$ 34,932,873	20.2%

The Operations, Engineering & Construction Section is composed of the Wastewater Treatment, Field Operations, and Engineering and Construction departments, which report directly to the Chief Operating Officer. In total, the budgets for these programs represent 84.7% of the Operations Division's FY22 Budget.

**FY24 Final Current Expense Budget
OPERATIONS, ENGINEERING & CONSTRUCTION by Programs**

PROGRAM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
WASTEWATER TREATMENT	\$ 70,065,232	\$ 75,366,316	\$ 80,028,568	\$ 101,499,093	\$ 21,470,525	26.8%
FIELD OPERATIONS	70,505,232	71,663,455	83,622,066	96,736,374	13,114,308	15.7%
ENGINEERING & CONSTRUCTION	8,555,395	7,594,852	9,321,678	9,669,718	348,040	3.7%
TOTAL	\$ 149,125,859	\$ 154,624,623	\$ 172,972,312	\$ 207,905,185	\$ 34,932,873	20.2%

WASTEWATER TREATMENT

The primary function of the Wastewater Treatment Department is to collect and treat community wastewater so that it can be discharged either into the Massachusetts Bay or the South Nashua River in compliance with federal and state environmental standards. The second function of the Department is to recycle sludge to produce fertilizer and provide for the proper disposal of any materials not suitable for treatment or fertilizer.

FY24 Final Current Expense Budget WASTEWATER TREATMENT

LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
WAGES & SALARIES	\$ 21,693,689	\$ 21,384,594	\$ 23,542,334	\$ 25,263,704	\$ 1,721,370	7.3%
OVERTIME	1,541,508	1,690,671	1,409,571	1,543,472	133,901	9.5%
FRINGE BENEFITS	38,647	42,321	32,755	42,745	9,990	30.5%
CHEMICALS	5,176,989	5,076,013	6,463,588	15,095,927	8,632,339	133.6%
UTILITIES	12,009,953	17,151,697	16,694,289	16,767,800	73,511	0.4%
MAINTENANCE	14,335,844	12,913,354	12,492,377	12,483,301	(9,076)	-0.1%
TRAINING & MEETINGS	1,449	13,168	32,100	32,100	-	0.0%
PROFESSIONAL SERVICES	33,082	34,508	86,500	284,500	198,000	228.9%
OTHER MATERIALS	573,495	594,463	726,950	738,450	11,500	1.6%
OTHER SERVICES	14,660,576	16,465,527	18,548,104	29,247,094	10,698,990	57.7%
TOTAL	\$ 70,065,232	\$ 75,366,316	\$ 80,028,568	\$ 101,499,093	\$ 21,470,525	26.8%

The **Deer Island Treatment Plant**, the **Residuals Management Program**, and the **Clinton Treatment Plant** comprise the Wastewater Treatment Department. Together, the budgets for these programs represent 43% of the Operations Division's FY24 Final Budget.

FY24 Final Current Expense Budget WASTEWATER TREATMENT by Program

PROGRAM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
DEER ISLAND	\$ 53,170,041	\$ 56,383,443	\$ 58,886,670	\$ 69,286,959	\$ 10,400,289	17.7%
RESIDUALS	14,649,472	16,407,567	18,480,624	29,155,163	10,674,539	57.8%
CLINTON	2,245,719	2,575,306	2,661,274	3,056,971	395,697	14.9%
TOTAL	\$ 70,065,232	\$ 75,366,316	\$ 80,028,568	\$ 101,499,093	\$ 21,470,525	26.8%

DEER ISLAND WASTEWATER TREATMENT PLANT

The **Deer Island Wastewater Treatment Plant** (Deer Island or DITP) budget accounts for 29% of the Operations Division's FY24 Final Budget. DITP has a peak capacity of 1.27 billion gallons per day (bgd) and peak secondary treatment capacity of 700 million gallons per day (mgd).

Wastewater influent from MWRA customer communities arrives at the plant through four underground tunnels. Pumps then lift the influent 80 to 150 feet, depending on the tunnel, to the head of the plant.

North system flows pass through grit channels and bar screens at the headworks that remove grit and screenings for disposal in an off-island landfill. South system flows are pre-treated for grit at Nut Island and the Braintree-Weymouth Intermediate Pump Station. Flow is routed to primary treatment clarifiers, which remove about half of the pollutants brought to the plant in typical wastewater (removes 50% of total suspended solids and up to 50% of pathogens and toxic contaminants). In the clarifiers, gravity separates sludge and scum from the wastewater.



In secondary treatment, reactors and clarifiers remove non-settleable solids through biological and gravity treatment. The biological process is a pure oxygen-activated sludge system, using aerobic microorganisms to consume organic matter that remain in the primary effluent flow. Secondary treatment raises the level of pollution removal to over 85%. More than 100 tons of pure oxygen is manufactured each day at Deer Island's cryogenic oxygen facility to support the aerobic biological treatment process.

Sludge from primary and scum from both primary and secondary treatment is thickened in gravity thickeners. Sludge from secondary treatment is thickened in centrifuges. Polymer is used in the secondary sludge thickening process to increase its efficiency. Digestion occurs in the egg-shaped anaerobic digesters at the Deer Island Treatment Plant. There are a total of 12 digesters, each 90 feet in diameter at their widest point and approximately 140 feet tall (128 ft. liquid level). Microorganisms naturally present in the sludge work to break sludge and scum down into methane gas, carbon dioxide, solid organic byproducts, and water. Digestion significantly reduces sludge quantity for later recycling. The methane gas produced in the digesters is used in the plant's on-site power generating facility to save operating costs by reducing consumption of fuel oil for heating and purchased electricity. The remaining digested sludge is pumped through pipes embedded in the sidewall of the Nut Island inter-island tunnel and Braintree-Weymouth

extension tunnel directly to the MWRA’s Pelletizing Facility at Fore River, where it is further processed into a fertilizer product.

FY24 Final Current Expense Budget DEER ISLAND TREATMENT PLANT							
LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23		
WAGES & SALARIES	\$ 20,599,294	\$ 20,274,768	\$ 22,412,690	\$ 24,040,995	\$ 1,628,305	7.3%	
OVERTIME	1,463,658	1,600,843	1,351,895	1,458,781	106,886	7.9%	
FRINGE BENEFITS	37,062	39,971	31,255	40,245	8,990	28.8%	
CHEMICALS	4,823,236	4,608,684	5,983,528	14,280,907	8,297,379	138.7%	
UTILITIES	11,736,232	16,788,440	16,273,949	16,398,059	124,110	0.8%	
MAINTENANCE	13,844,766	12,404,670	12,010,607	12,002,272	(8,335)	-0.1%	
TRAINING & MEETINGS	1,271	13,168	28,600	28,600	-	0.0%	
PROFESSIONAL SERVICES	5,059	26,308	42,000	270,000	228,000	542.9%	
OTHER MATERIALS	458,154	429,134	495,700	495,700	-	0.0%	
OTHER SERVICES	201,309	197,457	256,446	271,400	14,954	5.8%	
TOTAL	\$ 53,170,041	\$ 56,383,443	\$ 58,886,670	\$ 69,286,959	\$ 10,400,289	17.7%	

Organizational Structure:

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

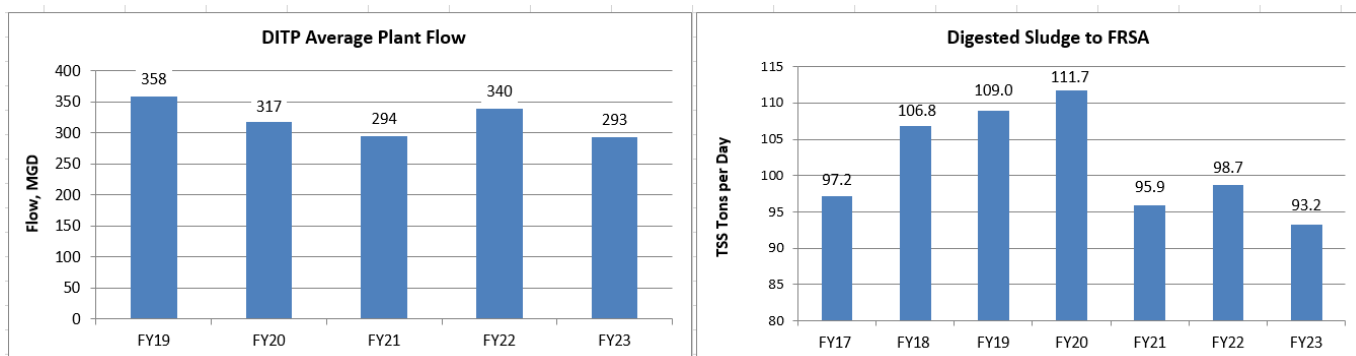
- Operations manages the day-to-day treatment operation of plant processing units, performs minor preventative maintenance activities, and oversees plant functions 24 hours per day, seven days per week.
- Thermal Power Plant manages and operates the Deer Island generation and thermal systems. Power Plant personnel provide 24-hour operation of the high-pressure, high temperature steam power plant. This facility is capable of producing up to 75 megawatts of electrical power including green energy assets with hydro-electric power, wind and solar.
- Process Control manages and maintains the following programs in support of plant operations; real-time process instrumentation and control system (PICS), operational data system (OMS), plant performance monitoring and reporting programs, and regulatory compliance programs including all plant permits, water quality, and air quality. Process Control 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, predictive, and corrective maintenance repairs on all equipment, utilizing a computerized maintenance management system (CMMS) to coordinate scheduling and document all work completed. Staff has developed the Reliability Centered Maintenance (RCM) program, which has improved plant performance by applying maintenance resources where they are most effective. RCM analyzes the operating systems with the objective of ensuring critical functions perform as required. Implementation of a preventive maintenance program using RCM helps reduce the cost of maintaining the plant and improves the efficiency by anticipating when maintenance will be required. An on-island warehouse, managed by Procurement Department staff, ensures there is adequate stock for maintenance repairs and plant operations.

- Capital Engineering provides technical support services for both Operations and Maintenance. Staff is responsible for all aspects of plant engineering including developing, procuring, and implementing all service contracts, consultant designs, and capital improvement projects at Deer Island. This group also manages the on-island Technical Information Center, which provides services to the DITP community and external clients, and ensures quick access to plant drawings and technical information for operational and maintenance needs.
- O&M Support 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 Deer Island Director’s Office provides overall management for the plant plus policy direction and support in the areas of public access and community relations.

Operating Assumptions:

Deer Island’s FY24 Budget assumes treatment of an average flow of 328 mgd based on four years (FY19-22) of historical data. The projected quantity of digested sludge to be pumped to FRSA (TSS basis) is 103.2TPD. This is based on six years of recent operating data for FY17-22.



Deer Island’s FY24 Budget accounts for the impact of self-generation of electricity from the steam turbine generators (STG), combustion turbine generators (CTG), hydroelectric generators, wind turbine generators, and photovoltaic panels. These assets will provide approximately 24.8% of the total electricity needs of the plant.

Deer Island continues to comply with the conditions of the National Pollutant Discharge Elimination System (NPDES) Permit issued in 1999, which has been administratively continued since FY05. The Environmental Protection Agency (EPA) has issued a preliminary permit in June 2023 for public comment. Comments are due back November 28, 2023. MWRA expects the new permit to become effective six months after comments have been received. Deer Island’s FY24 Budget assumed half a year under the new permit. When the new permit is issued, Deer Island’s treatment process will be required to kill enterococcus in addition to fecal coliform to comply with the new regulations at a substantial increase in chemical quantities and cost.

FY24 Goals and Initiatives:

I. Wastewater Quality and System Performance

- **Goal #4 – Compliance with Regulatory Requirements:** Meet or surpass environmental compliance standards at both MWRA treatment facilities and throughout the wastewater collection system. Through FY23, Deer Island has met all of its compliance goals.

- **Key Regulatory Performance Measurements:**

Effluent Characteristic	Permit Limits	FY21 Actual	FY22 Actual	FY23 Actual	FY24 Goal
Dry Day Flow (mgd)	436	262.0	297.0	257.7	100%
cBOD (mg/L)	25	5.7	6.3	6.8	100%
TSS (mg/L)	45	8.6	11.4	11.3	100%
TCR (ug/L)	631	<40	<40	<40	100%
Fecal Coliform	14,000	6	8	7	100%
pH (S.U.)	6 to 9	6.7	6.7	6.6	100%
Acute Toxicity	Pass	Pass	Pass	Pass	100%
Chronic Toxicity	Pass	Pass	Pass	Pass	100%

- **Goal #6 – Wastewater Infrastructure:** Move forward with design and construction of major wastewater infrastructure rehabilitation and renewal projects.
 - Issue Notice to Proceed for numerous contracts including the following major DITP asset protection projects including:
 - Design: Combined Heat and Power Design/ESDC/REI, Fire Alarm System Replacement Construction, Fire Alarm System Replacement REI, Digester & Storage Tank Rehab Design/ESD, HVAC Design/ESDC, Deer Island Dystor Membrane Replacement, Cryo Plant Equipment Replacement Design/ESDC/REI, Clarifier Rehab Phase 2 REI, MCC & Switchgear Replacement Construction, DITP Roofing Replacement, Deer Island As-Needed Design Phases 10-1, 10-2 & 10-3, Chemical Pipe Replacement Construction, Odor Control Rehab Design/ESDC, Gas Protection System Replacement Phase 2, Barge Berth Design/ESDC/REI, HVAC Equipment Replacement REI, and HVAC Control System Replacement.
 - Make substantial progress according to FY24 CIP schedule for other near-term major DITP projects including:
 - Eastern Seawall and Shoreline Protection Remediation, Fire Alarm System Replacement, Design, Variable Frequency Drive Replacements, South System Pump Station Variable Frequency Drive Replacement Design/ESDC/REI, Radio Repeater System Upgrade 2, Clarifier Rehab Phase 2 Design/ESDC, and MCC Switch Gear Replacement Design/ESDC/REI, and Clarifier Rehab Phase 2 REI.
 - Substantially complete CIP phases for DITP asset protection including the:
 - Deer Island Treatment Plant Roof Replacements, and Digester Cover Replacement and Screw Pump Replacements at Clinton.

II. Infrastructure Management and Resilience

- **Goal #9 – System Maintenance and Enhancement:** Maintain and enhance water and wastewater system assets over the long term at the lowest possible life cycle cost and acceptable risk, consistent with customer, community, and regulatory support services levels. Through FY23, Deer Island has met all of its goals in this area.
- **Key Maintenance Measurements:**

Indicator	FY21 Actual	FY22 Actual	FY23 Actual	FY24 Goal
Critical Equipment Availability	99.8	99.8	99.9%	100%
Predictive Maintenance Completion	96%	98.8%	99%	100%
Predictive Maintenance - % of work orders	25%	25%	25.1%	25%
867Maintenance Backlog (hours)	19,672 Standard	17,639 Standard	17,365 Standard	Within industry standard
Preventive Maintenance Completion	94%	98.7%	99%	100%
Maintenance Kitting - % of work orders	56%	57.1%	57.3%	57%

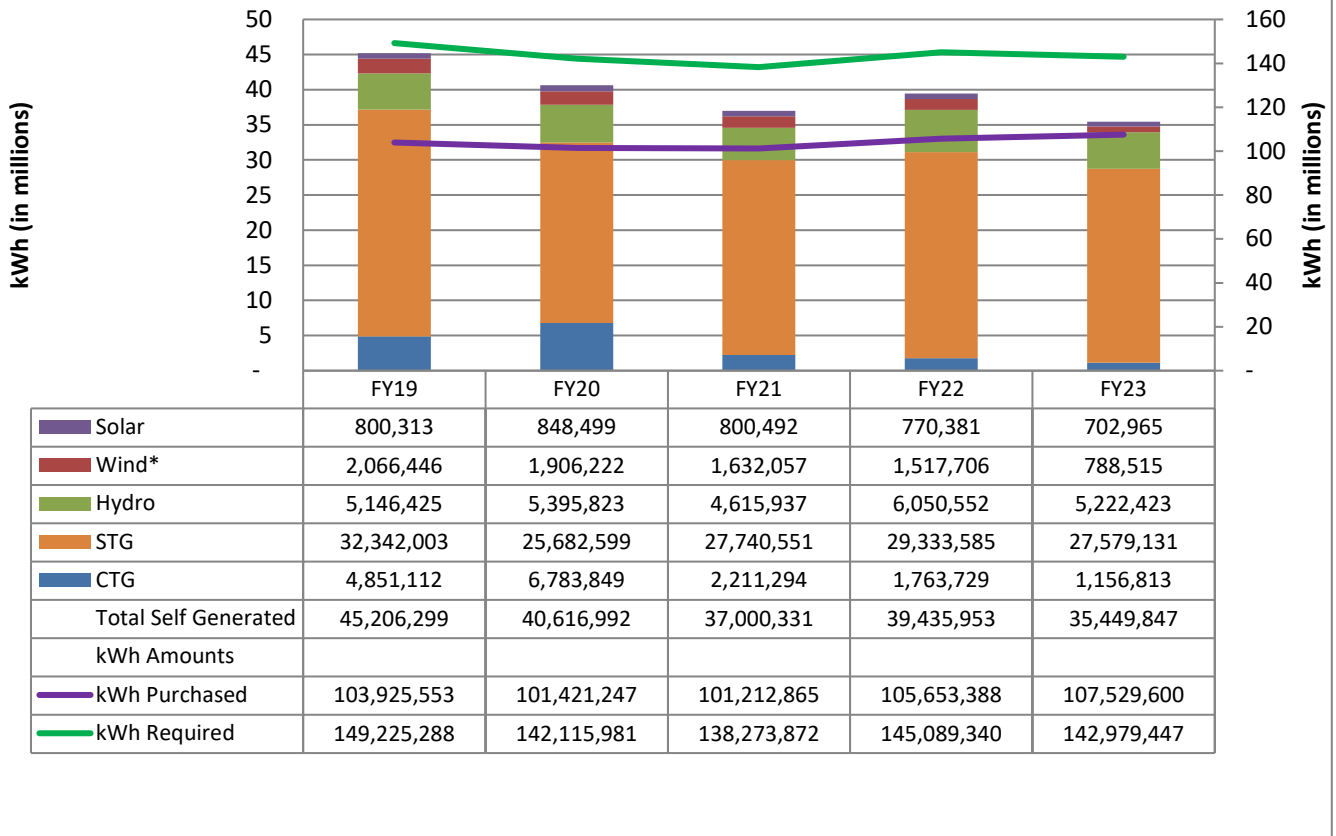
V. Environmental Sustainability

- **Goal #15 – Energy Optimization:** Continue to maximize energy efficiency of MWRA operations, renewable energy production, and revenue generation opportunities using MWRA’s energy assets.
- **Key Performance Measurements and Accomplishments:**

Indicator	FY21 Actual	FY22 Actual	FY23 Actual	FY24 Goal
% Required Power Self-Generated - Total	26.8%	27.3%	24.8%	28.5%
% Required Power Self-Generated – Renewables	25.2%	26.1%	24.0%	26.4%
Thermal/Power Plant Digester Gas Utilization	97.6%	98.3%	98.3%	98.1%
Avoided capacity costs	\$1,368,400	\$1,233,091	\$1,352,028	\$867,000
Generate revenue from energy programs (RPS credits, demand response)	\$1,894,133	\$1,472,827	\$1,191,356	\$1,090,570

- Continue to implement projects to reduce energy use, increase energy revenue, decrease greenhouse gas emissions, and increase self-generation capacity, particularly via renewable energy.

DITP Electricity (Actuals)



* On May 29, 2023 (FY23) one of the two wind turbines on Deer Island had a catastrophic failure. The second wind turbine has been offline while an investigation is being done and the second wind turbine is inspected to make sure it is safe to operate.

FY23 Year-End Accomplishments:

- Deer Island received the Platinum Peak Performance Award for calendar year 2022 from the National Association of Clean Water Agencies (NACWA) for the 16th continuous year. The award recognizes facilities for outstanding compliance with their National Pollutant Discharge Elimination System (NPDES) permit limits. DITP has had no permit violations for over 16 years.
- Deer Island met secondary permit limits at all times, treating on average 99.3% of flows with full secondary treatment. More detailed information about DITP’s NPDES Permit compliance is available on the Transparency/Performance Indicator section of MWRA’s website.
- Eversource completed the third annual maintenance on the new 115 kVA cross-harbor marine power cable to Deer Island during October/November 2022. Eversource worked on one side at a time so we remained on the grid for most of the work. All flows received disinfection and met numerical effluent standards.
- Completed numerous major maintenance projects including:

- Plumbers removed cast iron pipe and 16 valves which were corroding causing grit classifiers to build of grit. They installed sixteen valves which allows service water to flush out grit classifier. They also installed using a pro-press tool about 400' of stainless steel pipe. This will prevent any corrosion going forward and extend the life of the service system.
- HVAC staff changed out four large valves on main heat loop line to allow better isolation of the North Main Pump Station heat exchanger. Staff also repaired the heat exchanger by plugging two tubes, cleaning remaining tubes and replacing all gaskets. The heat exchanger is responsible to supply heat for North Main Pump Station and Odor Control facility.
- We have replaced one existing elevator controller in the Maintenance warehouse Building located in the stockroom. We replaced the existing controller with a new Galaxy controller. The Galaxy controller's variable-frequency closed loop controller with phase 1-2 fire service and code compliant features is state of the art system. The existing controller was obsolete.
- Station batteries were changed out at Main Switchgear Building. Two chargers and 120 batteries installed are extremely important to ensure reliability for our electrical distribution system.
- Deer Island sent out two reactor/aerator gearboxes for overhaul. Mechanical issues with the gearboxes due to wear were identified by the Condition Monitoring group through the use of vibration. The gearboxes were removed, installed, and functionally tested by Deer Island maintenance staff.
- New LED emergency lighting was purchased and installed by Deer island maintenance electricians in the Primary Galleries A-B.
- The Residuals Complex has numerous in line grinders, which provide continuous grinding of sludge into uniform, homogenized slurry. Mechanical staff changed out eight in-line grinders, which are smaller than the larger channel grinders, due to normal wear and tear.
- Electricians installed special LED lighting for the Digester complex. It required new conduit, connections, computer panel and supports. It allows staff to change colors to meet different events during the year.
-
- Issued Notice to Proceeds for Asset Protection Program contracts including the following:
 - Deer Island Radio Repeater System Upgrade Phase 2 (Sep-2022)
 - Deer Island Clarifier Rehabilitation Phase 2 Construction (Feb-2023)
- Substantially completed projects:
 - Deer Island Replace Odor Control Dampers (Jan-2023)
 - Deer Island Equipment Replacement Projections (Jun-2023)
 - Deer Island As-Needed Design 9-1 (Jun-2023)
 - Deer Island As-Needed Design 9-2 (Jun-2023)

Budget Highlights:

The FY24 Budget is \$69.3 million, an increase of \$10.4 million or 17.7% compared to the FY23 Budget.

- \$24.4 million for **Wages and Salaries**, an increase of \$1.6 million or 7.3%, compared to the FY23 Budget, primarily due to wage increases associated with reserves for un-awarded collective bargaining agreements (FY24). The FY24 Budget also includes \$172,000 for stand-by pay to support operational and maintenance needs primarily during storms and emergencies.

- \$1.5 million for **Overtime**, an increase of \$107,000 or 7.9% compared to the FY23 Budget primarily due to wage increases associated with reserves for un-awarded collective bargaining agreements (FY24). The FY24 Budget is based on multi-year historical trends and supports overtime required for operational coverage, critical maintenance projects, and regulatory requirements (i.e. inspections).
- \$14.3 million for **Chemicals**, an increase of \$8.3 million or 138.7% compared to the FY23 Budget. The increase is due price adjustments. The FY24 Budget, which is based on multi-year historical usage trends and projected market prices, includes \$6.2 million for sodium hypochlorite, an increase of \$4.5 million primarily due to price; \$5.5 million for ferrous/ferric chloride, an increase of \$3.2 million primarily due to price; \$872,000 for hydrogen peroxide, an increase of \$139,000 due to price; \$823,000 for polymer, an increase of \$198,000; \$301,000 for activated carbon, an increase of \$13,000; \$371,000 for sodium bisulfite, an increase of \$222,000 and \$187,000 for sodium hydroxide, a decrease of \$14,000. The budget includes half a year impact \$489,000 on sodium hypochlorite and sodium bisulfite for the anticipated impact of a new NPDES permit
- \$16.4 million for **Utilities**, an increase of \$124,000 primarily due to \$348,000 increase in kWh based on 4-year average and a slight increase in pricing. This is offset by a \$133,000 decrease in diesel fuel for lower pricing and quantity and \$91,000 for water for lower pricing and quantity.
- \$12.0 million for **Maintenance**, a decrease of \$8,000 or 0.1% compared to the FY23 Budget. The FY24 Budget includes \$5.5 million for materials and \$6.5 million for services. Of the total, \$6.5 million or 54% is for plant and machinery materials and services, \$1.9 million is for electrical system maintenance and \$1.9 million is for building and grounds work, and \$1.1 million is for HVAC system maintenance. The budget reflects project priorities with a particular emphasis on maintenance of critical equipment.
- \$270,000 for **Professional Services**, an increase of \$228,000 from the FY23 Budget. The FY24 Budget includes \$250,000 for a study to look at the feasibility of a battery backup system.
- \$496,000 for **Other Materials**, level funded from the FY23 Budget. The FY24 Budget includes \$166,000 for health and safety materials, \$120,000 for work clothes, \$86,000 for equipment and furniture, \$58,000 for vehicles expenses (bulk fuel and mileage reimbursements), and \$44,000 for office supplies.
- \$271,000 for **Other Services**, an increase of \$15,000 or 5.8%, from the FY23 Budget due to \$15,000 increase in police details. The FY24 Budget includes \$104,000 for health and safety services, \$55,000 for permit fees, \$37,000 for telephones, \$29,000 for membership dues and subscriptions, \$18,000 for police details, \$15,000 for freight charges, and \$5,000 for printing services. The budget is based on historical averages for most items in this category.

RESIDUALS MANAGEMENT

The **Residuals Management Program** manages the processing and disposal of approximately 99-110 dry tons per day (on average per year) total suspended solids (TSS) of sludge from the anaerobic digestion process at the Deer Island Wastewater Treatment Plant, as well as the disposal of grit and screenings from all MWRA facilities. MWRA pumps liquid sludge from Deer Island through the inter-island tunnel to the Fore River Pelletizing Plant where the sludge is dewatered, dried, and shipped by either rail or truck for use as fertilizer or to other appropriate disposal. MWRA is committed to the beneficial use of biosolids to the greatest extent practicable. MWRA seeks to dispose of all sludge and grit and screenings in a reliable, economical, and environmentally sensitive manner.

- MWRA has contracted with the New England Fertilizer Company (NEFCo) since 1991 to operate the sludge pelletizing plant and to market and distribute biosolids products. The first 10-year contract ran from 1991-2001. The second 15-year contract continued from 2001 to December 31, 2015. MWRA and NEFCo negotiated a five-year contract extension that commenced in January 2016 and ended December 31, 2020. MWRA and NEFCo negotiated another two-year extension, which commenced January 1, 2021 and is in effect during calendar years 2021 and 2022. The extension includes a third optional year for calendar year 2023, which the MWRA Board of Directors approved to execute at the June 2022 Board of Director’s meeting. MWRA is in the process of bidding the replacement contract.
- The FY24 Budget is based on the assumption of 103.2 average tons per day (TPD; TSS basis), consistent with historical averages from recent years.
- 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.

FY24 Final Current Expense Budget RESIDUALS MANAGEMENT PROGRAM

LINE ITEM	FY21	FY22	FY23	FY24	Change	
	Actuals	Actuals	Final Budget	Final Budget	FY24 vs. FY23	
WAGES & SALARIES	\$ 163,308	\$ 162,315	\$ 159,421	\$ 169,609	\$ 10,188	6.4%
MAINTENANCE	-	-	-	-	-	-
TRAINING & MEETINGS	-	-	3,200	3,200	-	0.0%
PROFESSIONAL SERVICES	18,681	6,700	20,000	-	(20,000)	-100.0%
OTHER MATERIALS	30,508	-	30,000	30,000	-	0.0%
OTHER SERVICES	14,436,975	16,238,552	18,268,003	28,952,354	10,684,351	58.5%
TOTAL	\$ 14,649,472	\$ 16,407,567	\$ 18,480,624	\$ 29,155,163	\$ 10,674,539	57.8%

FY24 Goals and Initiatives:

II. Wastewater Quality and System Performance

- **Goal #4 – Compliance with Regulatory Requirements:** Meet or surpass environmental compliance standards at both MWRA treatment facilities and throughout the wastewater collection system.

- Continue marketing efforts for Bay State Fertilizer.
- Maintain beneficial use of MWRA’s processed pellets.
- **Key Performance Measurements:**

Indicator	FY21 Actual	FY22 Actual	FY23 Actual	FY24 Goal
Pelletize all sludge received from DITP	100%	100%	100%	100%
Average Tons Per Day Sludge (TSS basis)	95.9	98.7	93.2	103.2
Monthly Ave % Capture – Processed Sludge (goal per contract with NEFCo)	91.5%	90.7%	90.9%	90%
Properly dispose of grit & screenings	100%	100%	100%	100%
Annual grit and screenings tonnage	5,087	5,390	5,064	5,331

- **Goal #6 – Capital Improvements:** Move forward with design and construction of major wastewater infrastructure rehabilitation and renewal projects.
 - Continue work on the following Residuals Asset Protection Program contracts:
 - Residuals Facility Plan/EIR

FY23 Year-End Accomplishments:

- Through NEFCo, processed and pelletized 93.2 tons per day of sludge on average from DITP.
- Through contracted operator, collected and properly disposed of 5,064 tons of grit and screenings.
- For FY23, earned \$26,900 in sales of Bay State Fertilizer, MWRA’s retail product.

Budget Highlights:

The FY24 Budget is \$29.2 million, which is \$10.7M or 57.8% more than the FY23 Budget.

- \$170,000 for **Wages and Salaries**, an increase of \$10k or 6.4%, funds one permanent position and stand-by pay to provide coverage for emergencies during off-shifts. This department also receives on-going management oversight and staff support from other departments of the MWRA including Deer Island, Treasury, and Operations Administration.
- **Other Materials** has a budget of \$30,000, level funded from FY23 to fund plastic bag material for sale of Bay State Fertilizer based on past cost.
- \$29.0 million for **Other Services**, an increase of \$10.7M or 58.5% from the FY23 Final Budget primarily due to estimated increases in contractual prices for the new sludge pelletization contract and increase in the grit and screen contract based on a new contract. The two major items funded in the FY24 Final Budget include \$2.4 million for grit and screenings disposal and \$26.6 million for sludge pelletization services, both are provided through contracts with private vendors.



MWRA Sludge Pelletizing Facility

CLINTON

The Clinton Wastewater Treatment Plant provides advanced wastewater 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.

A new NPDES permit issued April 1, 2023. EPA also issued a new General Permit for all Medium Wastewater Treatment Facilities on September 28, 2022 and the effective date was November 1, 2022. imposes additional requirements on phosphorus removal. Under a prior NPDES permit, MWRA commenced operations of a new Phosphorous building as of May 2018 to meet more stringent phosphorus removal requirements and lower discharge limit. The Clinton Plant complies with the new phosphorous limits established under the NPDES permit.

FY24 Final Current Expense Budget CLINTON WASTEWATER TREATMENT PROGRAM

LINE ITEM	FY21	FY22	FY23	FY24	Change	
	Actuals	Actuals	Final Budget	Final Budget	FY24 vs. FY23	
WAGES & SALARIES	\$ 931,087	\$ 947,511	\$ 970,223	\$ 1,053,100	\$ 82,877	8.5%
OVERTIME	77,850	89,828	57,676	84,691	27,015	46.8%
FRINGE BENEFITS	1,585	2,350	1,500	2,500	1,000	66.7%
CHEMICALS	353,753	467,329	480,060	815,020	334,960	69.8%
UTILITIES	273,721	363,257	420,340	369,741	(50,599)	-12.0%
MAINTENANCE	491,078	508,684	481,770	481,029	(741)	-0.2%
TRAINING & MEETINGS	178	-	300	300	-	0.0%
PROFESSIONAL SERVICES	9,342	1,500	24,500	14,500	(10,000)	-40.8%
OTHER MATERIALS	84,833	165,329	201,250	212,750	11,500	5.7%
OTHER SERVICES	22,292	29,518	23,655	23,340	(315)	-1.3%
TOTAL	\$ 2,245,719	\$ 2,575,306	\$ 2,661,274	\$ 3,056,971	\$ 395,697	14.9%

The plant provides secondary treatment using an activated sludge process in combination with advanced nutrient removal, chlorination and dechlorination. The major facilities include headworks, primary settling tanks, digesters, sludge processes, trickling filters, aeration tanks, secondary tanks, phosphorus removal via filtration 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, with a design flow of 3.01 mgd. The plant has a potential peak flow rate of 12 mgd. Residual materials are pressed and transported to an MWRA-owned landfill for final disposal. Staff manage and regularly monitor the landfill site, which discharges leachate back to the Clinton Wastewater plant for treatment.

FY24 Goals and Initiatives:

This department contributes significantly to the following MWRA goals included in the draft FY21-FY25 Five-Year Strategic Business Plan;

II. Wastewater Quality and System Performance

- **Goal #4 – Compliance with Regulatory Requirements:** Meet or surpass environmental compliance standards at both MWRA treatment facilities and throughout the wastewater collection system.
 - Fully comply with new phosphorous removal requirements.
 - Comply with Department of Environmental Protection (DEP) finding for landfill height levels and sloping that require ongoing remediation efforts.
 - **Key Regulatory Performance Measurements:**

Effluent Characteristic ^α	Permit Limit ^β	FY21 Actual	FY22 Actual	FY23 Actual	FY24 Goal % compliance
Daily Average Flow (mgd) – 12 month rolling average	3.01 mgd	2.27 mgd	3.24 mgd	2.49 mgd	100%
BOD (mg/L)	20 mg/L	1.79 mg/L	2.03 mg/L	1.71 mg/L	100%
TSS (mg/L)	20 mg/L	2.75 mg/L	2.54 mg/L	2.32 mg/L	100%
TCR (mg/L)	17.6 mg/L	<0.02 mg/L	<0.02 mg/L	<0.02 mg/L	100%
E.coli (cfu/100mL)	126/100mL	5.23/100mL	5.81/100mL	5.27/100mL	100%
pH (S.U.)	6.5-8.3	7.39	7.35	7.48	100%
Acute Toxicity	>100%	>100%	>100%	>100%	100%
Chronic Toxicity	≥62.5%	(*)<62.5%	≥62.5%	(*)<60.5%	100%
Total Phosphorus (mg/L) annual avg	0.15 mg/L Apr-Oct 1.0 mg/L Nov-Mar	0.11 mg/L	0.11 mg/L	0.10 mg/L	100%
Total Ammonia as Nitrogen (mg/L)	2 mg/L Jun-Oct 5 mg/L May 10 mg/L Nov-Apr	0.109 mg/L	0.1 mg/L	0.092 mg/L	100%

^β Clinton's new NPDES permit went into effect on April 1, 2023

(*Chronic Toxicity levels below target due to Q1. Staff investigated these intermittent instances of apparent toxicity in the plant effluent and found no obvious cause. The next three tests showed no evidence of toxicity (all results were 100%).

- **Goal #6 – Wastewater Infrastructure:** Move forward with design and construction of major wastewater infrastructure rehabilitation and renewal projects included in the FY24 CIP.

Issue notice to proceed for:

- Clinton Influent Sampler Enclosure (Jan-2024)
- Clinton Clariflocculator Valve Replacement (Jan-2024)
- Clinton Screw Pump Replacement Phase 2 Construction (May-2024)

III. Infrastructure Management and Resilience

- **Goal #9 – System Maintenance and Enhancement:** Maintain and enhance water and wastewater system assets over the long term at the lowest possible life cycle cost and acceptable risk, consistent with customer, community, and regulatory support levels.
 - Make substantial progress or complete major maintenance projects.
 - Replace sodium bisulfite tank and pump
 - Replace Trickling Filter #4
 - Install sodium bisulfite containment system

V. Environmental Sustainability

- **Goal #15 – Energy Optimization:** Continue to maximize energy efficiency of MWRA operations, renewable energy production, and revenue generation opportunities using MWRA’s energy assets.
 - Continue operations of recently installed natural gas line to replace use of fuel oil in the facility.
 - Continue to evaluate and implement energy audit recommendations.

FY23 Year-End Accomplishments:

- Staff performed process operation and maintenance of the new phosphorus reduction facility (PRF). The PRF was shut down for the winter and restarted in March in order to meet very low NPDES permit limits for phosphorus effective April 1, 2020. During the winter downtime, staff implemented a number of minor system modifications and improvements were made to increase the reliability of the system including replacement of a few of the filter cartridges and some backwash nozzles. The lower seasonal effluent phosphorus limit of 150 ug/L and 3.8 pounds per day loading limit became effective starting April 1, 2019. The effluent for FY23 has met these new lower limits.
- Completed numerous maintenance projects including the following:
 - Maintenance staff replaced tubing on the phosphorus system with hard piping.
 - Maintenance staff replaced motor on the #2 polymer pump.
 - Maintenance staff replaced the drive motor and gear box on the soda ash mixing tank.
 - Staff rebuilt the dry polymer loading dock door and the hinge assembly for the belt filter press system.
 - Staff rebuilt both the #1 and #2 Penn Valley Pumps for the soda ash system.
 - Plant staff dismantled and inspected the Wipps PRF sluice gate valve and determined a replacement is warranted.
 - Staff replaced the hydraulic pump in the influent wet well.

Budget Highlights:

The FY24 Budget for Clinton is \$3.1 million, an increase of \$396,000 or 14.9% from the FY23 Budget.

- \$1.1 million for **Wages and Salaries**, a change of \$83,000 or 8.5%, from the FY23 Budget due to wage increases associated with reserves for un-awarded collective bargaining agreements (FY24).
- \$85,000 for **Overtime**, an increase of \$27,000 or 46.8% compared to the FY23 Budget. Overtime is used for critical maintenance work and to meet the 24 hour, 7 days per week emergency coverage requirement. The increase based on historical spending and reflects potential impact of un-awarded collective bargaining agreements (FY24).
- \$815,000 for **Chemicals**, an increase of \$335,000 or 69.8% from the FY23 Budget. The increase is due to price increases.
- \$370,000 for **Utilities**, a decrease of \$51,000 or 12.0% from the FY24 Budget due lower electricity pricing. The budget includes \$326,000 for electricity, \$38,000 for natural gas, and \$2,000 for water.
- \$481,000 for **Maintenance**, a decrease of \$1,000 or 0.2% from the FY23 Budget.

- \$15,000 for **Professional Services**, a decrease of \$10,000 or 40.8% from the FY23 Budget. This funds as-needed consultant engineering and resident inspection services to support maintenance projects.
- \$213,000 for **Other Materials**, an increase of \$12,000, or 5.7% from the FY23 Budget. This line item includes \$190,000 for clean fill for the landfill operation.
- \$23,000 for **Other Services**, virtually level funded from the FY23 Budget. This line item includes \$13,000 for permit fees, \$6,000 for telephones, and \$3,500 for railroad easement expenses.



Clinton Wastewater Treatment Plant

FIELD OPERATIONS

The primary function 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 Wastewater Treatment Plant.

FY24 Final Current Expense Budget FIELD OPERATIONS

LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
WAGES & SALARIES	\$ 36,522,093	\$ 35,086,334	\$ 38,917,244	\$ 42,203,485	\$ 3,286,241	8.4%
OVERTIME	2,493,631	2,906,448	3,414,379	3,619,242	204,863	6.0%
FRINGE BENEFITS	57,191	65,687	81,071	81,071	-	0.0%
CHEMICALS	6,475,062	6,712,424	8,530,448	13,173,197	4,642,749	54.4%
UTILITIES	9,745,170	12,053,069	14,071,601	14,254,967	183,366	1.3%
MAINTENANCE	10,351,216	10,448,044	13,492,763	18,398,912	4,906,149	36.4%
TRAINING & MEETINGS	36,869	47,731	67,000	67,000	-	0.0%
PROFESSIONAL SERVICES	492,036	387,017	638,350	351,005	(287,345)	-45.0%
OTHER MATERIALS	774,541	726,517	1,202,822	959,301	(243,521)	-20.2%
OTHER SERVICES	3,557,423	3,230,184	3,206,388	3,628,194	421,806	13.2%
TOTAL	\$ 70,505,232	\$ 71,663,455	\$ 83,622,066	\$ 96,736,374	\$ 13,114,308	15.7%

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

FY24 Final Current Expense Budget FIELD OPERATIONS by Programs

Program	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
WASTEWATER OPERATIONS	\$ 12,074,142	\$ 13,468,362	\$ 14,913,610	\$ 15,770,108	\$ 856,498	5.7%
WATER OPERATIONS & MAINT	31,512,426	31,874,402	39,284,438	47,693,532	8,409,094	21.4%
METRO MAINTENANCE	14,391,217	14,020,954	14,788,763	16,234,299	1,445,536	9.8%
OPERATIONS SUPPORT	7,926,371	7,919,609	9,333,202	11,405,322	2,072,120	22.2%
FOD ADMIN	4,601,076	4,380,128	5,302,053	5,633,113	331,060	6.2%
TOTAL	\$ 70,505,232	\$ 71,663,455	\$ 83,622,066	\$ 96,736,374	\$ 13,114,308	15.7%

Wastewater Operations operates MWRA's wastewater transport facilities, including four continuously staffed headworks facilities; thirteen fully automated pumping stations; and five Combined Sewer Overflow (CSO) facilities which are similarly unstaffed. The wastewater system is monitored and controlled from the operations control center (OCC) in MWRA's Chelsea facility. Wastewater Operations aims to meet all operational and regulatory performance standards and requirements efficiently and cost-effectively.

**FY24 Final Current Expense Budget
WASTEWATER OPERATIONS**

LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
WAGES & SALARIES	\$ 5,934,968	\$ 5,756,843	\$ 6,315,061	\$ 6,675,951	\$ 360,890	5.7%
OVERTIME	896,256	1,191,704	1,084,523	1,149,595	65,072	6.0%
FRINGE BENEFITS	20,362	25,776	34,140	34,140	-	0.0%
CHEMICALS	541,675	499,075	684,952	1,200,540	515,588	75.3%
UTILITIES	4,313,405	5,673,687	6,647,687	6,562,444	(85,243)	-1.3%
MAINTENANCE	46,999	19,135	-	-	-	-
PROFESSIONAL SERVICES	-	-	-	-	-	-
OTHER MATERIALS	120,827	96,203	68,205	68,396	191	0.3%
OTHER SERVICES	199,650	205,939	79,042	79,042	-	0.0%
TOTAL	\$ 12,074,142	\$ 13,468,362	\$ 14,913,610	\$ 15,770,108	\$ 856,498	5.7%

Water Operations and Maintenance operates and maintains the water supply and treatment facilities to provide an adequate supply of properly treated drinking water to meet all operational and regulatory performance requirements. The Unit is responsible for the treatment and delivery of approximately 200 million gallons per day (average mgd) of water from the Quabbin and Wachusett reservoirs to the community water systems. Water must be supplied to customer



communities at the expected pressure. This unit is also responsible for the maintenance of 300 miles of distribution pipeline and 6,000 valves in a water system that encompasses a service area from Chicopee in the western part of the state to Lynnfield, Wakefield, Marblehead, Norwood and Canton in the metropolitan area. This unit operates twelve pumping stations in the Metropolitan area and operates and maintains MWRA’s western waterworks facilities, including the Carroll Water Treatment Plant, the Metro West Tunnel, the Brutsch Water Treatment Plant, the Cosgrove Intake Facility, the Norumbega Reservoir, and the covered storage facilities. There are two operations centers providing monitoring and control of the water system on a 24-hour per day basis. The Metropolitan Operations and Control Center (OCC) is located at MWRA’s Chelsea office Facility and the Western Operations Center is located at the Carroll Water Treatment Plant.

**FY24 Final Current Expense Budget
WATER OPERATIONS & MAINTENANCE**

LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
WAGES & SALARIES	\$ 14,046,969	\$ 13,381,802	\$ 15,156,162	\$ 15,955,648	\$ 799,486	5.3%
OVERTIME	1,101,764	1,184,366	1,306,148	1,384,515	78,367	6.0%
FRINGE BENEFITS	25,390	27,364	28,557	28,557	-	0.0%
CHEMICALS	5,933,387	6,213,349	7,845,496	11,972,657	4,127,161	52.6%
UTILITIES	4,906,464	5,797,904	6,523,895	6,717,598	193,703	3.0%
MAINTENANCE	4,336,886	4,216,253	7,305,144	10,677,466	3,372,322	46.2%
PROFESSIONAL SERVICES	250,665	358,562	398,349	201,004	(197,345)	-49.5%
OTHER MATERIALS	264,191	315,295	287,994	323,394	35,400	12.3%
OTHER SERVICES	646,710	379,507	432,693	432,693	-	0.0%
TOTAL	\$ 31,512,426	\$ 31,874,402	\$ 39,284,438	\$ 47,693,532	\$ 8,409,094	21.4%

Metro Maintenance is responsible for the maintenance of MWRA’s wastewater and water facilities within the Route 128 area. Staff maintain interceptors, pumps, facility equipment, and buildings and grounds.

**FY24 Final Current Expense Budget
METRO MAINTENANCE**

LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
WAGES & SALARIES	\$ 9,169,426	\$ 8,662,113	\$ 9,933,646	\$ 10,592,113	\$ 658,467	6.6%
OVERTIME	415,465	435,246	832,415	882,359	49,944	6.0%
FRINGE BENEFITS	10,137	10,756	16,701	16,701	-	0.0%
CHEMICALS	-	-	-	-	-	-
UTILITIES	-	-	-	-	-	-
MAINTENANCE	4,323,262	4,629,758	3,564,873	4,300,193	735,320	20.6%
PROFESSIONAL SERVICES	166,984	15,210	110,000	110,000	-	0.0%
OTHER MATERIALS	242,850	215,051	249,340	251,145	1,805	0.7%
OTHER SERVICES	63,093	52,820	81,788	81,788	-	0.0%
TOTAL	\$ 14,391,217	\$ 14,020,954	\$ 14,788,763	\$ 16,234,299	\$ 1,445,536	9.8%

Operations Support provides technical support to the FOD in three areas. Operations engineering staff coordinate all engineering issues related to the operation of the water and wastewater systems, and provide technical support to Operations staff. The SCADA unit is responsible for the maintenance of the water and wastewater Supervisory Control and Data Acquisition (SCADA) systems. Metering Department staff maintain revenue meters and provide flow data. Staff collect meter data for operational and revenue generating purposes from the water and wastewater systems. Over 200 water meters and over 250 wastewater meters are operated and maintained by MWRA staff. The data collection and analysis supports MWRA Rates and Budget Department’s allocation of MWRA rate revenue requirements.

**FY24 Final Current Expense Budget
OPERATIONS SUPPORT**

LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
WAGES & SALARIES	\$ 5,979,074	\$ 5,980,266	\$ 6,439,697	\$ 7,911,832	\$ 1,472,135	22.9%
OVERTIME	61,956	75,531	143,601	152,220	8,619	6.0%
FRINGE BENEFITS	1,302	1,760	1,644	1,644	-	0.0%
CHEMICALS	-	-	-	-	-	-
UTILITIES	64,318	58,527	57,753	67,846	10,093	17.5%
MAINTENANCE	1,234,121	1,222,063	1,867,977	2,617,652	749,675	40.1%
PROFESSIONAL SERVICES	7,133	11,332	130,001	40,001	(90,000)	-69.2%
OTHER MATERIALS	51,643	74,148	170,522	77,522	(93,000)	-54.5%
OTHER SERVICES	526,824	495,982	522,007	536,605	14,598	2.8%
TOTAL	\$ 7,926,371	\$ 7,919,609	\$ 9,333,202	\$ 11,405,322	\$ 2,072,120	22.2%

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

**FY24 Final Current Expense Budget
FOD ADMIN**

LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
WAGES & SALARIES	\$ 1,391,656	\$ 1,305,310	\$ 1,072,678	\$ 1,067,941	\$ (4,737)	-0.4%
OVERTIME	18,190	19,601	47,692	50,553	2,861	6.0%
FRINGE BENEFITS	-	31	29	29	-	0.0%
UTILITIES	460,983	522,951	842,266	907,079	64,813	7.7%
MAINTENANCE	409,948	360,835	754,769	803,601	48,832	6.5%
TRAINING & MEETINGS	36,869	47,731	67,000	67,000	-	0.0%
PROFESSIONAL SERVICES	67,254	1,913	-	-	-	-
OTHER MATERIALS	95,030	25,820	426,761	238,844	(187,917)	-44.0%
OTHER SERVICES	2,121,146	2,095,936	2,090,858	2,498,066	407,208	19.5%
TOTAL	\$ 4,601,076	\$ 4,380,128	\$ 5,302,053	\$ 5,633,113	\$ 331,060	6.2%

FY24 Goals and Initiatives:

I. Drinking Water Quality and System Performance

- **Goal #1 – Compliance with Regulatory Requirement and Public Health Standards:** Maintain drinking water quality to protect public health, and continue to ensure that MWRA water meets all applicable regulations.
 - Optimize operation of water treatment facilities to produce high quality, safe drinking water while maximizing water aesthetics (i.e. taste, clarity and odor).
 - Monitor drinking water quality in collaboration with member communities and the Department of Conservation and Recreation (DCR) in order to verify high quality water and provide guidance for operating decisions.

- Operate the reservoir system to optimize both quality and quantity of water available for water supply purposes and to meet statutory and regulatory requirements for downstream releases.

- **Key Regulatory Performance Measurements:**

Indicator	FY21 Actual	FY22 Actual	FY23 Actual	FY24 Goal
Turbidity < 5NTU	100%	100%	100%	100%
pH >9.1 & Alkalinity >37 mg/l	100%	100%	100%	100%
Disinfection Effectiveness	100%	100%	100%	100%

- Complete the 2023/2024 Carroll Water Treatment Plant half plant maintenance.
- Inspect, clean, and/or paint water storage tanks according to the prevailing maintenance plan.
- Continue valve replacement and exercising annual goals.

II. Wastewater Management and System Performance

- **Goal #4 – Compliance with Regulatory Requirements:** Meet or surpass environmental compliance standards at both MWRA treatment facilities and throughout the wastewater collection system.

- **Key Regulatory Performance Measurements:**

Indicator	FY21 Actual	FY22 Actual	FY23 Actual	FY24 Goal
Total annual flow (billion gallons based on DITP mgd) – Process all flow at headworks within system parameters	107.5	123.93	106.9	119.8
Minimize choking at headworks (# of hours/highly dependent on weather):				
Nut Island	0	0	0	0
Columbus Park	39.82	76.30	36.67	0
Ward Street	14.35	49.06	20.42	0
Chelsea Creek	1.7	52.77	15.73	0

III. Infrastructure Management and Resilience

- **Goal #9 – System Maintenance and Enhancement:** Maintain and enhance water and wastewater system assets over the long term at the lowest possible life cycle cost and acceptable risk, consistent with customer, community, and regulatory support service levels.
- Continue to ensure proper operations and maintenance of the water and wastewater systems and minimize system downtime by performing:
 - Preventative maintenance
 - Predictive maintenance
 - Corrective maintenance on equipment and linear assets
 - Leak surveys of the water system

- Water system valve inspections and exercise
- Wastewater pipelines, structures, water storage tanks, and inverted siphons inspections, and cleanings.
- Inspect, maintain, and improve the dams, dikes, and other facilities constituting the watershed system infrastructure through ongoing maintenance and an adequate multi-year capital improvement program to ensure system reliability and limit potential flood hazards.
- **Key Maintenance Measurements:**

Indicator	FY21 Actual	FY22 Actual	FY23 Actual	FY24 Goal
% Total Revenue Calculated Using Meters				
Water	99.65%	99.5%	98.6%	98%
**Wastewater	91.7%	95%	98.6%	95%
Water System:				
Leak Detection – miles surveyed)	101.71	190.48	167	150
Main Line Valves – # exercised	838	1168	582	950
Main Line Valves – # replaced	10	21	2	10
Blow-off Valves – # exercised	440	745	484	675
Blow-off Valves – # maintained	4	10	15	15
Wastewater System:				
Pipeline Inspections – miles	23.02	30.69	33.62	32
Pipeline Cleaning – miles	30.72	38	37.85	36
Structure Inspections – # structures	1025	814	652	650
Manhole Rehabilitation – # manholes	64	84	38	105
Inverted Siphon Inspections – # siphons	23	35	49	48
Inverted Siphon Cleaning – # siphons	7	47	46	36
Metro Maintenance-Equipment and Facilities:				
Ops Light Preventive Maint (PM) - % maint hours	11%	14%	11%	10%-15%
Preventive Maintenance Completion	100%	100%	100%	100%
*Maint Kitting – % work orders kitted	50%	63%	63%	60%
Ops Light Maint % PM Completion	100%	100%	100%	100%
Maintenance Backlog – crew hours	14,112	18,476	14,046	9-13.5k

VI. Environmental Sustainability

- **Goal #17 – Energy Optimization:** Continue to maximize energy efficiency of MWRA operations, renewable energy production, and revenue generation opportunities using MWRA’s energy assets.
 - Continue to implement projects to reduce energy use, increase energy revenue, decrease greenhouse gas emissions, and increase self-generation capacity, particularly via renewable energy, including:
 - Energy audits at all facilities as needed.
 - Stand-alone renewable energy projects at all MWRA facilities.
 - Electrification for heating and MWRA vehicle fleet energy efficiency, non-fossil fuel heating, and renewable energy projects into new construction, rehabilitation projects, and equipment replacement.

○ **Key Performance Measurements:**

Indicator	FY21 Actual	FY22 Actual	FY23 Actual	FY24 Goal
Energy programs-Generate revenue from FOD-managed facilities:				
Power Sales	\$687,819	\$927,553	\$1,114,379	\$730,000
Demand Response	\$188,124	\$132,534	\$90,325	\$43,000
Renewable Portfolio Standard Credits	\$383,516	\$397,298	\$264,464	\$347,000

FY23 Year-End Accomplishments:

Water System

- Completed the CWTP half plant maintenance.
- Staff continued to acclimate the lead pipes to the MWRA water system for the Corrosion Control Pipe Rig Project and met with the expert panel to map out the next phase of the study.
- Managed the design and coordination of Cell #2 of the Norumbega Covered Storage Tank cleaning. The tank had not been cleaned since its activation in 2004. Norumbega is a 115MG tank with three cells, approximately 42MG each. The remaining cells will be cleaned, one a year, over the next two years
- Metropolitan Operations crews successfully cleaned two of the three cells of the 20 MG Fells Reservoir Covered Storage Tank.
- All MWRA Significant Hazard and High Hazard Class dam regulatory Phase 1 inspections completed.
- Invasive species removal work continued at the Shaft 8 Intake Pool, the Wachusett, Sudbury, Foss, Ware River, Weston and Chestnut Hill Reservoirs. Detail invasive plant surveys were completed at all MWRA reservoirs.
- Completed successful winter drawdowns at Foss Reservoir and Chestnut Hill Reservoir.
- River Road Slope Stabilization Improvements work completed and Certificate of Completion request submitted to Clinton Conservation Commission.
- Staff successfully operated the Deer Island Water Supply system.
- Managed the consultant for the CWTP SCADA System Upgrades contract and provided SCADA support for the replacement of all PLCs.
- Successfully maintained all instrumentation, network, and communications infrastructure for the MWRA Water and Wastewater systems.
- Continued cybersecurity projects to improve SCADA cybersecurity profile in accordance with NIST guidelines.
- Completed the inspections of 13 MWRA water storage tanks.
- Assisted many customer communities with both routine and emergency assistance, including:
 - Leak detection for Belmont, Boston, Chelsea, Medford, Milton, Newton, Quincy, Revere, Saugus, Somerville, Swampscott and Wakefield.

- Provided planning, testing and hydraulic support to the City of Newton with their plan to isolate 75% of their 20 MG covered water storage tank and maintained adequate water system pressure throughout the City.

Wastewater System

- Electricians replaced the VFD unit for Pump #1 at Braintree Weymouth Intermediate Pump Station.
- Mechanics replaced the influent gate stem and actuator at New Neponset Pump Station.
- Mechanics and Plumbers replaced Pump #2 and its isolation plug valve at Houghs Neck Pump Station.
- Electricians replaced the VFD units for Pumps #1, 2 and 3 at Hingham Pump Station.
- Electricians replaced the VFD unit for Pump #1-1 at Caruso Pump Station.
- Mechanics replaced both channel grinders in the pumping station at Braintree Weymouth Pump Station.
- Plumbers replaced the river water intake strainers and the plug valves in the system at Prison Point CSO.
- Welders made repairs to the Pump #1 discharge piping at Prison Point CSO.
- Plumbers replaced two check valves at South Boston CSO Pumping Station.
- Plumbers installed a new compressed air line for purging the sodium bisulfite system after activation at Somerville Marginal CSO.
- Plumbers and Welders replaced Grit Pod #4 at Columbus Park Headworks.
- Mechanics and Welders replaced the grit collector flights in Channel #3 at Columbus Park Headworks.
- Mechanics replaced the dewatering pump in the overflow chamber at NIHW.
- Mechanics replaced the belt, as well as worn rollers, shafts, and bearings for Grit Conveyor #3 at NIHW.
- Mechanics and Electricians replaced the drive motor and clutch for Screen #3 at Ward Street Headworks.

Energy Conservation

- Incorporated several energy efficiency components into the Chelsea Creek HW rehabilitation project that was completed in FY22.
- Applied for, and was approved to participate in Eversource's EV Make Ready program. Under this program, Eversource will provide the entire electrical infrastructure for 20 new EV charging stations at the Chelsea Facility. This work is expected to begin in CY23.
- Installed facility-wide energy efficient LED lighting at the Carroll Water Treatment Plant and at the Clinton WWTP, as well as at various locations on Deer Island and at the Nut Island Headworks.
- Installed energy efficient Variable Frequency Drives on three pumps at Deer Island.
- Applied for and received grant funding to do an assessment of the hydroelectric turbines at Deer Island to review ways to optimize their generation.
- Purchased five additional electric vehicles.

Budget Highlights:

The FY24 Final Budget is \$96.7 million, an increase of \$13.1 million or 15.7% from the FY23 Budget.

- \$42.2 million for **Wages and Salaries**, an increase of \$3.28 million or 8.4% over the FY23 Budget, and reflects increases to collective bargaining agreements. The FY24 Budget includes \$454,000 for stand-by pay to ensure support for operational and maintenance needs during wet weather and emergencies and \$87,000 for interns to provide support in several areas including Operations Engineering, SCADA, and Pipe and Grounds Maintenance.
- \$3.6 million for **Overtime**, an increase of \$205,000 or 6.0% over the FY23 Budget. The FY24 Budget for overtime, which incorporates collective bargaining increases, includes \$1.8 million for emergency related overtime; \$1 million for planned overtime; and \$714,000 for operational coverage needs.
- \$13.2 million for **Chemicals**, an increase of \$4.6 million or 54.4% over the FY23 Budget. The FY24 budget includes \$12 million for water treatment chemicals and \$1.2 million for wastewater treatment chemicals and is based on multi-year historical usage trends and projected market prices. The budget includes \$5.8 million for sodium hypochlorite, \$3.1 million for soda ash, \$1.2 million for Carbon Dioxide, \$900,000 for liquid oxygen, \$700,000 for aqua ammonia, \$700,000 for Hydrofluosilic Acid, \$440,000 for sodium bisulfite, \$278,000 for other oxidizers, \$77,000 for Activated Carbon, \$30,000 for other chemicals (sodium thiosulfate) and \$15,000 for Sodium Hydroxide.
- \$14.3 million is included for **Utilities**, an increase of \$183,000 or 1.3% over the FY23 Budget. The FY24 Budget includes \$11.0 million for electricity, \$1.5 million for diesel fuel, \$1.1 million for natural gas, \$455,000 for water and \$104,000 for propane. There is a \$132,000 increase in electricity, a \$268,000 increase in natural gas, and a \$14,000 increase in propane, all due to price increases. There is a \$113,000 decrease in diesel fuel due to a projected price decrease, and a \$116,000 decrease in water due to less usage at the Nut Island Treatment Plant.
- \$18.4 million for **Maintenance**, an increase of \$4.9 million or 36.4% over the FY23 Budget due to project priorities and projected needs. The FY24 Budget includes \$8 million in major projects, \$5.3 million in day-to-day needs \$5.1 million for services, and \$55,000 for energy initiatives. Some of the major projects included for the FY24 Budget are:

- Annual Tank Cleaning - West	\$2,900,000
- Hatch Cover Replacements at Loring	\$600,000
- Hatch Cover Replacements at Fells	\$450,000
- Invasives Control-Wachusett Reservoir	\$425,000
- Eastern Ave Traffic Light	\$360,000
- JJCWTP Switchgear Replacement	\$300,000
- \$67,000 for **Training and Meetings**, level-funded with the FY23 Budget. The budget covers training required for work duties, health and safety compliance, job-related licensures and certifications, cyber-security and SCADA technical training.
- \$351,000 for **Professional Services**, a decrease of \$287,000 or 45.0% from the FY23 Budget primarily due to a decrease in use of engineering services to support several projects. The FY24 Budget includes \$190,000 for engineering services comprised of \$150,000 for as-needed engineering services to support CEB-funded maintenance projects; and \$40,000 for consulting services to configure security operations

technology for SCADA. Additionally, the professional services budget includes \$94,000 for an annual Macrophyte (invasive species) survey at the reservoirs; and \$53,000 for quality assurance services for Macrophyte harvesting, \$10,000 for PCB Abatement services and \$4,000 for Digsafe membership.

- \$959,000 for **Other Materials**, a decrease of \$244,000 or 20.2% over the FY23 Budget. The FY24 Budget includes \$269,000 for work clothes, \$226,000 for furniture, \$200,000 for vehicle expenses, \$196,000 for health and safety supplies, \$34,500 for office supplies, \$26,500 for lab and testing supplies, \$5,000 for computer software, \$1,900 for other materials, and \$1,000 for postage.
- \$3.6 million for **Other Services**, an increase of \$422,000 or 13.2% from the FY23 Budget primarily due to an increase in costs associated with the building lease located at 2 Griffin Way Chelsea, MA. The FY24 Budget includes \$2.4 million for annual lease payments for the Chelsea office building; \$601,000 for telecommunication services, and \$460,000 for police details.



Wachusett Aqueduct Water Pump Station Forebay

ENGINEERING AND CONSTRUCTION

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 reliable wastewater collection and treatment. Staff is organized into three units: 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. This work supports projects necessary for the maintenance, repair, and rehabilitation of wastewater and waterworks systems. In accordance with the CIP, the Department plans and implements the rehabilitation of existing facilities and construction of new facilities. This includes pipelines, pump stations, storage facilities, and treatment facilities on schedules that allow for sufficient system capacity and performance.

The **Wastewater Engineering Unit** manages all wastewater design and engineering projects including Combined Sewer Overflow (CSO) engineering activities as well as specialized technical services in electrical, structural, mechanical, and civil engineering disciplines.

The **Water Engineering Unit** manages all water design and engineering projects. The unit also maintains the Design Information Services Center (DISC), which provides computer-aided design and drafting (CADD) services.

The **Construction Unit** provides contract management and resident inspection on all MWRA water and wastewater construction and rehabilitation projects, with the exception of Deer Island Treatment Plant.

FY24 Final Current Expense Budget ENGINEERING AND CONSTRUCTION

LINE ITEM	FY21	FY22	FY23	FY24	Change	
	Actuals	Actuals	Final Budget	Final Budget	FY24 vs. FY23	
WAGES & SALARIES	\$ 8,493,035	\$ 7,494,769	\$ 9,134,725	\$ 9,497,803	\$ 363,078	4.0%
OVERTIME	25,744	29,973	116,838	101,250	(15,588)	-13.3%
FRINGE BENEFITS	94	121	500	500	-	0.0%
MAINTENANCE	313	958	-	-	-	-
TRAINING & MEETINGS	4,232	23,532	16,500	19,500	3,000	18.2%
OTHER MATERIALS	10,786	16,459	19,200	15,300	(3,900)	-20.3%
OTHER SERVICES	21,191	29,040	33,915	35,365	1,450	4.3%
TOTAL	\$ 8,555,395	\$ 7,594,852	\$ 9,321,678	\$ 9,669,718	\$ 348,040	3.7%

FY24 Goals and Initiatives:

The Engineering and Construction Department has significant responsibility for the following MWRA goals included in the draft FY21-FY25 Five-Year Strategic Business Plan;

Wastewater Quality and System Performance

- **Goal #6 – Wastewater Infrastructure:** Move forward with design and construction of major wastewater infrastructure rehabilitation and renewal projects. Initiatives include:
 - Continue to design and implement facility rehabilitation projects for various pump stations, headworks, and CSO facilities.
 - Continue to implement an ongoing program to review, prioritize, and accelerate interceptor renewal projects.
- **Goal #7 – CSO Plan Compliance:** Demonstrate that the CSO Plan meets its performance objectives. Ensure compliance with CSO NPDES permit requirements.
 - Comply with the CSO Variances for the Alewife Brook/Upper Mystic River Basin and Lower Charles River/Charles Basin issued to MWRA and CSO communities for the period Sept 1, 2019 through Aug. 31, 2024.

III. Infrastructure Management and Resilience

- **Goal #9 – System Maintenance and Enhancement:** Maintain and enhance water and wastewater system assets over the long term at the lowest possible life cycle cost and acceptable risk consistent with customer, community, and regulatory support levels.
 - Issue Notices to Proceed for numerous contracts in accordance with the FY24 CIP.
 - Substantially complete numerous project phases in accordance with the FY24 CIP.

For more information about Capital Improvement Program projects, please refer to the Fiscal Year 2023 Capital Improvement Program document located on the Budget page of the MWRA's website at mwra.com.

FY23 Year-End Accomplishments:

- Awarded or Issued Notices to Proceed for numerous contracts including the following:
 - Wastewater System:
 - Braintree Weymouth Improvements Construction
 - Braintree Weymouth Improvements Resident Inspection Services
 - Remote Headworks Shaft Access Improvements Construction
 - Fuel Oil Tank Replacement Construction Phase 2
 - Braintree Weymouth Intermediate Pump Station Transformer Replacement
 - Chelsea Creek Headworks Microwave Equipment
 - Fort Point Channel and Mystic Community Managed CSO work
 - Water System:
 - Shaft 7 New Connection Mains Section 24 & 25 Construction Phase 2
 - Corrosion Control Pipe Loop Study
 - Wachusett Lower Gate House Pipe & Boiler Replacement Construction
 - Wachusett Lower Gate House Pipe & Boiler Replacement Resident Inspection
 - Carroll Water Treatment Plant Soda Ash and Fluoride Resident Inspection
- Substantially completed numerous design and construction phases including the following:
 - Wastewater System:
 - Chelsea 008 Pipe Connection
 - East Boston Sewer Separation Community Managed Construction

- Water System:
 - Carroll Water Treatment Plant Sodium Hypochlorite System Modifications
 - Marlboro Pump Station Construction
 - Quabbin Water Supply Construction
 - Cosgrove Storage Building & Intake Improvements
 - Wachusett Bastion Rehab Construction
 - Wachusett Bastion Rehab Design/ESDC
 - Weston Aqueduct Supply Mains 3 (WASM 3) Construction 1
 - New Roofs At Water Pump Stations Construction

Budget Highlights:

The FY24 Budget is \$9.7 million, an increase of \$348,000 or 3.7%, as compared to the FY23 Budget.

- \$9.5 million for **Wages and Salaries**, an increase of \$363,000 or 4% compared to the FY23 Budget primarily for wage increases associated with collective bargaining agreements. FY24 CEB has 80 approved positions which reflects the addition of one position over FY23 and funds 77 positions net of the vacancy rate.
- \$101,000 for **Overtime**, which includes wage increases and overtime associated with nine construction projects scheduled for FY24. Overtime covers resident inspection at construction sites after regular work hours to ensure monitoring of construction projects. Overtime also covers unplanned design or survey needs, evening attendance at public meetings, and achieving project deadlines.
- \$20,000 for **Training & Meetings** to cover attendance at conferences and technical seminars. This funds staff attendance at conferences as part of MWRA's workforce development and succession planning strategies.
- \$15,000 for **Other Materials** to cover office supplies, work clothes, health and safety supplies, and survey equipment.
- \$35,000 for **Other Services** for printing/duplicating, telephone expenses, memberships and dues, on-line engineering services and police details.

PROGRAMS, POLICY AND PLANNING

Programs, Policy & Planning

Toxic Reduction and Control
Environmental Quality
Laboratory Services
Planning

The Deputy Chief Operating Officer oversees this section, which focuses on the following:

- Master planning, business planning, and strategic initiatives (such as system expansion);
- Environmental programs and regulatory coordination;
- Water and wastewater quality testing and reporting;
- Divisional budget preparation and monitoring;
- Financial planning and analysis;
- Accounts payable and contract administration;
- Human resources management functions; and
- Energy program planning, evaluation, analysis, reporting and audits.

The Deputy Chief Operating Officer also provides support to the Chief Operating Officer on key MWRA operations, technical, policy, community coordination, permitting, and public constituency matters.

FY24 Final Current Expense Budget

PROGRAMS, POLICY & PLANNING

LINE ITEM	FY21	FY22	FY23	FY24	Change	
	Actuals	Actuals	Final Budget	Final Budget	FY24 vs. FY23	
WAGES & SALARIES	\$ 16,409,172	\$ 15,175,053	\$ 17,028,864	\$ 17,547,238	\$ 518,374	3.0%
OVERTIME	253,918	278,691	254,926	318,419	63,493	24.9%
FRINGE BENEFITS	2,750	2,931	3,329	3,482	153	4.6%
UTILITIES	46,182	56,873	39,627	39,625	(2)	0.0%
MAINTENANCE	365,002	425,572	542,537	530,717	(11,820)	-2.2%
TRAINING & MEETINGS	6,290	10,642	34,154	35,154	1,000	2.9%
PROFESSIONAL SERVICES	2,136,030	1,608,772	1,943,863	2,228,150	284,287	14.6%
OTHER MATERIALS	1,743,087	1,441,977	1,751,792	1,819,231	67,439	3.8%
OTHER SERVICES	360,185	418,189	394,432	402,738	8,306	2.1%
TOTAL	\$ 21,322,616	\$ 19,418,700	\$ 21,993,524	\$ 22,924,754	\$ 931,230	4.2%

The Programs, Policy & Planning Section is composed of the Toxic Reduction and Control, Environmental Quality (EnQual), Laboratory Services, and Planning departments. The Environmental Quality Department has two units; EnQual-Wastewater and EnQual-Water Quality Assurance. In total, the budgets for these programs represent 11.4% of the Operations Division's FY22 Budget.

**FY24 Final Current Expense Budget
PROGRAMS, POLICY & PLANNING by Program**

PROGRAM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
TOXIC REDUCTION & CONTROL	\$ 5,276,090	\$ 4,758,727	\$ 5,183,705	\$ 5,519,706	\$ 336,001	6.5%
ENVIRONMENTAL QUALITY	5,401,703	5,216,155	6,043,097	6,244,513	201,416	3.3%
LABORATORY SERVICES	7,990,181	7,039,673	7,575,885	8,009,845	433,960	5.7%
PLANNING	2,654,642	2,404,145	3,190,837	3,150,690	(40,147)	-1.3%
TOTAL	\$ 21,322,616	\$ 19,418,700	\$ 21,993,524	\$ 22,924,754	\$ 931,230	4.2%



Nut Island Headworks

TOXIC REDUCTION AND CONTROL

The Toxic Reduction and Control (TRAC) Department operates a multi-faceted program to minimize and control the inflow of hazardous or toxic materials into the MWRA sewer system. TRAC operates MWRA’s Environmental Protection Agency (EPA) approved Industrial Pretreatment Program and is responsible for all associated activities which include conducting inspections (approximately 1,250 annually), issuing permits (approximately 500 annually), conducting sampling (more than 2,500 events annually), and carrying out enforcement activities (approximately 300 annually). The program tracks more than 1,900 permitted facilities and 4,000 gas/oil separators. TRAC uses a software application to manage an extensive amount of industrial data on analytical test results, compliance status, and facility sampling and permitting requirements.

FY24 Final Current Expense Budget TOXIC REDUCTION AND CONTROL

LINE ITEM	FY21	FY22	FY23	FY24	Change	
	Actuals	Actuals	Final Budget	Final Budget	FY24 vs. FY23	
WAGES & SALARIES	\$ 4,940,884	\$ 4,421,164	\$ 4,869,896	\$ 5,123,698	\$ 253,802	5.2%
OVERTIME	146,013	186,244	133,926	197,419	63,493	47.4%
FRINGE BENEFITS	1,647	1,823	1,647	1,800	153	9.3%
MAINTENANCE	27,970	20,108	12,800	16,500	3,700	28.9%
TRAINING & MEETINGS	1,025	100	5,300	5,300	-	0.0%
OTHER MATERIALS	136,079	109,926	137,577	150,488	12,911	9.4%
OTHER SERVICES	22,472	19,362	22,558	24,500	1,942	8.6%
TOTAL	\$ 5,276,090	\$ 4,758,727	\$ 5,183,705	\$ 5,519,706	\$ 336,001	6.5%

FY24 Goals and Initiatives:

II. Wastewater Management and System Performance

- **Goal #4 – Compliance with Regulatory Requirements:** Meet or surpass environmental compliance standards at both MWRA treatment facilities and throughout the wastewater collection system.
 - Continue to carry out the Pretreatment Program to protect receiving water quality, maximize the beneficial reuse of wastewater residuals, and protect workers and MWRA’s wastewater treatment plants and receiving waters.
 - Ensure compliance with MWRA and Federal regulations by issuing appropriate enforcement actions as outlined in the Enforcement Response Plan.
 - Staff will continue to transition the 8M permitting process into TRAC’s Pre-treatment Information Management System (PIMS) software.
 - TRAC staff will utilize the PIMS software to schedule and track work and to draft permits and track permit requirements. Sampling required by permits is entered into the PIMS system by permittees’ contract laboratories. This electronic reporting system is subject to EPA’s Cross Media Electronic Reporting Rule (CROMERR).
- **Goal #5 – Regulatory Changes:** Continue to initiate plans and studies to prepare for regulatory changes; identify opportunities to refine monitoring requirements; and improve effluent quality.
 - Prepare updated Local Limits Studies for Deer Island in accordance with EPA guidelines to confirm appropriate discharge limits from industries.
 - Continue to closely follow developing permit issues such as the impact of changes in bacterial and nutrient water quality standards; effluent loading limits; emerging contaminants and PFAS

regulations; stormwater permitting; endangered species designations and phosphorus and PFAS in biosolids.

FY23 Year-End Accomplishments:

- In FY23 MWRA received the Clinton NPDES permit. The NPDES permit for the Clinton Wastewater Treatment Plant required that the MWRA conduct an analysis of the industrial discharge limits for permitted industries in the Clinton Sewerage Service Area and submit a written technical evaluation of the results. TRAC prepared and submitted to EPA and DEP, updated Local Limits Studies for the Clinton Wastewater Treatment Plant in accordance with EPA guidelines to confirm appropriate discharge limits from industrial users.
- TRAC completed a full industrial survey of the Clinton Wastewater Treatment Plant service area. The industrial survey was completed to capture potential industrial sources of Per-and polyfluoroalkyl substances (PFAS) required to be monitored during calendar year 2024 as required in the Clinton NPDES permit.
- In accordance with EPA’s Cross-Media Reporting Regulation (CROMERR), TRAC successfully registered all laboratories submitting wastewater sample results on behalf of TRAC permitted industrial users with an EPA Shared CROMERR Services (SCS) user account. This makes all data received in PIMS CROMERR compliant. TRAC requested EPA approval for the proposed process of electronic receipt of self-monitoring data.
- Key performance indicators includes;

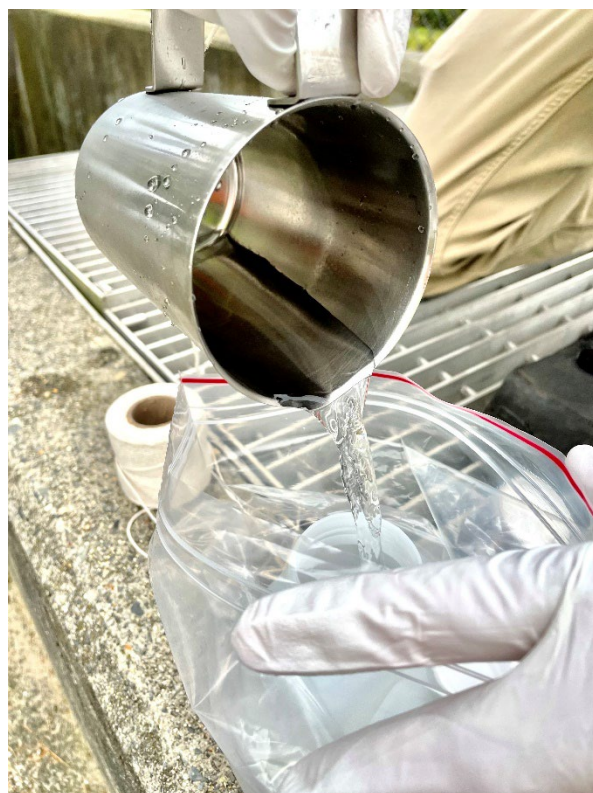
Indicators	FY21 Actual	FY22 Actual	FY23 Actual	FY24 Goal
EPA Required SIU Monitoring Events	166	159	159	161
Non-SIU Monitoring Events	136	90	59	90
SIU Connections to be Sampled	384	421	382	391
EPA Required SIU Inspections	198	184	189	179
SIU Permits due to Expire	52	82	62	92
Non-SIU Permits due to Expire	243	268	452	210
Issue Annual Industrial Pretreatment Program Report	Oct 2021	Oct 2022	Oct 2023	Oct 2024

Budget Highlights:

The FY24 Budget is \$5.5 million, an increase of \$336,000 or 6.5%, from the FY23 Budget.

- \$5.1 million for **Wages & Salaries**, an increase of \$254,000 or 5.2% from the FY23 Budget primarily due to wage increases associated with collective bargaining agreements. The budget includes \$82,000 for stand-by pay for wet weather sampling events.
- \$197,000 for **Overtime**, an increase of \$63,500 or 47.4% from the FY23 Budget primarily due to increases associated with collective bargaining agreements. Overtime covers sampling, monitoring, and inspections during off-hours as well as emergencies and wet weather events.

- \$16,500 for **Ongoing Maintenance**, an increase of \$3,700 or 29% from the FY23 Budget. This funds sampling equipment, materials, and maintenance of equipment used in sampling discharges at permitted industries.
- \$150,000 for **Other Materials**, an increase of \$13,000 or 9.4% from the FY23 Budget. Funding in this line item mainly supports lab and testing supplies, health and safety materials, and work clothes.
- \$24,500 for **Other Services**, an increase of \$1,900 or 8.6% from the FY23 Budget. This line item also funds printing costs for regulations, telecommunications, public advertising of industrial users in Significant Noncompliance, and police details for sampling work done in public streets.



PFAS sampling at the Clinton Wastewater Treatment Plant effluent to support NPDES compliance

ENVIRONMENTAL QUALITY

The core functions of the Environmental Quality Department are to monitor and report on the quality of drinking water and to ensure compliance with regulatory reporting requirements governing drinking water; to monitor wastewater and the receiving water environment as laid out in the Ambient Monitoring Plan; and to ensure compliance with regulatory reporting requirements governing wastewater treatment and discharges.

FY24 Final Current Expense Budget ENVIRONMENTAL QUALITY

LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
WAGES & SALARIES	\$ 3,751,078	\$ 3,534,748	\$ 3,791,256	\$ 3,968,005	\$ 176,749	4.7%
OVERTIME	15,174	9,654	22,000	22,000	-	0.0%
FRINGE BENEFITS	127	66	200	200	-	0.0%
MAINTENANCE	95,901	98,652	223,520	208,000	(15,520)	-6.9%
TRAINING & MEETINGS	(200)	4,673	17,000	17,000	-	0.0%
PROFESSIONAL SERVICES	1,325,405	1,364,862	1,770,421	1,821,148	50,727	2.9%
OTHER MATERIALS	103,629	123,113	127,100	121,400	(5,700)	-4.5%
OTHER SERVICES	110,589	80,387	91,600	86,760	(4,840)	-5.3%
TOTAL	\$ 5,401,703	\$ 5,216,155	\$ 6,043,097	\$ 6,244,513	\$ 201,416	3.3%

The **Environmental Quality Department** (EnQual) has two units: EnQual-Water Quality Assurance (EnQual-Water) and EnQual-Wastewater (EnQual-WW). EnQual-Water manages compliance with the reporting requirements of the Massachusetts Department of Environmental Protection (MADEP) Drinking Water Regulations, as well as conducts and oversees the drinking water quality-monitoring program. Activities include maintaining the Contaminant Monitoring System (CMS), reservoir profiling buoys, water quality instrumentation, and a mobile CMS unit for as-needed sampling including emergency response situations. The group also conducts an algae monitoring program, responds to customer complaints, conducts sampler training; reviews and reports system and community water quality data while assessing needs for treatment plant chemical dose changes; and conducts community sampler training. The unit assists water department officials with water quality concerns such as declining chlorine residuals, total coliform or *E. coli* detections including preparation for possible Boil Water Order events, storage tank management, and regulatory level assessments.

EnQual-WW manages compliance with the reporting requirements of MWRA's National Pollutant Discharge Elimination System (NPDES) permits. The group must submit permit reports to state and federal regulators, the science advisory panel and its subcommittees, and post many of these reports on its Harbor and Bay web pages. EnQual-WW manages environmental data and monitors and reports on the environmental quality of Massachusetts Bay, sewage influent and effluent, Boston Harbor and its tributary rivers, and Harbor beaches. EnQual-WW uses the monitoring data to demonstrate benefits of CSO control and support future decision-making. EnQual-WW also keeps current with upcoming and draft regulations, providing comments and evaluating potential impacts on MWRA operations.

**FY24 Final Current Expense Budget
ENVIRONMENTAL QUALITY by Program**

PROGRAM	FY21	FY22	FY23	FY24	Change	
	Actuals	Actuals	Final Budget	Final Budget	FY24 vs. FY23	
ENQUAL	\$ 3,110,135	\$ 2,951,230	\$ 3,531,576	\$ 3,660,252	\$ 128,676	3.6%
WATER QUALITY ASSURANCE	2,291,568	2,264,925	2,511,521	2,584,261	72,740	2.9%
TOTAL	\$ 5,401,703	\$ 5,216,155	\$ 6,043,097	\$ 6,244,513	\$ 201,416	3.3%

The Environmental Quality Department has significant responsibility for the following MWRA goals included in the Five-Year Strategic Business Plan (FY21-FY25):

FY24 Goals and Initiatives:

I. Drinking Water Quality and System Performance

- **Goal #1 – Compliance with Regulatory Requirements and Public Health Standards:** Maintain drinking water quality to protect public health, and continue to ensure that MWRA water meets all applicable regulations and reporting requirements.
 - Manage water facility NPDES permits, and provide monthly and quarterly reports to regulators.
 - Under the existing Interdepartmental Service Agreement with UMass Amherst, continue to develop strategies for the control of disinfection by-products, and treatment of algae and cyanobacteria in the Wachusett and Quabbin Reservoirs.
 - In coordination with the MA Department of Conservation & Recreation (DCR), continue to develop operational emergency response plans for nuisance and harmful algal blooms, detection of taste and odor compounds, and algal toxins. In FY24, we will meet more regularly to discuss important water quality topics.
 - Continue to monitor algal toxins and taste and odor compounds in source and drinking water and adapt the program to the rapidly changing regulatory landscape of this issue.
 - Continue the process of transitioning water quality reporting to automated platforms from an EnQual-Water database.
 - Continue to respond to MADEP and the U.S. Environmental Protection Agency (USEPA) regarding regulatory changes for drinking water quality monitoring.
 - In FY23 and continuing into FY24, staff will be replacing the current CMS units with upgraded s::can units.
 - On an on-going basis, staff will continue to assess the market for new technologies associated with continuous drinking water monitoring, sensors, and alarming. Staff participate in an EPA facilitated Online Water Quality Monitoring Forum to stay well-informed of equipment other utilities are using.
 - Continue to assist communities with drinking water regulatory compliance including level assessments, coliform sample plan updates, sample site investigations, Boil Water Order planning, and water quality reporting.
 - On a weekly basis, generate and present various water quality data on both the Wachusett & Quabbin systems to treatment plant and water quality staff to assess and/or modify treatment plant chlorine dosing. In FY23, staff began automation of this report.
 - Support Lead and Copper regulatory program by providing data to the Expert Panel for the lead Pipe Rig, collecting samples from the rig, and performing field tests. Also, continue to coordinate and collect samples for “Find and Fix” requirements of the Lead and Copper Rule

program. As part of the new Lead and Copper Rule with a compliance deadline of October 2024, any residence that is over the Action Level needs a follow-up sample at a nearby routine community sample site within 3 days (“find and fix” program).

- **Goal #2 –Water Quality Public Communications:** Continue to effectively report and communicate water quality information internally and to our customers.
 - As part of an Authority Consequence Management Plan, operate a comprehensive network of water quality monitoring stations; operate and maintain four reservoir profiling buoys, maintain a mobile water quality trailer to provide field-monitoring capabilities; and oversee a quality-monitoring program for emergency standby reservoirs. Develop and train staff on emergency response procedures and contaminant response procedures for reservoir or distribution system events.
 - Collect samples and evaluate data for the emergency standby reservoirs to ensure they are ready for use in the event of a drinking water shortage. Continue to annually report on reservoir data.
 - Train water department staff from MWRA communities in drinking water coliform sampling and chlorine residual and other water quality parameter testing, drinking water quality complaints, emergency response, and regulatory compliance assistance. Disseminate monthly community chlorine residual reports to communities. Train additional MWRA-member community staff on the use of water quality instruments that measure multiple parameters. On a semi-annual basis, provide training on water quality topics during MWRA’s semi-annual Emergency Response Training sessions.
 - Finalize updates to several response plans including those for total coliform, turbidity, loss of treatment, water quality complaints, reservoir contamination events, Contaminant Monitoring Alarm Management and *E. coli* detections/Boil Water Orders.

II. Wastewater Quality and System Performance

- **Goal #4– Compliance with Regulatory Requirements:** Meet or surpass environmental compliance standards at all MWRA treatment facilities and throughout the wastewater collection system.
 - Respond to public interest and improve timeliness of accurate reporting. Continually improve systems to more quickly gather and report accurate combined sewer overflow (CSO) and sanitary sewer overflow location and volume data. Sewage overflows (CSO, Blending, and certain SSOs) are now reported within two hours to a subscriber list and posted on MWRA’s website.
 - Continue to develop and manage a monitoring program for Boston Harbor and its tributary rivers, and Massachusetts Bay, reflecting permit and CSO Variance requirements, relevant current concerns, and long-term interests of the area.
 - Continue to implement the reporting requirements of DITP and Clinton Treatment Plant NPDES permits. Respond to regulatory changes and program initiatives, including any new permits.
 - Continue to produce scientific reports and manage environmental monitoring data; make data and analysis available in-house, in public presentations, online, and in designed print products; keep up-to-date data available for presentations to regulators and other interested parties.

- **Goal #5 – Regulatory Changes:** Continue to initiate plans and studies to prepare for regulatory changes; identify opportunities to refine monitoring requirements; and improve effluent quality.
 - Review and comment on the draft updated NPDES Permit for DITP. Identify possible impacts to operations, laboratory, TRAC, and NPDES reporting. Provide information to member communities and advisory committees to assist them in making their comments.
 - Review other draft permits, including general permits that affect MWRA facilities, and regulatory changes, e.g., water quality standards and criteria.

- **Goal #7 – Combined Sewer Overflow Plan Compliance:** Assist Engineering & Construction to complete all CSO milestones in the Long Term Control Plan and assess the performance of the combined sewer system, and identify additional mitigation projects as needed to meet goals.
 - Provide technical and scientific support for additional analyses following the EPA-required CSO Program performance assessment.
 - Working with staff from Planning, Engineering and Construction, and Operations, continue work on the CSO performance assessment, and the Variance requirements including ongoing water quality monitoring, creation of an Updated CSO Control Plan for the Charles and Mystic/Alewife, coordination with CSO communities, and public engagement.
 - To continue to meet Variance requirements for the Mystic/Alewife and Charles watersheds, produce annual water quality report bringing together disparate datasets such as localized rainfall data, metered and modeled CSO discharges, and receiving water quality.

FY23 Year-End Accomplishments:

III. Drinking Water Quality and System Performance

- **Goal #1 – Compliance with Regulatory Requirement and Public Health Standards:**
 - In FY23, MWRA and DCR collected algae samples on Wachusett and Quabbin Reservoirs. Staff performed algal toxin and taste and/or odor compound sampling at treated water taps through the routine monitoring season. Results revealed no cyanotoxin detections during any routine sampling events.
 - Continued to develop and implement automation of weekly water quality reporting and application development.
 - Staff, working in conjunction with the Engineering & Construction department and consultant CDM Smith, continue to meet to redesign the Route 12 shed sampling intake system.
 - Throughout FY23 staff completed the following initiatives:
 - Community assistance sampling events: 16 events
 - Water quality complaint assistance: 6 events
 - Offline pipeline or tank clearance sampling: 39 events
 - Drinking water sampler training: 11 events
 - Performed “Find and Fix” sampling: As part of the updated Lead and Copper Rule announced in 2021, any residence that is over the Action Level needs a follow-up sample at a nearby routine community sample site within 3 days. ENQUAL performed this task in September–November, 2022 at 18 locations, all within the DEP timeline.
 - Continuing into FY23, ENQUAL staff provided sampling support for the Carroll Water Treatment Plant lead pipe-rig study. This project involves multiple groups across the agency

and its goal is to measure lead in tap water using community lead service lines with various corrosion control treatment.

- Ensured winter maintenance of all reservoir buoy-related equipment; installed additional batteries on all buoys in FY23. Facilitated the bidding of a replacement boat for reservoir sampling and buoy maintenance.
- Procured replacement CMS analyzers to replace older units as budgeted for in the FY23 and FY24 CIP budgets.

- **Goal #2 –Water Quality Public Communications: Continue to effectively report and communicate water quality information to our customers and public officials.**

- In FY23, continued to assess the market for new technologies associated with continuous drinking water monitoring and alarming and determine if wholesale system replacements are warranted. Determined that s::can continues to provide the functionality MWRA requires for the CMS program.
- Assisted numerous MWRA communities with sampling or testing needs in FY23. Most assistance was related to storage tank clearance sampling following cleaning events, coliform detection investigations, special Optimal Water Quality Parameter sampling, or coliform sampling.
- Provided updated community sampling training and community water quality briefings.
- Continued to provide monthly virtual drinking water sampler training to newly hired MWRA and community sampling staff.
- Presented information on water quality at both the spring and fall Emergency Response Planning training that MWRA provides routinely.
- Conducted training sessions on chemical delivery acceptance procedures for water and wastewater operators and participated in a state audit of chemical delivery paperwork. State audit did not find any items of concern relating to the bulk chemical delivery program.

EnQual-Wastewater

- **Goal #4– Compliance with Regulatory Requirements:**
 - EnQual-Wastewater published 13 technical reports in FY23.
 - Implemented MWRA’s sewage notification web pages and database to meet the new rapid notification requirements for CSOs, SSOs, and blending in the Sewage Notification Regulations (314 CMR 16.00). Submitted the final Sewage Notification Plan as required, and revised the plan as directed by MassDEP. Led an interagency coordination effort in metro Boston to assist with compliance, including developing and distributing warning signs to post at public access locations. Based on lessons learned from large storms in FY22, developed and updated standard operating procedures to allow effective communication and training for future staff to utilize during very large storms.
 - Met all NPDES reporting requirements including routine monthly, quarterly, and annual reports, and required notifications under Part II of permits, Contingency Plan, DITP blending order. Missed no reporting deadlines.
 - Completed update of software used to implement the DITP permit’s water quality modeling requirements and reduced backlog of annual reports.

- Observing Covid-19 protocols, conducted all ambient monitoring sampling required under the DITP NPDES permit, collecting and analyzing seawater, sediment and flounder, lobster, and mussel samples for evidence of outfall-related environmental degradation (none was observed).
- Complied with monitoring and reporting requirements for new permits including the Medium Wastewater General Permit for Clinton and the Dewatering & Remediation General Permit for Norumbega tank cleaning, as well as the CSO Variances for the Alewife/Upper Mystic and Charles Rivers.

Goal #5 – Regulatory Changes:

- Reviewed and (where appropriate) commented on other communities’ draft permits, including on a new requirement to plan for major storms decades in the future.
- Provided information to USEPA Region 1 to inform on issues related to their preparation of a new DITP permit, and met with both USEPA and MADEP.
- Held several internal meetings and prepared briefings and presentations to be able to comment quickly on a draft DITP permit when issued.

Goal #7 – Combined Sewer Overflow Plan Compliance:

- Continued monitoring (using Covid-19 safety protocols) and data analyses required by the CSO Variances for the Charles and Alewife/Mystic Rivers.
- Assisted with public briefings, interagency meetings, and reports for variances.
- Continued to use the CSO public notification system implemented in July 2020 to make required notifications to regulatory agencies, boards of health, and subscribers. As of August 2023, notifications are being sent to more than 250 subscribers, including the required notifications to regulatory agencies and boards of health.
- Made notifications of blending, CSOs, and SSOs, and updated website data, in accordance with the Sewage Notification Law and Regulations which require reporting within two hours.

Budget Highlights:

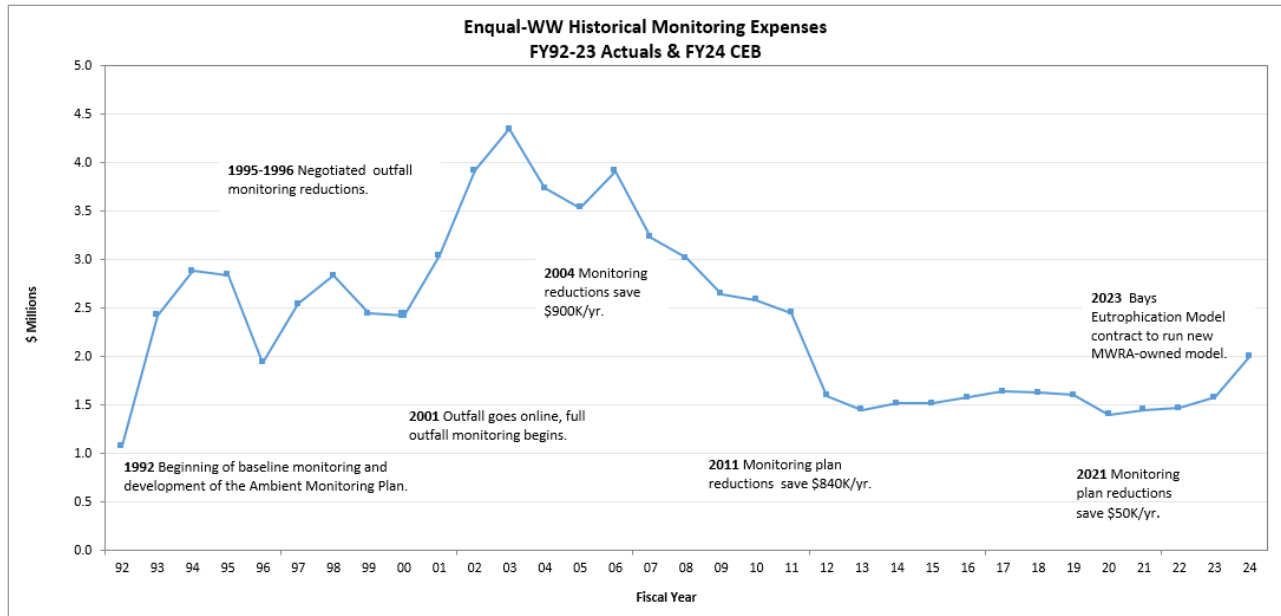
The FY24 Final Budget is \$6.2 million, an increase of \$201,416 or about 3% over the FY23 Budget. This increase is due to two new Harbor and Outfall Monitoring contracts (one amendment, one procurement) including startup costs and a benthic hardbottom study. Interns increased from four to six in the Enqual-Water budget to cover Carroll Water Treatment Plant corrosion control sampling.

- \$3.7 million for **Wages and Salaries**, an increase of \$100,000 or 3%, due to wage increases and the addition of water sampling interns in Southborough to assist with USEPA-required UCMR5 and CWTP lead pipe rig sampling. The budget includes \$108,600 for interns to assist with permit deliverables, data analysis, water quality sampling, and technical support and \$40,290 for stand-by pay associated with wet weather and water quality monitoring and rapid notifications.
- \$1.8 million for **Professional Services**, an increase of \$50,727 or 3% from the FY23 Budget due to a new HOM-water contract procurement starting in January 2024 that includes CY24 sampling; and a one-year extension to the current benthic contract (OP-401B) that includes a hardbottom study.

The FY24 budget for the OP-401A HOM water contract and its follow-on contract total \$893,617; the FY24 budget for the OP-401B HOM benthic contract and its follow-on contract total \$575,287. In addition, the budget contains the following activities that are co-funded through cost-sharing or cost-reduction agreements:

- UMass Amherst: New contract to study to investigate strategies to control algae and cyanobacteria at Wachusett and Quabbin reservoirs (\$100,000).
- University of Maine's buoy off Cape Ann: instruments measuring algae, chlorophyll and other water-quality indicators (Two contracts, \$85,000).
- The Center for Coastal Studies: monitors water quality in Cape Cod Bay (\$136,000).
- \$208,000 for **Maintenance**, a decrease of \$15,000 or 7% from the FY23 Budget because there is no anchor line inspection required in FY24, and Fluidion water quality instruments are no longer being used for wastewater quality testing. Included in FY24 are funds for project materials needed to renovate the Rte. 12 sampling shed at the Wachusett Reservoir (\$100K).
- \$121,000 for **Other Materials** a decrease of \$5,700 or 5% from the FY23 Budget, because an Abraxis test strip reader is not required in FY24. The budget includes \$65,000 for lab and testing supplies for the Contaminant Monitoring System (CMS) and \$30,000 for a new water quality analyzer.
- \$86,000 for **Other Services**, a decrease of \$5,000 or 5% from the FY23 Budget, due to the shipping cost for the UCMR5 sampling program being moved to the Department of Laboratory Services budget. Also included is \$57,000 for Verizon services for the CMS, I pads, and I phones.
- \$22,000 for **Overtime** to support wet weather and water quality monitoring programs, level funded with the FY23 budget.
- \$17,000 for **Training and Meetings** to cover staff participation in professional conferences and technical and software training, which is level funded with the FY23 Budget.

The FY24 Budget reflects approximately \$840,000 in annual savings due to the reduction in scope of HOM monitoring that took place in 2011 through 2013. Additional reductions were implemented starting in FY21, resulting in about \$50,000 in annual savings (see figure below). These changes were based on favorable findings of many years of monitoring data and regulatory approval.



Norumbega Covered Storage Tank and Norumbega Open Reservoir (now a backup supply)

LABORATORY SERVICES

The core function of the **Department of Laboratory Services** is to provide high quality and responsive laboratory services to MWRA’s water and wastewater treatment programs, including the Watershed Division of the Department of Conservation and Recreation (DCR) and the MWRA member water and wastewater communities. This involves timely and cost-effective laboratory tests to meet the strict testing guidelines required by all regulatory programs and permits, including the Safe Drinking Water Act (SDWA), Clean Water Act, and National Pollutant Discharge Elimination System (NPDES) permits.

The Department supports these functions at five locations: Chelsea, Southborough, Quabbin, the Central Laboratory at Deer Island, and Clinton. Testing supports drinking water transmission and treatment processes, wastewater operations and process control at Deer Island and Clinton, NPDES compliance, Massachusetts Bay outfall monitoring, Toxic Reduction and Control, and wastewater residuals. The Department also conducts the Boston Harbor monitoring program that involves regular sampling for nutrients, bacteria, and water quality parameters throughout Boston Harbor. Laboratory staff track and analyze results for submission to the Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP).

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

FY24 Final Current Expense Budget LABORATORY SERVICES

LINE ITEM	FY21	FY22	FY23	FY24	Change	
	Actuals	Actuals	Final Budget	Final Budget	FY24 vs. FY23	
WAGES & SALARIES	\$ 5,333,534	\$ 5,138,316	\$ 5,578,684	\$ 5,743,345	\$ 164,661	3.0%
OVERTIME	92,731	82,386	99,000	99,000	-	0.0%
FRINGE BENEFITS	976	1,042	1,482	1,482	-	0.0%
UTILITIES	46,182	56,873	39,627	39,625	(2)	0.0%
MAINTENANCE	241,131	306,812	306,217	306,217	-	0.0%
TRAINING & MEETINGS	140	4,500	2,854	2,854	-	0.0%
PROFESSIONAL SERVICES	809,825	242,456	172,441	406,001	233,560	135.4%
OTHER MATERIALS	1,333,827	1,035,537	1,247,400	1,283,141	35,741	2.9%
OTHER SERVICES	131,835	171,751	128,180	128,180	-	0.0%
TOTAL	\$ 7,990,181	\$ 7,039,673	\$ 7,575,885	\$ 8,009,845	\$ 433,960	5.7%

FY24 Goals and Initiatives:

The Laboratory Services Department has significant responsibility for the following MWRA goals included in MWRA’s FY21 - FY25 Five-Year Strategic Business Plan:

I. Drinking Water Quality and System Performance

- **Goal #1 – Compliance with Regulatory Requirement and Public Health Standards:** Maintain drinking water quality to protect public health, and continue to ensure that MWRA water meets all applicable regulations.
- **Goal #3 – Technical Assistance for Water Communities:** Assist member communities to improve local water distribution systems through ongoing financial, technical, and operational support programs to maximize long-term water quality benefits.

- PFAS testing: MWRA has developed the capability to meet the new MassDEP PFAS testing requirements for both fully and partially served communities.

II. Wastewater Quality and System Performance

- **Goal #4 – Compliance with Regulatory Requirements:** Meet or surpass environmental compliance standards at both MWRA treatment facilities and throughout the wastewater collection system.
 - CSO Assessment: Continue to perform weekend CSO receiving water sampling during/after significant wet weather events.
 - PFAS testing: MWRA is developing the capability to assess the PFAS inputs into the wastewater system and the subsequent impacts on effluent quality and fertilizer pellet marketability.
 - Decision support: Provide as-needed laboratory services to support assessment of regulatory and operational issues.
- **Goal #5 – Compliance with Regulatory Requirements:** Continue to initiative plans and studies to prepare for regulatory changes; identify opportunities to refine monitoring requirements; and improve effluent quality. Special initiatives include:
 - Continue to work with researchers investigating the use of wastewater as an indicator of the presences of the Covid19 virus and other diseases.

In addition, the Laboratory Services Department provides support functions for other MWRA Departments. FY24 Major Initiatives in support of those functions include:

- **NPDES Permits** – Provide laboratory data and consulting to wastewater operations and EnQual on Deer Island draft or final NPDES permits. The draft DITP permit includes substantial increases in the amount of PFAS testing required, including quarterly testing of influent, effluent and sludge, and an estimated 750 samples per year from permitted industries. While the permit is unlikely to take effect in FY24, preparations for this additional testing will need to be completed during FY24.
- **Revised Lead and Copper Rule** – EPA has already imposed some requirements of the new rule on MWRA. This includes an increase in the number of compliance samples and “find and fix” response. Additionally the required treatment optimization (pipeloop) study is now fully underway. Two major changes that are yet to be implemented are the 5th liter sampling at residences with lead service lines, and the requirement to sample 20% of all schools and daycares each year. All of these changes together will represent a major increase in the anticipated number of samples per year, and will likely require increased staffing for the lab.

School Lead Testing Initiative – This special project began in FY16 and is continuing into FY24. MWRA’s lab completed 248 lead and copper tests from 66 schools and childcare facilities in 31 communities during FY23. Since 2016, MWRA’s Laboratory has conducted over 40,000 tests from 560 schools and daycares in 44 communities. We have also completed 864 home lead tests under the DPH sampling program since 2017. Overall MWRA’s lab completed 2629 drinking water lead and copper tests in FY23.

- **Ethics Training** – Continue laboratory ethics and data integrity training to meet MassDEP laboratory certification and National Environmental Laboratory Accreditation Program (NELAP) requirements.
- **Laboratory Renovation Projects** – MWRA is planning for eventual replacement of the HVAC system and fume hoods at the Central Lab. Replacement of the system that circulates laboratory grade water

throughout the Central Lab is expected to be completed in FY24.

○ **Key Department Performance Measurements and Accomplishments:**

Indicator	FY20 Actual	FY21 Actual	FY22 Actual	FY23 Actual	FY24 Goal
Total # of Tests Performed	261,011	268,686	275,619	268,064	280,000
Percent On-Time Results	95.5%	95.5%	90.6%	91.9%	95%
Average Turnaround Time (days)	5.78	5.48	7.89	7.51	9
Percent Quality Control Within Specifications	97.7%	97.7%	98.1%	97.8%	97%
Special Project: School Lead Project # Samples	442	968	1,416	248	As-needed

FY23 Year-End Accomplishments:

- The Department of Laboratory Services (DLS) performed 268,064 tests during FY23 including 130,000 tests for the wastewater system and 135,000 tests for the water system.
- **CSO Assessment:** Performed CSO receiving water sampling in the Charles and Mystic Rivers during/after significant wet weather events to document the recovery of the rivers after rain events. MWRA will use this information as part of the court-ordered CSO Assessment.
- **Pandemic Management:** Issued regular internal reports on the status and prevailing guidance regarding the COVID19 pandemic in Massachusetts. Also worked with the current vendor, Biobot Analytics, to monitor and report the presence of the virus in MWRA’s wastewater. Worked with DPH, other academic groups and association research projects to further the goal of Wastewater Based Epidemiology for the future.
- **PFAS Testing:** Performed testing in-house for MWRA and community compliance testing as requested. Arranged for contract testing of wastewater samples by a newly revised and expanded EPA Method for the new Clinton permit and as requested by TRAC.
- **Decision support:** Provided testing and analytical services to support assessment of numerous issues including School Lead testing, the drinking water lead pipeloop study, the next DITP NPDES Permit, the new Clinton NPDES Permit, consulting on PFAS regulations and concerns for both drinking water and wastewater, testing for algae blooms in the Emergency Distribution Reservoirs, and red tide testing in Massachusetts Bay.
- **Staff Turnover:** This is an ongoing issue. Staff turnover was 20.7% for FY22 and 15.5% for FY23. The department started FY24 with 10 vacancies out of 59 budgeted positions.

Budget Highlights:

The FY24 Budget is \$8.0 million, an increase of \$434,000 or 5.7% compared to the FY23 Final Budget.

- \$5.7 million for **Wages and Salaries**, an increase of \$165,000 or 3.0% compared to the FY23 Budget primarily due to labor union contract agreements, and a high vacancy rate the prior year.
- \$99,000 for **Overtime**, level funded with the FY23 Budget based on recent history, to cover work associated with peak periods, emergencies, and special initiatives.
- \$40,000 for **Utilities**, level funded with the FY23 Budget based on historical spending levels. The budget covers the purchase of gases and cryogenic liquids used for various laboratory instruments.
- \$306,000 for **Ongoing Maintenance**, level funded with the FY23 Budget. This budget includes Lab equipment maintenance, repairs, and calibration for major lab instruments and once a year preventive maintenance for all ovens, water baths, incubators, refrigerators, freezers, chillers, meters, sensors, microscopes, thermometers, and balances. The budget for FY24 is based on historical spending levels.
- \$406,000 for **Professional Services**, and increase of \$233,000 or 135% compared to the FY23 Budget. The increase reflects ongoing testing for PFAS and Lithium required under UCMR5 and an anticipated need to test permitted industries in the wastewater system for PFAS, above and beyond the in-house testing capacity.
- \$2,800 for **Training and Meetings** to fund attendance at the Lab Accreditation/National Environmental Monitoring Conference and the Association of Public Health Laboratories (APHL) annual meeting. Also included are several new conferences and seminars to keep staff technically knowledgeable. The budget for FY24 is level funded with the FY23 Budget.



PLANNING

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

FY24 Final Current Expense Budget PLANNING

LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
WAGES & SALARIES	\$ 2,383,676	\$ 2,080,825	\$ 2,789,028	\$ 2,712,190	\$ (76,838)	-2.8%
OVERTIME	-	407	-	-	-	-
FRINGE BENEFITS	-	-	-	-	-	-
ONGOING MAINTENANCE	-	-	-	-	-	-
TRAINING & MEETINGS	5,325	1,369	9,000	10,000	1,000	11.1%
PROFESSIONAL SERVICES	800	1,454	1,000	1,000	-	0.0%
OTHER MATERIALS	169,552	173,401	239,715	264,202	24,487	10.2%
OTHER SERVICES	95,289	146,689	152,094	163,298	11,204	7.4%
TOTAL	\$ 2,654,642	\$ 2,404,145	\$ 3,190,837	\$ 3,150,690	\$ (40,147)	-1.3%

The department previously had two units, the **Planning Unit** and the **Meter Data Unit**. As of FY21, the Meter Data Unit shifted to the Field Operations/Operations Support Department, so the budget no longer rolls up into the Planning Department.

FY24 Final Current Expense Budget PLANNING by Program

PROGRAM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
PLANNING	\$ 2,654,642	\$ 2,404,145	\$ 3,190,837	\$ 3,150,690	\$ (40,147)	-1.3%
METER DATA	-	-	-	-	-	-
TOTAL	\$ 2,654,642	\$ 2,404,145	\$ 3,190,837	\$ 3,150,690	\$ (40,147)	-1.3%

The functions of the **Planning Department** are:

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

infrastructure needs assessment, and capital project development. Key work includes:

- Reviews water and wastewater system expansion requests, water supply agreements, and emergency water withdrawal requests;
 - Assists with project siting decisions, environmental reviews, and permitting, including assessing impacts on MWRA facilities from other agencies' projects;
 - Develops strategies for reducing long-term emergency risks; and
 - Prepares plans for mitigating the risk of a range of hazards (i.e. climate change and sea level rise) on MWRA facilities and systems.
- **Regulatory and Policy Matters** – Staff work with various regulatory entities to advocate for cost-effective rule setting that protects the environment and promotes public health. Senior staff members also actively work with industry associations and other groups with agendas consistent with MWRA's to advance regulations that make environmental and economic sense. Senior staff conduct strategic policy research on a broad range of topics. Staff also conduct public health research and reports on potable water quality through production of the annual regulatory-required Consumer Confidence Report (CCR). Staff also coordinates with DCR on watershed protection initiatives. In conjunction with the Office of the Executive Director and Public Affairs, this unit serves as the Operations Division's lead on regulatory and policy matters potentially affecting MWRA's water and wastewater systems.
 - **Community Support Program** – This unit oversees and manages MWRA's financial assistance and technical community support programs. Staff are responsible for the development, implementation, and reporting on Inflow/Infiltration (I/I) reduction policy; oversight of and reporting on MWRA leak detection and demand management programs; and reporting on the portions of MWRA's NPDES permit related to demand management and flow limitation activities. Staff administers community assistance programs including sewer Inflow/Infiltration financial and technical assistance, water pipeline rehabilitation financial assistance, lead service line replacement funding, water distribution systems technical assistance, water leak detection technical assistance, and water conservation programs.

FY24 Goals and Initiatives:

- I. **Drinking Water Quality and System Performance** – The Planning Department's purview and function supports all the goals associated with this strategic priority. FY23 priorities include:
 - Provide cost-effective and timely mapping, modeling, data analysis, and regulatory review services to support decision-making on operational, planning, environmental, and regulatory issues.
 - Continue coordination with member communities for distribution of grants and loans for local sewer, water, and lead service line removal projects.
 - Conduct training and technical assistance to support communities in compliance with the revised Lead and Copper Rule. Continue outreach and coordination to schools and childcare facilities on lead testing and remediation. Work collaboratively with MA Department of Public Health on testing of water in homes with children who have elevated blood lead levels and other priority initiatives.
 - Continue to advocate for responsible and reasonable revised drinking water regulations.
 - Distribute the federally required annual water quality report, the Consumer Confidence Report (CCR), to all households.

- II. Wastewater Quality and System Performance** – The Planning Department’s purview and function supports all the goals associated with this strategic priority. FY23 priorities include:
- Provide cost-effective and timely mapping, modeling, data analysis, and regulatory review services to support decision-making on operational, planning, environmental, and regulatory issues
 - Update selected record plans and real estate records.
 - Comply with I/I mapping and planning requirements in state environmental regulations and NPDES permits; interact with regulators after submitting full I/I control plan for MWRA collection system.
 - Continue coordination with member communities for distribution of grants and loans for local sewer, water, and lead service line removal projects.
- III. Infrastructure Management and Resilience** - Maintain and enhance water and wastewater system assets over the long term at the lowest possible life cycle cost and acceptable risk, consistent with customer, community, and regulatory support service levels. FY23 priorities include:
- Provide cost-effective and timely mapping, modeling, data analysis, and regulatory review services to support decision-making on planning, regulatory, and infrastructure issues.
 - Update the water distribution system model.
 - Begin preparation of Water and Wastewater Master Plans.
- V. Environmental Sustainability** – The Planning Department’s purview and function supports all the goals associated with this strategic priority by directing and managing MWRA’s planning processes including water system expansion planning, and climate change adaptation and mitigation efforts. FY22 priorities include:
- Update reports on greenhouse gas tracking and energy efficiency efforts and develop a sustainability section on MWRA’s web page.
 - Work with state and regional organizations and academic institutions to identify how MWRA can use existing long-term environmental data sets to help assess and project impacts of climate change.
 - Continue to assist communities seeking admission to the MWRA’s water system or approval of emergency withdrawals.
 - Begin research and work on a long term greenhouse gas reduction plan.

FY23 Year-End Accomplishments:

- **Local Water System Assistance Program** - Through June 2022, distributed \$32.1 million in Local Water System Assistance Program interest-free loans, plus an additional \$6.3 million under the Lead Service Line Replacement Loan Program in FY22. In total, MWRA has distributed \$528.7 million in loans to fund 585 local projects with participation from 43 of the 47 eligible water communities. Since 1998, MWRA has replaced or cleaned and lined 593 miles of local water main (about 8% of the regional system) via projects funded by MWRA’s financial assistance. In addition, MWRA has loaned \$31.3 million via 34 distributions to 14 communities for Lead Water Service Line Replacement projects.
- **Community Leak Detection** - Through June 2022, assisted eight (8) municipalities in the MWRA’s service area with leak detection (via task-order contracts) in their systems in FY22.
- **Lead Reduction Assistance** - Continued outreach to communities on sampling in schools for lead in conjunction with third round of DEP’s Technical Assistance program. Continued laboratory assistance to MDPH for water sampling for schools and day care centers.

- **Regulatory Input** - Planning Department staff have continued to be active in state and federal review of the Lead and Copper Rule as well as other proposed rule changes. Provided community updates on the revised LCR.
- **Sewer Grant/Loan Program** – Through June 2022, distributed \$31.3 million in grants and interest-free loans to member sewer communities for Infiltration/Inflow reduction and sewer system rehabilitation projects in FY22. In total, MWRA has distributed \$509.8 million in grants and loans to fund 646 local projects with participation from all 43-member sewer communities.
- **Emergency Planning** - Provided substantial information to the State Auditor’s Office on emergency planning. Participated in a major staff training exercise related to potential railroad spills at Wachusett Reservoir and in developing and running an exercise of a radiological spill at Wachusett Reservoir.
- **Computer Modeling** - Provided computer modeling support for major capital programs including operational planning for pipeline shutdowns and metro tunnels emergency planning on the water side; and ongoing support for wastewater projects including the CSO evaluation. Assisted in project to update the water distribution system model.
- **Greenhouse Gas Reduction** - Continued coordination with local and regional climate change adaptation planning efforts. Completed and posted an update to MWRA’s greenhouse gas inventory
- **Climate Change Adaptation** - Coordinated the design, procurement and installation training for flood protection equipment to be installed at key MWRA wastewater facilities. Participated in Metro Mayors’ Climate Change Coalition Task Force and continued to monitor new research related to the effects of climate change in the service area. Co-chaired and participated in multi-agency Mystic River Regional Infrastructure exercise.
- **Mystic River** - Staff continued to represent MWRA on the Mystic River Steering Committee (facilitated by EPA and Mystic River Watershed Association staff). Key objectives are improved water quality and access to the River and improved open space opportunities are key objectives.

Budget Highlights:

- The FY24 Final Budget is \$3.2 million, a decrease of \$40,000 or 1.3% as compared to the FY23 Budget, the decrease reflects a drop primarily in Wages & Salary increases.
- \$2.7 million for **Wages and Salaries**, a decrease of \$77,000 or 2.8% as compared to the FY23 Budget. The FY24 Budget funds 23 filled positions, one fewer than the FY23 Budget. The reduction in filled positions is partially offset by wage increases associated with collective bargaining agreements. Wages and Salaries includes \$5,000 for summer interns to assist with analyses in the areas of climate change, benchmarking, public health, and other projects in the spring of 2024.
- **Ongoing Maintenance** is not funded in FY24 due to the transfer of the Meter Data Unit in FY21.
- \$10,000 for **Training and Meetings**, which is \$1,000 above the FY23 Budget. The budget covers participation in training and conferences primarily focused on water quality regulations and geographic information systems.

- \$1,000 for **Professional Services** costs associated with the translation of the CCR.
- \$264,000 for **Other Materials** which includes funding of \$199,000 for postage and mailing of the CCR, \$15,000 for water conservation kits, \$14,000 for replacement of gas meter sensors, and \$5,000 for mapping supplies. The increase of \$25,000 is primarily due to expected price increases for distributing the CCR.
- \$163,000 for **Other Services** which includes \$123,000 for printing the CCR; \$20,000 for technical assistance related to lead issues, \$10,000 for printing water conservation and other informational brochures, \$7,500 for costs associated with community lead service line reduction initiatives, and \$1,300 for Memberships and Dues for department employees.



Law Division
Budget

LAW DIVISION

Law

Legal Reviews
Litigation
Court Order Compliance
Environmental Regulation

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

Law Division staff, though usually representing MWRA in a defensive posture, also work with Operations Division staff to effectuate cost recovery claims for design errors and omissions and construction defects. 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.

FY24 Final Current Expense Budget						
LAW DIVISION						
LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
WAGES & SALARIES	\$ 1,496,428	\$ 1,461,249	\$ 1,624,725	\$ 1,976,521	\$ 351,796	21.7%
OVERTIME	-	-	-	-	-	-
TRAINING & MEETINGS	440	1,775	4,000	4,000	-	0.0%
PROFESSIONAL SERVICES	128,446	244,388	350,000	800,000	450,000	128.6%
OTHER MATERIALS	1,206	6,385	3,500	3,500	-	0.0%
OTHER SERVICES	38,268	29,576	46,023	53,835	7,812	17.0%
TOTAL	\$ 1,664,788	\$ 1,743,373	\$ 2,028,248	\$ 2,837,856	\$ 809,608	39.9%

FY24 Goals and Initiatives:

For FY24, the Law Division has identified the following goals and initiatives:

- Provide exemplary legal representation of MWRA.
- Provide timely and cost effective resolution of legal disputes involving MWRA through litigation, administrative proceedings, mediation, arbitration, or other alternative means of dispute resolution.

- Provide high quality legal services, advice and guidance to support the business and operational needs of MWRA in several areas of the law including employment, labor, construction, contracts, procurement, environmental, energy, real estate, tort, regulatory compliance and ethics/conflict of interest.
- Provide legal advice on legislation and regulatory issues.

FY23 Year-End Accomplishments:

Worked with outside counsel in obtaining dismissal of a complaint alleging violation of the Clean Water Act in the administration of the MWRA's Industrial Pretreatment Program.

Worked with outside counsel in negotiating settlement agreement and release and stipulation of dismissal with prejudice dismissing federal court action involving the cross-harbor electric cable.

Obtained dismissal of a complaint asserting a claim for personal injuries resulting from a jobsite accident funded under MWRA's Infiltration/Inflow Local Financial Assistance Program.

Obtained dismissal of complaint appealing the denial of unemployment benefits after plaintiff's employment was terminated.

Obtained settlement payment of \$17,950 from a class action lawsuit related to certain MWRA vehicles.

Negotiated two settlements of separate claims alleging personal injuries resulting from motor vehicle accidents involving MWRA vehicles.

Received an arbitration award in MWRA's favor, denying a grievance regarding compensatory time and meal breaks.

Received an arbitration award in MWRA's favor, upholding disciplinary action taken by MWRA.

Received an arbitration award in MWRA's favor, denying a grievance regarding grade level of work performed.

Received an arbitration award in MWRA's favor, upholding the non-selection of an employee for a promotional opportunity.

Received two favorable decisions from the Department of Unemployment Assistance Board of Review in appeals related to unemployment benefits.

Settled a number of grievances, resulting in withdrawals of arbitration demands.

Settled an unfair labor practice charge relating to the posting of a position.

Assisted with negotiations of successor collective bargaining agreements for all bargaining units.

Drafted license agreements related to temporary use of land for MWRA Contract 6224 - Siphon and Junction Structure Rehabilitation.

Finalized grant of permanent water easements and easement plan related to new MWRA water meters and water main lines at proposed development in Revere/Boston at site of former Suffolk Downs.

Drafted an easement related to the proposed relocation of MWRA's Section 80 water main located at the MBTA's Riverside Green Line Station property in Newton.

Finalized and recorded a grant of permanent and temporary easements and plan for MWRA Contract 7117 - Northern Intermediate High Section 89 Replacement Pipeline.

Assisted with finalizing legal documents and advancing payment transfers to DCR for: Quabbin Watershed Fee Acquisition W-001236; Quabbin Watershed Fee Acquisition W-001237; Wachusett Watershed Fee Acquisition W-001239; Ware River Watershed Fee Acquisition W-001240; and Wachusett Watershed Fee Acquisition W-001250.

Assisted with revisions to OP.10, Admission of New Community to MWRA Water System, regarding water supply entrance fees.

Assisted with the preparation and filing of the Annual Report in the Boston Harbor federal court case. Also provided counsel and assistance to staff on various Combined Sewer Overflow (CSO) issues.

Reviewed four hundred fifteen 8(m) permits, including any applicable MEPA Section 61 findings. Prepared amendments to three public access 8(m) permits, and reviewed Direct Connection permits.

Assisted with review and revision to the draft Site Host Agreement with Eversource regarding electric vehicle infrastructure charging equipment.

Assisted with the application for MWRA's CVA Fish Hatchery hydropower facility under the Energy Policy Act Section 242 Federal Hydropower Incentive funding program.

Finalized a Memorandum of Understanding and Financial Assistance Agreement with the Boston Water and Sewer Commission for the implementation of Fort Point Channel and Mystic/Chelsea Confluence Combined Sewer Overflow Control Projects.

Provided advice and counsel in the preparation of a Memorandum of Agreement between MWRA, the Massachusetts Historical Commission and Midtown Tenant LLC regarding a proposed project on Huntington Avenue and Cumberland Street, Boston.

Provided advice and counsel to TRAC staff regarding permitting, enforcement, and other regulatory matters arising under the TRAC program.

Reviewed and advised on proposed legislation. Assisted with fulfilling public records requests and updating various policies.

Provided representation, advice and counsel in a myriad of labor and employment matters, claims and issues arising out of MWRA’s operations and construction projects and in several areas affecting the Authority’s environmental and energy interests including CSO issues, NPDES permits and proposed regulations and regulatory action.

Budget Highlights:

The FY24 Budget is \$2.8 million, an increase of \$810,000 or 39.9%, as compared to the FY23 Budget.

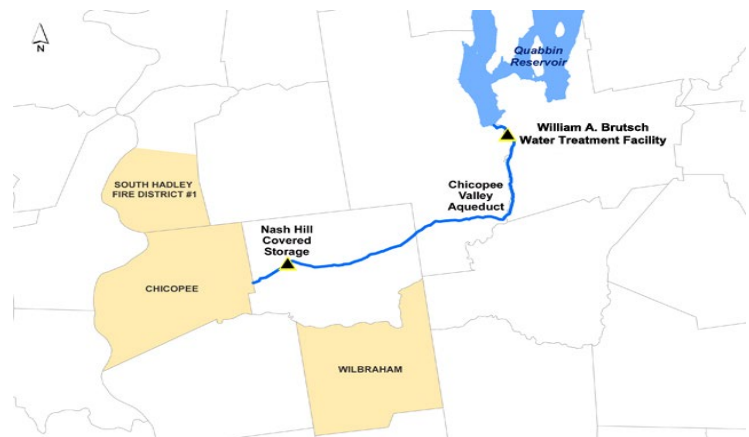
\$1.6 million for **Wages and Salaries**, an increase of \$352,000 or 21.7%, as compared to the FY23 Budget primarily due to the addition of two positions as well as wage increases associated with collective bargaining agreements. The FY24 Final Budget includes funding for 14.0 FTEs, 2.0 FTEs above the FY23 Budget.

LAW DEPARTMENT	FY23 FTEs	FY24 FTEs
LAW	12.0	14.0
TOTAL	12.0	14.0

- \$350,000 for **Professional Services**, matching FY22’s funding level.



Brutsch Water Treatment Facility



CVA System Map



Administration Division
Budget

ADMINISTRATION DIVISION

Administration

Director's Office
 Facilities Management
 Fleet Services
 Human Resources
 Management Information Systems
 Procurement
 Occupational Health and Safety

The **Administration Division** is responsible for managing the support service functions of the Authority. Its departments support daily operations and maintenance and ensure the implementation of the Authority's long-term goals and strategies.

FY24 Final Current Expense Budget						
ADMINISTRATION						
LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
WAGES & SALARIES	\$ 14,378,032	\$ 14,062,965	\$ 15,552,546	\$ 16,782,669	\$ 1,230,123	7.9%
OVERTIME	91,930	95,849	136,682	139,710	3,028	2.2%
FRINGE BENEFITS	21,595,954	21,603,858	23,843,626	25,695,225	1,851,599	7.8%
WORKERS' COMPENSATION	1,842,853	1,665,017	2,519,751	2,144,395	(375,356)	-14.9%
UTILITIES	85,718	91,116	90,849	2,500	(88,349)	-97.2%
MAINTENANCE	5,052,546	4,551,805	5,928,748	6,343,686	414,938	7.0%
TRAINING & MEETINGS	71,392	112,769	241,542	249,542	8,000	3.3%
PROFESSIONAL SERVICES	1,649,057	2,188,500	1,748,128	2,216,588	468,460	26.8%
OTHER MATERIALS	1,644,447	1,579,393	1,422,757	2,036,225	613,468	43.1%
OTHER SERVICES	3,557,071	3,612,632	3,962,356	2,478,215	(1,484,141)	-37.5%
TOTAL	\$ 49,969,000	\$ 49,563,904	\$ 55,446,985	\$ 58,088,755	\$ 2,641,770	4.8%

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

FY24 Final Current Expense Budget ADMINISTRATION by Department						
DEPARTMENT	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
ADMIN DIRECTOR'S OFFICE	399,332	339,680	394,662	379,151	(15,511)	-3.9%
HUMAN RESOURCES	25,948,781	25,700,155	28,918,332	30,627,752	1,709,420	5.9%
MIS	13,218,935	12,572,853	15,433,481	17,125,559	1,692,078	11.0%
FACILITIES MANAGEMENT	2,710,650	3,526,937	2,759,286	1,222,582	(1,536,704)	-55.7%
FLEET SERVICES	1,876,433	1,854,309	2,195,676	2,351,062	155,386	7.1%
PROCUREMENT	4,972,572	4,907,971	4,376,311	4,656,963	280,652	6.4%
REAL PROPERTY / ENVIR MGMT	323	130	-	-	-	-
OCCUPAT HEALTH AND SAFETY	841,974	661,869	1,369,237	1,721,686	352,449	25.7%
TOTAL	\$ 49,969,000	\$ 49,563,904	\$ 55,446,985	\$ 58,084,755	\$ 2,637,770	4.8%

FY24 Goals and Initiatives:

Consistent with MWRA's Board approved FY21 - FY25 Five-Year Strategic Business Plan, the Administration Division's FY23 goals are as follows:

IV. Finance and Management

- **Goal # 12 – Ensure Cost-Effective Operational and Resource Management:**
 - Provide Real Estate Support to Tunnel Redundancy Project's property acquisition needs
 - Assure a safe and well-maintained working environment for all MWRA staff at CNY and appropriate space for staff by coordinating workspace planning, design, and furniture acquisitions.
 - Maintain and expand MWRA-wide recycling efforts.
 - Work with staff MWRA-wide to improve specifications development and documentation.
 - Transition from paper to electronic processes.

- **Goal #13 – Maintain an Excellent Workforce:**
 - Attract and retain a qualified high-performance workforce, hire and promote qualified minority, female, and veteran employees, and offer a competitive total compensation package (salary and benefits) to all employees.
 - Continue to expand on MWRA's in-house job shadowing and career development training programs in anticipation of critical retirements over the next several years.
 - Continue to provide training to ensure employee safety. Continue to transition to virtual trainings to the extent possible.
 - Provide effective training necessary for employees to obtain and maintain required licenses and certifications to ensure a highly skilled workforce.
 - Continue MWRA's efforts to develop new recruitment and retention strategies to foster diversity, including traditionally underrepresented categories, people with disabilities and veterans.
 - Negotiate successor collective bargaining agreements with the five unions.

- **Goal #14 – Leverage Information Technology to Improve Organizational Effectiveness:**
 - Deliver Information Technology (IT) services and solutions efficiently and effectively.
 - Continue to provide IT resources to support remote work and meetings.

- o Provide IT solutions to streamline work processes while ensuring the security and integrity of MWRA data by leveraging the use of existing or emerging technologies.
- o Maintain current technology hardware, software, and network infrastructure.
- o Maintain a secure technology environment.

V. Environmental Sustainability

- ***Goal #15 – Continue to maximize energy efficiency of MWRA operations, renewable energy production, and revenue generation opportunities using MWRA’s energy assets:***
 - o Integrate more alternative fueled vehicles into the Authority’s fleet. Continue to install idle reduction devices in all Authority vehicles to comply with state and federal regulations and also purchase more fuel efficient vehicles.

FY23 Year-End Accomplishments:

- Successfully transitioned MWRA workforce to a post-COVID pandemic work environment.
- Began resumption of in-person training to better meet the educational needs of staff, while maintaining applicable safety standards.
- Continued to fill positions with qualified applicants using electronic processes and virtual interviews.
- Participated in the Diversity, Equity, and Inclusion (DEI) Workgroup to promote diversity and completed the procurement process to provide DEI training to all employees.
- Settled successor one-year contracts for all five bargaining units.
- MIS has completed the organizational transformation recommended in the 5-year Strategic Plan. The transition of responsibilities for all applications will continue during FY23.
- Network cabling and edge switches were upgraded at six facilities.
- The implementation of a new learning management system with integration to LinkedIn Learning was successfully implemented in FY23. This initiative facilitated the ability for training to provide online training options for staff and a single reporting location for tracking training requirements.
- Continued to support the agency’s efforts in implementing succession planning activities due to an increase in retirements anticipated over the next several years.
- Continued to offer supervisory, professional, and career development training programs necessary to support succession planning initiatives.
- Developed additional specialized recruitment sources to attract women, minorities, and veterans for difficult to fill positions including expanding social network recruiting capabilities.
- Reduced future MWRA exposure on Workers’ Compensation cases through aggressive claims management.

- Completed the procurement process for dental insurance.
- Continued management of the MWRA’s Telework and Performance Evaluation programs which provide participating employees flexibility and ensure accountability.
- Continued efforts to promote a safe and inclusive work environment through an online Harassment Prevention Training program.
- Worked with various vendors to provide training for the Nut Island HVA and Odor Control Project.
- Completed preliminary review and analysis of compensation for titles in all bargaining units to ensure compliance with the Massachusetts Equal Pay Act.
- Developed specifications for new replacement vehicles and equipment. The majority of the vehicles and equipment will utilize alternative fuel, consistent with the Authority’s goal of purchasing environmentally friendly products. Spec’d and purchased 5 additional electric vehicles for the Authority.
- Installed additional electric vehicle charging stations at Chelsea, Deer Island, CWTP, Southboro, and Clinton Treatment Facility.
- Completed the fuel management system installation at Chelsea, Deer Island, and Lonergan Intake. Continue to work with MIS and Engineering staff on the implementation of a new fuel management system at Southboro headquarters, and the Weston facility.
- Completed 6,823 purchase orders for a total of \$57.9 million in FY23.
- Online vehicle and equipment auctions resulted in revenue of \$575,794. Recycled 12.14 tons of batteries, 14.62 tons of paper and 220.39 tons of scrap metal, generating \$74,045 in revenue.

Budget Highlights:

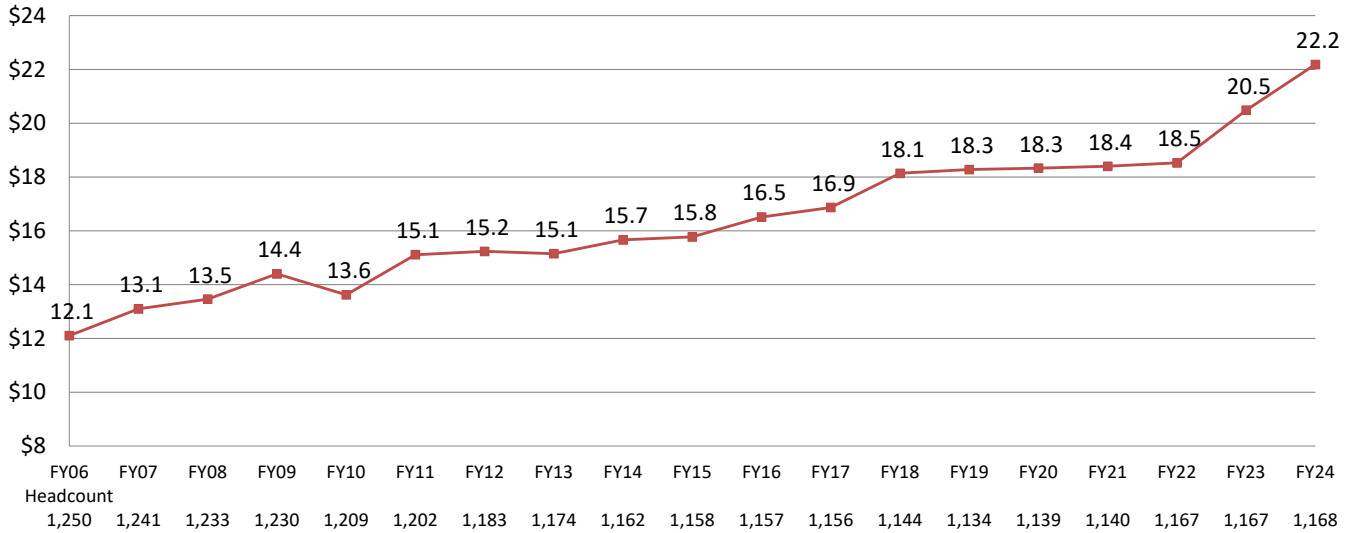
The FY24 Final Budget is \$58.1 million, an increase of \$2.6 million or 4.8% as compared to the FY23 Budget.

- \$16.8 million for **Wages and Salaries**, an increase of \$1.2 million or 7.9% as compared to the FY23 Budget. The increase is primarily due to wage increases associated with collective bargaining agreements, partially offset by retirements and backfilling at a lower wage rate. The FY24 Final Budget funds 149 FTE, a drop of 0.7 FTEs, from the FY23 Budget.
- \$140,000 for **Overtime**, \$3,000 or 2.2% above the FY23 Budget.

FTEs		
ADMINISTRATION by Department		
DEPARTMENT	FY23 FTEs	FY24 FTEs
ADMIN DIR OFFICE	3.0	3.0
HUMAN RESOURCES	16.8	17.0
MIS	57.0	59.0
FACILITIES MGMT	7.0	5.0
FLEET SERVICES	12.0	12.0
OH&S	10.0	10.0
PROCUREMENT	43.9	43.0
TOTAL	149.7	149.0

- \$25.7 million for **Fringe Benefits**, an increase of \$1.9 million or 7.8% as compared to the FY23 Budget, reflecting the continuing rise in health insurance costs.

**Health Insurance Spending
(in millions)**



- \$2.1 million for **Workers' Compensation**, \$375,000 below the FY23 Budget or 14.9%. Actual spending for Worker's Compensation can vary as evidenced below. The Workers' Compensation budget is based on the average of the last three years of actual spending excluding reserve adjustments.

Worker's Compensation	FY17 Actual	FY18 Actual	FY19 Actual	FY20 Actual	FY21 Actual	FY22 Actual	FY23 Final	FY24 Final	3 Year Average*
Compensation Payments	1,771,557	1,259,213	1,862,210	1,172,825	999,514	1,097,561	1,677,953	1,434,978	1,089,967
Medical Payments	470,072	718,233	707,099	516,755	641,740	454,995	667,624	547,680	537,830
Other	323,706	169,617	148,259	173,362	201,599	112,461	174,174	161,737	162,474
Total Worker's Comp.	\$2,565,335	\$2,147,063	\$2,717,568	\$1,862,942	\$1,842,853	\$1,665,017	\$2,519,751	\$2,144,395	\$1,790,271

- \$2,500 for **Utilities**, a decrease of \$88,000 or 97.2%, as compared to the FY23 Budget, to reflect a drop in expected usage due departure from Charlestown and expiration of the related lease.
- \$6.3 million for **Maintenance**, an increase of \$415,000 or 7.0% as compared to the FY23 Budget, due to number of software licenses coming off multi-year maintenance and support agreements, and equipment on extended service agreements. In FY24, spending on computer licenses totals \$4.8 million,, an increase of \$774,000 over FY23 Budget.
- \$250,000 for **Training and Meetings**, a change of \$8,000 or 3.3% as compared to the FY23 Budget.
- \$2.2 million for **Professional Services**, an increase of \$468,000 or 26.8% as compared to the FY23 Budget. The largest component of this line item is \$1.6 million for computer consultants which increased \$550,000 over the prior year's budget. The increase reflects a new cyber security monitoring

and managing contract for \$462,000.

- \$2.0 million for **Other Materials**, an increase of \$613,000 or 43.1% as compared to the FY23 Budget. In FY24 this expense included \$400,000 for reconfiguration expenses relating to the expiration of the Charlestown lease and relocation of staff to other facilities.
- \$2.5 million for **Other Services**, a decrease of \$1.5 million or 37.5% as compared to the FY23 Budget, primarily due to the termination of the Charlestown Navy Yard Headquarters lease.



ADMINISTRATION DIVISION DIRECTOR'S OFFICE

The **Administration Division Director's Office** is responsible for the centralized support functions of procurement, human resources, management information systems, fleet services, facilities management, and real property. Additionally, the Director's Office ensures compliance with applicable statutes, regulations, Authority policies and procedures, and contract terms.

FY24 Final Current Expense Budget							
ADMINISTRATION DIVISION DIRECTOR'S OFFICE							
LINE ITEM	FY21	FY22	FY23	FY24	Change		
	Actuals	Actuals	Final Budget	Final Budget	FY24 vs. FY23		
WAGES & SALARIES	\$ 384,018	\$ 335,390	\$ 379,440	\$ 363,929	\$ (15,511)	-4.1%	
OVERTIME	-	-	-	-	-	-	
PROFESSIONAL SERVICES	15,000	3,900	15,000	15,000	-	0.0%	
OTHER MATERIALS	-	29	-	-	-	0.0%	
OTHER SERVICES	314	361	222	222	-	0.0%	
TOTAL	\$ 399,332	\$ 339,680	\$ 394,662	\$ 379,151	\$ (15,511)	-3.9%	

The Administration Director's Office core functions are to:

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

FY24 Goals:

- Provide real estate services to Tunnel Redundancy Project's property acquisition needs.
- Provide real estate services (appraisal, negotiation, survey review, recording and/or planning) for: Siphon Structure Rehabilitation Project, Phase 1 (41 siphon structures in need of repair with varying real estate acquisition needs.)
- Manage six (6) cellular vendor permit agreements (three at Turkey Hill, two at Walnut Hill, one at Fells Tower.)
- Provide real estate support to Legal, Operations and Public Affairs for issuance of 8(m) permits to public and private entities requesting use of MWRA controlled land
- Provide real property support to fulfill Public Records Requests
- Manage the Real Estate Mapping project with GIS Department
- Manage lease and financial obligations for Walpole Records Center and temporary expansion space; and Tunnel Redundancy's Core Storage Space in Needham

FY23 Year-End Accomplishments:

- Managed communications, rent/utility/real estate tax payments for Walpole Records Center. Assisted staff with market analysis, drafting and review of documents for an Amendment to the Walpole Records Center lease which added a temporary and adjacent expansion space for additional records storage.

- Provided real estate services to Tunnel Redundancy Project (title research, appraisal, planning) for scoping of preferred alternative shaft site locations identified in the Metropolitan Water Tunnel Program's PDR and DEIR.
- Provided real estate services and support (market analysis, property research, document drafting and review) necessary for a RFP culminating in a 19,000 sq. ft. leased space in Needham for Tunnel Redundancy's Core Storage/Flex space. Managed communications, rent/utility/real estate tax payments related to leased space.
- Provided real estate services and support (title research, appraisal, survey review and/or planning, document drafting) for: Contract 7116, Section 89 Replacement Project; Section 56 Water Main Saugus River Crossing Project; Contract 6224/6225, Siphon/Junction Rehabilitation Project, Phase 1;; impending conveyance of vacant land at Cleverly Court, Quincy from MWRA to City of Quincy.
- Managed seven (7) cellular vendor permit agreements (four at Turkey Hill; two at Walnut Hill; one at Fells Tower, including 4 permit agreement renewals, 1 deconstruction and processing of modification requests. FY 2023 revenues for all towers were \$510,211, half of which went to the host communities.
- Provided real estate support to Operations and Public Affairs for issuance of 8(m) permits to 1) private entities requesting use of MWRA controlled land and 2) cities and towns applying to the Aqueduct Trails Program. Annual revenue from long term 8(m) permit totals \$87,453..
- Managed with GIS Department Real Estate Mapping project to transfer MWRA's real property takings to a user-friendly GIS-map based interface. Continued updating and editing records adding 77 mapped areas to the system.

Budget Highlights:

The FY24 Budget is \$369,000, a decrease of \$16,000 or 3.9% as compared to the FY23 Budget.

- \$364,000 for **Wages and Salaries**, a decrease of \$16,000 or 4.1% as compared to the FY23 Budget, primarily due to backfilling at a lower wage rate, partially offset by wage increases associated with collective bargaining agreements. The FY24 Budget supports three FTEs, matching the FY23 Budget.



Deer Island Treatment Plant Thermal Power Plant

FACILITIES MANAGEMENT

The **Facilities Management Department** provides mail, courier, shuttle and motor pool services to MWRA staff. Staff provides administrative and office support services that facilitate the efficient use of MWRA resources including the Walpole Record Center. These responsibilities include providing and managing the motor pools at both the Chelsea and Deer Island Facilities, transportation, mail, and courier services.

FY24 Final Current Expense Budget FACILITIES MANAGEMENT							
LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23		
WAGES & SALARIES	\$ 462,502	\$ 423,786	\$ 458,842	\$ 482,504	\$ 23,662	5.2%	
OVERTIME	5,483	5,617	40,000	20,000	(20,000)	-50.0%	
FRINGE BENEFITS	-	-	-	-	-	-	
UTILITIES	83,028	88,718	88,349	-	(88,349)	-100.0%	
MAINTENANCE	5,602	3,856	18,600	600	(18,000)	-96.8%	
PROFESSIONAL SERVICES	38,230	880,437	4,000	4,000	-	0.0%	
OTHER MATERIALS	90,012	38,409	67,251	456,500	389,249	578.8%	
OTHER SERVICES	2,025,793	2,086,114	2,082,244	258,978	(1,823,266)	-87.6%	
TOTAL	\$ 2,710,650	\$ 3,526,937	\$ 2,759,286	\$ 1,222,582	\$ (1,536,704)	-55.7%	

FY24 Goals and Initiatives:

IV. Finance and Management

- **Goal #12 – Ensure Cost-Effective Operational and Resource Management:**
 - o Provide administrative and office support services.
 - o Manage the lease for the Records Center in Walpole.

FY23 Year-End Accomplishments:

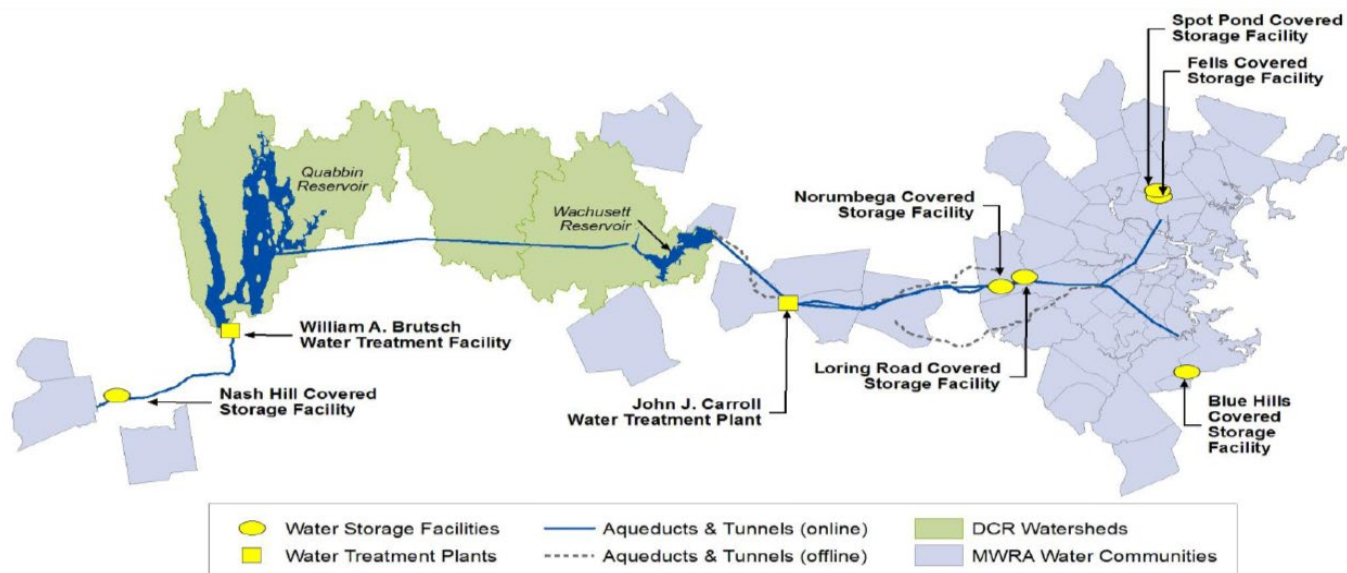
- Successfully relocated the CNY mail room services and motor pool to Deer Island and Chelsea
- Implemented a pilot employee shuttle program to transport staff to and from Chelsea and the MBTA's Orient Heights Train Station.

Budget Highlights:

The FY24 Final Budget is \$1.2 million, a decrease of \$1.5 million as compared to the FY23 Budget.

- \$483,000 for **Wages and Salaries**, an increase of \$24,000 or 5.2% as compared to the FY23 Budget, primarily for wage increases associated with collective bargaining agreements. The FY23 Budget funds five FTEs, a reduction of two from the FY23 Budget.

- \$467,000 for **Other Materials**, \$389,000 above the FY23 Budget, The FY24 Budget includes \$400,000 in moving related expenses as employees are relocated and space reconfigured with MWRA departure from Charlestown space and that staff relocated to other facilities.
- \$259,000 for **Other Services**, \$1.8 million or 87.6% below the FY23 Budget. This reflects the removal of the lease and related expense for CNY Headquarters building at \$1.9 million as MWRA departs from the Charlestown facility. Includes \$250,000 for the Walpole Records Center lease and associated operating costs.



FLEET SERVICES

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

FY24 Final Current Expense Budget							
FLEET SERVICES							
LINE ITEM	FY21	FY22	FY23	FY24	Change		
	Actuals	Actuals	Final Budget	Final Budget	FY24 vs. FY23		
WAGES & SALARIES	\$ 859,786	\$ 728,961	\$ 913,012	\$ 957,398	\$ 44,386	4.9%	
OVERTIME	16,410	24,021	15,000	20,000	5,000	33.3%	
FRINGE BENEFITS	351	825	250	250	-	0.0%	
UTILITIES	2,690	2,398	2,500	2,500	-	0.0%	
MAINTENANCE	528,192	540,791	664,500	665,500	1,000	0.2%	
TRAINING & MEETINGS	116	-	4,000	4,000	-	0.0%	
OTHER MATERIALS	467,276	556,078	595,000	700,000	105,000	17.6%	
OTHER SERVICES	1,612	1,235	1,414	1,414	-	0.0%	
TOTAL	\$ 1,876,433	\$ 1,854,309	\$ 2,195,676	\$ 2,351,062	\$ 155,386	7.1%	

FY24 Goals and Initiatives:

IV. Finance and Management

- **Goal #12 – Ensure Cost-Effective Operational and Resource Management:**
 - Continue to cost effectively maintain the Authority's fleet of vehicles and equipment.
- **Goal #13 – Maintain a Safe Workforce:**
 - Continue to Purchase vehicles with additional safety lighting to enhance driver/vehicle visibility and added blue tooth technology to all vehicles.
 - Purchase vehicles with current driver safety technology, including collision avoidance and lane departure warning.

V. Environmental Sustainability

- **Goal #15 – Continue to maximize energy efficiency of MWRA operations, renewable energy production, and revenue generation opportunities using MWRA's energy assets:**
 - Integrate more alternative fueled vehicles into the Authority's fleet. Continue to install idle reduction devices in all Authority vehicles to comply with state and federal regulations and also purchase more fuel efficient vehicles.
 - Oversee the installation of additional electric vehicle charging stations at MWRA facilities.

FY23 Year-End Accomplishments:

- Developed specifications for new replacement vehicles and equipment. The majority of the vehicles and equipment will utilize alternative fuel, consistent with the Authority's goal of purchasing environmentally friendly products.
- Completed the fuel management system installation at Chelsea, Deer Island, and Lonergan Intake. Continue to work with MIS and Engineering staff on the implementation of a new fuel management system at Southboro headquarters, and the Weston facility.

- Spec'd and purchased 5 additional electric vehicles for the Authority.
- Installed additional electric vehicle charging stations at Chelsea and Deer Island.
- Electric charging stations installed at CWTP, Southboro, and Clinton Treatment Facility.

Budget Highlights:

The FY24 Budget is \$2.4 million, an increase of \$155,000 or 7.1% as compared to the FY23 Budget.

- \$957,000 for **Wages & Salaries**, an increase of \$44,000 or 4.9% as compared to the FY23 Budget, primarily for wage increases associated with collective bargaining agreements offset by retirements and backfilling at a lower rate. The FY24 Budget funds 12 FTEs, the same as the FY22 Budget.
- \$666,000 for **Ongoing Maintenance**, 0.2% or \$1,000 only slightly above the FY23 Budget.
- \$700,000 for **Other Materials**, \$105,000 or 17.6% above the FY23 Budget reflecting higher projected fuel prices for vehicles. The FY23 Budget funds vehicle/equipment fueling which is based on historical fuel usage and current pricing. Fleet Services procures bulk fuels from state contracts while continuing to meet all governmental alternative fuel directives. It should be noted that the volatility of fuel pricing could impact this line item.



New Chevy Volt at Charging Station

HUMAN RESOURCES

FY24 Final Current Expense Budget							
HUMAN RESOURCES							
LINE ITEM	FY21	FY22	FY23	FY24	Change		
	Actuals	Actuals	Final Budget	Final Budget	FY24 vs. FY23		
WAGES & SALARIES	\$ 1,652,825	\$ 1,745,748	\$ 1,838,191	\$ 2,057,908	\$ 219,717	12.0%	
OVERTIME	-	-	-	-	-	-	-
FRINGE BENEFITS	21,594,466	21,601,605	23,842,601	25,693,300	1,850,699	7.8%	
WORKERS' COMPENSATION	1,842,853	1,665,017	2,519,751	2,144,395	(375,356)	-14.9%	
MAINTENANCE	96	258	-	-	-	-	-
TRAINING & MEETINGS	-	-	3,963	3,963	-	0.0%	
PROFESSIONAL SERVICES	820,786	639,777	640,790	647,150	6,360	1.0%	
OTHER MATERIALS	12,274	8,442	19,650	19,650	-	0.0%	
OTHER SERVICES	25,481	39,308	53,386	61,386	8,000	15.0%	
TOTAL	\$ 25,948,781	\$ 25,700,155	\$ 28,918,332	\$ 30,627,752	\$ 1,709,420	5.9%	

The **Human Resources Department** is responsible for the overall management of MWRA employees. The Department enables employees to contribute successfully to MWRA's goals and objectives through effective recruitment, labor management, training, and employee benefits management.

The Human Resources Department is comprised of 3 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 unit also ensures that all MWRA employees possess the necessary licenses and certifications required for their positions. This unit is also responsible for managing workers' compensation claims.
- The **Labor Relations Unit** is responsible for fulfilling MWRA's collective bargaining and contract administration obligations under Massachusetts' public sector collective bargaining law.
- 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 and safety.

In addition, the Human Resources Department includes the Centralized Fringe Benefits cost center, which carries the budget for fringe benefits for all MWRA employees as well as for mandatory payments for unemployment expenses and Medicare.

**FY24 Final Current Expense Budget
HUMAN RESOURCES by Unit**

UNIT	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
EMPLOYEE/COMP/BEN	\$ 1,600,197	\$ 1,286,200	\$ 1,236,918	\$ 1,406,044	\$ 169,126	13.7%
LABOR RELATIONS	352,570	359,426	525,977	559,436	33,459	6.4%
TRAINING	495,623	728,745	711,085	742,577	31,492	4.4%
CENTRALIZED FRINGE BENEFITS	23,500,391	23,325,784	26,444,352	27,919,695	1,475,343	5.6%
TOTAL	\$ 25,948,781	\$ 25,700,155	\$ 28,918,332	\$ 30,627,752	\$ 1,709,420	5.9%

FY23 Year-End Accomplishments:

- Successfully transitioned MWRA workforce to a post-COVID pandemic work environment.
- Continued to manage employee leaves for qualifying reasons under the Massachusetts Paid Family Medical Leave law and the federal Family and Medical Leave Act.
- Continued to fill positions with qualified applicants using electronic processes and virtual interviews. Began resumption of in-person interviews.
- Participated in the Diversity, Equity, and Inclusion (DEI) Workgroup to promote diversity and inclusion within the workplace and in the MWRA’s recruitment efforts.
- Settled successor one-year contracts for all five bargaining units.
- Continued to review and approve, when applicable, employee requests for reasonable accommodations.
- Continued to support the agency’s efforts in implementing succession planning activities due to an increase in retirements anticipated over the next several years.
- Continued to offer supervisory, professional, and career development training programs necessary to support succession planning initiatives.
- Continued to utilize and promote specialized recruitment resources to attract women, minorities, and veterans for difficult to fill positions, including expanding social network recruiting capabilities.
- Reduced future MWRA exposure on Workers’ Compensation cases through aggressive claims management.
- Renewed the MWRA’s contract for dental insurance.
- Investigated reported complaints of violations of MWRA policies and Code of Conduct. Implemented disciplinary action as necessary.
- Offered a variety of professional and technical training to MWRA employees including Confined Space Entry, Hoisting License Mandatory Refresher Training, Wastewater & Water Operator Exam Prep,

OSHA 40-Hour Hazardous Waste Operations and Response (HAZWOPER) training, OSHA 10-Hour Construction Safety, OSHA 8-Hour Annual Refresher, created learning paths on LinkedIn Learning specific to MWRA skills needs, Supervisory Development, RCRA/DOT Safety, Work-zone Safety, Lockout/Tagout, Electrical Safety, Electric and Plumbing Code Review classes, Keolis & MBTA Track Safety, and a number of training contact hours (TCH) classes for Water and Wastewater License holders.

- Continued efforts to promote a safe and inclusive work environment through an online Harassment Prevention Training program.
- Worked with various vendors to provide training for the Nut Island HVAC and Odor Control Project.
- Began resumption of in-person training to better meet the educational needs of staff, while maintaining applicable safety standards.
- Continued to implement the Infor Learning Management System (LMS) to manage trainings, particularly with respect to tracking, course scheduling, and course delivery.
- Implemented salary adjustments for bargaining unit employees to ensure compliance with the Massachusetts Equal Pay Act and internal pay equity principles.
- Successfully negotiated the creation of an OMC Laborer-in-Training pilot program to establish an entry-level career path.
- Continued management of the MWRA's Telework and Performance Evaluation programs which provide participating employees flexibility and ensure accountability.
- Successfully negotiated class recruitment rate pilot programs for hard-to-fill positions.
- Successfully negotiated employee referral fee pilot program.
- Expanded the Summer Intern program, including a volunteer service event.
- Successfully completed Year 1 of the CORE Mentorship Program which provides participants with a structured environment to develop and enhance the mentor-mentee relationship.
- Successfully implemented benefit plan changes for FY24 which included the creation of several new health plans, the elimination of a number of previously-offered health plans, and a new health care spending administrator.

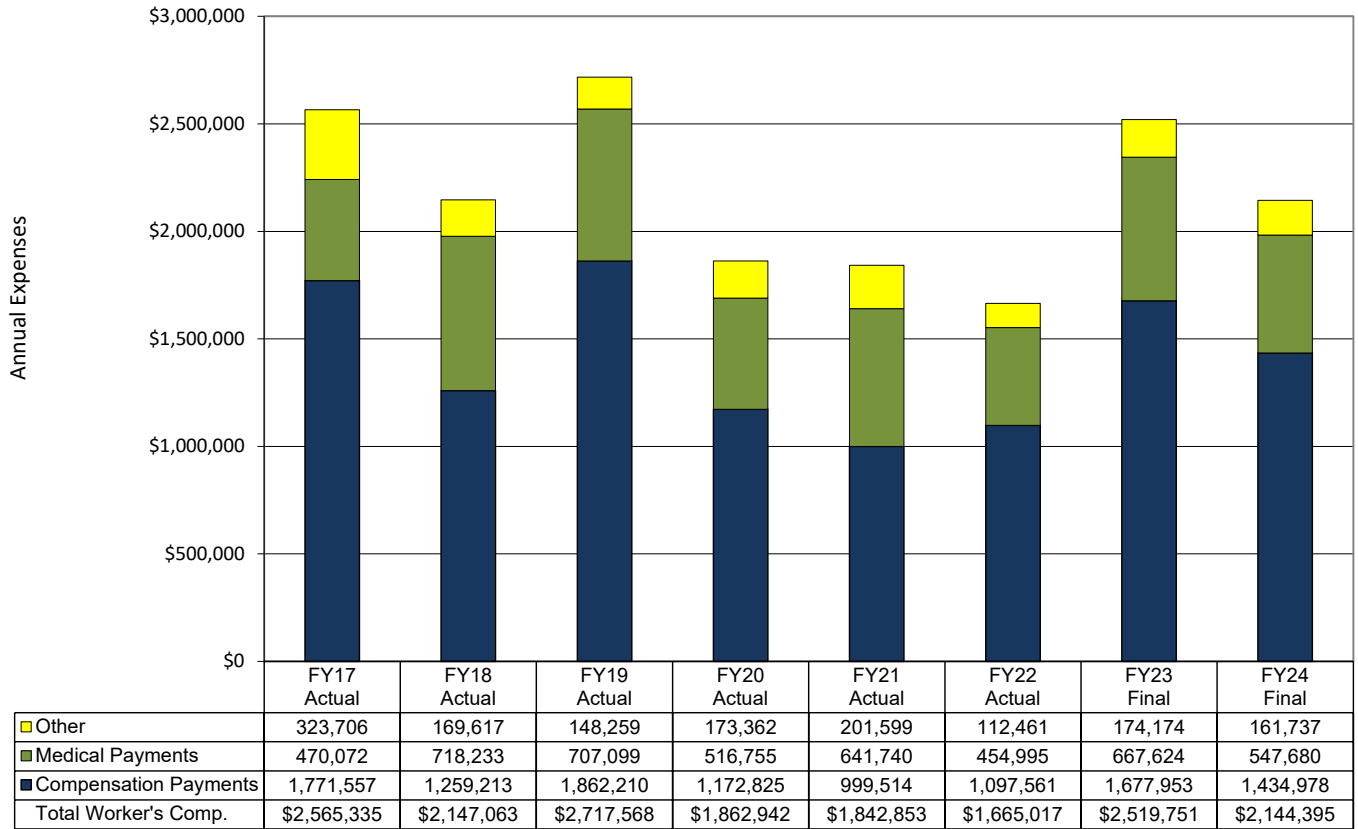
Budget Highlights:

The FY24 Budget is \$30.6 million, an increase of \$1.7 million or 5.9% as compared to the FY23 Budget.

- \$2.0 million for **Wages and Salaries**, an increase of \$219,707 or 12%, as compared to the FY23 Budget, the increase reflect the collective bargaining agreements. The FY24 Budget includes funding for 17.0 FTEs, an increase from the FY23 Budget for training.
- \$25.7 million for **Fringe Benefits**, an increase of \$1.9 million or 7.8%, as compared to the FY23 Budget mainly for increases in health insurance costs. The FY24 Budget includes \$22.2 million for health insurance, \$1.7 million for Medicare, \$1.1 million for dental insurance, \$468,000 for the Massachusetts Paid Family and Medical Leave (PFML) law, \$140,000 for unemployment insurance, and \$55,000 for tuition reimbursement.
- \$2.1 million for **Workers’ Compensation**, a decrease of \$375,356 or 14.9%, as compared to the FY23 Budget, based on historical spending. The Workers’ Compensation expenses can be difficult to predict and the budget is based on an average of the prior three years of expenditures excluding reserve adjustments. Below is a graph showing actual expenditures beginning in FY17 and budgets for fiscal years FY23 and FY24. The Human Resources Department is responsible for the management of this program and the coordination with the third-party administrator and legal counsel.

Human Resouces Fringe Benefits				
Line Item	FY22 Actuals	FY23 Budget	FY24 Budget	Difference
Health Insurance	\$ 18,525,318	\$ 20,484,396	\$ 22,183,120	\$ 1,698,724
Dental Insurance	1,061,934	1,115,162	1,115,162	0
Unemployment Insuranc	59,112	140,000	140,000	-
PFML	399,223	458,403	468,491	10,088
Medicare	1,545,079	1,589,640	1,731,526	141,886
Tuition Reimbursement	10,939	55,000	55,000	-
Total Fringe Benefits	\$21,601,605	\$23,842,601	\$25,693,300	\$ 1,850,699

Worker's Compensation Expenses
FY17 - FY22 Actual & FY23 & FY24 CEB



\$647,000 for **Professional Services**, an increase of \$6,360 or 1.0% as compared to the FY23 Budget. The major budgeted items for FY24 include \$370,000 for Professional Development and Technical Training, \$135,000 for Workers' Compensation Claims Administration and Legal Services, \$47,000 for Arbitrators and Arbitration Expenses, \$35,000 for Medical Evaluation Services, and \$27,000 for the Employee Assistance Program.

MANAGEMENT INFORMATION SYSTEM

The **MIS Department** provides MWRA with the secure information processing services necessary to carry out the Authority’s 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 and telephone systems, the department also provides library and records management services. The MIS department supports all MWRA staff, including those at the Charlestown Navy Yard (CNY), Chelsea Facility, Deer Island Wastewater Treatment Plant, Southborough Facility, Carroll Water Treatment Plant, and other remote sites.

FY24 Final Current Expense Budget MANAGEMENT INFORMATION SYSTEM							
LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23		
WAGES & SALARIES	\$ 6,004,560	\$ 5,833,706	\$ 6,694,602	\$ 7,209,749	\$ 515,147	7.7%	
OVERTIME	947	1,177	12,000	12,000	-	0.0%	
FRINGE BENEFITS	-	-	-	-	-	-	
MAINTENANCE	4,012,048	3,711,804	5,245,648	5,677,586	431,938	8.2%	
TRAINING & MEETINGS	71,276	112,767	221,328	223,328	2,000	0.9%	
PROFESSIONAL SERVICES	775,041	664,386	1,088,338	1,550,438	462,100	42.5%	
OTHER MATERIALS	970,910	850,229	597,657	662,875	65,218	10.9%	
OTHER SERVICES	1,384,153	1,398,784	1,573,908	1,789,583	215,675	13.7%	
TOTAL	\$ 13,218,935	\$ 12,572,853	\$ 15,433,481	\$ 17,125,559	\$ 1,692,078	11.0%	

FY24 Goals and Initiatives:

IV. Finance and Management

- **Goal #13 – Leverage Information Technology to Improve Organizational Effectiveness:**
 - o Deliver Information Technology (IT) services and solutions efficiently and effectively.
 - o Provide IT solutions to streamline work processes by leveraging the use of existing or emerging technologies.
 - o Obtain feedback from users on satisfaction levels and desired new services and implement changes accordingly.
 - o Maintain current technology hardware, software, and network infrastructures.
 - o Maintain a secure technological environment by ensuring the confidentiality, availability, and integrity of MWRA data.
 - o Enhance Information Technology workforce capabilities through new certifications and license requirements.

The MIS Department divides the IT services that it provides into 4 programs. A description of each program and the specific initiatives in each are detailed below:

Information Technology Management Program

This program is intended to improve the Information Technology (IT) organization and the oversight processes for selecting, implementing and operating IT solutions throughout the MWRA.

Complete the transition of application and operational responsibilities to the appropriate MIS teams, matching the new organizational structure for the department.

- ***Project Portfolio Management:*** Continue the adoption of the IT project management solution and possibly integrate them with the ECM Management Dashboard and the development of an executive dashboard.

Application Improvement Program Initiatives

This program, along with associated projects, continue MWRA's efforts to update and enhance a wide range of applications to improve efficiencies of business processes and effectiveness of the staff while ensuring the availability and integrity of the MWRA's data resources.

Administration and Finance Initiatives

- ***Electronic Document Management:*** The MWRA has procured a Content Management System that will support e-Construction processes as well as design (e-Engineering) processes including corresponding Procurement and Contract Management processes (e-Procurement) and corresponding Document and Records Management processes. The content management system will improve communication and make design and construction management practices more efficient, replace the legacy document/records management system and provide the infrastructure for expansion and integrations with other systems. Configuration of this system is underway.
- ***Archiving & Purge and e-Discovery:*** Leveraging existing vendor relationships and institutional knowledge gained by its use, staff are implementing the archiving features within existing backup technology. This solution will eliminate the need for personal folders (PST) and streamline the e-discovery process.
- ***Website Replacement/Upgrade:*** The current website www.mwra.com infrastructure includes nonstandard MWRA IT components impacting support and maintenance. This project will replace the existing website leveraging current technologies, adoption of standards, and enhance the user/visitor experience.
- ***Enterprise Resource Planning (ERP) System Upgrades:*** The current software version of the ERP system is approaching end of support by the vendor. An independent assessment of the existing ERP system was conducted Q1 FY20 to assist staff in selecting the most cost effective and efficient approach to addressing this. The assessment recommended that MWRA upgrade the ERP system to the latest supported on-premise version of the software. However during the initial RFQ/P process it was identified that the MWRA requirements could only be met with a migration to the Software as a Service option. A new RFP/Q is underway and this initiative will be accomplished over multiple fiscal years.

- **Budgeting Software Upgrade:** Replace or migrate the legacy application to new budget application platform with better integration to Infor.

Compliance Management Initiatives

- **Oracle Discoverer Migration to SAP Business Objects (BO):** Following a successful proof of concept, the remaining 600-700 Oracle Discoverer Workbooks are to be migrated to SAP Business Objects. The migration is expected to complete in FY24.
- **Laboratory Information Management (LIMS):** Upgrade current Laboratory Information Management system to latest stable version available. Assessment will be conducted in FY24 to determine best migration path.

System Integration and Data Warehousing Initiatives

- **ESRI GIS Infrastructure:** Initiative underway to upgrade the existing GIS environment along with implementation of recommended best practices.
- **Enterprise Data Management:** Develop an Authority-wide data architecture that maximizes benefits from data capture and ongoing maintenance. Implement Authority-wide data modeling and management, to standardize data access across multiple systems for a consistent view of the Authority across all business units.

Operations Management Initiatives

- **Maximo/Lawson Interface Enhancements:** The MWRA utilizes a custom interface to synchronize the Maximo Enterprise Asset Management (EAM) and Infor/Lawson Enterprise Resource Planning (ERP) systems. The interface has eighteen “touch points” where Infor/Lawson is the system of record for the majority of the data. The Maximo Integration Framework (MIF) is the primary controlling element for data flow between the two systems with supporting functions coded in Infor/Lawson. The objective of this project is to build on the existing interface by streamlining process flows, enhancing functionality, and adding data validation for optimal performance and transaction integrity.
- **WQRS/AQUARIUS:** WQRS/AQUARIUS application upgrade and enhancements will continue in FY23 and will wrap up by Q1 FY23.
- **OMMS Application refresh:** MWRA’s existing OMMS application is built using 20 year old technology. Redesign of the application is underway and completion is anticipated in Q2 FY23.

Information Security Program Initiatives

This program focuses on the strength, resiliency, and sustainability of MWRA’s cyber security practices for its data and computing-related assets. The program also monitors for and protects against penetrations, intrusions, and malicious actions from both internal and external threats. The projects associated with this program continue to assess, implement, and improve MWRA’s information security protections, including

recommendations to improve each IT system's security profile. The following are the FY23 projects under this program:

- ***American Water Infrastructure Act (AWIA):*** Congress imposed new requirements for assessing and responding to water system vulnerabilities in the AWIA. AWIA requires that community drinking water systems develop or update risk assessments and emergency response plans and certify to EPA that they have been completed or updated by specific deadlines. Under AWIA, systems must now recertify that they have reviewed and updated their Risk and Resiliency Assessments (RRA) every five years. The initial assessment was completed in March 2020 and responses to the assessment will continue in FY24.
- ***Load Balancer Appliance Replacement:*** The current appliance (Netscaler) used for load balancing secure access to MWRA network resources is reaching End of Life (EOL). A replacement must be procured and implemented to ensure the MWRA has continued protection.
- ***SD-WAN:*** This initiative will provide resiliency to network connectivity along with added security with the further segmentation of network traffic and additional firewalls.
- ***Wireless Network Expansion:*** As MWRA becomes a more mobile workforce, the wireless infrastructure will be expanded to support staff as they move throughout facilities and use new collaboration spaces.

Technology Infrastructure Improvement Program

The MWRA IT department currently operates 1,004 desktops, 596 laptops, 400 virtual servers, 184 tablets, 302 Smartphones, and 19 wide area network circuits. This program will assess and implement consolidated and optimized versions of these core IT infrastructure elements as utility-like services and commodities. Furthermore, it will look to improve and optimize data management practices including: storage, backup, and archive and purge processes and technologies. The following projects are currently under way:

- ***Disaster Recovery:*** Build out of a Disaster Recovery site providing the ability to restore business data and applications should the Chelsea Data Center, servers or infrastructure get damaged or destroyed.
- ***Telephone System Replacement:*** The current telephone system, Mitel PBXs, has exceeded end of life and is unsupported by the vendor. Much of the current hardware cannot be replaced unless using refurbished equipment, as it is no longer being manufactured. MWRA is not able to upgrade the software or purchase new features because the software is no longer supported. Rollout for the Deer Island facility will continue in FY24.
- ***Edge & Core Switch Hardware Refresh:*** The current hardware is approaching end of life and will require replacement in order to maintain support. This initiative is being rolled out in multiple phases. Procurements for the initial phase have been awarded; however the processor chip shortage is impacting delivery lead times. Chelsea switches have been received, installation of these switches will coincide with facility updates. Deployment of new hardware is expected to complete in FY24.

- ***Instrumentation and Controls of IT:*** Plan for the implementation of additional tools to monitor and alert on the infrastructure and application health.
- ***Future Workplace:*** Explore new technologies and hardware platforms to improve efficiencies in business process supporting the future workplace initiative with the goal of providing a single streamlined user experience regardless of location, support for remote work, shared work, and collaboration spaces.
- ***SAN Storage:*** Implement recommended IT infrastructure changes that include enhancements to capacity and performance of networking and communications, storage, backups, server consolidation, disaster recovery, and integration approach and tools.
- ***Deer Island Cabling and Switch Replacement:*** In addition to edge switch replacements on Deer Island, network cabling is also in need of an upgrade. Design specifications are being developed.
- ***Conference Room Media Upgrades:*** In support of the MWRA space planning efforts and the use of Webex for video conferences, additional media capabilities will be added to some conference rooms.

FY23 Year-End Accomplishments:

- ***MIS Reorganization:*** MIS has completed the organizational transformation recommended in the 5-year Strategic Plan. The transition of responsibilities for all applications will continue during FY23.
- ***Learning Management System:*** The implementation of a new learning management system with integration to LinkedIn Learning was successfully implemented in FY23. This initiative facilitated the ability for training to provide online training options for staff and a single reporting location for tracking training requirements.
- ***Visitor Management:*** Staff evaluated applications to track MWRA visitors at security guard managed facilities to support ongoing visitor management. An application was selected and implementation is complete.
- ***Lawson Contracts Management:*** All open contracts have been migrated to the Lawson ERP Contract application
- ***Electronic Document Management:*** Phase 1: Records Management of this project was completed. Data migration for master drawing is under way as well as the configuration design for selected engineering and design processes.
- ***PIMS Oracle 19 Upgrade:*** The PIMS application database was successfully upgraded to database version Oracle 19 in support of migrating the entire PIMS environment to supported platforms.
- ***Aquarius NG Upgrade:*** The Aquarius application was successfully upgraded to version NG in FY23.

- **Telog Infrastructure Upgrade:** The Telog infrastructure was successfully upgraded to a supported platform.
- **PST File Archiving:** Staff implemented a solution to ingest Outlook PST files into an archiving system that would allow for easier searching and retention of PSTs in one location and eliminate the need/risk for PST files saved on local harddrives.
- **Cabling:** Network cabling and edge switches were upgraded at six facilities.
- **Digital Message Boards:** Digital signage has been installed at six.
- **Canto Cumulus Upgrade:** The Canto Cumulus application supporting digital photo archives was successfully upgraded in FY23.
- **Tiscor InspectNTrack Upgrade:** Tiscor InspectNTrack was on unsupported hardware and OS. This project upgraded InspectNTrack to the latest version and included device migration from handheld scanner to ipads.
- **SQL Server Upgrades:** All SQL application databases have been upgraded to SQL 2019.
- **WQRS/AQUARIUS:** WQRS/AQUARIUS application upgrade and enhancements was completed in FY23.
- **Wireless Expansion:** The wireless network was expanded in Southboro and the first and second floor of the DITP Admin/Lab and Maintenance/Warehouse building.
- **Conference Room Media Upgrades:** Video conference room capabilities were added to all conference rooms and some collaboration spaces

Budget Highlights:

The FY24 Budget is \$17.1 million, a decrease of \$1.7 million or 11.0% as compared to the FY23 Budget.

- \$7.2 million for Wages and Salaries, an increase of \$515,000 or 7.7% as compared to the FY23 Budget. The increase in Wages and Salaries reflecting the addition of two FTEs, wage increases associated with collective bargaining agreements and salary adjustments associated with position changes/upgrades within the department partially offset by backfilling positions at lower wage rates. The FY24 Budget includes funding for 59 FTEs, two more than FY23 Budget.
- \$5.7 million for **Ongoing Maintenance**, an increase of \$432,000 or 8.2%, as compared to the FY23 Budget. The increase includes \$640,000 for subscription licenses and upgrades for CrowdStrike, WorkspaceOne, and Adobe Acrobat of \$118,000, \$125,000, and \$90,000, respectively.
- \$1.6 million for **Professional Services**, an increase of \$462,000 or 42.5% as compared to the FY23 Budget. Professional services to augment MIS staff are needed for upgrades that include PeopleClick,

MHC, Forcepoint (Websense), Maximo, Oracle, OSISOFT, and Aruba wireless. Custom Development projects include Complaints Database, technical reference model, cloud security, and cyber security assessments. The largest component of this line item is \$462,000 for managed security services provider.

- \$663,000 for **Other Materials**, an increase of \$65,000 or 10.9%, as compared to the FY23 Budget. The majority of these funds are to replace aging servers, printers, plotters and mobile devices. Equipment to enhance wireless connectivity at various MWRA sites will also be purchased.
- \$1.8 million for **Other Services**, an increase of \$216,000 or 13.7%, as compared to the FY23 Budget. Funding of \$1.6 million is for facility data and voice circuits and network upgrades. Remaining funds are for the lease of Automated Vehicle Location (AVL) services and Library subscriptions for the Authority.

PROCUREMENT

The **Procurement Department** provides timely and high quality services to all MWRA Divisions to enable MWRA programs to meet their public, production and schedule responsibilities. The Procurement Department is responsible for procuring materials, equipment, supplies, construction, professional, and non-professional services in a timely, efficient, and openly competitive process in accordance with MWRA applicable law and policies and procedures, including those related to meeting affirmative action goals. The Department also maintains a centralized, efficient, and cost-effective management of spare parts and operating supplies inventory.

FY24 Final Current Expense Budget							
PROCUREMENT							
LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23		
WAGES & SALARIES	\$ 4,320,117	\$ 4,447,235	\$ 4,157,373	\$ 4,494,412	\$ 337,039	8.1%	
OVERTIME	20,565	41,142	23,471	41,500	18,029	76.8%	
FRINGE BENEFITS	572	1,129	300	1,200	900	300.0%	
MAINTENANCE	493,492	294,716	-	-	-	-	
TRAINING & MEETINGS	-	-	10,751	12,751	2,000	18.6%	
OTHER MATERIALS	68,232	71,619	112,000	91,000	(21,000)	-18.8%	
OTHER SERVICES	69,594	52,130	72,416	16,100	(56,316)	-77.8%	
TOTAL	\$ 4,972,572	\$ 4,907,971	\$ 4,376,311	\$ 4,656,963	\$ 280,652	6.4%	

The **Procurement Department** includes three operational 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.

FY24 Goals & Initiatives:

IV. Finance & Management

- **Goal #11 - Ensure Financial Sustainability, Integrity, and Transparency:**
 - Continue to conduct strategic energy procurements for both the purchase of energy and sale of energy credits generated from MWRA energy production.
- **Goal #12 – Promote Effective Business Operations and Resource Management:**
 - Maintain and expand recycling program in order to contain MWRA operating costs by removing recyclable materials from the waste stream.
 - Review and update policies and procedures for procurement of professional services, non-professional services and goods and materials.
 - Provide training to MWRA staff on various procurement policies and procedures including purchasing of goods and materials and consultant selection committee service.
 - Update construction contract documents.

FY23 Year-End Accomplishments:

- Awarded the following Major Capital Improvement Program Contracts and Other Contracts necessary for Operations and Maintenance through Q4, FY22:
 - CHE008 PIPE REPLACEMENT PROJECT
 - GRIFFIN WAY/EASTERN AVENUE TRAFFIC SIGNALIZATION
 - CHESTNUT HILL WESTON RES DAMS INSTRU (PIEZ) INSTAL
 - HYDRAULIC EQUIPMENT SERVICE
 - WOC BUILDING #279 ROOF PAINTING, SOUTHBOROUGH, MA
 - ELEVATOR MAINTENANCE AND REPAIR SERVICES-D.I.T.P.
 - WACHUSETT DAM LGH PIPE & BOILER REPLACEMENT
 - INSTRUMENTATION SERVICES - METROPOLITAN BOSTON
 - WINSOR DAM INTAKE BUILDING MASONRY REPOINTING
 - DIESEL GENERATOR MAINTENANCE, JJCWTP
 - 69kV ELECTRICAL SYSTEMS MAINTENANCE
 - REFURBISH SODIUM HYPOCHLORITE TANK 1 WOC, DITP
 - BRAINTREE WEYMOUTH IPS TRANSFORMER REPLACEMENT
 - INT HIGH PIPELINE IMPRV - CP2 PRE-PURCH MATERIALS
 - CRANE MAINTENANCE SERVICE
 - 13.8kV ELECTRICAL SYSTEMS MAINTENANCE
 - DITP CLARIFIER REHABILITATION, PHASE 2
 - MISCELLANEOUS FENCING INSTALLATIONS AND REPAIRS
 - DEER ISLAND DEMAND RESPONSE SERVICES 2027-2030
 - MONITORING AND MAINTENANCE OF INTRUSION ALARM SYST
 - FIRE ALARM SERVICE METRO BOSTON
 - INT HIGH PIPELINE IMPROVEMENTS (CP2)
 - PHASE 12 SEWER MANHOLE REHABILITATION
 - GRIT AND SCREENINGS HAULING AND DISPOSAL
 - ELECTRICAL TESTING AND TECHNICAL SERVICES
 - GROUNDSKEEPING SERVICES, DITP
 - FIRE PROTECTION SPRINKLER SYSTEM SERVICE
 - NORUMBEGA COVERED STORAGE TANK CELL NO. 3 CLEANING
 - 6823 PURCHASE ORDERS IN FY23 FOR A TOTAL OF \$ 57,865,689
 - ONLINE VEHICLE AND EQUIPMENT AUCTIONS RESULTED IN REVENUE OF \$575,794

Budget Highlights:

The FY24 Budget is \$4.7 million, an increase of \$281,000 or 6.4% as compared to the FY23 Budget.

- \$4.5 million for **Wages and Salaries**, an increase of \$337,000 or 8.1% as compared to the FY23 Budget. The increase in Wages and Salaries reflects wage increases associated with collective bargaining agreements partially offset by backfilling positions at lower wage rate. The FY23 Budget funds 43.0 FTEs, a drop of 0.9 from the FY23 Budget.

OCCUPATIONAL HEALTH AND SAFETY

The **Occupational Health and Safety** Department manages MWRA's compliance with Massachusetts Department of Labor Standards (state) and federal rules and regulations and provides programs, guidance and recommendations in areas of employee safety and health. The department oversees a program for regulatory compliance with state standards and works closely with other authority safety and health staff to communicate, implement, monitor and track safety and health regulatory compliance. OHS leads the agency's activities in a proactive way to minimize health issues and prevent situations that could create workers' compensation cases.

FY24 Final Current Expense Budget OCCUPATIONAL HEALTH AND SAFETY							
LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23		
WAGES & SALARIES	\$ 694,224	\$ 548,139	\$ 1,111,086	\$ 1,216,769	\$ 105,683	9.5%	
OVERTIME	48,526	23,893	46,210	46,210	-	0.0%	
FRINGE BENEFITS	565	299	475	475	-	0.0%	
CHEMICALS	-	-	-	-	-	-	
UTILITIES	-	-	-	-	-	-	
MAINTENANCE	13,116	381	-	-	-	-	
TRAINING & MEETINGS	-	-	1,500	1,500	-	0.0%	
PROFESSIONAL SERVICES	-	-	-	-	-	-	
OTHER MATERIALS	35,420	54,457	31,200	106,200	75,000	240.4%	
OTHER SERVICES	50,123	34,700	178,766	350,532	171,766	96.1%	
TOTAL	\$ 841,974	\$ 661,869	\$ 1,369,237	\$ 1,721,686	\$ 352,449	25.7%	

FY24 Goals and Initiatives:

V. Diversity, Equity, Inclusion & Workforce Development

- **Goal #16 – Ensure a safe and healthful work place for all employees, contractors, and visitors free of recognized hazards:**
 - o Continue to find cost effective measures to provide the Authority with appropriate safety equipment.
 - o Review, update, and develop safety programs for the Authority to comply with DLS standards and newly adopted Massachusetts State Plan approved by OSHA. Communicate the new programs to the workforce to ensure compliance to safety and health requirements.
 - o Conduct facility (50+) worksite safety assessments and inspections (i.e., self-audits) across the Authority. During this FY, the goal is to complete at a minimum one-third of facilities identified for inspection. Self-audits will be utilized to ensure that workplace conditions conform to DLS standards and do not present known hazards to the workforce.
 - o Continue to review training needs of the workforce, in conjunction with the training department, to identify any possible gaps within current training offerings or new training requirements due to DLS standards.

FY23 Year-End Accomplishments:

- Collaborated with training department to identify safety-training deficiencies, establishing a training matrix as a training baseline with new learning management system.
- Assessed potential hazards and controls through workplace inspections, walk-throughs, and

surveillance/observations of work practices.

- Investigated incidents involving the safety and health of employees, visitors, vendors and contractors.
- Maintained and evaluated injury and illness records in accordance with OSHA standards.
- Utilized safety audit software to assist in performing safety inspections of MWRA facilities.

Budget Highlights:

The FY24 Budget is \$1.7 million which is \$352,000 or 25.7% above the FY23 Budget. The Occupational Health and Safety department was established in FY20 when it was spun out of Operations.

- \$1.2 million for **Wages & Salaries**, an increase of \$106,000 or 9.5% over FY23 primarily due to wage increases associated with collective bargaining agreements. OHS is staffed by 10 FTE's in FY24, matching the FY23 Budget.
- \$46,000 for **Overtime**, to respond to as needed incidents.
- \$106,000 for **Other Materials**, an increase of \$75,000 over the FY23 Budget due to transfer of required safety equipment from other departments.
- \$351,000 for **Other Services**, an increase of \$172,000 for services and freight to maintain Authority wide safety equipment like winches, fire extinguishers, respirators, AEDs, and first aid cabinets that were transferred from FOD Operations Support.



Finance Division
Budget

FINANCE DIVISION

Finance

Director's Office
Rates and Budget
Treasury
Controller
Risk Management

The **Finance Division** is responsible for managing the finance functions of the Authority. It performs a multitude of functions that support the daily operations and ensure the implementation of the Authority's long term goals and strategies. The Finance Division also ensures that a variety of fiscal management systems are in place to monitor and control the Current Expense Budget (CEB) and Capital Improvement Program (CIP).

FY24 Final Current Expense Budget						
FINANCE DIVISION						
LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
WAGES & SALARIES	\$ 3,681,936	\$ 3,488,514	\$ 5,317,459	\$ 5,866,156	\$ 548,697	10.3%
OVERTIME	-	176	-	-	-	-
TRAINING & MEETINGS	1,225	259	3,000	7,000	4,000	133.3%
PROFESSIONAL SERVICES	639,442	430,591	704,505	704,505	-	0.0%
OTHER MATERIALS	12,547	7,533	11,300	11,300	-	0.0%
OTHER SERVICES	5,321	4,329	8,646	8,952	306	3.5%
TOTAL	\$ 4,340,471	\$ 3,931,402	\$ 6,044,910	\$ 6,597,913	\$ 553,003	9.1%

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

FY24 Final Current Expense Budget						
FINANCE by Department						
DEPARTMENT	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
DIR OFFICE (FINANCE)	\$ 271,550	\$ 276,129	\$ 278,136	\$ 300,565	\$ 22,429	8.1%
CONTROLLER	1,505,617	1,299,027	1,615,146	1,932,638	317,492	19.7%
RATES AND BUDGET	854,805	883,074	1,777,826	1,793,457	15,631	0.9%
TREASURY	1,129,135	921,915	1,788,347	1,961,490	173,143	9.7%
RISK MANAGEMENT	579,364	551,257	585,455	609,763	24,308	4.2%
TOTAL	\$ 4,340,471	\$ 3,931,402	\$ 6,044,910	\$ 6,597,913	\$ 553,003	9.1%

FY24 Goals & Initiatives:

The Finance Division supports the fourth key strategic priority set forth in the Authority's FY21 - FY25 Strategic Business Plan.

IV. Finance & Management

- **Goal #11- Ensure Financial Sustainability, Integrity, and Transparency:**
 - Develop and implement long-term strategies to ensure assessment increases to MWRA's Continue assessment and evaluation of sustainable cost savings opportunities throughout the organization.
 - Continue to implement MWRA's approach to sustainable rate increases while accounting for the pandemic's effects on its communities' revenue.
 - Manage debt and investment portfolios to maximize prudent savings/returns in compliance with all applicable rules and regulations.
 - Continue diversification strategy to insulate against overexposure and promote resiliency to changing market conditions.
 - Maintain a system of internal controls to best protect the organization's resources.
 - Continue to employ budget and expense control practices to manage expenses.
 - Identify and pursue optimization in all aspects of MWRA financial operations.
 - Continue to conduct strategic energy procurements.
 - Continue to fund the pension fund at the annual required contribution level and to fund Other Post-Employment Benefits at a level that has a meaningful impact on the unfunded liability while being sustainable.

FY23 Year-End Accomplishments:

- Developed the FY24 Budget consistent with the FY23 planning estimates, for both the Current Expense Budget and the Capital Improvement Program.
- Maintained MWRA's strong credit ratings, Aa1, AA+, AA+ from Moody's, Standard & Poor's and Fitch respectively. MWRA's credit ratings from all three major agencies are only one ratings step below the highest rating of AAA. These high credit ratings enable MWRA to borrow at very advantageous interest rates helping to minimize debt service expenses.
- Prepared submission of MWRA's Comprehensive Annual Financial Report (CAFR) to the Government Finance Officers Association
- Held Budget Briefings with the MWRA Advisory Board to communicate FY23 departmental budgets and initiatives and how they relate to the MWRA's Master Plan.

Budget Highlights:

The FY24 Budget for the Finance Division is \$6.6 million, an increase of \$553,000 million or 9.1% as compared to the FY23 Budget.

- \$5.9 million for **Wages and Salaries**, an increase of \$549,000 or 10.3% as compared to the FY23 Budget, the increase reflects wage increases associated with collective bargaining agreements. The FY24 Budget funds fifty-two (52) FTEs, the same as in the FY23 Budget.

FTEs FINANCE by Department		
DEPARTMENT	FY23 FTEs	FY24 FTEs
DIR OFFICE (FINANCE)	2.0	2.0
CONTROLLER	16.0	16.0
RATES AND BUDGET	16.0	16.0
TREASURY	14.0	14.0
RISK MANAGEMENT	4.0	4.0
TOTAL	52.0	52.0

FINANCE DIRECTOR'S OFFICE

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

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

The Division's continuing challenge in FY24 will be maintaining an agency-wide focus on balancing competing needs to minimize assessment increases while ensuring the provision of critical MWRA services.

FY24 Final Current Expense Budget							
FINANCE DIVISION DIRECTOR'S OFFICE							
LINE ITEM	FY21	FY22	FY23	FY24	Change		
	Actuals	Actuals	Final Budget	Final Budget	FY24 vs. FY23		
WAGES & SALARIES	\$ 259,296	\$ 270,298	\$ 263,284	\$ 285,713	\$ 22,429	8.5%	
OVERTIME	-	-	-	-	-	-	
TRAINING & MEETINGS	1,225	259	3,000	3,000	-	0.0%	
OTHER MATERIALS	10,715	5,258	10,100	10,100	-	0.0%	
OTHER SERVICES	314	314	1,752	1,752	-	0.0%	
TOTAL	\$ 271,550	\$ 276,129	\$ 278,136	\$ 300,565	\$ 22,429	8.1%	

FY24 Goals and Initiatives:

IV. Finance & Management

- **Goal #11- Ensure Financial Sustainability, Integrity, and Transparency:**
 - Manage and coordinate the Authority's finance functions.
 - Identify and pursue optimization in all aspects of MWRA's financial operations.
 - Continue to fund the Pension Fund at the annual required contribution level and to fund Other Post-Employment Benefits at a level that has a meaningful impact on the unfunded liability while being sustainable.
 - Guide and coordinate division activities to support MWRA's goals and objectives.
 - Continuously improve processes and performance for greater efficiency.
 - Develop and implement long-term strategies to ensure sustainable and predictable assessments and charges to our communities at both the water and wastewater utility level.

Budget Highlights:

The FY24 Budget is \$301,000, in increase of \$22,000 or 8.1% as compared to the FY23 Budget.

- \$286,000 for **Wages and Salaries**, an increase of \$22,500 or 8.5% as compared to the FY23 Budget, reflecting collective bargaining agreements. The FY24 Final Budget funds two FTEs, the same as in the FY23 Budget.

FINANCE RATES & BUDGET

The **Rates & Budget Department** provides the financial analysis that allows MWRA to translate its goals, and legal and financial commitments into cost-effective annual and multi-year programs and budgets. Department staff works closely with divisional staff to coordinate development of the long-term Capital Improvement Program (CIP) and monitor the progress of capital projects compared to projected schedules and budgeted spending. Staff also coordinates the development of MWRA’s annual Current Expense Budget (CEB) and monitors spending compared to the budget throughout the year. The Budget Department also manages the annual process of establishing water and sewer assessments to be paid by MWRA’s member communities and develops planning estimates of rate projections.

FY24 Final Current Expense Budget							
RATES AND BUDGET							
LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23		
WAGES & SALARIES	\$ 854,110	\$ 882,484	\$ 1,776,477	\$ 1,792,102	\$ 15,625	0.9%	
TRAINING & MEETINGS	-	-	-	-	-	-	
OTHER MATERIALS	381	57	500	500	-	0.0%	
OTHER SERVICES	314	533	849	855	6	0.7%	
TOTAL	\$ 854,805	\$ 883,074	\$ 1,777,826	\$ 1,793,457	\$ 15,631	0.9%	

FY24 Goals and Initiatives:

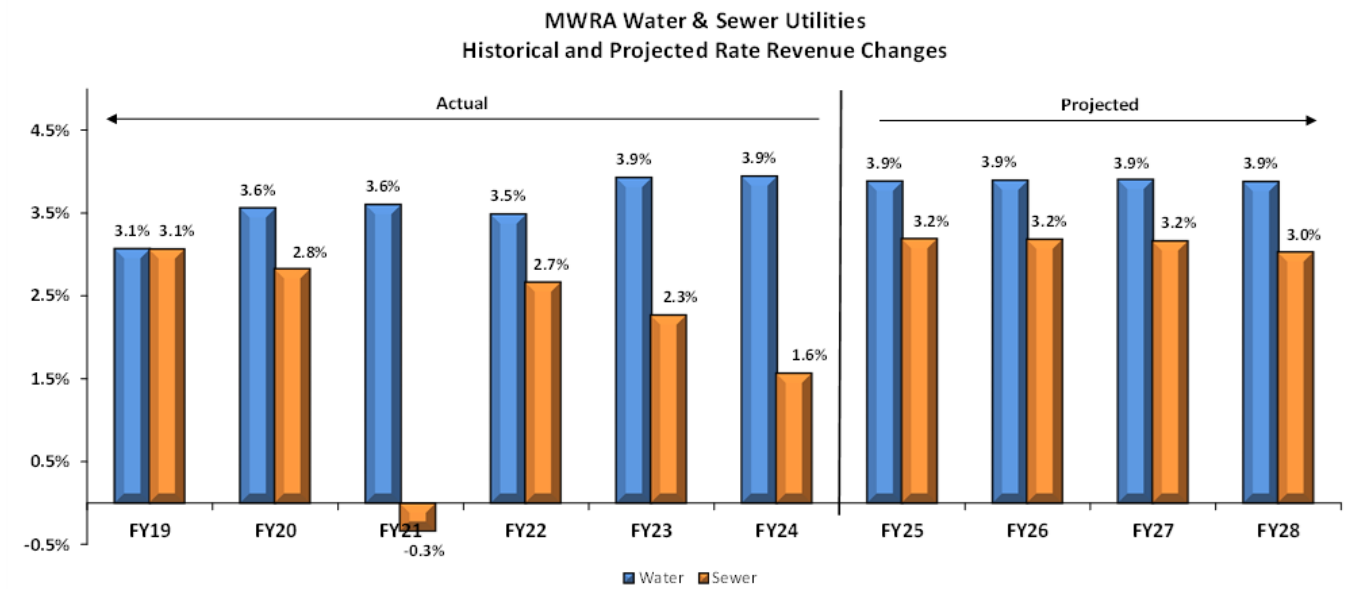
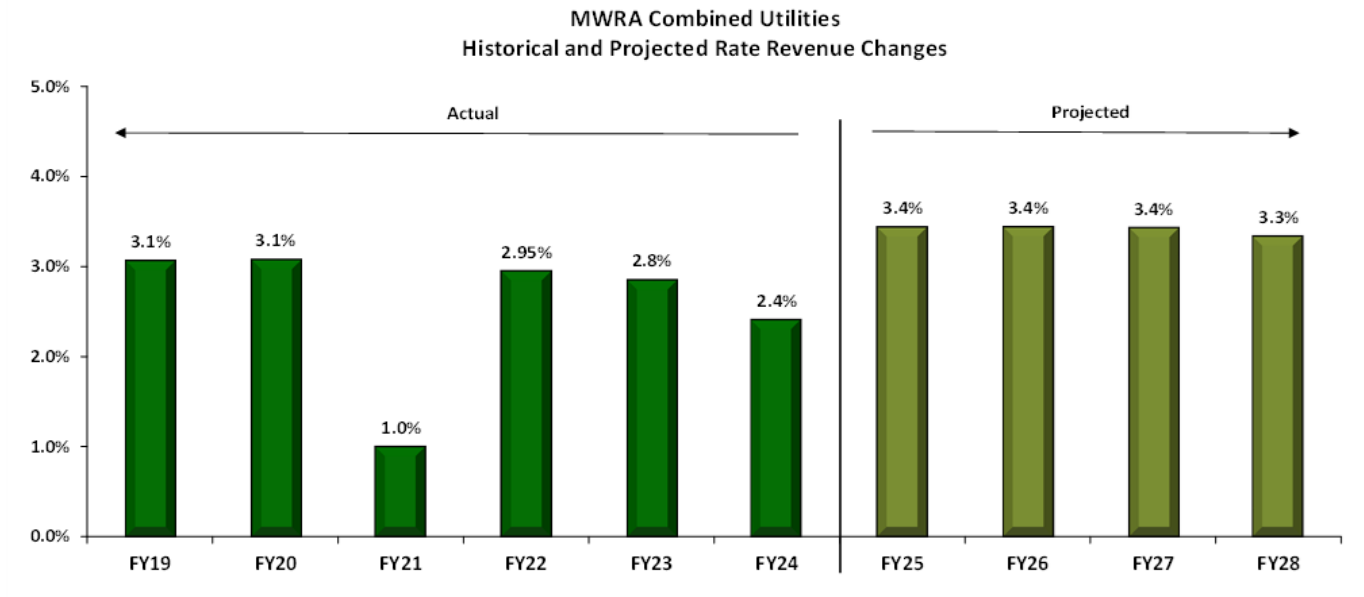
IV. Finance & Management

- **Goal #11- Ensure Financial Sustainability, Integrity, and Transparency:**
 - Continue long-term strategic budgeting practices to ensure predictable and sustainable sewer and water assessments and charges to our member communities at both the combined and the water and wastewater utility level.
 - Continue to employ budget and expense control practices to manage expenses.
 - Continue to enhance processes and the management of resources to deliver the final CIP and CEB timely and accurately.
 - Adhere to all MWRA policies, procedures, and administrative practices as well as all relevant statutory and regulatory authority, accounting, and budgeting principles.
 - Provide financial analysis as required, including system expansion opportunities.
 - Start the process of evaluating and selecting software applications to replace the CEB and CIP programs.
 - Improve the quality and presentation of budget documents and regularly required reports while working to develop new reports that will aid the Authority’s Board of Directors, Management, and the MWRA Advisory Board.

FY23 Year-End Accomplishments:

- Developed the FY24 Current Expense Budget below the FY23 planning estimates for combined water and sewer assessment increases.
- Developed the FY24 Capital Improvement Budget and established the five-year spending cap for the FY24-28 period.

- Communicated Final FY25 Assessments to the service area communities, staying within the 3.4% projected assessment changes that are in the MWRA’s multi-year planning model.
- Held Budget Briefings with the MWRA Advisory Board to communicate FY24 departmental budgets and initiatives and how they relate to the MWRA’s Master Plan.



Budget Highlights:

The FY24 Budget is \$1.8 million, an increase of \$16,000 or 0.9% as compared to the FY23 Budget.

- \$1.8 million for **Wages and Salaries**, an increase of \$16,000 or 0.9% as compared to the FY23 Budget. The FY24 Budget funds sixteen FTEs, the same as in the FY23 Budget.

TREASURY

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

FY24 Final Current Expense Budget						
TREASURY						
LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
WAGES & SALARIES	\$ 706,826	\$ 680,923	\$ 1,324,030	\$ 1,497,173	\$ 173,143	13.1%
OVERTIME	-	176	-	-	-	-
FRINGE BENEFITS	-	-	-	-	-	-
TRAINING & MEETINGS	-	-	-	-	-	-
PROFESSIONAL SERVICES	419,111	238,461	462,005	462,005	-	0.0%
OTHER MATERIALS	921	1,862	500	500	-	0.0%
OTHER SERVICES	2,277	493	1,812	1,812	-	0.0%
TOTAL	\$ 1,129,135	\$ 921,915	\$ 1,788,347	\$ 1,961,490	\$ 173,143	9.7%

FY24 Goals and Initiatives:

IV. Finance & Management

- **Goal #11- Ensure Financial Sustainability, Integrity, and Transparency:**
 - Manage debt and investment portfolio to maximize savings/returns in compliance with all applicable rules and regulations while maintaining compliance with the General Revenue Bond Resolution requirements regarding security and liquidity and contributing to the achievement of sustainable and predictable assessment increases.
 - Continue diversification strategy to insulate against overexposure and promote resiliency to changing market conditions.

FY23 Year-End Accomplishments:

- Maintained MWRA's strong credit ratings, Aa1, AA+, AA+ from Moody's, Standard & Poor's and Fitch respectively. MWRA's credit ratings from all three major agencies are only one ratings step below the highest rating of AAA. The credit report from Moody's noted that for the rates management and Compliance and Capital Planning key ratings indicators, MWRA was assigned the highest Aaa rating. These high credit ratings enable MWRA to borrow at very advantageous interest rates minimizing debt service expense.
- Completed a \$234.3 million refunding and new money Green Bond transaction on April 27, 2023. The overall transaction carried an All-in True Interest Cost of 3.35% with an average life of 10.4 years. During the order period, \$542.1 million in offers to purchase the \$234.3 million in bonds were received, this allowed for interest yield reductions in over half the new money maturities. The refunding transaction was comprised of bonds, which due to increased interest rates, investors wanted to sell (tender) back to MWRA. After a fourteen business day notice period, \$135.7 million in bonds were offered to be tendered to MWRA. MWRA accepted \$120.1 million of the tendered bonds to be refunded for interest rate savings. The refunding resulted in \$19.9 million in gross savings or \$12.9 million or 10.0% in present value savings between FY23 and FY37. MWRA has issued a total of \$2.6 billion in Green Bonds.

- Completed two borrowings with the Massachusetts Clean Water Trust, a \$18.8 million long-term borrowing with the Massachusetts Clean Water Trust in December 2022. The long-term borrowings are for a term of 20 years at a 2.0% interest rate. The second transaction completed in January 2023, was an interim loan for \$41.9 million, which included \$3.4 million in principal forgiveness loans funded by money from the American Rescue Plan Act.
- Secured approximately \$450,000 in FEMA funds to reimburse MWRA for costs associated with the COVID-19 pandemic, including reimbursement for staff COVID testing. Obtained an additional approximately \$28,000 in FEMA reimbursement to assist with the costs associated with a winter storm in January 2022.
- Executed an \$27.2 million and a \$28.8 million defeasance of outstanding senior principal in September 2022 and June 2023 respectively. These defeasances reduced the debt service requirement between FY24 and FY28 by a total of \$63.5 million reducing the rate of increase to the Rate Revenue Requirement in those years. The transactions also resulted in \$1.8 million in interest savings by paying bonds on their call dates.

Budget Highlights:

The FY24 Final Budget is \$2.0 million, an increase of \$173,000 or 0.7% as compared to the FY23 Budget.

- \$1.5 million for **Wages and Salaries**, an increase of \$173,000 or 13.1% as compared to the FY23 Budget, this increase is driven by wage increases associated with collective bargaining agreements. The FY24 Budget funds fourteen FTEs, matching the FY23 Budget.
- \$462,000 for **Professional Services**, matching the FY23 Budget. These funds are used for banking, financial advisory, bond and disclosure counsel services.

CONTROLLER

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

FY24 Final Current Expense Budget							
CONTROLLER							
LINE ITEM	FY21	FY22	FY23	FY24	Change		
	Actuals	Actuals	Final Budget	Final Budget	FY24 vs. FY23		
WAGES & SALARIES	\$ 1,350,541	\$ 1,153,844	\$ 1,448,273	\$ 1,761,765	\$ 313,492	21.6%	
OVERTIME	-	-	-	-	-	-	
TRAINING & MEETINGS	-	-	-	4,000	4,000	-	
PROFESSIONAL SERVICES	152,268	142,403	162,500	162,500	-	0.0%	
OTHER MATERIALS	531	228	200	200	-	0.0%	
OTHER SERVICES	2,277	2,552	4,173	4,173	-	0.0%	
TOTAL	\$ 1,505,617	\$ 1,299,027	\$ 1,615,146	\$ 1,932,638	\$ 317,492	19.7%	

FY24 Goals and Initiatives:

IV. Finance & Management

- **Goal #11- Ensure Financial Sustainability, Integrity, and Transparency:**
 - Implement process efficiencies in all department units.
 - Enhance controls to safeguard Authority assets and ensure accurate and timely reporting.
 - Continue to support management initiatives with underlying documentation and detail.
 - Implement any new or changed GASB standards as appropriate.
 - Manage the certification of Financial Statements by Independent Auditors.

FY23 Year-End Accomplishments:

- Successfully completed certified financial statement audit with no audit findings.
- Awarded the Certificate of Achievement for Excellence in Financial Reporting by the Government Finance Officers Association (GFOA) for the MWRA’s FY21 Annual Comprehensive Financial Report. The FY22 Comprehensive Annual Financial Report will be submitted to the GFOA for review.
- Reviewed over two dozen contractor financial statements to support Procurement Department analysis of contractor’s financial capacity to successfully perform under the terms of the MWRA contract.

Budget Highlights:

The FY24 Budget is \$1.9 million, an increase of \$317,000 or 19.7% as compared to the FY23 Budget.

- \$1.8 million for **Wages and Salaries**, an increase of \$313,000 or 21.6%, as compared to the FY23 Budget, the increase reflects wage increases associated with collective bargaining agreements. The FY23 Budget funds 16 FTEs, the same as the FY23 Budget.

RISK MANAGEMENT

The **Risk Management Department** is responsible for all MWRA insurance programs and risk management functions. Department staff manages all administrative functions relating to the initial reporting, processing, and resolution of construction contract claims and self-insured auto, general liability, and property damage claims. Department staff members are responsible for the annual procurement, renewals, and maintenance of all Authority-wide insurance policies and programs and for managing all aspects of MWRA’s contractor/vendor insurance certificate program. Department staff serves as liaisons to insurance industry participants including brokers, insurers, insurance consultants, and attorneys as well as providing support to all MWRA departments.

FY24 Final Current Expense Budget							
RISK MANAGEMENT							
LINE ITEM	FY21	FY22	FY23	FY24	Change		
	Actuals	Actuals	Final Budget	Final Budget	FY24 vs. FY23		
WAGES & SALARIES	\$ 511,163	\$ 500,965	\$ 505,395	\$ 529,403	\$ 24,008	4.8%	
PROFESSIONAL SERVICES	68,063	49,728	80,000	80,000	-	0.0%	
OTHER MATERIALS	-	126	-	-	-	-	
OTHER SERVICES	138	438	60	360	300	500.0%	
TOTAL	\$ 579,364	\$ 551,257	\$ 585,455	\$ 609,763	\$ 24,308	4.2%	

FY24 Goals and Initiatives:

IV. Finance & Management

- **Goal #11- Ensure Financial Sustainability, Integrity, and Transparency:**

- Secure the timely, cost effective renewal of Authority-wide insurance policies and contracts.
- Minimize MWRA’s exposure to financial loss stemming from contractor and vendor activities by reviewing risk exposures and establishing contract insurance requirements and monitoring contractors/vendors for compliance.
- Process self-insured automobile, general liability, property damage, and construction contract claims in an efficient and timely manner.
- Provide support to all MWRA Departments on all insurance, claims, litigation and risk management issues.

FY23 Year-End Accomplishments:

- Successfully procured MWRA’s Insurance Program through a competitive bid process for all lines of coverage.
- Staff renewed MWRA’s license to operate as a self-insured entity for workers’ compensation claims by completing the annual application process with the Division of Insurance.
- Received, investigated and processed 98 self-insured Automobile (57), General Liability (27) and Property Damage (14) claims.
- Performed 96 Project/Contract Insurance Reviews and 72 Risk Assessments in support of construction, professional services and purchase order contracts.

- Received, analyzed and processed 15 Construction Contract Claims (Claimed value \$3M) in support of issuance of Engineer’s Decisions by MWRA.
- Provided timely support to MWRA managers on all insurance, claims, litigation and risk management issues.

Budget Highlights:

The FY24 Final Budget is \$610,000, an increase \$24,000 or 4.2% as compared to the FY23 Budget.

- \$529,000 for **Wages & Salaries**, \$24,000 or 4.8% above the FY23 Budget. The increase reflects wage increases associated with collective bargaining agreements. The FY24 Budget funds four FTEs, the same as the FY23 Budget.



Quabbin Reservoir



Appendices

APPENDIX A

DIRECT EXPENSES BUDGET LINE ITEM DESCRIPTIONS

MWRA's direct expenses budget funds the annual expenses of its operating and support divisions. Though the direct expenses budget is approximately 31% 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 expenses 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, overtime meals, and tuition reimbursement.

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 sodium hypochlorite, soda ash, sodium bisulfite, and hydrofluosilicic acid.

Utilities - This line item includes funds for electricity, diesel fuel, natural gas 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.

FY24 Final Current Expense Budget MWRA Direct Expenses by Line Item						
LINE ITEM	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
WAGES & SALARIES	\$ 109,857,067	\$ 105,394,954	\$ 118,980,689	\$ 127,828,242	\$ 8,847,553	7.4%
OVERTIME	4,415,142	5,010,758	5,337,896	5,727,593	389,697	7.3%
FRINGE BENEFITS	21,694,636	21,714,918	23,961,641	25,823,383	1,861,742	7.8%
WORKERS' COMPENSATION	1,842,853	1,665,017	2,519,751	2,144,395	(375,356)	-14.9%
CHEMICALS	11,652,051	11,788,437	14,994,036	28,269,124	13,275,088	88.5%
UTILITIES	21,887,023	29,352,756	30,896,365	31,064,891	168,526	0.5%
MAINTENANCE	30,660,795	28,842,198	33,241,022	38,574,255	5,333,233	16.0%
TRAINING & MEETINGS	150,787	232,056	492,197	498,597	6,400	1.3%
PROFESSIONAL SERVICES	7,377,648	7,373,709	8,197,577	10,410,484	2,212,907	27.0%
OTHER MATERIALS	6,272,621	5,039,043	6,728,862	7,167,400	438,538	6.5%
OTHER SERVICES	23,656,949	25,243,013	28,372,237	38,494,660	10,122,423	35.7%
TOTAL	\$ 239,467,572	\$ 241,656,859	\$ 273,722,273	\$ 316,003,024	\$ 42,280,751	15.4%

FY24 Final Current Expense Budget MWRA Direct Expenses by Division						
DIVISION	FY21 Actuals	FY22 Actuals	FY23 Final Budget	FY24 Final Budget	Change FY24 vs. FY23	
EXECUTIVE	\$ 1,370,838	\$ 1,313,489	\$ 1,500,826	\$ 1,410,181	\$ (90,645)	-6.0%
EMERGENCY PREPAREDNESS	3,249,245	3,409,153	4,030,720	4,489,575	458,855	11.4%
ADMINISTRATION	49,969,000	49,563,904	55,446,985	58,088,755	2,641,770	4.8%
FINANCE	4,340,471	3,931,402	6,044,910	6,597,913	553,003	9.1%
LAW	1,664,788	1,743,373	2,028,248	2,837,856	809,608	39.9%
AFFIRMATIVE ACTION	657,791	585,459	700,059	1,527,342	827,283	118.2%
INTERNAL AUDIT	637,784	580,488	794,988	838,602	43,614	5.5%
PUBLIC AFFAIRS	1,000,722	993,736	1,254,811	1,514,486	259,675	20.7%
OPERATIONS/PLANNING	176,576,933	179,535,855	201,920,726	238,698,314	36,777,588	18.2%
TOTAL	\$ 239,467,572	\$ 241,656,859	\$ 273,722,273	\$ 316,003,024	\$ 42,280,751	15.4%

Performance measures for all MWRA Divisions and Departments are published monthly in the MWRA “Yellow Notebook” and quarterly in the MWRA “Orange Notebook.” In addition, monthly financial staff summaries are presented to the Board of Directors reviewing monthly budget performance and explaining variances. All documents are available on-line at mwra.com.

APPENDIX B
BUDGET PROCESS AND TIMETABLE

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

	Current Expense Budget (CEB)	Capital Improvement Program (CIP)
Date	Activity	Activity
Aug-22	Prepare budget guidelines and materials	Update database with current awards, change orders, and annual estimated inflation factor
Sep-22		Kick-off meeting
Sep-22	Kick-off meeting - Release database files to all departments	
Oct-22		Project Managers update project schedules and costs
Oct-22		Proposed CIP finalized
Nov-22	Budget staff prepare capital financing requirements and indirect expenses	Review of Proposed CIP with senior management
Nov-22	Update CEB impacts from CIP	
Nov-22		Proposed CIP Staff Summary and Board of Directors presentation
Dec-22	Proposed CEB, Rate Revenue Requirement and planning projections	
Dec-22	Review of Proposed CEB with Senior Management	
Dec-22		Present Proposed CIP at Board Of Directors Meeting
Dec-22		Advisory Board Review and Comments begins
Jan-23	Proposed CEB Staff Summary and Board of Directors presentation	
Feb-23	Present Proposed CEB at Board of Directors Meeting	
Feb-23	Advisory Board Review and Comments begins	
Mar-23	Spring Revisit - Distribute Proposed FY19 database files to all departments	
Apr-23	Update Proposed CEB	Update Proposed CIP
Apr-23	Public hearings	Public hearings
Apr-23	Receive Advisory Board Comments	Receive Advisory Board Comments
May-23	Prepare MWRA's response to Advisory Board Comments	Prepare MWRA's response to Advisory Board Comments
May-23	Prepare Draft Final CEB presentation for Board of Directors	Prepare Draft Final CIP presentation for Board of Directors
May-23	Presentation - Draft Final CEB to Board of Directors	Presentation - Draft Final CIP to Board of Directors
Jun-23	Draft Final CEB Staff Summary	Draft Final CIP Staff Summary
Jun-23	Board of Directors Meeting - Vote on Final CEB	Board of Directors Meeting - Vote on Final CIP

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.

Basis of Budgeting

The Authority is required by the Enabling Act to establish user rates for its water and sewer services which provide sufficient funds to recover the costs of operations (excluding depreciation), debt service, maintenance, replacements, improvements to its facilities, and appropriate reserves. MWRA budgets on the accrual basis, its financial statements are reported on the accrual basis of accounting and the economic measurement focus as specified by the Governmental Accounting Standards Board's (GASB) requirements for an enterprise fund.

The MWRA distinguishes operating revenues and expenses from nonoperation items. Operating revenues and expenses generally result from providing water and sewer services to its member communities. All revenues and expenses not meeting this definition are reported as nonoperating revenues and expenses. All operating revenues are pledged for repayment of outstanding debt service.

In addition, MWRA applies the provisions of GASB Statement No. 62, Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 FASB and AICPA Pronouncements, to provide a better matching of revenues and expenses. The effect of this policy has been to defer certain outflows of resources, which will be recovered through future revenues in accordance with MWRA's rate model, and to record deferred inflows of resources for revenue collected through current rates for costs expected to be incurred in the future.

Budget Surpluses

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

Budgeting and Assessment Objectives

MWRA follows conservative budgeting practices, and has the following objectives in developing budgets and community assessments:

1. To minimize total costs, consistent with MWRA's statutory responsibilities to provide effective, environmentally sound wholesale water delivery and wastewater collection and treatment services;
2. To minimize the cost of debt;
3. To avoid single year assessment spikes by prudent management of cost and assessment increases, and
4. To support inter-generational equity by avoiding unfair assessment burdens on either current or future ratepayers.

Allocation of Costs and Revenue to Systems

Most of MWRA's current expenses are directly attributable to either water or sewerage service costs or to investment in either the water or sewerage systems. Expenses which support both systems (indirect system costs) are allocated to the water or sewer system based on generally accepted cost allocation principles. Investment, contract, and other income offsets water and sewerage expenses on either a direct or allocated, indirect basis. The resulting net cost of water and sewerage services is the amount to be recovered through water and sewer assessments.

Allocation of Rate Revenue Requirements to User Assessments

Users of MWRA wholesale water and sewerage services are assessed for those services according to MWRA's water and sewer assessment methodologies. Assessments for water services are computed by MWRA based on metered water use for the preceding calendar year. The total assessment is allocated based on each community's share of water delivered in the immediately preceding calendar year.

Assessments for sewer services are computed on the basis of a combination of metered wastewater flow and loads, and population.

- Operations and Maintenance (O&M) costs are allocated based on total annual metered wastewater flow, and total annual average strength, septage, and high strength flow loads.
- Capital (or debt service) costs are allocated based on a combination of metered wastewater flow and loads, and population. One-quarter of capital costs are allocated based on maximum month flow, and total annual average strength, septage, and high strength flow loads. The

remaining three-quarters of capital costs are allocated based on population. Half of the population allocation is based on census population and half is based on contributing population.

Schedule and Procedure for Adoption of Assessments

During the preparation of the proposed Current Expense Budget, required water and sewer rate revenue is determined, and a preliminary calculation of the allocation of costs to user-specific assessments is made. This information is provided to MWRA customers to assist them in their own fiscal planning. As provided in the Enabling Act, the proposed Current Expense Budget and preliminary assessments undergo statutory review, including public hearings and review by MWRA's Advisory Board. Further refinements of projected expenses and revenues also occur during this period. If review and analysis of the proposed Current Expense Budget results in lower projected expenses or higher projected revenue, some or all of such savings from preliminary estimates of assessments can be included in the adopted budget as additions to the rate stabilization fund and used to reduce rate revenue requirements in subsequent years. Alternatively, some or all of such savings can be used to reduce final assessments to customers below preliminary estimates.

The Current Expense Budget and final water and sewer assessments are adopted in June for the fiscal year beginning in July. The budget adopted in June may differ from the proposed budget as a result of review and further refinement of the proposed budget, although final assessments adopted by MWRA must be sufficient to recover water and sewer rate revenue requirements specified in the adopted budget. Final water and sewer rate requirements and their allocation to users may thus change from preliminary estimates. In addition, any individual community's final assessment may be higher or lower than the preliminary estimate, both because of changes in the factors which affect the allocation of assessments among wholesale customers, and because of differences between MWRA's proposed and final budgets as approved by the Board of Directors.

Review and Dispute Resolution Process

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

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

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

If after an initial review a community believes that specific data used to calculate assessments should be reevaluated, a community may submit a written objection to the Executive Director with a copy to the Rates Manager or their designee. The objection must be signed by the local official on record with MWRA as responsible for water or sewer services in the city, town, or district. The objection should state the community's concern with the data used to calculate community assessments, and should also include information and technical data to support the community's objection.

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

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

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

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

Water and Sewer Assessment Payment Schedule

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

Assessments are payable to MWRA in ten equal installments due on the first day of August, September, October, November, December, February, March, April, May, and June.

Interest Charge on Delinquent Payments

For payments received after a payment due date MWRA levies an interest charge of one percent per month or 0.033 percent per day. Interest charges do not accrue until 30 days after the bills are mailed to MWRA's customer communities. Interest charges are added to subsequent regular billings.

Retail Rates

MWRA assessments are for MWRA's provision of wholesale services. Local bodies which receive wholesale services in turn provide retail services to their users at the local level.

MWRA encourages its customers to establish retail rates which:

1. Recover the full cost of providing local water and/or sewerage services, including both direct costs and an allocation or estimate of indirect costs,
2. Charge users of local water and/or sewerage services in a manner which demonstrates to customers that increased use of services results in increased user costs,
3. Comply with MWRA policies directed to conservation of water; elimination of infiltration and inflow of surface water and ground water into the sewage collection, treatment, and disposal system; and removal or pretreatment of industrial wastes, and
4. To the extent consistent with #1 and #2, provide assistance to low income users through lifeline rates.

CAPITALIZATION POLICY

It is the policy of the MWRA that capitalization of expenditures conforms to generally accepted accounting principles. Under such guidelines, MWRA has adopted the provisions of the Financial Accounting Standards Board's Statement No. 71, "Accounting for the Effects of Certain Types of Regulation," which is intended to assure that utility revenues are appropriately matched with incurred costs. Capital expenditures create assets or extend their useful lives. Assets are valued at their cost and provide benefits over an extended period of time. Sources of funds for capital expenditures include grants, proceeds of MWRA borrowing, loans, and current revenue.

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

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

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

RESERVES FUNDED FROM CURRENT REVENUE

Operating Reserve

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

Insurance Reserve

The Insurance Reserve has been established to provide funds to restore, replace, or reconstruct lost or damaged property or facilities of the water or sewer system. It provides funds reserved against risks for which MWRA does not currently maintain insurance. This self-insurance reduces the cost MWRA might otherwise incur for purchased insurance policies. MWRA periodically evaluates the level of its insurance reserve and every three years a consulting engineer or an insurance consultant recommends an appropriate insurance reserve fund requirement. The current funding level of \$14.0 million has been determined to be adequate based on a FY17 Insurance Reserve Fund review performed by an outside insurance consultant who estimated an acceptable fund level in the range of \$12 to \$16 million. The next Insurance Reserve Fund review is expected in February 2020.

Renewal and Replacement Reserve

The Renewal and Replacement Reserve has been established to pay the costs of emergency repairs or capital improvements to the system when funds are not available in either the Construction Fund or the Operating Fund. Amounts may not be withdrawn until MWRA has specified the project to which the amount will be applied, its estimated cost, and estimated completion date. It must also certify that such expenditures are reasonably required for the continued operation of the systems, or for maintenance of revenues, or that other provisions have not been made for funding such expenditures. The requirement of the Bond Resolution, every three years, MWRA receives recommendations from a Consulting Engineer as to the adequacy of the renewal and replacement reserve fund requirement. The Renewal and Replacement Reserve Fund requirement is presently established at \$35 million. The adequacy of the funding requirements for the Operating Reserve Fund and the Replacement Reserve Fund have been confirmed by the Consulting Engineer in its most recent triennial report dated October 2014, prepared and delivered in accordance with the General Resolution. The next Triennial Report is scheduled for October 2017. The Consulting Engineer also provides an opinion as to the adequacy of the Authority rates, rentals, and other charges.

CURRENT EXPENSE BUDGET MANAGEMENT POLICIES AND PROCEDURES

A. Budget Allocations

Budget Contingency Holdbacks

After the Board of Directors adopts the Current Expense Budget each year, the Executive Director, the Chief Operating Officer, or a division director may reserve between two percent and four percent of a division's approved budget as a budget contingency to be expended only upon approval of the Executive Director. The contingency holdback may be from any line item or cost center or combinations thereof, and any amount reserved as a budget contingency is not to be included in the monthly budget allocation process described below. The Administration, Finance, and Audit Committee will be notified of all budget contingency holdback amounts.

Monthly Allocation of the Annual Current Expense Budget

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

B. Budget Variance Monitoring and Analysis

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

Variance Analysis

Division directors and staff review variance reports and explain variances between budgeted and actual expenditures as requested by the Rates and Budget Department. Variance explanations are prepared as needed, usually at the first quarter of the year, and following monthly for the rest of the year. At least twice each year MWRA staff prepares forecasts of year-end expenditures and revenue. Barring extraordinary circumstances, division directors are responsible for controlling spending within the overall division budget. The Rates and Budget Department reviews all variances and projections so that appropriate measures may be taken to ensure that overall spending is within the MWRA's budget.

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

Indicators of MWRA Performance (Orange Notebook). At least twice a year, the Rates and Budget Department prepares a staff summary to the Board of Directors on year-end projections of revenue and expenses.

C. Budget Amendments

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

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

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

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

CAPITAL BUDGET MANAGEMENT POLICIES AND PROCEDURES

General Guidelines

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

Capital Budget Contingency

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

Capital Budget Monitoring and Reporting

The Authority continually monitors 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 are provided to the Board of Directors, one for the first six months of a year and one at year-end. The reports include a comparison between planned project schedules to actual performance. The reports 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 are provided to the Board of Directors on a regular basis, both as project specific updates and in Quarterly Orange Notebook reports that shall include discussions of project progress compared to schedules. Monthly Financial Summary reports shall include discussions of capital expenditures compared to budget.

Capital Budget Spending Cap

Beginning in June 2003, the Board of Directors established a five-year Capital Budget Spending cap and annual caps for each year within the cap period. Spending for any year in the cap period may vary within plus or minus 20% of the annual cap, as long as total spending for the five-year period does not exceed the five-year cap. Before the end of each five-year cap period, the Board will adopt a cap for the next five-year period and annual caps for each year in the period. The Board established the third five-year cap for the FY14-18 period at its June 2013 meeting.

Expenditures in Excess of the Spending Cap

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

Debt Limit

The Authority's statutory debt limit is \$6,450,000,000. The current debt is well below the debt limit. The Authority's debt limit was most recently amended by Chapter 312 of the Acts of 2008 of the Commonwealth of Massachusetts.

APPENDIX D

MWRA Planning Estimates FY2024 to FY2033										
<u>COMBINED UTILITIES</u>	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031	FY2032	FY2033
EXPENSES										
Direct Expenses	\$316,003	\$324,772	\$333,996	\$344,161	\$353,398	\$363,403	\$373,584	\$384,297	\$395,141	\$406,395
Indirect Expenses	70,387	66,114	69,499	73,207	77,010	81,541	86,466	59,071	64,697	66,383
Capital Financing (before offsets)	<u>488,947</u>	<u>508,195</u>	<u>525,639</u>	<u>544,039</u>	<u>563,903</u>	<u>580,127</u>	<u>594,235</u>	<u>639,526</u>	<u>650,921</u>	<u>666,147</u>
Sub-Total Expenses	\$875,336	\$899,081	\$929,134	\$961,407	\$994,311	\$1,025,071	\$1,054,285	\$1,082,893	\$1,110,759	\$1,138,925
Debt Service Assistance	(1,187)	0	0	0	0	0	0	0	0	0
Bond Redemption Savings	0	0	0	0	0	0	0	0	0	0
Variable Rate Savings	0	0	0	0	0	0	0	0	0	0
Total Expenses	\$874,149	\$899,081	\$929,134	\$961,407	\$994,311	\$1,025,071	\$1,054,285	\$1,082,893	\$1,110,759	\$1,138,925
REVENUE & INCOME										
Non-Member and Other Revenue	\$16,229	\$16,638	\$17,061	\$17,500	\$17,952	\$18,412	\$18,679	\$18,972	\$19,304	\$19,641
Interest Income	23,346	18,572	18,635	19,880	21,517	23,329	25,042	26,481	27,807	28,542
Rate Stabilization	<u>305</u>	<u>917</u>	<u>809</u>	<u>780</u>	<u>782</u>	<u>740</u>	<u>140</u>	<u>12</u>	<u>0</u>	<u>0</u>
Total Other Revenue	\$39,881	\$36,128	\$36,505	\$38,159	\$40,250	\$42,480	\$43,860	\$45,466	\$47,111	\$48,183
Total Rate Revenue	\$834,268	\$862,953	\$892,629	\$923,248	\$954,061	\$982,591	\$1,010,425	\$1,037,428	\$1,063,647	\$1,090,743
Rate Revenue Increase	2.4%	3.4%	3.4%	3.4%	3.3%	3.0%	2.8%	2.7%	2.5%	2.5%
Estimated Annual Household Charge **										
Based on water use of 61k gpy (weighted)	\$1,385	\$1,445	\$1,509	\$1,575	\$1,644	\$1,714	\$1,786	\$1,861	\$1,938	\$2,019
Based on water use of 90k gpy (weighted)	\$2,043	\$2,132	\$2,226	\$2,324	\$2,425	\$2,529	\$2,636	\$2,746	\$2,860	\$2,979
WASTEWATER UTILITY										
EXPENSES										
Direct Expenses	\$206,680	\$212,353	\$218,393	\$225,160	\$231,037	\$237,575	\$244,310	\$251,237	\$258,310	\$265,685
Indirect Expenses	29,332	24,935	26,469	28,166	29,840	32,041	34,461	16,281	19,104	19,398
Capital Financing (before offsets)	<u>318,992</u>	<u>331,369</u>	<u>341,118</u>	<u>351,562</u>	<u>362,968</u>	<u>370,453</u>	<u>375,969</u>	<u>400,122</u>	<u>401,779</u>	<u>405,759</u>
Sub-Total Wastewater Expenses	\$555,004	\$568,657	\$585,980	\$604,887	\$623,845	\$640,069	\$654,740	\$667,640	\$679,193	\$690,843
Debt Service Assistance	(1,072)	0	0	0	0	0	0	0	0	0
Bond Redemption Savings	0	0	0	0	0	0	0	0	0	0
Variable Rate Savings	0	0	0	0	0	0	0	0	0	0
Total Wastewater Expenses	\$553,932	\$568,657	\$585,980	\$604,887	\$623,845	\$640,069	\$654,740	\$667,640	\$679,193	\$690,843
REVENUE & INCOME										
Non-Member and Other Revenue	\$5,464	\$5,613	\$5,769	\$5,931	\$6,099	\$6,269	\$6,442	\$6,621	\$6,804	\$6,995
Interest Income	13,876	10,828	10,591	11,417	12,480	13,603	14,514	15,159	15,609	15,897
Rate Stabilization	0	575	425	350	300	200	140	12	0	0
Prior Year Utility Surplus/Deficit Transfer	0	0	0	0	0	0	0	0	0	0
Total Other Revenue	\$19,340	\$17,016	\$16,785	\$17,698	\$18,879	\$20,072	\$21,096	\$21,792	\$22,413	\$22,893
Wastewater Rate Revenue	\$534,592	\$551,641	\$569,195	\$587,189	\$604,966	\$619,998	\$633,643	\$645,848	\$656,780	\$667,951
Rate Revenue Increase	1.6%	3.2%	3.2%	3.2%	3.0%	2.5%	2.2%	1.9%	1.7%	1.7%
Estimated Annual Household Charge **										
Based on water use of 61k gpy (weighted)	\$826	\$862	\$900	\$939	\$980	\$1,020	\$1,062	\$1,105	\$1,148	\$1,194
Based on water use of 90k gpy (weighted)	\$1,219	\$1,272	\$1,328	\$1,386	\$1,446	\$1,506	\$1,567	\$1,630	\$1,694	\$1,761
WATER UTILITY										
EXPENSES										
Direct Expenses	\$109,323	\$112,419	\$115,604	\$119,001	\$122,361	\$125,828	\$129,274	\$133,061	\$136,831	\$140,710
Indirect Expenses	41,054	41,179	43,030	45,041	47,170	49,500	52,005	42,789	45,593	46,984
Capital Financing (before offsets)	<u>169,955</u>	<u>176,826</u>	<u>184,520</u>	<u>192,478</u>	<u>200,935</u>	<u>209,674</u>	<u>218,266</u>	<u>239,404</u>	<u>249,142</u>	<u>260,388</u>
Sub-Total Water Expenses	\$320,332	\$330,424	\$343,154	\$356,520	\$370,466	\$385,002	\$399,546	\$415,254	\$431,565	\$448,082
Debt Service Assistance	(115)	0	0	0	0	0	0	0	0	0
Bond Redemption Savings	0	0	0	0	0	0	0	0	0	0
Variable Rate Savings	0	0	0	0	0	0	0	0	0	0
Total Water Expenses	\$320,217	\$330,424	\$343,154	\$356,520	\$370,466	\$385,002	\$399,546	\$415,254	\$431,565	\$448,082
REVENUE & INCOME										
Non-Member and Other Revenue	\$10,766	\$11,025	\$11,292	\$11,568	\$11,853	\$12,144	\$12,236	\$12,352	\$12,500	\$12,646
Interest Income	9,470	7,744	8,044	8,462	9,037	9,726	10,528	11,323	12,198	12,644
Rate Stabilization	305	342	384	430	482	540	0	0	0	0
Prior Year Utility Surplus/Deficit Transfer	0	0	0	0	0	0	0	0	0	0
Total Other Revenue	\$20,541	\$19,111	\$19,720	\$20,461	\$21,371	\$22,409	\$22,764	\$23,674	\$24,698	\$25,290
Water Rate Revenue	\$299,676	\$311,312	\$323,434	\$336,059	\$349,094	\$362,593	\$376,782	\$391,580	\$406,867	\$422,792
Rate Revenue Increase	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%	3.9%
Estimated Annual Household Charge **										
Based on water use of 61k gpy (weighted)	\$558	\$583	\$609	\$636	\$664	\$693	\$724	\$757	\$790	\$825
Based on water use of 90k gpy (weighted)	\$824	\$860	\$898	\$938	\$980	\$1,023	\$1,069	\$1,116	\$1,166	\$1,218

** Annual household charges are estimated for communities that receive full water and wastewater services from MWRA weighted by the number of households in each of these core communities. Based on community responses to the 2022 MWRA Advisory Board's Annual Water and Sewer Retail Rate Survey.

APPENDIX E
FY24 Current Expense Budget - Capital Financing Detail (as of 6/30/23)

	Outstanding as of 6/30/23	Total	Sewer	Water
SRF¹				0.00
1999E Sewer		395,248	395,248	0
1999E Water	3,527,206	0	0	0
1999F	84,410,000	17,999,318	17,999,318	0
2000E Sewer		1,978,107	1,978,107	0
2000E Water	29,524,433	0	0	0
2001C Water	27,043	0	0	0
2001D Sewer		41,530	41,530	0
2001D Water	331,467	0	0	0
2002H Sewer		4,917,087	4,917,087	0
2002H Water	41,165,000	0	0	0
2002I Sewer		62,080	62,080	0
2002I Water	1,030,567	0	0	0
2003A	-	0	0	0
2003C Sewer		1,290,715	1,290,715	0
2003C Water	17,112,646	0	0	0
2004C Sewer		501,278	501,278	0
2004C Water	5,308,655	0	0	0
2004D Sewer		2,700,017	2,700,017	0
2004D Water	31,745,000	721,719	0	721,719
2005C Sewer		255,011	255,011	0
2005C Water	2,893,474	0	0	0
2005D Sewer		3,027,310	3,027,310	0
2005D Water	35,534,198	793,892	0	793,892
2005E Sewer		24,961	24,961	0
2005E Water	87,785	5,479	0	5,479
2006C Sewer		480,429	480,429	0
2006D Sewer		2,792,068	2,792,068	0
2006D Water	38,742,347	1,592,064	0	1,592,064
2006E Sewer		22,883	22,883	0
2006E Water	126,279	10,281	0	10,281
2007C Sewer		195,041	195,041	0
2007C Water	1,618,738	161,289	0	161,289
2007D Sewer		1,141,600	1,141,600	0
2007E Sewer		2,726,143	2,726,143	0
2007E Water	38,744,649	1,250,139	0	1,250,139
2008G Sewer		360,701	360,701	0
2008G Water	1,688,718	78,970	0	78,970
2009C Sewer		3,240,210	3,240,210	0
2009C Water	52,251,960	1,871,072	0	1,871,072
2009D Sewer		636,311	636,311	0
2009D Water	5,616,788	84,963	0	84,963
2010 D Sewer		1,385,483	1,385,483	0
2010 D Water	26,122,852	1,426,511	0	1,426,511
2011A Sewer		305,847	305,847	0
2011A Water	4,829,895	359,686	0	359,686
2012C Sewer		515,976	515,976	0
2012C Water	5,620,757	255,075	0	255,075
2012D Sewer		2,748,911	2,748,911	0
2012D Water	28,608,472	533,079	0	533,079
2013B Sewer		2,048,941	2,048,941	0
2013B Water	20,418,453	534,378	0	534,378
2014C Sewer		283,745	283,745	0
2014C Water	6,445,121	385,608	0	385,608
2015A Sewer		2,649,793	2,649,793	0
2015A Water	45,382,233	980,654	0	980,654
2015B Sewer		212,767	212,767	0
2015B Water	3,125,101	151,525	0	151,525
2016A Sewer		2,131,218	2,131,218	0
2016A Water	40,129,213	848,772	0	848,772
2017A Sewer		542,201	542,201	0
2017A Water	24,958,455	1,539,034	0	1,539,034
2018E Sewer		1,077,934	1,077,934	0
2018E Water	41,642,210	2,022,129	0	2,022,129
2019D Sewer		2,031,460	2,031,460	0
2019D Water	45,980,860	1,222,451	0	1,222,451
2021A Sewer		1,558,588	1,558,588	0
2021A Water	46,313,704	1,567,390	0	1,567,390

APPENDIX E
FY24 Current Expense Budget - Capital Financing Detail (as of 6/30/23)

	Outstanding as of 6/30/23	Total	Sewer	Water
2022A Sewer	18,784,945	556,757	556,757	0
2022A Water		607,092	0	607,092
2023 Sewer Projected	41,935,213	5,528,720	5,528,720	0
2023 Water Projected		3,428,621		3,428,621
Total SRF Debt	\$ 808,831,462	\$ 90,798,263	\$ 68,366,388	\$ 22,431,875
MWRA Senior Debt				
2007B Refunding	647,950,000	79,759,438	66,997,928	12,761,510
2013A Refunding	29,645,000	-	-	-
2014F Refunding	4,350,000	4,567,500	4,263,000	304,500
2016B New	9,280,000	1,909,800	954,900	954,900
2016C Refunding	320,140,000	28,018,550	14,295,123	13,723,428
2016D Refunding	43,525,000	1,748,250	1,136,363	611,888
2017B New	53,515,000	2,910,500	1,455,250	1,455,250
2017C Refunding	166,710,000	36,957,250	16,630,763	20,326,488
2018B New	86,465,000	4,694,500	2,816,700	1,877,800
2018C Refunding	13,100,000	1,331,500	941,000	390,500
2019B New	115,895,000	15,844,750	14,139,380	1,705,370
2019E New	50,000,000	3,247,472	1,623,736	1,623,736
2019F Refunding	423,500,000	52,805,693	21,122,277	31,683,416
2020B New Money	151,705,000	7,510,250	5,112,750	2,397,500
2021B	58,635,000	7,995,250	5,629,500	2,365,750
2021C	671,575,000	24,083,103	12,430,168	11,652,935
2023B	133,975,000	12,466,338	7,161,750	5,304,588
2023C	100,340,000	5,017,000	2,157,310	2,859,690
FY24 New Money	-	8,962,500	7,240,000	1,722,500
June 2023 Defeasance Impact	-	(5,774,000)	(643,100)	(5,130,900)
Utility Soothing		-		
Total Senior	\$ 3,080,305,000	294,055,644	\$ 185,464,796	\$ 108,590,847
Subordinate Debt				
1999B	\$ 32,800,000	\$ 6,444,646	\$ 3,866,788	\$ 2,577,858
2008A Refunding	\$ 108,860,000	\$ 17,043,020	\$ 14,997,858	\$ 2,045,162
2008C Refunding	\$ 34,347,000	\$ 9,845,776	\$ 9,451,945	\$ 393,831
2008E Refunding	\$ 65,395,000	\$ 8,619,001	\$ 7,929,481	\$ 689,520
2012E Refunding	\$ 50,060,000	\$ 5,030,179	\$ 1,056,338	\$ 3,973,841
2012G Refunding	\$ 2,265,000	\$ 607,116	\$ 582,832	\$ 24,285
2014A Refunding	\$ 44,365,000	\$ 15,056,330	\$ 1,355,070	\$ 13,701,260
2014B Refunding	\$ -	\$ -	\$ -	\$ -
2018A Refundng	\$ 47,530,000	\$ 4,910,004	\$ 1,031,101	\$ 3,878,903
2018D Refunding	\$ 50,000,000	\$ 2,375,000	\$ 213,750	\$ 2,161,250
Total Subordinate Debt	\$ 435,622,000	69,931,072	40,485,161	29,445,911
Total SRF & MWRA Debt Service²	\$ 4,324,758,462	454,784,979	\$ 294,316,345	\$ 160,468,634
Other Capital				
Water Pipeline Commercial Paper		\$ 7,744,625	\$ -	\$ 7,744,625
Current Revenue/Capital ³		\$ 19,200,000	\$ 18,818,327	\$ 381,673
Capital Lease		\$ 3,217,060	\$ 1,936,381	\$ 1,280,679
Debt Prepayment ⁴		\$ 4,000,000	\$ 3,920,485	\$ 79,515
Total Other Capital	\$ -	\$ 34,161,685	\$ 24,675,192	\$ 9,486,492
Total Capital Financing (before Debt Service Offsets)	\$ 4,324,758,462	488,946,663.67	\$ 318,991,538	\$ 169,955,126
Debt Service Offsets				
Debt Service Assistance		(1,187,297)	(1,072,129)	(115,168)
Bond Redemption				
Total Debt Service Offsets		(1,187,297)	(1,072,129)	(115,168)
MWRA Short-term borrowings	\$ 100,000,000	-	-	-
Total Capital Financing	\$ 4,424,758,462	487,759,367	317,919,408	169,839,958

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

² Numbers may not add due to rounding.

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

⁴ Debt Prepayment will be used defeasance of bonds at end of fiscal year.

APPENDIX F

Advisory Boards and Committees

The Advisory Board

The Advisory Board is established by section 23 of the MWRA Enabling Act. The Advisory Board's primary purposes are as follows:

1. To appoints 3 members of the Board of Directors, with staggered 6-year terms.
2. To review and comment on the current expense and capital improvement budgets.
3. To approve expansion of the MWRA's service area, whether permanent or temporary.
4. To make recommendations to the governor and the legislature with respect to matters that affect the Authority.

The Authority's proposed annual current expenses budget and its capital improvement program budget must be submitted to the Advisory Board at least sixty days prior to the adoption of each budget by the Board of Directors. Amendments to the current expenses budget must be submitted to the Advisory Board at least thirty days prior to adoption, except in the event of emergencies. The Authority is required to provide a written response to any reports of the Advisory Board regarding its finances. The Advisory Board has provided the Authority with written comments to both the current expenses and the capital improvement budgets. The Advisory Board's budget for personnel and expenses is included in the Executive Division's budget.

Water Supply Citizens Advisory Committee to MWRA (WSCAC)

Originally formed in 1977 to review a proposed diversion of the Connecticut River for water supply to the metropolitan Boston area, WSCAC represents an unusual approach for engaging citizen participation in water resource policy decisions.

WSCAC advises the MWRA and the Department of Conservation and Recreation on water conservation and watershed protection strategies. The MWRA has implemented leak repair and demand management programs, avoiding the need for river diversion.

WSCAC's current focus is water quality - source protection and management of the watersheds, reservoirs and distribution system.

WSCAC worked with the New England Safe Drinking Water Task Force on the Safe Drinking Water Act reauthorization. WSCAC helped secure passage of state legislation - the Interbasin Transfer Act of 1983, the Water Management Act of 1985, and the Watershed Protection Act of 1992. State officials have tapped WSCAC for other statewide advisory groups.

The Wastewater Advisory Committee (WAC)

The MWRA Board of Directors created WAC in 1990 to offer independent recommendations on wastewater policies and programs. WAC's mission is to be an independent public forum for holistic discussion of wastewater issues. Membership is designed to reflect the knowledge and interest of major affected constituencies: engineering and construction, environmental advocacy, planning, academic research, and business.

WAC's contractual duties are as follows:

1. Provide independent advice to the MWRA Board and staff on wastewater programs and policies directly related to the MWRA
2. Review and comment to the Authority on wastewater reports and proposed documents; offer independent advice on current and proposed wastewater program and policy directions to further MWRA objectives
3. Reflect the knowledge and interest of major affected constituencies, including
 - a. Engineering
 - b. Construction
 - c. Business/industry
 - d. Planning
 - e. Academic research
 - f. Environmental advocacy
4. Advise MWRA on wastewater planning
5. Increase citizen participation and education by providing MWRA with assistance in outreach. Review programs and explain plans & policies to citizens
6. Attend Authority working groups related to wastewater programs and policy, including the Advisory Board and WSCAC
7. Propose to the Authority ways to continue effective and efficient long-term public involvement in wastewater programs.

WAC's focus for 2017-2018 includes:

- Protecting the ratepayer's massive investment in clean water remains one of WAC's primary interests, and it will continue to monitor maintenance as well as progress on the CSO project.
- WAC is interested in the possibilities of further energy efficiency and renewable energy production at all MWRA facilities.
- Other areas of interest:
 - Co-digestion as it expands across New England
 - Marketability of Bay State Fertilizer
 - Climate Change impacts
 - Regulatory changes that might affect MWRA

Appendix G

MWRA Capital Improvement Program Overview

In 1984, legislation was enacted to create the Massachusetts Water Resources Authority, an independent agency with the ability to raise its revenues from ratepayers, bond sales and grants. The primary mission was to modernize the area's water and sewer systems and clean up Boston Harbor. Since its establishment, the MWRA has invested over \$9.1 billion to improve the wastewater and waterworks systems serving its 61 customer communities with projected future spending of \$5.3 billion. The system serves 3.0 million people and more than 5,500 businesses.

Since 1985, MWRA has been subject to a Clean Water Act enforcement action to end years of wastewater pollution of Boston Harbor and its tributaries from the old Deer Island and Nut Island treatment plants and combined sewer overflows (CSOs). The enforcement case was initiated by the Conservation Law Foundation in 1983 and taken up by the U.S. Environmental Protection Agency in 1985. The Commonwealth of Massachusetts, the Boston Water and Sewer Commission, the City of Quincy and the Town of Winthrop are also parties to the case.

The Orders of the Court set forth the schedules of activities to be undertaken to achieve compliance with the law. Since 1985, MWRA has complied with 422 milestones which include the completion of extensive new wastewater treatment facilities at Deer Island in Boston and Nut Island in Quincy, a residuals facility in Quincy, and 35 CSO control projects in Boston, Cambridge, Chelsea, Brookline, and Somerville which comprise the long-term CSO control plan, the last of which were completed in December 2015.

As part of compliance with the Court's Orders, MWRA was required to file monthly compliance and progress reports on its ongoing activities through December 15, 2000 and quarterly compliance and progress reports through December 2016. MWRA was required to submit bi-annual compliance and progress reports through December 2020. Bi-annual reports were also submitted in 2021 prior to the approval of a 3-year extension to the court ordered Long Term Control Plan (December 2024). Under this extension period, annual updates will be submitted to the court.

During the same time, MWRA complied with regulatory mandates to improve waterworks facilities. The mandated waterworks projects included the MetroWest Water Supply Tunnel, the Carroll Water Treatment Plant, and several covered water storage facilities.

The mandated projects account for most of the Capital Improvement Program (CIP) spending. The five initiatives below account for over \$6.0 billion or nearly 70% of life spending to date:

- Boston Harbor Project - \$3.8 billion
- Combined Sewer Overflow - \$915 million
- MetroWest Tunnel - \$697 million
- Carroll Water Treatment Plant - \$429 million
- Covered Storage Facilities - \$239 million

As the MWRA reaches maturity as an agency, the infrastructure modernization and new facilities construction phase is nearing completion, and, barring new mandates, most of the Authority's future capital budget will be designated for Asset Protection, Water System Redundancy, Pipeline Replacement and Rehabilitation, and Business System Support.

Asset Protection focuses on the preservation of the Authority's operating facilities. Currently over \$2.3 billion in future spending is targeted for asset protection initiatives. Water System Redundancy aims to reduce the risks of service interruption and facilitate planned maintenance where major sections of the water delivery system assets can be taken off-line. Long-term water redundancy will be a critical future CIP initiative with estimated spending in excess of \$2.0 billion over the next 17 years. Pipeline Replacement and Rehabilitation focuses on the maintenance and replacement of water and sewer pipelines. Business System Support provides for the continuing improvement and modernization of technology and security systems.

The FY24 CIP Budget reaffirms MWRA's commitment to the community financial assistance programs on both the water and wastewater side.

Capital initiatives to date have been primarily funded through long-term borrowings, and the debt service on these outstanding bonds represents a significant and growing portion of the Authority's operating budget. As of June 30, 2023, MWRA's total debt was \$4.4 billion. The Authority's capital finance (including debt service) obligation as a percent of total expenses has increased from 36% in 1990 to 55.8% in the Final FY24 Current Expense Budget.

The MWRA's credit ratings of Aa1 from Moody's, AA+ from S&P, and AA+ from Fitch, reflect strong management of financial performance, application of operating surpluses to early debt defeasance, satisfactory debt service coverage ratios, well maintained facilities, comprehensive long-term planning of both operating and capital needs, and the strong credit quality of its member service communities.

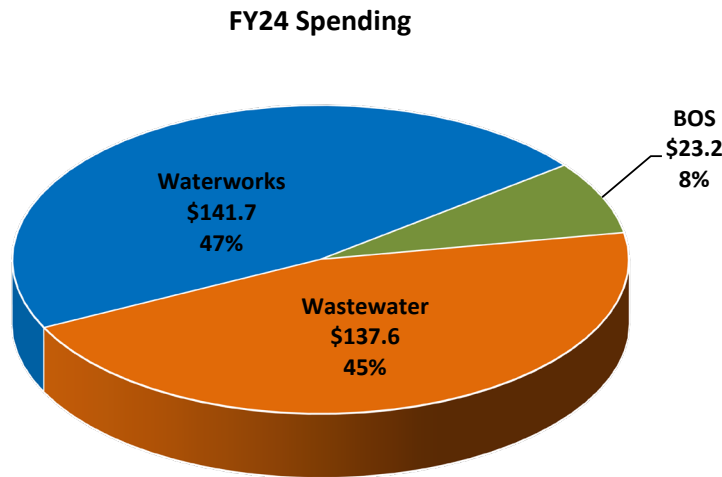
To arrive at the FY24 CIP, the Authority identified the needs of the capital programs taking into account the recommendations of the Master Plan. The long-term strategy for capital work is identified in the Authority's Master Plan which was published in 2006 and updated in 2013 as well as 2018. The Master Plan serves as a road map for inclusion of projects in the CIP in every budget cycle. Additionally, the Authority's 5-Year Strategic Plan for FY21-FY25 was released in early 2021.

The FY24 CIP represents an update to the FY23 CIP and was approved by the MWRA Board in June 2023. The spending projections are the result of prioritizing the projects, establishing realistic estimates based on the latest information, striking a balance between maintenance and infrastructure improvements, and ensuring that there is adequate support for MWRA's core operations to meet all regulatory operating permit requirements.

FY24 Final CIP

FY24 Capital Spending

The FY24 Final Capital Improvement Program projects \$302.6 million in spending for FY24, of which \$137.6 million supports Wastewater System Improvements, \$141.7 million supports Waterworks System Improvements, and \$23.2 million is for Business and Operations Support.



The FY24 Final CIP includes \$57.0 million for community assistance programs, which are a combination of loan and partial grant programs, with net expenditures of \$42.9 million for the local Infiltration/Inflow program and net expenditures of \$14.1 million for the local water pipeline program.

The Fiscal Year 2024 Capital Improvement Program (CIP) represents an update to the FY23 CIP Program approved by the Board in June 2022 for Fiscal Year 2023. The FY24 Final CIP includes the latest cost estimates, revised schedules, and new projects, and reaffirms MWRA's commitment to the community financing assistance programs on both the water and wastewater sides. The FY24 Final CIP projects \$302.6 million spending for FY24, of which \$137.6 million supports Wastewater System Improvements, \$141.7 million supports Waterworks System Improvements, and \$23.2 million is for Business and Operations Support. The projects with significant spending in FY24 include Deer Island Clarifier Rehabilitation Phase 2 Construction (\$24.8 million), Wachusett Lower Gate House Pipe & Boiler Replacement (\$13.6 million), Waltham Water Pipeline Construction (\$13.5 million), and NIH Redundancy & Storage - Section 89 & 29 Replacement Construction (\$10.8 million).

The \$302.6 million in projected spending is driven by 40 active wastewater and water projects. Of this \$302.6 million in spending, project contracts with spending greater than \$5.0 million in FY24, excluding local community assistance programs, total \$114.5 million and account for 37.8% of the total annual spending. These projects are presented in the following table:

Project	Subphase	FY24 \$s in Millions	% of Total
DI Treatment Plant Asset Protection	Clarifier Rehab Phase 2 - Construction	\$24.8	8.2%
Quabbin Transmission System	Wachusett Lower Gate House Pipe&Boiler Replacement Construction	\$13.6	4.5%
Metro Redundancy Interim Improvements	Waltham Water Pipeline Construction	\$13.5	4.5%
NIH Redundancy & Storage	Section 89 & 29 Replacement - Construction	\$10.8	3.6%
Braintree-Weymouth Relief	B/W Improvements - Construction	\$9.7	3.2%
New Connecting Mains-Shaft 7 to WASM 3	CP3-Sect 23,24,47, Rehabilitation	\$9.5	3.1%
New Connecting Mains-Shaft 7 to WASM 3	Sect 25 & 24 - Construction CP-2	\$9.0	3.0%
DI Treatment Plant Asset Protection	MCC & Switchgear Replacement Construction	\$6.0	2.0%
New Connecting Mains-Shaft 7 to WASM 3	Section 75 Extension - Construction CP-1	\$6.0	2.0%
Metro Tunnel Redundancy	Geotechnical Support Services	\$6.0	2.0%
Metro Redundancy Interim Improvements	CP3 Shafts 7, 7B, 7C, 7D	\$5.7	1.9%
Total Contracts > \$5 million (excl. Loan Programs)		\$114.5	37.8%
Other Project Spending		\$188.2	62.2%
Total FY24 Spending		\$302.6	100.0%

Clarifier Rehabilitation Phase 2 Construction - \$24.8 million (\$289.4 million total construction cost). This project will rehabilitate the sludge removal system in the primary tanks and the aeration/recirculation systems in the secondary tanks. The influent gates, effluent launders and aeration systems, and concrete corrosion in primary clarifiers will also be addressed and repaired.

Wachusett Lower Gatehouse Pipe & Boiler Replacement Construction - \$13.6 million (\$19.0 million total construction cost). Replace the oldest piping in the Lower Gatehouse. Provide CFRP lining of the pipes between the dam and the Lower Gatehouse. Replace the existing propane fueled boilers and radiators.

Waltham Water Pipeline Construction - \$13.5 million (\$27.6 million total construction cost). This contract will include installation of approximately 8,920 linear feet of new 36-inch diameter water main along Lexington Street in Waltham, from Meter 182 to a new meter near Totten Pond Road, including installation of valves, meters and other appurtenances, by-pass pumping, replacement of certain utilities, pavement restoration, traffic and environmental controls.

Northern Intermediate High Redundancy Section 89 and 29 Replacement Construction - \$10.8 million (\$33.7 million total construction cost). This is a redundancy project for MWRA's Northern Intermediate High service area. Section 89 will be replaced now that the redundant pipeline is completed. This contract was awarded in May 2021.

Braintree-Weymouth Improvements Construction - \$9.7 million (\$13.5 million total construction cost). Modifications needed to improve facility safety, reliability and performance. Construction improvements are required to address deficiencies in odor control, monitoring/instrumentation systems, solids screenings/handling and pumping operations.

CP3 Sections 23, 24 and 47 Rehabilitation - \$9.5 million (\$24.6 million total construction cost). This contract includes cleaning and cement mortar lining approximately 4,500 linear feet of Section 23, which is a 36-inch diameter cast iron water main, 10,800 feet of 20-inch Section 24 and Section 47 cast iron water mains, and 500 feet of 20-inch steel water main along Section 24. The construction work will also include installing, by open-cut, 3,600 feet of 36-inch ductile iron Section 23 water main, 6,400 feet of 24-inch ductile iron Section 24 water main, and new valves

and appurtenances, and replacing the check valve assembly at Boston Meter 120. Additionally, the construction contract will include replacing approximately 2,400 linear feet of City of Newton 20-inch diameter, 140 year old cast iron water main on Ward Street between Manet Road and Waverly Avenue. This contract was awarded in October 2021.

Sections 24 & 25 – Construction CP-2 - \$9.0 million (\$21.4 million total construction cost). Replacement of the existing Watertown 4,900ft Section 25, a 16-in CI pipe, with 5,900ft of 20-in DI pipe and valves. Relocation/replacement of Watertown revenue Meter 2 and replacement of Watertown Meter 40 and new PRV for interconnection of the intermediate high to southern high systems. Cleaning and lining 3,300ft of Section 24, a 20-inch CI pipe, including valve replacements. Work in Newton includes the cleaning and lining of the southern crossing of the Charles River (part of Section 24) and valve replacements.

Motor Control Center & Switchgear Replacement Construction - \$6.0 million (\$23.5 million total construction cost). Project includes the replacement of Motor Control Center equipment that has become obsolete and unreliable at Deer Island Treatment Plant.

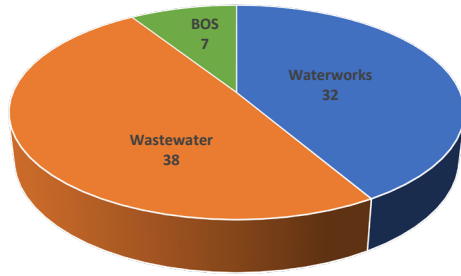
Major Planned Contract Awards for FY24:

In Fiscal Year 2024, 77 contracts totaling \$371.2 million are projected to be awarded. The largest ten projected contract awards total \$183.5 million and account for 49.4% of expected awards. Those planned awards are presented in the following table.

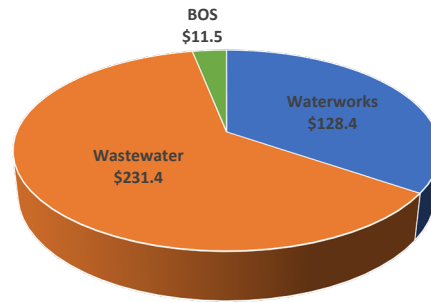
Project	Subphase	Notice to Proceed	Total Contract Amount \$s in Millions
DI Treatment Plant Asset Protection	Fire Alarm System Replacement - Construction	Dec-23	\$35.0
DI Treatment Plant Asset Protection	MCC & Switchgear Replacement Construction	Dec-23	\$23.5
DI Treatment Plant Asset Protection	HVAC Control System Replacement	Jun-24	\$22.0
Northern Extra High Service New Pipelines	CP-2 NEH Improvements	Dec-23	\$20.7
Facility Asset Protection	Hayes Pump Station Rehab Construction	Dec-23	\$19.5
DI Treatment Plant Asset Protection	CHP Des/ESDC/REI	Sep-23	\$14.5
New Connect Mains-Shaft 7 to WASM 3	Section 75 Extension - Construction CP-1	Oct-23	\$14.0
Metro Redundancy Interim Improvements	WASM 3 Rehab CP-2	Mar-24	\$13.7
Waterworks Facility Asset Protection	Steel Tank/Improvement Construction	Sep-23	\$11.5
DI Treatment Plant Asset Protection	DITP Roofing Replacement	Aug-23	\$9.0
Top 10 Planned Contract Awards			\$183.5
% of Planned Awards			49.4%
77 Planned Contract Awards			\$371.2

Of the 77 planned contract awards for FY24, 38 are for Wastewater, 32 are for Waterworks, and 7 for Business and Operation Services with associated dollar awards of \$231.4 million, \$128.4 million, and \$11.5 million, respectively. Deer Island’s Fire Alarm Replacement Construction is the largest planned award at \$35.0 million with a targeted notice to proceed of December 2023.

FY24 Planned NTPs (#)



FY24 Planned NTPs (\$s in millions)



New Projects

The FY24 CIP adds 10 new projects at a total cost of \$245.7 million with projected spending of \$81.2 million over the FY24-28 period. There are 8 wastewater projects totaling \$232.5 million and 2 waterworks projects at \$13.2 million. The largest new project is the Rehabilitation of the Braintree-Weymouth Intermediate Pump Station at \$46.5 million. Other new wastewater projects include rehab of four pump stations: Squantum PS, Quincy PS, Framingham, and New Neponset PS at \$24 million each. The largest water project is the Butterfly Valve Replacement project at the Carroll Water Treatment Plant for \$12.5 million. Another phase of I/I assistance was also added in the FY24 Budget cycle at \$75 million. A complete listing of projects is included as Attachment C.

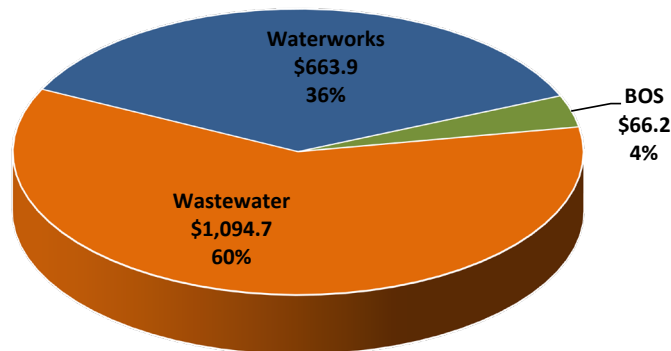
Project	Total Contract Amount	FY24-28 Spending
I/I Local Financial Assistance - Phase XIV	\$75.0	\$55.8
Intermediate Pump Station Rehabilitation	46.5	0.0
New Neponset Pump Station Rehabilitation	24.0	0.0
Framingham Pump Station Rehabilitation	24.0	0.0
Quincy Pump Station Rehabilitation	24.0	0.0
Squantum Pump Station Rehabilitation	24.0	0.0
Fort Point Channel & Mystic/Chelseas Confluence	10.0	9.4
CSO Updated Control Plan Design	5.0	2.8
Total Wastewater #8	\$232.5	\$68.0
Carroll Water Treatment Plant Butterfly Valve 4	12.5	12.5
Brutsch Treatment Plant Sodium Hypo Upgrade	0.7	0.7
Total Waterworks #2	\$13.2	\$13.2
10 New Projects	\$245.7	\$81.2

Additional details on these new projects with cash flows and descriptions can be found in Appendix 3.

FY24-28 Expenditures & Five-Year Spending Cap

Spending during the FY24-28 timeframe is planned to be \$1.8 billion, including local community spending of \$174.5 million for the I/I loan and grant program and \$24.0 million for the water pipeline loan program. The \$1.8 billion includes \$1.1 billion for Wastewater spending, \$663.9 million for Waterworks, and \$66.2 million for Business & Operations Support. Yearly projected expenditures for the FY24-28 Cap period by Division are shown below in millions:

FY24-28 Spending



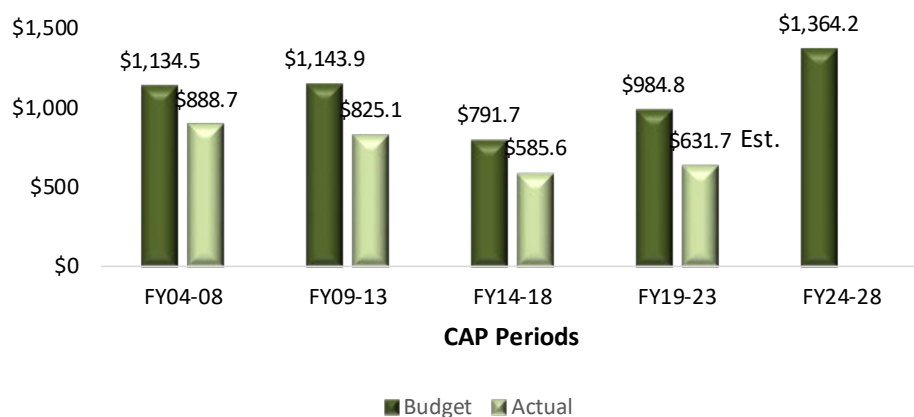
	FY24	FY25	FY26	FY27	FY28	Total FY24-28
Wastewater System Improvements	\$137.6	\$199.6	\$195.6	\$253.3	\$308.7	\$1,094.7
Waterworks System Improvements	\$141.7	\$162.4	\$131.3	\$114.3	\$114.1	\$663.9
Business & Operations Support	\$23.2	\$21.2	\$10.6	\$6.2	\$4.9	\$66.2
Total MWRA	\$302.6	\$383.2	\$337.4	\$373.8	\$427.8	\$1,824.8

FY24-28 Five-Year Spending Cap

The concept of a five-year spending Cap was first introduced at the Advisory Board's recommendation in 2003 for the FY04-08 period. The FY24-28 Cap will be the fifth cap established by the Authority. The Cap represents a targeted maximum spending limit to ensure adequate capital program funding and to serve as a guide for long-term planning estimates and community assessments. The FY24-28 Cap of \$1,346.2 million is significantly higher than the prior FY19-23 Cap of \$984.8 million for a variety of reasons including updated project schedules, inflation, increased spending on asset protection and the funding of initial phases of the long-term redundancy program.

The following graph illustrates the history of the past four five-year Caps and the Final FY24-28 Cap, both in terms of the Cap levels and actual spending:

CAP Spending Budget & Actuals \$s in millions



MWRA project spending (excluding water and wastewater loan programs) has been 25% under plan levels on average since FY04. Underspending for the past two Cap periods, FY14-18 and projected FY19-23, were 26% and 36%, respectively. To try to better predict future spending, the Authority proposes to discount projected Cap spending by applying a Spend Rate Adjustment of 25%. This will be a better reflection of likely spending targets without removing future projects from plan. The Final FY24-28 Cap cash flows total \$1.8 billion and net to \$1.4 billion after applying the 25% Spend Rate Adjustment. Annual cash flows for the Cap period are shown in the following table (in millions):

		FY24	FY25	FY26	FY27	FY28	FY24-28
FY24 Final	Projected Expenditures excl. Metro Tunnel	\$288.2	\$357.9	\$313.5	\$349.8	\$349.1	\$1,658.5
	Metropolitan Tunnel	\$14.4	\$25.2	\$23.9	\$23.9	\$78.6	\$166.2
	I/I Program	(42.9)	(41.5)	(27.5)	(28.4)	(34.2)	(174.5)
	Water Loan Program	(14.1)	(10.9)	(5.0)	(2.6)	8.6	(24.0)
	MWRA Spending	\$245.6	\$330.8	\$304.9	\$342.8	\$402.2	\$1,626.3
	Contingency	15.2	21.8	20.7	23.6	31.7	113.0
	Inflation on Unawarded Construction	1.9	8.1	12.2	22.1	36.1	80.4
	Chicopee Valley Aqueduct Projects	(0.3)	(0.5)	0.0	0.0	0.0	(0.8)
	Projected Spending before Adjustment	\$262.4	\$360.2	\$337.8	\$388.5	\$469.9	\$1,818.9
	Spend Rate Adjustment (25%)*	(65.6)	(90.1)	(84.5)	(97.1)	(117.5)	(454.7)
FY24 Draft Final FY24-28 Spending	\$196.8	\$270.2	\$253.4	\$291.4	\$352.5	\$1,364.2	

*Based on historical underspending FY04-FY22 excluding community loan programs

In addition to the Spend Rate Adjustment, the format of the Cap table is adjusted to account separately for MWRA and Metropolitan Tunnel spending, and excludes the local I/I grant and loan program and the local water pipeline loan spending which are both outside of MWRA’s control. The Cap also excludes Chicopee Valley Aqueduct system projects. As in past Caps, contingency for each fiscal year is incorporated into the CIP to fund the uncertainties inherent to construction. The contingency budget is calculated as a percentage of budgeted expenditure outlays.

Specifically, contingency is 7% for non-tunnel projects and 15% for tunnel projects. Inflation is added for unawarded construction contracts.

The Capital Improvement Program includes on-going Combined Sewer Overflow improvements in Boston, Chelsea and Somerville, rehabilitation of MWRA's Somerville Marginal, Prison Point and Cottage Farm CSO treatment facilities, and a new placeholder at the end of the cap period for design of any projects that come out of the Variance Water updated CSO Long-Term Control Plan process. MWRA continues to evaluate the needs of the program and will refine cost projections as more information becomes available.

The Capital Improvement Program continues to address critical redundancy improvements most notably the Metropolitan Water Tunnel Program. When this program was initially added to the CIP in FY17, estimated program costs totaled \$1.47 billion, since that time some actual contracts have been awarded and costs are known and additional inflation has been applied. The FY24 CIP includes approximately \$1.79 billion in projected project spending, an increase of \$324.3 million due primarily to inflation. As the design of the tunnel progresses, the associated costs will continue to be refined. The initial contract for Program Support Services was awarded in March 2019 with a budget of \$17.5 million and spanning over a nine-year period. The second contract, Preliminary Design & MEPA Review (Massachusetts Environmental Policy Act), for \$15.7 million was awarded in May 2020 with projected spending through FY24. The third contract, Metropolitan Water Tunnel Program Geotechnical Support Services, for \$12.8 million and a term of 36 months was awarded in December 2022. This contract is critical to identifying geological conditions and selecting the optimal tunnel route.

Today, the Authority is well positioned to reinvest in rehabilitation and replacement of aging facilities as result of conservative fiscal management, which includes judicious control of expenses, and the fact that MWRA has implemented the practice of utilizing available funds for defeasances resulting in the reduction of debt service expense and lowering the rate of increase to assessments. MWRA projects an overall reduction in outstanding indebtedness during the FY24-28 period.

Today, the Authority is better positioned to reinvest in rehabilitation and replacement of aging facilities as result of conservative fiscal management which includes judicious control of expenses, and the fact that MWRA has implemented the practice of utilizing available funds resulting from positive current expense budget variances for defeasances resulting in the reduction of future fiscal years debt service expense. MWRA projects an overall reduction in outstanding principal of debt during the FY24-28 cap period.

FY24-28 Expenditures

Yearly projected expenditures for the Proposed FY24-28 period by program are shown below in millions:

	Future Spending Beyond FY22	FY24	FY25	FY26	FY27	FY28	Total FY24-28
Wastewater System Improvements	\$2,420.6	\$137.6	\$199.6	\$195.6	\$253.3	\$308.7	\$1,094.7
Interception & Pumping	883.3	31.0	40.8	34.6	82.8	110.4	299.5
Treatment	1,277.8	56.2	109.5	132.1	138.1	159.8	595.8
Residuals	90.6	0.0	0.8	0.8	3.5	3.5	8.6
CSO	21.3	7.5	7.1	0.5	0.5	0.8	16.4
Other Wastewater	147.5	42.9	41.5	27.5	28.4	34.2	174.5
Waterworks System Improvements	\$2,736.0	\$141.7	\$162.4	\$131.3	\$114.3	\$114.1	\$663.9
Drinking Water Quality Improvements	72.5	4.0	5.7	5.3	3.7	7.8	26.6
Transmission	2,080.9	66.2	60.5	36.2	39.6	91.4	293.9
Distribution & Pumping	626.7	47.1	68.8	65.0	52.7	14.5	248.1
Other Waterworks	(44.0)	24.5	27.3	24.7	18.3	0.4	95.2
Business & Operations Support	\$96.2	\$23.2	\$21.2	\$10.6	\$6.2	\$4.9	\$66.2
Total MWRA	\$5,252.9	\$302.6	\$383.2	\$337.4	\$373.8	\$427.8	\$1,824.8

It is important to emphasize that the majority of spending within the Wastewater and Waterworks programs is concentrated in several larger projects with significant spending in the FY24-28 timeframe. Project contracts with expenditures greater than \$21 million for the FY24-28 period total \$766.7 million, which excludes local community assistance programs. These 15 projects account for 42.0% of total period spending. Largest construction initiatives in terms of FY24-28 spending include the Clarifier Rehabilitation at Deer Island of \$224.8 million (total cost \$289.4 million), Ward Street Headworks of \$61.3 million (total cost \$142.8 million), CP-1 Section 53 Construction total cost of \$51.5 million, Tunnel Construction of \$50.0 million (total cost \$1.3 billion), Tunnel Final Design \$45.8 million (total cost \$114.4 million), South System PS VFD Replacement of \$45.5 million (total cost \$80.5 million), and Combined Heat and Power Construction \$44.3 million (total cost \$114.0 million).

The table below highlights major project spending in the FY24-28 timeframe:

Project	Subphase	FY24-FY28 \$s in Millions
DI Treatment Plant Asset Protection	Clarifier Rehab Phase 2 - Construction	\$224.8
Facility Asset Protection	Ward St Headworks Construction	\$61.3
NHS - Revere & Malden Pipelines	CP-1 Section 53 Conn-Construction	\$51.5
Metro Tunnel Redundancy	Tunnel Construction	\$50.0
Metro Tunnel Redundancy	Final Design/ESDC	\$45.8
DI Treatment Plant Asset Protection	SSPS VFD Replace Construction	\$45.5
DI Treatment Plant Asset Protection	Combined Heat & Power - Construction	\$44.3
Facility Asset Protection	Columbus Park HW Construction	\$43.8
Metro Tunnel Redundancy	Admin Legal & Public Outreach	\$37.1
DI Treatment Plant Asset Protection	Fire Alarm System Replacement - Construction	\$35.0
NIH Redundancy & Storage	NIH Storage - Construction	\$33.0
Facility Asset Protection	Prison Point Rehabilitation	\$28.7
DI Treatment Plant Asset Protection	MCC & Switchgear Replace Construcion	\$23.5
New Connecting Mains-Shaft 7 to WASM 3	Sect 25 & 24 - Construction CP-2	\$21.4
Metro Redundancy Interim Improvements	Waltham Water Pipeline Construction	\$21.2
Top 15 Subphase Spending (excl. Loan Programs)		\$766.7
% of FY24-28 Spending		42.0%
FY24-28 Spending		\$1,824.8

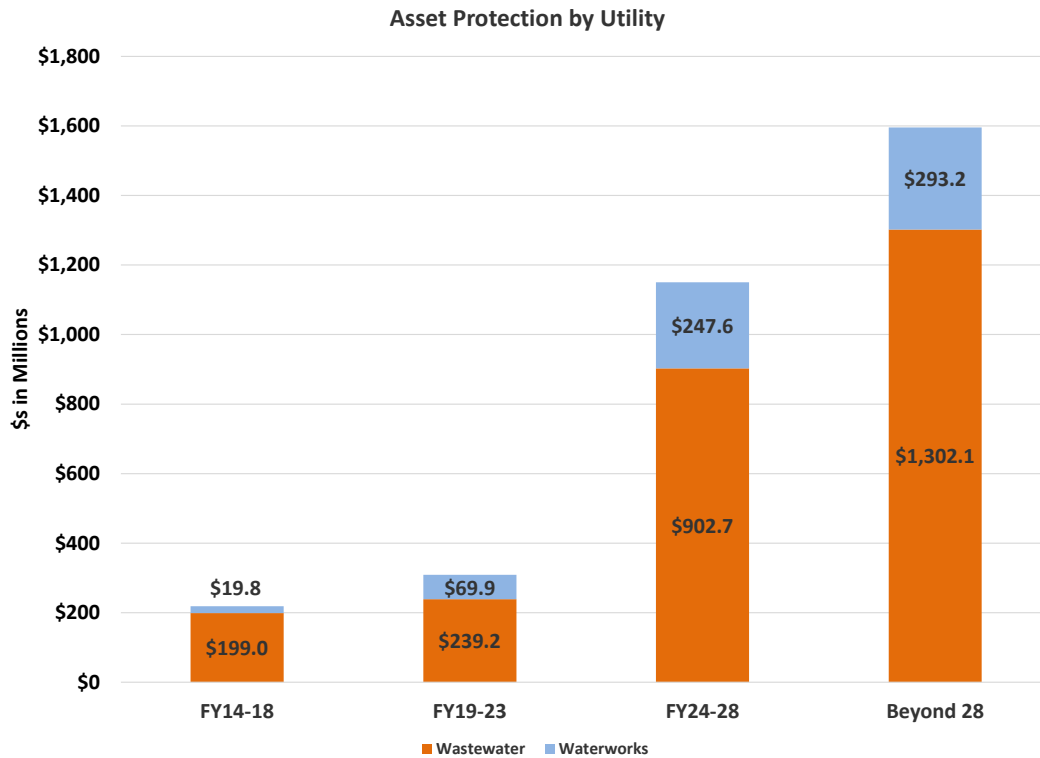
Asset Protection accounts for the largest share of capital expenditures for the FY24-28 period. The FY24 Final CIP includes \$1.2 billion for asset protection initiatives, representing 63.9% of total MWRA spending in this timeframe. Asset protection spending by program is as follows: Wastewater (\$902.7 million), Waterworks (\$247.6 million), and Business and Operations Support (\$15.4 million). Spending for Water Redundancy projects totals \$365.8 million in the same FY24-28 period, accounting for 20.0% of total spending.

**Changing nature of the CIP by Category
(\$s in millions)**

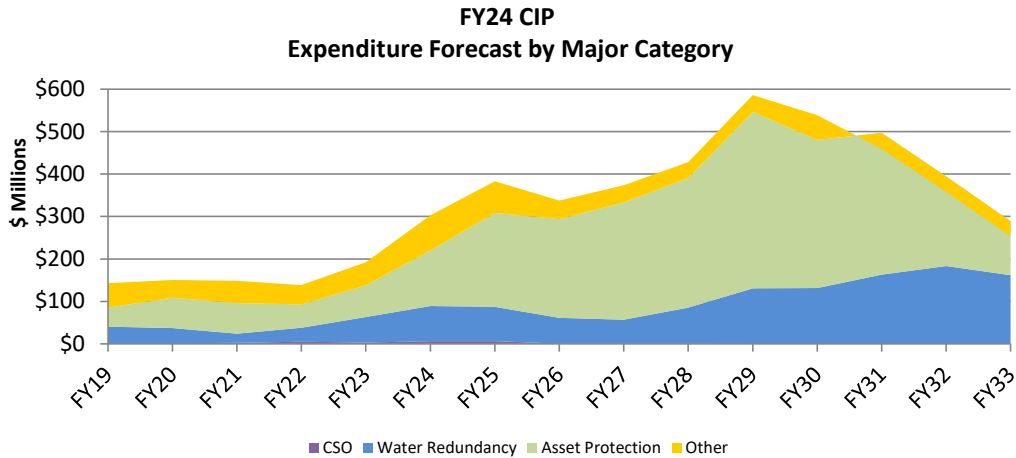
Project Category	FY14-18	FY19-23	FY24-28	Beyond 28
Asset Protection	\$222.8	\$318.3	\$1,165.7	\$1,596.8
Water Redundancy	\$174.6	\$189.7	\$365.8	\$1,813.1
CSO	\$64.7	\$12.3	\$14.2	\$2.2
Other	\$123.5	\$251.6	\$279.0	-\$175.9
Total	\$585.6	\$771.9	\$1,824.8	\$3,236.3
Asset Protection	38.0%	41.2%	63.9%	49.3%
Water Redundancy	29.8%	24.6%	20.0%	56.0%
CSO	11.0%	1.6%	0.8%	0.1%
Other	21.1%	32.6%	15.3%	-5.4%
Total	100.0%	100.0%	100.0%	100.0%

In terms of utility spending, Wastewater Asset Protection accounts for 77.4% of the FY24-28 projected Asset Projection spending at \$902.7 million of which \$581.4 million is designated for the Deer Island Wastewater Treatment Plant and \$321.3 million for headworks and pipelines.

The \$247.6 million targeted for Waterworks Asset Protection includes \$142.3 million for water pipeline projects.



As illustrated by the following graph, the next two waves of spending over the FY24-28 and the FY29-33 periods will be for asset protection and water redundancy. This reflects MWRA’s commitment to maintaining its physical plant and addressing the need for water system redundancy in some critical service areas. This reflects MWRA’s commitment to maintaining its physical plant and addressing the need for water system redundancy in some critical service areas. Total asset protection spending for FY24-28 is projected at \$1.2 billion or 63.9% of projected spending. Similarly, water redundancy spending for FY24-28 is projected at \$365.8 million or 20.0% of projected FY24-28 spending. For the FY29-33 spending window, total asset protection is projected at \$1.4 billion or 65.4% of projected spending. Similarly, water redundancy spending for FY29-33 is projected at \$769.9 million or 35.0% of projected spending.



FY24 CIP Future Expenditures

The FY24 CIP contains future spending (beyond FY22) estimated at \$5.3 billion, including \$2.4 billion for Wastewater (primarily Asset Protection of \$2.2 billion) and \$2.7 billion for Waterworks (primarily Redundancy projects of \$2.2 billion). Wastewater Asset Protection includes \$1.3 billion for Deer Island and \$985.2 million for Wastewater Facility Asset Protection (primarily pump station rehabilitation). Redundancy projects include the Metro Tunnel Redundancy and Metro Redundancy Interim Improvement projects with future spending of \$1.8 billion and \$167.0 million, respectively. FY24-FY28 spending is projected at \$1.8 billion or 34.7% of future spending.

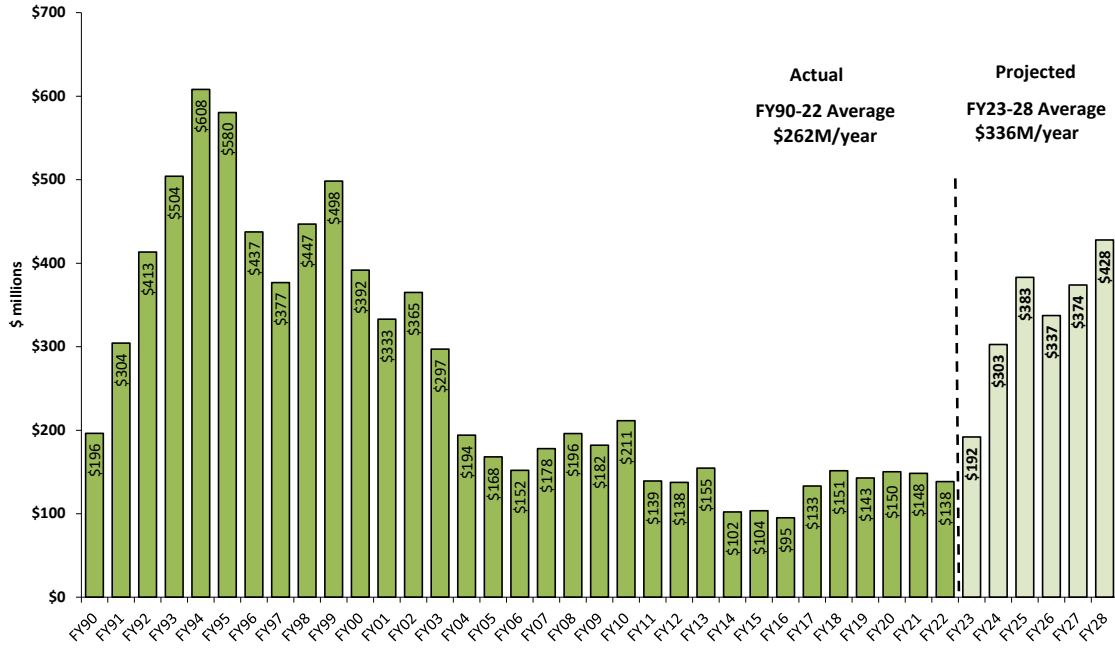
The table below represents the projected spending by the major project categories:

	Future Spending Beyond FY22	FY23	Total FY24-28	Beyond 28
Wastewater System Improvements	\$2,420.6	\$61.6	\$1,094.7	\$1,264.3
Interception & Pumping	883.3	29.5	299.5	554.3
Treatment	1,277.8	9.9	595.8	672.2
Residuals	90.6	0.0	8.6	82.0
CSO	21.3	2.8	16.4	2.2
Other Wastewater	147.5	19.4	174.5	-46.4
Waterworks System Improvements	\$2,736.0	\$101.8	\$663.9	\$1,970.4
Drinking Water Quality Improvements	72.5	4.3	26.6	41.6
Transmission	2,080.9	42.0	293.9	1,744.9
Distribution & Pumping	626.7	39.4	248.1	339.2
Other Waterworks	(44.0)	16.1	95.2	-155.3
Business & Operations Support	\$96.2	\$28.5	\$66.2	\$1.6
Total MWRA	\$5,252.9	\$191.9	\$1,824.8	\$3,236.3

Historical & Projected Spending

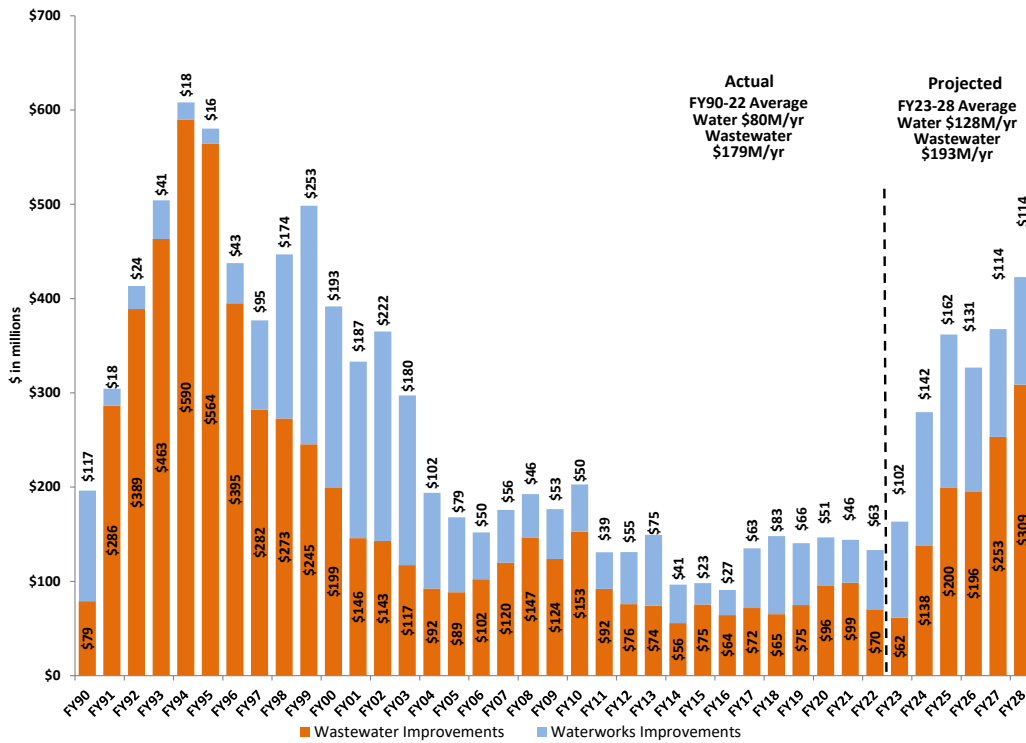
The following chart captures the historical CIP spending through FY22 and projects spending through FY28 based on the FY24 Proposed CIP. Average annual CIP spending through FY22 was \$262 million. Average annual CIP spending for the FY23-28 period is projected to be \$336 million.

Annual CIP Spending



The following chart shows the historical CIP spending from FY90 through FY22 by utility with projections through FY28. Average annual CIP spending through FY22 was \$80 million for Waterworks and \$179 million for Wastewater. Average annual CIP spending for FY23-28 is projected to be \$128 million for Waterworks and \$193 million for Wastewater.

Annual CIP Spending by Utility



Community Loan Programs

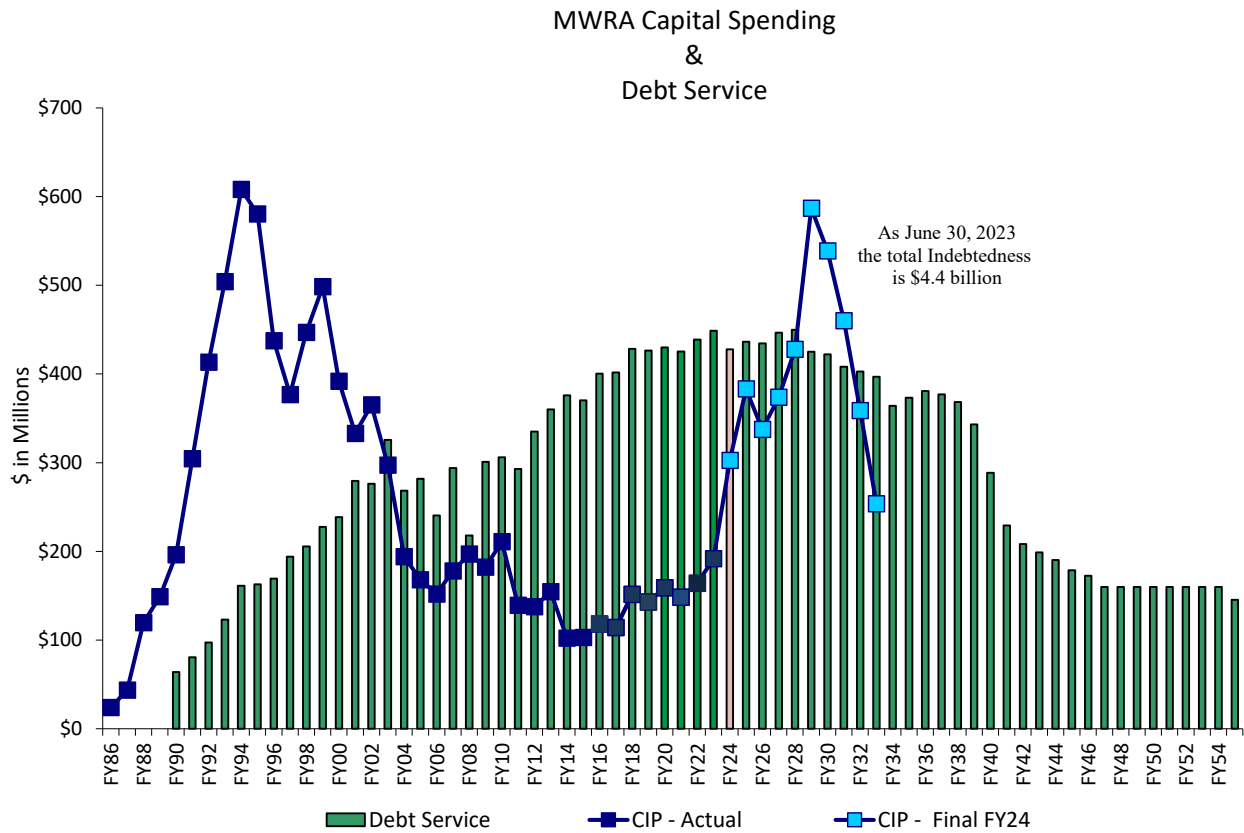
The MWRA offers its water and wastewater communities loan and grant opportunities for infrastructure preservation. Community loans are interest-free and repaid to MWRA over a 5-year or a 10-year period. On the water side, the program's goal is to improve local water system pipeline conditions to help maintain high water quality distribution from MWRA's treatment plant through local pipelines to customers' taps. The water loan program was established in 1998 and over 603 miles of pipeline have been improved. Similarly, on the wastewater side, the local financial assistance program provides MWRA sewer communities funding to perform local infiltration and inflow "I/I" reduction and sewer rehabilitation. The I/I program was established in 1993 and funds are currently approved for distribution through Fiscal Year 2030. Unlike the water loan program, the I/I program is a partial grant program.

Over the FY24-28 timeframe, \$174.5 million in funding is projected to be distributed to MWRA wastewater communities and \$24.0 million is projected to be distributed to MWRA water communities for a total of \$198.5 million in community support.

\$s in Millions	FY24	FY25	FY26	FY27	FY28	FY24-28
I/I Financial Assistance (Net of repayments)	\$42.9	\$41.5	\$27.5	\$28.4	\$34.2	\$174.5
Local Water System Assistance (Net of Repayments)	\$14.1	\$10.9	\$5.0	\$2.6	-\$8.6	\$24.0
Total Community Loan Programs	\$57.0	\$52.4	\$32.5	\$31.0	\$25.6	\$198.5

MWRA Capital Improvement Spending and Debt Service

As of June 30, 2023, MWRA’s total debt is \$4.4 billion, which is \$169.8 million less than the MWRA’s total debt as of June 30, 2022. While total outstanding debt is decreasing, debt service obligations continue to rise and are projected to increase in coming years.



APPENDIX H

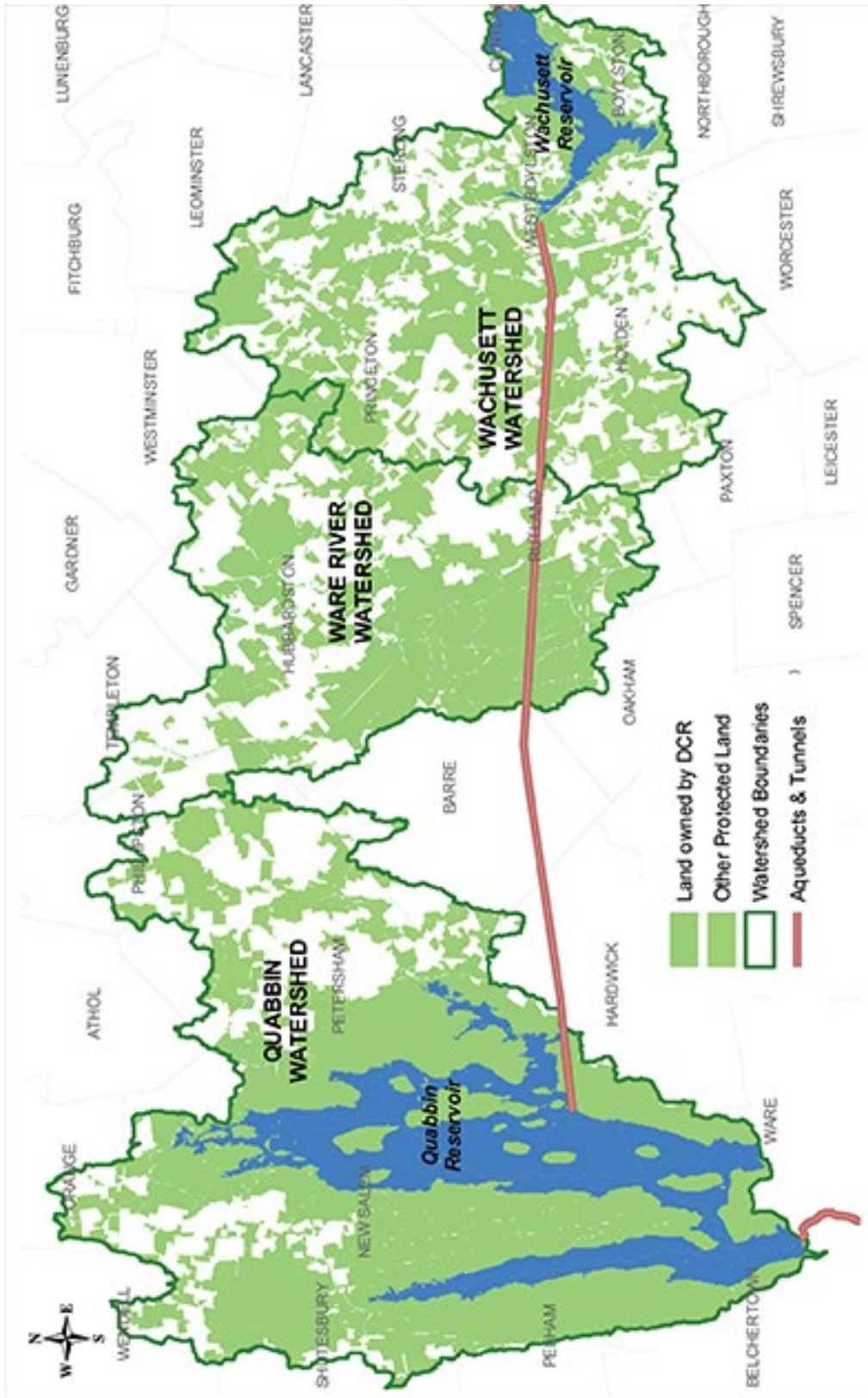
Water Supply Protection Trust

Code	Line Item	FY23 Final	FY24 Final	Change	% Change
AA	Personnel	\$ 11,904,891	\$ 12,401,454	\$ 496,562	4.2%
BB	Employee Expenses	\$ 15,000	\$ 20,000	\$ 5,000	33.3%
CC	Contracted Services	\$ 30,000	\$ 30,000	\$ -	0.0%
DD	Pensions/Insurance	\$ 5,078,580	\$ 5,804,733	\$ 726,154	14.3%
EE	Admin Expenses	\$ 160,000	\$ 160,000	\$ -	0.0%
FF	Facility Operational Supplies	\$ 250,000	\$ 250,000	\$ -	0.0%
GG	Energy Costs	\$ 340,000	\$ 410,000	\$ 70,000	20.6%
HH	Consultant Contracts	\$ 237,000	\$ 267,000	\$ 30,000	12.7%
JJ	Operational Services	\$ 45,000	\$ 130,000	\$ 85,000	188.9%
KK	Equipment	\$ 910,000	\$ 770,000	\$ (140,000)	-15.4%
LL	Leases, Rentals	\$ 180,000	\$ 180,000	\$ -	0.0%
NN	Construction Improvements	\$ 1,397,000	\$ 1,585,000	\$ 188,000	13.5%
PP	Grants to Public Entities	\$ 100,000	\$ 100,000	\$ -	100.0%
TT	Specials Payments	\$ 150,000	\$ 150,000	\$ -	0.0%
UU	IT Expenses	\$ 210,000	\$ 210,000	\$ -	0.0%
	Total Expenses	\$ 21,007,471	\$ 22,468,187	\$ 1,460,716	7.0%

6995	Hydro + Transmission	\$ 400,000	\$ 600,000	\$ 200,000	50.0%
4500	Forestry	\$ 450,000	\$ 250,000	\$ (200,000)	-44.4%
3148	Fishing & Recreation	\$ 150,000	\$ 150,000	\$ -	0.0%
6900	Miscellaneous	\$ 20,000	\$ 10,000	\$ (10,000)	-50.0%
	Total Revenue	\$ 1,020,000	\$ 1,010,000	\$ (10,000)	-1.0%

	Total Net Operating Budget	\$ 19,987,471	\$ 21,458,187	\$ 1,470,716	7.4%
	PILOT net of Fay School and Southboro rec use fee	\$ 8,903,291	\$ 8,900,000	\$ (3,291)	0.0%
	Grand Total to Budget in Indirect Expense Section	\$ 28,890,762	\$ 30,358,187	\$ 1,467,425	5.1%

APPENDIX H



Appendix I

MASSACHUSETTS WATER RESOURCES AUTHORITY

Board of Directors Report

on

Key Indicators of MWRA Performance

Fourth Quarter FY2023

Q1	Q2	Q3	Q4



Frederick A. Laskey, Executive Director
David Coppes, Chief Operating Officer
September 13, 2023

Board of Directors Report on Key Indicators of MWRA Performance

Fourth Quarter FY23

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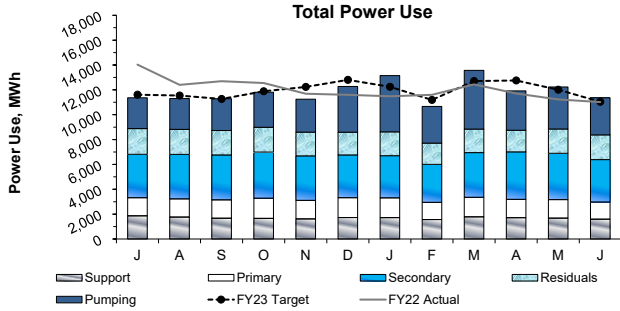
This quarterly report is prepared by MWRA staff to track a variety of MWRA performance measures for routine review by MWRA's board of directors. The content and format of this report is expected to develop as time passes. Information is reported on a preliminary basis as appropriate and available for internal management use and is subject to correction and clarification.

Frederick A. Laskey, Executive Director
David Coppes, Chief Operating Officer
September 13, 2023

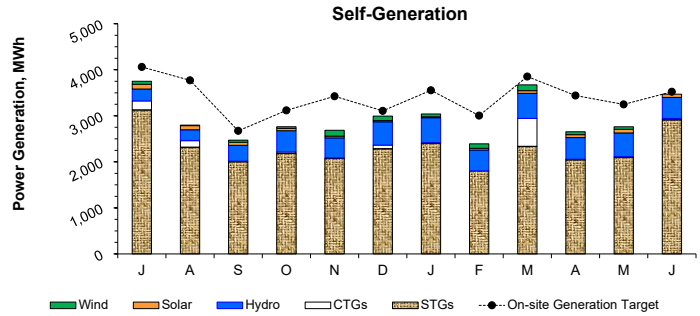
OPERATIONS AND MAINTENANCE

Deer Island Operations

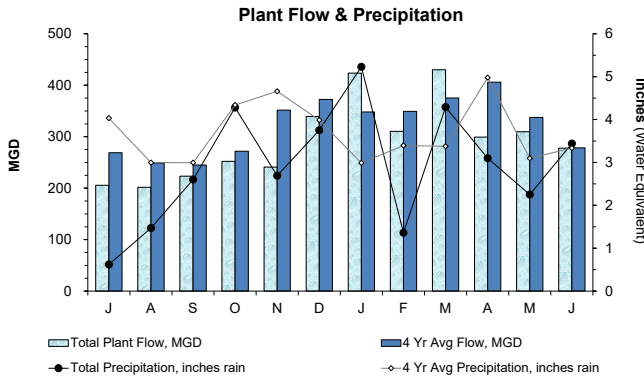
4th Quarter - FY23



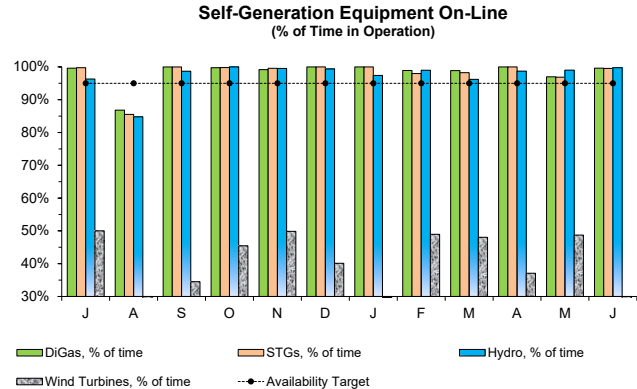
Total power usage in the 4th Quarter was on target (-0.8%) even though plant flow for this period was 13.2% below target with historical (4 year average) data used to generate the electricity model, as precipitation was 22.9% below target (11.41 inches expected vs. 8.79 inches actual). Power usage for most of the treatment processes was lower to or similar to target, including power used for raw wastewater pumping which was 9.8% below target as expected due to the lower plant flow. Power usage for secondary treatment cryogenic oxygen generation and for the residuals treatment processes was 18.7% and 6.1% higher than target, respectively, due to higher oxygen demand and higher secondary waste sludge production. **Overall, total power usage for FY23 was within 0.8% of target as total plant flow was 8.8% below the 4 year average plant flow target.**



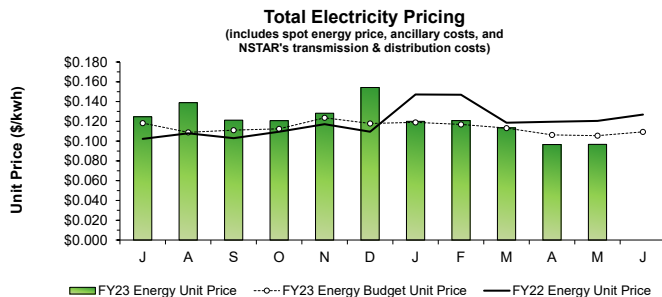
Power generated on-site during the 4th Quarter was 13.0% below the target. The CTGs operated on June 5 for an ISO-NE demand response summer audit and briefly throughout the quarter for maintenance/checkout purposes. STGs generation was 4.1% below target as digester gas production was 5.2% below target. Hydro Turbine generation was 7.7% below target due to lower plant flows. Solar Panel generation was 21.5% below target as the Residuals Odor Control Facility rooftop array continues to remain out of service pending replacement of the grid inverter which has been difficult to source. Wind Turbine generation was 73.9% below target as Turbine #1 remained out of service and Turbine #2 has been out of service since May 29. This turbine was taken out of service for precautionary reasons during the wind storm that led to catastrophic damage to the offline Turbine #1, and an inspection of Turbine #2 noted the inboard bearing on the generator shaft was in need of replacement. Repairs for Turbine #2 will proceed pending arrival of the replacement parts. **Overall, power generation was 13.1% below target for FY23.**



Total Plant Flow for the 4th Quarter was 13.2% below target with the budgeted 4 year average plant flow (295.5 MGD actual vs 340.5 MGD expected) as precipitation was 22.9% below target (8.79 inches actual vs. 11.41 inches expected). **Total Plant Flow for FY23 was 8.8% below target as precipitation was 20.6% below target.**

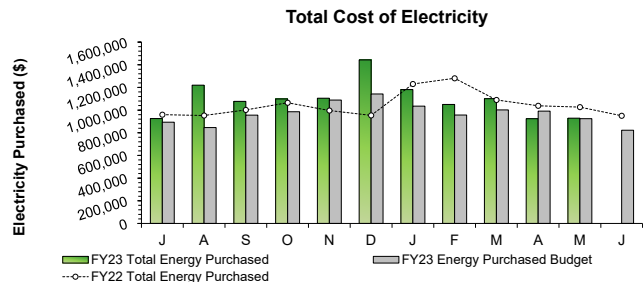


The DiGas System, STGs, and Hydro Turbines availability exceeded the 95% availability target in the 4th Quarter. However, Wind Turbines availability fell to 28.6% due to several mechanical issues with Wind Turbine #2, which reduced its availability to 57.2% for the quarter, and Turbine #1 has been out of service since April 11, 2022. **Overall for FY23, Wind Turbines availability was only 36.9%, while availability for the other self-generating equipment exceeded the 95% availability target.**



Under the current energy supply contract, a block portion of DI's energy is a fixed rate and the variable load above the block is purchased in real time. The actual Total Energy Unit Prices for June is not yet available as the complete invoice has not been received. The actual Total Energy Unit Price in April was 9.2% below target and in May, the most current available price, was 8.3% below target with the budgetary estimates. The Total Energy Unit Price includes a fixed block price, spot energy price, transmission & distribution charges, and ancillary charges. **Overall for FY23 through May, the Total Energy Unit Price was 6.3% higher than target due to much higher than expected prices during the first half of FY23.**

Note: Only the actual energy prices are reported. Therefore, the dataset lags by one (1) month due to the timing of invoice receipt and review.

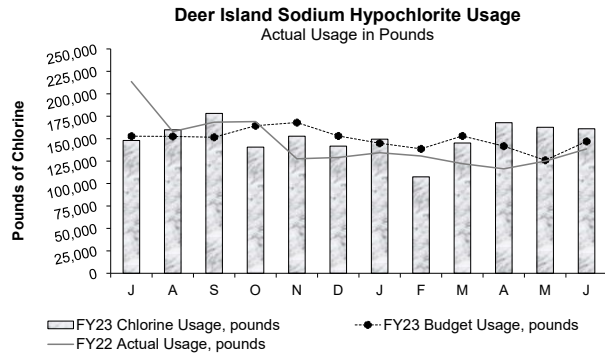
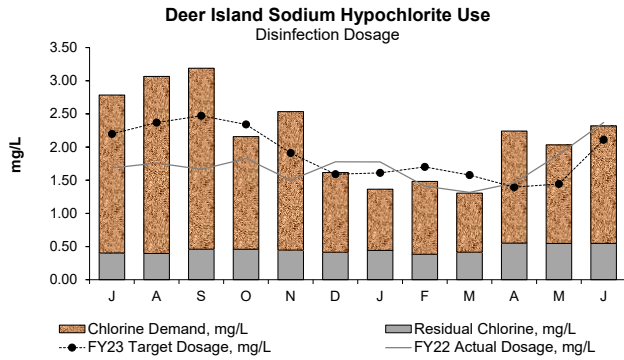


The Electricity cost data for Electricity Purchased in June is not yet available as the complete invoice has not been received. Year-to-date Total Cost of Electricity is \$1,231,976 (11.4%) higher than budgeted through May, the most current available price, as the Total Energy Unit Price was 6.3% higher than target and the Total Electricity Purchased was 4.8% above target.

Note: Only months with complete Electricity Purchased data are reported. Therefore, the dataset lags by one (1) month due to the timing of invoice receipt and review

Deer Island Operations

4th Quarter - FY23



The disinfection dosing rate in the 4th Quarter was 33.0% above target with budgetary estimates. As a result, actual sodium hypochlorite usage in pounds of chlorine was similarly 18.6% higher-than-expected. The disinfection basin effluent total residual chlorine target was increased on March 29 from a lower target to a higher target that is greater than or equal to 0.50 mg/L, thus resulting in the higher sodium hypochlorite usage. The higher chlorine residual target was adopted in preparation for meeting the more stringent potential new NPDES permit effluent discharge limits for indicator bacteria. DITP maintained an average disinfection chlorine residual of 0.55 mg/L this quarter with an average dosing rate of 2.20 mg/L as chlorine demand was 1.65 mg/L with the higher target. **Overall in FY23, the disinfection dosing rate was 15% higher than the budgetary estimate which was based on meeting only the fecal coliform limits in the current NPDES permit.**

The overall disinfection dosing rate (target and actual) is dependent on plant flow, target effluent total chlorine residual levels, effluent quality and NPDES permit levels for fecal coliform.

Secondary Blending Events

Month	Count of Blending Events	Count of Blending Events Due to Rain	Count of Blending Events Due to Non-Rain-Related Events	Secondary, as a Percent of Total Plant Flow	Total Hours Blended During Month
July	0	0	0	100.0%	0.00
August	0	0	0	100.0%	0.00
September	0	0	0	100.0%	0.00
October	1	1	0	99.8%	2.43
November	1	1	0	99.9%	2.12
December	4	4	0	99.5%	17.95
January	3	3	0	98.7%	28.99
February	0	0	0	100.0%	0.00
March	2	2	0	96.8%	48.02
April	1	1	0	99.8%	3.56
May	1	1	0	99.6%	4.43
June	0	0	0	100.0%	0.00
Total	13	13	0	99.3%	108.50

99.8% of all flows were treated at full secondary during the 4th Quarter. There were two (2) secondary blending events due to high plant flows from heavy precipitation. These blending events resulted in 7.99 hours of blending and a total of 54.95 MGal of primary-only treated effluent blended with secondary effluent. The Maximum Secondary Capacity during the entire quarter was 700 MGD.

Overall in FY23, 99.3% of all flows received full secondary treatment, as there were 13 separate secondary blending events totaling 108.50 hours of blending and a total of 1,329.77 MGal of primary-only treated effluent blended with secondary effluent. These secondary blending events were due to high plant flows resulting from heavy precipitation, sometimes in combination with snow melt.

Secondary permit limits were met at all times through the entire FY23.

Deer Island Operations & Maintenance Report

Environmental/Pumping:

The plant achieved an instantaneous peak flow rate of 1,013.4 MGD during the early morning hours of May 21. This peak flow occurred during a storm event that brought 1.94 inches of precipitation to the metropolitan Boston area over the course of two (2) days. The Total Plant Flow in the 4th Quarter was 13.2% below the 4 year average plant flow target for the quarter.

Staff from several departments across the MWRA (PICS, I&C, and SCADA) along with Operations staff completed the final switchover of the headworks communications between Columbus Park and DITP from an old copper line system to a new Verizon digital lease line system. This switchover to a new digital lease line system was necessary as Verizon was no longer supporting the copper line system. This project was designated as priority and staff worked diligently to install this new system and conducted trial tests prior to performing the final successful cutover to the new system on May 4.

Secondary:

Annual turnaround maintenance was performed on Train #2 in the Cryogenic Oxygen Facility from May 15 to May 26. This two (2) week turnaround maintenance is performed on roughly half of the components and systems in the Cryogenic Oxygen Facility. During this turnaround maintenance, the contractor calibrated all the instrumentation on Cold Box unit #2 as well as, a number of other components of the oxygen plant. The same turnaround maintenance will be completed on Train #1 in the fall.

Disinfection:

The disinfection basin effluent total residual chlorine target was raised to greater than or equal to 0.50 mg/L starting on March 29. The higher chlorine residual target was adopted in preparation for meeting the more stringent potential new NPDES permit effluent discharge limits for indicator bacteria including lower fecal coliform limits and new limits for Enterococcus bacteria.

Deer Island Operations & Maintenance Report (continued)**Residuals:**

Sludge feed to each of the Module #2 digesters (#1 through #4) was temporarily suspended, one at a time, for several days each, starting on May 15, to allow the contractor to perform routine scheduled maintenance on each of the digester's sludge overflow line. This maintenance is performed on only one (1) digester at a time and continued until this maintenance is completed for these four (4) operating digesters. This maintenance was not needed for the Module #3 digesters as these digesters were only recently placed into operation earlier this year. This routine preventative maintenance is typically performed annually.

Odor Control Treatment:

Carbon adsorber (CAD) units #1 and #2 in the East Odor Control (EOC) Facility and unit #5 in the Residuals Odor Control (OC) Facility were emptied and refilled with new regenerated activated carbon media this quarter as part of routine maintenance to replace spent activated carbon.

Energy and Thermal Power Plant:

Overall, total power generated on-site accounted for 25.0% of Deer Island's total power use for the 4th Quarter and was 24.9% for FY23. Renewable power generated on-site (by Solar, Wind, STGs, and Hydro Turbines) was 24.1% for FY23.

CTG-1A was operated for approximately 1.8 hours on June 5 for an ISO-New England declared Demand Response summer audit event. The performance on this audit determines DITP's demand response program payment for the next six (6) months.

Routine annual maintenance was performed for CTG 1A during the week of June 12. The scope of the work included routine preventative maintenance, instrument calibrations, and inspection of its generator bearing. CTG 1A was not available for operation during this maintenance. However, CTG 2B was available for operation in the event of an emergency and a single generator is able to provide sufficient power to the plant up to plant flows of 825 MGD. CTG 1A was successfully test operated at the end of the maintenance on Friday June 16 and the unit was returned to standby mode. Additionally, a required fire system inspection for CTG 1A was successfully completed on June 23. These inspections routinely take approximately four (4) hours to complete and the unit was returned to standby once the inspection was completed.

One half of the solar array on the rooftop of the Maintenance/Warehouse Building, MW #2, was returned to service on April 20 after the failed A/C contactor was replaced. This solar array had failed on March 21. The other half of the same solar array system, MW #1, unexpectedly failed on April 21 due to a pair of failed transistors in the grid inverter. The transistors were replaced and the array was returned to service on June 6. The rated capacity of the combined M/W solar array is 180 kW.

Wind Turbine #1 has been out of service since April 11, 2022 with a main shaft bearing failure. During the early morning of May 29, this turbine experienced a catastrophic structural failure when the hydraulic brake system failed, causing parts of two (2) blades to come apart while the unit spun out of control for several hours during a wind storm, until the winds decreased sufficiently enough to bring the blade assembly under control to be secured. For safety reasons, the public access area in the vicinity of the turbines and the South Parking Lot 3 were closed, and the nose cone and blade assembly for this turbine was removed and safely lowered to the ground on June 2. Additionally, Wind Turbine #2 was taken out of operation as a precautionary measure on May 29 and is awaiting replacement of a faulty inboard bearing on the generator shaft before attempting to return the unit to operation.

DITP took delivery of 320,000 gallons of #2 fuel oil, a total of 32 oil tanker trucks, without incident from May 22 through May 30. This fuel oil is used for CTG operation, for boiler startup operations, and for supplemental fuel for boiler operation during periods of low or unstable digester gas production.

Clinton Operations & Maintenance Report**Dewatering Building:**

Maintenance and Facility Specialists made repairs on the Belt Filter Press conveyor. Maintenance staff also completed numerous monthly Preventative Maintenance (PM) work orders. Operation staff washed down and dewatered Gravity Thickener #1. They also washed down the weirs on Gravity Thickener # 2. A contractor checked the eyewash stations for connection to the Verbatim alarm system. A contractor also calibrated the Belt Filter Press flow meter.

Chemical Building:

Maintenance staff removed and replaced the #2 Waste Activated Sludge (WAS) pump with a new pump and pipe spool, and returned the unit to operation. Maintenance staff and Facility Specialists disassembled & cleaned the soda ash feed line and mixing tank. They also cleaned and resealed the soda ash inspection hatch. Staff install a new Hypochlorite storage tank with the assistance of a Chelsea crane crew. Staff also flushed the feed pumps and replaced the diaphragms on the #1 & #2 ferric pumps. The electrical contractor determined there was a faulty flow switch for the eyewash showers located in the lower level. Staff worked with contractor to install flow tubes and replaced the # 2 WAS flow meter. The contractor then calibrated the WAS and the Return Activated Sludge (RAS) flow meters.

Aeration Basins:

Operations staff cleaned the pH and dissolved oxygen probes. The contractor calibrated the pH and ORP probes.

Phosphorus Building:

Maintenance staff acid washed all three (3) disk filters, cleaned the troughs, and inspected all the spray nozzles. Operation staff cleaned both online CL17 chlorine analyzers. Maintenance staff replaced the sump pump for the CL17 chlorine analyzer dosing system. The contractor charged and reinsulated the newly installed line for AC unit.

Headworks Building:

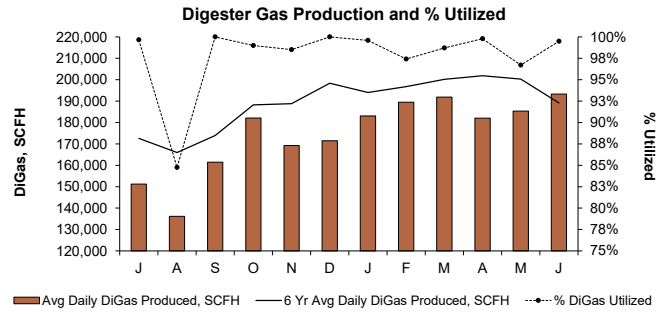
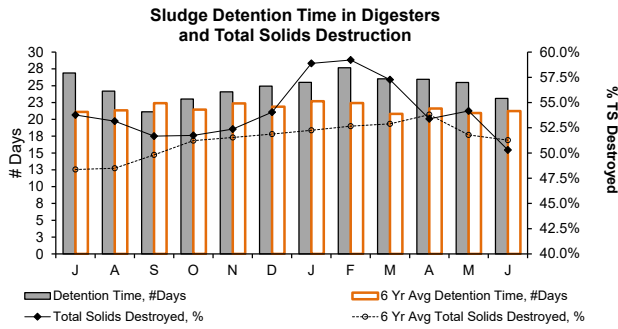
Maintenance staff cleaned the influent and mechanical bar racks and greased the upper and lower pin racks. The contractor tested the newly installed influent gates with water for the one (1) hour leak test. Operations staff drained the water out of the channel for the contractor. They removed the drain plug and the stop logs. The contractor disassembled screw pumps #1 and #3.

Digester Building:

Maintenance staff checked all equipment for proper operation and also greased the Ovivo mixer on the floating cover. Staff performed maintenance on the #2 waste gas flare to establish gas flow, however, the digester gas pipe continues to remain blocked.

Deer Island Operations and Residuals

4th Quarter - FY23



Total solids (TS) destruction following anaerobic sludge digestion averaged 52.6% during the 4th Quarter, on target (+0.6%) with the 6 year average of 52.3%. Sludge detention time in the digesters was 24.8 days, 16.9% above the 21.3 days detention time target. 7.9 digesters were in operation, just under the projected target of 8.0 digesters. The higher sludge detention time is attributed to a 3.8% lower-than-expected volume of sludge feed going to the digesters. **Overall for FY23, TS destruction averaged 54.2%, 5.5% higher than the 51.3% target.**

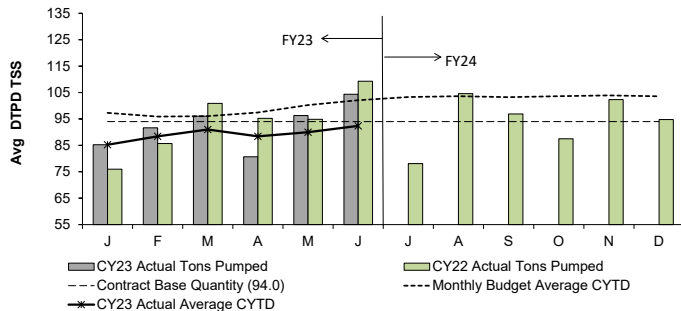
The Avg Daily DiGas Production in the 4th Quarter was 5.2% below the 6 Year Avg Daily DiGas Production due mainly to 7.3% lower-than-expected primary sludge production as a result of 13.2% lower plant flows. 98.7% of the DiGas produced was utilized at the Thermal Power Plant in the 4th Quarter. **Overall for FY23, DiGas Production was 7.6% lower-than-expected and 97.8% of the DiGas produced was utilized at the Thermal Power Plant.**

Total solids (TS) destruction is dependent on sludge detention time which is determined by primary and secondary solids production, plant flow, and the number of active digesters in operation. Solids destruction is also significantly impacted by changes in the number of digesters and the resulting shifting around of sludge.

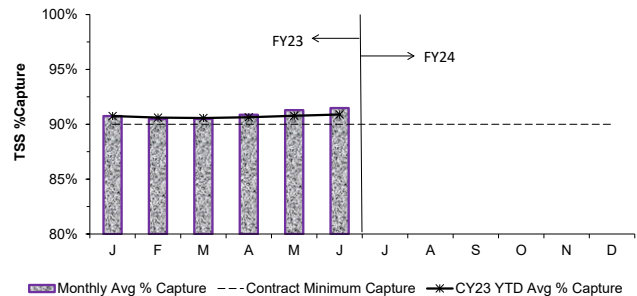
Residuals Pellet Plant

New England Fertilizer Company (NEFCO) operates the MWRA Biosolids Processing Facility (BPF) in Quincy under contract. MWRA pays a fixed monthly amount for the calendar year to process up to 94.0 DTPD/TSS as an annual average (for the extended contract period of January 1, 2021 through December 31, 2023). The monthly invoice is based on 94.0 DTPD/TSS (Dry Tons Per Day/Total Suspended Solids) times 365 days divided by 12 months. At the end of the year, the actual totals are calculated and additional payments are made on any quantity above the base amount. On average, MWRA processes more than 94.0 DTPD/TSS each year (FY23's budget is 103.3 DTPD/TSS and the preliminary FY24's budget is 103.2 DTPD/TSS).

Sludge Pumped From Deer Island



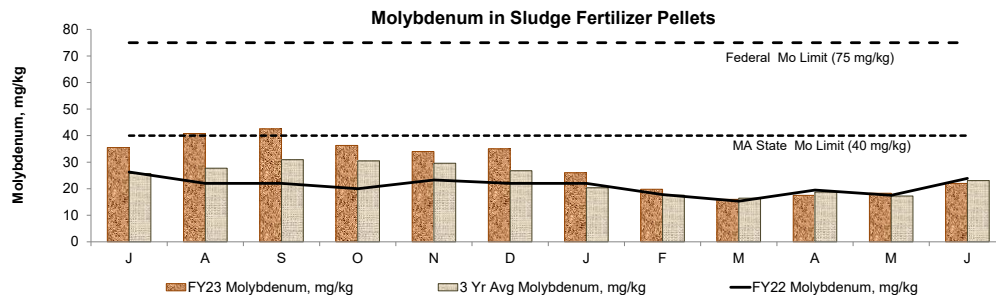
Monthly Average % Capture of Processed Sludge



The average quantity of sludge sent to the Biosolids Processing Facility (BPF) in the 4th Quarter was 93.8 TSS Dry Tons Per Day (DTPD), 13.2% below target with the FY23 budget of 108.1 TSS DTPD for the same period. The lower amount of sludge sent to the BPF is partially attributed to a lower-than-expected volume of sludge being pumped to the BPF. Additionally, staff discovered a leaking flushing water valve that had inadvertently diluted the sludge in the DITP Digested Sludge Holding Tanks for several days, thus reducing the solids content of the sludge that was sent to the BPF from April 17 through the first two weeks of May.

The contract requires NEFCO to capture at least 90.0% of the solids delivered to the Biosolids Processing Facility. The average capture for the 4th Quarter was 91.21% and the CY23-to-date average capture is 90.9%.

The overall CY23-to-date average quantity of sludge pumped is 92.4 DTPD, 9.5% below target compared to the CY23-to-date average budget of 102.1 DTPD.



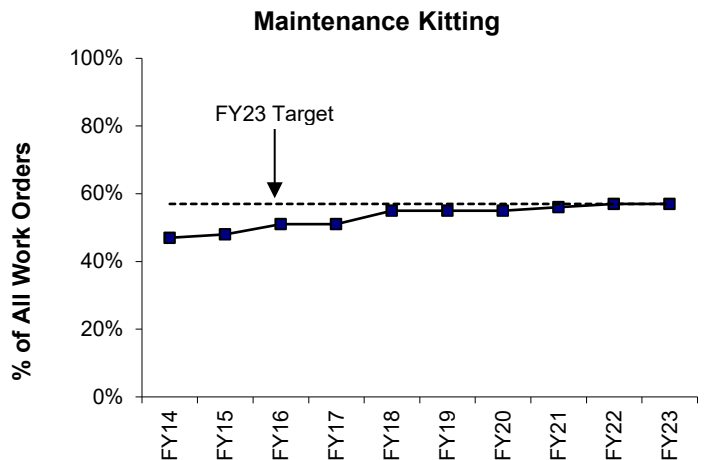
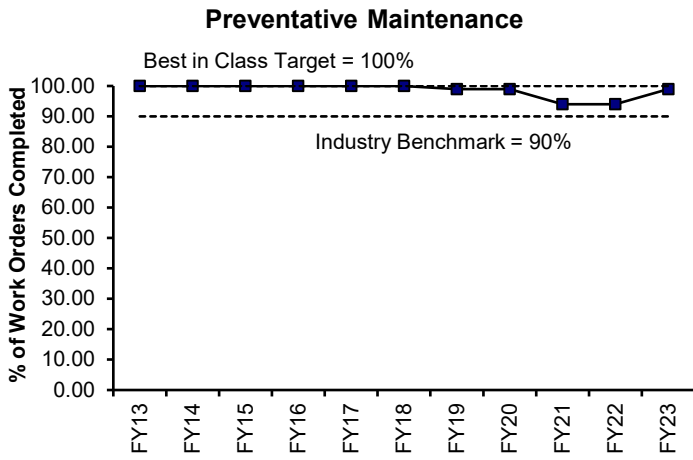
Copper, lead, and molybdenum (Mo) are metals of concern for MWRA as their concentrations in its biosolids have, at times, exceeded regulatory standards for unrestricted use as fertilizer. Molybdenum-based cooling tower water is a significant source of Mo in the sludge fertilizer pellets. The Federal standard for Mo is 75 mg/kg. The Massachusetts Type 1 biosolids standard for molybdenum was changed from 25 mg/kg to 40 mg/kg in 2016, allowing MWRA to sell its pellets in-state for land application whereas the previous limits forced several months' worth of pellets to be shipped out of state.

Overall, the levels have been below the DEP Type 1 limit for all three (3) metals. For Mo, the level in the MWRA sludge fertilizer pellets during the 4th Quarter averaged 19.3 mg/kg, 2% below the 3 year average, 52% below target with the MA State Limit, and 74% below the Federal Limit. **Overall for FY23, the Mo level in the pellets averaged 28.6 mg/kg, 28% below the MA State Limit, and 62% below the Federal Limit.**

Deer Island Yearly Maintenance Metrics

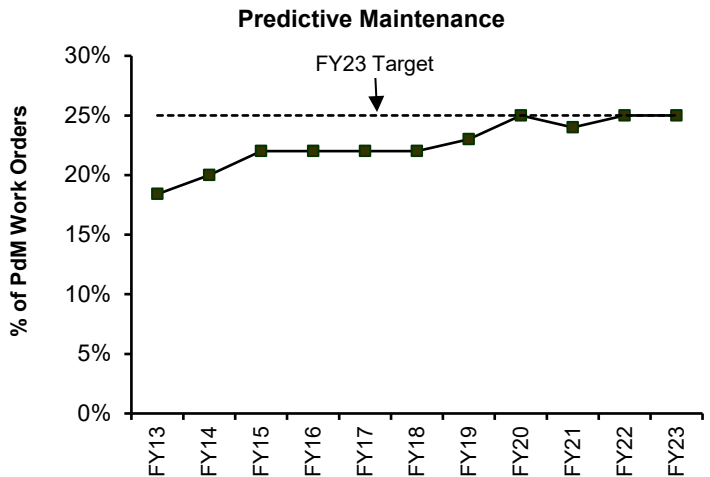
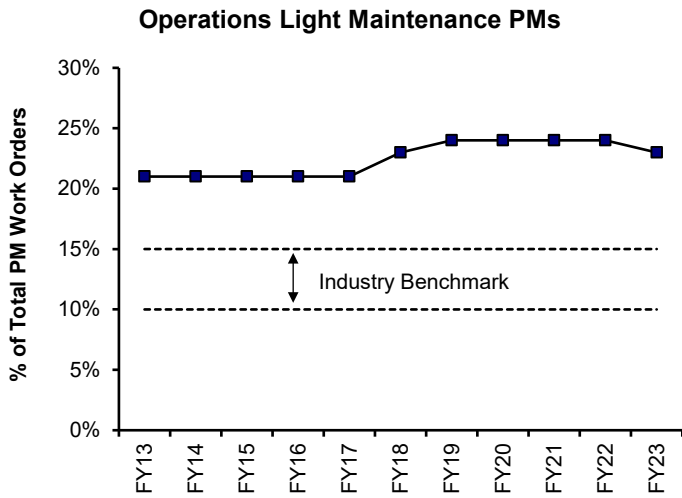
4th Quarter - FY23

Proactive and Productivity Measures



The industry benchmark is 90% for Preventative Maintenance (PM) completion. Upon reaching the 90% goal in FY05, the target goal was increased to the "Best in Class" Target of 100% PM completion. Reliability-Centered Maintenance (RCM) and PM optimization efforts have continued. PM completion rate was 99% in FY23.

Preventive Maintenance (PM) inventory items were loaded into Maximo to assign spare parts for equipment to PM work orders. DITP reached the PM kitting goal of 100%. In FY12 a new graph was developed to track kitting of all maintenance work orders in an effort to increase wrench time. Staff continues to fine-tune the process to "kit" all maintenance work orders. Kitting is considered a best practice by maintenance and reliability professionals. It entails staging parts necessary to complete maintenance work. Kitting allows maintenance staff to spend more time "turning the wrench" and less time waiting for parts at the stockroom window. Kitting for FY23 was 57%, meeting DITP's goal of 57%.



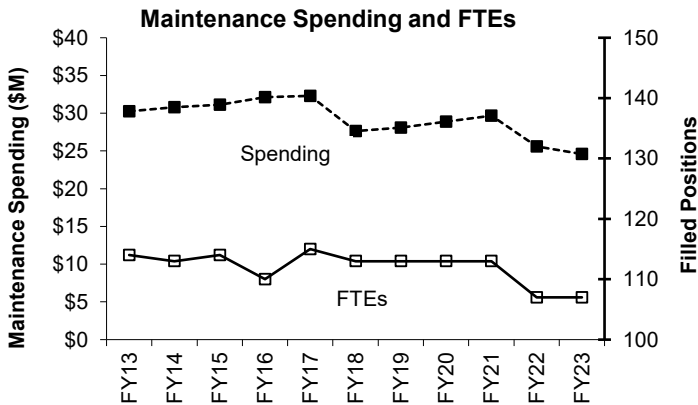
The percentage of preventive maintenance work orders completed by Operations staff (non maintenance staff) increased from less than 1% in January 2002 to the current level of 23% in FY23. DITP reached the industry benchmark range of 15% and has exceeded the goal through FY23. The slight decrease of Operations PM work orders is due to adjusting frequencies during the year to meet plant needs.

Predictive maintenance has steadily increased from 2% in FY03 to 25% in FY23, DITP met the FY25 goal of 25%. This percentage in predictive maintenance was achieved through the expanded use of lubrication, vibration, thermography, and acoustic ultrasonic testing techniques. The Condition Monitoring Group continually reviews and investigates new opportunities and initiatives to expand condition monitoring testing and analysis.

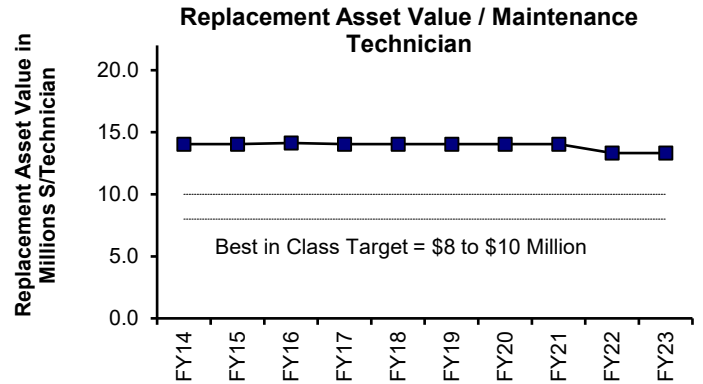
Deer Island Yearly Maintenance Metrics

4th Quarter - FY23

Overall Maintenance Program Measures

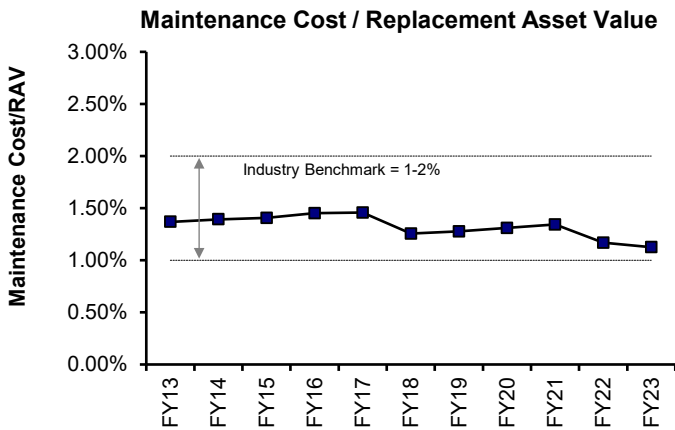


DITP's Maintenance staff is currently at 107 FTE's. Maintenance staff levels ended at 107 due to retirements and hiring challenges for trades personnel. Maintenance has worked to meet our goals though implementation of numerous maintenance efficiencies including: Operations performing light maintenance, cross-functional training and flexibility, and Reliability-Centered Maintenance. This year's overall Maintenance spending decreased slightly.

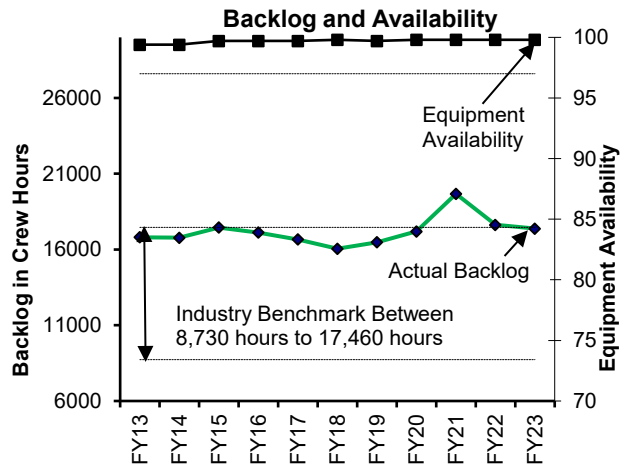


DITP adopted a "best in class" target of \$8-\$10 Million/Technician for maintenance staffing. DITP remains above this Best in Class. However, as the plant ages and additional equipment replacements are expected, DITP management will reassess staffing as needed.

The Maintenance Spending graph shows actual annual maintenance spending and CIP asset replacements (equipment costs only). Maintenance staff continues to evaluate plant assets and requirements for replacement of obsolete equipment to ensure the plant operates at maximum efficiency. In FY23, overall spending decreased slightly from FY22 due to a reduction in CIP Spending. Maintenance Projects in FY23; Replacement of Odor Control Dampers, Station Batteries replaced in Main Switchgear Building, Radio system upgrade, Replacement of four large valves on the hot water system, Installation of Gas Protection System panel in North Main Pump Station, Installation of LED Emergency Lights, and installation of LED lights for the Digester Complex.



The industry benchmark for annual maintenance spending is between 1% to 2% of replacement asset value, currently DITP is at 1.13%. The plant's replacement asset value is calculated at approximately \$2.6 billion dollars. DITP's current maintenance spending is within the industry benchmark. Overall maintenance spending has decreased slightly from last year. DITP Maintenance CEB spending is \$23.5 million. CIP spending was \$1.1 million (equipment costs only). CIP/CEB Spending totaled \$24.6 million in FY23.



Industry benchmark for Equipment Availability is 97%. Deer Island has exceeded this benchmark over for the last ten years. In FY23 the availability was 99%. The high percentage in Equipment Availability during FY23 is due to redundancy of equipment and effective/efficient maintenance practices.

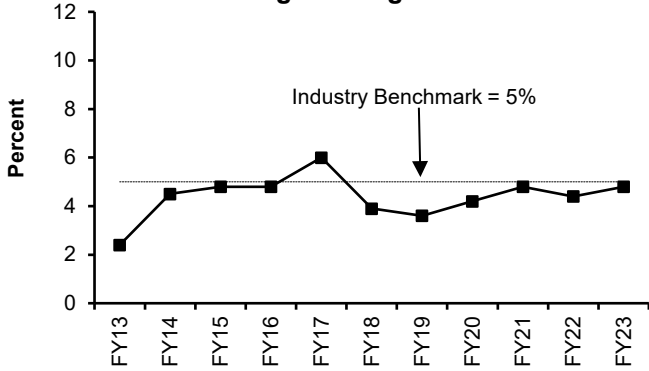
Industry Benchmark for Backlog is between 8,730 to 17,460 hours for maintenance based on current staffing, the total average backlog for FY23 was 17,373 hours, which is within the industry benchmark. DITP Maintenance has made significant progress over the last year to be within the Industry Benchmark, after being over the previous two years.

Deer Island Yearly Maintenance Metrics

4th Quarter - FY23

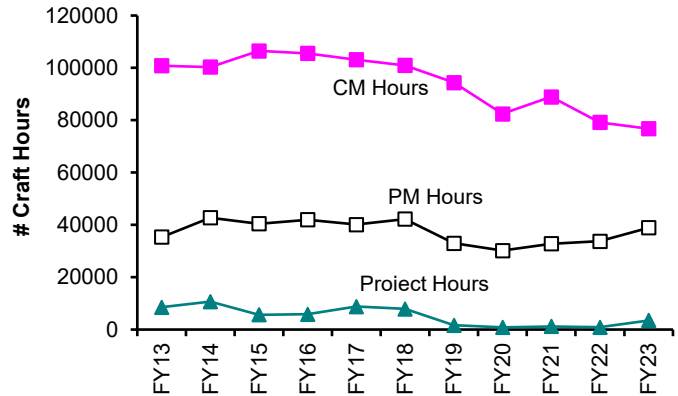
Overall Maintenance Program Measures (cont.)

Overtime (excluding Storm Coverage) as a Percentage of Wages & Salaries



Management continues its effort to keep overtime below the industry benchmark. DITP maintenance overtime was 4.8% for FY23. Management has taken steps to reduce overtime spending by limiting overtime to repair critical equipment and systems only. DITP has been under the Industry Benchmark every year except FY17, due to the increase in overtime for the Eversource Cable Outage.

Craft Hours



This year's slight decrease in Corrective Maintenance (CM) hours was due to staff working on projects which slipped during Covid to increase equipment performance and extend the useful life of the equipment.

This year's slight increase in Preventive Maintenance (PM) was due to completing additional PM work orders than previous year. Staff continued to work on optimization of the Preventive Maintenance (PM) program

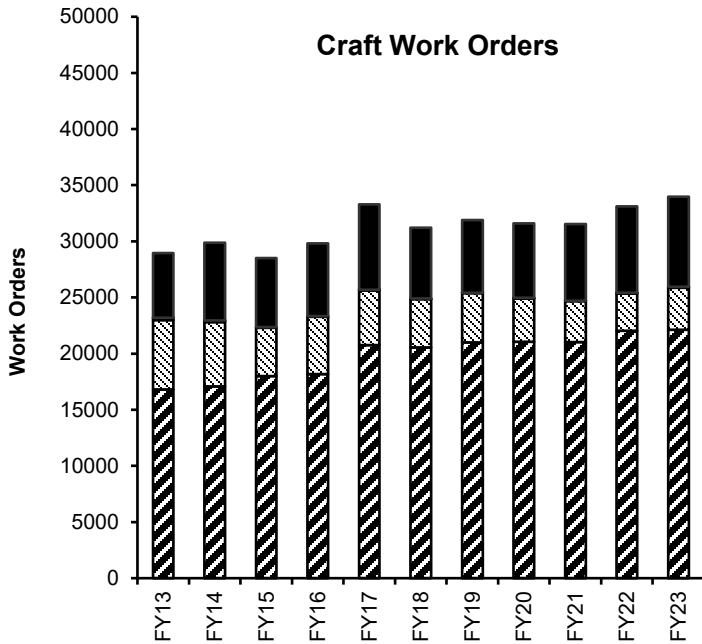
This year slight increase in Project Work (PROJ) was due to catching up on critical project to enhance operations ability to operate the plant and increase equipment performance.

Maintenance did complete some significant maintenance work in FY23: Plumbers installed 400' of stainless steel pipe and replaced sixteen service valves which were corroding. This system allows service water to flush out grit classifier. This extend the life of the service system and increase performance of grit classifiers. Electricians supported the replacing one existing elevator controller in the Maintenance building. We replaced the existing controller with a new Galaxy controller. The Galaxy controller is a variable-frequency closed loop controller and code compliant features is a state of the art system. The existing controller was obsolete. HVAC staff replaced four large valves on the hot water loop. Mechanical staff changed out numerous in-line grinders due to the additional clogging due to wipes in the system.

During FY23, the overall number of work orders slightly increased from the previous year. The increase is due to equipment replacements, with increased preventative schedules.

The Work Coordination department is continuously modifying PM, PdM, and CM Job Plans to ensure maintenance is being performed efficiently and effectively, while ensuring reliability and availability of DITP's Assets.

Craft Work Orders



- Predictive Maintenance
- Emergency Maintenance
- Project
- ▨ Corrective Maintenance
- ▤ Preventive Maintenance

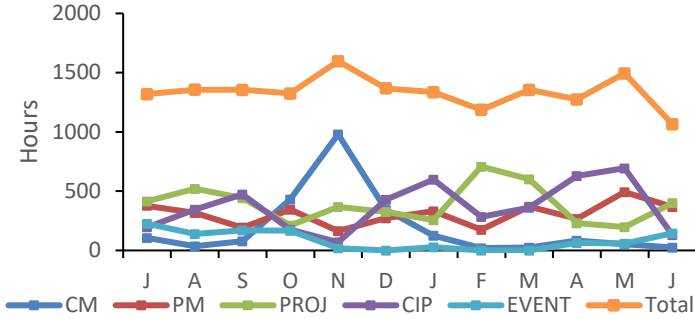
Water Distribution System Valves

4th Quarter - FY23

Background

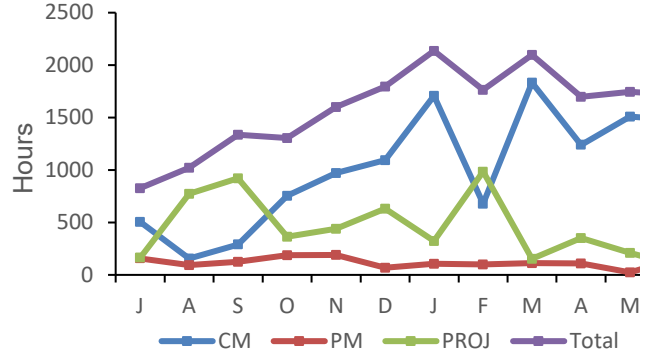
Valves are exercised, rehabilitated, or replaced in order to improve their operating condition. This work occurs year round. Valve replacements occur in roadway locations during the normal construction season, and in off-road locations during the winter season. Valve exercising can occur year round but is often displaced during the construction season. This is due to the fact that a large number of construction contracts involving rehabilitation, replacement, or new installation of water lines, requires valve staff to operate valves and assist with disinfection, dechlorination, pressure-testing, and final acceptance. Valve exercising can also be impacted due to limited redundancy in the water system; valve exercising cannot be performed in areas where there is only one source of water to the community meters or flow disruptions will occur.

Water Valve Labor Hours



During Q4 of FY23 there was a total of 3836 hours worked. Percentage breakdown; Corrective Maintenance 4%, Preventative Maintenance 29%, Project 22%, Capital Improvement Project 38%, Event - Wtr Fountain 7%

Water Pipeline Labor Hours



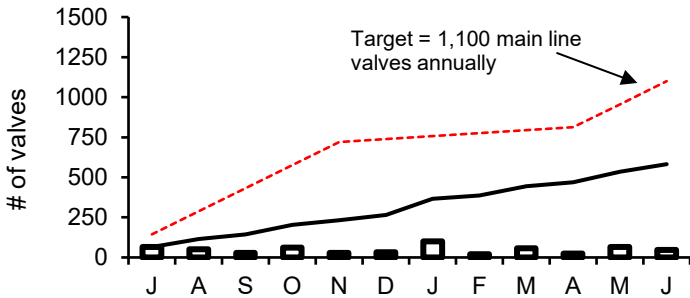
During Q4 of FY23 there was a total of 5160 hours worked. Percentage breakdown; Corrective Maintenance 82%, Preventative Maintenance 6%, Project 12%

Type of Valve	Inventory #	Operable Percentage	
		FY23 to Date	FY23 Targets
Main Line Valves	2,159	96.9%	95%
Blow-Off Valves	1,682	98.8%	95%
Air Release Valves	1,519	96.2%	95%
Control Valves	49	100.0%	95%

Key to Symbols:

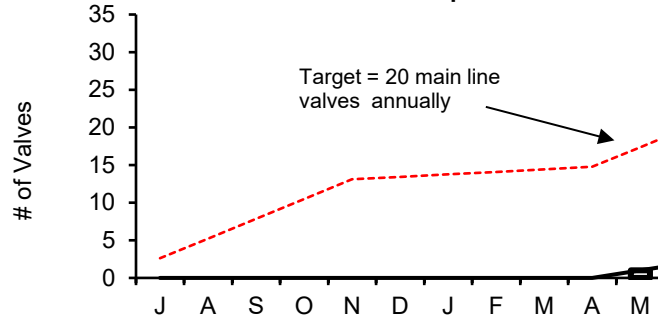
- FY23 Monthly Total
- FY23 Cumulative Total
- - - FY23 Target

Main Line Valves Exercised



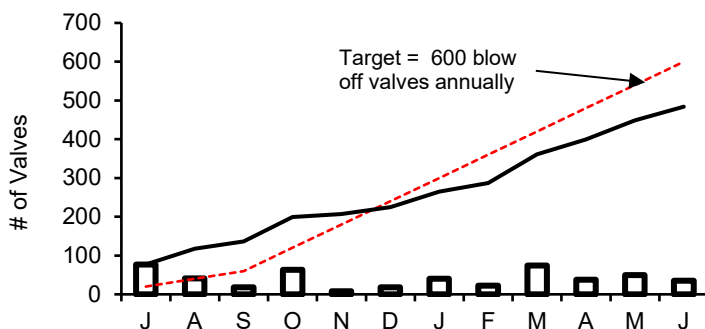
During Q4 of FY23, 138 main line valves were exercised. The total exercised for the fiscal year to date is 582. Below target due to necessary hours spent to support Capital Improvement Projects and in-house construction work.

Main Line Valves Replaced



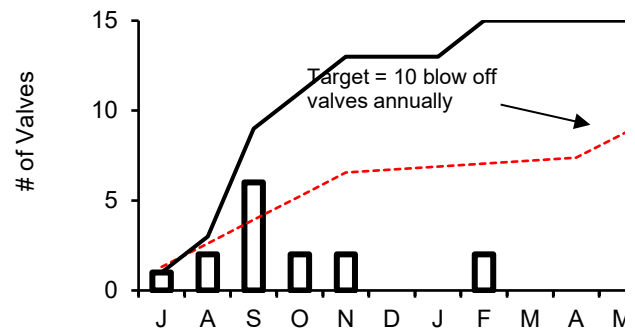
During Q4 of FY23, there were 2 main line valve replaced. The total replaced for the fiscal year to date is 2. Below target due to staff vacancies.

Blow-Off Valves Exercised



During Q4 of FY23, 123 blow off valves were exercised. The total exercised for the fiscal year to date is 484.

Blow-Off Valves Replaced



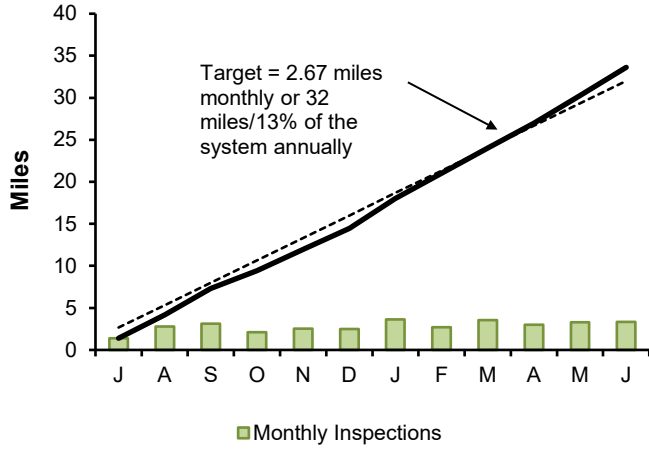
During Q4 of FY23, there were 0 blow off valves replaced. The total replaced for the fiscal year to date is 15.

Wastewater Pipeline and Structure Inspections and Maintenance

4th Quarter - FY23

Inspections

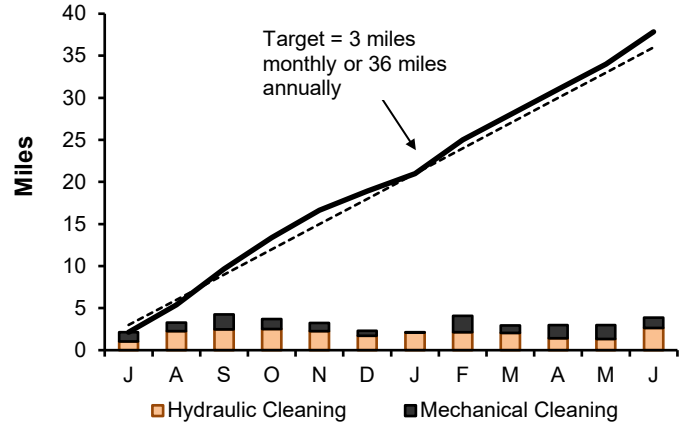
Pipeline Inspections



Staff internally inspected 9.62 miles of MWRA sewer pipe during this quarter. The year to date total is 33.62 miles. No Community Assistance was provided.

Maintenance

Pipeline Cleaning



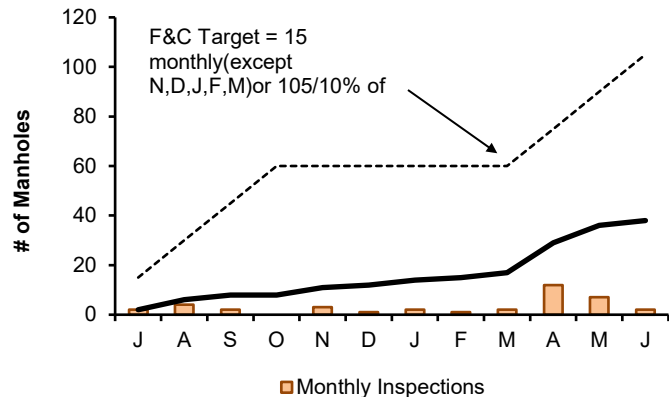
Staff cleaned 9.85 miles of MWRA sewer pipe, and removed 43 yards of grit. The year to date total is 37.85 miles. No Community Assistance was provided.

Structure Inspections



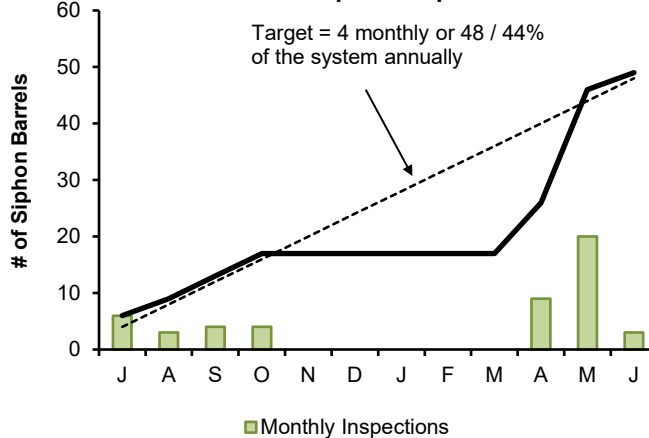
Staff inspected the 36 CSO structures and performed 108 other additional manhole/structure inspections during this quarter. The year to date total is 652 inspections.

Manhole Rehabilitation



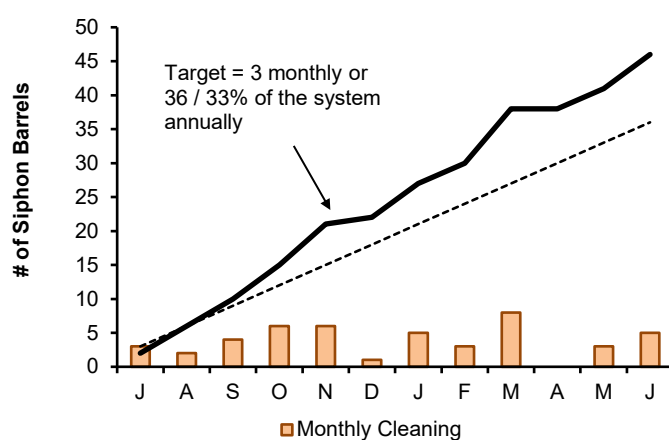
Staff replaced 21 frame and cover replacements this quarter. The year to date total is 38.

Inverted Siphon Inspections



Staff inspected 32 siphon barrels this quarter. The year total is 49 inspections.

Inverted Siphon Cleaning

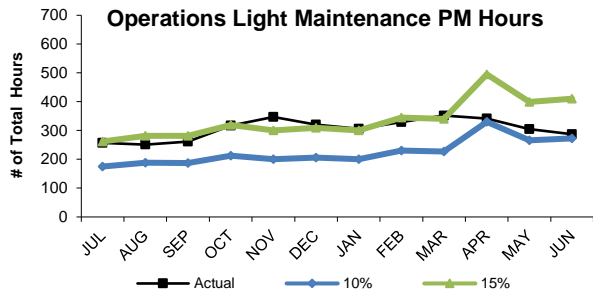


Staff cleaned 8 siphon barrels this quarter.

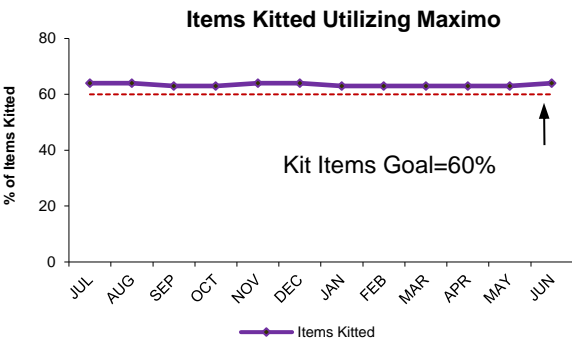
Field Operations' Metropolitan Equipment & Facility Maintenance

4th Quarter - FY23

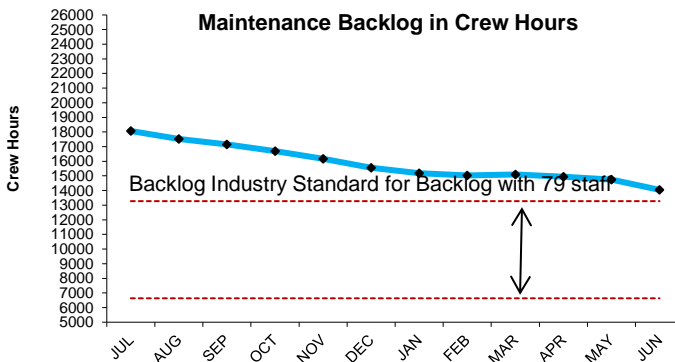
Several maintenance and productivity initiatives are in progress. The goal for the Overall PM completion and the Operator PM completion is 100%. The Operator PM and kitting initiatives frees up maintenance staff to perform corrective maintenance and project work, thus reducing maintenance spending. Backlog and overtime metrics monitor the success of these maintenance initiatives.



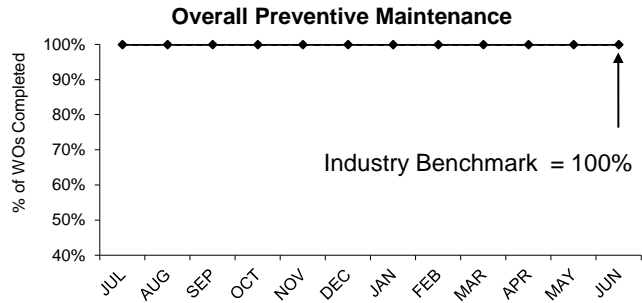
Operations staff averaged 311 hours per month of preventive maintenance during the 4th Quarter of FY23, an average of 11% of the total PM hours for the 4th Quarter, which is within the industry benchmark of 10% to 15%.



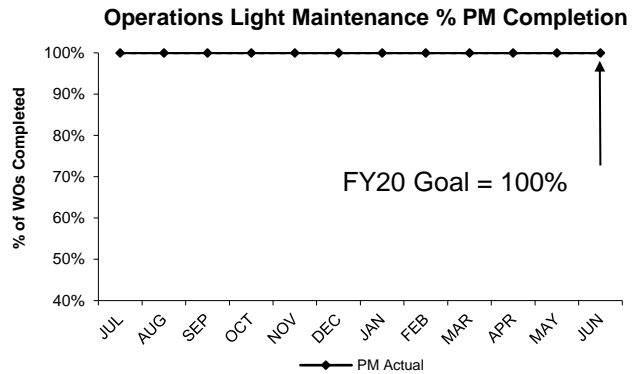
Operations' FY23 maintenance kitting goal has been set at 60% of all work orders to be kitted. Kitting is the staging of parts or material necessary to complete maintenance work. In the 4th Quarter of FY23, 63% of all applicable work orders were kitted. This resulted in more wrench time and increased productivity.



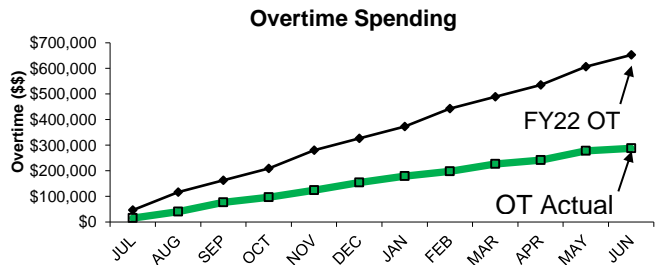
The 4th Quarter of FY23 backlog average is 14,585 hours. Management's goal is to continue to control overtime and try to get back within the industry benchmark of 6,636 to 13,275 hours. The increase is due to vacancies and several large maintenance projects.



The Field Operations Department (FOD) preventive maintenance goal for FY23 is 100% of all PM work orders. Staff completed 100% of all PM work orders in the 4th Quarter of FY23.



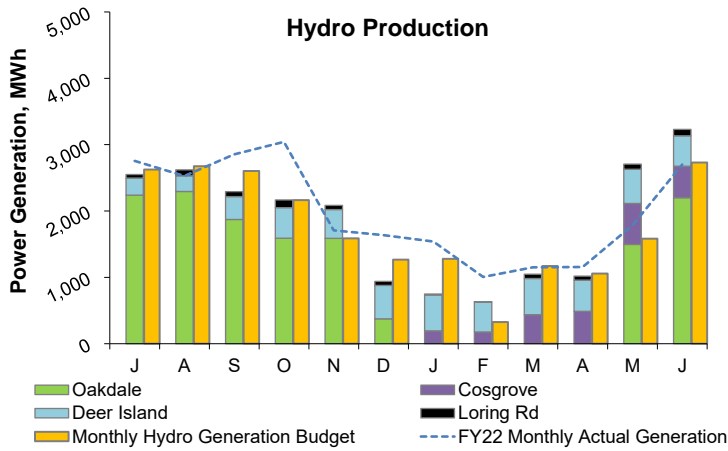
Wastewater Operations complete light maintenance PM's which frees up maintenance staff to perform corrective maintenance. Operations' FY23 PM goal is completion of 100% of all PM work orders assigned. Operations completed 100% of PM work orders in the 4th Quarter of FY23.



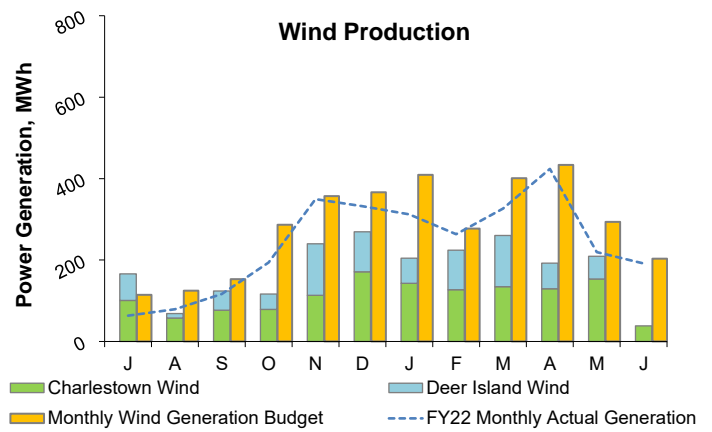
Maintenance overtime was \$33,871 under budget on average, per month, for the 4th Quarter of FY23. Overtime is used for critical maintenance repairs and wet weather events. The overtime budget through the 4th Quarter of FY23 is \$652,552. Overtime spending was \$287,826 which is \$364,726 under budget for the fiscal year.

Renewable Electricity Generation: Savings and Revenue

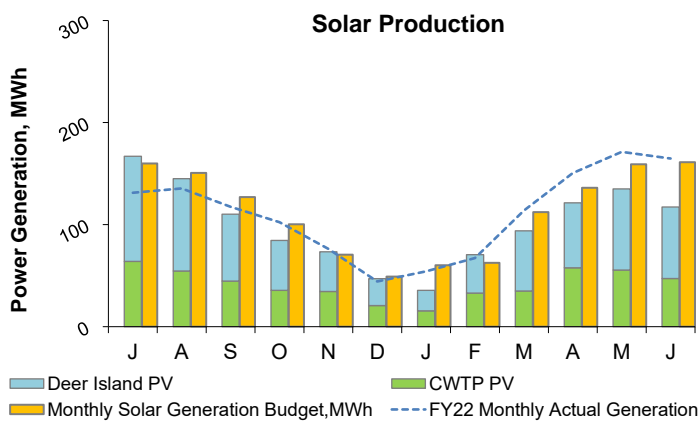
4th Quarter - FY23



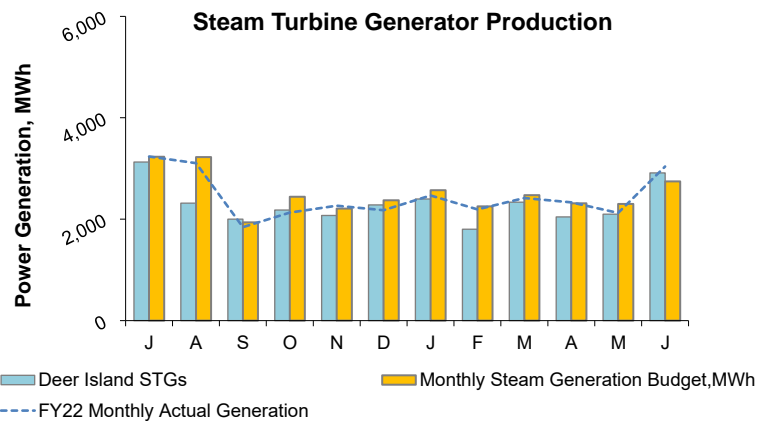
In Quarter 4, the renewable energy produced from all hydro turbines totaled 7,066 MWh; 32% above budget¹.



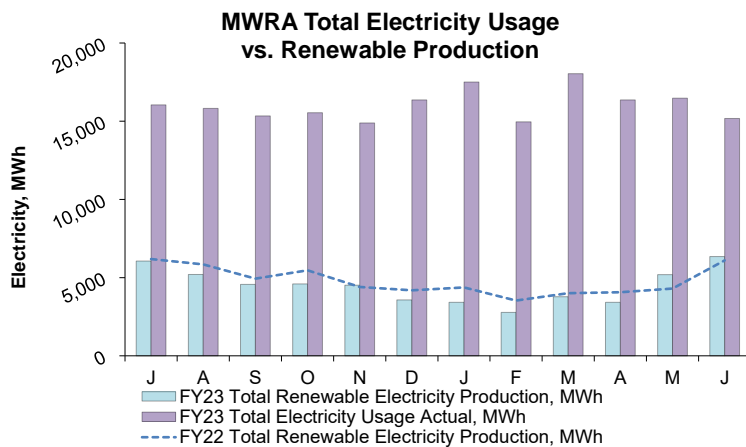
In Quarter 4, the renewable energy produced from all wind turbines totaled 440 MWh; 53% below budget¹. This shortfall is in large part due to Turbine #2 at Deer Island Treatment Plant being taken offline following the failure of Turbine #1 (which had been out of service since April 2022) on May 29, 2023.



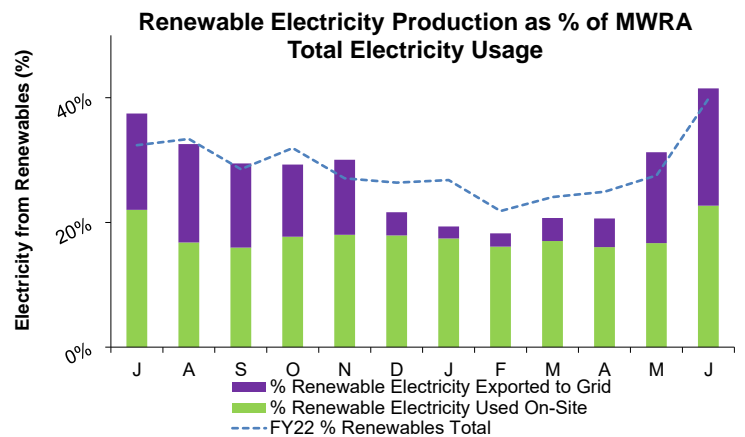
In Quarter 4, the renewable energy produced from all solar PV systems totaled 404 MWh; 12% below budget¹. The Deer Island Residuals Odor Control roof mounted array has been offline since September 11, 2022 while awaiting replacement parts. The CWTP system was also offline for several days in June, adding to the shortfall in Quarter 4.



In Quarter 4, the renewable energy produced from all steam turbine generators totaled 7,057 MWh; 6% above budget¹.



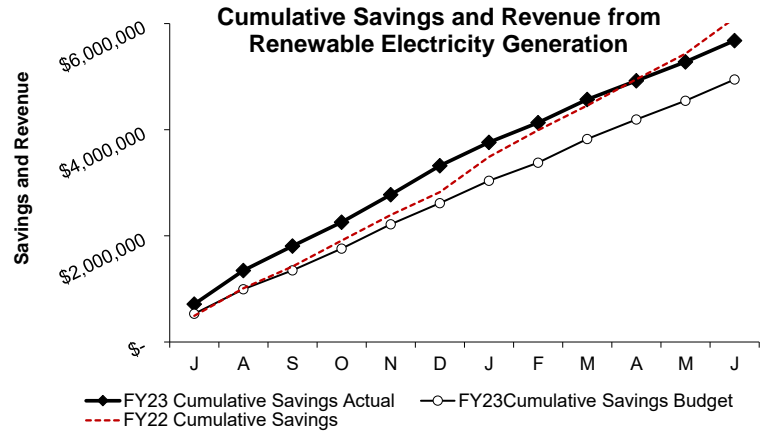
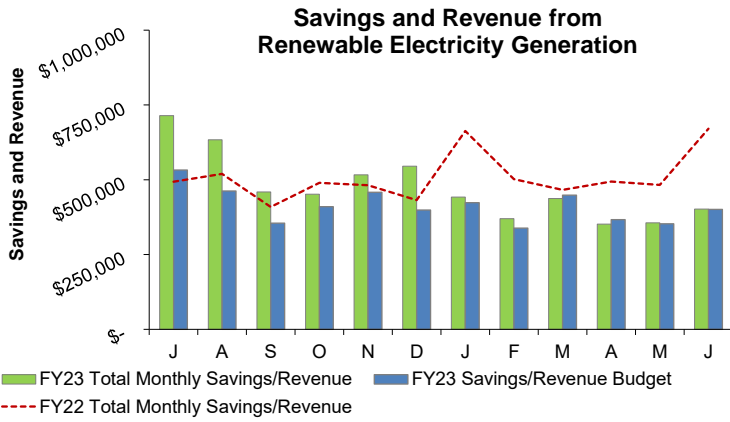
In Quarter 4, MWRA's electricity generation by renewable resources totaled 14,965 MWh, 6% above budget. MWRA's total electricity usage was approximately 48,021 MWh. Renewable resources were 31% of total usage. The MWRA total electricity usage is the sum of all electricity purchased for Deer Island and FOD plus electricity produced and used on-site at these facilities. Approximately 99% of FOD electrical accounts are accounted for by actual billing statements; minor accounts that are not tracked on a monthly basis such as meters and cathodic protection systems are estimated based on this year's budget. All renewable electricity generated on DI is used on-site (this accounts for more than 50% of MWRA renewable generation). Almost all renewable electricity generated off-DI is exported to the grid.



Notes: 1. Budget values are based on historical averages for each facility and include operational impacts due to maintenance work.

Renewable Electricity Generation: Savings and Revenue

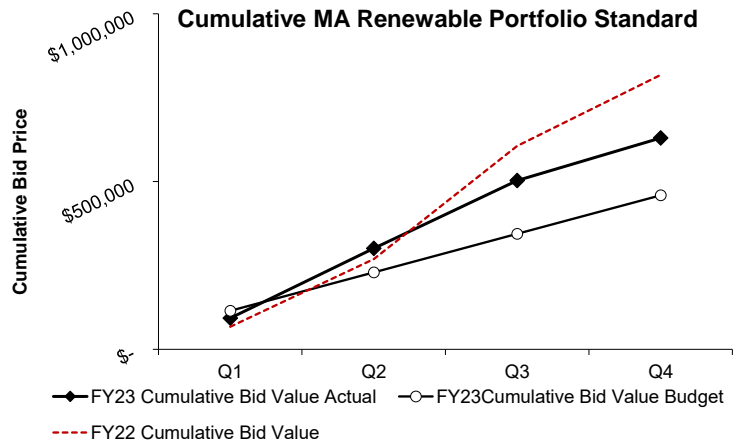
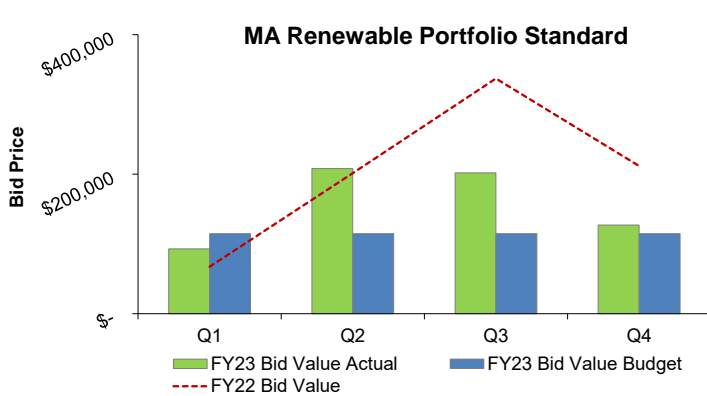
4th Quarter - FY23



Savings and revenue invoices for Oakdale Hydro have not yet been received for May and June FY23.

Savings and revenue¹ from all renewable energy sources include wind turbines, hydroelectric generators, solar panels, and steam turbines (DI). This includes savings and revenue due to electricity generation (does not include avoided fuel costs and RPS RECs).

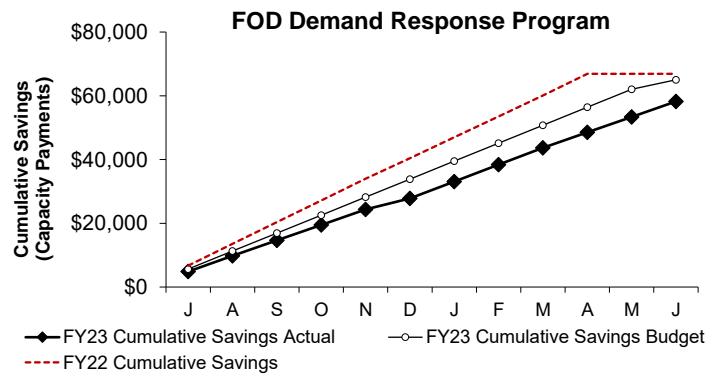
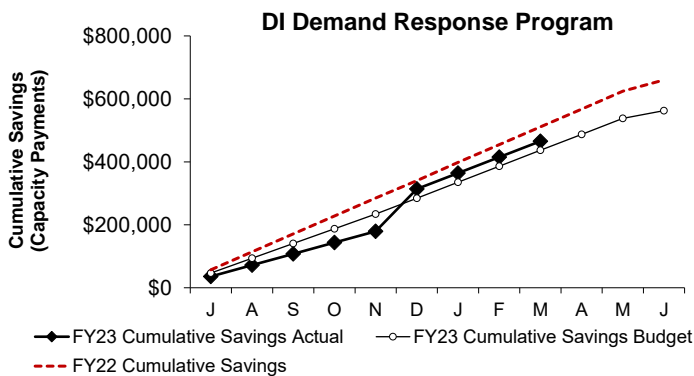
The use of DITP digester gas as a fuel source provides the benefit of both electricity generation from the steam turbine generators, and provides thermal value for heating the plant, equivalent to approximately 5 million gallons of fuel oil per year (not included in charts above).



Bids were awarded during the 4th Quarter² from MWRA's renewable energy assets; 1,614 Q4 FY23 Class I Renewable Energy Certificates (RECs); and 2,277 Q4 FY23 Class 2 RECs were sold for a total value of \$127,053 RPS revenue; which is 11% above budget³ for the Quarter.

REC values reflect the bid value on the date that bids are accepted. Cumulative bid values reflects the total value of bids received to date.

*MWRA's SRECs have transitioned to the Class 1 REC category starting in FY23.

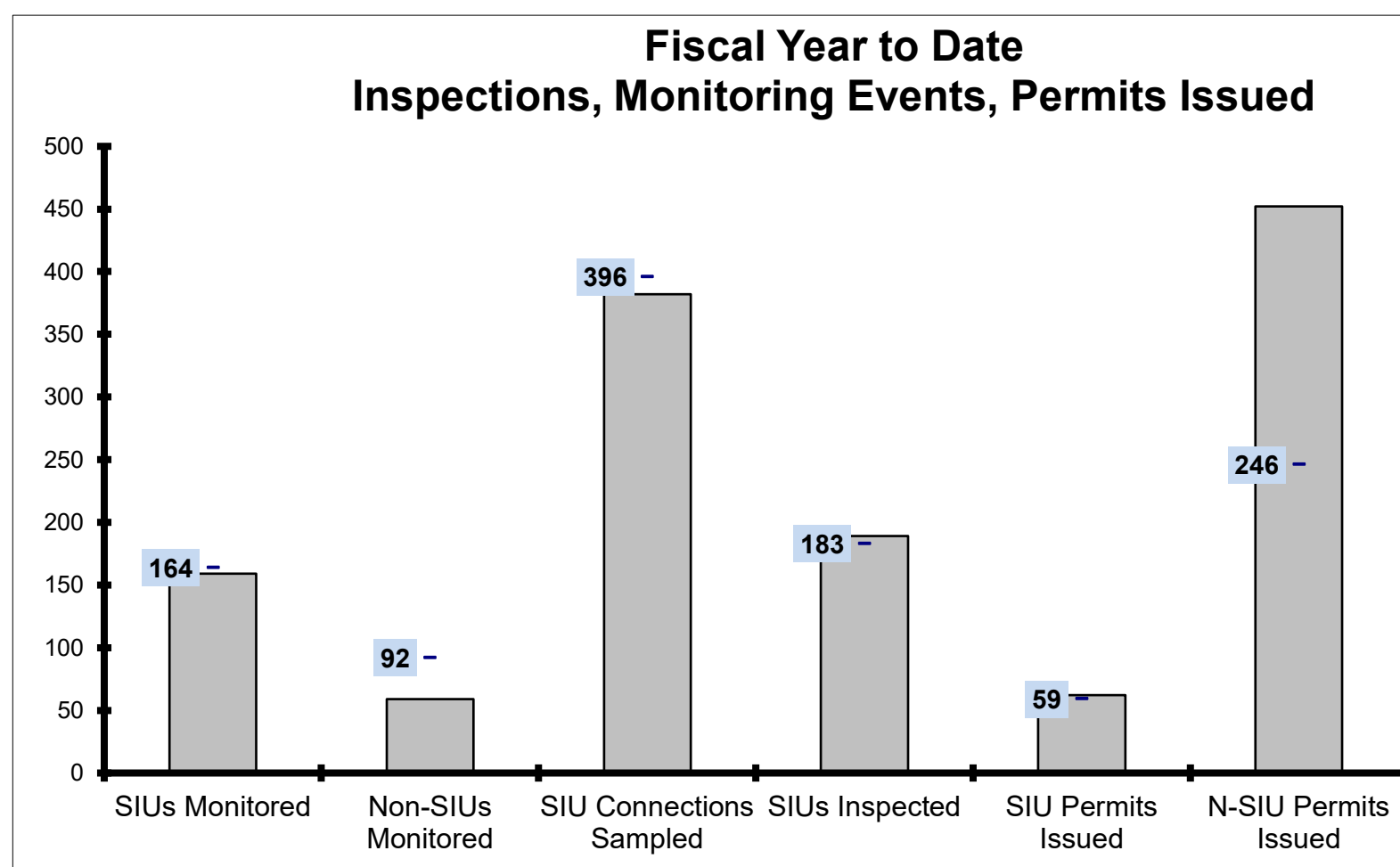


Currently Deer Island, JCWTP, Loring Rd, and Brusch participate in the ISO-New England Demand Response Programs⁴. By agreeing to reduce demand and operate the facility generators to help reduce the ISO New England grid demand during periods of high energy demand, MWRA receives monthly Capacity Payments from ISO-NE. When MWRA operates the generators during an ISO-NE called event, MWRA also receives energy payments from ISO-NE. FY23 Cumulative savings (Capacity Payments only) through March² total \$465,523 for DI and payments for FOD total \$58,233 through June².

- Notes:
1. Savings and Revenue: Savings refers to any/all renewable energy produced that is used on-site therefore saving the cost of purchasing that electricity, and revenue refers to any value of renewable energy produced that is sold to the grid.
 2. Only the actual energy prices are being reported. Therefore, some of the data lags up to 3 months due to timing of invoice receipt.
 3. Budget values are based on historical averages for each facility and include operational impacts due to maintenance work.
 4. Chelsea Creek, Columbus Park, Ward St., and Nut Island participated in the ISO Demand Response Program through May 2016, until an emissions related EPA regulatory change resulted in the disqualification of these emergency generators beginning in June 2016.

Toxic Reduction and Control

4th Quarter - FY23



EPA Required SIU Monitoring Events
for FY23: 164
YTD : **159**

Required Non-SIU Monitoring Events
for FY23: 92
YTD : **59**

SIU Connections to be Sampled
For FY23: 396
YTD: **382**

EPA Required SIU Inspections
for FY23: 183
YTD: **189**

SIU Permits due to Expire
In FY23: 59
YTD: **62**

Non-SIU Permits due to Expire
for FY23: 246
YTD: **452**

Significant Industrial Users (SIUs) are MWRA's highest priority industries due to their flow, type of industry, and/or their potential to violate limits. SIUs are defined by EPA and require a greater amount of oversight. EPA requires that all SIUs *with flow* be monitored at least once during the fiscal year.

The "SIU Monitored" data above, reflects the number of industries monitored; however, many of these industries have more than one sampling point and the "SIU Connections Sampled" data reflect samples taken from multiple sampling locations at these industries.

EPA requires MWRA to issue or renew 90 percent of SIU permits within 120 days of receipt of the application or the permit expiration date - whichever is later. EPA also requires the remaining 10 percent of SIU permits to be issued within 180 days.

	Number of Days to Issue a Permit						Permits Issued	
	0 to 120		121 to 180		181 or more		SIU	Non-SIU
	SIU	Non-SIU	SIU	Non-SIU	SIU	Non-SIU		
Jul	1	9	0	3	0	8	1	20
Aug	1	38	1	8	1	18	3	64
Sep	5	14	0	5	0	25	5	44
Oct	5	12	0	3	0	12	5	27
Nov	2	31	0	13	0	16	2	60
Dec	4	31	1	7	1	31	6	69
Jan	18	25	1	5	0	10	19	40
Feb	0	2	0	0	0	15	0	17
Mar	10	30	0	4	0	4	10	38
Apr	2	30	0	0	0	5	2	35
May	5	19	0	0	1	6	6	25
Jun	3	9	0	1	0	3	3	13
% YTD	90%	55%	5%	11%	5%	34%	62	452

TRAC's annual monitoring and inspection goals are set at the beginning of each fiscal year but they can fluctuate due to the actual number of SIUs. *In FY23 there were 10 status changes of which 6 were changed from SIU to Non-SIU and 4 were changed to SIUs. There was 1 new SIU permit issued and 1 is now inactive.* In addition to the Annual SIU inspections required under TRAC's EPA approved Industrial Pretreatment Program, 39 other inspections were completed, including for enforcement, permit renewal, follow up, temporary construction dewatering sites, group/combined permit audits, spot, sampling locations, visit only and out of business facility. Monitoring of SIUs and Non-SIUs is dynamic for several reasons, including: newly permitted facilities; sample site changes requiring a permit change; changes in operations necessitating a change in SIU designation; non-discharging industries; a partial sample event is counted as an event even though not enough sample was taken due to the discharge rate at the time; and sometimes increased/decreased inspections lead to permit category changes requiring additional monitoring

This is the end of the 4th quarter of the MWRA fiscal year, FY23.

In the 4th quarter, of the 84 permits issued, there were 11 SIUs. All but 1 of the SIUs were issued within the 120-day timeframe with 1 issued beyond the 120-day timeline.

At the end of the FY23 fiscal year, 514 permits have been issued, 62 were SIUs.

90% of the SIU permits were issued within the 120-day timeframe, with 5% issued beyond 180 days. This meets the EPA benchmark requirement.

There were 452 non-SIU permits issued, of which 202 were issued beyond the 120-day timeline.

Reasons for late issuances continued to include:

- staffing due to turnover and vacancies
- waiting for critical data needed for permit processing
- delays relating to new start-up operations and
- the late payment of the relevant permit charges.

In FY23, there were 226 completely new permits issued: 2 SIUs and 223 N-SIUs among which were 25 Cat 02s, 1 cat 01, 2 One-Time Discharge, 74 Low Flow Permits, 105 Dental, 2 Food Processing, 1-Septage and 14-Construction dewatering.

Western Water Operations and Maintenance

- Carroll Water Treatment Plant – Staff installed duct insulation on the HVAC units in the PT building near the lead pipe rigs to prevent condensation. Plant operations staff continue support construction projects for chemical feed updates and SCADA controls upgrade.
- Brutsch Water Treatment Facility – Staff replaced actuator on the primary flow control sleeve valve for the Chicopee Valley Aqueduct as well as cleaned and inspected the internal parts of the sleeve valve while it was out of service. Chicopee Valley Aqueduct back pressure sustaining valves adjusted to normal summer flow conditions.
- Wachusett Dam and Bastion Building – Staff installed stop logs in the upper gatehouse bay 1 as well as dewatered the lower gate house cells 1, 2 and 3 to support the pipe replacement project. Staff participated in the final walk through for the Bastion rebuild project as well as operated Crest Gate and angle pattern release valve for flood control purposes.
- Reservoir Operations, Misc. - Reservoirs Terrestrial Spill Response Training held at Wachusett watershed on 06.07.23. New Wachusett Spill Response Trailer was fitted out by Western Carpenters and deployed to Reservoir. Staff responded to an SSO at Wachusett Reservoir on 06.28.23.

Operations Engineering

- Staff continued to provide technical support for Design and Construction Contracts including; Low System PRV Upgrades, Columbus Park and Ward St Headworks, Upgrades, Nut Island Odor Control Improvements, Hayes Pump Station Upgrades, NEH improvements, WASM3 CP1 and CP2, Section 101, Storage Tank Improvements, Section 23, 24 and 47 Rehabilitation, Shaft Improvements, IHS Improvement, Hydraulic Model upgrades, BWRPS Upgrades and Section 89 Replacement.

- Staff continued to monitor the wet scrubber system and continued supporting the development of the facility manual and training.
- Hydraulic Model Upgrades: Staff continued to provide an in-depth review of the draft model and review of calibrations.
- Staff continued to support Pipeline and Valve Programs with some of the following activities: Operation Shutdown Plans, Exercise Schedule Packages and Disinfection Plans and Permitting;
- Staff provided support for system expansion to the north and south and to the Metro communities.
- Staff have provided support to the city of Newton for the disinfection and reactivation of their covered storage tank.
- Provide daily facility flow data to support Biobot Study.
- Staff continued to support the lead loop study at CWTP
- Staff assisted in several wet weather storm events, compiled and finalized storm reports, monitored and reported on CSO activation durations and volumes and provided follow up on operational and SCADA issues.
- Staff performed a lead role in the fluoride tracer study.

SCADA

- Water System: Continued technical support for JCWTP PLC replacement project; configured and hardened SCADA Operating system; continued work on network management improvements in the JCWTP SCADA system; supported Brutsch sodium hypochlorite system project; supported fluoride controller installation.
- Wastewater system: Continued work on Ward/Columbus, Hayes P.S. Improvements, Braintree/Weymouth Pump Station Improvements Project, and Fuel Tank Replacement Project; continued work on new limit switch system for Chelsea Creek influent gates.

TRAC

Compliance and Enforcement

- TRAC issued 12 Notices of Noncompliance, 31 Notices of Violation, 2 Return to Permit Letters, 3

Extension Letters, and 1 Penalty Assessment Notice in the amount of \$40,000.00

Inspections and Permitting

- TRAC issued a total of 74 MWRA 8(m) Permits allowing companies to work within an easement or other property interest held by the Authority. Permits issued this quarter were issued in an average of 65 days from the date the application for 8(m) permit was received by the MWRA.
- TRAC monitored the septage receiving sites a total of 30 times. Staff conducted inspection at 81 new construction gasoline/oil separators and 203 existing gasoline/oil separators.
- TRAC staff conducted 18 Annual SIU Inspections and 218 other inspections.
- 81 MWRA Sewer Use Discharge Permits (Permits) were issued and/or renewed to its sewer users. One permit was issued and/or renewed in the Clinton Service Area.

Environmental Quality-Water

- **Algae:** DCR and MWRA staff continued to collect algae samples at Wachusett and Quabbin Reservoirs. Low levels of nuisance algae were identified, but all were well below levels of concern.

Community & In-House Support

- Community Support: On April 7, staff provided coliform sampler training to 34 Operations and Enforcement staff at Boston Water and Sewer Commission.
- Sampling & Analysis: Throughout the quarter, staff conducted sampling at six sites at WASM-4 in Newton and the new Quabbin Administration well and pipeline. The CWTP lead pipe-rig study sampling continued and samples were collected approximately every 2 weeks.
- Projects: Staff worked with CWTP, Operations Engineering, and E&C staff to plan and execute a fluoride tracer study on June 12. EnQual Water trained all field volunteers on portable fluoride meter use and the sampling plan. Field and

laboratory fluoride testing performed and hydraulic model revised and updated based on system configuration and demands during the study.

Data Management: Staff continued to work with Planning to review all fully and partially-served community draft annual Consumer Confidence Reports.

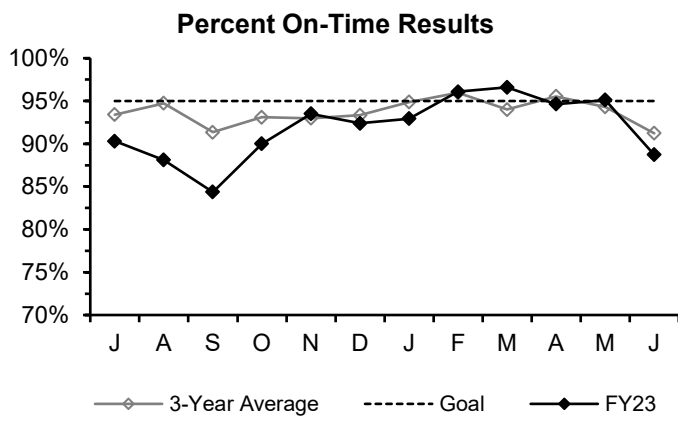
Environmental Quality-Wastewater

- Ambient Monitoring: The spring and early summer water column surveys and the annual flounder monitoring survey were completed. A summary report of monitoring in Cape Cod Bay for 2020-2022 has been completed and posted on our webpage.
- Harbor/CSO Receiving Water Monitoring: Biweekly harbor monitoring continues, along with seasonal CSO receiving water sampling.
- Permitting and Compliance Reporting: Submitted monthly and quarterly discharge monitoring reports, annual Clinton collection system O&M report, and as-needed notifications of CSOs and blending. The new Clinton permit became effective April 1, 2023. Staff submitted comments to EPA on new requirements seen in draft permits, and began preparing comments on the draft permit for the Deer Island Treatment Plant, which was issued on May 31. Submitted revised final plan for CSO notifications as required by MassDEP, and installed signs at public access areas as required by that plan.
- Cooperation with other agencies: Continued follow up communication with metro Boston CSO permittees about the new sewage notification regulation, and printed and distributed signs for public access locations. Discussed new EPA permit requirements for climate-change planning with NACWA and with other MA wastewater utilities. Staff attended meetings and conferences, including the Massachusetts Bays Partnership, the Stellwagen Bank National Marine Sanctuary Advisory Council, and the Stone Living Lab conference on Nature-Based Coastal Resilience in Urban Settings.

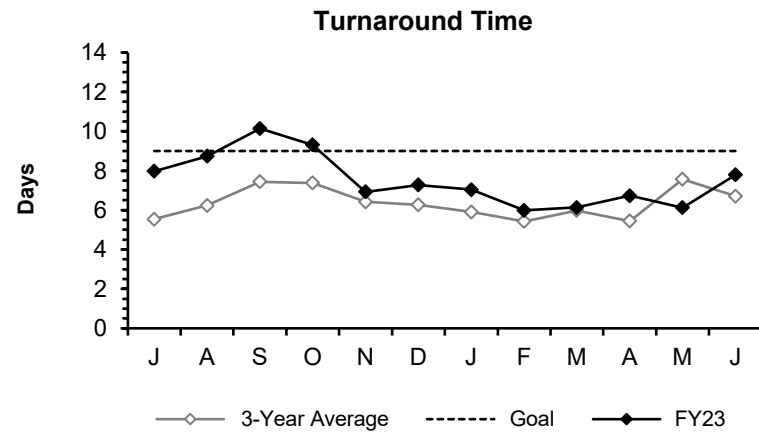
Laboratory Services

4th Quarter - FY23

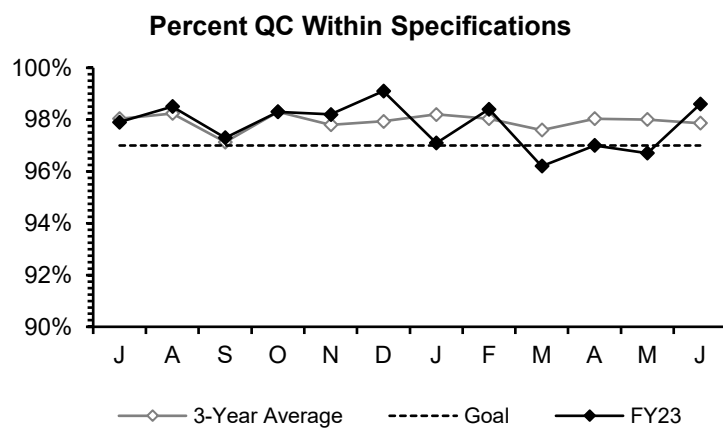
Laboratory Services supports the laboratory sampling, testing, and consulting needs of various client groups primarily in the Operations Division. This includes drinking water transmission and treatment, wastewater collection and treatment, wastewater residuals management, industrial-pretreatment monitoring, and environmental quality.



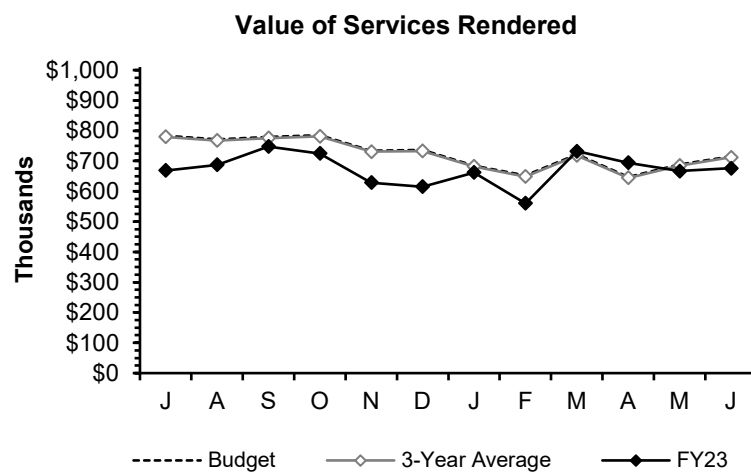
The Percent On-Time measurement assesses performance against internal client due dates. These due dates are shorter than the compliance reporting requirements to allow for internal review of the data.



Turnaround Time measures the average time from sample receipt to sample completion.



Percent QC Within Specifications measures the fraction of Quality Control tests that met required limits during the month.



Value of Services Rendered models the true cost of the lab work performed, including fringe benefits that are not a part of the Laboratory Services budget.

Performance Summary: Only the Turnaround Time goals were met for every month in the 4th quarter. The other measures missed their goals for one or two months during the 4th quarter. This was largely due to continued staffing vacancies.

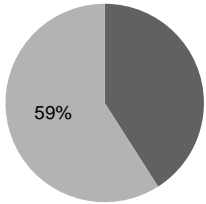
School Lead Program: MWRA's lab completed 248 lead and copper tests from 66 schools and childcare facilities in 31 communities during FY23. Since 2016, MWRA's Laboratory has conducted over 40,000 tests from 560 schools and daycares in 44 communities. We have also completed 864 home lead tests under the DPH sampling program since 2017. Overall MWRA's lab completed 2629 drinking water lead and copper tests in FY23.

CONSTRUCTION PROGRAMS

Projects In Construction

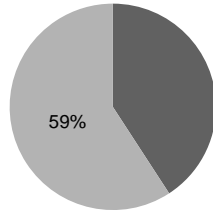
4th Quarter – FY23

Cost



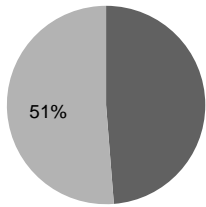
■ Amount Remaining
■ Billed to Date

Time



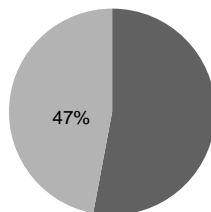
■ Time Remaining
■ Time Expended

Cost



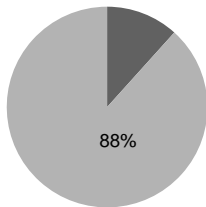
■ Amount Remaining
■ Billed to Date

Time



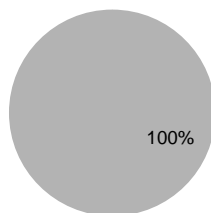
■ Time Remaining
■ Time Expended

Cost



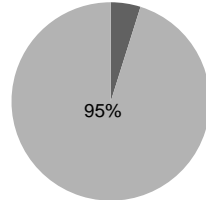
■ Amount Remaining
■ Billed to Date

Time



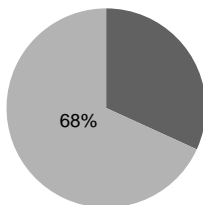
■ Time Remaining
■ Time Expended

Cost



■ Amount Remaining
■ Billed to Date

Time



■ Time Remaining
■ Time Expended

Carroll Water Treatment Plant SCADA Improvements

Project Summary: The current SCADA control equipment has reached the end of its useful life, and future vendor support for the installed PLC base is no longer guaranteed. This contract includes the supply and installation of replacement instrumentation panels, PLC's, UPS backup power, fiber-optic communication network, wiring between the existing panels, and new equipment and refurbishment of the operator control room. In addition, a new server room equipped with HVAC and fire suppression is being constructed to house redundant computer hardware supporting active and backup SCADA systems.

Contract Amount: \$13,160,147.52

Contract Duration: 1,127 Days

Notice to Proceed: 1-Sep-21

Contract Completion: 2-Oct-24

Section 89 Replacement Pipeline

Project Summary: This project will include replacement of a 10,500-foot portion of PCCP with class IV reinforcing wire, line valves and appurtenances, and abandonment of the 118-year old, 24-inch diameter cast iron Section 29 pipeline.

Contract Amount: \$32,869,000

Contract Duration: 1,475 Days

Notice to Proceed: 5-Aug-21

Contract Completion: 19-Aug-25

Low Service PRV Improvements

Project Summary: This project will demolish the existing Nonantum Road and Mystic Valley Parkway PRV vault structures, including four 24-inch PRVs and appurtenances, and construct new, larger cast-in-place vaults. At Mystic Valley Parkway, two 42-inch PRVs and at Nonantum Road two 30-inch PRVs, isolation valves, piping, and other appurtenances will be installed. Additionally, a new master meter will be constructed at the Mystic Valley Parkway pressure reducing valves and the existing master meter located near the Nonantum Road pressure reducing valves will be upgraded to accommodate the increased flow.

Contract Amount: \$12,088,167.10

Contract Duration: 720 Days

Notice to Proceed: 14-Jul-21

Contract Completion: 4-Jul-23

Rehabilitation of WASM 3

Project Summary: This construction contract includes rehabilitation of approximately 13,800 feet of 56-inch and 60-inch diameter water main in Arlington, Somerville and Medford. The rehabilitation consists of cleaning and internal cement mortar lining the pipe and adding valves for better operational flexibility. In addition, two old 36-inch valves are being removed to eliminate reduced sections of pipe..

Contract Amount: \$20,175,619.6

Contract Duration: 1,383 Days

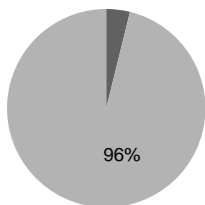
Notice to Proceed: 28-Oct-20

Contract Completion: 11-Aug-24

Projects In Construction

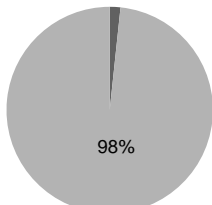
4th Quarter – FY23

Cost



■ Amount Remaining
■ Billed to Date

Time



■ Time Remaining
■ Time Expended

Nut Island Odor Control and HVAC

Project Summary: This project will provide upgrades to the odor control system, heating, ventilation and air conditioning system and other equipment. Most of the equipment is at or near the end of its useful life and replacement is required to ensure the continued reliability of this critical facility. This contract will also provide reconfiguration of ductwork serving the odor control system to expand the system's operational flexibility, and will improve surface access into the below-grade odor control room, the need for which was made evident during the January 2016 fire.

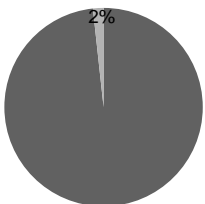
Contract Amount: \$60,444,537.28

Contract Duration: 1,084 Days

Notice to Proceed: 12-Feb-20

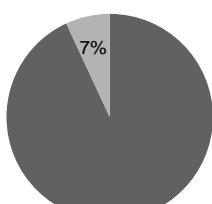
Contract Completion: 10-Jun-23

Cost



■ Amount Remaining
■ Billed to Date

Time



■ Time Remaining
■ Time Expended

Clarifier Rehabilitation Phase 2

Project Summary: This project involves the replacement of the original remaining scum and sludge equipment, as follows: over 400 Primary Clarifier influent, effluent, and dewatering gates; 384 primary effluent cross channel gate actuators; approximately 450 secondary scum influent gates and actuators; wear strip rails, 768 head shaft and idler sprockets; over 3000 linear feet of influent channel aerations piping systems; 360 head shafts collector drives and chains; return sludge line vent piping; approximately 400 concrete and aluminum hatches and associated electrical and control systems.

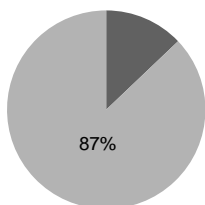
Contract Amount: \$289,359,690

Contract Duration: 1620 Days

Notice to Proceed: 10-Mar-23

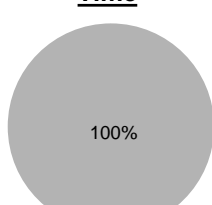
Contract Completion: 16-Aug-27

Cost



■ Amount Remaining
■ Billed to Date

Time



■ Time Remaining
■ Time Expended

DITP Odor Control Damper Replacement

Project Summary: This project includes replacing three existing 30-inch diameter steel dampers with stainless steel dampers, surface preparation and coatings application on the existing 30-inch diameter ductile iron pipe. The damper and piping are part of the odor control system that serves the sludge wet wells in the centrifuge building at the Deer Island Treatment Plant.

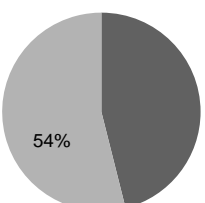
Contract Amount: \$539,701

Contract Duration: 455 Days

Notice to Proceed: 3-Feb-22

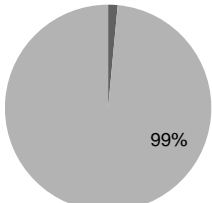
Contract Completion: 4-May-23

Cost



■ Amount Remaining
■ Billed to Date

Time



■ Time Remaining
■ Time Expended

Clinton Screw Pump Replacement

Project Summary: This project involves demolishing and replacing the three screw pumps and motors, replacing three existing 72-inch by 60-inch pump isolation slide gates and associated electrical and controls; providing a temporary bypass pumping system to ensure the plant's pumping capacity is maintained during the construction phase; and providing concrete remediation in the pump channels.

Contract Amount: \$3,452,985

Contract Duration: 540 Days

Notice to Proceed: 14-Jan-22

Contract Completion: 8-Jul-23

CSO CONTROL PROGRAM

4th Quarter – FY23

Overview

In compliance with milestones in the Federal District Court Order, all 35 projects in the CSO Long-Term Control Plan (LTCP) were complete as of December 2015. Subsequently, MWRA completed a multi-year CSO post-construction monitoring program and performance assessment, filing the Final CSO Post Construction Monitoring Program and Performance Assessment Report with the Court and submitted copies to EPA and DEP in December 2021. April 2023 Annual report shows an 88% reduction in CSO in a typical year, from 3.3 billion gallons to 396 million gallons, with 72 of 86 outfalls meeting the LTCP goals for CSO activation frequency and volume. MWRA and its member CSO communities have already completed construction at BOS003, BOS004 and CHE008 and are moving forward with plans to bring an additional 7 CSOs in line with the LTCP goals. With respect to the remaining 6 challenging CSO outfalls, MWRA and its CSO Consultant (AECOM) continue to investigate alternative to move closer to LTCP goals.

MWRA CSO Performance Assessment

- In November 2017, MWRA signed a contract for CSO Post-Construction Monitoring and Performance Assessment with AECOM Technical Services, Inc. The contract includes CSO inspections, overflow metering, hydraulic modeling, system performance assessments and water quality impact assessments, culminating in the submission of a report to EPA and MassDEP in December 2021 verifying whether the LTCP goals are attained.
- AECOM continues to support efforts to advance project identified to meet performance goals at 8 of the 16 CSOs that didn't meet LTCP goals, evaluate alternatives for the remaining 6 challenging sites, and predict and report on annual CSO discharges. Two of those 16 outfalls are now meeting LTCP goals (BOS014 and BOS003) and the post construction performance of CHE008 is being evaluated.

Court Ordered Levels of CSO Control

Progress on the work to comply with the court ordered levels of CSO control is discussed with the EPA/MassDEP at progress meetings held quarterly. Most recent quarterly meeting was on **6/22/23** and the next meeting is scheduled for **9/28/23**

Ongoing Projects as of December 31, 2022

- *East Boston CSO Control*: As part of the East Boston CSO a FAA/MOU was executed in June 2021 for \$2.1M, BWSC design and construction. Work at BOS014, BOS003 is complete and are now meeting LTCP goals. Sewer separations is expected to be completed in fall 2023. Plans for Phase 4 sewer separation with five new contracts starting in 2023 (through 2028) will result in most of East Boston being separated.
- *CHE008 Pipe Replacement – Enlarging the CHE008 regulator connection is now complete (July 2023).*
- *Somerville Marginal New Pipe Connection* came out of the variance optimization study that recommended adding a new pipe from the facility's CSO influent conduit to the interceptor with an added

control gate. The \$1.2M (est.) construction project is expected to be completed by December 2024.

- *Fort Point Channel and Mystic Confluence* - BOS062, BOS065, BOS070 DBC and BOS017: FAA/MOU established to design and construct improvement at these 4 CSOs. 90% design submitted August with an updated cost estimate of \$7.2M including a 5% contingency. Anticipate completion of construction by December 2024.

CSO variances

As part of MWRA's CSO Control Program, MassDEP has issued a series of multi-year CSO variances that allow MWRA, Cambridge, and Somerville to continue to have limited CSO discharges to Alewife Brook and the Upper Mystic River, as well as the Charles River lower basin. The most recent variances, issued in 2019, require the development of Updated LTCPs for the CSO outfalls that each entity owns and operates that may discharge to the corresponding waterbody. The Updated LTCPs must include a description of the existing level of CSO control, an evaluation of the costs and the performance and water quality improvements achieved by additional CSO control alternatives, a public participation plan, and an affordability analysis.

- o MassDEP and EPA conditionally approved MWRA's Updated CSO Control Plan Scope of Work on **5/11/2022**. The Authority is currently working closely with the CSO communities of Cambridge and Somerville to develop these plans over the upcoming years.
- o A request to extend the deadline for completion of the Updated CSO Control Plan by 36 months was submitted on 9/22/22. In May 2023, MassDEP and EPA both approved this extension and instructed MWRA, Cambridge, and Somerville to proceed in accordance with the requested revised schedule.
- o As identified in the variance the progress is reported at monthly meetings with EPA/MassDEP. The last meeting was on **8/9/23** and the next meeting is scheduled for **9/13/23**. Key elements of the Updated CSO Control Plan are discussed including the development of an Updated Typical year which includes climate change and the development of a Unified Hydraulic Model.
- o The 2nd of 8 planned meetings was held on 12/15/22. **The next Public Meeting is scheduled for late fall of 2023.**
- o Development and Submittal of Studies as required under variance included the following:
 - Alewife PS Optimization Evaluation was submitted on 4/27/2021
 - Somerville Marginal CSO Reduction, Study and Preliminary Design was submitted on 12/27/2021
 - Alewife Brook and Charles River System Optimization Evaluation was submitted on 12/28/2022
 - MWRA CSO Variances Additional System Optimization Measures Report was submitted on 1/31/2023.
- o Bi-annual meeting with CLF/Watershed groups held on 7/12/2023 providing an update on the 16 sites not currently meeting the LTCP.

CIP Expenditures

4th Quarter – FY23

FY23 Capital Improvement Program Expenditure Variances through June by Program - (\$ in thousands)				
Program	FY23 Budget Through June	FY23 Actual Through June	Variance Amount	Variance Percent
Wastewater	\$109,752	\$57,630	(\$52,122)	-47%
Waterworks	\$133,079	\$89,470	(\$43,609)	-32%
Business and Operations Support	\$35,222	\$24,079	(\$11,144)	-31%
Total	\$278,053	\$171,178	(\$106,875)	-38%

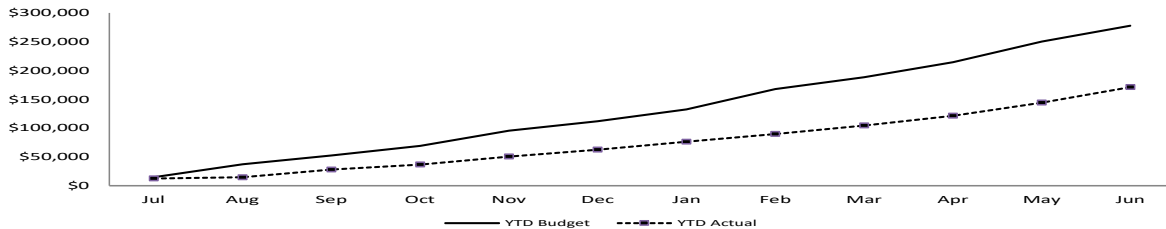
Wastewater:

- Underspending due to timing of grant and loan distributions for the I/I Local Financial Assistance program
- Updated schedules for Primary & Secondary Clarifier Rehab Phase 2 Construction, DITP Roof Replacement, DITP Motor Control Center & Switchgear Replacement - Construction & Design/ESDC/REI, Dystor Membrane Replacements, Digester Cover Replacement, and Fire Alarm System Replacement – Construction
- Completion of some design and inspection tasks were later than anticipated for Ward Street and Columbus Park Headworks Upgrades Design/Construction Administration
- Contractor behind schedule for the Nut Island Odor Control and HVAC Improvements
- Timing of work for South System Pump Station VFD Replacement Design/ESDC/REI

Water:

- Underspending in Waterworks was due to timing of community distributions for the Water Loan program, as well as timing of work for Geotechnical Support Services
- Long lead time for piping materials and permit issues for Waltham Water Pipeline Construction and REI
- Long lead time for materials for Wachusett Lower Gatehouse Pipe & Boiler Replacement - Construction
- Updated schedules for Quabbin Maintenance Garage/Wash Bay/Storage Building, and CP-2 Shaft 5 Construction
- Scope changes for Cathodic Protection Shafts E, L, N & W
- This underspending was partially offset by contractor progress for NIH Section 89 & 29 Replacement, and CP-1 NEH Improvements, and timing of consultant work for Metropolitan Tunnel Redundancy Preliminary Design & Massachusetts Environmental Policy Act Review

Budget vs. Actual CIP Expenditures (\$ in thousands)
Total FY23 CIP Budget of \$278,053



Construction Fund Management

All payments to support the capital program are made from the Construction Fund. Sources of fund in-flows include bond proceeds, commercial paper, SRF reimbursements, loan repayments by municipalities, and current revenue. Accurate estimates of cash withdrawals and grant payments (both of which are derived from CIP spending projections) facilitate planning for future borrowings and maintaining an appropriate construction fund balance.

Cash Balance as of 6/30/23	\$150.1 million
Unused capacity under the debt cap:	\$2.1 billion
Estimated date for exhausting construction fund without new borrowing:	OCT-23
Estimated date for debt cap increase to support new borrowing:	Not anticipated at this time
Commercial paper/Revolving loan outstanding:	\$55 million
Commercial paper capacity / Revolving Loan	\$195 million
Budgeted FY23 Cash Flow Expectancy*:	\$248 million

* Cash based spending is discounted for construction retainage.

DRINKING WATER QUALITY AND SUPPLY

Source Water – Microbial Results and UV Absorbance

4th Quarter – FY23

Source Water – Microbial Results

Total coliform bacteria are monitored in both source and treated water to provide an indication of overall bacteriological activity. Most coliforms are harmless. However, fecal coliforms, a subclass of the coliform group, are identified by their growth at temperatures comparable to those in the intestinal tract of mammals. They act as indicators of possible fecal contamination. The Surface Water Treatment Rule for unfiltered water supplies allows for no more than 10% of source water samples prior to disinfection over any six-month period to have more than 20 fecal coliforms per 100mL.

Sample Site: Quabbin Reservoir

Quabbin Reservoir water is sampled at the William A. Brutsch Water Treatment Facility raw water tap before being treated and entering the CVA system.

All samples collected during the quarter were below 20 cfu/100mL. **For the current six-month period, 0.0% of the samples have exceeded a count of 20 cfu/100mL.**

Sample Site: Wachusett Reservoir

Wachusett Reservoir water is sampled at the CWTP raw water tap in Marlborough before being treated and entering the MetroWest/Metropolitan Boston systems.

In the wintertime when smaller water bodies near Wachusett Reservoir freeze up, many waterfowl will roost in the main body of the reservoir - which freezes later. This increased bird activity tends to increase fecal coliform counts. DCR has an active bird harassment program to move the birds away from the intake area.

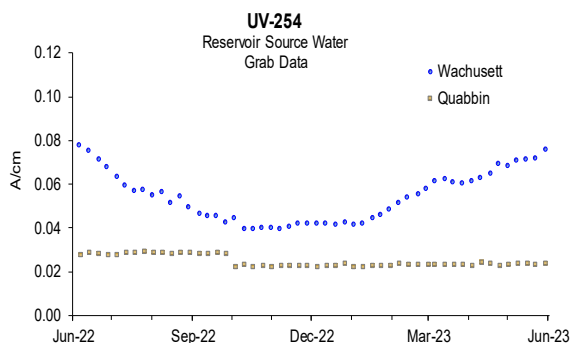
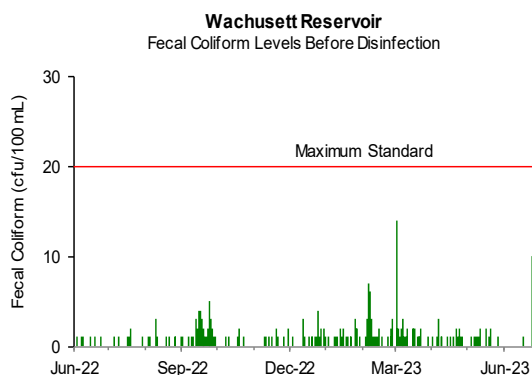
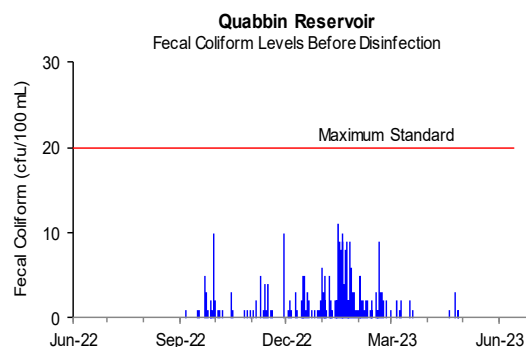
All samples collected during the 4th Quarter were below 20 cfu/100mL. **For the current six-month period, 0.0% of the samples exceeded a count of 20 cfu/100mL.**

Source Water – UV Absorbance

UV Absorbance at 254nm wavelength (UV-254), is a measure of the amount and reactivity of natural organic material in source water. Higher UV-254 levels cause increased ozone and chlorine demand resulting in the need for higher ozone and chlorine doses, and can increase the level of disinfection by-products. UV-254 is impacted by tributary flows, water age, sunlight and other factors.

Quabbin Reservoir UV-254 levels averaged 0.023 A/cm for the quarter.

Wachusett Reservoir UV-254 levels averaged 0.069 A/cm for the quarter.



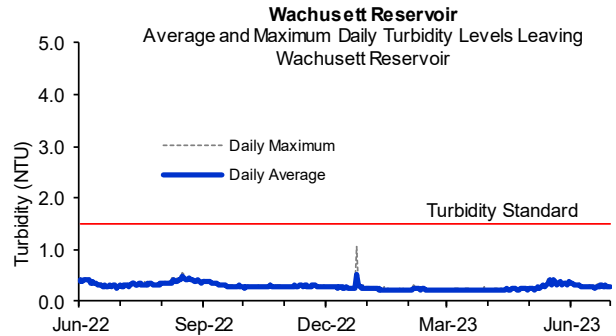
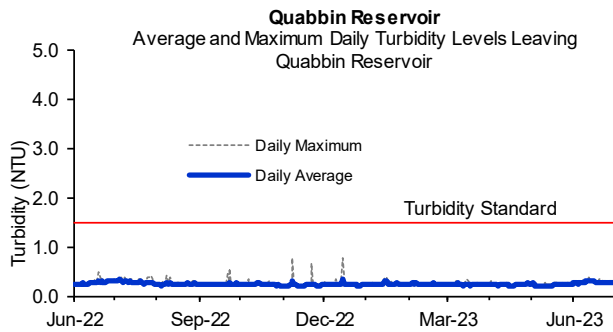
Source Water – Turbidity

4th Quarter – FY23

Turbidity is a measure of suspended and colloidal particles including clay, silt, organic and inorganic matter, algae and microorganisms. The effects of turbidity depend on the nature of the matter that causes the turbidity. High levels of particulate matter may have a higher disinfectant demand or may protect bacteria from disinfection effects, thereby interfering with the disinfectant residual throughout the distribution system.

There are two standards for turbidity: all water must be below five NTU (Nephelometric Turbidity Units), and water only can be above one NTU if it does not interfere with effective disinfection.

Turbidity of Quabbin Reservoir water is monitored continuously at the Brutsch Water Treatment Facility (BWTF) before UV and chlorine disinfection. Turbidity of Wachusett Reservoir is monitored continuously at the Carroll Water Treatment Plant (CWTP) before ozonation and UV disinfection. Maximum turbidity results at Quabbin and Wachusett were within DEP standards for the quarter.

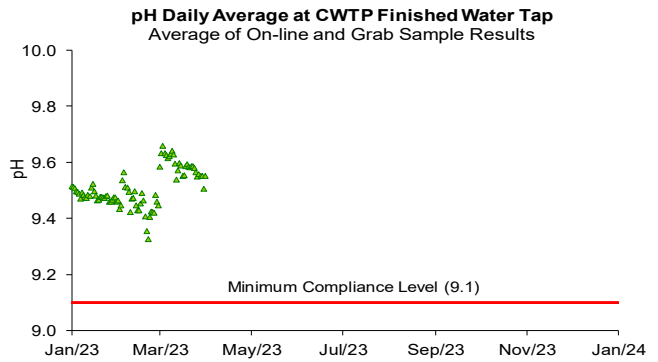
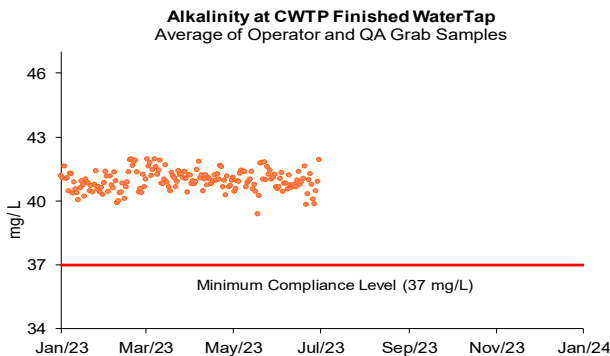


Treated Water – pH and Alkalinity Compliance

MWRA adjusts the alkalinity and pH of Wachusett water at CWTP to reduce its corrosivity, which minimizes the leaching of lead and copper from service lines and home plumbing systems into the water. MWRA tests finished water pH and alkalinity daily at the CWTP's Fin B sampling tap. MWRA's target for distribution system pH is 9.3; the target for alkalinity is 40 mg/l. Per DEP requirements, CWTP finished water samples have a minimum compliance level of 9.1 for pH and 37 mg/L for alkalinity. Samples from 27 distribution system locations have a minimum compliance level of 9.0 for pH and 37 mg/L for alkalinity. Results must not be below these levels for more than nine days in a six month period. Distribution system samples are collected in March, June, September, and December.

Each CVA community provides its own corrosion control treatment. See the CVA report: www.mwra.com/water/html/awqr.htm.

Quarterly distribution system samples were collected over a course of two weeks in June. Distribution system sample pH ranged from 9.4 to 9.8 and alkalinity ranged from 39 to 42 mg/L. No sample results were below DEP limits for this quarter.



Treated Water – Disinfection Effectiveness

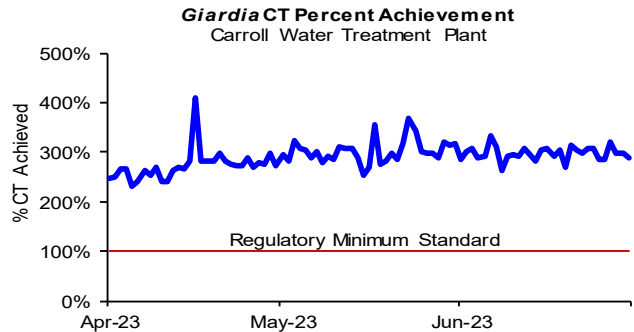
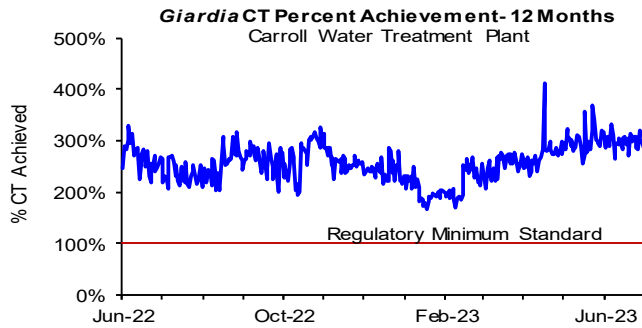
4th Quarter – FY23

At the Carroll Water Treatment Plant (CWTP), MWRA meets the required 99.9% (3-log) inactivation of *Giardia* using ozone (reported as CT: concentration of disinfectant x contact time) and the required 99% (2-log) inactivation of *Cryptosporidium* using UV (reported as IT: intensity of UV x time). MWRA calculates inactivation rates hourly and reports *Giardia* inactivation at maximum flow and *Cryptosporidium* inactivation at minimum UV dose. MWRA must meet 100% of required CT and IT.

CT achievement for *Giardia* assures CT achievement for viruses, which have a lower CT requirement. For *Cryptosporidium*, there is also an "off-spec" requirement. Off-spec water is water that has not reached the full required UV dose or if the UV reactor is operated outside its validated ranges. No more than 5% off-spec water is allowed in a month.

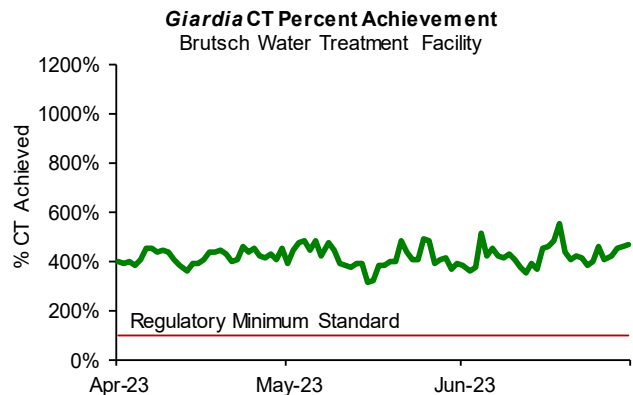
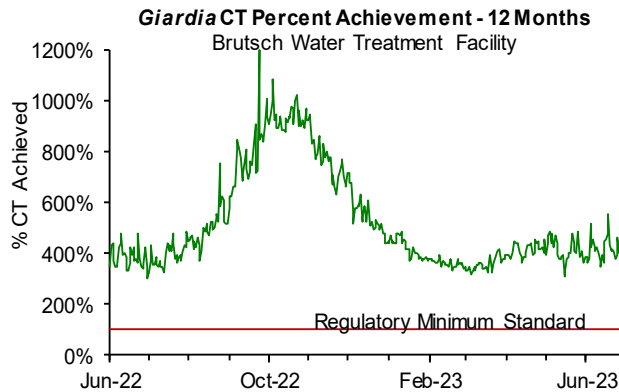
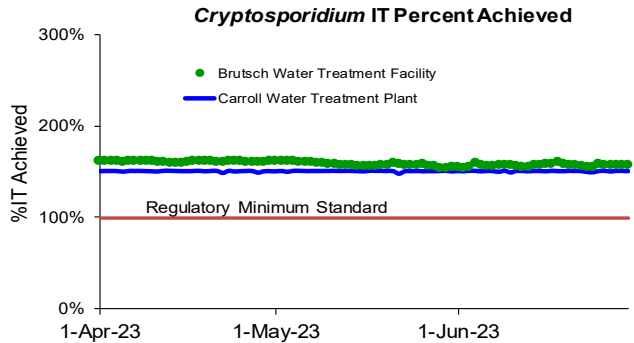
Wachusett Reservoir – MetroWest/Metro Boston Supply:

- The chlorine dose at the CWTP varied between 3.35 and 3.90 mg/L for the quarter.
- Ozone dose at the CWTP varied between 1.7 to 3.0 mg/L for the quarter.
- Giardia* CT was maintained above 100% at all times the plant was providing water into the distribution system this quarter, as well as every day for the last fiscal year.
- Cryptosporidium* IT was maintained above 100% for the quarter. Off-spec water was less than 5%.



Quabbin Reservoir (CVA Supply) at: Brutsch Water Treatment Facility

- The chlorine dose at BWTF is adjusted in order to achieve MWRA's seasonal target of 0.75 - 0.85 mg/L (November 1 – May 31) and 0.85 - 1.05 mg/L (June 1 – October 31) at Ludlow Monitoring Station.
- The chlorine dose at BWTF varied between 1.30 to 1.55 mg/L for the quarter.
- Giardia* CT was maintained above 100% at all times the plant was providing water into the distribution system for the quarter.
- Cryptosporidium* IT was maintained above 100% for the quarter. Off-spec water was less than 5%.



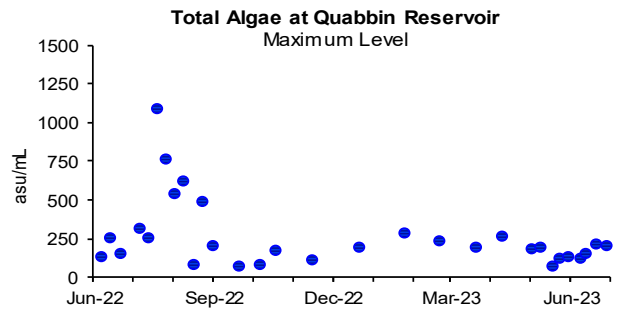
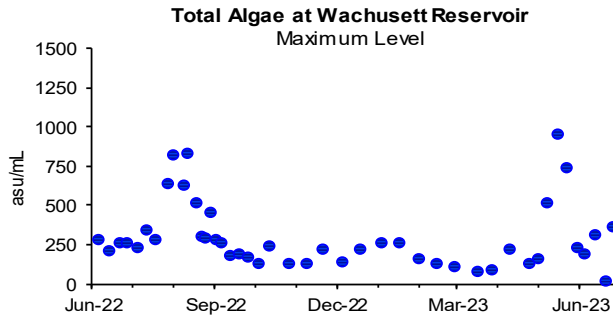
Source Water - Algae

4th Quarter – FY23

Algae levels in the Wachusett and Quabbin Reservoir are monitored by DCR and MWRA. These results, along with taste and odor complaints, are used to make decisions on source water treatment for algae control.

Taste and odor complaints at the tap may be due to algae, which originate in source reservoirs, typically in trace amounts. Occasionally, a particular species grows rapidly, increasing its concentration in water. When *Synura*, *Anabaena*, or other nuisance algae bloom, MWRA may treat the reservoirs with copper sulfate, an algaecide. During the winter and spring, diatom numbers may increase. While not a taste and odor concern, consumers that use filters may notice a more frequent need to change their filters.

In the 4th quarter, there were no complaints which may be related to algae reported from the local water departments.

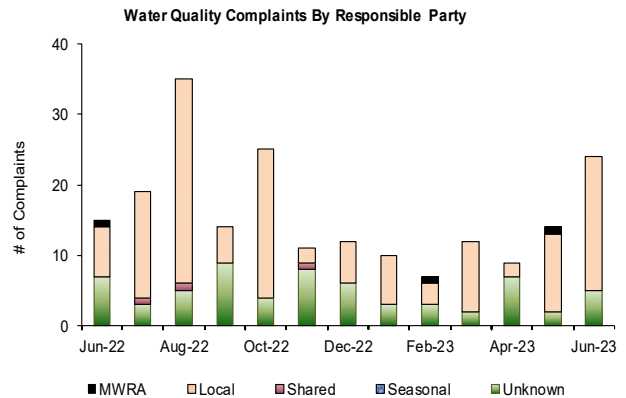
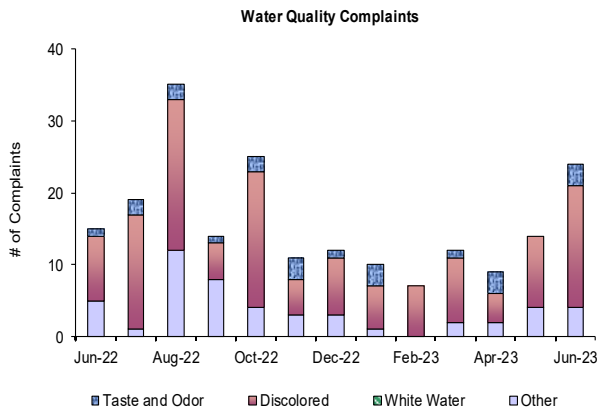


Drinking Water Quality Customer Complaints: Taste, Odor, or Appearance

MWRA collects information on water quality complaints that typically fall into four categories: 1) discoloration due to MWRA or local pipeline work; 2) taste and odor due to algae blooms in reservoirs or chlorine in the water; 3) white water caused by changes in pressure or temperature that traps air bubbles in the water; or 4) "other" complaints including no water, clogged filters or other issues.

MWRA routinely contacts communities to classify and tabulate water complaints from customers. This count, reflecting only telephone calls to towns, probably captures only a fraction of the total number of customer complaints. Field Operations staff have improved data collection and reporting by keeping track of more kinds of complaints, tracking complaints to street addresses and circulating results internally on a daily basis.

Communities reported 47 complaints during the quarter compared to 42 complaints from 4th Quarter of FY22. Of these complaints, 31 were for "discolored water", 6 were for "taste and odor", and 10 were for "other". Of these complaints, 32 were local community issues, 1 was a shared local community and MWRA related issue, and 14 were unknown in origin. Twenty-four discolored water complaints were due hydrant flushing being performed in Somerville during May and June. Two discolored water complaints were due hydrant flushing being performed in Northborough during April and June.



Bacteria & Chlorine Residual Results for Communities in MWRA Testing Program

4th Quarter – FY23

While all communities collect bacteria samples and chlorine residual data for the Total Coliform Rule (TCR), data from the 44 systems that use MWRA's Laboratory are reported below.

The MWRA TCR program has 144 sampling locations. These locations include sites along MWRA's transmission system, water storage tanks and pumping stations, as well as a subset of the community TCR locations.

Samples are tested for total coliform and *Escherichia coli* (*E.coli*). *E.coli* is a specific coliform species whose presence likely indicates potential contamination of fecal origin.

If *E.coli* are detected in a drinking water sample, this is considered evidence of a potential public health concern. Public notification is required if repeat tests confirm the presence of *E.coli* or total coliform.

Total coliform provide a general indication of the sanitary condition of a water supply. If total coliform are detected in more than 5% of samples in a month (or if more than one sample is positive when less than 40 samples are collected), the water system is required to investigate the possible source/cause with a Level 1 or 2 Assessment, and fix any identified problems.

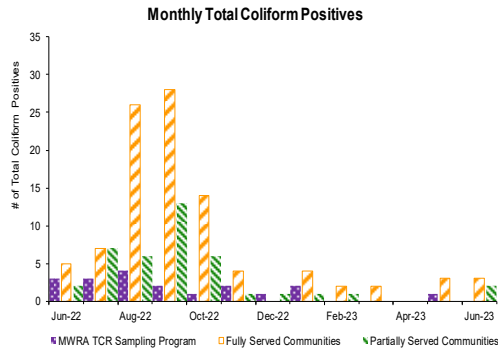
A disinfectant residual is intended to maintain the sanitary integrity of the water; MWRA considers a residual of 0.2 mg/L a minimum target level at all points in the distribution system.

Highlights

In the 4th Quarter, eight of the 6,276 samples (0.13% system-wide) submitted to MWRA labs for analysis tested positive. One of the 1899 Community/MWRA shared samples (0.05%) tested positive for total coliform. None of the 271 CVA/MWRA community samples tested positive for total coliform. No communities were required to perform a Level Assessment. No samples confirmed for *E.coli*. None of the Fully Served community samples had chlorine residuals lower than 0.2 mg/L for the quarter.

NOTES:

- MWRA total coliform and chlorine residual results include data from community locations. In most cases these community results are indicative of MWRA water as it enters the community system; however, some are strongly influenced by local pipe conditions. Residuals in the MWRA system are typically between 1.0 and 2.8 mg/L.
- The number of samples collected depends on the population served and the number of repeat samples required.
- These communities are partially supplied, and may mix their chlorinated supply with MWRA chloraminated supply.
- Part of the Chicopee Valley Aqueduct System. Free chlorine system.



		Total Coliform		<i>E.coli</i>	# Assessment	
		# Samples (b)	# (%) Positive	Positive	Required	
MWRA	a	MWRA Locations	398	0 (0%)	0	No
	Shared Community/MWRA sites	1501	1 (0.07%)	0		
		Total: MWRA	1899	1 (0.05%)	0	
Fully Served		ARLINGTON	169	0 (0%)	0	No
	BELMONT	104	0 (0%)	0		
	BOSTON	797	6 (0.75%)	0		
	BROOKLINE	237	0 (0%)	0		
	CHELSEA	169	0 (0%)	0		
	DEER ISLAND	52	0 (0%)	0		
	EVERETT	169	0 (0%)	0		
	FRAMINGHAM	237	0 (0%)	0		
	LEXINGTON	120	0 (0%)	0		
	LYNNFIELD	18	0 (0%)	0		
	MALDEN	234	0 (0%)	0		
	MARBLEHEAD	72	0 (0%)	0		
	MARLBOROUGH	126	0 (0%)	0		
	MEDFORD	192	0 (0%)	0		
	MELROSE	117	0 (0%)	0		
	MILTON	102	0 (0%)	0		
	NAHANT	30	0 (0%)	0		
	NEWTON	279	0 (0%)	0		
	NORTHBOROUGH	48	0 (0%)	0		
	NORWOOD	99	0 (0%)	0		
	QUINCY	324	0 (0%)	0		
	READING	130	0 (0%)	0		
	REVERE	195	0 (0%)	0		
	SAUGUS	104	0 (0%)	0		
	SOMERVILLE	252	0 (0%)	1		
	SOUTHBOROUGH	30	0 (0%)	0		
	STONEHAM	91	0 (0%)	0		
SWAMPSCOTT	57	0 (0%)	0			
WALTHAM	216	0 (0%)	0			
WATERTOWN	143	0 (0%)	0			
WESTON	45	0 (0%)	0			
WINTHROP	66	0 (0%)	0			
		Total: Fully Served	5024	6 (0.12%)	0	
Partially Served		BEDFORD	54	0 (0%)	0	No
	BURLINGTON	139	0 (0%)	0		
	CANTON	91	1 (1.10%)	0		
	NEEDHAM	126	1 (0.79%)	0		
	PEABODY	209	0 (0%)	0		
	WAKEFIELD	130	0 (0%)	0		
	WELLESLEY	114	0 (0%)	0		
	WILMINGTON	87	0 (0%)	0		
	WINCHESTER	94	0 (0%)	0		
	WOBURN	208	0 (0%)	0		
		Total: Partially Served	1252	2 (0.16%)	0	
		Total: Community Samples No CVA	6276	8 (0.13%)	0	
CVA		MWRA CVA Locations	104	0 (0%)	0	No
	CHICOPEE	62	0 (0%)	0		
	SOUTH HADLEY FD1	60	0 (0%)	0		
	WILBRAHAM	45	0 (0%)	0		
	Total: CVA	271	0 (0%)	0		

Chlorine Residuals in Fully Served Communities

	2022							2023					
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
% <0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% <0.2	0.0	0.1	0.3	0.4	0.5	0.8	0.2	0.1	0.1	0.1	0.0	0.0	0.0
% <0.5	0.5	1.4	1.6	1.8	2.1	2.4	1.5	1.2	0.7	0.5	0.3	0.3	1.0
% <1.0	2.6	4.0	5.7	6.5	5.8	5.7	3.9	2.4	1.8	1.3	1.4	1.9	3.4
% ≥1.0	97.4	96.0	94.3	93.5	94.2	94.4	96.2	97.7	98.2	98.7	98.6	98.1	96.6

Treated Water Quality: Disinfection By-Product (DBP) Levels in Communities

4th Quarter – FY23

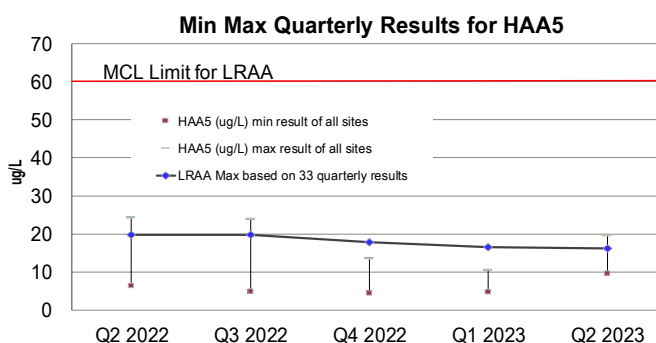
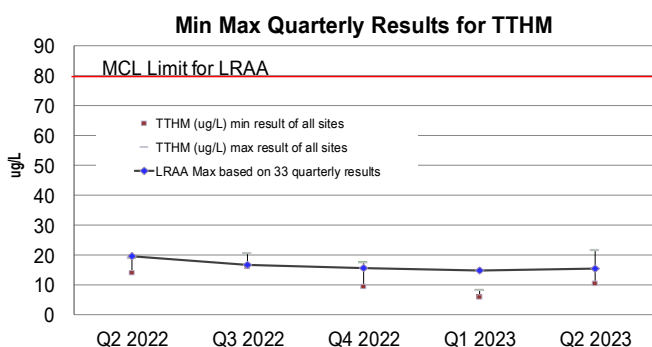
Total Trihalomethanes (TTHMs) and Haloacetic Acids (HAA5s) are by-products of disinfection treatment with chlorine. They are of concern due to their potential adverse health effects at high levels. EPA's locational running annual average (LRAA) standard, using the most recent four quarterly results, is 80 µg/L for TTHMs and 60 µg/L for HAA5s. The locational running annual average at each individual sampling location must be below the standard.

Bromate is tested monthly as required for water systems, like CWTP, that treat with ozone. EPA's RAA Maximum Contaminant Level (MCL) standard for bromate is 10 µg/L. The current RAA for Bromate at the CWTP finished water tap is 0.0 µg/L.

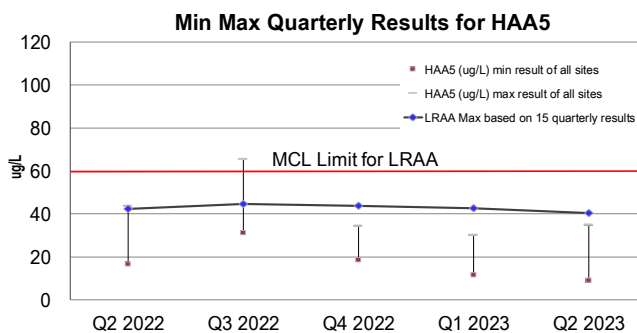
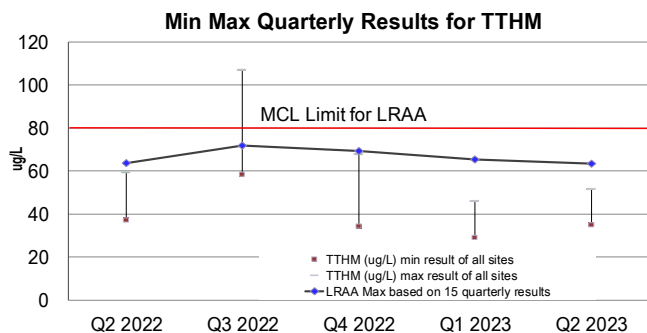
MWRA's TTHM and HAA5 sampling program includes sampling at 33 MetroWest and Metro Boston communities sites. Partially served and CVA communities are responsible for their own compliance monitoring and are regulated individually.

The LRAA for TTHMs and HAA5s for MWRA's Compliance Program (represented as the line in the top two graphs below) remains below current standards. The Max LRAA in the quarter for TTHMs = 15.5 µg/L; HAA5s = 16.3 µg/L. No LRAA exceedances or violations occurred this quarter for MetroBoston and for any of the CVA communities.

MetroBoston Disinfection By-Products



CVA Disinfection By-Products (Combined Results Chicopee, Wilbraham, & South Hadley FD1)



Water Supply and Source Water Management

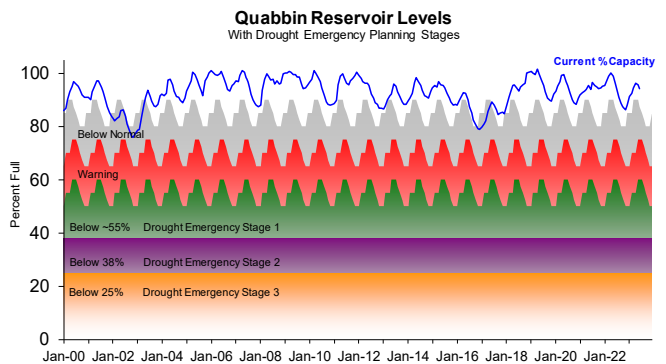
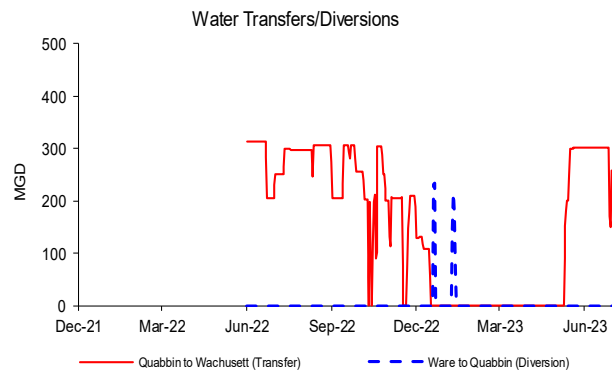
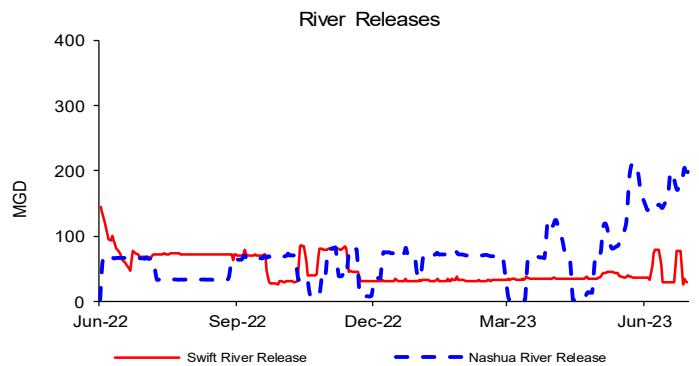
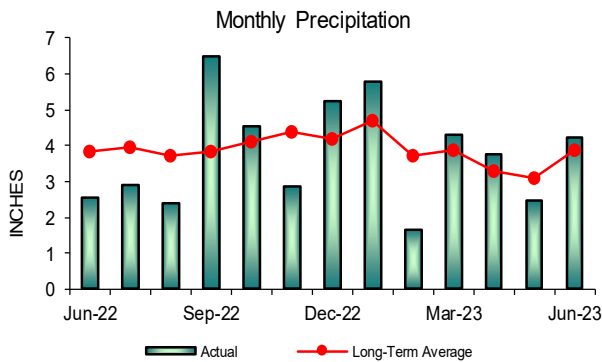
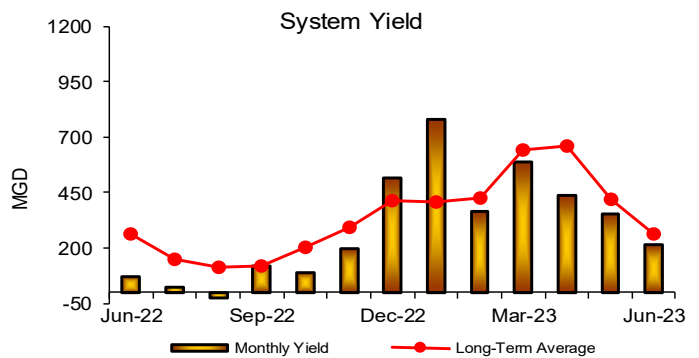
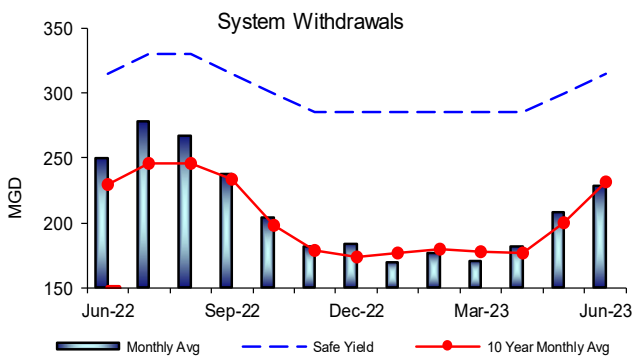
4th Quarter – FY23

Background

A reliable supply of water in MWRA's reservoirs depends on adequate precipitation during the year and seasonal hydrologic inputs from watersheds that surround the reservoirs. Demand for water typically increases with higher summer temperatures and then decreases as temperatures decline. Quabbin Reservoir was designed to effectively supply water to the service areas under a range of climatic conditions and has the ability to endure a range of fluctuations. Wachusett Reservoir serves as a terminal reservoir to meet the daily demands of the Greater Boston area. A key component to this reservoir's operation is the seasonal transfer of Quabbin Reservoir water to enhance water quality during high demand periods. On an annual basis, Quabbin Reservoir accounts for nearly 50% of the water supplied to Greater Boston. The water quality of both reservoirs (as well as the Ware River, which is also part of the System Safe Yield) depend upon implementation of DCR's DEP-approved Watershed Protection Plans. System Yield is defined as the water produced by its sources, and is reported as the net change in water available for water supply and operating requirements.

Outcome

The volume of the Quabbin Reservoir was at 94.2% as of June 30, 2023; a 1.6 % increase for the quarter, which represents a gain of more than 6.7 billion gallons of storage and an increase in elevation of 0.90'. System withdrawal was below its long term quarterly average. Precipitation and Yield quarterly average were below their long term quarterly averages. Quabbin is in Normal Operating Range for this time of year.



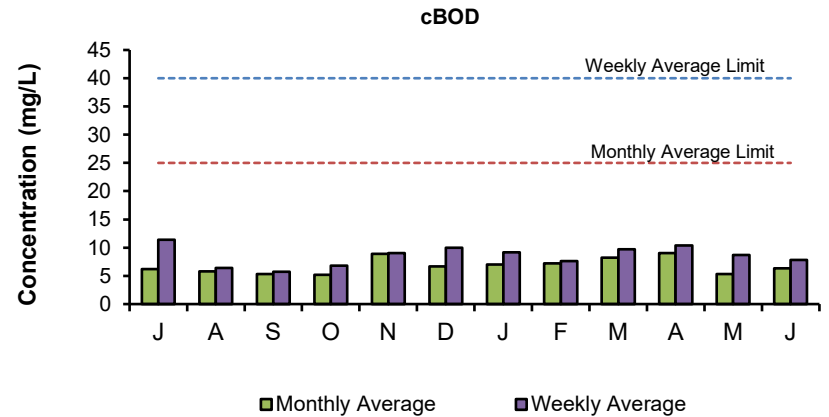
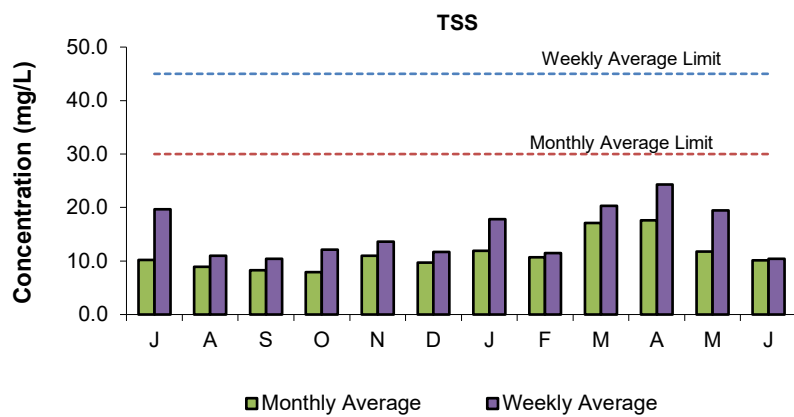
WASTEWATER QUALITY

NPDES Permit Compliance: Deer Island Treatment Plant 4th Quarter - FY23

NPDES Permit Limits

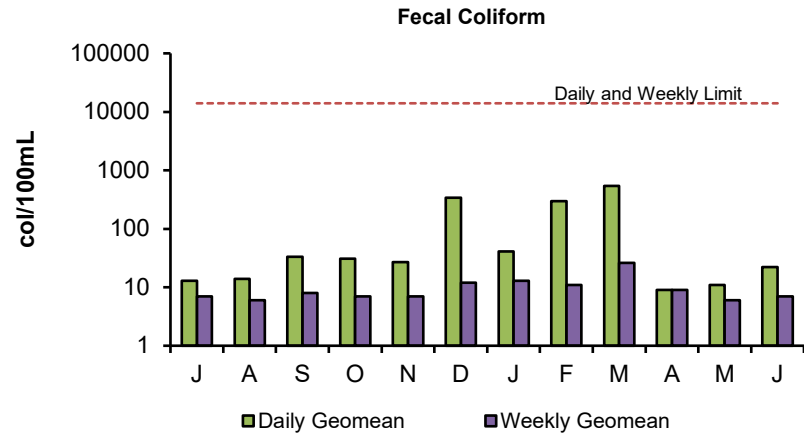
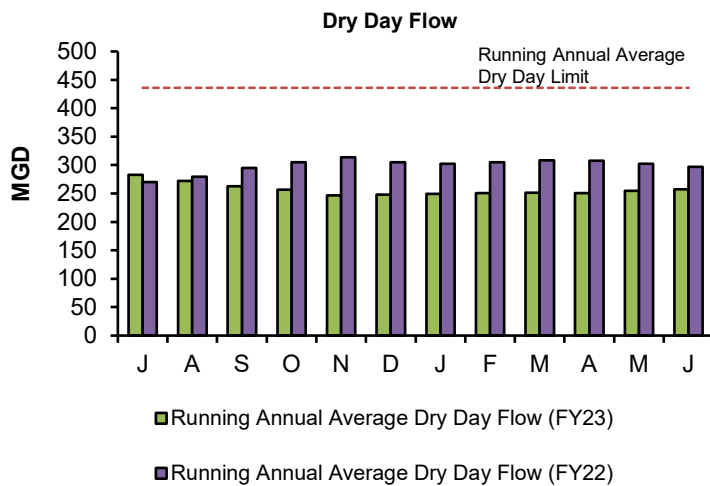
Effluent Characteristics		Units	Limits	April	May	June	4th Quarter Violations	FY23 YTD Violations
Dry Day Flow (365 Day Average):		mgd	436	250.4	254.5	257.7	0	0
cBOD:	Monthly Average	mg/L	25	9.0	5.3	6.3	0	0
	Weekly Average	mg/L	40	10.4	8.7	7.8	0	0
TSS:	Monthly Average	mg/L	30	17.6	11.8	10.1	0	0
	Weekly Average	mg/L	45	24.3	19.5	10.4	0	0
TCR:	Monthly Average	ug/L	456	0.0	0.0	0.0	0	0
	Daily Maximum	ug/L	631	0.0	0.0	0.0	0	0
Fecal Coliform:	Daily Geometric Mean	col/100mL	14000	9	11	22	0	0
	Weekly Geometric Mean	col/100mL	14000	9	6	7	0	0
	% of Samples >14000	%	10	0	0	0	0	0
	Consecutive Samples >14000	#	3	0	0	0	0	0
pH:		SU	6.0-9.0	6.5-6.8	6.4-6.9	6.5-6.9	0	0
PCB, Aroclors:	Monthly Average	ug/L	0.000045	UNDETECTED			0	0
Acute Toxicity:	Inland Silverside	%	≥50	>100	>100	>100	0	0
	Mysid Shrimp	%	≥50	>100	>100	>100	0	0
Chronic Toxicity:	Inland Silverside	%	≥1.5	50	50	50	0	0
	Sea Urchin	%	≥1.5	100	100	100	0	0

There have been no permit violations in FY23 to date at the Deer Island Treatment Plant (DITP).



Total Suspended Solids (TSS) in the effluent is a measure of the amount of solids that remain suspended after treatment. All TSS measurements for the 4th Quarter were within permit limits.

Carbonaceous Biochemical Oxygen Demand (cBOD) is a measure of the amount of dissolved oxygen required for the decomposition of organic materials in the environment. All cBOD measurements for the 4th Quarter were within permit limits.



Running Annual Average Dry Day Flow is the average of all dry weather influent flows over the previous 365 days. The Dry Day Flow for the 4th Quarter was well below the permit limit of 436 MGD.

Fecal Coliform is an indicator for the possible presence of pathogens. The levels of these bacteria after disinfection show how effectively the plant is inactivating many forms of disease-causing microorganisms. In the 4th Quarter, all permit conditions for fecal coliform were met.

NPDES Permit Compliance: Clinton Wastewater Treatment Plant
4th Quarter - FY23

NPDES Permit Limits

Effluent Characteristics		Units	Limits	April	May	June	4th Quarter Violations	FY23 YTD Violations
Flow:	12-month Rolling Average:	mgd	3.01	2.35	2.43	2.49	0	1
BOD:	Monthly Average:	mg/L	20	0.4	1.5	1.3	0	0
	Weekly Average:	mg/L	20	1.8	2.3	2.3	0	0
TSS:	Monthly Average:	mg/L	20	1.2	2.5	1.7	0	0
	Weekly Average:	mg/L	20	1.8	1.6	6.8	0	0
pH:		SU	6.5-8.3	7.4-7.8	6.5-7.6	7.3-7.7	0	0
Dissolved Oxygen:	Daily Average Minimum:	mg/L	6	9.5	9.3	7.8	0	0
E. Coli:	Monthly Geometric Mean:	cfu/100mL	126	5	5	6	0	0
	Daily Geometric Mean:	cfu/100mL	409	7	5	11	0	0
TCR:	Monthly Average:	ug/L	20	<20	<20	<20	0	0
	Daily Maximum:	ug/L	30.4	<20	<20	<20	0	0
Copper:	Monthly Average:	ug/L	11.6	7.77	6.91	8.70	0	2
	Daily Maximum:	ug/L	14.0	8.36	6.91	8.70	0	0
Total Ammonia Nitrogen: June 1st - October 31st	Monthly Average:	mg/L	2.0	0.02	<0.1	<0.1	0	0
	Daily Maximum:	mg/L	3.0	0.07	<0.1	<0.1	0	0
Total Phosphorus: April 1st - October 31st	Monthly Average:	ug/L	0.15	0.04	0.04	0.08	0	0
	Daily Maximum:	ug/L	RPT	0.1	0.1	0.2	0	0
Acute Toxicity*	Daily Minimum:	%	≥100	>100	N/A	N/A	0	0
Chronic Toxicity*	Daily Minimum:	%	≥62.5	100.0	N/A	N/A	0	1

There have been four permit violations in FY23 at the Clinton Treatment Plant.

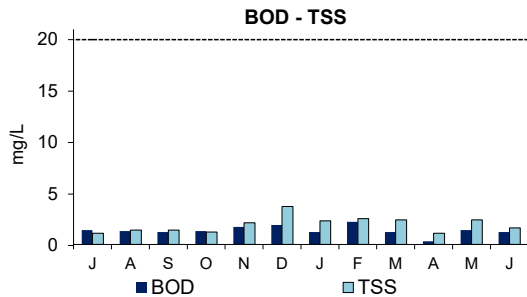
1st Quarter: There were four permit violations in the first quarter. In July, plant flows exceeded the 12-month rolling average. July and August copper monthly averages exceeded the permit limit of 11.6 ug/L. The quarterly chronic toxicity result of 12.5% was below the minimum permit limit of 62.5%.

2nd Quarter: There were no permit violations in the second quarter.

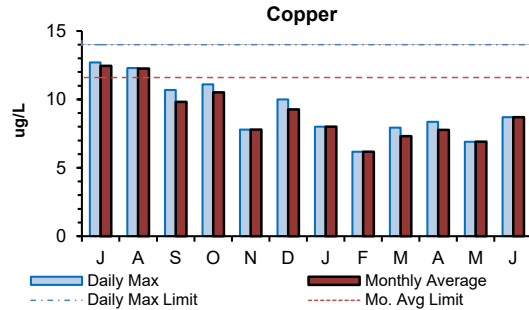
3rd Quarter: There were no permit violations in the third quarter.

4th Quarter: There were no permit violations in the fourth quarter.

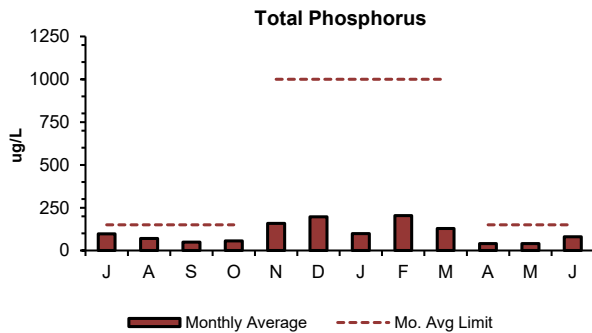
+ Toxicity testing at the Clinton Treatment Plant is conducted on a quarterly basis.



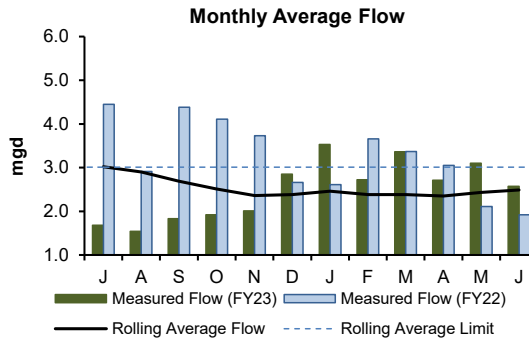
The 4th Quarter's monthly average and daily maximum concentrations of ammonia were below the permit limits. The monthly average and daily maximum limits for the 4th Quarter are variable. The permit limits are most stringent from June to October when warm weather conditions are most conducive to potential eutrophication.



Daily maximum and monthly average concentrations of copper were below permit limits in the 4th Quarter. Permit daily and monthly limits are 14.0 ug/L and 11.6 ug/L respectively.



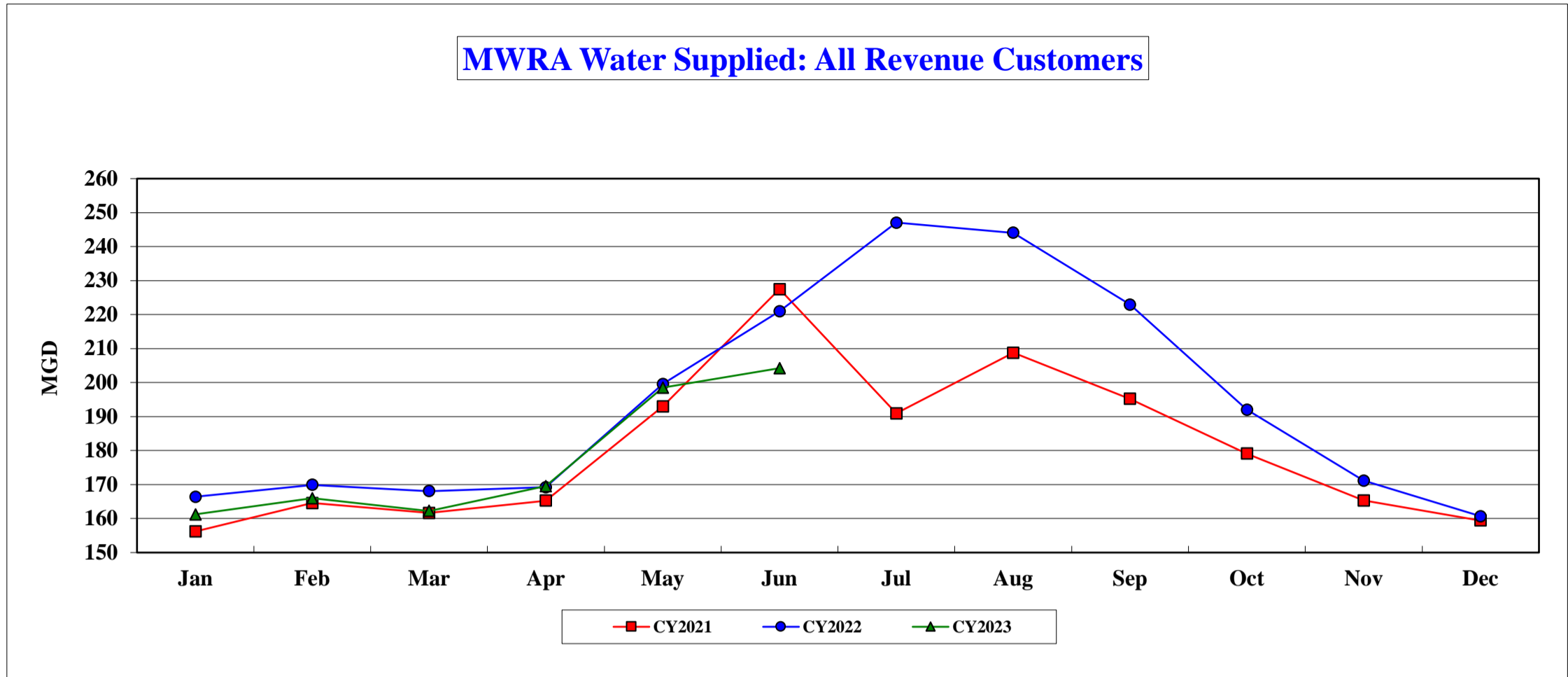
Total phosphorus limits are most stringent during the growing season from April to October. The 4th Quarter's monthly average concentrations for total phosphorus were below permit limits.



The graph depicts the rolling annual average monthly flow, measured in million gallons per day, exiting the plant. The 12-month rolling average flows during the 4th Quarter were below the permit limit.

COMMUNITY FLOWS AND PROGRAMS

Customer Water Use 4th Quarter - FY23



Water Use (million gallons per day)														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD Average	Annual Average
CY2021	156.213	164.567	161.697	165.284	192.998	227.522	190.945	208.810	195.229	179.116	165.302	159.442	178.067	180.641
CY2022	166.445	169.923	168.101	169.253	199.626	221.002	247.075	244.069	222.906	192.000	171.170	160.697	182.457	194.537
CY2023	161.248	165.963	162.266	169.566	198.489	204.245	-	-	-	-	-	-	177.035	177.035

The June 2023 Community Water Use Report was recently distributed to communities and customers served by the MWRA's Metropolitan and Chicopee Valley waterworks systems. Each community's annual water use relative to the system as a whole is the primary factor in allocating the annual water rate revenue requirement to MWRA water communities. Calendar year 2023 water use will be used to allocate the FY2025 water utility rate revenue requirement.

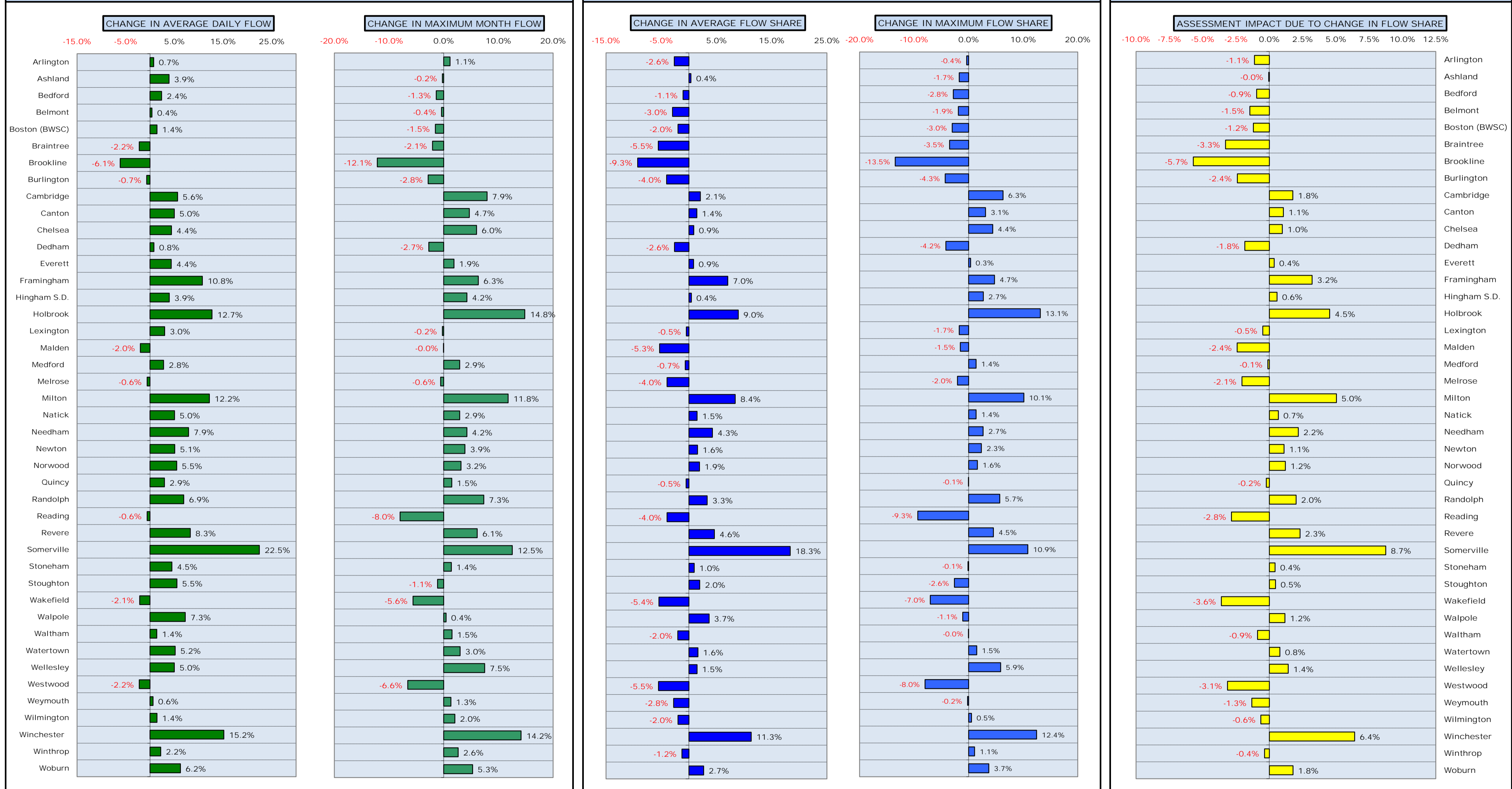
MWRA customers used an average of 196.7 mgd in the 4th quarter (Apr-Jun 2023) of FY2023. This is a decrease of 5.8 mgd or 3.0% compared to the 4th quarter of FY2022.

How CY2021-23 Community Wastewater Flows Could Effect FY2025 Sewer Assessments ^{1,2,3}

The flow components of FY2025 sewer assessments will be calculated using a 3-year average of CY2021 to CY2023 wastewater flows compared to FY2024 assessments that will use a 3-year average of CY2020 to CY2022 wastewater flows.

But as MWRA's sewer assessments are a ZERO-SUM calculation, a community's assessment is strongly influenced by the RELATIVE change in CY2021 to CY2023 flow share compared to CY2020 to CY2022 flow share, compared to all other communities in the system.

The chart below illustrates the change in the TOTAL BASE assessment due to FLOW SHARE CHANGES. ⁴



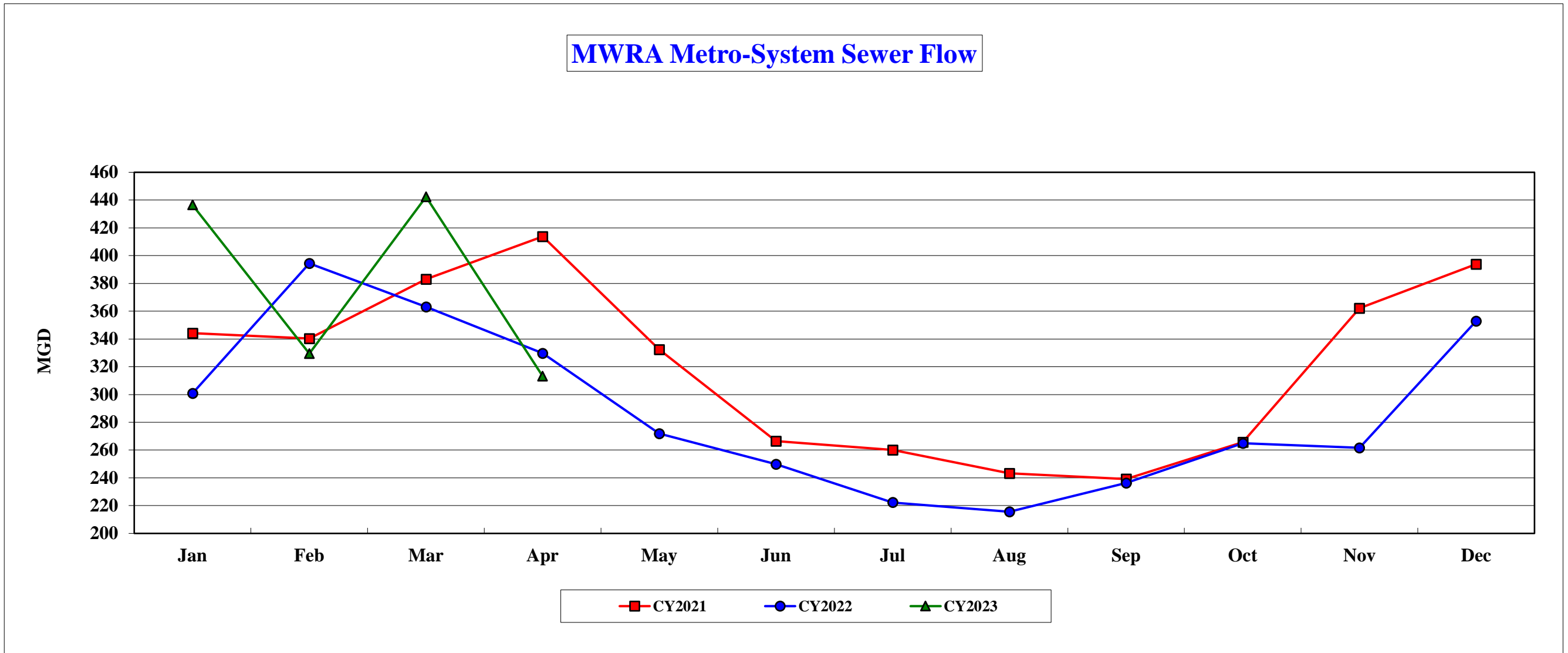
¹ MWRA uses a 3-year flow average to calculate sewer assessments. Three-year averaging smoothes the impact of year-to-year changes in community flow share, but does not eliminate the long-term impact of changes in each community's relative contribution to the total flow.

² Based on actual flows for 2022 and 2023 (through April), and January to March, and June to December 2020. April & May 2020 based on the average of 3 prior years, adjusted for 2020 water use. January to December 2021 estimated based on the average of the 3 prior years.

³ Flow data is preliminary and subject to change pending additional MWRA and community review.

⁴ Represents ONLY the impact on the total BASE assessment resulting from the changes in average and maximum wastewater FLOW SHARES.

Community Sewer Flow YTD - FY23



Sewer Flow (million gallons per day)														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD Average	Annual Average
CY2021	344.203	340.320	383.107	413.769	332.385	266.443	260.030	243.310	239.147	265.670	362.143	393.833	370.739	320.199
CY2022	300.930	394.400	363.110	329.710	271.890	249.840	222.280	215.600	236.380	264.960	261.560	352.870	345.998	287.969
CY2023	436.480	329.510	442.340	313.210	-	-	-	-	-	-	-	-	382.217	308.729

The 2023 4-Month Community Sewer Flow Report was recently distributed to the 43 communities served by the MWRA's Metropolitan sewer system. Each community's share of sewer flow relative to the system as a whole is used to allocate the annual sewer rate revenue requirement to MWRA sewer communities. The average of calendar year 2021-2023 sewer flow will be used to allocate the FY2025 sewer utility rate revenue requirement.

MWRA customer sewer flow averaged 382.2 mgd in the first four months of CY2023. This is an increase of 36.2 mgd or 10.5% compared to the first four months of CY2022.

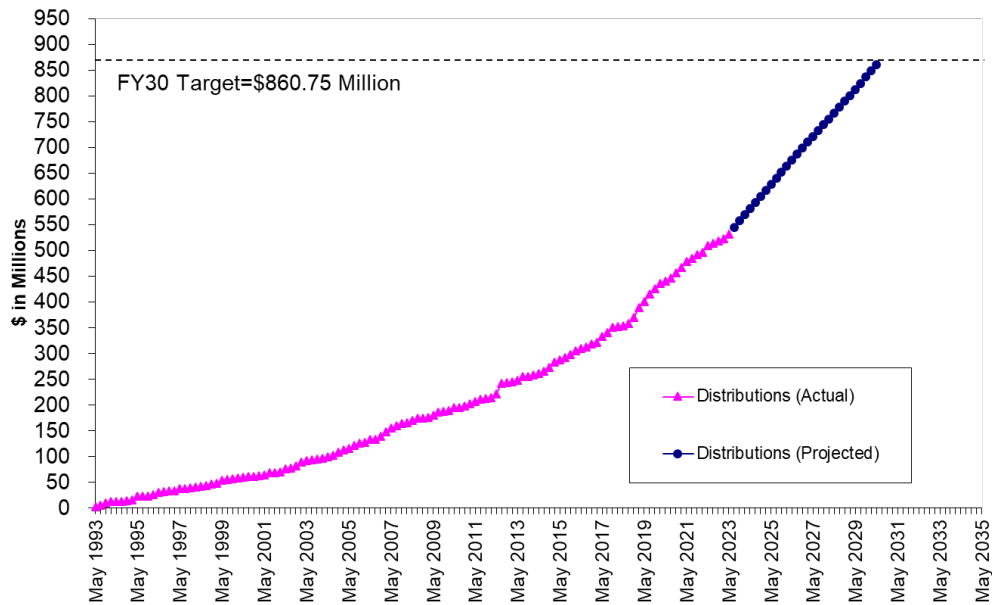
Community Support Programs

4th Quarter – FY23

Infiltration/Inflow Local Financial Assistance Program

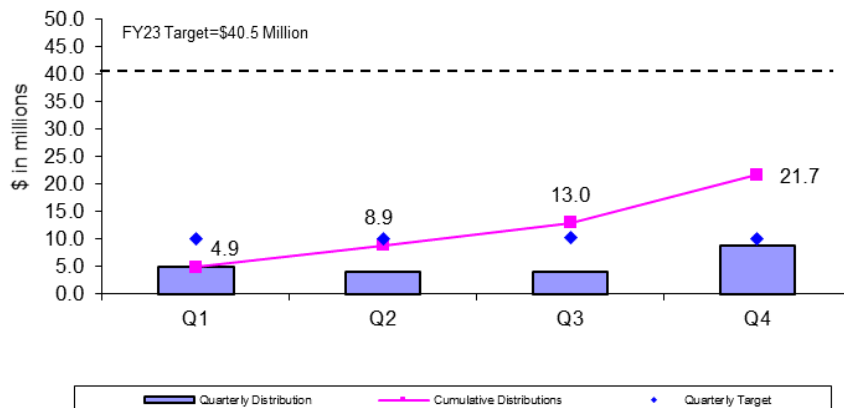
MWRA's Infiltration/Inflow (I/I) Local Financial Assistance Program provides \$860.75 million in grants and interest-free loans (average of about \$22 million per year from FY93 through FY30) to member sewer communities to perform I/I reduction and sewer system rehabilitation projects within their locally-owned collection systems. Eligible project costs include: sewer rehabilitation construction, pipeline replacement, removal of public and private inflow sources, I/I reduction planning, engineering design, engineering services during construction, etc. I/I Local Financial Assistance Program funds are allocated to member sewer communities based on their percent share of MWRA's wholesale sewer charge. Phase 1-8 funds (total \$300.75 million) were distributed as 45% grants and 55% loans with interest-free loans repaid to MWRA over a five-year period. Phase 9 through 12 funds (total \$360 million) are distributed as 75% grants and 25% loans with interest-free loans repaid to MWRA over a ten-year period. Phase 13 provides an additional \$100 million in ten-year loan-only funds. Phase 14 funds (total \$100 million) are distributed as 75% grants and 25% loans with interest-free loans repaid to MWRA over a ten-year period.

I/I Local Financial Assistance Program Distribution FY93-FY30



During the 4th Quarter of FY23, \$8.7 million in financial assistance (grants and interest-free loans) was distributed to fund local sewer rehabilitation projects in Boston, Burlington, Melrose, Newton and Quincy. Total grant/loan distribution to date for FY23 is \$22 million. From FY93 through 4th Quarter of FY23, all 43 member sewer communities have participated in the program and \$532 million has been distributed to fund 664 local I/I reduction and sewer system rehabilitation projects. Distribution of the remaining funds has been approved through FY30 and community loan repayments will be made through FY40. All scheduled community loan repayments have been made.

FY23 Quarterly Distributions of Sewer Grant/Loans



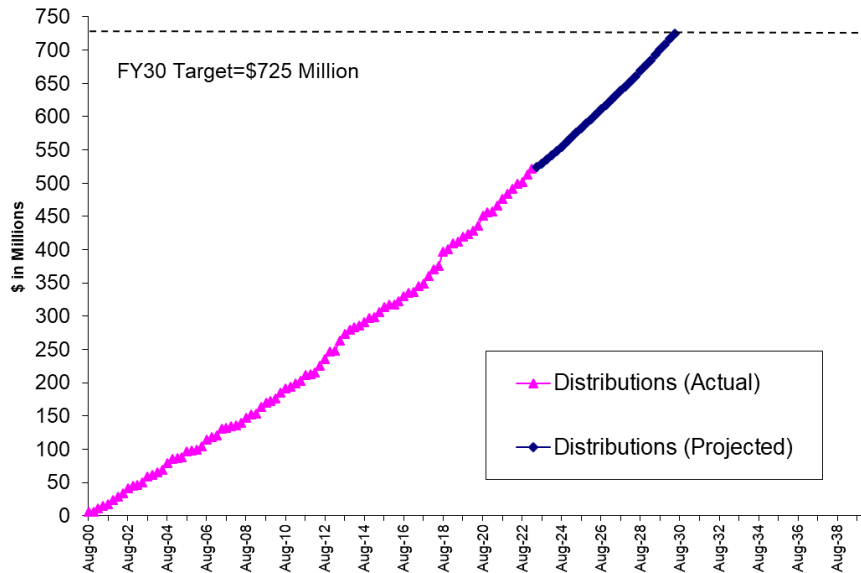
Community Support Programs

4th Quarter – FY23

Local Water System Assistance Program

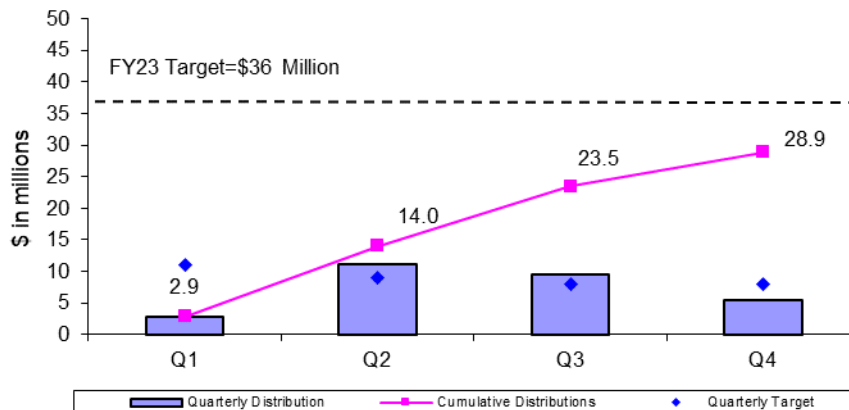
MWRA's Local Water System Assistance Programs (LWSAP) provides \$725 million in interest-free loans (an average of about \$24 million per year from FY01 through FY30) to member water communities to perform water main rehabilitation projects within their locally-owned water distribution systems. There have been three (3) funding phases: Phase 1 at \$222 Million, Phase 2 at \$210 Million, and Phase 3 at \$293 Million. Eligible project costs include: water main cleaning/lining, replacement of unlined water mains, lead service replacements, valve, hydrant, water meter, tank work, engineering design, engineering services during construction, etc. MWRA partially-supplied communities receive pro-rated funding allocations based on their percentage use of MWRA water. Interest-free loans are repaid to MWRA over a ten-year period beginning one year after distribution of the funds. The Phase 1 water loan program concluded in FY13 with \$222 million in loan distributions. The Phase 2 - LWSAP continues distributions through FY25. The Phase 3 Water Loan Program is authorized for distributions from FY18 through FY30.

Local Water System Assistance Program Distribution FY01-FY30



During the 4th Quarter of FY23, \$5.4 million in interest-free loans was distributed to fund local water projects in Everett, Melrose, Newton, Nahant and Swampscott. Total loan distribution to date for FY23 is \$28.9 million. From FY01 through the 4th Quarter of FY23, \$527 million has been distributed to fund 519 local water system rehabilitation projects in 43 MWRA member water communities. Distribution of the remaining funds has been approved through FY30 and community loan repayments will be made through FY40. All scheduled community loan repayments have been made.

FY23 Quarterly Distributions of Water Loans



Community Support Programs

4th Quarter – FY23

Lead Service Line Replacement Loan Program

By its vote on March 16, 2016, the Board approved an enhancement to the Local Water System Assistance Program to provide up to \$100 million in 10-year zero-interest loans to communities solely for efforts to fully replace lead service lines. The Lead Service Line Replacement Loan Program is also referenced as the Lead Loan Program or LLP. Each community can develop its own program, tailored to their local circumstances. MWRA's goal in providing financial assistance to member communities is to improve local water systems so that the high quality water MWRA delivers can make it all the way to the consumer's tap. The presence of a lead service line connecting a home to the main in the street can lead to elevated lead levels in tap water, especially if that water sits stagnant for an extended period. MWRA's stable water quality and effective corrosion control treatment reduce the risk that a lead service line will cause elevated lead levels, and measured lead levels in high risk homes have decreased by 90 percent since corrosion control was brought on-line in 1996. However, the risk of elevated levels remains as long as lead service lines are in use. To date, \$35.5 million dollars have been distributed to 14 communities.

FY17 was the first year of the Lead Service Line Replacement Loan Program - MWRA made three Lead Loans.

FY18 was the second year of the Lead Loan Program - MWRA made five Lead Loans.

FY19 was the third year of the Lead Loan Program - MWRA made four Lead Loans.

FY20 was the fourth year of the Lead Loan Program - MWRA made eight Lead Loans.

FY21 is the fifth year of the Lead Loan Program - MWRA made seven Lead Loans.

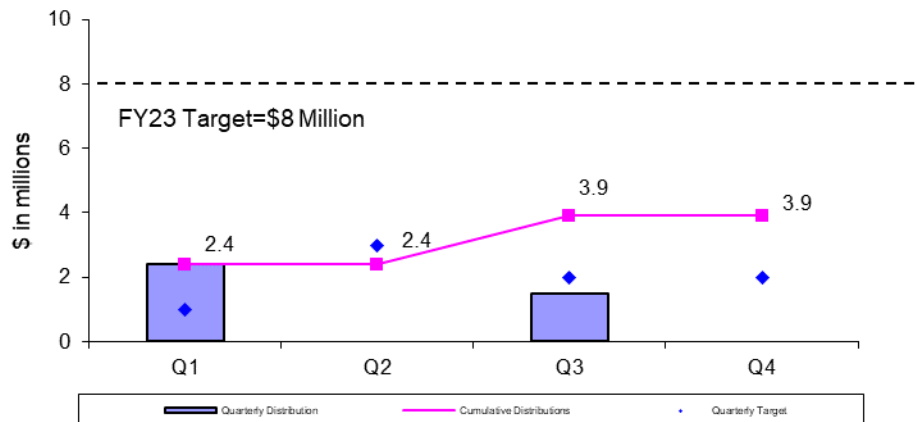
FY22 is the sixth year of the Lead Loan Program - MWRA made six Lead Loans.

FY23 is the seventh year in the Lead Loan Program - MWRA has made six Lead Loans.

Summary of Lead Loans:

Chelsea in FY23	\$0.5 Million	Everett in FY20	\$1.0 Million
Watertown in FY23	\$0.3 Million	Somerville in FY20	\$0.9 Million
Winthrop in FY23	\$0.7 Million	Chelsea in FY20	\$0.3 Million
Reading in FY23	\$1.5 Million	Marlborough in FY19	\$1.0 Million
Watertown in FY23	\$0.3 Million	Winthrop in FY19	\$0.5 Million
Winchester in FY23	\$0.6 Million	Chelsea in FY19	\$0.1 Million
Everett in FY22	\$1.5 Million	Everett in FY19	\$1.0 Million
Boston in FY22	\$0.9 Million	Needham in FY18	\$1.0 Million
Winthrop in FY22	\$0.8 Million	Winchester in FY18	\$0.5 Million
Somerville in FY22	\$1.6 Million	Revere in FY18	\$0.2 Million
Revere in FY22	\$1.3 Million	Winthrop in FY18	\$0.3 Million
Chelsea in FY22	\$0.3 Million	Marlborough in FY18	\$1.0 Million
Watertown in FY21	\$0.6 Million	Newton in FY17	\$4.0 Million
Marlborough in FY21	\$2.0 Million	Quincy in FY17	\$1.5 Million
Everett in FY21	\$1.5 Million	Winchester in FY17	\$0.5 Million
Boston in FY21	\$2.6 Million	TOTAL	\$35.5 Million
Winthrop in FY21	\$0.8 Million		
Chelsea in FY21	\$0.3 Million		
Winchester in FY21	\$0.6 Million		
Everett in FY20	\$0.5 Million		
Marlborough in FY20	\$1.0 Million		
Winchester in FY20	\$0.6 Million		
Winthrop in FY20	\$0.7 Million		
Weston in FY20	\$0.2 Million		

FY23 Quarterly Distributions of Lead Service Line Replacement Loans

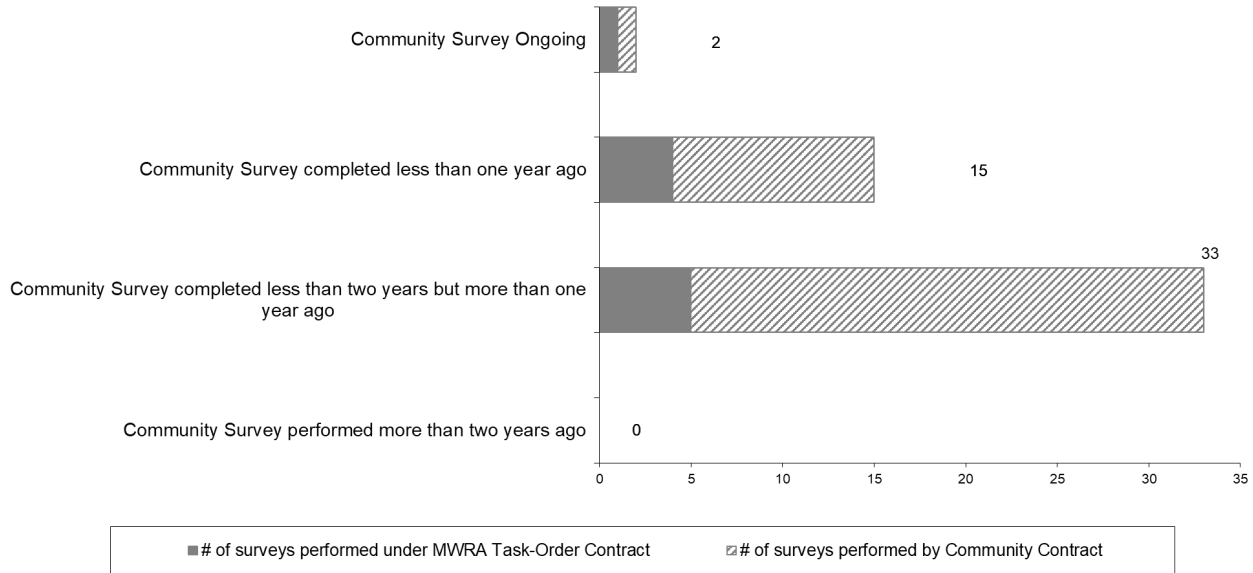


Community Support Programs

4th Quarter – FY23

Community Water System Leak Detection

To ensure member water communities identify and repair leaks in locally-owned distribution systems, MWRA developed leak detection regulations that went into effect in July 1991. Communities purchasing water from MWRA are required to complete a leak detection survey of their entire distribution system at least once every two years. Communities can accomplish the survey using their own contractors or municipal crews; or alternatively, using MWRA’s task order leak detection contract. MWRA’s task order contract provides leak detection services at a reasonable cost that has been competitively procured (3-year, low-bid contract) taking advantage of the large volume of work anticipated throughout the regional system. Leak detection services performed under the task order contract are paid for by MWRA and the costs are billed to the community the following year. During the 4th Quarter of FY23, all member water communities were in compliance with MWRA’s Leak Detection Regulation.



Community Water Conservation Outreach

MWRA’s Community Water Conservation Program helps to maintain average water demand below the regional water system’s safe yield of 300 mgd. Current 5-year average water demand is less than 200 mgd. The local Water Conservation Program includes distribution of water conservation education brochures (indoor - outdoor bill-stuffers) and low-flow water fixtures and related materials (shower heads, faucet aerators, and toilet leak detection dye tabs), all at no cost to member communities or individual customers. The Program’s annual budget is \$25,000 for printing and purchase of materials. Annual distribution targets and totals are provided in the table below. Distributions of water conservation materials are made based on requests from member communities and individual customers.

	Annual Target	Q1	Q2	Q3	Q4	Annual Total
Educational Brochures	100,000	17,985	418	15,304	7,462	41,169
Low-Flow Fixtures (showerheads and faucet aerators)	10,000	2,302	62	467	586	3,417
Toilet Leak Detection Dye Tablets	_____	3,151	28	3,258	370	6,807

BUSINESS SERVICES

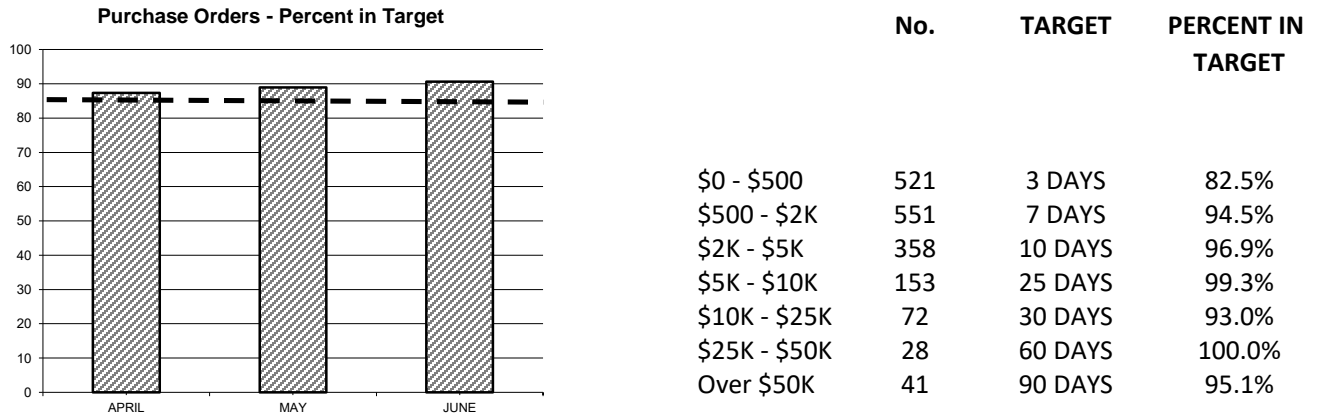
Procurement: Purchasing and Contracts

4th Quarter - FY23

Background: Goal is to process 85% of Purchase Orders and 80% of Contracts within Target timeframes.

Highlights: Processed 92% of purchase orders within target; Average Processing Time was 5.23 days vs. 5.39 days in Qtr 4 of FY22. Processed 100% (2 of 2) of contracts within target timeframes; Average Processing Time was 138 days vs. 98 days in Qtr 4 of FY22.

Purchasing



The Purchasing Unit processed 1,724 purchase orders, 43 more than the 1,657 processed in Qtr 4 of FY22 for a total value of \$14,927,509 versus a dollar value of \$15,684,353 in Qtr 4 of FY22.

The purchase order processing target was not met for the \$0K - \$500 category due to item sourcing and price confirmations.

Contracts, Change Orders and Amendments

Procurement executed two contracts with a value of \$5,339,839 and three amendments with a value of \$552,449.

Staff reviewed 50 proposed change orders and 23 draft change orders.

Twenty change orders were executed during the period. The dollar value of all non-credit change orders during Q4 FY23 was \$1,911,085 and the value of credit change orders was (\$175,414).

Note: A credit change order is a change order that results in a decrease in contract value.

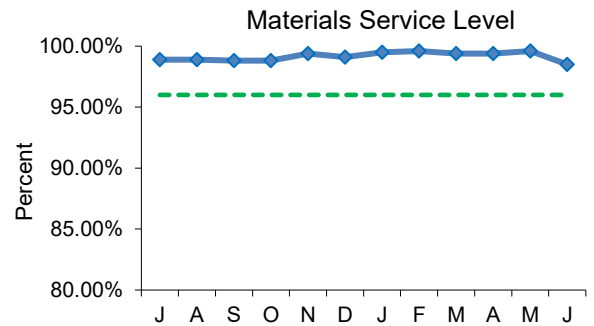
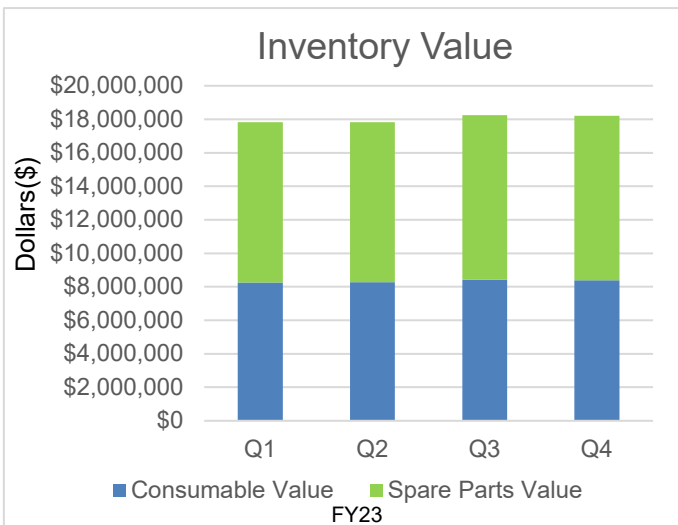
Materials Management

4th Quarter - FY23

The Materials Management department manages the three regional warehouses (Chelsea, Deer Island and Southboro). This includes the replenishment and receipt of both consumable and spare parts items to meet the needs of the MWRA. Additionally, MWRA tools and equipment are safeguarded through the Property Pass unit within the Materials Management department.

Inventory goals focus on:

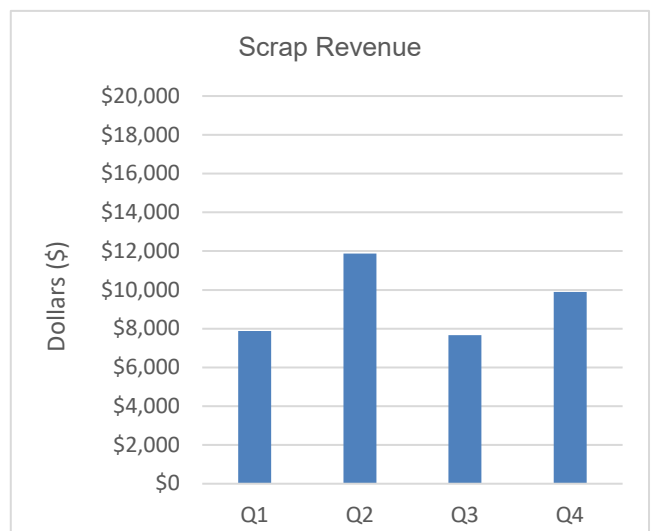
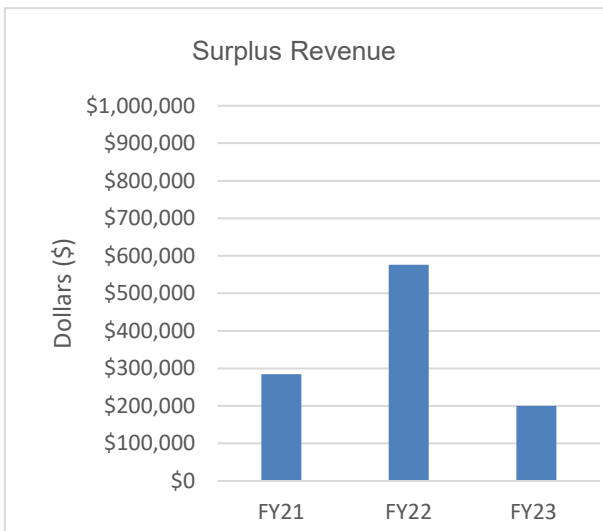
- Maintaining optimum levels of consumables inventory (office supplies, electrical, safety, etc.) and spare parts inventory (critical items such as actuators, motors, muffin monsters, etc.) necessary to support MWRA Operations and Maintenance. Typically spare parts carry longer lead times.
- Adding new items to inventory to meet changing business needs.
- Reviewing consumables and spare parts for obsolescence.
- Managing and controlling valuable equipment and tools via the Property Pass Program.



The service level is the percentage of stock requests filled. The goal is to maintain a service level of 96%. Staff issued 2,714 (98.5%) of the 2,756 items requested in Q4 from the inventory locations for a total dollar value of \$643,171.

Property Pass Program:

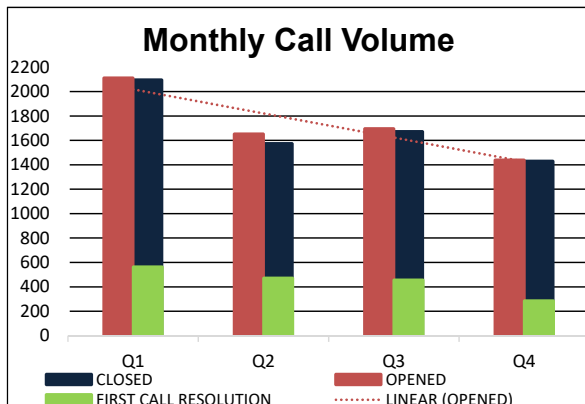
- Conducts audits of tools and equipment to ensure the safeguarding of MWRA assets.
- Manages the disposition and sale of surplus tools and equipment through GovDeals, an online auction site.
- Manages the surplusing of scrap metals and materials generating revenue to the MWRA staff.



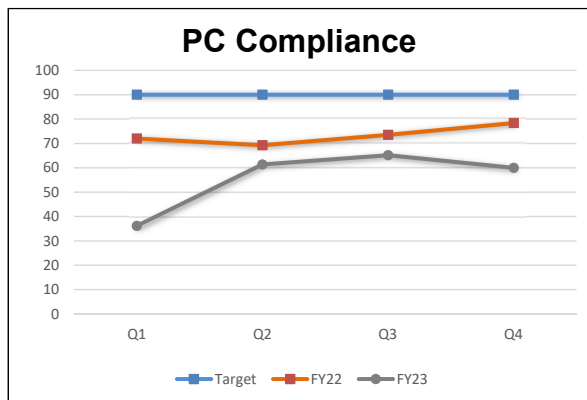
MIS Program

4th Quarter – FY23

Numbers & Statistics



Summary of calls managed by the Helpline. The trend line indicates the number of new tickets has decreased since peaking in Q1.



Percentage of user endpoints that are in compliance with system updates. These numbers are a direct reflection of accessibility to these systems. Daytime patching began in January for mobile devices.

Project Updates

Infrastructure & Security

Office Space Planning: All phases of the construction are completed with the exception of phase 2 in Deer Island, which is estimated to complete in July.

Network Enhancement/Upgrades: Tunnel Redundancy Core Storage facility brought online. Cellphone Distributed Antenna System upgraded in Chelsea, Deer Island installation to be scheduled. Edge switched replacement 60% completed, expected completion in October. Scope being developed for balance of copper cabling on DITP. Design of Software Defined Wide Area Network (SD-WAN) infrastructure to improve network resiliency completed. Phase 1 (Chelsea) implementation completed, remote sites to begin in July.

VMWare Workspace ONE: This solution will replace Citrix Workspace, XenMobile, Absolute, and Ivanti and will manage remote access, mobile devices, device tracking, software deployment, and asset management. MIS Desktop Team visited Chelsea, DI and Southborough to assist user's with migration on smartphones to the new email tool called Boxer, this effort is 82% complete

Conference Room Media Upgrades: Moving all conference rooms to new MWRA meeting standard. 8 of 16 conference rooms have been upgraded across the Authority. The remaining rooms are awaiting procurement of additional media kits.

Telephone System Upgrade: Phase 1 of phone system cutover completed on DITP. Next phase pending copper cabling upgrade.

Library, Record Center, & Training

Library: Undertook 20 research requests, supplied 28 books for circulation, provided 12 new books and 8 new standards (aside from subscription). Supported 450 end user searches, including: specifications for seawall repair, change orders for construction contracts-industry average, historic photos of wasm 3 construction, and gauging station images-Framingham.

Record Center (RC): 43 new boxes added to RC (1,052 YTD), handled 1,095 total boxes, and shredded 15, 65 gallon bins of confidential documentation this quarter. The scanning initiative continues with over 360 boxes of physical records since starting in Q1. Performed searches for various departments on topics such as seawall construction at Deer Island, historic photos of wasm 3 construction, Dudley Rd pump station, section 75 pipe laying, Deer Island wind turbine.

MIS Training: In Q4, 2 online IT lessons were taken by 78 employees (208 YTD).

Applications

ECM/Electronic Document Management: Made significant progress on Phase 2 of the project, which includes a large migration of electronic CAD drawings into a newly built Master Repository. Successfully migrated approximately 70% of DITP's approximately 10,000 drawings into the development environment. Started the development of two custom forms for RFI's and Submittals, and began preparations to begin User Acceptance Testing with E&C. Executed a change order to correct multiple data issues with the physical records data migration.

MWRA Website Refresh: Kick off meeting and initial requirements gathering meeting held. Worked with vendor to answer multiple technical questions from MIS and ENQUAL. Provided feedback on proposed site map. Demo of initial design to occur in early July.

Infor Upgrade/Migration: Received board approval, Notice to Proceed is expected in August.

Maximo/Lawson Interface: The contractor is finalizing development on the Maximo/Lawson interface touchpoints and staff are reviewing the documentation to be used for user acceptance testing. Production implementation is planned for late September.

Lawson: Implemented new Health Insurance and Flexible Spending Account (FSA) plans for the new plan year starting June 1st and July 1st respectively. Employees were transferred to the new plans based on their enrollment preferences. Worked with Payroll to complete salary chart setup, training and documentation for all new Union charts. Retroactive salary payments for Unit 2 employees has been created.

Discoverer to Business Objects Enterprise (BOE) Migration: Current Discoverer application that is used to create reports is being discontinued and being replaced with BOE. All required reports have been migrated to new application and are in the process of being verified. Training classes for MWRA staff are in development.

Tellog Infrastructure Upgrade: Application upgrade to latest Tellog Enterprise version 6.96 has been completed.

Maximo Version Upgrade: MIS continues with upgrade activities. The Development environment is complete and currently working to upgrade the Test environment with Production to follow.

Legal Matters
4th Quarter FY23

PROJECT ASSISTANCE

Real Estate, Contract, Energy, Environmental and Other Support:

- **8(m) Permits, License Agreements, and Other Permits:** Reviewed **82 eighty-two** 8(m) permits, including any related MEPA Section 61 findings. Reviewed and finalized a wastewater direct connection permit. Drafted four licenses.
- **Real Property:** Reviewed and authorized seven watershed real property acquisition projects by the Department of Conservation and Recreation. Revised form of license agreement for temporary use of land at various locations and drafted thirteen notices of offer for acquisition of permanent and temporary easements to support MWRA's Siphon Juncture Rehabilitation Project. Researched property rights for Metropolitan Water Tunnel Program and prepared license and access letters for survey and boring work to support the Program.
- **Energy:** Provided ongoing counsel and support for energy team and other MWRA divisions regarding energy related issues.
- **Environmental/NPDES:** Provided ongoing counsel and support to ENQUAL and other MWRA divisions regarding NPDES and other environmental related issues.
- **Miscellaneous:** Reviewed various proposed legislation for potential impacts to MWRA. Reviewed various construction contracts and prepared correspondence. Finalized MWRA policies for Information Technology, Security and Human Resources. Assisted operations with preparation of draft amendments to two water supply agreements. Assisted with preparation of a list of regulatory changes anticipated to be undertake/promulgated in the next twelve months, pursuant to the requirements of M.G.L. c. 30A. Researched applicable laws regarding removal of public shade trees, and finalized public tree hearing notice for MWRA Contract 6543 WASM 3. Assisted staff with resolution of certain construction claims and contract close out. Negotiated terms of license for software subscription service.
- **Public Records Requests:** MWRA received and responded to one hundred forty-nine public records requests. Provided counsel and support to various MWRA divisions and records access officers regarding the Public Records Law and Massachusetts Statewide Records Retention Schedule. Reviewed documents for submission to Records Conservation Board for disposition.

New Matters

- An employee filed a second charge of discrimination and retaliation against MWRA at the Massachusetts Commission Against Discrimination, based upon sex, gender identity and disability.
- A union filed a grievance and request for arbitration alleging MWRA violated the collective bargaining agreement when it failed to pay an employee 3.5 hours of compensatory time.

- A union filed a charge of prohibited practice at the Department of Labor Relations, alleging that MWRA violated the state labor relations law M.G.L. c. 150E, in connection with an arbitrator's decision concerning posting of a position at Grade 19 rather than Grade 21.
- A union filed a request for arbitration alleging that the MWRA unilaterally changed employees' compensatory time limits in violation of Article 6, Sections 1 and 2 of the Collective Bargaining Agreement.
- A union filed a request for arbitration, alleging that an employee was forced to violate an MWRA policy requiring accurate recording of time worked, was forced to keep track of his own overtime compensation and was not paid for overtime hours worked in violation of Article 6 of the Collective Bargaining Agreement.
- A union filed a request for arbitration, asserting that the MWRA forced an employee to use benefit time instead of allowing the accrual of overtime compensation, in violation of Article 6 of the Collective Bargaining Agreement.
- A union filed a request for arbitration asserting that MWRA forced employees to violate an alleged MWRA policy to accurately report time worked by having to keep track of their own overtime compensation, in violation of Article 6 of the Collective Bargaining Agreement. The union also alleged that, for the purpose of avoiding payment of overtime compensation, the MWRA forced employee to use benefit time instead of allowing the accrual of overtime compensation, in violation of Article 6 of the Collective Bargaining Agreement.
- A union filed a request for arbitration alleging that an employee was denied 3 hours of compensatory time on an unspecified date in violation of Article 6 of the Collective Bargaining Agreement.
- A union filed a request for arbitration asserting that an employee's leave balance does not accurately reflect compensatory time earned as a result of working 4 extra hours on 9/25/22.
- A union filed a request for arbitration, alleging that the MWRA violated the collective bargaining agreement when it suspended the Grievant.

Significant Developments

- The MWRA filed a complaint in the Chelsea District Court, appealing the decision of the Department of Unemployment Assistance's Board of Review affirming the Department's earlier decision granting unemployment benefits to a former employee. MWRA filed a Motion for Judgment on the Pleadings.

Matters Concluded

- Settled a grievance in which the union alleged that MWRA violated a collective bargaining agreement by unilaterally changing employees' compensatory time limits in violation of Article 6, Sections 1 and 2 of the Collective Bargaining Agreement. As a result of the settlement, the union withdrew its demand for arbitration.

- Settled a grievance in which the union alleged that an employee was forced to violate an MWRA policy requiring accurate recording of time worked, was forced to keep track of his own overtime compensation and was not paid for overtime hours worked in violation of Article 6 of the Collective Bargaining Agreement. As a result of the settlement, the union withdrew its demand for arbitration.
- Settled a grievance in which the union alleged that the MWRA forced an employee to use benefit time instead of allowing the accrual of overtime compensation, in violation of Article 6 of the Collective Bargaining Agreement.
- Settled a grievance in which the union alleged that the MWRA forced employees to violate an alleged MWRA policy to accurately report time worked by having to keep track of their own overtime compensation, and forced employee to use benefit time instead of allowing the accrual of overtime compensation to avoid payment of overtime compensation, in violation of Article 6 of the Collective Bargaining Agreement.
- Settled a grievance in which the union asserted that the MWRA denied an employee 3 hours of compensatory time on an unspecified date in violation of Article 6 of the Collective Bargaining Agreement. As a result of the settlement, the union withdrew its demand for arbitration.
- Settled a grievance in which the union asserted that the MWRA violated the Collective Bargaining Agreement because an employee's leave balance did not accurately reflect compensatory time earned as a result of working 4 extra hours on 9/25/22. As a result of the settlement, the union withdrew its demand for arbitration.
- Settled a grievance in which the union alleged that MWRA violated the collective bargaining agreement when it failed to pay an employee 3.5 hours of compensatory time. As a result of the settlement, the union withdrew its demand for arbitration.

LITIGATION/CLAIMS

New Lawsuits

Unified Contracting, Inc. v. MWRA, Suffolk Superior Court, 2384CV00927. This action, filed on April 18, 2023, arises out of MWRA Contract No. 7198, Quabbin Aqueduct Shaft 2 Repairs. The Plaintiff alleges it is entitled to payment for additional time and materials furnished for the project. The Plaintiff alleges damages of over \$1.3 million.

MWRA v. Department of Unemployment Assistance and (Former Employee), Chelsea District Court, 2314CV180. Law Division filed a complaint for judicial review of a decision of the DUA allowing unemployment compensation.

New Claims:

There are no new claims to report.

Significant Developments:

Jon Eldridge, et al. v City of Framingham, MWRA and RJV Construction Corporation, Middlesex Superior Court, 2281CV03049. MWRA's Motion to Dismiss allowed by Court on May 5, 2023. Claims remain pending against other parties so final judgment for MWRA has not yet entered.

(Current employee) v. MWRA, et al., Suffolk Superior Court C.A. No. 284CV01434. Court allowed Joint Motion to Extend Tracking Order deadlines on May 26, 2023 to allow time for mediation. Assisted in the preparation of MWRA's submission in advance of mediation scheduled for July 11, 2023.

MWRA v. NAGE, Suffolk Superior Court CA No. 2284CV02453. MWRA served NAGE with a Motion for Judgment on the Pleadings.

Closed Lawsuits:

United States of America and Massachusetts Port Authority v. NSTAR Electric Company d/b/a Eversource ("Eversource"), Harbor Electric Energy Company ("HEEC") and Massachusetts Water Resources Authority, US District Court No. 1:16-cv-11470-RGS (Cross Harbor Cable Case): The Authority was a defendant, along with NSTAR Electric Company d/b/a Eversource ("Eversource") and Harbor Electric Energy Company ("HEEC"), in a civil action brought in July 2016 by the United States of America, at the request of the United States Army Corps of Engineers. The action sought injunctive relief and civil penalties and alleged violation of a permit issued to the defendants in September 1989 for the installation of a submarine cable that provides electric power to the Deer Island Treatment Plant. The federal action alleged that the power cable was not installed at required depths. The federal action was stayed by the District Court in 2017 as a result of an agreement between MWRA and HEEC pursuant to which HEEC was to undertake the design and installation of a suitable replacement power cable for MWRA's exclusive use (the "2017 Agreement"). Under the 2017 Agreement, the Authority is required to pay the cost of the project, subject to a \$17.5 million credit for the early decommissioning of the old cable and a \$9.0 million cap on MWRA's share of the cost of decommissioning the old cable. HEEC completed the installation and energizing of the replacement power cable and the old cable was removed. Eversource, HEEC and MWRA executed a Settlement Agreement & Release and on February 9, 2023, the parties filed a Stipulation of Dismissal of the federal action with prejudice. DPU Proceedings 17-136 and 21-147: The 2017 Agreement also provided that HEEC would propose a final tariff addendum to the Department of Public Utilities ("DPU") to incorporate the final project costs. In December 2021, the Authority and HEEC reached an agreement as to the terms of the final tariff addendum which included agreed project costs through August 31, 2021 of \$116.5 million (representing 98% completion of the project) and provisions to permit HEEC to supplement the final tariff addendum to request recovery of certain remaining project costs to bring the project to final completion. On December 14, 2021, the DPU approved the final tariff addendum. At the time of the filing of the final tariff addendum HEEC was near, but not fully complete with the cable project. Applying the \$9.0 million decommissioning cap, HEEC has estimated total project costs to the Authority of approximately \$120 million. Any additional project costs incurred by HEEC are subject to review and audit by the Authority, and submission to the DPU for approval to supplement the final tariff addendum.

Re: Seaport Diagnostics Inc. (including its affiliate Telemere Diagnostic), Commencement of Creditors Trust. On February 1, 2023, a Notice of Commencement of Creditor's Trust was received on behalf of Seaport Diagnostics,

Inc., and its affiliate Telomere Diagnostic (f/k/n Orig3n). The Authority filed no claim as the TRAC permit issued to Orig3n was revoked as of September 30, 2022.

Citibank (South Dakota), N.A. v. (Current Employee)

This wage garnishment matter is closed.

Closed Claims:

Edgar Marques. This personal injury claim arose out of motor vehicle accident involving MWRA employee. The claim settled for \$50,000. This claim is now closed.

Subpoenas:

There are no new subpoenas received and no subpoenas that closed in 4th Quarter FY 2023.

**Wage
Garnishments**

There is one wage garnishment matter that is active and monitored by Law Division.

SUMMARY OF PENDING LITIGATION MATTERS

TYPE OF CASE/MATTER	As of June 2023
Construction/Contract/Bid Protest	1
Tort/Labor/Employment	4
Environmental/Regulatory/Other	1
Eminent Domain/Real Estate	0
TOTAL	6
Other Litigation matters (restraining orders, etc.) - Class Action suit	1
TOTAL – all pending lawsuits	7
Claims not in suit	2
Bankruptcy	2
Wage Garnishment	1
TRAC/Adjudicatory Appeals	3
Subpoenas	0
TOTAL – ALL LITIGATION MATTERS	15

INTERNAL AUDIT AND CONTRACT AUDIT ACTIVITIES
4th Quarter - FY23

Internal Audit evaluates the effectiveness of internal controls and procedures and monitors the quality, efficiency and integrity of the Authority's operating and capital programs. Through our audits and reviews, we assess whether internal controls are functioning as intended and that only reasonable, allowable and allocable costs are paid to consultants, contractors and vendors.

Highlights

During the 4th quarter FY23, Internal Audit (IA) completed a fleet physical inventory of all plated vehicles and equipment in coordination with management. An audit of Accounts Payable Process controls and procedures and the Payroll Process controls and procedures is progressing. An internal review of MIS assets is progressing.

In addition, IA completed a true-up of 2022 operating expenses for the HEEC cable, reviewed the Fore River Railroad 2022 tax return, and completed 2 labor burden reviews. There are 4 preliminary reviews of professional service contracts, 4 incurred cost audits and 3 labor burden reviews in process. IA also issued 48 indirect cost rate letters to consultants following a review of their consultant disclosure statements.

Status of Recommendations

During FY23, 5 recommendations were closed.

IA follows-up on open recommendations on a continuous basis. All open recommendations have target dates for implementation and are generally targeted to be closed within 12 months of the audit report issue date.

Report Title (issue date)	Audit Recommendations		
	Open	Closed	Total
Fleet Services Non-Plated Equipment Inspections (3/30/20)	1	14	15
Compliance Status of Employees' Mandatory Confined Space Entry Training (2/24/23)	1	3	4
Water and Wastewater Licenses and Certifications (3/31/23)	2	1	3
Total Recommendations	4	18	22

Cost Savings

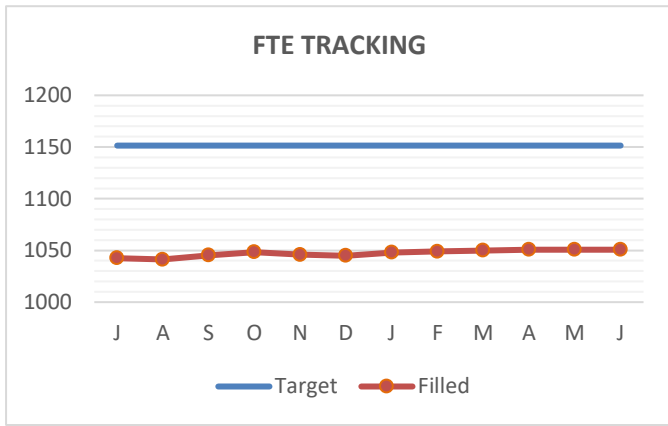
IA's target is to achieve at least \$1,000,000 in cost savings each year. Cost savings vary each year based upon many factors. In some cases, cost savings for one year may be the result of prior years' audits.

Cost Savings	FY19	FY20	FY21	FY22	FY23	TOTALS
Consultants	\$262,384	\$643,845	\$563,525	\$39,938	\$223,609	\$1,733,301
Contractors & Vendors	\$3,152,884	\$2,097,729	\$1,547,223	\$1,714,614	\$1,912,548	\$10,424,998
Internal Audits	\$210,063	\$212,517	\$214,458	\$222,554	\$225,684	\$1,085,276
Total	\$3,625,331	\$2,954,091	\$2,325,206	\$1,977,106	\$2,361,841	\$13,243,575

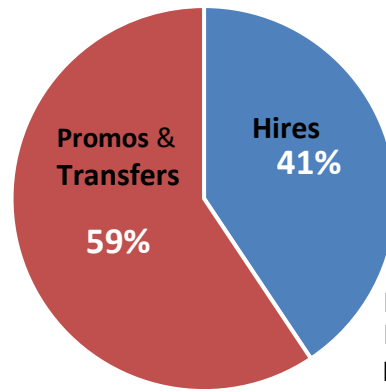
OTHER MANAGEMENT

Workforce Management

4th Quarter - FY23



Position Filled by Hires/Promos & Transfer for YTD

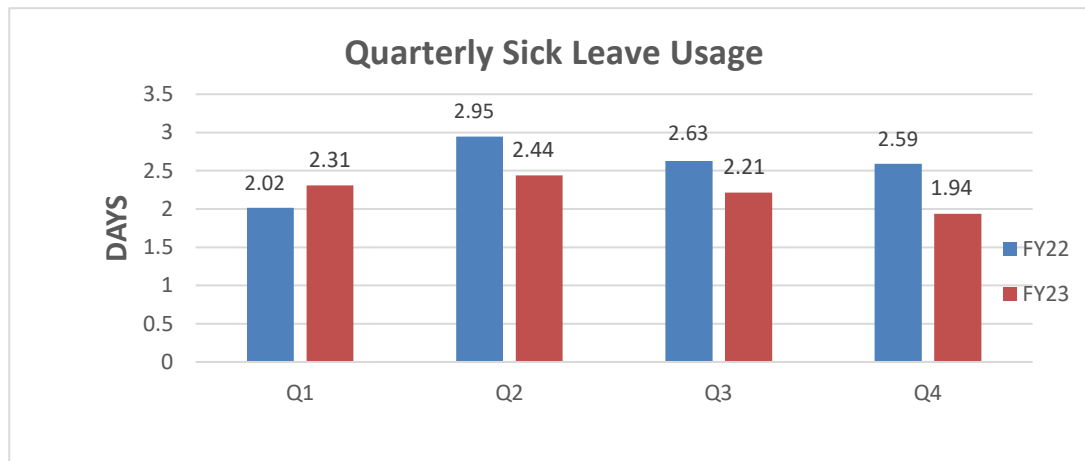


	<u>Pr/Trns</u>	<u>Hires</u>	<u>Total</u>
FY21	81 (56%)	64 (44%)	145
FY22	138 (68%)	65 (32%)	203
FY23	133 (59%)	91(41%)	224

FY23 Budget for FTEs = 1151.4
 FTEs as of June 2023= 1050.7
 Tunnel Redundancy as of June 2023 = 9

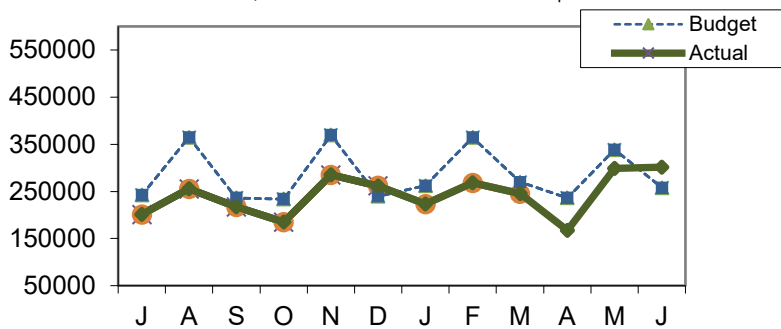
POSITION CHANGE by FY

FY	HIRES	PROMOS	TRANSFER	RETIRE	RESIGN	DISMISS	DECEASED
FY19	76	87	25	40	32	9	4
FY20	58	70	14	38	23	2	1
FY21	64	66	15	58	15	2	2
FY22	65	108	30	82	45	2	3
FY23	91	118	15	46	31	5	5



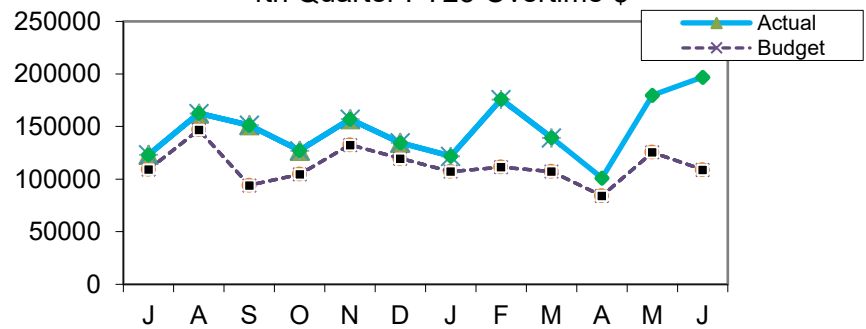
Average quarterly sick leave for the 4th Quarter of FY23 has decreased as compared to the 4th Quarter of FY22. (1.94 from 2.59).

Field Operations 4th Quarter FY23 Overtime \$



Total Overtime for Field Operations for fourth quarter was \$768k, which is \$64k or 8% under budget. Emergency overtime was \$244k, which is \$175k under budget or 42%, primarily due to fewer wet weather events. Coverage overtime totaling \$222k which is \$85k over budget or 48%, primarily due to vacant shifts going unfilled. Planned overtime was \$238k or \$14k or 6% over budget, with a combination spending of \$46k for scheduled maintenance; and \$126k for various coverage shifts.

Deer Island Treatment Plant 4th Quarter FY23 Overtime \$

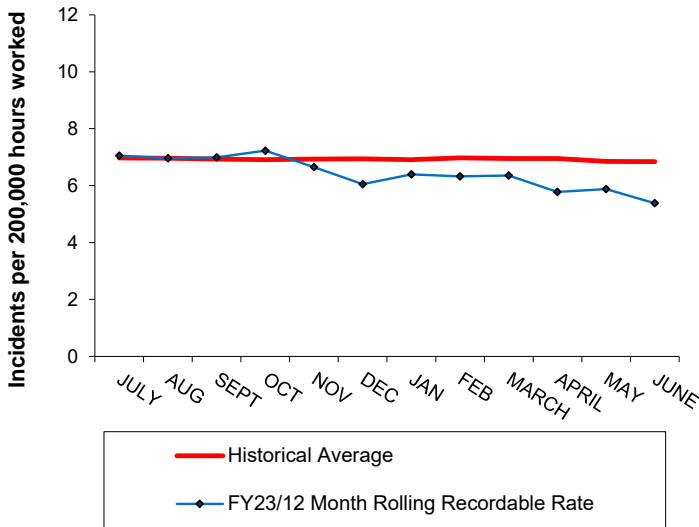


Deer Island's total overtime expenditure fourth quarter was \$478K, which is \$159K or 50.0% over budget due to higher than anticipated shift coverage of \$145K and planned/unplanned overtime of \$49K. This is offset by lower spending for storm coverage of (\$34K). YTD Deer Island's overtime spending is \$922K, which is \$420K or 31.0% over budget due to higher than anticipated shift coverage of \$524K and planned/unplanned overtime of \$48K. This is offset by lower than anticipated storm coverage of \$152k.

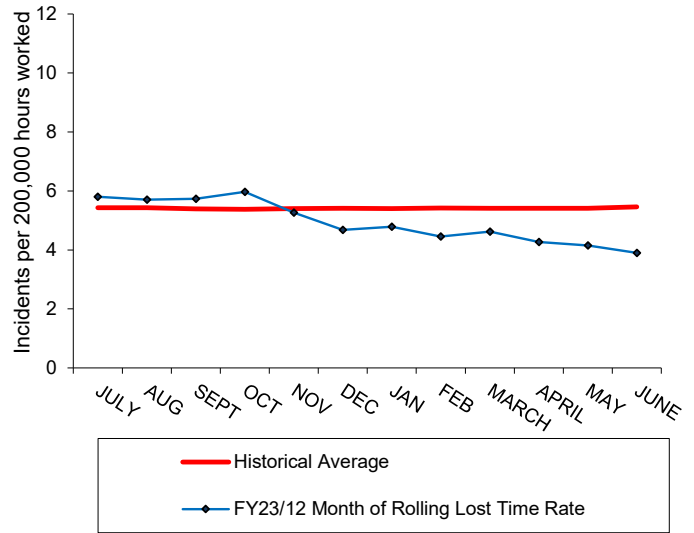
Workplace Safety

4th Quarter - FY23

Recordable Injury & Illness Rates



Lost Time Injury & Illness Rates

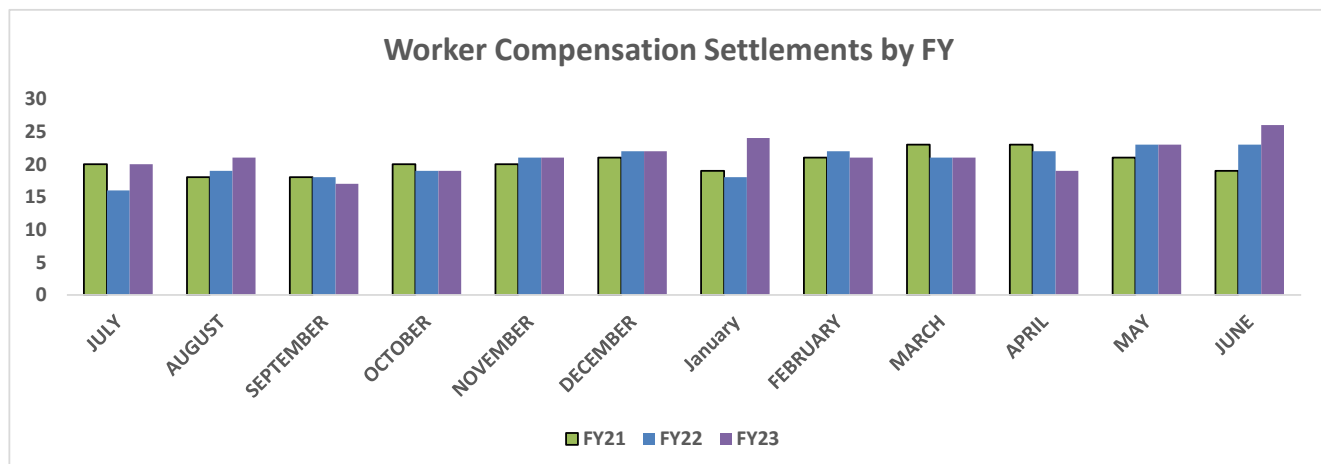


- 1 "Recordable" incidents are all work-related injuries and illnesses which result in death, loss of consciousness, restriction of work or motion, transfer to another job, or require medical treatment beyond first aid. Each month this rate is calculated using the previous 12 months of injury data.
- 2 "Lost-time" incidents, a subset of the recordable incidents, are only those incidents resulting in any days away from work, days of restricted work activity or both - beyond the first day of injury or onset of illness. Each month this rate is calculated using the previous 12 months of injury data.
- 3 The "Historical Average" is computed using the actual MWRA monthly incident rates for FY99 through FY22.

WORKERS COMPENSATION HIGHLIGHTS

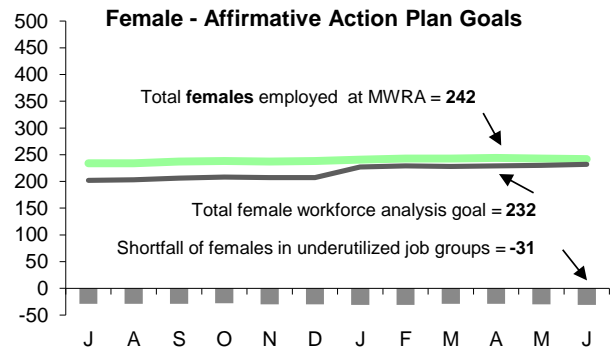
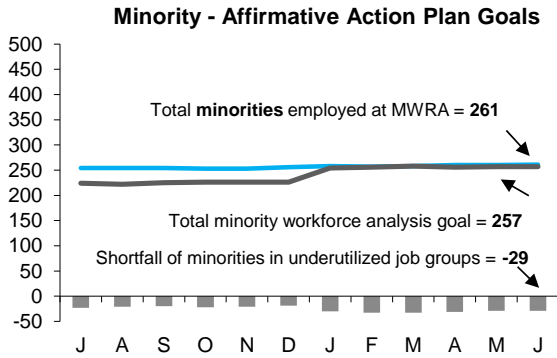
	4th Quarter Information		Open Claims
	New	Closed	
Lost Time	3	14	35
Medical Only	12	13	111
Report Only	15	17	
	QYTD		FYTD
Regular Duty Returns	7		19
Light Duty Returns	0		2
Indemnity payments as of June 2023 included in open claims listed			26

Worker Compensation Settlements by FY



MWRA Job Group Representation

4th Quarter - FY23



Highlights:

At the end of Q4 FY23, 6 job groups or a total of 29 positions are underutilized by minorities as compared to 5 job groups for a total of 21 positions at the end of Q4 FY22; for females 8 job groups or a total of 31 positions are underutilized by females as compared to 8 job groups or a total of 30 positions at the end of Q4 FY22. During Q4, 7 minorities and 5 females were hired. During this same period 3 minorities and 4 females were terminated.

Underutilized Job Groups - Workforce Representation

Job Group	Employees as of 6/30/2023	Minorities as of 6/30/2023	Achievement Level	Minority Over or Underutilized	Females As of 6/30/2023	Achievement Level	Female Over or Underutilized
Administrator A	26	4	2	2	11	6	5
Administrator B	24	2	5	-3	6	7	-1
Clerical A	24	8	5	3	20	18	2
Clerical B	23	7	6	1	3	12	-9
Engineer A	80	18	21	-3	22	21	1
Engineer B	55	19	16	3	14	13	1
Craft A	110	17	25	-8	0	6	-6
Craft B	122	26	26	0	1	5	-4
Laborer	57	15	16	-1	3	3	0
Management A	90	20	22	-2	33	25	8
Management B	39	11	11	0	6	9	-3
Operator A	64	4	16	-12	3	7	-4
Operator B	58	18	9	9	3	2	1
Professional A	30	8	8	0	16	14	2
Professional B	155	47	45	2	70	50	20
Para Professional	48	17	11	6	24	23	1
Technical A	54	17	12	5	7	10	-3
Technical B	5	3	1	2	0	1	-1
Total	1064	261	257	33/-29	242	232	41/-31

AACU Candidate Referrals for Underutilized Positions

Job Group	Job Title	# of Vacancies	Requisition Internal/ External	Promotions/ Transfers	AACU Referral External	Position Status New Hire/Promotion	
Administrative B	Asst Director, Internal Audit	1	Int.	1	0	PROMO = AM	
Administrative B	Deputy Dir, Procurement	1	Int.	1	1	PROMO = AF	
Craft B	Inventory Control Specialist	1	Int.	1	0	PROMO = HM	
Engineer A	Sr Program Manager	1	Int.	1	0	PROMO = WM	
Engineer A	Manager, Western Maintenance	1	Int./Ext.	1	0	PROMO = WM	
Engineer A	Principal Civil Engineer	1	Int.	1	0	PROMO = WM	
Engineer A	Project Engineer CADD - DISC	1	Ext.	0	0	NH = WM	
Craft A	Unit Supervisor - Mech Cert	1	Int.	1	0	PROMO = WM	
Craft A	M & O Specialist	1	Ext.	0	0	NH= WM	
Craft B	Instrument Technician	1	Int./Ext.	1	0	PROMO = BM	
Craft B	Med Volt Electrical Specialist	1	Int.	1	0	PROMO = WM	
Craft B	Toolmaker	1	Int.	1	0	PROMO = WM	
Craft B	Construction Pipelayer	1	Int.	1	0	PROMO = HM	
Craft B	Electrician	1	Ext.	0	0	NH = WM	
Laborer	OMC Laborer	2	Ext.	0	0	NH=1WM, 1BM	
Laborer	Supervisor, Equipment Maint	1	Int.	1	0	PROMO= WM	
Laborer	Building/Grounds Worker	2	Int./Ext.	1	0	PROMO=BM, NH=TM	
Management A	Construction Coordinator	1	Ext.	0	0	NH = WM	
Management B	Assistant Contracts Manager	1	Ext.	0	0	NH = WM	
Technical A	Transmission & Treatment Opera	283	1	Int.	1	0	PROMO = WF
Technical A	Field Sup WW Pipe Inspection	49	2	Int.	2	0	PROMO = 2WM

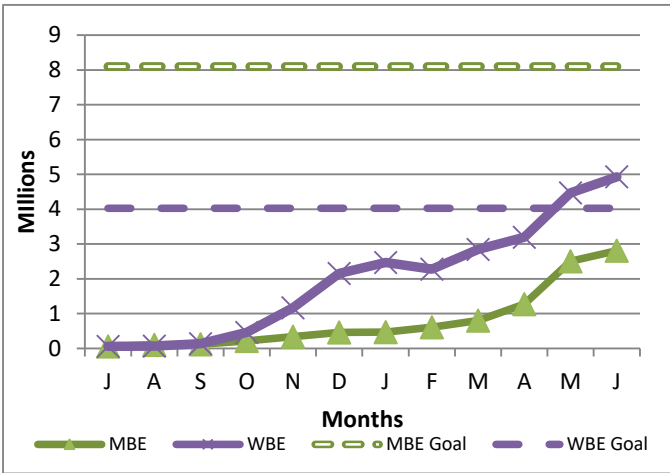
MBE/WBE Expenditures

4th Quarter - FY23

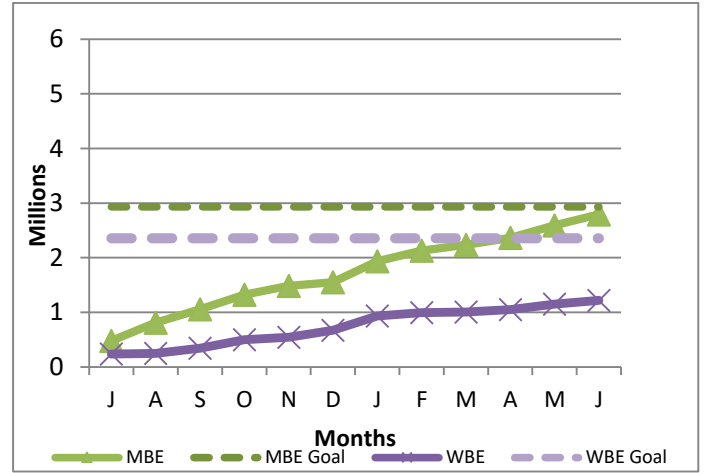
MBE/WBE targets are determined based on annual MWRA expenditure forecasts in the procurement categories noted below. The spending goals for FY23 are based on 85% of the total construction and 75% of the total professional projected spending for the year. Certain projects that do not meet the established monetary thresholds and/or have limited opportunities for subcontracting have been excluded from the goals as they have no MBE/WBE spending goals. The spending goals for FY23 for Goods and Services are based on the average spending of MBE/WBE dollars for the previous 5 years.

MBE/WBE percentages are the results from a 2002 Availability Analysis, and MassDEP's Availability Analysis. As a result of the Availability Analyses, the category of Non-Professional Services is included in Goods/Services. Consistent with contractor reporting requirements, MBE/WBE expenditure data is available through June.

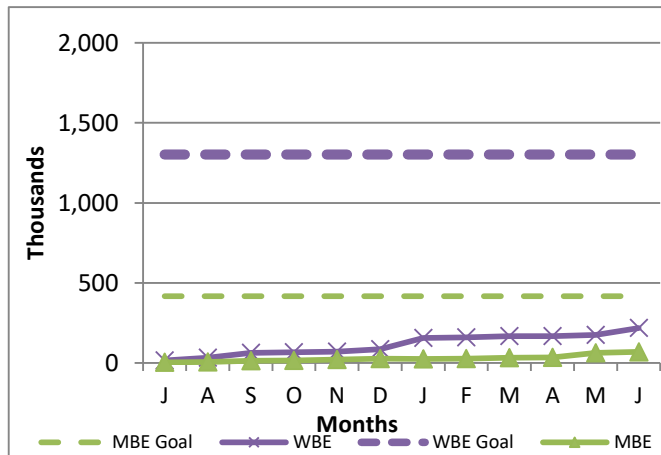
Construction



Professional Services



Goods/Services



FY23 spending and percentage of goals achieved, as well as FY22 performance are as follows:

MBE			
FY23 YTD	FY22		
Amount	Percent	Amount	Percent
2,808,124	34.7%	3,102,188	56.2%
2,794,126	95.3%	3,156,867	147.1%
69,250	16.6%	387,120	102.7%
5,671,500	49.6%	6,646,175	82.6%

WBE			
FY23 YTD	FY22		
Amount	Percent	Amount	Percent
4,927,964	95.3%	1,276,049	46.5%
1,220,172	51.8%	1,737,850	100.8%
174,521	13.4%	365,393	27.6%
6,322,657	82.3%	3,379,292	58.3%

Construction
Prof Svcs
Goods/Svcs
Totals

FY23 MBE/WBE dollar totals do not include MBE and WBE payments to prime contractors and consultants.

MWRA FY23 CEB Expenses through 4th Quarter 2023

As of June 2023, total expenses are \$823.2 million, \$17.0 million or 2.0% lower than budget, and total revenue is \$864.7 million, \$24.5 million or 2.8% over the estimate, for a net variance of \$41.5 million.

Expenses –

Direct Expenses are \$261.3 million, \$12.4 million or 4.5% under budget.

- **Wages & Salaries** are \$12.5 million under budget or 10.5%. Regular pay is \$12.9 million under budget, due to lower head count, and timing of backfilling positions. YTD through June, the average Full Time Equivalent (FTE) positions was 1,057, 110 below the 1,167 FTE's budgeted.
- **Chemicals** are \$3.0 million over budget or 20.3% due to higher spending for Sodium Hypochlorite of \$1.8 million over budget due to greater usage at DITP due to lower flows and greater need for odor control and higher contract price and Wastewater Operations, primarily at the Nut Island Headworks. In addition, spending for Ferric Chloride and Carbon Dioxide were over budget by \$1.0 million and \$227k, respectively.
- **Utilities** expenses are over budget by \$1.6 million or 5.2%. This reflects higher spending on Electricity of \$2.0 million, 8.6% over budget. Spending at Deer Island Treatment Plant (DITP) was \$1.2 million above budget due to higher real time pricing as well as higher usage, and peak demand charges. Higher usage reflects a 14.2% drop in on-site generation which drove a 4.0% rise in purchased power. This offset lower power requirements due to flows being 9.5% under budget. Similarly, Electricity in Field Operations was greater than budget by \$792k due to T&D and Generation costs being greater than budget. Lower spending on diesel, \$396k, due to better pricing on May's top-off.
- **Other Materials** are \$1.9 million under budget or 28.1%, due to underspending on Vehicle Purchases, \$862k under budget, reflecting timing and supply chain issues, \$317k in furniture expense, and \$279k in vehicle expense primarily due to delay in installation of electrical vehicle chargers.
- **Other Services** are \$1.4 million under budget or 4.8%, due to lower than anticipated Telecommunication costs of \$694k, Other Services \$184k under budget, lower Space/Lease Rentals of \$265k due to Rock Shed Lease and shelving due to timing, and lower Grit Screening Removal of \$116k due to lower quantities.

Indirect Expenses are \$58.1 million, \$2.4 million or 3.9% under budget due primarily to lower Watershed Reimbursement (including PILOT) of \$2.7 million.

Capital Finance Expenses totaled \$503.7 million, \$2.2 million under budget or 0.4%. Surplus was a result of lower than budget variable interest expense of \$3.0 million due to lower interest rates combined with lower SRF spending of \$8.0 million due to bond issue timing, and lower Water Pipeline CP of \$2.4 million, partially offset by higher Senior Debt of \$11.2 million, as a result of defeasance expenditures of \$21.8 million.

Revenue and Income –

Total Revenue and Income is \$864.7 million, \$24.5 million or 2.8% over the estimate. The favorable variance was driven by Investment Income of \$17.0 million over the budget due to higher than budget interest rates, Other User Charges which were \$4.6 million over the estimate reflecting water purchases from the City of Cambridge during facility maintenance, and Other Revenue of \$2.9 million primarily due to receipt of Debt Service Assistance from Commonwealth of \$1.2 million, Energy Revenue of \$510k, Miscellaneous Revenue of \$495k, Permit Fees of \$347k, and operating grants of \$495k primarily for COVID-19 from FEMA.

	Jun 2023 Year-to-Date			
	Period 12 YTD Budget	Period 12 YTD Actual	Period 12 YTD Variance	%
EXPENSES				
WAGES AND SALARIES	\$ 118,980,689	\$ 106,433,845	\$ (12,546,844)	-10.5%
OVERTIME	5,337,896	5,172,629	(165,267)	-3.1%
FRINGE BENEFITS	23,961,641	23,122,023	(839,618)	-3.5%
WORKERS' COMPENSATION	2,519,751	2,076,732	(443,019)	-17.6%
CHEMICALS	14,994,036	18,038,588	3,044,552	20.3%
ENERGY AND UTILITIES	30,896,365	32,514,216	1,617,851	5.2%
MAINTENANCE	33,241,023	34,317,838	1,076,815	3.2%
TRAINING AND MEETINGS	492,197	258,753	(233,444)	-47.4%
PROFESSIONAL SERVICES	8,197,575	7,546,594	(650,981)	-7.9%
OTHER MATERIALS	6,728,862	4,837,988	(1,890,874)	-28.1%
OTHER SERVICES	28,372,237	27,017,485	(1,354,752)	-4.8%
TOTAL DIRECT EXPENSES	\$ 273,722,272	\$ 261,336,691	\$ (12,385,581)	-4.5%
INSURANCE	\$ 3,916,002	\$ 3,849,201	\$ (66,801)	-1.7%
WATERSHED/PILOT	28,890,762	26,150,961	(2,739,801)	-9.5%
HEEC PAYMENT	6,225,566	6,658,205	432,639	6.9%
MITIGATION	1,735,694	1,735,694	-	0.0%
ADDITIONS TO RESERVES	2,418,453	2,418,453	-	0.0%
RETIREMENT FUND	12,555,203	12,555,203	-	0.0%
POST EMPLOYEE BENEFITS	4,754,061	4,754,061	-	0.0%
TOTAL INDIRECT EXPENSES	\$ 60,495,741	\$ 58,121,777	\$ (2,373,964)	-3.9%
STATE REVOLVING FUND	\$ 96,342,495	\$ 88,298,785	\$ (8,043,710)	-8.3%
SENIOR DEBT	302,169,940	313,377,111	11,207,171	3.7%
DEBT SERVICE ASSISTANCE	(1,182,494)	(1,182,494)	-	0.0%
CURRENT REVENUE/CAPITAL	18,200,000	18,200,000	-	0.0%
SUBORDINATE MWRA DEBT	75,491,975	75,491,975	-	0.0%
LOCAL WATER PIPELINE CP	6,233,882	3,832,560	(2,401,322)	-38.5%
CAPITAL LEASE	3,217,060	3,217,060	-	0.0%
VARIABLE DEBT	-	(2,985,881)	(2,985,881)	---
DEFEASANCE ACCOUNT	-	-	-	---
DEBT PREPAYMENT	5,500,000	5,500,000	-	0.0%
TOTAL CAPITAL FINANCE EXPENSE	\$ 505,972,858	\$ 503,749,116	\$ (2,223,742)	-0.4%
TOTAL EXPENSES	\$ 840,190,871	\$ 823,207,584	\$ (16,983,287)	-2.0%
REVENUE & INCOME				
RATE REVENUE	\$ 814,648,000	\$ 814,648,000	\$ -	0.0%
OTHER USER CHARGES	9,836,507	14,456,977	4,620,470	47.0%
OTHER REVENUE	6,139,104	9,037,235	2,898,131	47.2%
RATE STABILIZATION	980,000	980,000	-	0.0%
INVESTMENT INCOME	8,587,260	25,614,246	17,026,986	198.3%
TOTAL REVENUE & INCOME	\$ 840,190,871	\$ 864,736,458	\$ 24,545,587	2.9%

Cost of Debt

4th Quarter – FY23

MWRA borrowing costs are a function of the fixed and variable tax exempt interest rate environment, the level of MWRA's variable interest rate exposure and the perceived creditworthiness of MWRA. Each of these factors has contributed to decreased MWRA borrowing costs since 1990.

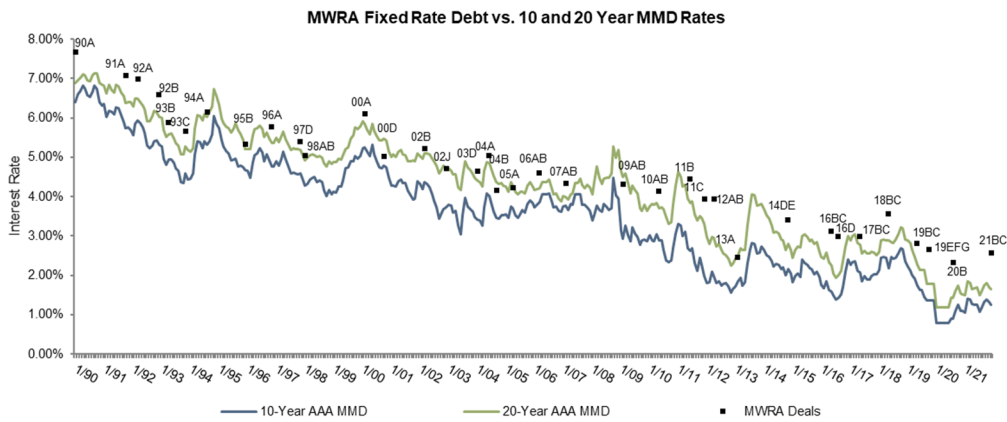
Average Cost of MWRA Debt FYTD

Fixed Debt (\$3.28 billion)	3.32%
Variable Debt (\$269.23million)	2.76%
SRF Debt (\$808.83 million)	1.70%

Weighted Average Debt Cost (\$4.24 billion) 2.97%

Most Recent Senior Fixed Debt Issue April 2023

2023 Series B and C (\$234.3 million) 3.35%

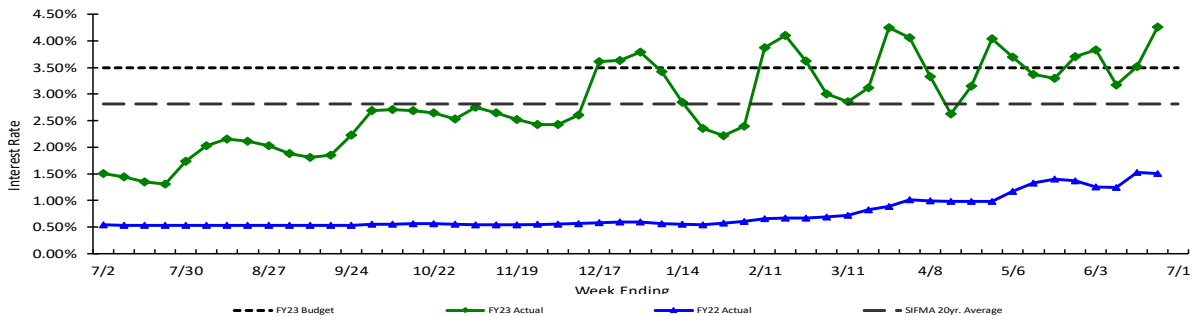


Bond Deal	1997D	1998AB	2000A	2000D	2002B	2002J	2003D	2004A	2004B	2005A	2006AB	2007AB	2009AB	2010AB
Rate	5.40%	5.04%	6.11%	5.03%	5.23%	4.71%	4.64%	5.05%	4.17%	4.22%	4.61%	4.34%	4.32%	4.14%
Avg Life	21.6 yrs	24.4 yrs	26.3 yrs	9.8 yrs	19.9 yrs	19.6 yrs	18.4 yrs	19.6 yrs	13.5 yrs	18.4 yrs	25.9 yrs	24.4 yrs	15.4 yrs	16.4 yrs

Bond Deal	2011B	2011C	2012AB	2013A	2014D-	2016BC	2016D	2017BC	2018BC	2019BC	2019EFG	2020B	2021BC	2023BC
Rate	4.45%	3.95%	3.93%	2.45%	3.41%	3.12%	2.99%	2.98%	3.56%	2.82%	2.66%	2.33%	2.56%	3.35%
Avg Life	18.8 yrs	16.5 yrs	17.9 yrs	9.9 yrs	15.1 yrs	17.4 yrs	18.8yrs	11.2 yrs	11.7yrs	11.9yrs	9.73 yrs.	15.6 yrs	12.2 yrs	10.45 yrs

Weekly Average Variable Interest Rates vs. Budget

MWRA currently has eight variable rate debt issues with \$435.6 million outstanding, excluding commercial paper. Of the eight outstanding series, three have portions which have been swapped to fixed rate. Variable rate debt has been less expensive than fixed rate debt in recent years as short-term rates have remained lower than long-term rates on MWRA debt issues. In June, the Securities Industry and Financial Markets Association rate ranged from a high of 4.18% to a low of 2.84% for the month. MWRA's issuance of variable rate debt, although consistently less expensive in recent years, results in exposure to additional interest rate rise as compared to fixed rate debt.

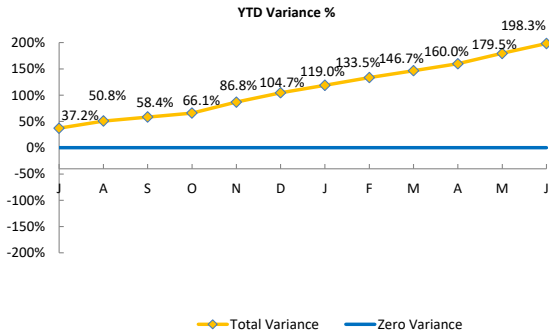


Investment Income

4th Quarter – FY23

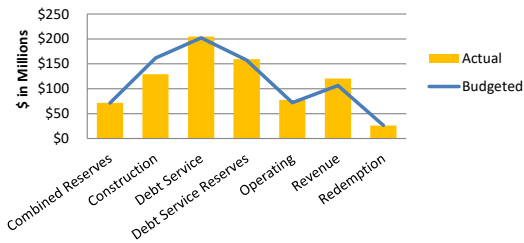
Year To Date

➤ YTD variance is 198%, or \$17 million, over budget due to higher than budgeted interest rates. The Federal Reserve Open Market Committee increased interest rates by 3.5% during FY23.

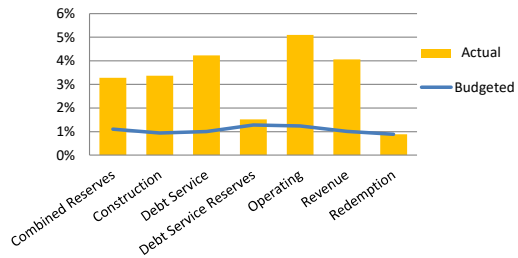


	YTD BUDGET VARIANCE			
	(\$'000)			
	BALANCES IMPACT	RATES IMPACT	TOTAL	%
Combined Reserve	\$6	\$1,566	\$1,572	198.9%
Construction	-\$411	\$2,809	\$2,399	153.1%
Debt Service	\$26	\$6,593	\$6,619	327.5%
Debt Service Reser	\$28	\$370	\$398	19.8%
Operating	\$71	\$2,138	\$2,209	248.0%
Revenue	\$143	\$3,687	\$3,830	356.6%
Redemption	\$0	\$0	\$0	0.1%
Total Variance	-\$137	\$17,164	\$17,027	198.3%

YTD Average Balances Budgeted vs. Actual

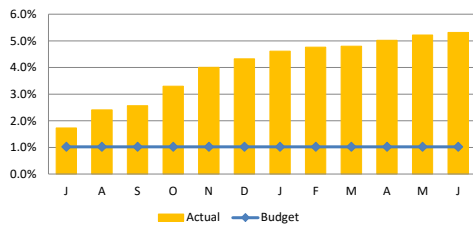


YTD Average Interest Rate Budgeted vs. Actual

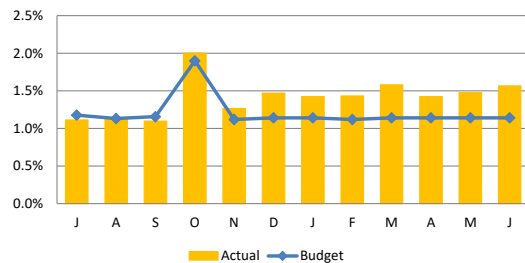


Monthly

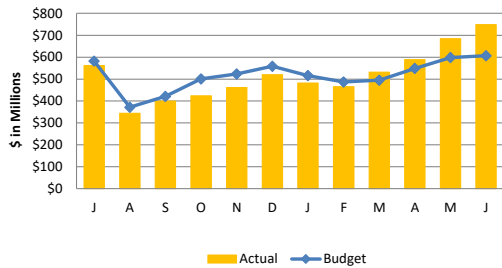
Short-Term Interest Rates



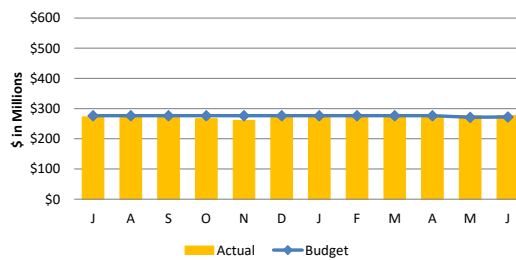
Long-Term Interest Rates



Short-Term Average Balances



Long-Term Average Balances



APPENDIX J

GLOSSARY OF FINANCIAL AND OPERATING TERMS

8M permit: Permission granted by MWRA to persons who wish to construct property improvements on land either adjoining or overlapping MWRA property interests. Permission may be conditioned on various operational and/or engineering concerns.

Accrued Costs: Adjustments to paid expenditures to account for materials or services received but for which payment has not yet been made.

Activated Sludge: The sludge that results when primary effluent is mixed with bacteria-laden sludge and then agitated and aerated to promote biological treatment.

Advanced Waste Treatment: Wastewater treatment beyond the secondary or biological stage that includes the removal of nutrients such as phosphorus and nitrogen and the removal of a higher percentage of suspended solids and organic matter than primary treatment.

Advisory Board: The agency that represents the interests of MWRA's 61 user communities to the Board of Directors in an advisory capacity in accordance with the provisions of MWRA's Enabling Act. The Advisory Board elects three members of the Board of Directors, reviews and comments on MWRA's CIP and CEB, and approves the addition of new communities to the wastewater and water systems.

Aerobic: In the presence of free oxygen.

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

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.

ARRA: American Recovery and Reinvestment Act of 2009 – principal forgiveness loans distributed based on the Department of Environmental Protection's Intended Use Plan.

Ash: The inert material remaining after the combustion of wastewater sludge. Ash is either wet or dry depending on combustion system design.

Audit: An independent examination of the financial books and records of the organization. Typically, audit refers to the year-end examination and preparation of audited financial statements performed by an outside accounting firm hired under contract.

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: A general debt obligation. Typically, bonds are issued as a series of bonds of different amounts and interest rates maturing in different years.

Bond Resolution: A document adopted by the Board of Directors that governs MWRA's issuance of revenue bonds and sets forth its obligations to bondholders.

Boston Harbor Project: An extensive plan of activities which MWRA developed and implemented to construct new wastewater treatment facilities in response to a federal court order to comply with the provisions of the U.S. Clean Water Act.

Business Systems Plan (BSP): The strategic planning framework for MWRA’s management information systems. The BSP is updated annually to reflect ongoing business requirements, new opportunities identified by ongoing MWRA strategic planning efforts, technology changes, and user requests.

BWSC: Boston Water and Sewer Commission - The agency responsible for providing water and sewer services to the City of Boston, MWRA’s largest customer.

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

CADD: Computer aided drafting and design.

Capital Improvement Program (CIP): A plan which identifies and estimates the nature, schedule, cost, and financing of long-term assets that MWRA intends to build or acquire during a specific period.

Capital Investment: Development of a facility or other asset that adds to the long-term value of an organization.

Carroll Water Treatment Plant (CWTP): Water treatment facility for waters from Quabbin and Wachusett Reservoirs with capacity of 405 mgd using ozonation as a primary disinfectant and UV as a secondary disinfectant beginning in February 2014.

CCR: Consumer Confidence Report – The 1996 Amendments to the Safe Drinking Water Act required public water suppliers to provide all consumers with an annual Consumer Confidence Report by July 1, 2005. The report includes water quality information and education for the consumer about their publicly supplied drinking water.

CDF: Cosgrove Disinfection Facility

Cathodic Protection: A form of corrosion protection that is particularly effective against galvanic corrosion. Galvanic corrosion occurs when pipe metal is in the presence of other metals while immersed in water. The interaction of these elements causes an electric current to flow away from the pipe, taking electrons with it and pitting the pipe as a result. Cathodic protection reverses the current, thereby stopping the corrosion.

Centrifuge: A machine that uses centrifugal force to separate substances of different densities and remove moisture. MWRA uses centrifuges at the Deer Island Wastewater Treatment Plant to de-water sludge.

CFM: Cubic Feet per Minute - A measure of the quantity of a material flowing through a pipe.

Chloramination: The process of adding chloramine to drinking water. Chloramine, a form of chlorine and ammonia, is used as a residual disinfectant because it lasts longer in the water distribution system than primary disinfectants.

Chloramine: A long lasting residual disinfectant created by combining measured amounts of chlorine and ammonia. Chloramine forms fewer disinfection by-products than chlorine.

Chlorination: The process of adding chlorine to drinking water to inactivate pathogens.

Chlorine: A relatively strong primary disinfectant, effective against bacteria, *giardia*, and viruses, but not *cryptosporidium*. Concerns exist about the health effects of its by-products, some of which are or will be regulated.

Clarifiers: Settling tanks or basins in which wastewater is held for a period of time, during which heavier solids settle to the bottom and lighter materials float to the surface.

Clean Water Act: A law passed by Congress in 1972, and subsequently amended, which sets national standards for pollution reduction, permits discharges from wastewater treatment plants, and promotes achievement of the national goal that all surface waters be "fishable and swimmable."

Cleaning and Lining: Cleaning and cement lining of unlined cast iron water mains to improve hydraulic capacity and extend useful life.

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

Co-Digestion Process: Introduction of non-wastewater derived organic waste material into the wastewater anaerobic digestion process. Co-digestion could potentially increase digester gas production which would be utilized for heating and electricity generation at Deer Island.

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

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

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

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

Community Obligation and Revenue Enhancement (CORE) Fund: A fund established by MWRA's bond resolution that is used to provide insurance against delays by communities in paying charges due to MWRA.

Composting: The process of converting wastewater treatment residuals to a soil-like humus material often used in the horticultural industry. The process involves the aerobic breakdown of the residuals and the addition of sawdust or wood chips.

Corrosion Control: Adjustments to the chemistry of treated water to reduce its ability to dissolve lead, copper, other metals, or form hydrogen sulfide. Corrosion control can include adjustments to pH and alkalinity, as well as the addition of corrosion inhibitors such as phosphates or oxidizers.

Coverage Requirement: Requirement of MWRA's bond resolution which provides that each year, revenue less operating expenses (net revenue) must be more than the amount required for debt service payments on outstanding bonds.

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

Cross-Connection: A point at which potable water piping is connected to a non-potable water source creating an opportunity for the introduction of pollutants into the potable water.

Cryogenic oxygen plant: MWRA operates a cryogenic oxygen-based facility as part of its secondary wastewater treatment program at Deer Island.

Cryptosporidium: A protozoan parasite that can cause severe gastrointestinal disease in healthy individuals, and may be fatal to people with compromised immune systems. Cryptosporidia exist in the environment as hard walled oocysts that are very resistant to chlorination, but can be inactivated by disinfection with ozone or ultraviolet light.

CSO: Combined Sewer Overflow – An overflow point and the discharged flow from a combined sewer system intended to provide hydraulic relief to avoid system flooding and backups during large wet weather events. During large rainstorms, systems can become overloaded, with the excess discharged directly into surface waters. The discharged flow and the discharge location are called CSOs. In the metropolitan Boston area there are approximately 46 active, permitted CSOs that currently discharge into rivers or Boston Harbor.

CSO Facilities: MWRA has six facilities that intercept the flow from CSO pipes. Four of these facilities provide treatment and two provide storage prior to discharge. The CSO facilities have some capacity to store flow and pump it to the Deer Island plant after rainstorms end.

CT: Concentration x Contact Time - A measure of disinfection effectiveness established under the Surface Water Treatment Rule. CT is the product of the concentration of disinfectant [C] and the time it has been in contact with the water [T]. Required CT varies by type of disinfectant, organism, temperature, and pH.

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

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

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

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

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

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

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

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

Defeasance: The setting aside of cash or securities sufficient to make debt service payments allowing the reduction of the debt amount to the liabilities of a balance sheet and the reduction of the debt service amount to the Current Expense Budget.

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

Department: A sub-unit of an MWRA division.

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

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

Diffusers: A system of shafts, rising from the end of MWRA's effluent outfall tunnel to the seabed, which disperses treated wastewater over a large area. Technically, the diffusers are the "sprinkler heads" mounted on top of the riser shafts that lead from the outfall tunnel and disperse wastewater into Massachusetts Bay.

Digesters: Tanks for the storage and anaerobic or aerobic decomposition of organic matter present in sludge.

Direct Program Expenses: Costs directly associated with providing services or performing activities.

Disinfection, Primary: The inactivation (killing) of pathogenic organisms in a water system by the use of chemical or other disinfection agents.

Disinfection, Residual: The presence of a measurable residual of disinfectant within a water distribution system to help control bacterial re-growth and guard against contamination.

Dissolved Oxygen (DO): A measure of the amount of oxygen in a given amount of water. Adequate levels of DO are needed to support aquatic life. Low dissolved oxygen concentrations can result from inadequate wastewater treatment.

Division: A major organizational unit within MWRA, encompassing the activities and resources for providing a major service or function.

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

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

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

Effluent: Treated wastewater discharged from a treatment plant.

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

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

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

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

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

EOC: Emergency Operations Center

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

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

ESWTR: Enhanced Surface Water Treatment Rule - A federal rule that is promulgated in three stages:

1) Interim Enhanced Surface Water Treatment Rule (IESWTR): The IESWTR was promulgated in 1998 and tightened the requirements for the operation of water filtration plants in large systems to take a first step toward controlling *cryptosporidium* in source waters. IESWTR also added *cryptosporidium* to the list of issues considered within watershed protection plans for unfiltered systems.

2) LT1ESWTR primarily extends the IESWTR to smaller systems

3) LT2ESWTR: further tightens the standards for the operation of filtration plants and adds requirements for 99% inactivation of *cryptosporidium* and the use of two primary disinfectants for unfiltered systems. The concept of proportional treatment, with less treatment required for cleaner sources, was implemented as part of the rule.

Enterococcus: A pathogen indicator, similar to fecal coliform, that is used in the Massachusetts Water Quality Standards for marine waters, consistent with the Federal Clean Water Act requirements, which indicates potential contamination from human or animal waste.

Enterprise Fund: A governmental accounting and budgeting Fund that is designed to be self-supporting with revenues equal to expenditures.

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.

Eversource: Formerly NStar, formerly Boston Edison Company, is a publicly traded, Fortune 500 energy company headquartered in Hartford, Connecticut and Boston, Massachusetts, with several regulated subsidiaries offering retail electricity and natural gas service to more than 3.6 million customers in Connecticut, Massachusetts and New Hampshire.

Expenditures: Payments for goods and services received.

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

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

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

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

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

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

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

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

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

FTE (Full Time Equivalent): An FTE is the hours worked by one employee on a full-time basis. The concept is used to convert the hours worked by several part-time employees into the hours worked by full-time employees.

Fund: A separate accounting entity for a particular purpose facilitating the accounting of assets, liabilities, and net assets.

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

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

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

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

Global Positioning System (GPS): Also known as an Automatic Vehicle Location system (GPS/AVL), this tool provides real-time transmission alerts utilizing a cell phone/satellite communication system and a web-based mapping system to track vehicles and operator-driven mobile equipment in MWRA's service area. The system allows MWRA to respond more quickly to emergencies, enhance driver and vehicle safety, reduce fuel costs, track mileage electronically, monitor unauthorized vehicle usage, and improve efficiency.

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

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

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

HAA: Haloacetic Acids - A class of disinfection by-products related to chlorine disinfection. HAAs are regulated under D/DBP Stage 1 and 2 Rules at 60 ppb.

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

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

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

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

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

Incentives and Other Charges: A fee system designed to help recover permitting, inspecting, and monitoring costs incurred by MWRA's TRAC Program and provide incentives to permitted users to reduce discharges.

Indirect Expenses: Costs not directly associated with providing services or performing activities.

Infiltration/Inflow (I/I): The problem of clean water flows entering sewers resulting in diminished pipe capacity for sanitary flows and in costly pumping and treatment of unnecessarily large wastewater volumes. Infiltration is groundwater that leaks into the sewerage system through pipe joints and defects. Inflow, primarily a wet-weather phenomenon, refers to water that enters sewers from improperly connected catch basins, sump pumps, land and basement drains, and defective manholes. Inflow also enters through improperly closed or defective tidegates during high tides.

Influent: The flow of water that enters the wastewater treatment process.

Insurance Reserve: A fund established to adequately reserve against risks for which MWRA does not currently maintain insurance.

Interceptors: The large pipes that convey wastewater from collection systems to treatment plants.

Investment Income: Income derived by investing certain operating and reserve fund balances in interest-yielding securities in accordance with the provisions of MWRA's bond resolution.

ISO - NE (Independent System Operator of New England): Non-profit wholesale operator of the regional grid system. The MWRA receives payment from ISO-NE when Deer Island, Carroll Water Treatment Plant, and the four Remote Headworks remove themselves from the grid. All six facilities participate in load response programs offered by ISO-NE which pays larger commercial and industrial electricity consumers to “shed load” during grid peaks. There are several programs available such as price, demand response and load response. MWRA constantly evaluates the options and participates in the most advantageous program.

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

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

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

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

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

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

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

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

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

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

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

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

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

MGD: Million gallons per day.

MIS: Management Information Systems

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

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

Molybdenum (Mo): A metallic element that resembles chromium and tungsten in many properties, and is used in strengthening and hardening steel. Mo is a trace element in plant and animal metabolism. The concentration of molybdenum in sludge products is strictly regulated.

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

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

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

NHS (Northern High Service): Project that involves a series of water system pipeline improvements in the MWRA's Northern High Service Area.

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

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

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

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

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

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

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

Outfall: The pipe or structure where effluent is discharged into receiving waters.

Ozonation: The application of ozone to water, wastewater, or air, generally for the purposes of disinfection or odor control. The Carroll Water Treatment Plant (CWTP) employs the ozonation process to inactivate pathogens, including *cryptosporidium*, with lower levels of DBPs.

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

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

Payments in Lieu of Taxes (PILOT): Amounts which MWRA pays each fiscal year to cities and towns for land owned by the Commonwealth in the Quabbin, Ware River, Wachusett, and Sudbury watersheds. Consistent with the provisions of MWRA's Enabling Act, these payments are based on the past commitments of the Commonwealth of Massachusetts.

Penalty Revenue: Revenue derived from penalties assessed by MWRA to violators of its sewer use regulations.

Performance Measure: An indicator of the work and/or service provided, defined by output, work or service quality, efficiency, effectiveness, or productivity.

Performance Objective: A statement of proposed accomplishments or attainments that is short-term in nature and measurable.

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

PILOT (Payment in Lieu of Taxes): The Watershed PILOT program is the method that DCR compensates communities which contain the state owned land bought to protect one of the nation's largest unfiltered water supply systems. The law that defines this PILOT program, MGL c. 59 s.5G, guarantees regular and stable payment to 29 Massachusetts communities.

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

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

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

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

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

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

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

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

RCM (Reliability Centered Maintenance): A maintenance strategy adopted at Deer Island in FY00 for critical systems. RCM is a failure modes and effects process that involves maintenance, operations and engineering staff in the development of preventative maintenance and operation plans for plant systems.

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

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

RGGI: The Regional Greenhouse Gas Initiative is a mandatory, market-based program in the United States to reduce greenhouse gas emissions. The program involves selling emission allowances through auctions and investing the proceeds in demand-side management and clean energy technology projects.

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

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

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

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

RPS (Renewable Portfolio Standards): State policies which mandate a state to generate a percent of its electricity from renewable resources. Qualified renewable generation facilities for the MWRA include: the Steam Turbine Generator (STG) and a variety of Hydroelectric, Wind and Solar units. The MWRA is issued electronic certificates for each megawatt hour of electricity produced from the digester gas, which is considered renewable energy. RPS credits are a source of revenue for the MWRA.

Safe Yield Model: The equation used to determine the maximum dependable draft that can be made continuously on a water supply source during a period of years during which the probable driest period or period of greatest deficiency in water supply is likely to occur.

SAMS: Sewerage Analysis and Management System – A database which contains specifications of the location, size, and condition of MWRA wastewater interceptors and appurtenances and which produces maps for use by MWRA and outside parties. Now referred to as Wastewater GIS.

Sanitary Sewers: In a separate system, pipes that carry only domestic wastewater.

SCADA: Supervisory Control and Data Acquisition - Equipment for monitoring and controlling water or wastewater facilities remotely.

SCBA: Self-contained breathing apparatus.

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

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

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

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

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

Seeding: The initial filling of sludge into digesters.

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

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

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

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

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

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

Sodium Hypochlorite (NaOCl): A liquid form of chlorine that MWRA uses in the disinfection and/or odor processes at the Deer Island Treatment Plant, various other Wastewater facilities, and the Carroll Water Treatment Plant (CWTP).

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

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

Suspended Solids: The particulate matter contained in wastewater.

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

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

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

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

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

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

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

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

Ultraviolet (UV) Treatment: Ultraviolet light is an effective method of disinfection in drinking and wastewater applications. UV light damages the DNA of microbes, and is particularly effective against cryptosporidium. Federal regulations require two primary disinfectants for unfiltered water systems. The Carroll Water Treatment Plant added UV as a second disinfectant (in addition to ozonation) in February 2014 and the Quabbin Disinfection Facility (now named the William A. Brutsch Water Treatment Facility) in Ware added UV (as a second disinfection in addition to chlorine) in October 2014.

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

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

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

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

Wastewater: The water carried by sewers serving residences and businesses that enters wastewater facilities for treatment. Wastewater is any water that has been adversely affected in quality by anthropogenic influence. It comprises liquid waste discharged by domestic residences, commercial properties, and/or agricultural and can encompass a wide range of potential contaminants and concentrations.

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

Water Supply Trust: The legislature further enhanced the ability of the Department of Conservation and Recreation (DCR) Office of Watershed Management to protect the source waters of the MWRA drinking water supply by establishing a Water Supply Protection Trust in 2004. The

trust provides a more efficient mechanism for MWRA's direct funding of the Office of Watershed Management. The Water Supply Protection Trust has a five person board of trustees responsible for approving the Annual Work Plan and Budget each spring for the following fiscal year.

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

Wholesale Water and Sewer Services: Potable water and wastewater collection, transport, delivery, and treatment services that MWRA provides to communities. Communities provide the same services directly to retail customers or end users.

WOCC: Western Operations Control Center, located at the Carroll Water Treatment Plant.