



# MASSACHUSETTS WATER RESOURCES AUTHORITY

Deer Island  
33 Tafts Avenue  
Boston, MA 02128

**Frederick A. Laskey**  
**Executive Director**

*Chair:* R. Tepper  
*Vice-Chair:* A. Pappastergion  
*Secretary:* B. Peña  
*Board Members:*  
P. Flanagan  
J. Foti  
L. Taverna  
H. Vitale  
J. Walsh  
P. Walsh  
M. White-Hammond  
J. Wolowicz

## **BOARD OF DIRECTORS' MEETING**

Telephone: (617) 242-6000  
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**Date:** Wednesday, November 15, 2023  
**Time:** 1:00pm  
**Location:** Deer Island Reception/Training Building, 1<sup>st</sup> Floor  
33 Tafts Avenue – Favaloro Meeting Room  
Boston, MA 02128

A photo ID will be required for entry to the building.  
The meeting will also be available via Webex. The Webex meeting link, event number and password to attend virtually are:

Webex meeting link (registration required):

<https://mwra.webex.com/weblink/register/ef899961c163b7361c61b816ca04a52bb>

Event number: 2345 900 5936      Password: 111523

## **AGENDA**

### **I. APPROVAL OF MINUTES**

### **II. REPORT OF THE CHAIR**

### **III. REPORT OF THE EXECUTIVE DIRECTOR**

### **IV. EXECUTIVE SESSION**

i. Approval of October 18, 2023 Executive Session Minutes

#### **A. Real Estate**

1. Watershed Land Acquisition

#### **B. Litigation**

1. *In re Aqueous Film-Forming Products Liability Litigation*, MDL No. 2:18-mn-02873-RMG, U.S. District Court for the District of South Carolina: PFAS Class Action Settlements; 3M Company and The Chemours Company, The Chemours Company FC, LLC, DuPont de Nemours, Inc., Corteva, Inc., and E.I. DuPont de Nemours and Company n/k/a EIDP, Inc. (verbal)
2. G.L. c. 21E, §4A Notice from Massachusetts Natural Fertilizer Co., Inc., Otter Farm and The Newark Group, Update, Strategy, Budget

**V. PERSONNEL & COMPENSATION****A. Approvals**

1. November 2023 PCR Amendments
2. Appointment of John Beckley, Manager, Transmission and Treatment
3. Appointment of Ester Lwebuga, Assistant Director of Engineering

**VI. ADMINISTRATION, FINANCE & AUDIT****A. Information**

1. Delegated Authority Report – October 2023
2. FY2024 Financial Update and Summary through October 2023
3. FY2024 First Quarter Orange Notebook

**B. Contract Awards**

1. Security Equipment Maintenance and Repair Services, Contract EXE-047, Viscom Systems, Inc.

**C. Contract Amendments/Change Orders**

1. Maximo Lawson Interface Enhancements, Starboard Consulting, LLC, Contract No.7649 - Amendment 3
2. Delta Dental of Massachusetts, Inc., d/b/a Delta Dental of Massachusetts, Contract A631, Amendment 2

**VII. WASTEWATER POLICY & OVERSIGHT****A. Information**

1. MWRA comment letter on the Deer Island Wastewater Treatment Plant Draft National Pollutant Discharge Elimination System (NPDES) Permit and Draft State Surface Water Discharge Permit

**B. Contract Awards**

1. Harbor and Outfall Monitoring, 2024-2027, Contract OP-466, Battelle Memorial Institute
2. Roofing Replacement at Various Buildings, Deer Island Treatment Plant, Greenwood Industries, Inc., Contract 7734
3. Operation and Maintenance of the Fore River Pelletizing Plant, New England Fertilizer Company, Contract S592

**VIII. WATER POLICY & OVERSIGHT**

**A. Information**

1. Update on Lead and Copper Rule Compliance – Fall 2023

**B. Contract Amendments/Change Orders**

1. Northern Intermediate High Section 89 Replacement Pipeline, P. Gioioso & Sons, Inc., Contract 7117, Change Order 5

**IX. CORRESPONDENCE TO THE BOARD**

**X. OTHER BUSINESS**

**XI. ADJOURNMENT**

## MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Board of Directors

October 18, 2023

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A meeting of the Massachusetts Water Resources Authority (“MWRA”) Board of Directors was held on October 18, 2023 at MWRA’s headquarters at Deer Island in Boston, and also via remote participation.

Chair Tepper presided from MWRA headquarters. Board Members Foti, Peña, Taverna, Jack Walsh, Patrick Walsh and White-Hammond also participated from MWRA headquarters. Board Members Pappastergion, Vitale and Wolowicz participated remotely. Board Member Flanagan was absent.

MWRA Executive Director Frederick Laskey; General Counsel Carolyn Francisco Murphy; Chief Operating Officer David Coppes; Deputy Chief Operating Officer Rebecca Weidman; Director of Finance Thomas Durkin; Director of Administration Michele Gillen; Special Assistant for Affirmative Action Patterson Riley; Senior Program Manager for Engineering and Construction Ester Lwebuga; Director of Construction Martin McGowan; Human Resources Director Wendy Chu; Procurement Director Douglas Rice; Director of Internal Audit Claude Cormier; Deputy Finance Director and Treasurer Matthew Horan; ENQUAL Director Betsy Reilley; ENQUAL Senior Program Manager David Wu; TRAC Director Matthew Dam; Engineering Services Manager Richard Adams; Steve Estes-Smargiassi Director of Planning and Sustainability; Chief of Staff Katie Ronan; Associate General Counsels Angela Atchue and Kristen Schuler Scammon; and, Assistant Secretary Kristin MacDougall participated at MWRA headquarters.

Moussa Albert Siri, WSCAC, participated in the meeting from MWRA Headquarters. Vandana Rao, EEA, and Matthew Romero, MWRA Advisory Board, participated remotely.

Chair Tepper called the meeting to order at 1:00pm.

### ROLL CALL

MWRA General Counsel Francisco Murphy took roll call of Board Members in attendance and announced that Chair Tepper and Board Members Pappastergion, Vitale and Wolowicz were participating remotely. The Chair announced that the meeting was being held at MWRA’s headquarters at Deer Island and virtually, via a link posted on MWRA’s website. She added that the meeting would be recorded, and that the agenda and meeting materials were available on MWRA’s website. She also announced that individual roll call votes would be conducted after each motion was made and given an opportunity for discussion.

### APPROVAL OF SEPTEMBER 13, 2023 MINUTES

**A motion was duly made and seconded to approve the minutes of the Board of Directors’ meeting of September 13, 2023.**

Chair Tepper asked if there was any discussion or questions from the Board. Hearing none, she requested a roll call vote in which the members were recorded as follows:

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Tepper		

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
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Foti

Pappastergion

Peña

Taverna

Vitale

J. Walsh

P. Walsh

Wolowicz

(ref. I)

REPORT OF THE CHAIR

Chair Tepper discussed the Healey-Driscoll Administration's 2023 ResilienceMass Plan ("Resilience Plan"). She explained that the Resilience Plan was prepared under federal mandate to maintain pre- and post-disaster funding eligibility. She noted that the Resilience Plan includes information on risks that the Commonwealth may incur from climate change, and sets forth actions to address those risks. The Chair advised that the greatest risks for Massachusetts include inland flooding, tidal rise, and extreme heat, and noted that the Plan specifies individual and collective actions for state agencies to increase resilience. She noted that the Resilience Plan will be administered by an inter-agency group, and that the Plan's actions will be publicly tracked online at <https://resilient.mass.gov/home.html>. The Chair then described some key actions of the Resilience Plan, such as the establishment of an Office of Climate Science, and actions related to the state building code and MBTA design standards. She explained that the Resilience Plan is designed to help state agencies prepare for extreme weather events, and described the increased frequency of such events in Massachusetts and their impacts to residents. Finally, Chair Tepper noted that the Resilience Plan incorporates science and findings of previous climate assessments, and was developed with input from key stakeholders. (ref. II)

REPORT OF THE EXECUTIVE DIRECTOR

On behalf of MWRA staff, Fred Laskey, MWRA Executive Director, offered remarks in tribute to the late James Guidod, MWRA Advisory Board Finance Director. Next, Mr. Laskey introduced and welcomed Moussa Albert Siri, the new Executive Director of the Water Supply Citizens Advisory Committee (WSCAC). He then briefly reported on land acquisition grant funding, and ongoing efforts for a proposed 100-acre Quabbin Watershed land acquisition. He presented a map of the planned acquisition area and noted that the effort was being conducted in collaboration with the DCR, Mass Audubon and Mount Grace Land Trust. Next, Mr. Laskey updated Board Members on the Quinapoxet Dam Removal project and the MWRA's participation in the Healey-Driscoll Administration's *Forests as Climate Solutions* initiative. He then advised that a number of MWRA water service communities had exceeded lead thresholds, and that MWRA was providing support. Mr. Laskey then briefly updated Board Members on MWRA's Audited Financial Statements, and an upcoming Veterans Day Ceremony and Luncheon. Next, Mr. Laskey invited Board Members to an event to celebrate the 175th Anniversary of the Cochituate Aqueduct at the Metropolitan Water Works Museum on October 25, 2023. Finally, Mr. Laskey reported that MWRA is submitting testimony on legislation related to combined sewer overflow (CSO) control

and the elimination of so-called “flushable” wipes, which clog sewer pipes and machinery. (ref. III)

#### EXECUTIVE SESSION

Chair Tepper requested that the Board move into Executive Session to discuss Real Estate and Litigation, since discussing such in Open Session could have a detrimental effect on the negotiating and litigating positions of the Authority. She announced the planned topics for discussion in Executive Session was a watershed land acquisition and the PFAS class action settlements. She announced that the Board would return to Open Session after the conclusion of Executive Session.

#### **A motion was duly made and seconded to enter Executive Session for these purposes, and to resume Open Session after Executive Session adjournment.**

General Counsel Francisco Murphy reminded Board members that under the Open Meeting Law members who were participating remotely in Executive Session must state that no other person is present or able to hear the discussion at their remote location. A response of “yes” to the Roll Call to enter Executive Session when their name was called would also be deemed their statement that no other person was present or able to hear the Executive Session discussion.

Upon a motion duly made and seconded, a roll call vote was taken in which the members were recorded as follows:

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Tepper		
Foti		
Pappastergion		
Peña		
Taverna		
Vitale		
J. Walsh		
P. Walsh		
Wolowicz		

#### **Voted: to enter Executive Session, and to resume Open Session after Executive Session adjournment.**

\*\*\* EXECUTIVE SESSION \*\*\*

The meeting entered Executive Session at 1:13pm and adjourned at 2:01pm.

(Board Member White-Hammond joined the meeting at 1:25pm during Executive Session.)

\*\*\* CONTINUATION OF OPEN SESSION \*\*\*

WATER POLICY AND OVERSIGHT

Information

Update on Water System Expansion Activities

Rebecca Weidman, MWRA Deputy Chief Operating Officer, presented an update on MWRA's water system expansion efforts. The presentation began with an overview of reservoir withdrawals from 1980 through 2022, and MWRA's Demand Management Program, which has resulted in a significant reduction of system water use. She noted that MWRA's daily system withdrawals are currently at approximately 200 million gallons per day (MGD), which is well below the Safe Yield of the reservoir system. She explained that the MWRA system has ample water to supply its current service communities and to add new service communities. She noted that MWRA has seen an uptick in inquiries about joining the water system. Ms. Weidman then described three recently completed Water System Expansion Studies conducted for the Ipswich River Basin, the South Shore, and MetroWest. She added that new PFAS regulations, and MWRA's Entrance Fee Waiver Program ("Waiver Program") are factors in communities' increased interest in joining the MWRA water system.

Next, Ms. Weidman advised that staff were considering a new Water System Expansion Evaluation ("Evaluation") for communities in the Quabbin Watershed.

Mr. Laskey explained that the Evaluation would take place in response to feedback received from Quabbin-area communities that are experiencing water quality and supply concerns. Mr. Laskey gave examples of the water quality and supply issues reported by the communities. He briefly described the logistics of the proposed Evaluation, which would be conducted similarly to the three prior studies. Finally, he asked Board Members if they recommended a vote to approve MWRA's Quabbin Evaluation.

(Rev. White-Hammond briefly exited and returned to the meeting during the discussion.)

Chair Tepper expressed support for the Evaluation. She discussed the history of towns that were disincorporated and flooded to build the Quabbin Reservoir, and advised that the Evaluation should be conducted out of fairness for the communities surrounding the Quabbin. Rev. White-Hammond echoed the Chair's remarks, and suggested that the Board take a vote in support for the Evaluation in recognition of this ongoing Environmental Justice issue. Chair Tepper agreed and advised that the Evaluation would be a worthwhile investment and requested a motion. There was brief discussion about the motion.

**A motion was duly made and seconded to support a MWRA Water System Expansion Evaluation for ten towns in the Quabbin Reservoir watershed (Barre, Belchertown, Hardwick, New Salem, Orange, Pelham, Petersham, Shutesbury, Ware and Wendell).**

Chair Tepper asked if there was further discussion or questions from the Board. Hearing none, she requested a roll call vote in which the members were recorded as follows:

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Tepper		

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Foti		
Pappastergion		
Peña		
Taverna		
Vitale		
J. Walsh		
P. Walsh		
White-Hammond		
Wolowicz		

Next, Ms. Weidman briefly presented an update on the status of recent water system expansion inquiries. She reported that two partially-supplied communities were considering increases to their MWRA water supplies; that four communities have received approval to pursue admission from their governing bodies; and, that additional communities were at various stages of the decision-making process. Finally, Ms. Weidman described next steps of the water system expansion process, including an evaluation of connection options for added service communities, such as a new connection point at Shaft L for the MetroWest area.

Chair Tepper requested an update on the Waiver Program. Ms. Weidman reported that the program extends through December 31, 2027, with a 20 MGD limit for new communities. She explained that the waiver includes a stipulation that communities must demonstrate water quality, quantity and supply issues due to economic development. She noted that none of communities that have recently expressed interest in joining the MWRA water system are at a point in the admission process when they would request a waiver, and that requests for waivers were expected in the future.

Board Member Jack Walsh asked which entities would be financially responsible for new water connections under the Expansion Program. Mr. Laskey explained that the financial responsibilities would vary by case, depending on such factors as the location, complexity and size of each connection. There was brief, general discussion about costs related to MWRA's Entrance Fee Waivers, and the purpose of the potential new connection point at Shaft L. Mr. Walsh requested more information about costs associated with new connections within the three completed Study areas. Ms. Weidman described existing and potential new connection points for each area. Board Member Peña requested more information about MWRA's policy for new connection inquiries from communities that are not within the established Study areas. Ms. Weidman explained that staff engage with any community that makes an inquiry, and that the completed studies would not be reopened.

Hearing no further discussion or questions from the Board, Committee Chair Vitale moved to Contract Awards. (ref. V A.1)



Contract Awards

Update on Contract 6955 with CDM Smith Inc., Design and Engineering Services During Construction and Memorandum of Agreement between MWRA and the City of Newton Intermediate High Pipeline Improvements, Section 75A and Section 47 - Belmont, Boston, Newton and Watertown Contract 7484

**A motion was duly made and seconded to authorize the Executive Director, on behalf of the Authority, to execute a Memorandum of Agreement between MWRA and the City of Newton, substantially in the form attached to the October 18, 2023 staff summary, related to reimbursement to MWRA for construction costs associated with the replacement of a City of Newton 20-inch diameter water main and drainage improvements under MWRA Construction Contract 7484.**

Ester Lwebuga, MWRA Senior Program Manager, Engineering and Construction, presented an update on the Intermediate High Pipeline Improvement Project (“Intermediate High Project”) and work to be performed under a proposed Memorandum of Agreement (MOA) with the City of Newton. She presented a project overview and progress update, and the scope and schedules for the project’s three Construction Packages (CP-1, CP-2, and CP-3). She advised that staff recommend the postponement of certain CP-3 design work related to the isolation of pipeline Sections 59 and 60 pending further conditions assessment. Next, Ms. Lwebuga explained that staff sought Board approval to execute a MOA with the City of Newton related to costs associated with the replacement of a City-owned water main and drainage improvements to be performed under the CP-1. Finally, Ms. Lwebuga provided further details about the location, scope, schedule and costs of the work to be performed under the proposed MOA.

Chair Tepper complimented Ms. Lwebuga for preparing a helpful report. Rev. White-Hammond asked if work on Sections 59 and 60 were expected to resume after further assessments are complete. Ms. Lwebuga responded in the affirmative.

Chair Tepper asked if there was further discussion or questions from the Board. Hearing none, she requested a roll call vote in which the members were recorded as follows:

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Tepper		
Foti		
Pappastergion		
Peña		
		Taverna
Vitale		
J. Walsh		
P. Walsh		
White-Hammond		
Wolowicz		

(ref. V B.1)

Contract Amendments/Change OrdersSouthborough Headquarters Electrical System Upgrades: Dagle Electrical Construction Corp., Contract 7425, Change Order 4

**A motion was duly made and seconded to authorize the Executive Director, on behalf of the Authority, to approve Change Order 4 to Contract 7425, Southborough Headquarters Electrical Systems Upgrades, with Dagle Electrical Construction Corp. to extend the contract term by 126 calendar days from October 27, 2023 to March 1, 2024, with no increase in contract amount.**

**Further, a motion was duly made and seconded to authorize the Executive Director to approve additional change orders as may be needed to Contract 7425 for up to 180 days, in accordance with the Management Policies and Procedures of the Board of Directors.**

Marty McGowan, MWRA Director of Construction, summarized the reasons for a proposed Change Order for the Southborough Headquarters Electrical System Upgrade contract. He explained that the requested 126-day contract term extension was needed due to electrical equipment supply chain delays for critical breakers.

Mr. Jack Walsh requested a brief overview of the scope of the contract. Mr. McGowan explained that the contract is for electrical distribution system upgrades at MWRA's Southborough facilities. There was brief, general discussion about the electrical work. Mr. Laskey added that the scope included the reconfiguration of the facility's generators. Board Member Foti requested clarification on whether contract cost increases related to this change order were expected in the future. Mr. McGowan advised the terms of the contract do not allow for additional costs associated with supply chain delays.

Chair Tepper asked if there was further discussion or questions from the Board. Hearing none, she requested a roll call vote in which the members were recorded as follows:

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Tepper		
Foti		
Pappastergion		
Peña		
Taverna		
Vitale		
J. Walsh		
P. Walsh		
White-Hammond		
Wolowicz		

(ref. V C.1)

PERSONNEL AND COMPENATIONApprovalsPCR Amendments – October 2023

Wendy Chu, MWRA Human Resources Director, described three proposed PCR amendments, including

two salary adjustments related to recruitment and retention efforts, and one title and grade change to better meet staffing needs.

**A motion was duly made and seconded to approve amendments to the Position Control Register (PCR) as presented and filed with the records of this meeting.**

Chair Tepper asked if there was further discussion or questions from the Board. Hearing none, she requested a roll call vote in which the members were recorded as follows:

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Tepper		
Foti		
Pappastergion		
Peña		
Taverna		
Vitale		
J. Walsh		
P. Walsh		
White-Hammond		
Wolowicz		

(ref. VI A.1)

#### ADMINISTRATION, FINANCE AND AUDIT

##### Information

##### Delegated Authority Report – September 2023

Michele Gillen, MWRA Director of Administration, invited Board Members' questions on the report.

Mr. Jack Walsh requested more information about Report Item C-6: *Braintree-Weymouth Pump Station Improvements, Design/ESDC Services*. David Coppes, MWRA Chief Operating Officer, explained that work under item C-6 included the review of additional submittals. Mr. Walsh asked if item C-6 represented a Change Order. Mr. Coppes explained that item C-6 represented an Amendment to a design contract, to compensate the design contractor for the review of items added during construction. Mr. Walsh asked why Report Item P-2, *One-Year Purchase Order Contract for Microsoft Unified Enterprise Support* was awarded to Dell Marketing LP. Douglas Rice, MWRA Procurement Director, explained that the procurement was advertised through a statewide contract, and that Dell was a qualified vendor under that contract. Mr. Walsh asked if Dell was the lowest bidder. Mr. Rice responded in the affirmative. Mr. Walsh asked if the contractor for Report Item P-10: *One-Year Purchase Order for Plumbing Services for the Clinton Wastewater Treatment Plant* was selected through a bidding process. Mr. Rice responded in the affirmative.

Board Member Vitale asked staff to clarify the term "Sole Source Contractor." Mr. Rice explained that MWRA's policy for sole source procurements requires the submittal and review of a justification memo. He advised that requests for sole source procurements are only approved if they meet thresholds for factors such as competition, and that only upon approval may a single vendor be solicited. Mr. Rice then

noted that MWRA's sole source contracts are often awarded to manufacturers of proprietary goods, such as Muffin Monsters, and that staff are required to periodically renew any recurring sole source requests. Ms. Gillen added that staff test the market to confirm that goods and services continue to be available on a proprietary basis only.

Hearing no further discussion or questions from the Board, Committee Chair Foti moved to the next Information item. (ref. VII A.1)

#### Internal Audit Department Activities Report – FY2023

Claude Cormier, MWRA Director of Internal Audit, updated Board Members on Internal Audit Department activities for FY2023. He provided a brief overview of Internal Audit's roles and responsibilities within the MWRA organization. He then noted that the purpose of the Internal Audit Department Activities Report is to provide an annual review of the Department's activities, findings, recommendations and associated cost savings. Next, he reported that Internal Audit staff had identified a total of \$2.3 million in cost savings and recoveries in FY2023. Finally, Mr. Cormier described the Internal Audit Department's mission and goals: to assess internal controls designed to reduce financial, operational and compliance risks; to review contracts and supporting documentation to ensure payments made to third party vendors and construction firms are reasonable, allowable, and allocable, and to review MWRA's policies, procedures and operational management methods to ensure employee safety, and reduce operational waste (fraud, waste and abuse).

Mr. Laskey asked Mr. Cormier to discuss Internal Audit's FY2023 activities with regards to the Harbor Electric Energy Company ("HEEC") cable. Mr. Cormier explained that Internal Audit's review of HEEC's billings and costs resulted in approximately \$700,000 in savings for MWRA in FY2023, and briefly described the HEEC review process.

Mr. Vitale asked which vendor provides MWRA's Confined Space Entry training, and if MWRA receives any assistance to conduct the training. Mr. Laskey explained that the training is conducted only by MWRA staff. Mr. Foti noted that he has participated in the training and found it to be useful and well-done.

Hearing no further discussion or questions from the Board, Mr. Foti moved to the next Information item. (ref. VII A.2)

#### FY2024 Financial Update and Summary through September 2023

Thomas Durkin, MWRA Finance Director, summarized FY2024 financial highlights through September 2023. He reported that the budget is progressing well, noting that inflation seems to have moderated, and that staff's budgetary assumptions for chemicals and energy costs are currently holding steady. Mr. Durkin then advised that staff were carefully monitoring current geopolitical events for any potential impacts to energy prices or other costs. Next, he explained that the expense variances reported in the Staff Summary reflect the typical patterns of a fiscal year and are not a cause for concern. Mr. Durkin then advised that the ongoing volatility of short-term interest rates continues to impact the budget, and that staff continue to watch interest rates. He further advised that MWRA's revenue has risen through September, attributable to higher than budgeted interest rates on investment income. Finally, Mr.

Durkin reported that revenue was \$1.4 million (+0.7%) over budget.

Hearing no discussion or questions from the Board, Mr. Foti moved to approvals. (ref. VII A.3)

### Approvals

#### Termination of Interest Rate Hedge Agreements

**A motion was duly made and seconded to authorize the Executive Director or his designee, on behalf of the Authority, to terminate all or a portion of the Authority's existing interest rate hedge agreements with Citigroup Financial Products Inc., Morgan Stanley Capital Services Inc., Barclays Bank PLC, and Wells Fargo, NA, including any termination payments due in connection with the termination thereof as calculated pursuant to the applicable International Swap and Derivatives Association Agreements.**

MWRA staff presented the reasons for the recommendation to terminate six derivative swap hedge contracts, which are contracts through which two parties exchange interest payments from two different financial instruments, such as a loan or a bond. Mr. Durkin began the presentation by describing various types of interest rate structures. He advised that current interest rates along with MWRA's overall decrease in variable rate debt present an opportunity for MWRA to achieve overall debt service savings by terminating its swap agreements for future debt service savings. Mr. Durkin then discussed factors considered in developing the recommended swap termination strategy, including cost savings, increased returns, and the reduction of risk. He provided a brief walkthrough of the mechanics of typical derivative swap transactions.

Next, Matthew Horan, MWRA Deputy Finance Director and Treasurer, presented an overview of six MWRA swap transactions from 1998 through 2001, and briefly described their benefits and risks. He advised that MWRA currently has five swap agreements outstanding, with a total outstanding value of approximately \$166 million, and a total termination value of \$27.5 million. He highlighted the high interest rates of MWRA's outstanding swap agreements. Next, Mr. Horan advised that MWRA's current budgetary position and the general economic climate favor the termination of these agreements. He discussed the reasons for MWRA's proposed swap termination, including a drop in termination values, and the benefits, such as reduced variable rate interest exposure, the elimination of swap counterparty risk, reduced auditing requirements, increased portfolio flexibility, and significant cost savings. He then briefly described the post-swap termination structure and the debt service impacts of the termination. Mr. Horan then advised that the proposed swap terminations could provide gross savings of approximately \$4.3 million to \$14.5 million, depending on future interest rates. Finally, he provided examples of similar transactions at other state agencies, and described the next steps of MWRA's swap termination if approved by the Board.

Mr. Peña requested clarification on the potential impacts of high interest rates on staff's recommended swap terminations. Mr. Horan explained that staff's recommendation was developed in consultation with its financial advisors, noting that interest rates have stabilized since August 2023, and that MWRA has the available funds. Mr. Peña then asked how MWRA would fund the swap termination. Mr. Horan explained that the transaction would be partly funded by a portion of MWRA's FY2023 favorable budget

variance, and any remaining funds would be used for a proposed defeasance, planned for December 2023. There was brief, general discussion about MWRA’s interest rate strategy.

Mr. Jack Walsh requested clarification of the swap termination’s potential impacts on MWRA’s financial position with respect to variable rate interest. Mr. Durkin advised that the swap transactions would benefit MWRA’s financial position. Mr. Walsh then asked how the termination would benefit the counterparties. Mr. Durkin explained that MWRA’s swap counterparties benefit via a “balanced book” (a similar, but reverse transaction with a third party.) There was brief, general discussion about the benefits of the swap, interest rates and the terms of the swap agreements and terminations.

Mr. Vitale complimented staff for presenting this complex topic clearly, and expressed his support. He advised that in his view, the proposed swap termination is the correct, and most conservative course of action. There was brief, general discussion about the complexity of counterparty agreements. Mr. Laskey congratulated all involved in the proposed swap termination, and reiterated its benefits to MWRA and its ratepayers. Mr. Foti agreed with Mr. Vitale, and complimented staff for their work on the swap termination and for developing an effective presentation.

(Mr. Pappastergion and Ms. Wolowicz left the meeting during the discussion.)

Chair Tepper asked if there was further discussion or questions from the Board. Hearing none, she requested a roll call vote in which the members were recorded as follows:

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Tepper		
Foti		
Peña		
Taverna		
Vitale		
J. Walsh		
P. Walsh		
White-Hammond		

(ref. VII B.1)

## WASTEWATER POLICY AND OVERSIGHT

### Information

#### 2022 Deer Island Outfall Monitoring Overview

Staff presented a review of MWRA’s Deer Island Outfall Monitoring Program (“Outfall Monitoring Program”) results for 2022. Betsy Reilley, MWRA ENQUAL Director, advised that the results demonstrate that the outfall is not adversely impacting Massachusetts Bay (“Mass Bay”). She discussed the Outfall Monitoring Program’s federal regulatory requirements and the program’s goals, which include tracking the impacts of MWRA’s Deer Island Treatment Plant (“DITP”) on Mass Bay and Boston Harbor, and ensuring that MWRA’s wastewater system improvements do not benefit Boston Harbor at the expense of Mass Bay. Next, Ms. Reilley briefly described the role of the Outfall Monitoring Science Advisory Panel (OMSAP), which reviews Outfall Monitoring Program results and makes any necessary

recommendations. Finally, she reported that in 2022, DITP met permit requirements for effluent quality for the 16<sup>th</sup> consecutive year, and that the treatment plant met contingency threshold limits for all parameters except dissolved oxygen and the plankton *Alexandrium*.

Next, David Wu, MWRA Senior Program Manager, ENQUAL, presented key highlights of the Outfall Monitoring Program results for 2022, including continued low levels of solids and metals discharges, and improved flounder health. He then discussed the Outfall Monitoring Program's Contingency Plan 2022 threshold exceedances for dissolved oxygen and *Alexandrium*. He noted that the thresholds are designed to signal changes from pre-outfall conditions and that exceedances are not necessarily indicative of any environmental harm. Next, Mr. Wu reported that dissolved oxygen exceedances occurred at Stellwagen Bank in August, September and October, 2022, and in July and September 2023. He noted that in 2021 dissolved oxygen exceedances were detected for the first time since the outfall came on-line, and added that the dissolved oxygen exceedance levels may be related to long-term, ongoing regional temperature increases. He presented data on ocean temperature increases in the Gulf of Maine, and for ocean and air temperature changes in Mass Bay, noting a correlation between higher temperatures and decreased dissolved oxygen levels. He advised that it is not likely that the *Alexandrium* exceedances are linked to the outfall.

Next, Mr. Wu discussed recent changes in the draft federal NPDES permit. He explained that the revised Draft Permit includes the addition of thresholds for harmful and nuisance algae, the deletion of benthic, fish and shellfish monitoring, and the removal of the Outfall Contingency Plan and its associated thresholds, including dissolved oxygen. He advised that MWRA will continue to monitor dissolved oxygen levels even though the threshold was removed from the Draft Permit.

Rev. White-Hammond asked why the thresholds were removed from the revised Draft Permit. Mr. Wu explained that they were likely removed because sufficient data had been gathered.

Mr. Wu then briefly described next the next steps for the Draft Permit. He noted that the public comment period will end November 28, 2023, after which time the permit will be revised, reviewed and finalized. Finally, he presented a 2020 video of diverse, healthy marine life near the Deer Island outfall's second diffuser cap.

Mr. Taverna asked if Contingency Plan threshold exceedances trigger any required actions. Mr. Wu explained that to date, MWRA's exceedances have not triggered any required actions other than the issuance of notifications; however, state and federal regulators reserve the right to request changes or additional reviews. Mr. Coppes added that that follow-up sampling is currently required if *Alexandrium* Contingency Plan thresholds are exceeded. Rev. White-Hammond asked if ocean warming trends could prompt further changes to the NPDES permit, and requested more information about the jurisdictional responsibilities for taking action on the impacts of climate change on the marine environment. Mr. Wu explained that the impacts of climate change are reflected in EPA's Draft Permit. There was brief, general discussion about the potential impacts of climate change on fish and shellfish. Ms. Reilly advised that the effects of climate change on Mass Bay have not been shown to be associated with the MWRA Outfall. There was brief, general discussion about methods for monitoring the impacts of climate change on fish and shellfish, and rising ocean temperatures.



Hearing no further discussion or questions from the Board, Committee Chair Jack Walsh moved to the next Information item. (ref. VIII A.1)

MWRA Industrial Waste Report #39: Industrial Pretreatment Program Annual Report to EPA for FY23

Matthew Dam, Director, TRAC, presented an update on the MWRA Industrial Pretreatment Program ("Pretreatment Program). He explained that the Pretreatment Program is required by the federal NPDES permit, and explained that the program is committed to controlling the level of toxic substances discharged into the sanitary sewer system from commercial and industrial sources through permits, inspections, sampling and enforcement. He noted that the Pretreatment Program protects worker health and safety and municipal and MWRA infrastructure; prevents the pass-through of pollutants from entering receiving waters, and enables MWRA to beneficially reuse its sewer residuals for the production of fertilizer. He further noted that the FY2023 Report includes highlights of the program, and presented some key metrics. Mr. Dam then discussed Conservation Law Foundation's April 2022 filing of a complaint for claims alleging that MWRA violated the Clean Water Act by failing to take adequate enforcement action under its Industrial Pretreatment Program. He advised that MWRA had stood by its record of enforcement, and that in February 2023 the district court entered judgement for the Authority, allowing MWRA's motion to dismiss the case. Mr. Dam noted that MWRA continues to prioritize enforcement and bringing industries into compliance with their permits. He described 271 enforcement actions issued in FY2023, including 201 notices of violation, 66 notices of noncompliance, two administrative orders, and two penalty assessment notices.

Board Member Jack Walsh requested more information about trends related to high level enforcement actions. Mr. Dam explained that the frequency of high level enforcement actions has shown to be variable over time, and confirmed that fewer high level enforcement actions (201) took place in FY2023 than in FY2022 (224). He added that escalated enforcement actions were not taken during the height of Covid (FY2021). Mr. Walsh asked if the Program's FY2024 permitting and monitoring charges increase rate of 3.0% is adequate. Mr. Dam explained that the annual increase is set in accordance with Toxic Reduction and Control (TRAC) regulations, which are due to be updated for 2025. There was brief, general discussion about the potential for raising the permitting and monitoring charges, and the cost of the Pretreatment Program.

Hearing no further discussion or questions from the Board, Committee Chair Jack Walsh moved to Contract Awards. (ref. VIII A.2)

Technical Assistance Consulting Services – Deer Island Treatment Plant: AECOM Technical Services, Inc. - Contract 7981; CDM Smith Inc. - Contract 7982; and Hazen and Sawyer, P.C. - Contract 8018

**A motion was duly made and seconded to approve the recommendation of the Consultant Selection Committee to award separate contracts to AECOM Technical Services, Inc., CDM Smith Inc. and Hazen and Sawyer, P.C., for the provision of as-needed technical assistance consulting services for the Deer Island Treatment Plant and to authorize the Executive Director, on behalf of the Authority, to execute Contract 7981 with AECOM Technical Services, Inc., Contract 7982 with CDM Smith Inc. and Contract 8018 with Hazen and Sawyer, P.C., each in an amount not to exceed \$2,400,000 for a contract term of**



**three years from the Notice to Proceed.**

Richard Adams, MWRA Engineering Services Manager, briefly summarized the scope, duration and costs of three, separate proposed contracts to provide as-needed technical assistance for DITP and other wastewater facilities.

Mr. Taverna requested more information about the financial terms (e.g. lump sum for the task required to be performed or time and material) of the task order contracts. Mr. Adams explained that each task order is for a lump sum for a defined scope of services.

Mr. Jack Walsh asked if the scope of the contracts was limited to work at the DITP. Mr. Adams explained that the technical assistance contracts include work at DITP, the Clinton Wastewater Treatment Plant and MWRA's biosolids processing facility. Mr. Coppes added that MWRA holds a series of similar technical assistance contracts for work at facilities across the MWRA system. Mr. Walsh asked staff to provide more information about the selection, qualifications and payment processes for task order contracts. Mr. Adams explained that MWRA staff approach the consulting firms with a defined scope of services, and award the work to the most qualified firm with the lowest costs. There was brief, general discussion about the administration of task order contracts. Upon a question from Mr. Jack Walsh, Mr. Adams and Mr. Laskey confirmed there are no up-front or advance payments, nor guaranteed money paid, to firms. Mr. Foti also responded that firms are pre-qualified and paid for specific tasks performed. Further, Mr. Coppes confirmed the contracts allow for a mechanism to pay the consultants for work performed.

Chair Tepper asked if there was any further discussion or questions from the Board. Hearing none, she requested a roll call vote in which the members were recorded as follows:

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Tepper		
Foti		
Peña		
Taverna		
Vitale		
J. Walsh		
P. Walsh		
White-Hammond		

(ref. VIII B.1)

**CORRESPONDENCE TO THE BOARD**

Chair Tepper announced that the Board of Directors had received correspondence from the Wastewater Supply Citizens Advisory Committee dated October 12, 2023, and asked if there was any discussion or questions from the Board. Hearing none, she moved to Other Business. (ref. IX)

**OTHER BUSINESS**

There was no other business. (ref. X)

ADJOURNMENT

**A motion was duly made and seconded to adjourn the meeting.**

A roll call vote was taken in which the members were recorded as follows:

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Tepper		
Foti		
Peña		
Taverna		
Vitale		
J. Walsh		
P. Walsh		
White-Hammond		

(ref. XI)

The meeting adjourned at 3:26pm.

Approved:      November 15, 2023

Attest:

\_\_\_\_\_  
Brian Peña, Secretary

## STAFF SUMMARY

**TO:** Board of Director  
**FROM:** Frederick A Laskey, Executive Director  
**DATE:** November 15, 2023  
**SUBJECT:** November 2023 PCR Amendments




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**COMMITTEE:** Personnel and Compensation

           INFORMATION  
  X   VOTE

Wendy Chu, Director of Human Resources  
Preparer/Title

  
Michele S. Gillen  
Director, Administration

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### RECOMMENDATION:

To approve amendments to the Position Control Register (PCR) included in the attached chart.

### DISCUSSION:

The Position Control Register lists all positions of the Authority, filled and vacant. It is updated as changes occur and it is published at the end of each month. Any changes to positions during the year are proposed as amendments to the PCR. All amendments to the PCR, except those resulting only in a change in title or cost center, must be approved by the Personnel Committee of the Board of Directors. All amendments resulting in an upgrade of a position by more than one grade level, and/or an amendment which creates a position increasing annual cost by \$10,000 or more, must be approved by the Board of Directors after review by the Personnel and Compensation Committee.

### November 2023 PCR Amendments

There are three PCR Amendments this month.

#### Organizational Changes:

1. Title and grade change to one filled position in the Administration Division, MIS Department from Librarian/Records Manager Unit 6 Grade 11 to Library/Records Center Manager Unit 6 Grade 12 per union agreement.
2. Salary adjustment to one filled position, Director of Waterworks, Non-Union Grade 16 in the Operations Division, Metro Water Department for pay equity reasons. The Massachusetts Pay Equity Act (MEPA) provides that no employer shall discriminate in any way on the basis of gender in the payment of wages, or pay any person in its employ a salary or wage rate less than the rates paid to its employees of a different gender for comparable work. "Comparable work" is defined as work that requires "substantially similar" skill, effort, and responsibility and is performed under similar working conditions. At the time of the appointment of the Director of Waterworks in 2020, a strict interpretation of the requirements of the relatively new MEPA law, resulted in a lower salary for the

Director of Waterworks compared to the Director of Wastewater. The slight difference in management experience between the incumbents in these comparable positions at that time, would not be considered by staff today when making salary recommendations and the two positions would be paid equally.

3. Title and grade change to one vacant position in the Operations Division, Inspection-Water Department from Project Coordinator, Control Valves Unit 9 Grade 22 to Supervisor, Inspection Unit 9 Grade 25 to better meet staffing needs.

**BUDGET/FISCAL IMPACT:**

The annualized budget impact of these PCR amendments will be a maximum cost of \$29,195. Staff will ensure that the cost associated with these PCR amendments will not result in spending over the approved FY24 Wages and Salaries budget.

**ATTACHMENTS:**

Job Descriptions

MASSACHUSETTS WATER RESOURCES AUTHORITY  
POSITION CONTROL REGISTER AMENDMENTS  
FISCAL YEAR 2024

PCR AMENDMENTS REQUIRING BOARD APPROVAL - November 15, 2023																	
Number	Current PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Current/Budget Salary	Estimated New Salary		Estimated Annual \$ Impact		Reason		
															For Amendment		
B52	Administration MIS Department 8610072	F	T,G	Librarian/Records Center Manager	6	11	Library/Records Center Manager	6	12	\$96,110	\$107,807	-	\$107,807	\$11,697	-	\$11,697	Per union agreement. Grade more appropriate for duties.
B53	Operations Metro Water 3391022	F	S	Director, Waterworks	NU	16	Director, Waterworks	NU	16	\$181,878	\$184,309	-	\$184,309	\$2,431	-	\$2,431	For pay equity reasons.
B55	Operations Inspection - Water 3384055	V	T,G	Project Coordinator, Control Valves	9	22	Supervisor, Inspection	9	25	\$107,991	\$88,012	-	\$123,058	-\$19,979	-	\$15,067	To better meet department staffing needs.
<b>BOARD TOTAL =</b>					3						<b>TOTAL:</b>		-\$5,851	-	\$29,195		

**MWRA  
POSITION DESCRIPTION**

**POSITION:** Librarian/Records Manager

**PCR#:** 8610072

**DEPARTMENT:** MIS

**DIVISION:** Administration

**BASIC PURPOSE:**

Manages comprehensive Records Management and Library Programs including the access and control of both programs electronic and physical documents, records search support, research support, and compliance with State and Federal records retention and access statutes and regulations.

**SUPERVISION RECEIVED:**

Reports to the I/S Custom Support Manager.

**SUPERVISION EXERCISED:**

Exercises close supervision over Library and Records Center staff.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Develops, recommends and implements Policy and Procedures for both the Library and Records Management Programs.
- Plans, forecasts, implements and manages the budget and cost controls for the Library and Records Management programs including the review and evaluation of all purchases relative to books, subscriptions, microfilm, appropriate equipment and searching services.
- Manages accessibility of information resources including library acquisitions, online resources, and records identified in corporate records tracking systems and databases and provides staff and the public access to appropriate authority information.
- Recommends technology enhancements supporting MWRA needs relevant to the Record Management and Library programs.
- Serves as liaison to the Records Conservation Board and State Archivist regarding Record Management issues.
- Oversees the appraisal, disposition and microfilming of all authority records according to the Commonwealth's record retention schedule and the requirements of the Records Conservation Board.
- Manages the continued taxonomy standardization and data integrity of the Library and Records Management systems and databases that index collections, such as

consultant reports, photographs, geology and soil samples, historical documents, etc.

- Manage the operation and maintenance of the Geologic records.
- Manages offsite storage of macromedia records with vendors for record protection.
- Markets Records Management and Library services to all MWRA staff
- Trains Department Records Managers (DRMs) and Officers (DROs) on records management requirements.
- Oversees daily operation of the Library and Records Center to assure uninterrupted delivery of services.
- Identifies training and development opportunities for Records Management and Library staff in technical research and appropriate software to assist them in meeting user's needs.

**SECONDARY DUTIES:**

- Ensures that requests from consultants and the public regarding Authority information are responded to in a timely manner.
- Provides consulting services to departments in the MWRA regarding file organization, document control, and associated equipment costs.
- Perform related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) A four (4) year college program in Information Science, Liberal Arts or Science. Masters degree in Library and Information Science preferred.
- (B) Six (6) to eight (8) years experience with a specific understanding of library science and record information management programs, systems and equipment, including at least four (4) years in a management capacity.
- (C) Any equivalent combination of education and/or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Demonstrated ability to plan for and implement new information technologies including knowledge of computer network usage.
- (B) Proficiencies in computer applications, including electronic media; on-line searching; database and spreadsheet software and electronic communications.
- (C) Excellent written and oral communication skills are required.

**SPECIAL REQUIREMENTS:**

None

**TOOLS AND EQUIPMENT USED:**

Office equipment as normally associated with the use of telephone, personal computers including word processing and other software, copy and fax machines.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools or controls and reach with hands and arms. The employee frequently is required to sit and talk or hear, climb or balance. The employee is occasionally required to walk; stand; stoop, kneel, crouch, or crawl; taste or smell.

The employee must frequently lift and/or move up to 25 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision and color vision, and the ability to adjust focus.

**WORK ENVIRONMENT:**

The work characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee frequently works in high, precarious places. The employee occasionally works in various field settings and in an office environment.

The noise level in the work environment is a moderately quiet office setting.

**August 2017**



**MWRA  
POSITION DESCRIPTION**

**POSITION:** Library/Records Manager

**PCR#:** 8610072

**DEPARTMENT:** MIS

**DIVISION:** Administration

**BASIC PURPOSE:**

Manages comprehensive Records Management and Library Programs including the access and control of both programs electronic and physical documents, records search support, research support, and compliance with State and Federal records retention and access statutes and regulations. Handles building issues and service contracts for leased space. Provides business area guidance on the implementation of the Electronic Content Management (ECM) system.

**SUPERVISION RECEIVED:**

Reports to the Business Relationship Manager.

**SUPERVISION EXERCISED:**

Exercises close supervision over Library and Records Center staff.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Develops, recommends and implements Policy and Procedures for both the Library and Records Management Programs including the electronic content management system.
- Plans, forecasts, implements and manages the budget and cost controls for the Library and Records Management programs including the review and evaluation of all purchases relative to books, subscriptions, microfilm, appropriate equipment and searching services.
- Manages accessibility of information resources including library acquisitions, online resources, and records identified in corporate records tracking systems and databases and provides staff and the public access to appropriate authority information.
- Recommends technology enhancements supporting MWRA needs relevant to the Record Management and Library programs.
- Serves as liaison to the Records Conservation Board and State Archivist regarding Record Management issues.
- Oversees the appraisal, disposition and microfilming of all authority records according to the Commonwealth's record retention schedule and the requirements of

the Records Conservation Board.

- Manages the continued taxonomy standardization and data integrity of the Library and Records Management systems and databases that index collections, such as consultant reports, photographs, geology and soil samples, historical documents, etc.
- Manage the operation and maintenance of the Geologic records.
- Manages offsite storage of macromedia records with vendors for record protection.
- Markets Records Management and Library services to all MWRA staff
- Trains Department Records Managers (DRMs) and Officers (DROs) on records management requirements and the electronic content management system.
- Oversees daily operation of the Library and Records Center to assure uninterrupted delivery of services.
- Identifies training and development opportunities for Records Management and Library staff in technical research and appropriate software to assist them in meeting user's needs.
- Serves as on-site building manager who is contacted about alarms, security issues, and related building problems. Serves as liaison to landlord and vendors on building system testing (fire protection, security, HVAC) and any building related systems. Serves as liaison to MWRA real property staff regarding lease, approving utility bills, and any dealing with issues relating to the Record Center.
- Develops and administers maintenance and facility service contracts for assigned assets to support the Record Center leased space.

**SECONDARY DUTIES:**

- Ensures that requests from consultants and the public regarding Authority information are responded to in a timely manner.
- Provides consulting services to departments in the MWRA regarding file organization, document control, and associated equipment costs.
- Perform related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) A Bachelor's degree in Information Science, Liberal Arts or Science. Masters degree in Library and Information Science preferred.
- (B) At least six (6) years' experience with a specific understanding of library science and record information management programs, systems and equipment, including at least four (4) years in a management capacity.
- (C) Any equivalent combination of education and/or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Demonstrated ability to plan for and implement new information technologies including knowledge of computer network usage.
- (B) Proficiencies in computer applications, including electronic media; on-line searching; database and spreadsheet software and electronic communications.
- (C) Excellent written and oral communication skills are required.

**SPECIAL REQUIREMENTS:**

A MA Class D Driver's license is required for travel between MWRA locations.

**TOOLS AND EQUIPMENT USED:**

Office equipment as normally associated with the use of telephone, personal computers including word processing and other software, copy and fax machines.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools or controls and reach with hands and arms. The employee frequently is required to sit and talk or hear, climb or balance. The employee is occasionally required to walk; stand; stoop, kneel, crouch, or crawl; taste or smell.

The employee must frequently lift and/or move up to 25 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision and color vision, and the ability to adjust focus.

**WORK ENVIRONMENT:**

The work characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee frequently works in high, precarious places. The employee occasionally works in various field settings and in an office environment.

The noise level in the work environment is a moderately quiet office setting.

**November 2023**

**MWRA  
POSITION DESCRIPTION**

**POSITION:** Director, Waterworks

**DIVISION:** Operations

**DEPARTMENT:** Waterworks

**BASIC PURPOSE:**

Directs the planning, design, construction, operation and maintenance of all water supply facilities and services including reservoirs, aqueducts, pumping, distribution, water supply and treatment and transmission operations.

**SUPERVISION RECEIVED:**

Reports to the Chief Operating Officer, Operations Division.

**SUPERVISION EXERCISED:**

Exercises close supervision of Senior Managers.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Develops operational strategies for the water system. Coordinates the use of supply reservoir, aqueduct flow, power generation, flood control, pumping, distribution, treatment and transmission, water quality and other elements of water supply.
- Directs all water system operations and operations engineering to achieve safe and optimum operating efficiency of the water delivery systems.
- Directs all maintenance activities for supply reservoirs, aqueducts, power generation, flood control, treatment facilities, distribution pipelines, pumping facilities, and certain storage facilities.
- Directs the development, maintenance, and implementation of SCADA and Metering systems for assigned water and wastewater facilities, and oversees meter data collection, quality control, and total flow calculations used for allocation of MWRA's rate revenue.
- Provides input and direction for the long-term planning, design, and construction of

modernizing, rehabilitating and upgrading the Authority's water facilities.

- Confers with consultants, local officials from member communities and state and federal officials on matters relating to operations and maintenance of the Waterworks.
- Reviews and evaluates managers' performance according to MWRA procedures.
- Recommends, develops and implements policies and procedures for Operations Engineering.
- Oversees successful administration of collective bargaining agreement provisions. Participates in grievance resolution, collective bargaining and contract negotiations. Serves as Step I hearing officer. Hears disciplinary actions.
- Participates in collective bargaining negotiations.
- Directs safety programs, strategic planning and policy development, employee involvement programs and supports MWRA-wide safety programs.
- Provides opportunities for technical, supervisory and managerial training and education for all department employees. Ensures that staff are trained properly to be ready to operate new facilities as they come online.
- Represents Waterworks and the Operations Division as required with the Authority's Division Directors, Executive Director and the Board of Directors.
- Acts as interagency liaison to the Massachusetts Department of Conservation and Recreation (DCR) and other government entities in regards to operations of the Waterworks Facilities.
- Administers personnel policies, provides direction, and coordinates the selection, supervision, training and evaluation of department personnel.
- Coordinates preparation of departmental staffing plan, budget and schedule and monitors the implementation of departmental objectives in keeping with budget parameters.
- Oversees staff productivity monitoring and continual improvement through staff skills development, strategic planning, standard operating procedures (SOP) improvements and research and implementation of technology advances.
- Assures consistency and uniformity of work rules in accordance with established policies

and procedures.

**SECONDARY DUTIES:**

- Performs other related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Bachelor's degree in civil engineering, environmental engineering, or a related technical discipline; and
- (B) Twelve (12) to fifteen (15) years of related experience, of which six (6) years must be in the design or management of a large waterworks system or other similar large operational facility with multiple supervisory levels; or
- (C) An equivalent combination of education and/or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Excellent working knowledge of a large water supply/treatment/distribution system and associated systems and equipment, or of a similar complex hydraulic and treatment system operation.
- (B) Demonstrated successful experience managing in a union environment with a diverse workforce.
- (C) Knowledge of computerized maintenance management systems and procedures.
- (D) Proficient in the use of personal computers and associated Microsoft Office software programs, including Word, Excel, and Power Point.
- (E) Excellent interpersonal, written and verbal communication skills.

### **SPECIAL REQUIREMENTS:**

- Able to respond to emergency situations 24 hours per day, seven days per week.
- A valid Massachusetts Class D Driver's License.
- Valid Massachusetts Grade I Water Treatment Operator's license OIT (or ability to obtain within 12 months).
- Valid Massachusetts Grade IV Water Distribution Operator's license (or ability to obtain within 12 months).
- Registered Professional Engineer preferred.

### **TOOLS AND EQUIPMENT USED:**

Office machines as normally associated with the use of telephone, personal computer including word processing and other software, copier, and fax machine.

### **PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to sit, talk or hear. The employee is regularly required to use hands to finger, handle, feel or operate objects, including office equipment, or controls and reach with hands and arms. The employee frequently is required to stand and walk.

There are no requirements that weight be lifted or force be exerted in the performance of this job. Specific vision abilities required by this job include close vision, and the ability to adjust focus.

### **WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee regularly works in an office environment.

The noise level in the work environment is usually a moderately quiet office setting.

**July 2020**

Page 4 of 4

NU16

**MWRA  
POSITION DESCRIPTION**

**POSITION:** Project Coordinator, Control Valve

**PCR:** 3384055

**DIVISION:** Operations

**SECTION:** Operations, Engineering & Construction  
Metropolitan Operations, Inspection Section

**BASIC PURPOSE:**

Assists in the day to day management of the Inspection Section; provides engineering support in the acquisition of field data for pipeline and valve work; supervises the Inspection Section in the absence of the Supervisor of the section. May be required for regular on-call rotations.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Supervisor, Inspection.

**SUPERVISION EXERCISED:**

Supervises Inspection section staff as needed including senior field service technicians, senior general construction inspector, general construction inspectors, and skilled laborers.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Assists supervisor in the day to day management of the Inspection section.
- Assists Senior Program Manager, Valves in the management of the Pressure Reducing Valve (PRV) program for the Metropolitan Operations section.
- Assists with various hydraulic engineering functions for the Metropolitan Operations section.
- Oversees the Cross Connection Control (CCC) Program for the Metropolitan Operations section. Performs sanitary surveys to confirm the presence or need for backflow prevention devices.
- Provides Engineering support and technical assistance both internally and to communities in issues related to leak detection, flow testing, and PRV operation and maintenance.



- Participates in all aspects of water meter testing. This may include performing meter testing, data interpretation, and equipment installation.
- Provides assistance in the 8(m) permit review process. May be required to perform inspection of contractors performing work in accordance with 8M permits, or in response to Dig Safe notices.
- May be required to perform MWRA water main mark outs for 8M permits or for Dig Safe.
- Provides training to MWRA staff related to leak detection and meter testing.
- Performs field survey work to collect data, confirm data, or to locate various infrastructure features, both above and below grade.
- Coordinates updating of detail records with Water Engineering, and/or thru the use of AutoCAD.

**SECONDARY DUTIES:**

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) BS Degree in Civil Engineering or equivalent from an accredited college; and
- (B) Three (3) to Five (5) years experience in an engineering discipline and/or field experience required. In depth knowledge of PRV operation and maintenance, leak detection survey, meter testing, survey, and cross connection control programs preferred.
- (C) Two (2) years of supervisory experience required.

Necessary Knowledge, Skills and Abilities:

- (A) Thorough knowledge of the MWRA Water Distribution System.
- (B) Familiarity with federal, state and regional environmental regulations related to the planning, design and construction of cross connection control programs preferred.
- (C) Demonstrated proficiency with computer software packages such as MS Office, GIS, ArcView, AutoCad, Telog and Maximo.

- (D) Ability to read and understand Waterworks water system schematics, record plans and detail records.
- (E) Demonstrated proficiency in the MWRA GIS system.
- (G) Excellent interpersonal, written and oral communication skills.

**SPECIAL REQUIREMENTS:**

Massachusetts Drinking Water Supply Facilities, Certified Grade 3D Full Operator required.

Massachusetts Cross Connection Control Surveyor Certification required within 6 months of date of hire.

Valid Massachusetts Class D Drivers License required.

**TOOLS AND EQUIPMENT USED:**

Hand tools, hydrant wrench, pipe wrench, valve wrench, confined space entry equipment, manhole hooks, and other tools used in the field. Other equipment includes: survey equipment, including transit, level, and electronic measuring devices; mobile radio, telephone, personal computer including word processing and other software, copy and fax machines.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools, or controls and reach with hands and arms. The employee frequently is required to stoop, kneel, crouch or crawl. The employee occasionally is required to stand, walk, talk or hear, sit, climb or balance.

The employee must frequently lift and/or move up to 25 pounds and occasionally lift and/or move more than 100 pounds. Specific vision abilities, required by this job include close vision, distance vision, color vision, depth perception, and the ability to adjust focus.

**WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee may regularly work in outside weather conditions. The employee also regularly works in an office environment. The employee may be exposed to cold or hot weather conditions, that may also include wet and/or humid condition.. The employee may be required for overtime in extended workday and emergency situations. The employee may be required for regular, on-call rotations.

The noise level in the work environment is usually loud in field settings, and moderately quiet in office settings.

**July, 2012**

**MWRA  
POSITION DESCRIPTION**

**POSITION:** Supervisor, Inspection

**PCR#:**

**DIVISION:** Operations

**DEPARTMENT:** Metropolitan Operations

**BASIC PURPOSE:**

Supervises leak detection surveys, flow tests, meter tests and regulator tests. Supervises pipeline and valve connection surveys. Serves as certified primary operator for Deer Island water system and provides assistance with the Cross Connection Control (CCC) Program for the Metropolitan Operations section.

**SUPERVISION RECEIVED:**

Works under the supervision of the Senior Program Manager, Water Pipeline Program.

**SUPERVISION EXERCISED:**

Exercises close supervision over leak detection staff.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Supervises all phases of leak-detection, meter testing of the distribution system including operation of sonic leak-detection apparatus, leak correlators preparation of progress reports, leakage site reports, and other relevant survey documents.
- Supervises and performs other related activities including pitot-type flow tests for meter accuracy, fire flow tests, pressure tests, inspection of emergency connections and bypasses, preparation and updating of record plans of new connections and waterline changes, and surveys of pipeline and valve connections for updating records drawings.
- Coordinates with Metering group in all aspects of water meter testing. This may include performing meter testing, data interpretation, and equipment installation.
- Coordinates the collection of field data from in-house valve replacements and leak sites including sketches with distance ties to newly installed equipment and leaks. Performs field survey work to collect data, confirm data, or to locate various infrastructure features, both above and below grade.

- Completes draft updates to existing MWRA Distribution system detail records and coordinates with engineering personnel on permanent updates. Coordinates updating of detail records with Water Engineering, and/or thru the use of AutoCAD.
- Provides assistance with the Cross Connection Control (CCC) Program for the Metropolitan Operations section. May perform sanitary surveys to confirm the presence or need for backflow devices.
- Provides assistance in the 8(m) permit review process. May be required to perform inspection of contractors performing work in accordance with 8M permits, Dig Safe notices or for ongoing MWRA contracts.
- May be required to perform MWRA water main mark outs for 8M permits or for Dig Safe.
- Assists customer communities with leak detection services, if requested.
- Coordinates the inspection group's schedule with and coordinates with other groups to ensure work completion.
- Provides and/or coordinates necessary training for inspection group staff.
- Operates the Deer Island water system and serves as a certified primary operator.

**SECONDARY DUTIES:**

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Bachelor's Degree in Civil Engineering or related engineering or technical field; and
- (B) Practical knowledge of water leakage surveys, reading and interpreting plans and drawings, and pitot-type flow testing as acquired by at least five (5) years experience in the water industry of which at least two (2) years is in a supervisory capacity; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Excellent administrative, interpersonal, management and written and oral communication skills.
- (B) Demonstrated knowledge of roadway safety practices, including night operations.
- (C) Familiarity with federal, state and regional environmental regulations related to the planning, design and construction of cross connection control programs preferred.

- (D) Demonstrated proficiency with computer software packages such as MS Office, GIS, ArcView, AutoCad, Telog and Maximo.
- (E) Ability to read and understand water system schematics, record plans and detail records.
- (F) Demonstrated experience utilizing GIS systems.

**SPECIAL REQUIREMENTS:**

Massachusetts Grade 2D Operator of Drinking Water Supply Facility License (OIT) required, with ability to obtain Grade 3D license within 18 months.

Certification by the Massachusetts Department of Environmental Protection (MassDEP) as a Cross Connection Surveyor within 12 months required. Must maintain active certification.

Massachusetts Class D Driver's license.

**TOOLS AND EQUIPMENT USED:**

Office machines as normally associated with the use of telephone, personal computer including word processing and other software, copy and fax machine.

Leak detection, meter testing equipment and associated field equipment.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential duties.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools, or controls and reach with hands and arms. The employee is regularly required to stand and walk. The employee is frequently required to sit and talk or hear.

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move more than 50 pounds. Specific vision abilities required by this job include close, distance, color and peripheral vision, depth perception, and the ability to adjust focus.

**WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee regularly works in an office environment.


The employee will also regularly be performing duties in the field and will be subject to varying weather conditions.

The noise level in the work environment can be very loud in some field settings and moderately loud in other work locations.

November 2023

U9 Grade 25

## STAFF SUMMARY


**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** November 15, 2023  
**SUBJECT:** Appointment of Manager, Transmission and Treatment, Western Operations

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**COMMITTEE:** Personnel and Compensation

Wendy Chu, Director, Human Resources  
Valerie Moran, P.E., Director, Waterworks  
Eben Nash, Director, Western Operations  
Preparer/Title

       INFORMATION  
  X   VOTE

  
David W. Coppes, P.E.  
Chief Operating Officer

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### RECOMMENDATION:

To approve the appointment of Mr. John Beckley to the position of Manager, Transmission and Treatment, Western Operations (Non-Union, Grade 14) in the Operations Division at the recommended annual salary of \$156,000 commencing on a date to be determined by the Executive Director.

### DISCUSSION:

The position of Manager, Transmission and Treatment became vacant upon the resignation of the incumbent. The Manager, Transmission and Treatment reports to the Director of Western Operations and Maintenance. The position oversees a staff of more than 30 and is responsible for managing the 24-hour operations of MWRA's western treatment and transmission water operations facilities, including the John J. Carroll Water Treatment Plant and the William A. Brutsch Treatment Facility. The Manager, Transmission and Treatment is responsible for ensuring the delivery of water from the reservoirs to metropolitan Boston, while meeting regulatory requirements and optimizing performance. The position provides the necessary resources and support to meet operational needs and applicable regulatory requirements, ensuring that proper staffing is maintained, adequate chemical levels are on hand, water treatment policies are being adhered to, and water treatment standards are being met. The position also plays an active role in facility construction and coordination activities to ensure minimal impacts to MWRA's water customers.

### Selection Process

This position was posted internally and externally. Two internal and two external candidates applied for this position. Two internal candidates and one external candidate were determined to be qualified and were referred for an interview. The Director of Waterworks, the Director of Western Operations, and the Associate Special Assistant for Affirmative Action conducted the interviews. Upon completion of the interviews, Mr. Beckley was recommended for the position based on a combination of experience, abilities, knowledge, skills and education.



John Beckley has approximately 29 years of experience in the water industry in various capacities. Mr. Beckley worked for five years for Thames Water in London, United Kingdom as a Research Scientist and Assistant Plant Manager conducting research projects for a 1.4 mgd advanced water treatment pilot plant to optimize treatment processes, including ozone recycling trials, rapid gravity backwashing regimes and hydraulic flow patterns. He has worked for F.P. Leopold in Pennsylvania as a Senior Product Engineer for eight years performing pilot studies for water treatment facilities throughout the United States, while managing junior engineers and projects. He managed the startup and commissioning of five full-scale water treatment plants, including optimizing system operations. Mr. Beckley has also worked for the consulting firm of Fay, Spofford and Thorndike as a Process and Controls Design Engineer managing junior engineers, draft persons and projects for nine years. Mr. Beckley worked on many projects at Fay, Spofford and Thorndike, including the Wachusett Aqueduct Pump Station, optimization of Carroll Plant restart procedures and closed-loop cooling water system design and implementation prior to joining MWRA in 2016. Since starting with MWRA, Mr. Beckley has been the Program Manager for Instrumentation and Control. In this role, he has managed the capital improvement program to replace aging control systems in the MWRA system, notably the SCADA control system project at the Carroll Plant that is currently underway. Mr. Beckley has demonstrated a solid commitment to safety, diversity, equity and inclusion, and project management, as well as completed the MWRA and New England Water Works Association Supervisory Development Programs. Mr. Beckley is a proactive leader with a lead-by-example philosophy and a demonstrated in-depth knowledge and experience in the operations and process control of water treatment and transmission systems.

Mr. Beckley holds a Bachelor of Science in Civil Engineering from Queen Mary College, London, United Kingdom and is a Registered Professional Engineer in Pennsylvania. He currently holds 2T (treatment) and 2D (distribution) operator in training drinking water licenses, a Grade IV Collection System Operator Certificate and is currently enrolled in the class for the 3T licensure exam at New England Water Works.

#### **BUDGET/FISCAL IMPACTS:**

There are sufficient funds in the Operations Division's FY24 Current Expense Budget to fund this position.

#### **ATTACHMENTS:**

Resume of John Beckley  
Position Description  
Organization Chart

# John Beckley

Experienced, self-motivated program manager with 29 years' experience in the water and waste water treatment industry. An extensive background in water and waste water treatment plant operations, design, process engineering, controls, instrumentation, commissioning and startup. Ability to manage large complex projects with multi-million dollar budgets, varied staffing and time critical schedules. Detailed knowledge of water treatment regulatory standards and history of working with Massachusetts State regulators. Strong communication, technical writing and presentation skills with the ability to relate to staff with a range of cultural and technical background. Proven problem solving and analytical ability with the depth of knowledge to provide innovative solutions in both the office and field environments.

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## Experience

FEB 2016 – PRESENT

[Program Manager Instrumentation & Control](#) /MWRA, Boston, MA

Responsible for managing the \$20 million dollar capital improvement plan to systematically replace the instrumentation and control systems for over 100 remote sites including water and waste water pump stations, headworks, CSO and treatment facilities. Developed the scope of work and managed the design for the replacement of the legacy control system for the 400 MGD Carroll Water Treatment Plant. Project constraints include maintaining the plant in operation 24/7 and ensuring compliance with State mandated water quality regulations while changing out 16 programmable logic controllers that are critical to operation of the facility. Managed internal and external staff to complete the complicated design within a tight schedule. Other job responsibilities include presentations to the MWRA Board of Directors on project status, development of CIP budgets, project specifications, contract documents, cost estimates, process & instrumentation drawings, control strategies and O&M manuals. Provided technical and design support for the SCADA department and maintenance of Agency wide SCADA standards.

JUNE 2007 – JAN 2016

[Process & Controls Design Engineer](#)/Fay, Spofford & Thorndyke, Boston, MA

Project engineer involved in the design and upgrade of water and waste water treatment facilities throughout New England. Key areas of responsibility included detailed knowledge of State drinking water regulations, regulatory assessments (LT2 SWTR, DBP Rule, Chapter 6 chemical overfeed prevention, sanitary surveys), design of SCADA, chemical feed systems, clarification and filtration processes, pumping, P&ID's, control strategies, pilot testing, startup and system optimization. Responsible for managing, mentoring and training of junior engineering staff. Maintained client relationships for successful project outcomes and development of future work. Detailed understanding of Health and Safety aspects of working within active construction and water treatment sites.

Selection of Past projects:

- **MWRA, CWTP Ozone Contactor Restart Optimization Project**  
Analysis of ozone CT time for plant re-start and investigation of methods to reduce startup time and maintain regulatory compliance.

- **MWRA, CWTP Ozone Generator Closed Loop Cooling**  
Researched and developed chemistry for ozone cooling system to prevent ozone generator corrosion. Sought and granted Mass DEP approval.
- **MWRA, Residuals Pump Replacement**  
Designed the instrumentation and controls for the replacement residuals pumps.
- **City of Gloucester, MA - Complete Refurbishment the City's two 5 MGD WTP's**  
High profile project with rapid turnaround in response to Mass DEP consent order. Designed new chlorine, fluoride, soda ash, sodium hydroxide and alum feed system and a new plant wide SCADA system. On site startup and commissioning of the two facilities. Close coordination with Mass DEP and city water treatment staff. Successfully placed both plants back into operation.
- **Groton, CT - 20 MDG Water Treatment Facility Upgrade**  
Took the project from piloting through to full scale design. Collaboration with Virginia Tech on novel high-rate manganese removal process. Responsible for design of the dissolved air flotation clarification process, carbon contactors, new chemical feed system and upgrade of all SCADA components. Coordination with CT DEP for design approval.
- **Swansea, MA – SCADA System Upgrade**  
Replacement of Modicon PLC with Allen Bradley PLC and complex live cutover without plant shutdown. Responsible for PLC programming review, field work and sequence to cut over the system.
- **Fall River, MA – Water Treatment Plant and Control System Rehabilitation**  
Provided support with DBP sampling plan, tracer study, SCADA upgrade and plant optimization. Developed SCADA reporting spread sheets to help with State water quality reports. Commissioning of controls for the booster pump station to bypass the water tank for rehabilitation and installation of DBP aeration system.
- **Pennichuck Water, NH – Water Treatment Plant**  
Optimization of treatment plant processes including CO2 system for pH control.
- **Manchaug, MA – Iron and manganese removal system**  
Piloting and process design of a water treatment facility to remove iron and manganese from well water. Design included aeration, manganese contactors and associated controls and instrumentation. Coordination with DEP, Plant placed into operation and successfully resolved the Town's colored water issues.
- **Wonju, South Korea – Water Treatment Plant Startup**  
Startup and commissioning of a water treatment plant in challenging environment with limited resources and communication barriers.
- **Djubuti, North Africa – Package Waste Water Treatment Plant**  
Startup and commissioning package waste water treatment plant in a challenging environment with limited resources and communication barriers.

1999 -2007

**Senior Product Engineer** /F.B. Leopold Company, Zelienople, PA

Designed a ¼ MGD complete water treatment pilot plant including pumping and chemical feed systems housed in a 50 ft mobile tractor trailer for testing at customers sites. Conducted water treatment pilot studies at multiple locations throughout the United States and utilized data to develop equipment design for full scale installation. Commissioned water treatment equipment and provided training in Colorado, Pennsylvania and Utah. Became in-house CFD modeling expert and performed analysis on filter underdrain product application to ensure optimum performance. Mentored junior engineers and pilot plant staff.

1994 -1999

[Research Scientist](#) /Thames Water, Reading, UK

Assistant manager of the 1.4 MGD Advance Water Treatment pilot plant research center. Managed daily operation of the facility to support state of the art water treatment research projects including dissolved air floatation clarification, high-rate slow sand filtration, membrane treatment, ozone and rapid gravity filters. The pilot facility was aa training tool for staff moving into management positions within the organization.

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## Licenses & Training

Professional Engineer - PE 073806 (PA)

Drinking Water Operator – T2, 27870 (T3 training class scheduled)

Distribution System Operator –D2, 29679 (D3 exam scheduled)

Collection System Operator Certificate – Grade IV

MWRA Supervisor Training

Rockwell Automation Cyber Security Training

Rockwell Automation SCADA HMI Development

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## Education

1989

[Bachelor of Science \(Mechanical Engineering\)](#) /Queen Mary College, London, UK

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## Publication

Operation Issues with Impulse Drying, Water Science and Technology, Vol 40 No. 11 -12

Co-Author, A multiphase CFD model of DAF process, Water Science and Technology, Vol.43 No. 8

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## Presentations

NEWWA Presentation - “Is you Jar Tester Collection Dust?”

NEWWA Presentation - “High Rate Manganese Removal Pilot Testing”

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## Professional Affiliations

NEWWA Filtration Committee Member

NEWWA IT Committee Member

**MWRA  
POSITION DESCRIPTION**

**POSITION:** Manager, Transmission & Treatment

**PCR#:** 3392021

**DIVISION:** Operations

**DEPARTMENT:** Treatment & Transmission

**BASIC PURPOSE:**

Manages the efficient and effective 24-hour operations of MWRA's Western treatment and hydraulic water operations facilities to ensure delivery of water from the reservoirs to metropolitan Boston, while meeting permit requirements and optimizing performance. Oversees all operations and process engineering staff, and provides them with necessary resources and support. Is required to be part of an on-call rotation for emergencies 24 hours a day, 7 days a week.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Director, Western Operations.

**SUPERVISION EXERCISED:**

Exercises close supervision of Senior Program Managers and other assigned managerial, supervisory, technical and operational staff.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Oversees operation of the John J. Carroll Water Treatment Plant and the William A. Brutsch Water Treatment Facility.
- Oversees monitoring and control of CVA, Oakdale Power Station (West Boylston), Cosgrove Intake, and Shaft 4/E flows for adequate water supply, hydroelectric generation and flood control on a 24-hour basis.
- Oversees intake operation, source water treatment, and distribution reservoir treatment as required.

NU14

- Oversees the process engineering staff responsible for optimizing operations for proper treatment and flow control of all Transmission & Treatment Facilities. Oversees the evaluation of long-range process control needs for the water treatment and flow control.
- Works with communities in CVA, Wachusett and MetroWest service areas to ensure reliable service and resolve problems. Works with power company officials regarding hydroelectric operations.
- Coordinates with Western Maintenance Department and establishes priorities to assure successful facility operations.
- Participates in capital project design, construction and start-up to ensure effective integration of new and rehabilitated facilities.
- Oversees the establishment and updating of operational procedures in accordance with control strategies. Works with SCADA and Process Engineering staff to implement the transmission and treatment facility SCADA changes.
- Oversees personnel management and staff hiring for the department. Ensures that major initiative and policy changes are properly communicated to all staff. Identifies organizational needs and proposes re-organization plans to address changing needs.
- Oversees staff productivity monitoring and continual improvement through staff skills development, strategic planning, SOP improvements and research, and implementation of technology advances. Maximizes effective use of the Maximo maintenance software and related computer programs.
- Manages the department safety programs, maximizing employee involvement, supporting the Authority-wide safety program, and making inspections. Acts as liaison to the Manager, Occupational Safety and Health. Immediately notifies Occupational Safety and Health of any safety issues or risks that need attention.
- Oversees development, periodic review, and updating of standard operating procedures (SOPs) and Facility O&M manuals, and ensures all staff are properly trained.
- Oversees budget management for department programs. Ensures that budget resources are allocated appropriately between units. Monitors spending and ensures budget compliance.
- Establishes emergency response procedures and oversees training and practice drills.
- Ensures consistency and uniformity of work rules in accordance with established policies and procedures. Identifies needed improvements to work.

NU14

- Manages successful administration of collective bargaining agreement provisions to maintain harmonious labor management relations. Participates in grievance resolution, collective bargaining and contract negotiations. Serves as Step I hearing officer. Hears disciplinary actions.

**SECONDARY DUTIES:**

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Knowledge of engineering principles and practices as normally attained through a Bachelor's degree in civil, mechanical or electrical engineering; and
- (B) Understanding of planning, supervising and implementing the operation and maintenance of all aspects of water treatment and/or water transmission as normally acquired through eight (8) to ten (10) years experience in the water industry, of which at least four (4) years must be in a management or supervisory position; or
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Excellent working knowledge of the operation and maintenance of a large water treatment and transmission system.
- (B) Excellent interpersonal, written and oral communication skills.
- (C) Demonstrated ability to plan, organize, direct, train and assign duties to subordinates.
- (D) Demonstrated successful experience managing in a union environment with a diverse workforce.
- (E) Proficient in computer hardware and software including Microsoft Office Suite, databases, data presentation, and analysis tools.
- (F) Experience with SCADA systems, statistical process control, and work process continuous improvement preferred.

NU14

**SPECIAL REQUIREMENTS:**

Possession of a valid Massachusetts Class D Motor Vehicle Operators License.

Valid Grade 4D and 2T full Drinking Water Operator licenses are required within 18 months.

Massachusetts Pesticide Applicator (Core) License is required within one (1) year.

Registered Professional Engineer (P.E.) preferred.

Is required to be part of an on-call rotation for emergencies 24 hours a day, 7 days a week.

**TOOLS AND EQUIPMENT USED:**

Office equipment as normally associated with the use of telephone, personal computer including word processing and other software, copy and fax machine.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, including office equipment or controls and reach with hands and arms. The employee frequently is required to sit and talk or hear. The employee is occasionally required to stand and walk; climb or balance; stoop, kneel, crouch, or crawl; taste or smell.

The employee must frequently lift and/or move up to 10 pounds, occasionally lift/or move up to 25 pounds. Specific vision abilities required by this job include close vision, distance vision, depth perception and the ability to adjust focus.



**WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly work in an office environment. The employee occasionally exposed to outdoor weather conditions. The employee is occasionally exposed to fumes and airborne particles including pesticides.

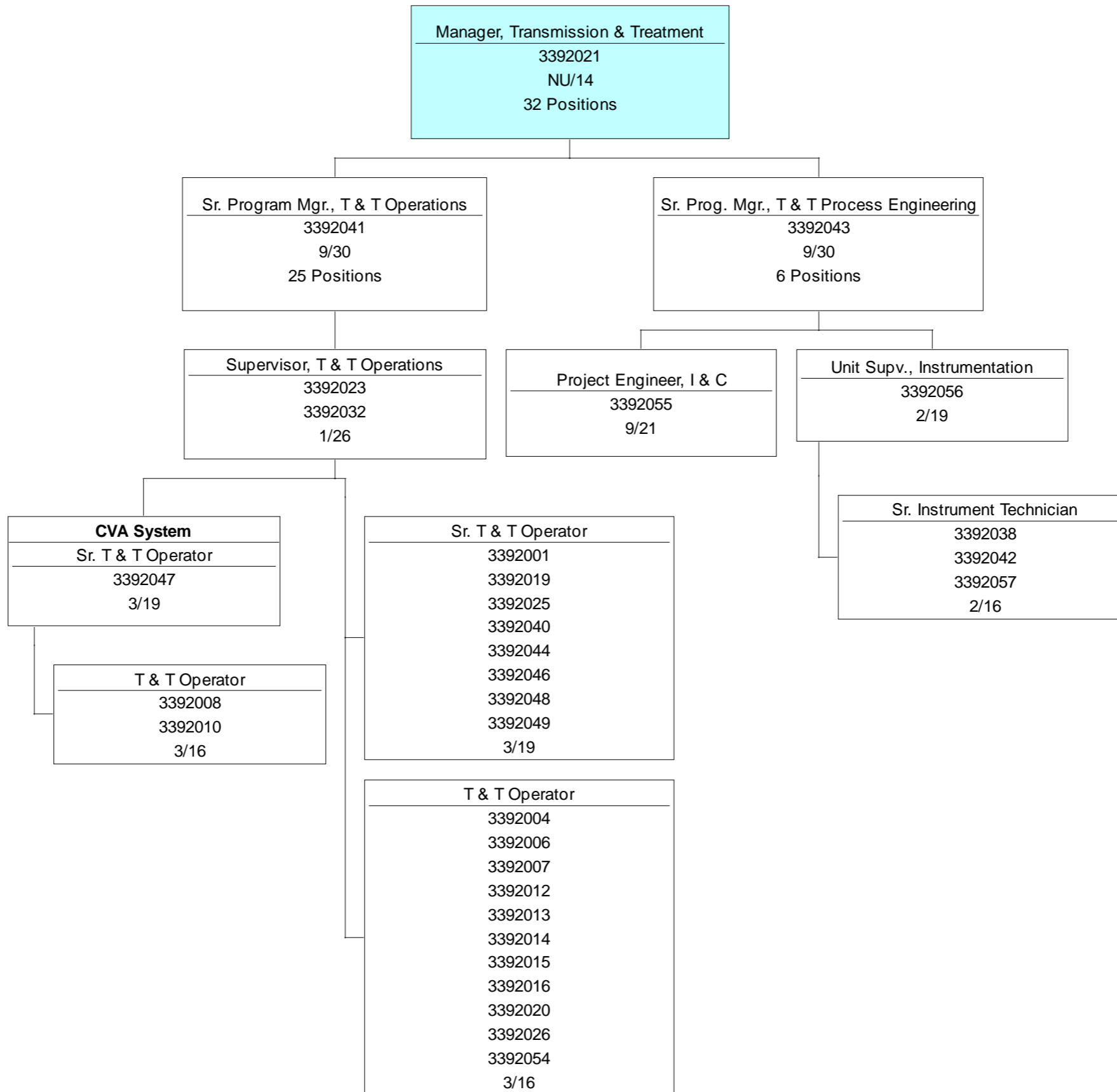
The noise level in the work environment is a moderately quiet in office setting.

NU14

July 2023

NU14

Operations-Western Water O&M  
**Transmission & Treatment**  
 October, 2023



## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** November 15, 2023  
**SUBJECT:** Appointment of Assistant Director of Engineering, Operations Division




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**COMMITTEE:** Personnel and Compensation

       INFORMATION  
  X   VOTE

Wendy Chu, Director, Human Resources  
Brian L. Kubaska, P.E. Chief Engineer  
Preparer/Title



David W. Coppes, P.E.  
Chief Operating Officer

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### RECOMMENDATION:

To approve the appointment of Ms. Ester Lwebuga to the position of Assistant Director of Engineering, Operations Division (Non-Union Grade 14) at an annual salary of \$158,000 commencing on a date to be determined by the Executive Director.

### DISCUSSION:

There are two Assistant Director positions in the Engineering & Construction Department; one for Waterworks and one for Wastewater Engineering. The Wastewater Assistant Director position became vacant in June 2023 as a result of the promotion of the incumbent. The Assistant Director, Engineering position reports directly to the Chief Engineer, manages 23 in-house engineering staff, and directs numerous consultant contracts. This position oversees the development and administration of capital improvement and current expense projects, as well as the development of environmentally sound solutions to engineering problems. It also assists in the preparation of and oversees the department's capital improvement budget. The Assistant Director, Engineering provides supervision and technical oversight to engineering staff and is responsible for managing projects within the engineering section. The Assistant Director, Engineering oversees and coordinates staffing resources, considering project workload to assure consistency of project execution and quality, and adherence to MWRA policy and procedures.

### Selection Process

The position of Assistant Director of Engineering was posted internally and externally. A total of four candidates applied for the position, including three internal applicants and one external applicant. All four candidates were determined to be qualified and were referred for an interview. The Chief Engineer, Special Assistant for Affirmative Action, and Director, Wastewater interviewed the candidates. Upon completion of the interviews, Ms. Lwebuga was determined to be the best qualified to fill the position based on a combination of experience, knowledge, skills and education.

Ms. Lwebuga has over 23 years of engineering experience, all of which have been at MWRA serving in progressively more responsible positions. She currently holds the position of Senior Program Manager within Engineering & Construction. Ms. Lwebuga has extensive experience working on planning and design of capital projects including several high profile pipeline rehabilitation and redundancy projects, such as Sections 23, 24 & 47 in Boston and Newton, and Section 75 Extension in Newton.

In her current position, Ms. Lwebuga supervises assigned engineering staff in managing design projects, record drawing review, field work and providing engineering support. She provides close project coordination with other MWRA departments, host communities and permitting agencies. She has successfully managed all of the projects that have been assigned to her as well as ensured the projects managed by assigned staff are successfully designed and brought to construction. As a Program Manager, Ms. Lwebuga managed pipeline projects, including Sections 28, 36, 11B and the Watertown Section, as well as cathodic protection testing throughout the metropolitan system and cathodic protection replacement at Shafts 5/5A, E & L. Ms. Lwebuga also served in the Operations Engineering group where she gained knowledge of MWRA's facility and pipeline construction activities serving as the Operations Representative performing submittal reviews, coordinating operations support and facility start-ups, and coordinating distribution system shutdowns. During her 23 years at the MWRA, Ms. Lwebuga has earned the respect of her colleagues and supervisors.

Ms. Lwebuga received a Bachelor of Science degree in Civil Engineering from Calvin College and a Master of Science degree in Civil Engineering from the University of Massachusetts, Lowell. She is a registered Professional Engineer in Massachusetts and is a certified Grade 4 Water Distribution System Operator-in-Training. She also holds a Construction Supervisor's License and is a credentialed Envision Sustainability Professional.

**BUDGET/FISCAL IMPACTS:**

There are sufficient funds in the Operations Division's FY24 Current Expense Budget to fund this position.

**ATTACHMENTS:**

- Resume of Ms. Ester Lwebuga
- Position Description
- Assistant Director of Engineering Organization Chart

## ESTER N. LWEBUGA, P.E.

**OBJECTIVE:** To obtain the position of Assistant Director, Engineering.

### EXPERIENCE

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#### MASSACHUSETTS WATER RESOURCES AUTHORITY

*Sr. Program Manager, Engineering and Construction - March 2019 - Current*

*Program Manager, Engineering and Construction Department Project - November 2014- March 2019*

*Project Manager, Engineering and Construction Department - June 2009 - November 2014*

- Effectively procure, manage and coordinate consultant contracts and staff support project work to meet project goals, and coordinate staffing with project workload to assure consistency of project execution and quality.
- Overseeing professional engineering consultant contracts including the development of scope of services, plans and specifications, cost estimates, work schedules, negotiation and preparation of contract award recommendations, and ensuring project compliance with budgets, schedules and contract terms.
- Coordinating projects with other Authority departments, host communities and permitting agencies to ensure designs comply with the Authority policies and procedures, regulatory requirements and applicable engineering standards.
- Reviewing of projects budgets and schedules for compliance with Capital Improvement Program goals.
- Attending Construction progress meetings and performing site visits to observe work progress; participating in discussions to resolve construction issues including change orders, claims and cost proposal reviews.
- Supervising subordinate engineering staff in reviewing record drawings; collecting, compiling and reporting field data; performing dam inspections, and utilizing the GIS system to support MWRA Engineering and Operations projects.

#### Projects Include:

- Contract 6385 (\$3.5M): Cleaning and cement mortar lining of approximately 4,500 feet of a 36-inch diameter cast iron water main, 11,000 feet of 20-inch cast iron water mains; and 500 feet of 20-inch. Installation by open-cut 4,200 feet of 36-inch ductile iron water main, 6,200 feet of 24-inch ductile iron water main, and valves and appurtenances and replacement of the check valve assembly at one of the revenue meter to City of Boston (construction cost \$26.8M).
- Contract 6540 Design (\$2.9M): Replacement of approximately 4,500 linear feet of a 16 inch with a 24-inch watermain and installation of approximately 1,250 linear feet of a 36 inch redundant water suction line connecting from a 60-inch lock-bar steel main to a 36-inch reinforced concrete main (estimated construction cost \$11.2M); rehabilitation of an 85-year old 30-inch riveted steel main by sliplining with HDPE pipe (estimated construction cost \$2.65M); and installation of approximately 8,800 linear feet of a new 36-inch main (estimated construction cost \$12M).
- Contract 6546, Section 28 Rehabilitation: Cleaning and cement mortar lining of approximately 6,250 feet of 20-inch cast iron pipe and replacement of a connection to a 56-inch diameter lock-bar steel transmission main.
- Belden Bly Bridge Water Main Relocation Feasibility Study: Relocation of a 20-inch water main using trenchless technology. The study included evaluating river crossing methodology, alignment and work limits that would provide the shortest permitting duration, easement acquisition process and construction schedule, while meeting design and schedule constraints required by the MassDOT for replacement of the bridge structure.
- Shaft E and Shaft L Cathodic Protection Troubleshooting, replacement design and engineering services during construction.
- Shaft 5A/5 Cathodic Protection replacement design and engineering services during construction.
- Subsurface Utility Engineering Investigations - Quality Level B: To determine the approximate horizontal location of existing utilities and their major laterals to existing buildings at specific locations within the project limits.

**Ester N. Lwebuga, P.E**

**Operations Engineering, Field Operations Department**  
**Acting Project Manager, March 2006 - August 2006**  
**Senior Engineer, April 2005 - June 2009**  
**Junior Civil Engineer, May 2000 - April 2005**

Provided engineering support for Field Operations department including:

- Liaison on Engineering and Construction projects. Reviewing designs and construction submittals.
- Coordinating Field operations support actions and facilities start-up activities including valve operations, pipeline leakage and pressure testing and disinfection. Coordinating distribution system shutdowns with communities to minimize impact to water service.
- Developing and coordinating review and execution of Operations plans and constraints. Acting as Responsible Person for execution of Plans including monitoring of the distribution system for potential service impacts.
- Preparing Emergency Action Plans and Contingency Plans for work performed on critical parts of the distribution system.
- Overseeing Metro-Operations Dams Inspection program including review of inspection reports, performing routine dam and reservoir visual inspections, developing scope of work for Dams maintenance, and ensuring execution of recommended repairs and maintenance.

#### **Engineering Intern, July 1999 – April 2000**

- Valve Replacement Design: Researched record plans, detail records, and field books to support the valve replacement program. Prepared designs for several blow-off valves replacement sites in the metropolitan area. Coordinated designs with local utilities.
- Analyzed metering data for Water Meter sizing.
- Performed administrative duties including writing correspondences, revising design reports, retrieving record plans to support ongoing design projects, publishing reports and preparing presentations.

#### **EDUCATION**

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M.S. Engineering, Civil Engineering, University of Massachusetts • Lowell, MA, June 2005

B.S. in Engineering, Calvin College, Grand Rapids, MI, May 1995

#### **LICENSES AND CERTIFICATES**

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- |  |                                       |
|--|---------------------------------------|
| • Registered Professional Civil Engineer - Massachusetts | • Construction Supervisor's License   |
| • Envision Sustainability Professional                   | • 10 Hour OSHA Training               |
| • Grade IV Distribution Operator in Training             | • 40 Hour Hazardous Waste Site Worker |
|  | • First Aid/CPR/AED                   |

#### **PROFESSIONAL MEMBERSHIPS**

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- |  |                                      |
|--|--------------------------------------|
| • American Society for Civil Engineers | • Boston Society for Civil Engineers |
|--|--------------------------------------|

#### **COMPUTER EXPERIENCE**

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Microsoft Windows, GIS ArcMAP

#### **VOLUNTEER**

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Everybody WINS / Read-to-a-Child, 09/06 – 3/20.

MathCounts, 09/08 -06/09; 09/09-06/10.

Global Children Ministry, 2000- present.

**MWRA  
POSITION DESCRIPTION**

**POSITION:** Assistant Director, Engineering (Water/Wastewater)

**PCR#:**

**DIVISION:** Operations

**DEPARTMENT:** Engineering and Construction

**BASIC PURPOSE:**

Assists in the direction of all aspects of engineering capital projects and current expense projects, including oversight of development, procurement and administration of professional services contracts and the oversight of the procurement, award, and engineering support of construction projects for assigned unit.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Chief Engineer.

**SUPERVISION EXERCISED:**

Exercises direct supervision of the assigned unit including several Senior Program Managers.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Directs the development and administration of capital improvement and current expense projects within the assigned unit. Develops funding plans for projects; assists in the preparation of and oversees the department's capital improvement budget.
- Assists in the evaluation of solutions to engineering problems and develops environmentally sound solutions.
- Oversees the work of staff and consulting engineers to ensure adherence to budgets, schedules, quality of outputs and compliance with scope of services and contract terms.
- Oversees coordination of projects and engineering functions with appropriate MWRA

Divisions and sees that projects comply with MWRA policies and procedures.

- Recommends and develops agency, program, or department policy by analyzing all pertinent issues and information regarding the impact of proposed policy on the provision of services to clients, consumers, or the general public and by determining the resources necessary to implement such policy.
- Maintains communication with local, State, and Federal agencies, professional organizations and community groups to provide information on and gain support for programs.
- Develops and oversees current expense budget for assigned unit.
- Oversees and coordinates staffing with project workload to assure consistency of project execution and quality, and adherence to Massachusetts Water Resources Authority's policy and procedures.
- Manages the Department in a manner that is consistent with MWRA's goals of Diversity, Equity, and Inclusion.

**SECONDARY DUTIES:**

- Performs related duties as required.
- Participates in preparing for collective bargaining and hears Step One Grievances.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) A Bachelor's degree in civil engineering or a related field. Graduate degree preferred; and
- (B) An understanding of water and/or wastewater engineering and contract construction management as acquired by a minimum of ten (10) years experience including at least four (4) years in a managerial or supervisory position; or
- (C) Any equivalent combination of education or experience.



Necessary Knowledge, Skills and Abilities:

- A. Knowledge of engineering practices and principles.
- B. Demonstrated verbal and written communication skills.
- C. Demonstrated ability to plan, organize, direct, train and assign duties to subordinates.
- D. Demonstrated successful experience managing in a union environment with a diverse workforce.
- E. Proficient in computer hardware and software including Microsoft Office Suite, databases, data presentation, and analysis tools.

**SPECIAL REQUIREMENTS:**

A Massachusetts Class D driver's license.

Registration as a Massachusetts Professional Engineer strongly preferred.

Is required to be part of an on-call rotation for emergencies 24 hours a day, 7 days a week.

**TOOLS AND EQUIPMENT USED:**

Office machines as normally associated, with the use of telephone, personal computer including word processing and other software, and copy machine.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to sit, talk or hear. The employee is regularly required to use hands to finger, handle, feel or operate objects,

including office equipment, or controls and reach with hands and arms. The employee frequently is required to stand and walk.

The employee must regularly lift and/or move up to 10 pounds. Specific vision abilities required by this job include close vision, and the ability to adjust focus.

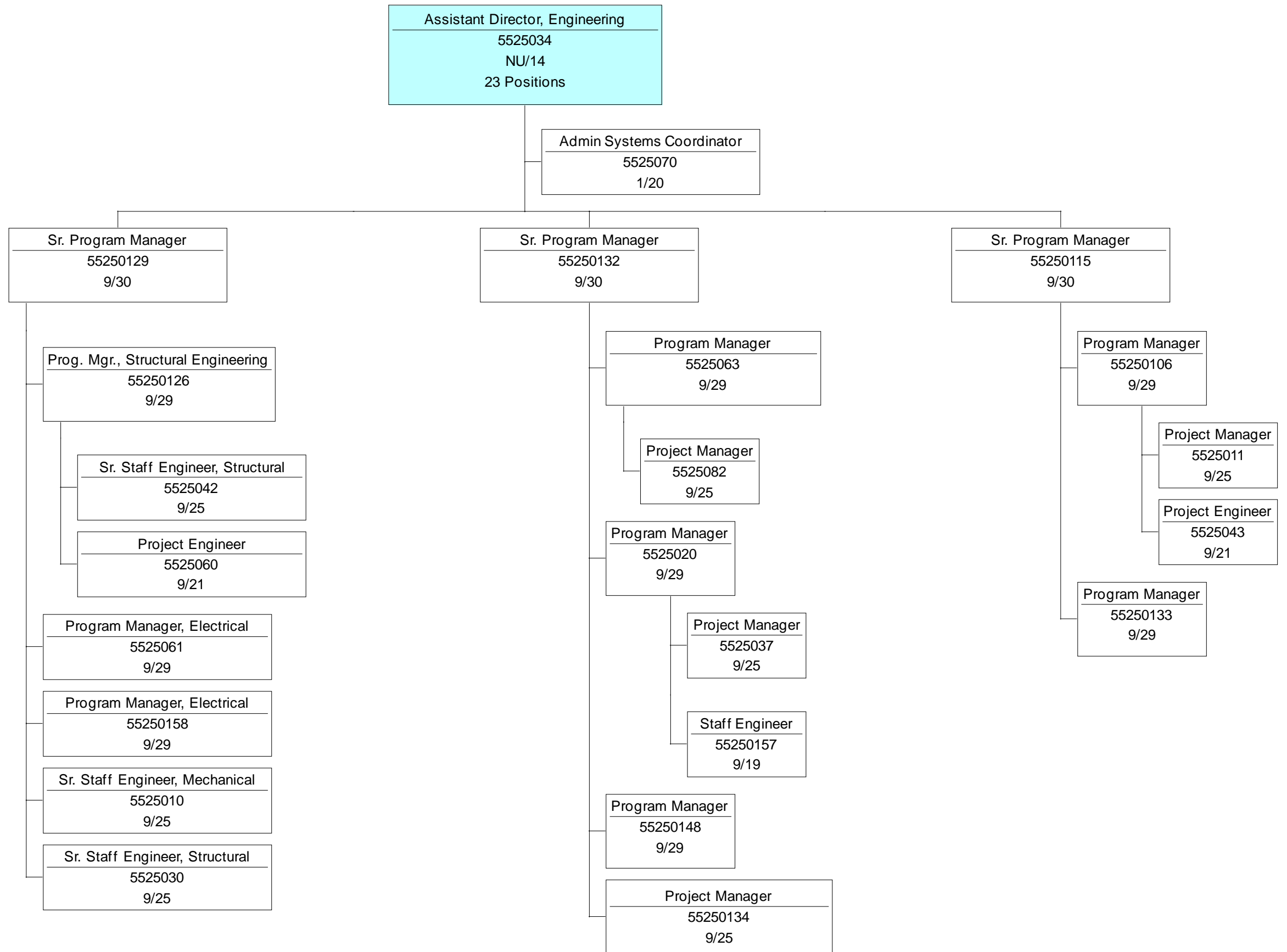
**WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee regularly works in an office environment.

The noise level in the work environment is usually a moderately quiet office setting.

**August 2023**

Engineering & Construction  
October 30, 2023



## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** November 15, 2023  
**SUBJECT:** Delegated Authority Report – October 2023



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**COMMITTEE:** Administration, Finance & Audit

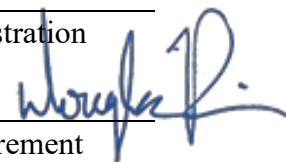
INFORMATION  
 VOTE



Michele S. Gillen  
Director, Administration

Barbara Aylward, Administrator A & F  
Preparer/Title

Douglas J. Rice  
Director of Procurement



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### RECOMMENDATION:

For information only. Attached is a listing of actions taken by the Executive Director under delegated authority for the period October 1 - 31, 2023.

This report is broken down into three sections:

- Awards of Construction, non-professional and professional services contracts and change orders and amendments in excess of \$25,000, including credit change orders and amendments in excess of \$25,000;
- Awards of purchase orders in excess of \$25,000; and
- Amendments to the Position Control Register, if applicable.

### DISCUSSION:

The Board of Directors' Management Policies and Procedures, as amended by the Board's vote on February 16, 2022, delegate authority to the Executive Director to approve the following:

Construction Contract Awards:

Up to \$3.5 million if the award is to the lowest bidder.

Change Orders:

Up to 25% of the original contract amount or \$1,000,000.00, whichever is less, where the change increases the contract amount, and for a term not exceeding an aggregate of six months; and for any amount and for any term, where the change decreases the contract amount. The delegations for cost increases and time can be restored by Board vote.

Professional Service Contract Awards:

Up to \$1,000,000 and three years with a firm; or up to \$200,000 and two years with an individual.

Non-Professional Service Contract Awards:

Up to \$1,000,000 if a competitive procurement process has been conducted, or up to \$100,000 if a procurement process other than a competitive process has been conducted.

Purchase or Lease of Equipment, Materials or Supplies:

Up to \$3.5 million if the award is to the lowest bidder.

Amendments:

Up to 25% of the original contract amount or \$500,000, whichever is less, and for a term not exceeding an aggregate of six months.

Amendments to the Position Control Register:

Amendments which result only in a change in cost center.

**BUDGET/FISCAL IMPACT:**

Recommendations for delegated authority approval include information on the budget/fiscal impact related to the action. For items funded through the capital budget, dollars are measured against the approved capital budget. If the dollars are in excess of the amount authorized in the budget, the amount will be covered within the five-year CIP spending cap. For items funded through the Current Expense Budget, variances are reported monthly and year-end projections are prepared at least twice per year. Staff review all variances and projections so that appropriate measures may be taken to ensure that overall spending is within the MWRA budget.

**Construction & Professional Services Delegated Authority Items October 1 – 31, 2023**

<b>No.</b>	<b>Date of Award</b>	<b>Title and Explanation</b>	<b>Contract</b>	<b>Amend/CO</b>	<b>Company</b>	<b>Value</b>
<b>C-1</b>	<b>10/10/23</b>	<b>Instrumentation Services – Metropolitan Boston</b> Final balancing change order to decrease the following bid items: Scheduled process systems services, Non-emergency and Emergency on-call service, On-call diagnostic and remediation services, Replacement parts and rental equipment, COVID-19 safety.	<b>OP-418</b>	<b>2</b>	<b>Safety, Inc.</b>	<b>(\$120,445.68)</b>
<b>C-2</b>	<b>10/10/23</b>	<b>Elevator Maintenance Services at Various Authority Facilities</b> Increase non-emergency repair services by an additional 200 hours.	<b>OP-433</b>	<b>1</b>	<b>United Elevator Company, Inc.</b>	<b>\$38,000.00</b>
<b>C-3</b>	<b>10/18/23</b>	<b>Fire Alarm Systems Service Metropolitan Boston</b> Final balancing change order to decrease the following bid items: On-site testing, Manufacturer’s representative services, On-site emergency repair, Replacement parts.	<b>OP-422</b>	<b>1</b>	<b>Sullivan &amp; McLaughlin Co.</b>	<b>(\$110,400.20)</b>
<b>C-4</b>	<b>10/18/23</b>	<b>Electrical Equipment Testing – Deer Island Treatment Plant</b> Extend contract time by 121 calendar days from August 1, 2023 to November 30, 2023; Perform scheduled diagnostic testing and services to maintain continuity of services through the 121-day contract time extension.	<b>S596</b>	<b>1</b>	<b>American Electrical Testing Company, Inc.</b>	<b>\$100,000.00</b>
<b>C-5</b>	<b>10/19/23</b>	<b>Continuous Emissions Monitoring System Services - Deer Island Treatment Plant</b> Award of a contract to the lowest responsive bidder for the continuous emissions monitoring systems services at the Deer Island Treatment Plant for a term of 730 calendar days.	<b>S615</b>	<b>Award</b>	<b>Alliance Technical Group, LLC</b>	<b>\$229,600.00</b>
<b>C-6</b>	<b>10/24/23</b>	<b>Thermal and Hydo Power Plant Maintenance</b> Extend contract time by 120 calendar days from November 19, 2023 to March 18, 2024; Increase non-emergency maintenance and repair services by an additional 250 hours; Increase manufacturer’s representative services.	<b>S597</b>	<b>2</b>	<b>O’Connor Corporation</b>	<b>\$54,750.00</b>
<b>C-7</b>	<b>10/24/23</b>	<b>Quinapoxet Dam Removal</b> Award of a contract to the lowest responsive bidder for the Quinapoxet Dam removal for a term of 730 calendar days.	<b>7348</b>	<b>Award</b>	<b>Lucianos Excavation, Inc.</b>	<b>\$2,470,000.00</b>

No.	Date of Award	Title and Explanation	Contract	Amend/CO	Company	Value
C-8	10/30/23	<b>John J. Carroll Water Treatment Plant Sodium Hypochlorite System Modification</b> Final balancing change order to decrease the following bid items: COVID-19 Safety, Decrease in time and materials necessary to perform the Work ordered in Change Order No. 3.	7085H	9	Harding & Smith, LLC	(\$135,939.00)
C-9.	10/30/23	<b>Rehabilitation of Sections 23, 24 and 47 Water Mains – Boston and Newton</b> Perform City of Newton temporary bypass piping and system improvements; Increase commodity allowance; Isolate and repair damaged unmarked water services and hand dig under concrete encased duct bank.	6392	2	Albanese D&S, Inc.	\$517,845.56

**Purchasing Delegated Authority Items October 1-31, 2023**

No.	Date of Award	Title and Explanation	Company	Value
P-1	10/5/23	<p><b>Purchase Order for 64 Multi-Function Devices and a Five Year Maintenance Service Agreement (State Contract ITC80)</b>                      MWRA currently has sixty-one MFDs in use Authority-wide that are now more than seven years old and in need of a refresh. In preparation for this hardware refresh MIS staff assessed the utilization of MFDs and laser printers. Staff determined that it would be more cost effective to refresh black and white MFDs with color MFDs and phase out laser printers.</p>	Toshiba Business Solutions USA, Inc.	\$530,592
P-2	10/10/23	<p><b>Purchase Order for Three New Ford Transit Crew Vans</b>                      The procurement of three new vans is recommended by staff in accordance with MWRA's Vehicle Replacement Policy. All of the vehicles to be replaced meet or exceed the current replacement criteria for age, mileage and/or condition. Staff believe the bid amount for these vehicles is reasonable based on current market instability and an overall lack of interest from other dealers bidding fleet vehicles. The three vans recommended have prices that are locked in.</p>	Stoneham Motor Company, Inc.	\$194,739
P-3	10/12/23	<p><b>Sole Source Purchase Order for One 150 Nordic Disc Filter Cartridges</b>                      To achieve compliance with permit limits, the Clinton Wastewater Treatment Plant utilizes three Westech Engineering Nordic super disc Filtration systems in the Phosphorus Reduction Facility. This filtration system employs replaceable cartridges to filter treated wastewater. Each super disc filter unit contains 250 filter cartridges and has the capacity to treat up to six million gallons of treated water per day.</p>	Westech Engineering, Inc.	\$82,800
P-4	10/18/23	<p><b>Purchase Order for 46 Glass Lined Plug Valves</b>                      Ball centric valves are used to direct sludge flow through online equipment in addition to providing isolation of plant equipment for servicing. Overtime, grit and other inorganic material can wear away the glass lining, valve body and valve plug causing leaks and failure. Staff developed specifications that will replace the ball centric valves with 100% full-port glass-lined plug valves. The valves have a thicker casting and coated plug that should increase the expected life-span of the replacement valves.</p>	Aquila and Neptun LLC	\$161,560



No.	Date of Award	Title and Explanation	Company	Value
P-5	10/19/23	<p><b>Sole Source Purchase Order for One Year of Maintenance and Support for the Laboratory Information Management System</b></p> <p>The Department of Laboratory Service uses the Laboratory Information Management System (LIMS) for compliance with DEP's laboratory certification requirements. The system provides user-friendly access, improved ease of compliance, facilitates the interface of new instruments to LIMS, and provides LIMS' clients complete information on laboratory results and efficiencies by streamlining workflows. MWRA currently owns a total of 45 concurrent user licenses for the core LIMS product; seven of these licenses are reserved for background processes and laboratory instrument data capture and 38 concurrent sessions are available for MWRA staff to access LIMS.</p>	LabWare, Inc.	\$70,814.50
P-6	10/20/23	<p><b>Purchase Order for Two Ion Chromatography Systems</b></p> <p>The Department of Laboratory Services uses two dedicated ion chromatography systems. One of these systems is used for the analysis of bromide and bromate in drinking water and one for the determination of chloride and sulfate in drinking water, ground water, surface water, wastewater, and fertilizer pellets. The system used for bromide and bromate was purchased in 2006 and is no longer supported. The system used for chloride and sulfate was purchased in 2008, upgraded 2017, and will be maintained in the lab. Staff intend to keep both systems for use in the lab as backup systems or if there is an increase in method development.</p>	Brinkmann Instruments, Inc.	\$118,760.95
P-7	10/30/23	<p><b>Sole Source Purchase Order for 11 Mine Safety Appliance Sample Pump Modules</b></p> <p>Fixed gas monitoring equipment is used to monitor and alarm on dangerous levels of hydrogen sulfide, oxygen concentrations above 23.5% or below 19.5%, combustible gases, carbon monoxide, sulfur dioxide and chlorine at Operations facilities. This request will replenish 11 MSA sample pump modules kept in inventory at the Chelsea Warehouse.</p>	MSA c/o Neponset Controls	\$26,180
P-8	10/30/23	<p><b>Three-Year Purchase Order Contract for Janitorial Services at the Clinton Wastewater Treatment Plant (State Contract FAC114)</b></p> <p>The Clinton Wastewater Treatment Plant provides advanced sewage treatment services to the town of Clinton and the Lancaster Sewer District. This facility is staffed eight hours per day, 365 days per year. For safe, clean and efficient management of the facility, MWRA requires a contract for janitorial services.</p>	Compass Facility Services, Inc.	\$49,036

No.	Date of Award	Title and Explanation	Company	Value
P-9	10/30/23	<p><b>Purchase Order for 450 Adobe Acrobat Pro Licenses (State Contract ITS75)</b>            Adobe Acrobat is used across the Authority to create and edits PDF documents. Currently the Authority owns 404 licenses of two different version of the software; 350 licenses of version 2017 which has reached end of life and 54 licenses of version 2020 which will reach end of life in June 2025. These 450 licenses will be used to bring all users of the software to latest supported version and allow for additional capacity as the Authority continues to create and handles more digital documents.</p>	Insight Public Sector, Inc.	\$53,748
P-10	10/30/23	<p><b>Purchase Order Contract for Snow Removal Services at the Clinton Wastewater Treatment Plant</b>            Each winter season the Clinton Wastewater Treatment Plant requires snow plowing, shoveling, sanding, and salting of roadways, parking lots and sidewalks to ensure the safety of workers and visitors to the plant after a snowstorm or other hazardous winter weather event. Bids for these services are designed to establish a firm cost for snow plowing and shoveling services based upon an estimated number of storms ranging from one inch to 18 inches or more of snow.</p>	Kilbourn Corporation	\$64,500
P-11	10/30/23	<p><b>Purchase Order for System Administration II Consultant (State Contract ITS77 Category 1A and 1B)</b>            In November 2021, MIS began the search to fill the vacant position for a System Administrator II. This position has been posted several times with no applicants being selected. To date, there have been twenty-five applicants; however, none have met the position’s minimum qualifications. While the search process continues to find a permanent replacement, MIS seeks an interim System Administration II Consultant to assist with MIS initiatives until the vacant position is filled.</p>	Mindlance, Inc.	\$138,567
P-12	10/30/23	<p><b>Purchase Order for Glass Lined Pipes and Fittings</b>            Each digester has an associated feed ring that introduces thickened raw sludge into the digester. This sludge contains grit and solids that over time can wear away the interior glass lining, exposing the cement and ductile iron pipe layers. Once these layers are exposed, grit and solids along with hydrogen sulfide gas accelerate the wear rate until leaks develop and the fitting or pipe section fails. This purchase is for 12-inch glass-lined end caps, 22.5 and 90-degree elbows, reducing pipe and standard teeshaped piping and fittings, and 120 feet of pipe, enabling MWRA to replace the feed ring.</p>	Core & Main LP	\$160,046


No.	Date of Award	Title and Explanation	Company	Value
P-13	10/30/23	<p><b>Two-Year Purchase Order Contract for Trash Removal and Single Stream Recycling Services</b></p> <p>The scope of work under this purchase order contract will include removal and disposal of all waste material that is not recycled. There are 11 ten-yard trash dumpsters that are emptied approximately twice per week; a 30-yard dumpster is emptied as needed upon request. The waste collected is disposed of in a landfill licensed to receive non-hazardous waste. In addition to trash removal services, this contract includes a single stream recycling initiative.</p>	EZ Disposal Service, Inc.	\$259,485
P-14	10/10/23	<p><b>Purchase and Supply of Electric Power for the MWRA Profile Accounts</b></p> <p>MWRA Profile Accounts include 38 smaller electricity accounts that account for approximately 4% of MWRA's total purchased electricity. Over the past few years, the number of competitive suppliers bidding on these smaller accounts has decreased, with fewer suppliers in the market (many suppliers have merged) and the load for this contract relatively small overall. Staff evaluated alternative purchasing collaborative programs and received pricing through both of the options available, including the Commonwealth's OSD Contract ENE49 and PowerOptions. MWRA executed a contract with Constellation New Energy, Inc., through the PowerOptions consortium, for the lowest price offered, for a term of 12 months, with a supply start date of November 2023.</p>	Constellation New Energy, Inc.	\$134.20/MWh

**Position Control Register (PCR) Location Changes October 2023**

<u>DATE OF CHANGE</u>	<u>POSITION TITLE</u>	<u>CURRENT PCR#</u>	<u>CURRENT COST CENTER</u>	<u>NEW PCR #</u>	<u>NEW COST CENTER</u>	<u>REASON FOR CHANGE</u>
10/21/2023	Project Manager, Design (Tunnel)	3640010	Tunnel Redundancy	3640010	Tunnel Redundancy	To meet department staffing needs.
10/28/2023	Project Manager, PICS Applications	2938508	Deer Island Treatment Plant / Process Control	2938508	Deer Island Treatment Plant / Process Control	To meet department staffing needs.

## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** November 15, 2023  
**SUBJECT:** FY24 Financial Update and Summary through October 2023




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**COMMITTEE:** Administration, Finance & Audit

Michael J. Cole, Budget Director  
James J. Coyne, Budget Manager  
Preparer/Title

INFORMATION  
 VOTE



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Thomas J. Durkin  
Director, Finance

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### RECOMMENDATION:

For information only. This staff summary provides the financial results and variance highlights for Fiscal Year 2024 through October 2023, comparing actual spending to the budget.

### DISCUSSION:

The total Year-to-Date variance for the FY24 CEB is \$12.7 million, due to lower direct expenses of \$9.3 million, indirect expenses of \$0.4 million, and debt service costs of \$0.8 million, and higher revenue of \$2.2 million.

### FY24 Current Expense Budget

The CEB expense variances through October 2023 by major budget category were:

- Lower Direct Expenses of \$9.3 million or 9.4% under budget. Spending was lower for Wages & Salaries, Professional Services, Utilities, Chemicals, Maintenance, Fringe Benefits, Other Services, Training & Meetings, and Workers' Compensation. Spending was higher than budget for Other Materials and Overtime.
- Lower Indirect Expenses of \$0.4 million or 1.5% under budget due primarily to lower Watershed Reimbursements.
- Debt Service expenses were \$0.8 million or 0.6% under budget driven by lower than expected variable interest expense.
- Revenue was \$2.2 million or 0.8% over budget driven by Investment Income of \$2.3 million due to higher than budgeted interest rates.

**FY24 Budget and FY24 Actual Variance by Expenditure Category  
(in millions)**

	<b>FY24 Budget</b>	<b>FY24 Actual</b>	<b>\$ Variance</b>	<b>% Variance</b>
Direct Expenses	\$99.0	\$89.7	-\$9.3	-9.4%
Indirect Expenses	\$28.8	\$28.4	-\$0.4	-1.5%
Capital Financing	\$143.7	\$142.9	-\$0.8	-0.6%
<b>Total</b>	<b>\$271.5</b>	<b>\$261.0</b>	<b>-\$10.6</b>	<b>-3.9%</b>

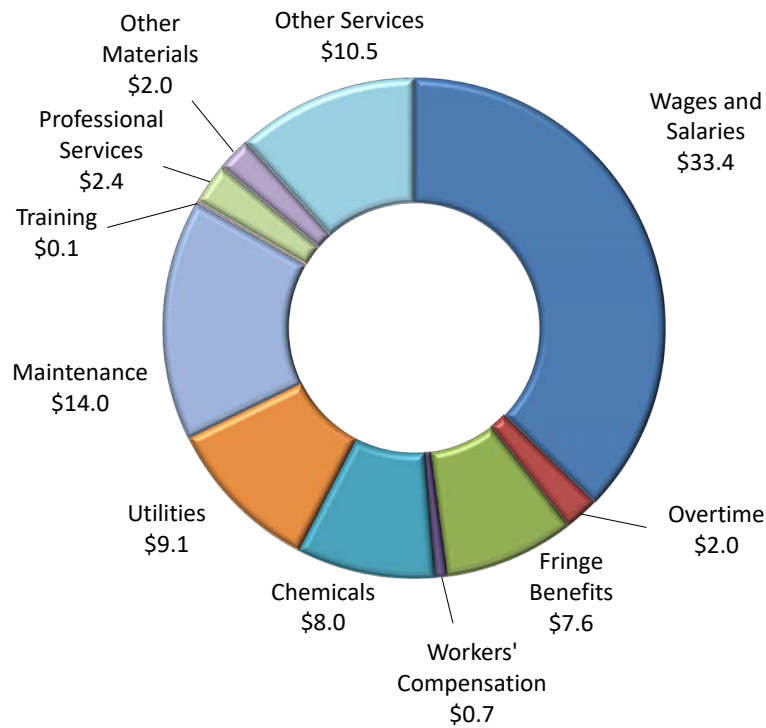
*Totals may not add due to rounding*

*Please refer to Attachment 1 for a more detailed comparison by line item of the budget variances for FY24.*

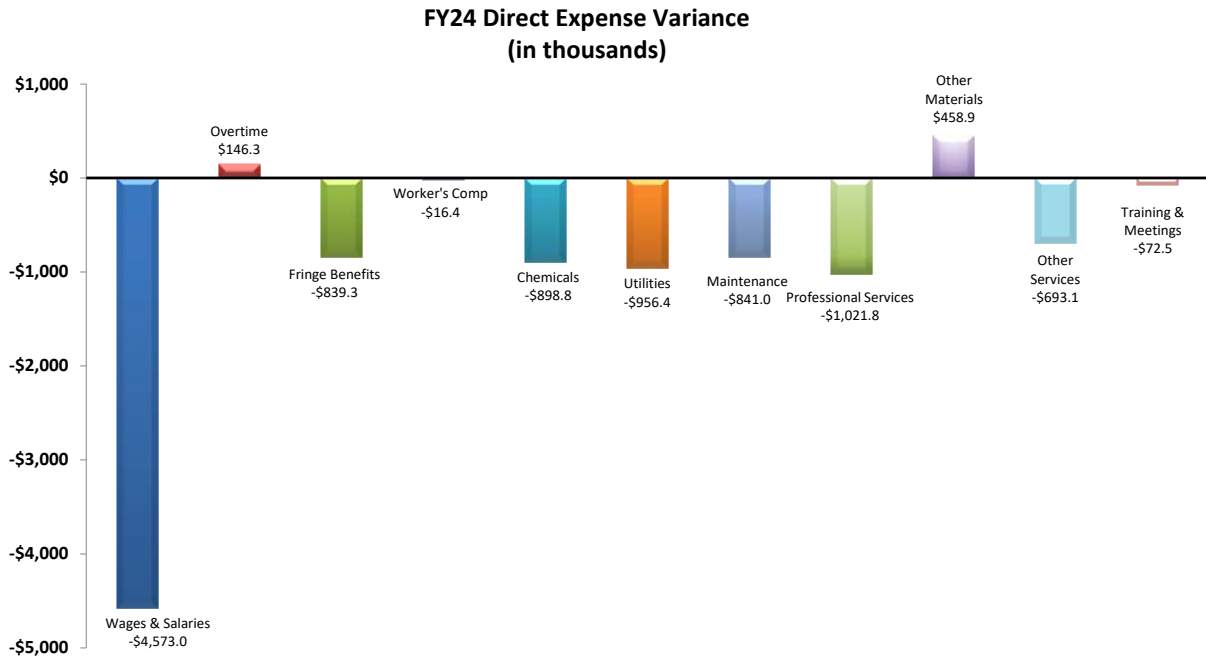
**Direct Expenses**

FY24 Direct Expenses through October totaled \$89.7 million, which was \$9.3 million or 9.4% less than budgeted.

**FY24 Direct Expenses  
(in millions)**

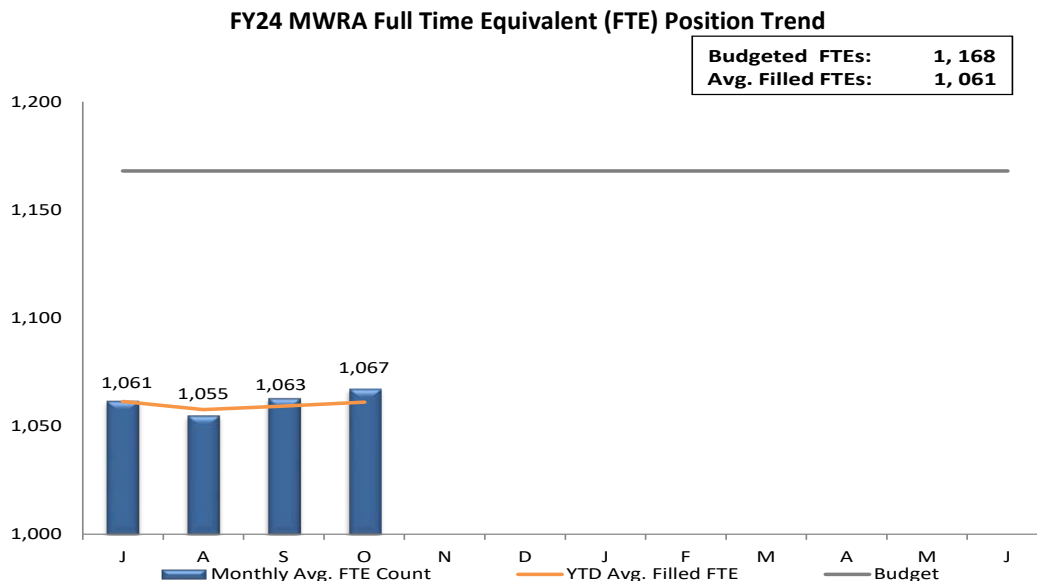


Spending was lower than budget for Wages & Salaries, Professional Services, Utilities, Chemicals, Maintenance, Fringe Benefits, Other Services, Training & Meetings, and Workers' Compensation. These were partially offset by higher than budgeted spending for Other Materials and Overtime.



## Wages and Salaries

Wages and Salaries was under budget by \$4.6 million or 12.0%. Through October, there were 107 fewer average FTEs (1,061 versus 1,168 budget) or 10.0% and lower average salaries for new hires versus retirees. The timing of backfilling vacant positions also contributed to Regular Pay being under budget.



## **Professional Services**

Professional Services were less than budget by \$1.0 million or 30.0% driven by lower Other Services of \$487,000 due to timing of services including the Disparity Study, Legal Services of \$167,000 and Computer Systems Consultant of \$166,000, all due to timing.

## **Utilities**

Utilities were lower than budget by \$956,000 or 9.5%. Underspending on Diesel Fuel of \$1.3 million primarily due to timing of purchasing at Deer Island. The purchase is expected later in the fiscal year. Overspending in Electricity of \$382,000 primarily at Deer Island of \$177,000 is driven by higher demand usage charges due to the many rain events and higher real time pricing on the supply contract. Electricity in Field Operations was greater than budget by \$139,000 due to higher usage, partially offset by lower pricing than budget.

## **Chemicals**

Chemicals were lower than budget by \$899,000 or 10.1%. Lower than budgeted spending on Sodium Hypochlorite of \$485,000 is driven by lower spending in Water Operations of \$809,000 due to lower contract pricing, partially offset by higher spending at Deer Island of \$416,000 due to additional usage for disinfection and odor control due to higher flows. Carbon Dioxide was lower than budget by \$215,000 primarily due to fewer deliveries, Other Oxidizers (Bioxide) at Framingham PS was lower than budget by \$102,000 due to fewer deliveries and lower price, Soda Ash of \$96,000 primarily due to less than anticipated deliveries, and Sodium Bisulfite of \$89,000 primarily driven by Deer Island due to lower quantities to dechlorinate the effluent, partially offset by higher Ferric Chloride of \$269,000, driven by Deer Island to keep the orthophosphate levels in the digesters at the desired target level. Deer Island flows are 16.1% greater than the budget and the Carroll Plant preliminary flows are 5.1% less than the budget through October. It is important to note that Chemical variances are also based on deliveries which in general reflect the usage patterns. However, the timing of deliveries is an important factor.

## **Maintenance**

Maintenance was lower than budget by \$841,000 or 5.7%, largely driven by the timing of projects. Maintenance Services are under budget by \$1.5 million driven by Plant and Machinery Services of \$1.1 million primarily due to timing of work for the Norumbega Cell #3 tank cleaning, Building and Ground Services of \$333,000, Electrical Services of \$230,000, and Pipeline Services of \$194,000 also due to timing of work, partially offset by higher Computer Software-Licenses/Upgrades of \$597,000 due to timing. Maintenance Materials are over budget by \$649,000 million driven by Warehouse Inventory of \$607,000 due to need for spare parts as well as purchasing of materials early due to supply chain issues, Plant & Machinery Materials of \$229,000 and Electrical Materials of \$91,000 due to timing, partially offset by lower Special Equipment Materials of \$183,000 and Building and Grounds Materials of \$143,000 also due to timing.



## **Fringe Benefits**

Fringe Benefit spending was lower than budget by \$839,000 or 10.0%. Spending was lower than budget in Health Insurance of \$693,000, due to fewer than budgeted participants in health insurance plans, increased contribution by external new hires vs. lower contribution rates of staff retiring, and the shift from family to individual plans which are less expensive. In addition, there was lower spending on Medicare of \$69,000 and Paid Family Medical Leave of \$41,000.

## **Other Services**

Other Services were lower than budget by \$693,000 or 6.2% driven by Telecommunication costs of \$366,000 due to less than anticipated costs, Memberships/Dues/Subscriptions of \$105,000 due to timing, Grit & Screenings Removal of \$79,000 due to lower quantities, and Police Details of \$78,000 due to less than anticipated needs.

## **Other Materials**

Other Materials were greater than budget by \$459,000 or 30.4% driven by higher Computer Hardware of \$328,000 primarily due to timing of equipment purchases and higher Vehicle Expense of \$133,000 due to timing of vehicle expenses including the electrical vehicle charging stations originally anticipated to be purchased in FY23.

## **Overtime**

Overtime expenses were greater than budget by \$146,000 or 7.9%. Greater than budgeted spending at Deer Island Treatment Plant of \$141,000 due to shift coverage and Field Operations of \$30,000 primarily due to excessive rain events and vacancy coverage. Year-to-date rainfall was a major contributor for the increased overtime.

## **Training & Meetings**

Training & Meetings was lower than budget by \$72,000 or 41.0% primarily due to timing.

## **Worker's Compensation**

Worker's Compensation expenses were lower than budget by \$16,000 or 2.3% due to lower Compensation Payments of \$48,000 and Administrative Expenses of \$6,000, partially offset by higher spending on Medical Payments of \$38,000. Due to uncertainties of when spending will happen, the budget is spread evenly throughout the year.

## **Indirect Expenses**

Indirect Expenses totaled \$28.4 million, which is \$442,000 or 1.5% lower than budget. The variance is driven by lower Watershed Reimbursements.

Based on FY24 operating activity only, the Watershed Division is \$309,000 or 5.1% under budget. Lower spending on Wages and Salaries and Fringe Benefits is driving the variance. When factoring

in the FY23 balance forward of \$156,000 which was a credit towards FY24, Watershed Reimbursement is \$497,000 or 8.2% below budget through October 2023.

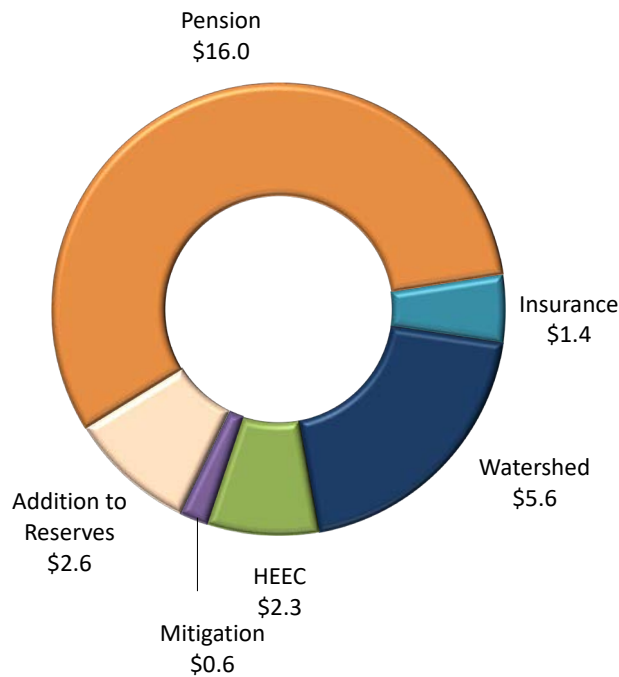
**FY24 Watershed Protection Variance**

\$ in millions	YTD Budget	YTD Actual	YTD \$ Variance	YTD % Variance
Operating Expenses	6.6	6.1	-0.5	-7.7%
Operating Revenues - Offset	0.5	0.3	-0.2	-39.5%
<b>FY24 Operating Totals</b>	<b>6.1</b>	<b>5.8</b>	<b>-0.3</b>	<b>-5.1%</b>
DCR Balance Forward (FY23 year-end accrual true-up)	0.0	-0.2	-0.2	
<b>FY24 Adjusted Operating Totals</b>	<b>6.1</b>	<b>5.6</b>	<b>-0.5</b>	<b>-7.6%</b>
PILOT	0.0	0.0	0.0	0.0%
<b>Total Watershed Reimbursement</b>	<b>6.1</b>	<b>5.6</b>	<b>-0.5</b>	<b>-7.6%</b>

*Totals may not add due to rounding*

MWRA reimburses the Commonwealth of Massachusetts Department of Conservation (DCR) and Recreation - Division of Water Supply Protection – Office of Watershed Management for expenses. The reimbursements are presented for payment monthly in arrears. Accruals are being made monthly based on estimated expenses provided by DCR and trued-up monthly based on the monthly invoice. MWRA’s budget is based on the annual Fiscal Year Work Plan approved by the Massachusetts Water Supply Protection Trust (with a vacancy adjustment applied). The FTE count at the end of October was 146 (and 142.5 on a year-to-date basis) vs. a budget of 150.

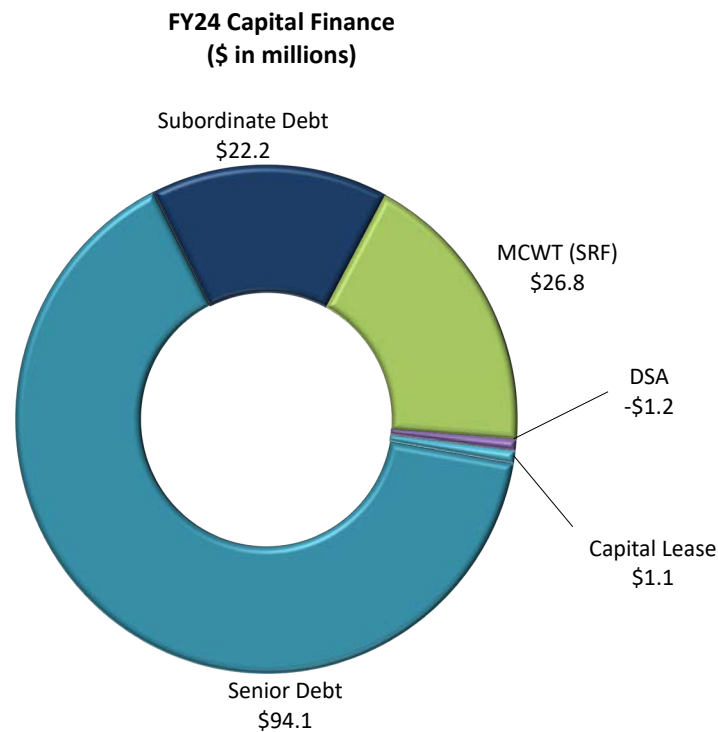
**FY24 Indirect Expenses  
(in millions)**



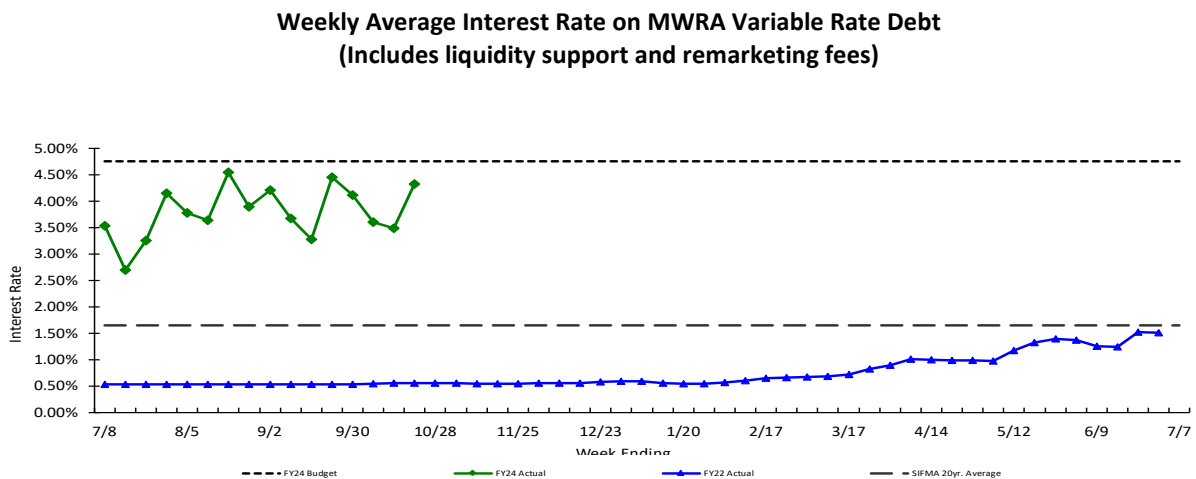
## Capital Financing

Capital Financing expenses include the principal and interest payments for fixed senior debt, the variable subordinate debt, the Massachusetts Clean Water Trust (SRF) obligation, the commercial paper program for the local water pipeline projects, current revenue for capital, Optional Debt Prepayment, and the Chelsea Facility lease payment.

Capital Financing expenses for FY24 through October totaled \$142.9 million, which is \$817,000 or 0.6% less than budget. This favorable variance is the result of lower than budgeted variable interest rates.



The graph below reflects the FY24 actual variable rate trend by week against the FY24 Budget.



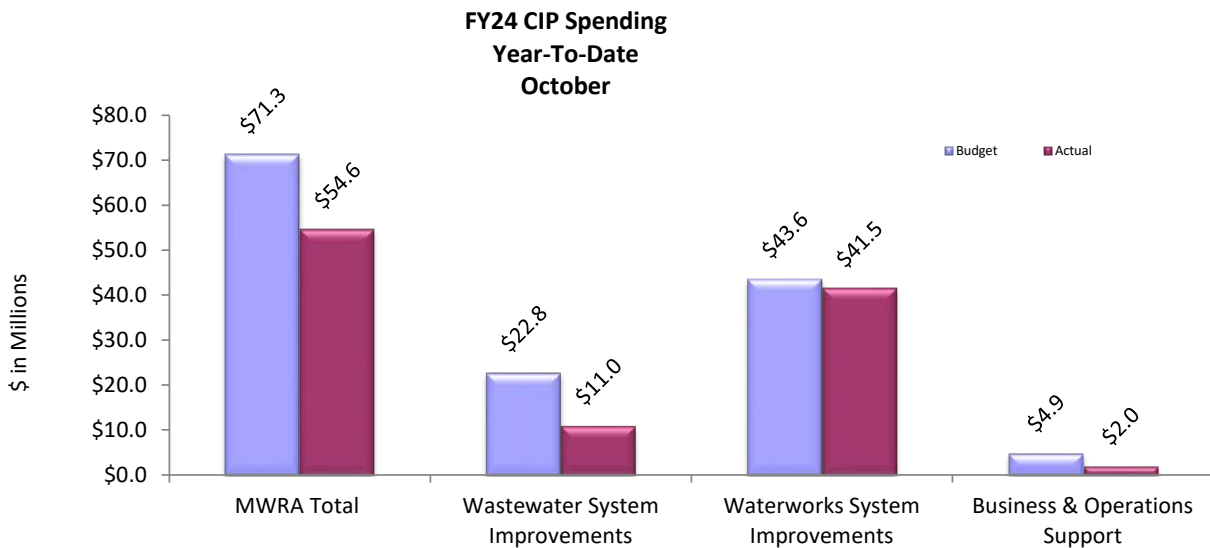
## Revenue & Income

Revenues of \$287.4 million were \$2.2 million or 0.8% over the estimate. Investment Income was \$2.3 million or 33.9% over the estimate due to higher than budgeted interest rates. Other Revenue was below the estimate by \$37,000 or 3.5% due to the Profit and Loss on Disposal of Equipment of \$96,000, Energy Revenue of \$67,000, partially offset by higher Penalties of \$80,000 and Permit Fees of \$30,000.

## **FY24 Capital Improvement Program**

Capital expenditures in Fiscal Year 2024 through October total \$54.6 million, \$16.7 million or 23.4% under planned spending.

After accounting for programs which are not directly under MWRA's control, most notably the Inflow and Infiltration (I/I) grant/loan program, the Local Water System Assistance loan program, and the community managed Combined Sewer Overflow (CSOs) projects, capital spending totaled \$36.7 million, \$14.4 million or 28.2% under planned spending.



Overall, CIP spending reflects the underspending in Wastewater Improvements (\$11.8 million), Waterworks (\$2.0 million) and Business and Operations Support (\$2.9 million). Major variances in Wastewater are primarily due to timing of community grants and loans for the I/I Local Financial Assistance Program, timing of work for Braintree/Weymouth Improvements – Construction and Deer Island Clarifier Rehab Phase 2, lower than projected task order work for Deer Island As-Needed Design contracts. This was partially offset by timing of work for Clinton Screw Pumps

Replacement Phase 1 – Construction, and contractor progress for Deer Island Radio Repeater System Upgrade.

Waterworks variances are primarily due to timing of work for Section 89/29 Replacement – Construction and WASM/Spot Pond Supply Mains West (SPSM) Pressure Reducing Valves (PRV) – Construction, timing of consultant’s work for Tunnel Redundancy Preliminary Design and Massachusetts Environmental Policy Act (MEPA) Review, and timing of services for Geotechnical Support. This was partially offset by timing of community loan distributions for the Water Loan Program, contractor progress for Waltham Water Pipeline, timing of work for Carroll Plant Chemical Feed System Improvements – Construction, and planned FY23 work completed in FY24 for Wachusett Lower Gatehouse Pipe & Boiler Replacement – Construction.

\$ in Millions	Budget	Actuals	\$ Var.	% Var.
<b>Wastewater System Improvements</b>				
Interception & Pumping	8.6	5.9	(2.7)	-31.6%
Treatment	2.0	1.9	(0.1)	-4.9%
Residuals	0.0	0.0	0.0	0.0%
CSO	1.4	0.2	(1.2)	-86.5%
Other	10.8	3.0	(7.7)	-71.9%
<b>Total Wastewater System Improvements</b>	<b>\$22.8</b>	<b>\$11.0</b>	<b>(\$11.8)</b>	<b>-51.7%</b>
<b>Waterworks System Improvements</b>				
Drinking Water Quality Improvements	1.1	1.0	(0.1)	-10.3%
Transmission	16.8	14.3	(2.6)	-15.2%
Distribution & Pumping	13.9	9.6	(4.4)	-31.3%
Other	11.7	16.7	5.0	42.5%
<b>Total Waterworks System Improvements</b>	<b>\$43.6</b>	<b>\$41.5</b>	<b>(\$2.0)</b>	<b>-4.7%</b>
<b>Business &amp; Operations Support</b>	<b>\$4.9</b>	<b>\$2.0</b>	<b>(\$2.9)</b>	<b>-58.3%</b>
<b>Total MWRA</b>	<b>\$71.3</b>	<b>\$54.6</b>	<b>(\$16.7)</b>	<b>-23.4%</b>

**FY24 Spending by Program:**

The main reasons for the project spending variances in order of magnitude are:

**Other Wastewater:** Net underspending of \$7.7 million

- \$7.7 million for Community I/I due to timing of community distributions of grants and loans.

**Other Waterworks:** Net overspending of \$5.0 million

- \$5.8 million for Local Financial Assistance due to timing of community loan distributions.
- This overspending was partially offset by underspending of \$0.3 million for Electrical Distribution Upgrades at Southborough due to timing of work.

**Water Distribution and Pumping:** Net underspending of \$4.4 million

- \$3.0 million for Section 89/29 Replacement – Construction, and \$1.1 million for CP-1 NEH Improvements due to timing of work.

**Business & Operations Support:** Net underspending of \$2.9 million

- \$1.3 million for As-Needed Design Contracts due to lower than projected task order work.
- \$0.6 million for Security Equipment & Installation due to timing of security initiatives.
- \$0.5 million for MAXIMO Interface Enhancements, \$0.4 million for Lawson Upgrade and \$0.3 for Core Switches due to timing and scheduling of work.

**Interception & Pumping:** Net underspending of \$2.7 million

- \$2.1 million for Braintree/Weymouth Improvements – Construction due to timing and long lead time for equipment.
- \$0.4 million for Ward Street & Columbus Park Headworks Upgrades - Design/CA due to delay in performing shaft inspections and issuing NTP for Final Design.

**Waterworks Transmission:** Net underspending of \$2.6 million

- \$1.6 million for Tunnel Redundancy Preliminary Design & MEPA Review due to timing of consultant work.
- \$1.0 million for Geotechnical Support Services due to timing of support services.
- \$0.4 million for WASM/Spot Pond Supply Mains Pressure Reducing Valves due to timing of work.
- This underspending was partially offset by overspending of \$2.0 million for Waltham Water Pipeline due to contractor progress, and \$0.3 million for Wachusett Lower Gatehouse Pipe & Boiler Replacement – Construction due to planned FY23 work completed in FY24.

**Combined Sewer Overflow:** Net underspending of \$1.2 million

- \$0.8 million for Chelsea 008 CSO Pipe Replacement due to timing of work.

**Wastewater Treatment:** Net underspending of \$0.1 million

- \$0.5 million for lower than projected Deer Island task order work, and \$0.4 million for Clarifier Rehab Phase 2 Construction due to timing of work.
- This underspending was partially offset by overspending of \$0.5 million for Clinton Screw Pumps Replacement Phase 1 – Construction due to timing of work and \$0.3 million for Radio Repeater System Upgrade 2 due to contractor progress.

**Construction Fund Balance**

The construction fund balance was \$124 million as of the end of October. Commercial Paper/Revolving Loan available capacity was \$170 million.

**ATTACHMENTS:**

- Attachment 1 – Variance Summary October 2023
- Attachment 2 – Current Expense Variance Explanations
- Attachment 3 – Capital Improvement Program Variance Explanations

ATTACHMENT 1  
FY24 Actuals vs. FY24 Budget

	Oct 2023 Year-to-Date				
	Period 4 YTD Budget	Period 4 YTD Actual	Period 4 YTD Variance	%	FY24 Approved
	<b><u>EXPENSES</u></b>				
WAGES AND SALARIES	\$ 37,958,129	\$ 33,385,133	\$ (4,572,996)	-12.0%	\$ 127,828,242
OVERTIME	1,857,024	2,003,314	146,290	7.9%	5,727,593
FRINGE BENEFITS	8,390,363	7,551,044	(839,319)	-10.0%	25,823,383
WORKERS' COMPENSATION	714,798	698,436	(16,362)	-2.3%	2,144,395
CHEMICALS	8,939,918	8,041,151	(898,767)	-10.1%	28,269,124
ENERGY AND UTILITIES	10,025,337	9,068,890	(956,447)	-9.5%	31,064,890
MAINTENANCE	14,824,690	13,983,698	(840,992)	-5.7%	38,574,256
TRAINING AND MEETINGS	176,814	104,355	(72,459)	-41.0%	498,597
PROFESSIONAL SERVICES	3,401,516	2,379,722	(1,021,794)	-30.0%	10,410,484
OTHER MATERIALS	1,509,572	1,968,506	458,934	30.4%	7,167,400
OTHER SERVICES	11,188,614	10,495,543	(693,071)	-6.2%	38,494,660
<b>TOTAL DIRECT EXPENSES</b>	<b>\$ 98,986,775</b>	<b>\$ 89,679,792</b>	<b>\$ (9,306,986)</b>	<b>-9.4%</b>	<b>\$ 316,003,024</b>
INSURANCE	\$ 1,329,066	\$ 1,384,559	\$ 55,493	4.2%	\$ 4,065,380
WATERSHED/PILOT	6,100,330	5,602,970	(497,360)	-8.2%	30,358,187
HEEC PAYMENT	2,266,176	2,266,176	-	0.0%	7,500,650
MITIGATION	581,624	581,624	-	0.0%	1,779,086
ADDITIONS TO RESERVES	2,569,954	2,569,954	-	0.0%	7,861,035
RETIREMENT FUND	15,972,804	15,972,804	-	0.0%	15,972,804
POST EMPLOYEE BENEFITS	-	-	-	---	2,849,365
<b>TOTAL INDIRECT EXPENSES</b>	<b>\$ 28,819,954</b>	<b>\$ 28,378,087</b>	<b>\$ (441,867)</b>	<b>-1.5%</b>	<b>\$ 70,386,507</b>
STATE REVOLVING FUND	\$ 26,755,687	\$ 26,755,687	\$ -	0.0%	\$ 90,798,263
SENIOR DEBT	94,122,758	94,122,758	-	0.0%	294,055,644
DEBT SERVICE ASSISTANCE	(1,187,297)	(1,187,297)	-	0.0%	(1,187,297)
CURRENT REVENUE/CAPITAL	-	-	-	---	19,200,000
SUBORDINATE MWRA DEBT	22,975,620	22,975,620	-	0.0%	69,931,072
LOCAL WATER PIPELINE CP	-	-	-	---	7,744,625
CAPITAL LEASE	1,051,731	1,051,731	-	0.0%	3,217,060
VARIABLE DEBT	-	(817,077)	(817,077)	---	-
DEFEASANCE ACCOUNT	-	-	-	---	-
DEBT PREPAYMENT	-	-	-	---	4,000,000
<b>TOTAL CAPITAL FINANCE EXPENSE</b>	<b>\$ 143,718,500</b>	<b>\$ 142,901,423</b>	<b>\$ (817,077)</b>	<b>-0.6%</b>	<b>\$ 487,759,367</b>
<b>TOTAL EXPENSES</b>	<b>\$ 271,525,229</b>	<b>\$ 260,959,302</b>	<b>\$ (10,565,930)</b>	<b>-3.9%</b>	<b>\$ 874,148,898</b>
<b><u>REVENUE &amp; INCOME</u></b>					
RATE REVENUE	\$ 272,741,461	\$ 272,741,461	\$ -	0.0%	\$ 834,268,000
OTHER USER CHARGES	4,673,480	4,614,104	(59,376)	-1.3%	10,390,434
OTHER REVENUE	1,034,364	997,721	(36,643)	-3.5%	5,838,903
RATE STABILIZATION	99,869	99,869	-	0.0%	305,482
INVESTMENT INCOME	6,709,287	8,984,117	2,274,830	33.9%	23,346,079
<b>TOTAL REVENUE &amp; INCOME</b>	<b>\$ 285,258,461</b>	<b>\$ 287,437,273</b>	<b>\$ 2,178,810</b>	<b>0.8%</b>	<b>\$ 874,148,898</b>

**ATTACHMENT 2**  
**Current Expense Variance Explanations**

Total MWRA	FY24 Budget YTD October	FY24 Actuals October	FY24 YTD Actual vs. FY24 Budget		Explanations
			\$	%	
<b>Direct Expenses</b>					
Wages & Salaries	37,958,129	33,385,133	(4,572,996)	-12.0%	Wages and Salaries are under budget by \$4.6 million or 12.0%. Year to date, there have been 107 fewer average FTEs (1,061 versus 1,168 budget), lower average new hire salaries versus retirees, the timing of backfilling vacant positions.
Overtime	1,857,024	2,003,314	146,290	7.9%	Overtime expenses were greater than budget by \$146,000 or 7.9%. Greater than budget spending at Deer Island of \$141,000 due to shift coverage and Field Operations of \$30,000 primarily due to excessive rain events and vacancy coverage. Year-to-date rainfall was a major contributor for the increased overtime. This overspending was partially offset by Engineering & Construction of \$22,000.
Fringe Benefits	8,390,363	7,551,044	(839,319)	-10.0%	Fringe Benefit spending was lower than budget by \$839,000 or 10.0%. Lower than budget in <b>Health Insurance</b> of \$693,000, due to fewer than budgeted participants in health insurance plans, increased contribution by external new hires vs. lower contribution rates of staff retiring, and the shift from family to individual plans which are less expensive. In addition, there was lower spending on <b>Medicare</b> of \$69,000, <b>Paid Family Medical Leave</b> of \$41,000, and <b>Unemployment Insurance</b> of \$16,000.
Worker's Compensation	714,798	698,436	(16,362)	-2.3%	Worker's Compensation expenses were lower than budget by \$16,000 or 2.3%. The lower expenses were due to <b>Compensation Payments</b> of \$48,000 and <b>Administrative Expenses</b> of \$6,000, partially offset by <b>Medical Payments</b> of \$38,000. Due to uncertainties of when spending will happen, the budget is spread evenly throughout the year.
Chemicals	8,939,918	8,041,151	(898,767)	-10.1%	Chemicals were lower than budget by \$899,000 or 10.1%. Lower than budget spending on <b>Sodium Hypochlorite</b> of \$485,000 driven by Water Operations of \$809,000 and Wastewater Operations of \$80,000 due to contract pricing, partially offset by DITP of \$416,000 due to additional usage for disinfection and odor control due to higher flows. <b>Carbon Dioxide</b> was lower than budget by \$215,000 primarily due to lower deliveries, <b>Other Oxidizers</b> (Bioxide) at Framingham PS was lower than budget by \$102,000 due to less deliveries and lower price, <b>Soda Ash</b> of \$96,000 primarily due to less than anticipated deliveries, and <b>Sodium Bisulfite</b> of \$89,000 primarily driven by Deer Island due to lower quantities to dechlorinate the effluent, partially offset by <b>Ferric Chloride</b> of \$269,000, driven by DITP to keep the orthophosphate levels in the digesters at the desired target level. DITP flows are 16.1% greater than the budget and the CWTP preliminary flows are 5.1% less than the budget through October. It is important to note that Chemical variances are also based on deliveries which in general reflect the usage patterns. However, the timing of deliveries is an important factor.



**ATTACHMENT 2**  
**Current Expense Variance Explanations**

Total MWRA	FY24 Budget YTD October	FY24 Actuals October	FY24 YTD Actual vs. FY24 Budget		Explanations
			\$	%	
Utilities	10,025,337	9,068,890	(956,447)	-9.5%	Utilities were lower than budget by \$956,000 or 9.5%. Underspending in <b>Diesel Fuel</b> of \$1.3 million primarily due to timing of DITP purchase. Purchase expected later in the fiscal year. Overspending in <b>Electricity</b> of \$382,000 primarily at DITP of \$177,000 driven by higher demand usage charges due to the many rain events and higher real time pricing on the supply contract. Electricity in Field Operations was greater than budget by \$139,000 due to higher use, partially offset by lower price than budget.
Maintenance	14,824,690	13,983,698	(840,992)	-5.7%	Maintenance was lower than budget by \$841,000 or 5.7%, largely driven by the timing of projects. <i>Maintenance Services</i> are under budget by \$1.5 million driven by <b>Plant and Machinery Services</b> of \$1.1 million primarily due to timing of work for the Norumbega Cell #3 tank cleaning, <b>Building and Ground Services</b> of \$333,000, <b>Electrical Services</b> of \$230,000, and <b>Pipeline Services</b> of \$194,000 also due to timing of work, partially offset by <b>Computer Software-Licenses/Upgrades</b> of \$597,000 due to timing. <i>Maintenance Materials</i> are over budget by \$649,000 million driven by <b>Warehouse Inventory</b> of \$607,000 due to need for spare parts as well as purchasing of materials early due to supply chain issues, <b>Plant &amp; Machinery Materials</b> of \$229,000 and <b>Electrical Materials</b> of \$91,000 due to timing, partially offset by <b>Special Equipment Materials</b> of \$183,000 and <b>Building and Grounds Materials</b> of \$143,000 also due to timing.
Training & Meetings	176,814	104,355	(72,459)	-41.0%	Training & Meetings was lower than budget by \$72,000 or 41.0% is primarily due to timing driven by MIS (\$54,000), Procurement (\$9,000), Water Redundancy (\$10,000), and Engineering & Construction (\$6,000), partially offset by higher spending in Field Operations \$10,000.
Professional Services	3,401,516	2,379,722	(1,021,794)	-30.0%	Professional Services were less than budget by \$1.0 million or 30.0% driven by lower <b>Other Services</b> of \$487,000 due to timing of services including the Disparity Study, <b>Legal Services</b> of \$167,000 and <b>Computer Systems Consultant</b> of \$166,000 due to timing.
Other Materials	1,509,572	1,968,506	458,934	30.4%	Other Materials were greater than budget by \$459,000 or 30.4% driven by <b>Computer Hardware</b> of \$328,000 primarily due to timing of equipment purchases, <b>Vehicle Expense</b> of \$133,000 due to timing of vehicle expenses including electrical vehicle charging stations originally anticipated to be completed by FY23, and <b>Vehicle Purchases/Replacements</b> of \$26,000 due to timing of purchases.ues.
Other Services	11,188,614	10,495,543	(693,071)	-6.2%	Other Services were lower than budget by \$693,000 or 6.4% driven by <b>Telecommunications</b> of \$366,000 due to less than anticipated costs, <b>Memberships/Dues/Subscriptions</b> of \$105,000 due to timing, <b>Police Details</b> of \$78,000 due to less than anticipated need, and <b>Grit &amp; Screenings Removal</b> of \$79,000 due to lower quantities.
<b>Total Direct Expenses</b>	<b>98,986,775</b>	<b>89,679,792</b>	<b>(9,306,983)</b>	<b>-9.4%</b>	

**ATTACHMENT 2**  
**Current Expense Variance Explanations**

Total MWRA	FY24 Budget YTD October	FY24 Actuals October	FY24 YTD Actual vs. FY24 Budget		Explanations
			\$	%	
<b>Indirect Expenses</b>					
Insurance	1,329,066	1,384,559	55,493	4.2%	Higher Payments/Claims of \$30,000 and higher Premiums of \$26,000 than budgeted
Watershed/PILOT	6,100,330	5,602,970	(497,360)	-8.2%	Lower Watershed Reimbursement of \$497,000 driven by lower spending on Wages & Salaries and Fringe Benefits.
HEEC Payment	2,266,176	2,266,176	-	0.0%	
Mitigation	581,624	581,624	-	0.0%	
Addition to Reserves	2,569,954	2,569,954	-	0.0%	
Pension Expense	15,972,804	15,972,804	-	0.0%	
Post Employee Benefits	-	-	-		
<b>Total Indirect Expenses</b>	<b>28,819,954</b>	<b>28,378,087</b>	<b>(441,867)</b>	<b>-1.5%</b>	
<b>Debt Service</b>					
Debt Service	144,905,796	144,088,719	(817,077)	-0.6%	Lower than budget debt service was a result of lower than budget variable interest expense of \$817,000 due to lower interest rates.
Debt Service Assistance	(1,187,297)	(1,187,297)	-	0.0%	
<b>Total Debt Service Expenses</b>	<b>143,718,499</b>	<b>142,901,422</b>	<b>(817,077)</b>	<b>-0.6%</b>	
<b>Total Expenses</b>					
<b>Total Expenses</b>	<b>271,525,228</b>	<b>260,959,301</b>	<b>(10,565,926)</b>	<b>-3.9%</b>	

**ATTACHMENT 2**  
**Current Expense Variance Explanations**

Total MWRA	FY24 Budget YTD October	FY24 Actuals October	FY24 YTD Actual vs. FY24 Budget		Explanations
			\$	%	
<b>Revenue &amp; Income</b>					
Rate Revenue	272,741,461	272,741,462	1	0.0%	
Other User Charges	4,673,480	4,614,104	(59,376)	-1.3%	<b>Other User Charges</b> were \$59,000 or 3.7% under budget due to timing of payments.
Other Revenue	1,034,364	997,827	(36,537)	-3.5%	Other Revenue was \$37,000 or 3.5% under budget due to <b>Profit and Loss on Disposal of Equipment</b> of \$96,000, <b>Energy Revenue</b> of \$67,000, partially offset by <b>Penalties</b> of \$80,000, <b>Permit Fees</b> of \$30,000, and <b>Miscellaneous Revenue</b> of \$15,000.
Rate Stabilization	99,869	99,869	-	0.0%	HEEC Reserve.
Investment Income	6,709,288	8,984,117	2,274,829	33.9%	Investment Income is over budget due to higher than budgeted interest rates.
<b>Total Revenue</b>	<b>285,258,462</b>	<b>287,437,379</b>	<b>2,178,917</b>	<b>0.8%</b>	
<b>Net Revenue in Excess of Expenses</b>	<b>13,733,234</b>	<b>26,478,078</b>	<b>12,744,843</b>		

**ATTACHMENT 3**  
**FY24 CIP Variance Report (\$000s)**

	FY24 Budget October	FY24 Actuals October	Actuals vs. Budget		Explanations
			\$	%	
<b>Wastewater</b>					
Interception & Pumping (I&P)	\$8,644	\$5,911	(\$2,733)	-31.6%	<u>Underspending</u> Braintree/Weymouth Improvements - Construction: \$2.1M (timing of work and long lead time for equipment) Ward Street & Columbus Park Headworks Upgrades - Design/CA: \$350k (delay in performing shaft inspections and issuing NTP for Final Design)
Treatment	\$1,967	\$1,871	(\$96)	-4.9%	<u>Underspending</u> Primary & Secondary Clarifier Rehab Phase 2 Construction: \$407k (timing of work) As-Needed Design: \$511k (lower than projected task order work) <u>Offset Overspending</u> Clinton Screw Pumps Replacement Phase 1 - Construction: \$508k (timing of work) Radio Repeater System Upgrade 2: \$301k (contractor progress)
Residuals	\$0	\$0	\$0	0.0%	
CSO	\$1,400	\$189	(\$1,210)	-86.5%	<u>Underspending</u> Chelsea 008 Pipe Replacement: \$818k (work scheduled for FY24 performed in FY23) Fort Point Channel & Mystic: \$278k (timing of community work)
Other Wastewater	\$10,758	\$3,020	(\$7,739)	-71.9%	<u>Underspending</u> I/I Local Financial Assistance: \$7.7M (timing of community distributions of grants and loans)
<b>Total Wastewater</b>	<b>\$22,770</b>	<b>\$10,992</b>	<b>(\$11,778)</b>	<b>-51.7%</b>	
<b>Waterworks</b>					
Drinking Water Quality Improvements	\$1,097	\$984	(\$113)	-10.3%	<u>Underspending</u> CWTP Technical Assistance: \$675k (lower than projected task order work) <u>Offset Overspending</u> CWTP Chemical Feed System Improvements - Construction: \$515k (work scheduled for FY23 performed in FY24)

**ATTACHMENT 3  
FY24 CIP Variance Report (\$000s)**

	FY24 Budget October	FY24 Actuals October	Actuals vs. Budget		Explanations
			\$	%	
Transmission	\$16,823	\$14,260	(\$2,562)	-15.2%	<u>Underspending</u> Tunnel Redundancy Preliminary Design & MEPA Review: \$1.6M (timing of consultant work) Geotechnical Support Services: \$987k (timing of support services) WASM 3 Rehabilitation CP-1: \$615k (work scheduled for FY24 performed in FY23) WASM 3 - MEPA/Design/CA/RI: \$450k (timing of consultant work) WASM/Spot Pond Supply Mains West (SPSM) Pressure Reducing Valves (PRV) - Construction: \$421k (timing of work) <u>Offset Overspending</u> Waltham Water Pipeline - Construction and REI: \$2.0M (contractor progress) Wachusett Lower Gatehouse Pipe & Boiler Replacement - Construction: \$284k (planned FY23 work completed in FY24)
Distribution & Pumping	\$13,923	\$9,561	(\$4,362)	-31.3%	<u>Underspending</u> Section 89/29 Replacement - Construction: \$3.0M, and CP-1 NEH Improvements: \$1.1M (timing of work) <u>Offset Overspending</u> CP-2, Sections 25 & 24 - Construction: \$665k (contractor progress)
Other Waterworks	\$11,747	\$16,735	\$4,988	42.5%	<u>Overspending</u> Local Water Pipeline Financial Assistance Program: \$5.8M (timing of community loan distributions) <u>Offset Underspending</u> Electrical Distribution Upgrades at Southborough: \$300k, and CWTP SCADA Upgrade Construction: \$222k (timing of work)
<b>Total Waterworks</b>	<b>\$43,590</b>	<b>\$41,540</b>	<b>(\$2,050)</b>	<b>-4.7%</b>	
<b>Business &amp; Operations Support</b>					

**ATTACHMENT 3  
FY24 CIP Variance Report (\$000s)**

	FY24 Budget October	FY24 Actuals October	Actuals vs. Budget		Explanations
			\$	%	
<b>Total Business &amp; Operations Support</b>	<b>\$4,903</b>	<b>\$2,046</b>	<b>(\$2,857)</b>	<b>-58.3%</b>	<u>Underspending</u> As-Needed Design Contracts: \$1.3M (lower than projected task order work) Security Equipment & Installation: \$562k (timing of security initiatives) MAXIMO Interface Enhancements: \$500k, Lawson Upgrade: \$390k, and Core Switches: \$320k (timing of work) <u>Offset Overspending</u> Office Space Modifications: \$1.0M (FY23 planned work completed in FY24)
<b>Total MWRA</b>	<b>\$71,263</b>	<b>\$54,578</b>	<b>\$16,685</b>	<b>23.4%</b>	

## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** November 15, 2023  
**SUBJECT:** FY2024 First Quarter Orange Notebook




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**COMMITTEE:** Administration, Finance & Audit

INFORMATION  
 VOTE

Rebecca Weidman, Deputy Chief Operating Officer  
Stephen Estes-Smargiassi, Director Planning & Sustainability  
Michael D. O'Keefe, Senior Program Manager, Planning  
Preparer/Title



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David W. Coppes, P.E.  
Chief Operating Officer

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### RECOMMENDATION:

For information only. The Quarterly Report on Key Indicators of MWRA Performance (the Orange Notebook) is prepared at the close of each quarter of the fiscal year.

### DISCUSSION:

The Orange Notebook presents performance indicators for operational, financial, workforce, and customer service parameters tracked by MWRA management each month. This staff summary includes highlights from the First Quarter of Fiscal Year 2024.

#### Staffing Levels

Hiring increased in the first quarter of FY24, with a total of 64 hires or promotions during the quarter. Both the total and external hires compare favorably with the prior two fiscal years: MWRA had 14 and 28 external hires during the first quarters of FY22 and FY23, respectively, compared to 36 during the first quarter of FY24. Overall, there was a net gain of seven FTEs (full time equivalents) since the beginning of the quarter. Nonetheless, at the end of September 2023, staffing stood at 1,057.5 FTEs, about 95 below the budget of 1,152 FTEs. (See page 44.)

Lower staffing levels continue to have impacts on operations. Several water distribution and wastewater pipeline performance measures were under target due to staff vacancies in addition to a focus on supporting more critical capital improvement projects and in-house construction work (see pages 7 and 8) and all lab services metrics fell below monthly goals during the first quarter, but still met regulatory requirements. (See page 15.)

#### Historic Precipitation

Higher than normal precipitation in the first quarter impacted both wastewater and water supply flows. Total plant flow at Deer Island for the first quarter was 22% above the four-year average plant flow (359.9 mgd actual versus 295.0 mgd), as precipitation was 49% above expected this quarter (20.64 inches actual versus 13.83 inches expected). (See page 1.) The precipitation this summer set several MWRA records: the 10.43 inches of rainfall for July was the highest recorded

rainfall for that month since the startup of Deer Island and the monthly total plant influent flow in August of 357.64 mgd set a new monthly high flow record for that month. (See page 2). This high flow impacted operations at Deer Island in several ways, including total power usage, which was 6.7% above target in the first quarter, mainly driven by pumping; total electricity purchased was 17.4% above target for July and August (see page 1); and sodium hypochlorite usage in pounds of chlorine was 14.2% above target. (See page 2.)

High precipitation over the summer similarly impacted flows at Clinton Wastewater Treatment Plant. The 12-month rolling annual average flow increased in July and August and reached the NPDES permit limit of 3.01 million gallons per day in September. Although there are no violations yet, the rolling average could exceed the limit next quarter. (See page 27.)

The watershed also experienced much higher than normal precipitation in the first quarter, allowing MWRA to maintain 95% capacity at Quabbin Reservoir and a system yield much higher than the long-term average for the summer. Higher precipitation also led to lower than normal transfers from the Quabbin Reservoir to the Wachusett Reservoir in order to sustain safe elevation levels at Wachusett Reservoir, as well as higher releases into the Nashua River from Wachusett. (See page 25.) Additionally, summer precipitation events increased the local tributary flows into Wachusett Reservoir, resulting in higher levels of natural organic matter. As mentioned at the September Board meeting and in a separate staff summary in today's Board package on Lead and Copper Rule Compliance, the combination of lower transfers from Quabbin and these higher tributary flows resulted in a decrease in the water quality benefits from Quabbin Reservoir at the Carroll Water Treatment Plant. This is reflected in an increase in UV-254, a measure of the reactive natural organic matter in the water, in Wachusett during the summer. (See page 19.)

### Higher Total Coliform Positives

While all of MWRA's water communities collect bacteria samples and chlorine residual data for the Total Coliform Rule (TCR), MWRA reports the results of the 44 systems that use our laboratory. The MWRA also has its own TCR program with 144 sampling locations along MWRA's transmission system, water storage tanks and pumping stations, as well as a subset of the community TCR locations. Total coliform levels provide a general indication of the condition of the distribution system.

In the first quarter, a total of 220 of 8,949 samples submitted to MWRA tested positive for total coliform: 190 of the 6,646 fully and partially served samples (2.9%), 28 of the 1,905 shared community/MWRA samples (1.5%), and 2 of the 398 Chicopee Valley Aqueduct community/MWRA samples (0.5%). (See page 23.) While the number of samples testing positive for total coliform is more than double the 107 positives from the first quarter of FY23, it is less than the 279 from the first quarter of FY22, which was another summer with high precipitation. In addition to the higher levels of organic matter present in the Wachusett Reservoir mentioned above, throughout the summer communities had lower system demands resulting in higher water age within their distribution systems. These could both be factors contributing to increased total coliform positives. Despite the more frequent positive samples, there were no regulatory violations or public health concerns associated with water quality in MWRA's service communities.



MASSACHUSETTS WATER RESOURCES AUTHORITY

# Board of Directors Report

on

## Key Indicators of MWRA Performance

First Quarter FY2024

Q1	Q2	Q3	Q4



Frederick A. Laskey, Executive Director  
David Coppes, Chief Operating Officer  
November 15, 2023

# Board of Directors Report on Key Indicators of MWRA Performance

## 1<sup>st</sup> Quarter - FY24

### Table of Contents

#### Operations and Maintenance

DITP Operations-	1
Total Power Use/Self-Generation	
Plant Flow & Precipitation	
Total Cost of Electricity/Pricing	
DITP Operations-	2
DI Sodium Hypochlorite Use	
Disinfection Dosage	
Secondary Blending Events	
DI Operations & Maintenance Report	3
Residuals Processing	4
Sludge Detention Time in Digesters & Total Solids Destruction	
Digester Gas Production & % Utilized	
Sludge Pumped from Deer Island	
Monthly Average % Capture of Processed Sludge	
Molybdenum in Sludge Fertilizer Pellets	
DITP Maintenance	5
Operations Division–Metering & Leak Detection	6
Water Distribution System–Valves	7
Wastewater Pipeline/Structures	8
FOD Metro Facility & Equipment Maintenance	9
Renewable Electricity Generation-1	10
Renewable Electricity Generation-2	11
Toxic Reduction and Control	12
Field Operations– Narrative Topics	13
Laboratory Services	15

#### Construction Programs

Projects in Construction	16
CSO Control Update	17
CIP Expenditures	18

#### Drinking Water Quality and Supply

Source Water – Microbial Results	19
Source Water – Turbidity, pH and Alkalinity	20
Treated Water – Disinfection Effectiveness	21
Source Water – Algae, Complaints	22
Bacteria and Chlorine Residual Results	23
Disinfection By-Products, UV 254	24
Water Supply/Source Water Management	25

#### Wastewater Quality

NPDES Permit Compliance	
-Deer Island TP	26
-Clinton TP	27

#### Community Flows and Programs

Total Water Use Core Communities	28
Community Wastewater Flows	29
Community Sewer Flow	30
Community Support Programs	
- Infiltration/Inflow Local Financial Assist. Progr.	31
- Water-Local Pipeline & System Assist. Progr.	32
- Lead Service Line Replacement Loan Progr.	33
- Community Water System Leak Detection and Conservation Outreach	34

#### Business Services

Procurement	35
Materials Management	36
MIS Program	37
Legal Matters	38
Internal and Contract Audits	43

#### Other Management

Workforce Management	44
Workplace Safety Program	45
Job Group Representation	46
MBE/WBE Expenditures	47
CEB Expenses	48
Cost of Debt	49
Investment Income	50

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.

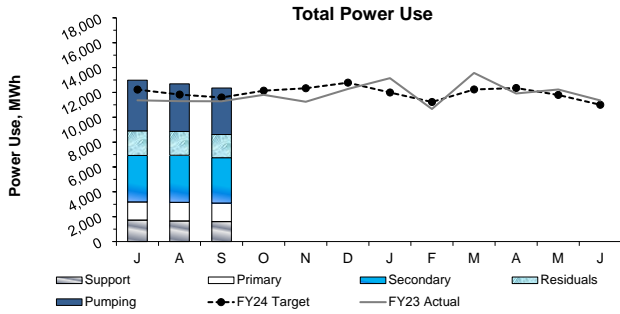
Frederick A. Laskey, Executive Director  
David Coppes, Chief Operating Officer  
November 15, 2023



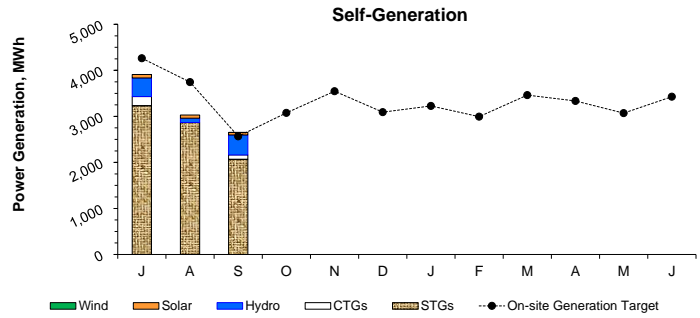
# OPERATIONS AND MAINTENANCE

# Deer Island Operations

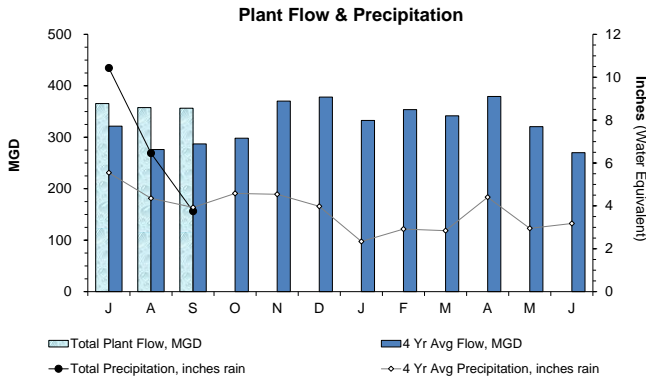
1<sup>st</sup> Quarter - FY24



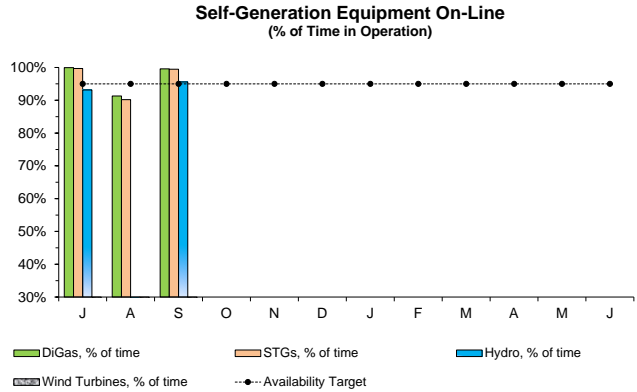
Total power usage in the 1st Quarter was 6.7% above target as plant flow for this period was 22.0% above target with historical (4 year average) data used to generate the electricity model. Power used in most areas and major treatment processes was within 5% of target, except for power used for raw wastewater pumping which was 22.1% above target due to the higher plant flows.



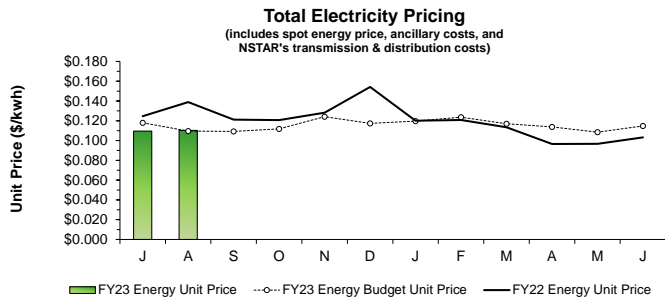
Power generated on-site during the 1st Quarter was 9.3% below the target. The CTDs operated mainly for peak shaving this quarter on seven (7) days for a total of 25 hours and briefly for routine maintenance/checkout purposes. STGs generation was within 2.5% of target as digester gas production was similar to target. Hydro Turbine generation was 6.0% below target as both turbines were out of service from August 6 to August 30 pending maintenance repairs. Solar Panel generation was 23.9% below target as the rooftop array on the Residuals Odor Control Facility remains out of service due to a failed inverter. Wind Turbine generation has been minimal this quarter as Turbine #1 remains out of service indefinitely and Turbine #2 was out of service for nearly the entire quarter, only returning to operation on September 22 after a faulty bearing was replaced.



Total Plant Flow for the 1st Quarter was 22.0% above target with the budgeted 4 year average plant flow (359.9 MGD actual vs 295.0 MGD expected) as precipitation was 49.3% above target this quarter (20.64 inches actual vs. 13.83 inches expected).

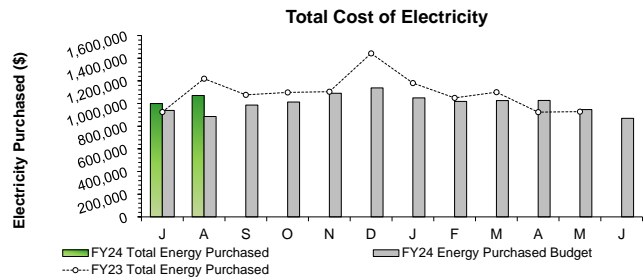


The DiGas System and STGs availability exceeded the 95% availability target in the 1st Quarter. Hydro Turbine availability was 70.0% as both turbines were out of service from August 6 to August 30 pending maintenance repairs. Hydro Turbine #1 remains out of service pending replacement of the gearbox and bearings and Turbine #2 was returned to service after broken shear pins were replaced. Wind Turbine availability was well below target as Turbine #1 remains out of service indefinitely and Turbine #2 was out of service for nearly the entire quarter, only returning to availability on September 22 after a faulty bearing was replaced.



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 Price for July through August (the latest available unit price) was 3.4% lower than the budgetary estimate. The Total Energy Unit Price includes a fixed block price, spot energy price, transmission & distribution charges, and ancillary charges.

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.

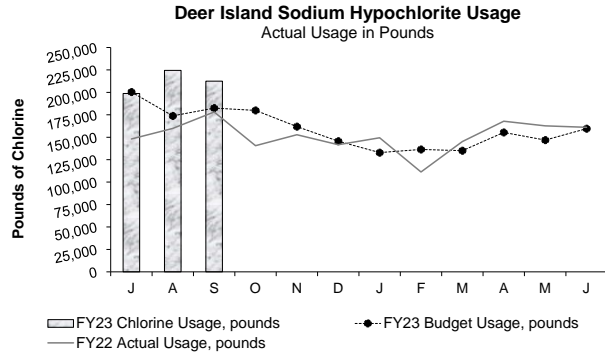
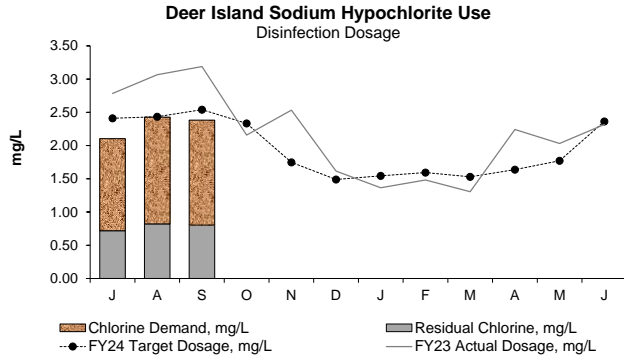


Year-to-date Total Cost of Electricity is \$245,491 (13.4%) higher than budgeted through August, even though the Total Energy Unit Price was 3.4% lower than target, as the Total Electricity Purchased was 17.4% above target.

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

1<sup>st</sup> Quarter - FY24



The disinfection dosing rate in the 1st Quarter was 6.0% below target with budgetary estimates while the sodium hypochlorite usage in pounds of chlorine was 14.2% above target as plant flows were 22.0% above target. To provide a proper pathogen kill, sodium hypochlorite is added to meet a chlorine demand then regulated by maintaining a chlorine residual. On March 29, 2023, the disinfection basin effluent total residual chlorine target was increased from 0.30 mg/L to greater than or equal to 0.50 mg/L, and was increased again to greater than or equal to 0.70 mg/L on July 22. The higher chlorine residual target was adjusted to develop operating strategies for the future more stringent seasonal NPDES permit limits for the indicator bacteria prior to the limits coming into effect. Deer Island maintained an average disinfection chlorine residual of 0.78 mg/L in the 1st Quarter with an average dosing rate of 2.30 mg/L as chlorine demand was 1.52 mg/L with the higher target.

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	8	8	0	98.4%	27.30
August	3	3	0	99.1%	13.32
September	2	2	0	99.4%	12.36
October					
November					
December					
January					
February					
March					
April					
May					
June					
<b>Total</b>	<b>13</b>	<b>13</b>	<b>0</b>	<b>99.0%</b>	<b>52.98</b>

99.0% of all flows were treated at full secondary during the 1st Quarter. There were a total of 13 secondary blending events due to high plant flows from heavy precipitation. These blending events resulted in 52.98 hours of blending and a total of 347.87 MGal of primary-only treated effluent blended with secondary effluent. The Maximum Secondary Capacity during the entire quarter was 700 MGD.

Secondary permit limits were met at all times during the 1st Quarter.

### Environmental/Pumping:

### Deer Island Operations & Maintenance Report

The plant achieved an instantaneous peak flow rate of 1,148.1 MGD during the late evening of July 29. This peak flow occurred during a storm event that brought 3.07 inches of precipitation to the metropolitan Boston area within a single day, which was the 5th wettest day in history during the month of July as recorded at the Boston Logan Airport station by the National Weather Service. The record wettest day in July is 6.04 inches of rainfall recorded on July 9, 1921. The 10.43 inches of rainfall for the entire month is the highest recorded rainfall for the month of July since the startup of the DITP (July 1998). The previous record was 10.07 inches from July 2021. The Total Plant Flow in Quarter 1 was 22.0% above the 4 year average plant flow target for the quarter.

Additionally, the monthly total plant influent flow in August of 357.64 MGD set a new monthly high flow record for August, beating the previous record of 354.18 MGD from August 2011. Also, the average daily South System influent flow of 120.63 MGD was higher than the previous record of 113.55 MGD from August 2021. These new high flow records for August are shown in the table below and are highlighted in yellow.

#### August High Plant Flow Records

	Previous or Current August High Flow Records (since plant startup July 1998)	New August High Flow Records (set 2023 highlighted in yellow)	Current All-time Monthly High Flow Records (since plant startup July 1998)
Total Plant Influent Flow	354.18 MGD (2011)	357.64 MGD	725.65 MGD (March 2010)
North System Influent Flow	249.31 MGD (2011)	No new record set (237.01 MGD)	460.80 MGD (March 2010)
South System Influent Flow	113.55 MGD (2021)	120.63 MGD	264.84 MGD (March 2010)
Precipitation	7.74 inches (2011)	No new record set (6.46 inches)	14.87 inches (March 2010)

## Deer Island Operations

1<sup>st</sup> Quarter - FY24

### Deer Island Operations & Maintenance Report (continued)

#### Disinfection:

DITP uses sodium hypochlorite to destroy pathogens in the plant effluent. To provide a proper pathogen inactivation, sodium hypochlorite, is added to meet a chlorine demand then regulated by maintaining a chlorine residual. The disinfection basin effluent total residual chlorine target was increased from 0.30 mg/L to greater than or equal to 0.50 mg/L from March 29 through July 21, then increased again to greater than or equal to 0.70 mg/L on July 22. The higher chlorine residual target was changed to develop operating strategies for the future more stringent seasonal NPDES permit limits for indicator bacteria prior to the limits coming into effect. Once staff have finalized the operating strategy to ensure future compliance with the new limits, staff will return disinfection dosing and chlorine residual targets back to current permit conditions until the new NPDES permit is in effect.

#### Energy and Thermal Power Plant:

Overall, total power generated on-site accounted for 25.2% of Deer Island's total power use for the 1st Quarter. Renewable power generated on-site (by Solar, Wind, STGs, and Hydro Turbines) accounted for 24.4% of Deer Island's total electrical power use for the quarter.

Wind Turbine #1 remains out of service following a main shaft bearing failure on April 11, 2022 and subsequent braking and blade failures on May 29, 2023. Inspections and repair evaluations are ongoing. After being out of service since May 29, 2023, a faulty bearing on Wind Turbine #2 was replaced and the turbine was returned to service on September 22.

This summer, DITP is enrolled in an Eversource Connected Solutions Curtailment (Demand Response) program to reduce a portion of DITP's load from the regional electrical grid during peak energy usage periods. As such, cryogenic oxygen production was taken offline for three (3) hours from 4pm to 7pm on five (5) days this quarter due to Eversource demand response events, curtailing approximately 2 megawatts of demand from the electrical grid. Oxygen continued to be fed to the secondary activated sludge treatment process during these periods using stored liquid oxygen that was previously produced and stored in the Liquid Oxygen (LOX) tank.

Annual maintenance at the Thermal Power Plant (TPP) began on August 21 and continued through September 6. Various maintenance activities on the STG, BP-STG, the two (2) Zurn boilers, and the common systems included maintenance on various pumps, valves, and instrumentation throughout the TPP and the DITP heat loop system. On August 27, the main STG, and the BP-STG were taken out of service to allow for maintenance to proceed on these units, as well as maintenance on the common systems, Boiler 101, and the DITP heat loop system. Boiler 201 was also taken out of service due to the common system maintenance. The boiler common system and the BP-STG maintenance was completed by mid-day on August 29 allowing Boiler 201 to be returned to service by evening. The BP-STG was placed into operation on August 30 and the STG was returned to service on August 31. All digester gas produced was flared from August 27 to August 30 during the full TPP shutdown and there were no negative impacts caused by this annual maintenance shutdown.

The emissions compliance Annual Relative Accuracy Test Audit (RATA) was successfully completed by the contractor on September 19 for Boiler 101. During the light off of Boiler 201, a small steam leak on the main steam header was identified. The RATA test for Boiler 201 will be scheduled as soon as the leak is repaired and the contractor scheduled, likely sometime in October. A RATA is required to confirm that data from the boiler's Continuous Emissions Monitoring System is in agreement with corresponding EPA Reference Method test results.

#### Regulatory:

A secure landfill was constructed at the southern end of Deer Island in 1990 into 1991, during the construction of the new wastewater treatment plant, to permanently store grit and screenings materials, and a limited amount of scum mixed with on-site soil, that had been generated at DITP from when the facility was opened in the 1960's to December 1986. A total of approximately 85,000 cubic yards of material was placed in the landfill. Covering and capping the landfill was completed in September 1991. Since then, DITP have continued to follow landfill post-closure required monitoring activities. Recently, MWRA staff began initial discussions with the MADEP to request termination of the post-closure period which could potentially result in the stoppage or the reduction of existing landfill post-closure monitoring and maintenance activities. Per MADEP's request, MWRA staff provided a summary of the results from the routine landfill post-closure monitoring samples that have been collected for over the past 30 years. On August 28, several representatives from MADEP completed a site inspection of the landfill accompanied by staff from DITP and the Environmental & Regulatory Affairs Department. Staff are currently in the process of preparing a formal request for termination of the landfill post-closure period to be submitted to the MADEP. Following the landfill inspection, the MADEP representatives also conducted an annual audit of the Deer Island Treatment Plant. This was the first DITP audit by the MADEP since before the COVID-19 pandemic.

### Clinton Operations & Maintenance Report

#### Dewatering Building

Operations staff and the Facilities Specialist hot water flushed the gravity thickener #2 beach plate hopper. The M&O's repacked the #2 Komline Sanderson piston pump and a contractor replaced the starter and transformer for this pump. Staff pressure washed the lower polymer pump area, cleaned out the plugged pipe on the # 3 polymer pump, and replaced the hydraulic oil.

#### Chemical Building

Maintenance staff and the Facilities Specialist disassembled and jetted clean both soda ash lines, A and B. They removed and replaced the soda ash bin monitor that failed and replaced an air hose on the soda ash filter bag system. M&O's also installed a new hypochlorite tank (# 2), completed piping on the tank, and replaced a level sensor. The contractor replaced a leaking backflow preventer in the chemical building. Deer Island staff installed an ultrasonic sensor on the lower soda ash mix tank.

#### Aeration Basins

Maintenance staff replaced the motor blower for aeration tank # 2 and the contractor replaced the control transformer for the same blower. Operations staff cleaned the pH and DO probes. The Facilities Specialist is repairing concrete and expansion joints.

#### Phosphorus Building

Operations staff hosed down floc train # 2 and switched over to # 3 train. Maintenance staff acid washed all three disk filters, cleaned troughs, and inspected all nozzles. Operations staff cleaned both CL17 chlorine analyzers. The electrical contractor replaced the VFD and fuse block for # 2 Disk Filter. Deer Island staff programmed the VFD.

#### Headwork's Building

The M&O's and the Facilities Specialist repaired #2 grit classifier by installing a large metal patch to keep it from leaking. They also replaced the seal in the Headwork's boiler room condensate pump. Maintenance staff cleaned influent and mechanical bar racks and greased both upper and lower pin racks. They also replaced scraper bar on the back side of bar rack. Contractor installed two out of three new screw pumps (#1 and #3 Screw pumps).

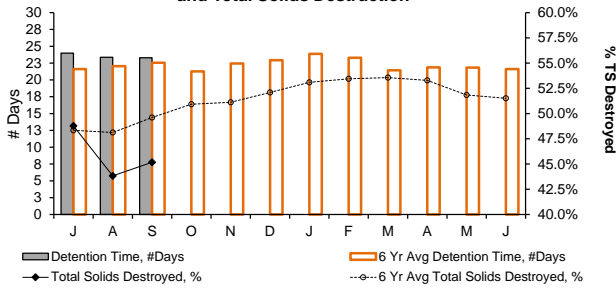
#### Digester Building

Operations staff changed from # 1 sludge heating boiler to # 2 for annual maintenance and inspection. The contractor cleaned both # 1 and # 2 sludge boilers and also replaced the temperature controller the on # 1 sludge boiler. The M&O's removed valves & flame arresters from the flare pit and also removed the gas regulators from the lower Digester building for jetting of gas lines. Maintenance staff checked all equipment for proper operation and greased the Ovivo mixer on the floating cover.

# Deer Island Operations and Residuals

1<sup>st</sup> Quarter - FY24

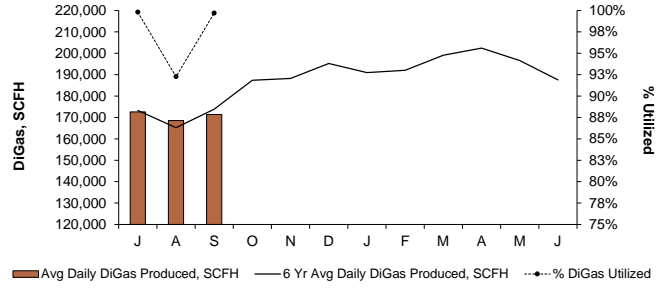
### Sludge Detention Time in Digesters and Total Solids Destruction



Total solids (TS) destruction following anaerobic sludge digestion averaged 45.9% during the 1st Quarter, 5.6% below target with the 6 year average of 48.7%. Sludge detention time in the digesters was 23.5 days, 6.7% above the 22.1 days detention time target. 8 digesters were in operation, just over the projected target of 7.9 digesters.

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.

### Digester Gas Production and % Utilized

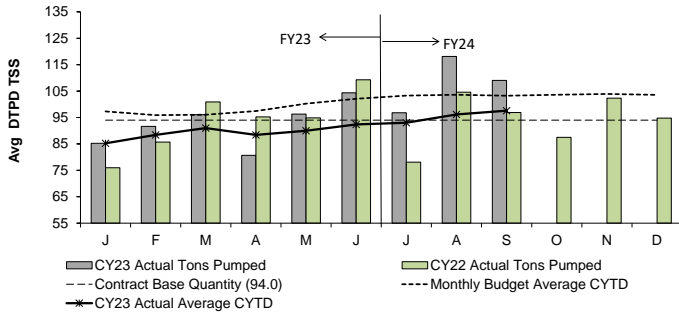


The Avg Daily DiGas Production in the 1st Quarter was on target with the 6 Year Avg Daily DiGas Production and 97.3% of the DiGas produced was utilized at the Thermal Power Plant. The lower digester gas utilization for August (92.3%) was due to the annual Thermal Power Plant maintenance outage.

## 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).

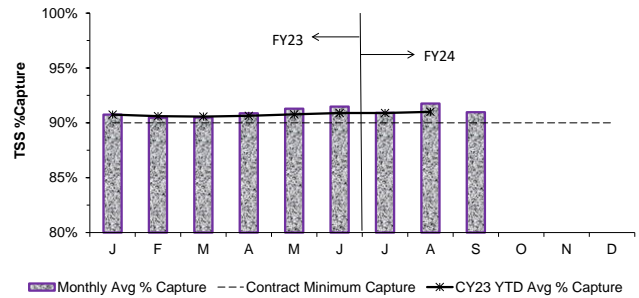
### Sludge Pumped From Deer Island



The average quantity of sludge pumped to the Biosolids Processing Facility (BPF) in the 1st Quarter was 108.0 TSS Dry Tons Per Day (DTPD), within 2.3% of target with the FY24 budget of 105.6 TSS DTPD for the same period.

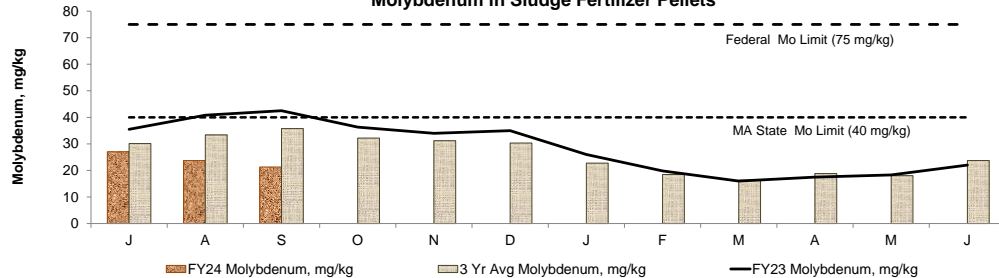
The CY23-to-date average quantity of sludge pumped is 97.6 DTPD, 5.5% below target compared to the CY23 average budget of 103.2 DTPD for the same period.

### Monthly Average % Capture of Processed Sludge



The contract requires NEFCO to capture at least 90.0% of the solids delivered to the Biosolids Processing Facility. The average capture for the 1st Quarter was 91.21%.

### Molybdenum in Sludge Fertilizer Pellets



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 I 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 1st Quarter averaged 24.0 mg/kg, 27% below the 3 year average, 40% below target with the MA State Limit, and 68% below the Federal Limit.



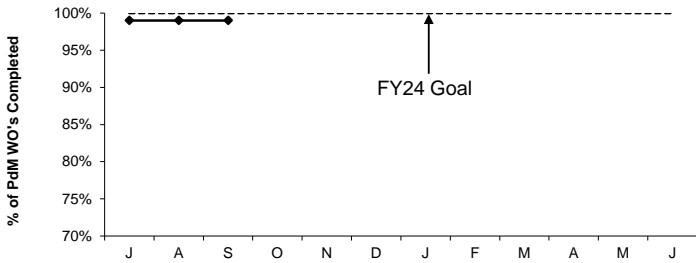
# Deer Island Maintenance

1<sup>st</sup> Quarter - FY24

## Productivity Initiatives

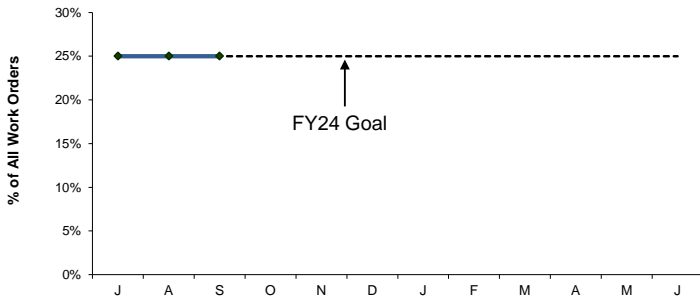
Productivity initiatives include increasing predictive maintenance compliance and increasing PdM work orders. Accomplishing these initiatives should result in a decrease in overall maintenance backlog.

### Predictive Maintenance Compliance



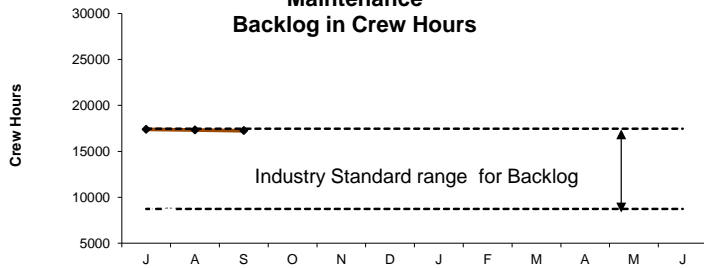
Deer Island's FY24 predictive maintenance goal is 100%. DITP completed 99% of all PdM work orders this quarter. DITP is continuing with an aggressive predictive maintenance program. Deer Island is slightly below our goal this quarter.

### Predictive Maintenance



Deer Island's increased FY24 predictive maintenance goal is 25% of all work orders to be predictive. 25% of all work orders were predictive maintenance this quarter. The industry is moving toward increasing predictive maintenance work to reduce downtime and better predict when repairs are needed.

### Maintenance Backlog in Crew Hours

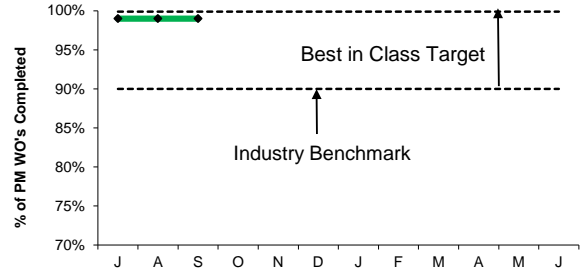


DITP's maintenance backlog at Deer Island is 17,237 hours this quarter. DITP is above the industry average for backlog. The industry Standard for maintenance backlog with 97 staff (currently planned staffing levels) is between 8,730 hours and 17,460 hours. Backlog is affected by (5) Vacancies; (1) Electrician, (1) Plumber, (1) HVAC Technician and (2) I&C Techicians. Management continues to monitor backlog and to ensure all critical systems and equipment are available.

## Proactive Initiatives

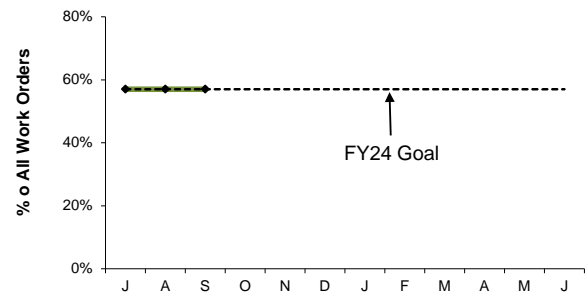
Proactive initiatives include completing 100% of all preventative maintenance tasks and increasing preventative maintenance kitting. These tasks should result in lower maintenance costs.

### Preventive Maintenance Compliance



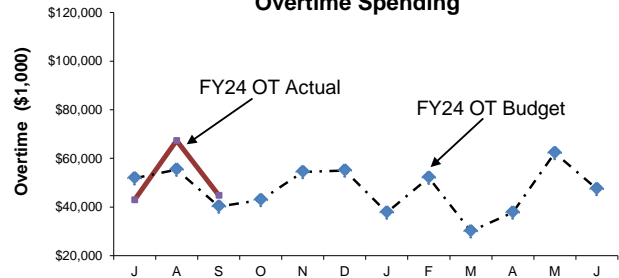
Deer Island's FY24 preventative maintenance goal is 100% completion of all work orders from Operations and Maintenance. DITP completed 99% of all PM work orders this quarter. Deer Island was slightly below our goal, but within Best in Class Target.

### Maintenance Kitting



Deer Island's increased FY24 maintenance kitting goal is 57% of all work orders to be kitted. 57% of all work orders were kitted this quarter. Kitting is staging of parts or material necessary to complete maintenance work. This has resulted in more wrench time and increased productivity.

### Overtime Spending



Maintenance overtime was over budget by \$8K this quarter and \$8k over for the year. Management continues to monitor backlog and to ensure all critical equipment and systems are available. This quarter's overtime was predominately used for Storm Coverage/High Flows, Pump Clogging Issues, Repair of Primary Operations Air Conditioning Unit, Repair Gravity Thickener Catwalk, MSA Gas Meter Replacement for NMPS, and Miscellaneous Tank Work.



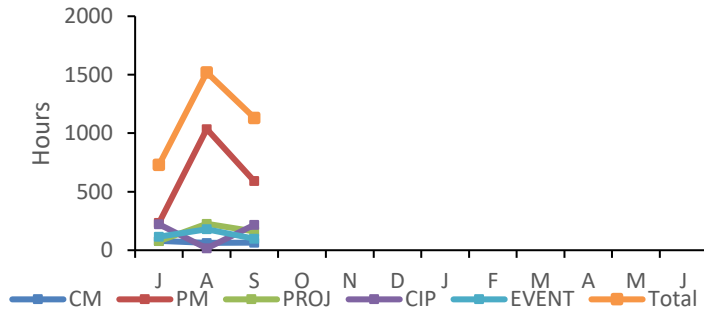
# Water Distribution System Valves

1<sup>st</sup> Quarter - FY24

## Background

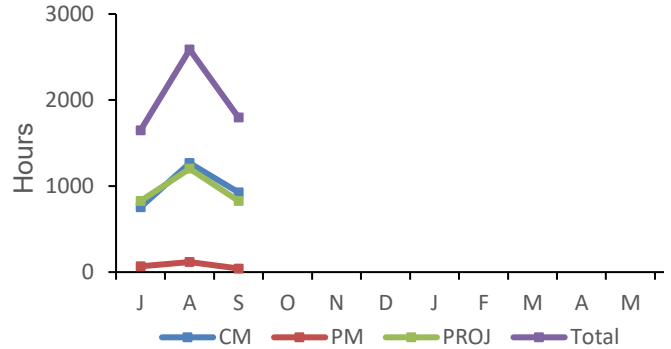
Valves are exercised, rehabilitated, or replaced in order to improve their operating condition. This work occurs year round. Valve replacements occur in locations during the normal construction season, and in off-road locations during the winter season. Valve exercising can occur year round but is often during the construction season. This is due to the fact that a large number of construction contracts involving rehabilitation, replacement, or new installation lines, requires valve staff to operate valves and assist with disinfection, dechlorination, pressure-testing, and final acceptance. Valve exercising can 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 consumers or flow disruptions will occur.

**Water Valve Labor Hours**



During 1st Quarter of FY24 there was a total of 3,381 hours worked. Percentage breakdown; Corrective Maintenance 6%, Preventative Maintenance 55%, Project 14%, Capital Improvement Project 13%, Event - Wtr Fountain 12%

**Water Pipeline Labor Hours**



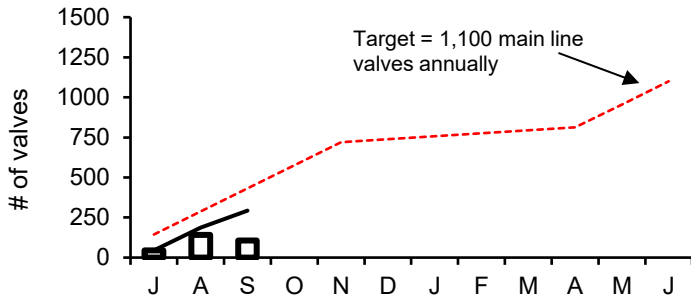
During 1st Quarter of FY24 there was a total of 6,031 hours worked. Percentage breakdown; Corrective Maintenance 49%, Preventative Maintenance 4%, Project 47%

Type of Valve	Inventory #	Operable Percentage	
		FY24 to Date	FY24 Targets
Main Line Valves	2,159	97.2%	95%
Blow-Off Valves	1,682	98.8%	95%
Air Release Valves	1,519	96.3%	95%
Control Valves	49	100.0%	95%

Key to Symbols:

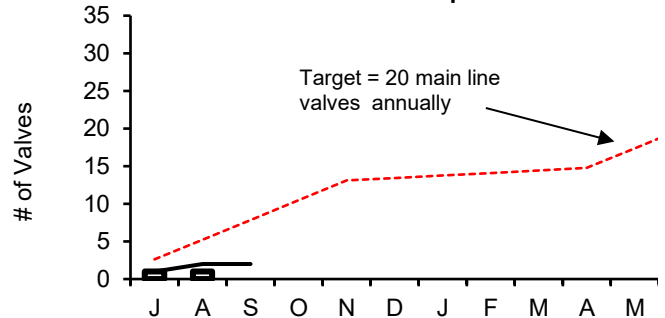
- FY24 Monthly Total
- FY24 Cumulative Total
- - - FY24 Target

**Main Line Valves Exercised**



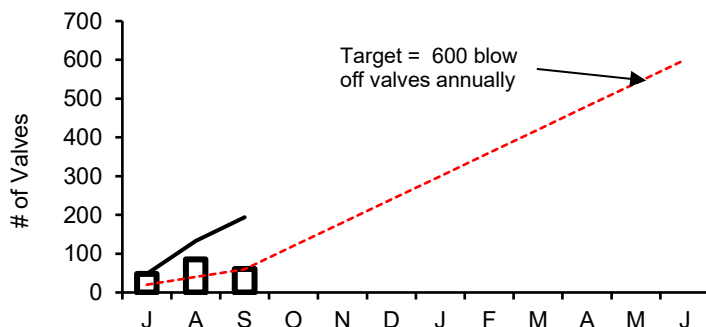
During 1st Quarter of FY24, 293 main line valves were exercised. The total exercised for the fiscal year to date is 293.

**Main Line Valves Replaced**



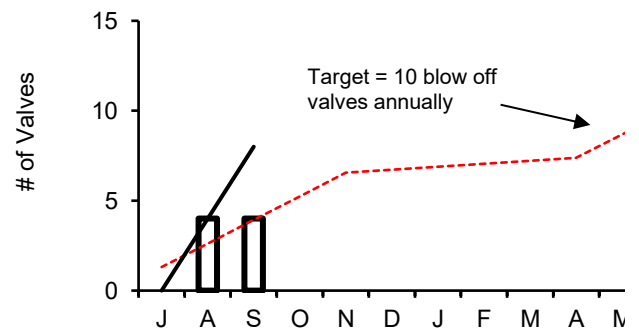
During 1st Quarter of FY24, there were two main line valves replaced. The total replaced for the fiscal year to date is two.

**Blow-Off Valves Exercised**



During 1st Quarter of FY24, 194 blow off valves were exercised. The total exercised for the fiscal year to date is 194.

**Blow-Off Valves Replaced**



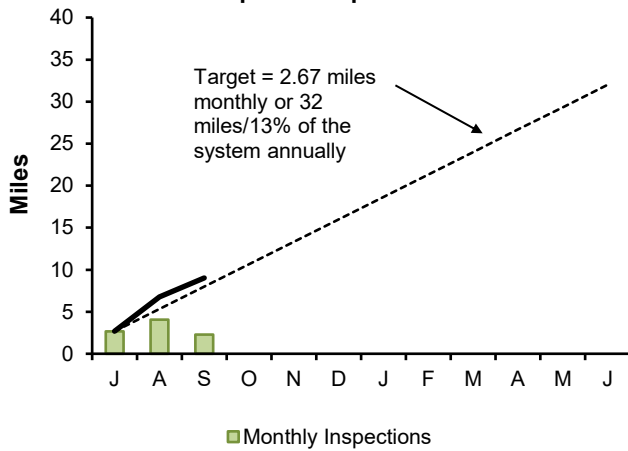
During 1st Quarter of FY24, there were eight blow valves replaced. The total replaced for the fiscal year to date is eight.

# Wastewater Pipeline and Structure Inspections and Maintenance

1<sup>st</sup> Quarter - FY24

## Inspections

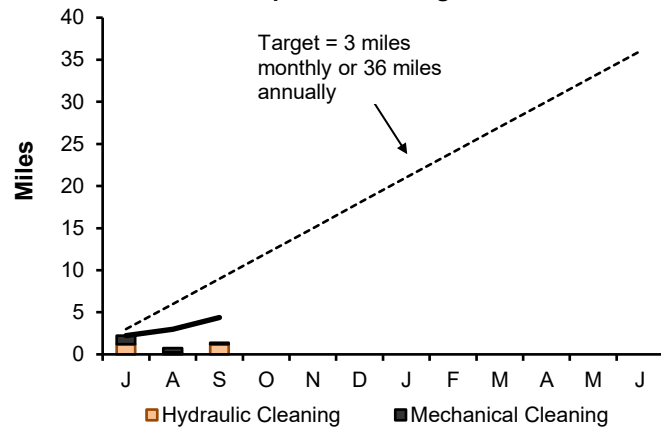
### Pipeline Inspections



Staff internally inspected 9.02 miles of MWRA sewer pipe during this quarter. The year to date total is 9.02 miles. No Community Assistance was provided.

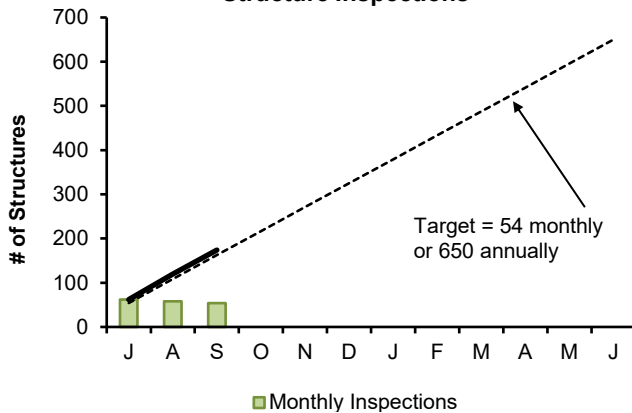
## Maintenance

### Pipeline Cleaning



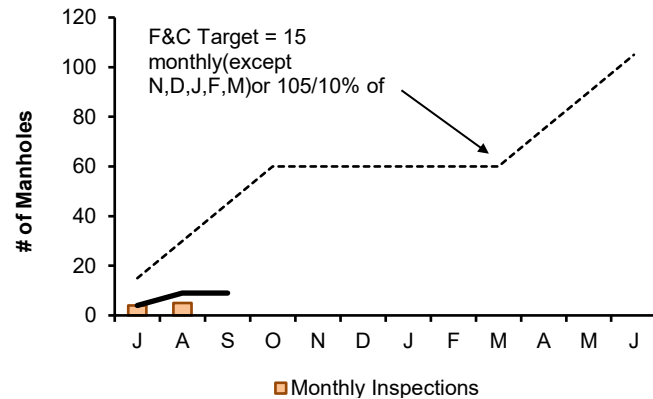
Staff cleaned 4.38 miles of MWRA sewer pipe, and removed 31 yards of grit. The year to date total is 4.38 miles. No Community Assistance was provided.

## Structure Inspections



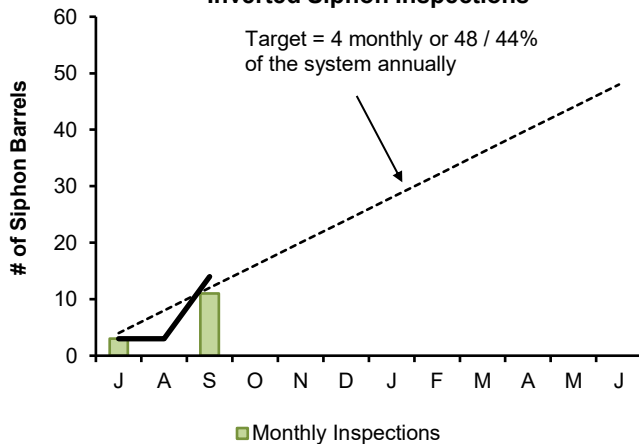
Staff inspected the 36 CSO structures and performed 138 other additional manhole/structure inspections during this quarter. The year to date total is 138 inspections.

## Manhole Rehabilitation



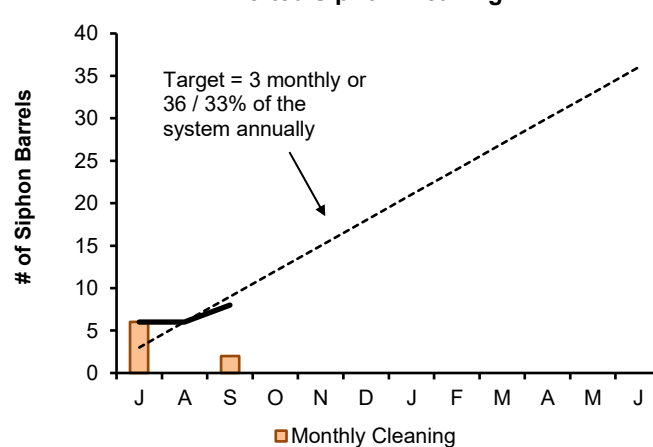
Staff replaced 9 frame and cover replacements this quarter. The year to date total is 9.

## Inverted Siphon Inspections



Staff inspected 14 siphon barrels this quarter. The year total is 14 inspections.

## Inverted Siphon Cleaning

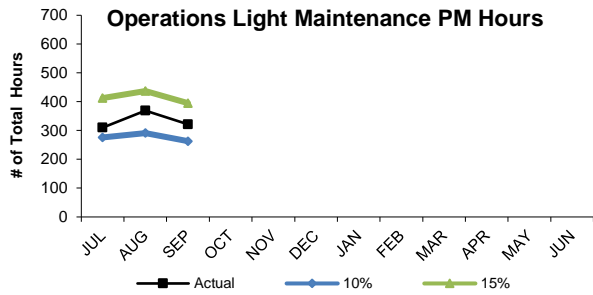


Staff cleaned 8 siphon barrels this quarter.

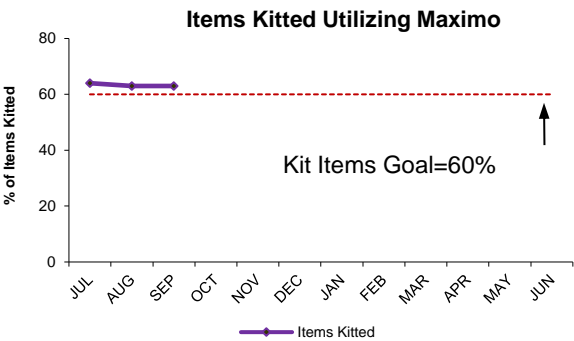
# Field Operations' Metropolitan Equipment & Facility Maintenance

1st Quarter - FY24

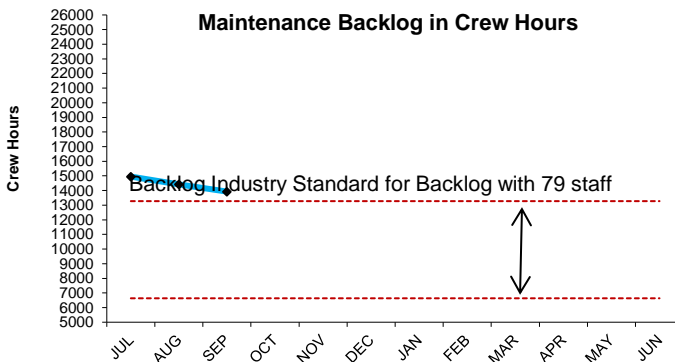
Several maintenance and productivity initiatives are in progress. The goal for the Overall PM completion and the Operator PM completion is 100%. The Operator PM and kitting initiatives frees up maintenance staff to perform corrective maintenance and project work, thus reducing maintenance spending. Backlog and overtime metrics monitor the success of these maintenance initiatives.



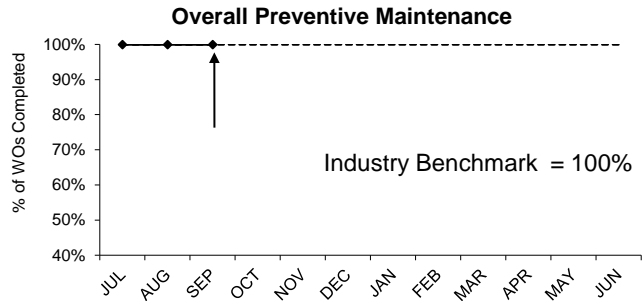
Operations staff averaged 334 hours per month of preventive maintenance during the 1st Quarter of FY24, an average of 12% of the total PM hours for the 1st Quarter, which is within the industry benchmark of 10% to 15%.



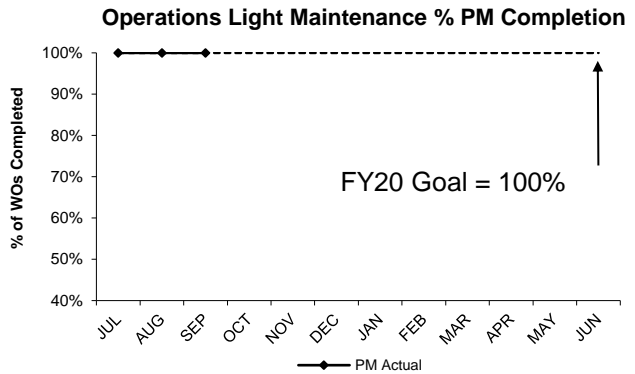
Operations' FY23 maintenance kitting goal has been set at 60% of all work orders to be kitted. Kitting is the staging of parts or material necessary to complete maintenance work. In the 1st Quarter of FY24, 63% of all applicable work orders were kitted. This resulted in more wrench time and increased productivity.



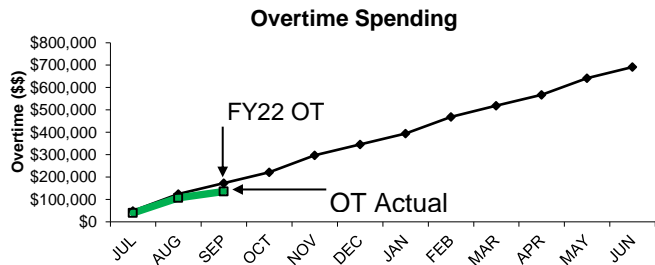
The 1st Quarter of FY24 backlog average is 14,429 hours. Management's goal is to continue to control overtime and try to get back within the industry benchmark of 6,636 to 13,275 hours. The current backlog is due to vacancies and several large maintenance projects.



The Field Operations Department (FOD) preventive maintenance goal for FY24 is 100% of all PM work orders. Staff completed 100% of all PM work orders in the 1st Quarter of FY24.



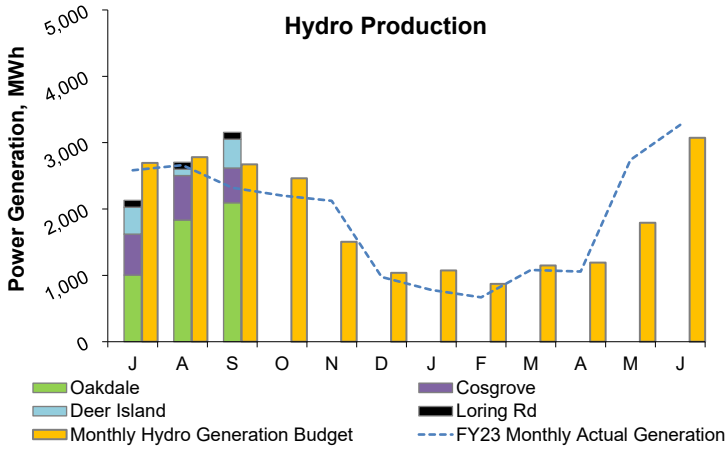
Wastewater Operations complete light maintenance PM's which frees up maintenance staff to perform corrective maintenance. Operations' FY24 PM goal is completion of 100% of all PM work orders assigned. Operations completed 100% of PM work orders in the 1st Quarter of FY24.



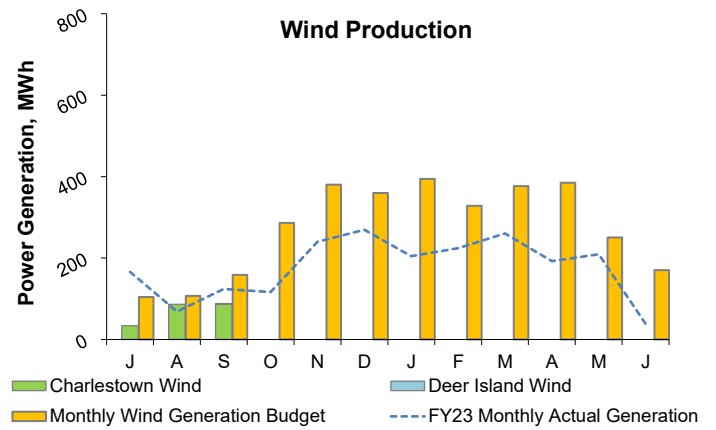
Maintenance overtime was \$12,455 under budget on average, per month, for the 1st Quarter of FY24. Overtime is used for critical maintenance repairs and wet weather events. The overtime budget through the 1st Quarter of FY24 is \$172,928. Overtime spending was \$135,562 which is \$37,366 under budget for the fiscal year.

# Renewable Electricity Generation: Savings and Revenue

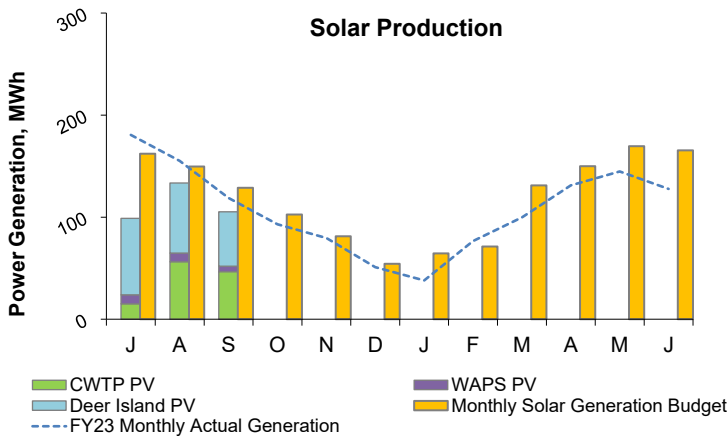
1<sup>st</sup> Quarter - FY24



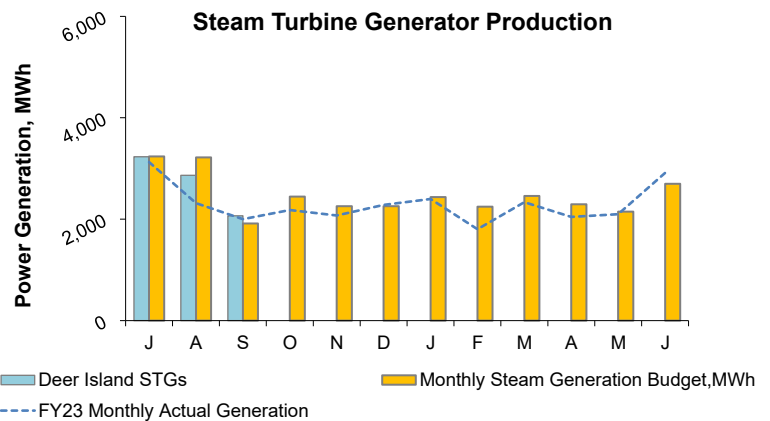
In Quarter 1, the renewable energy produced from all hydro turbines totaled 8,098 MWh; 1% below budget<sup>1</sup>.



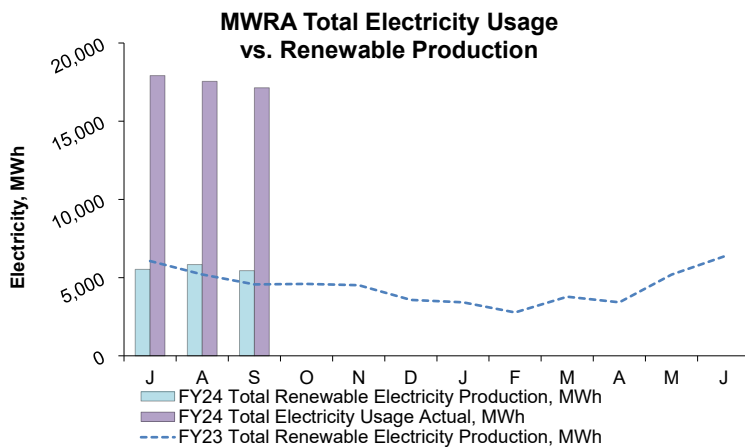
In Quarter 1, the renewable energy produced from all wind turbines totaled 208 MWh; 44% below budget<sup>1</sup>. This shortfall is in large part due to Turbine #2 at Deer Island Treatment Plant being taken offline following the May 29 failure of Turbine #1 (which had been out of service since April 2022). Deer Island Turbine #2 was returned to service on September 22.



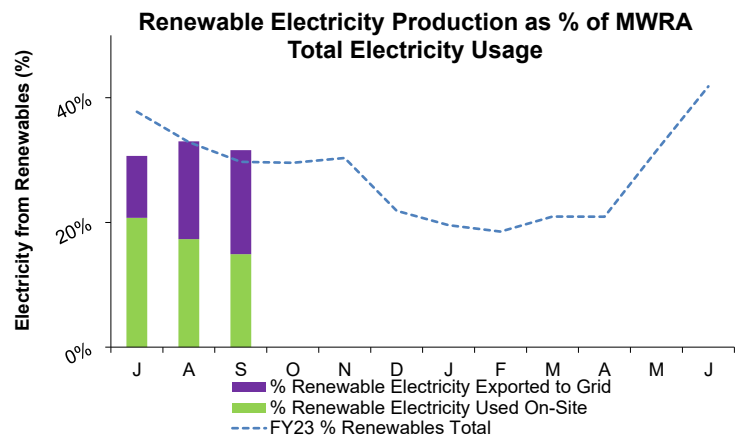
In Quarter 1, the renewable energy produced from all solar PV systems totaled 338 MWh; 23% below budget<sup>1</sup>. The Deer Island Residuals Odor Control roof mounted array has been offline since September 11, 2022 while awaiting replacement parts.



In Quarter 1, the renewable energy produced from all steam turbine generators totaled 8,164 MWh; 2% below budget<sup>1</sup>.



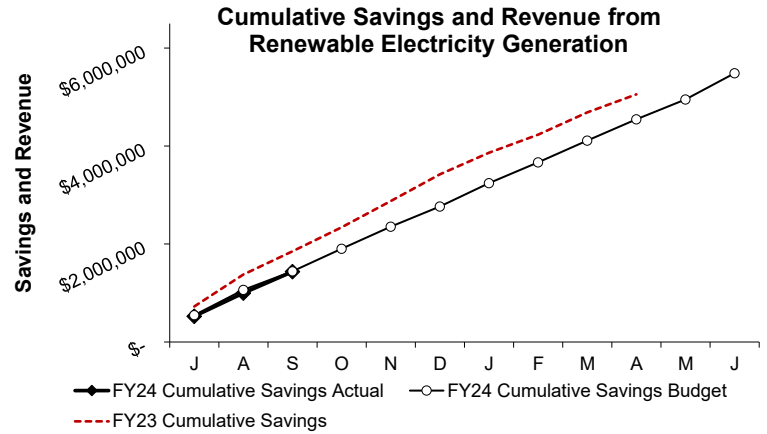
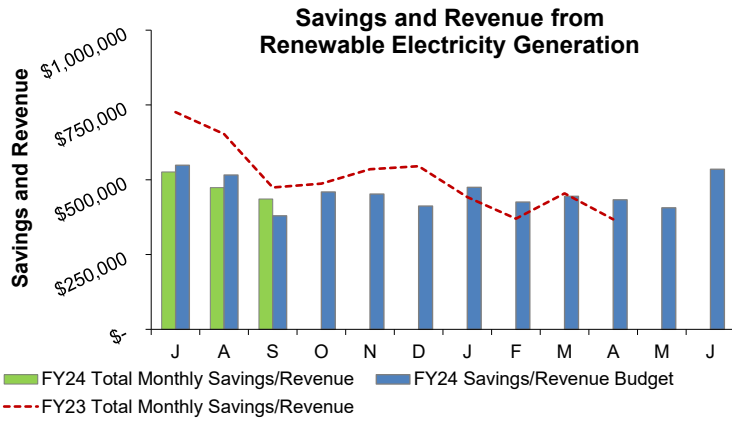
In Quarter 1, MWRA's electricity generation by renewable resources totaled 16,808 MWh, 3% below budget. MWRA's total electricity usage was approximately 52,600 MWh in Quarter 1. Renewable resources were 32% of total usage. The MWRA total electricity usage is the sum of all electricity purchased for Deer 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.

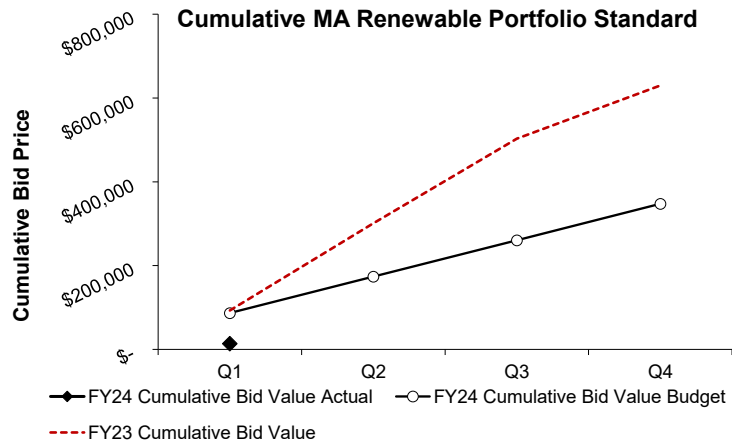
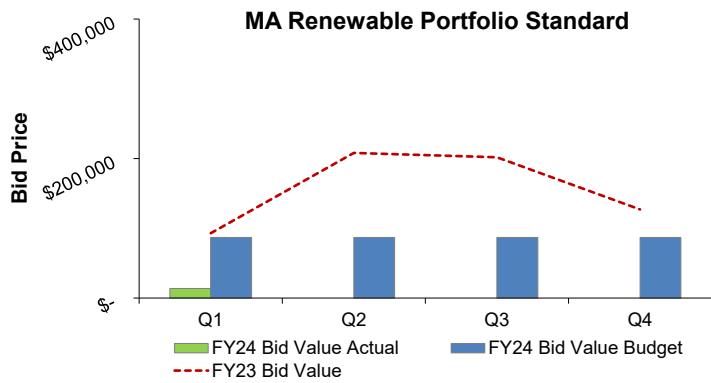
# Renewable Electricity Generation: Savings and Revenue

1<sup>st</sup> Quarter - FY24

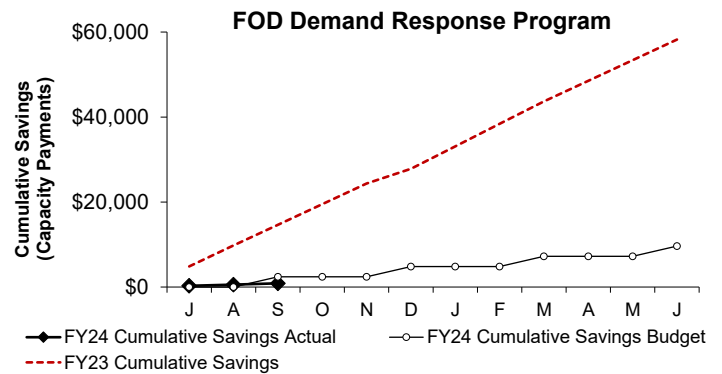
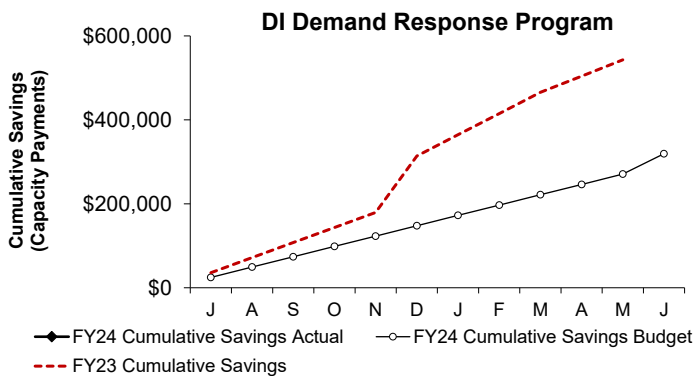


Savings and Revenue for Quarter 1 are estimated at \$1,435,298; 1% below budget.<sup>3</sup> No invoice has been received for Oakdale Hydro in July; an average of July values for FY20-22 is used to estimate. Savings and revenue invoices for Oakdale Hydro have also not yet been received for May and June FY23.

Savings and revenue<sup>1</sup> 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 1st Quarter<sup>2</sup> from MWRA's renewable energy assets; 385 Q1 FY23 Class I Renewable Energy Certificates (RECs) were sold for a total value of \$13,659 RPS revenue, which is 84% below budget<sup>3</sup> for the Quarter. Multiple factors contributed to this shortfall. The quantity of RECs MWRA is obligated to provide electricity suppliers has increased per state regulations and contract structures, reducing the number of RECs available for sale. There were also fewer RECs produced due to reduced wind power production at Deer Island, which will likely persist through the fiscal year (see previous page). 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.



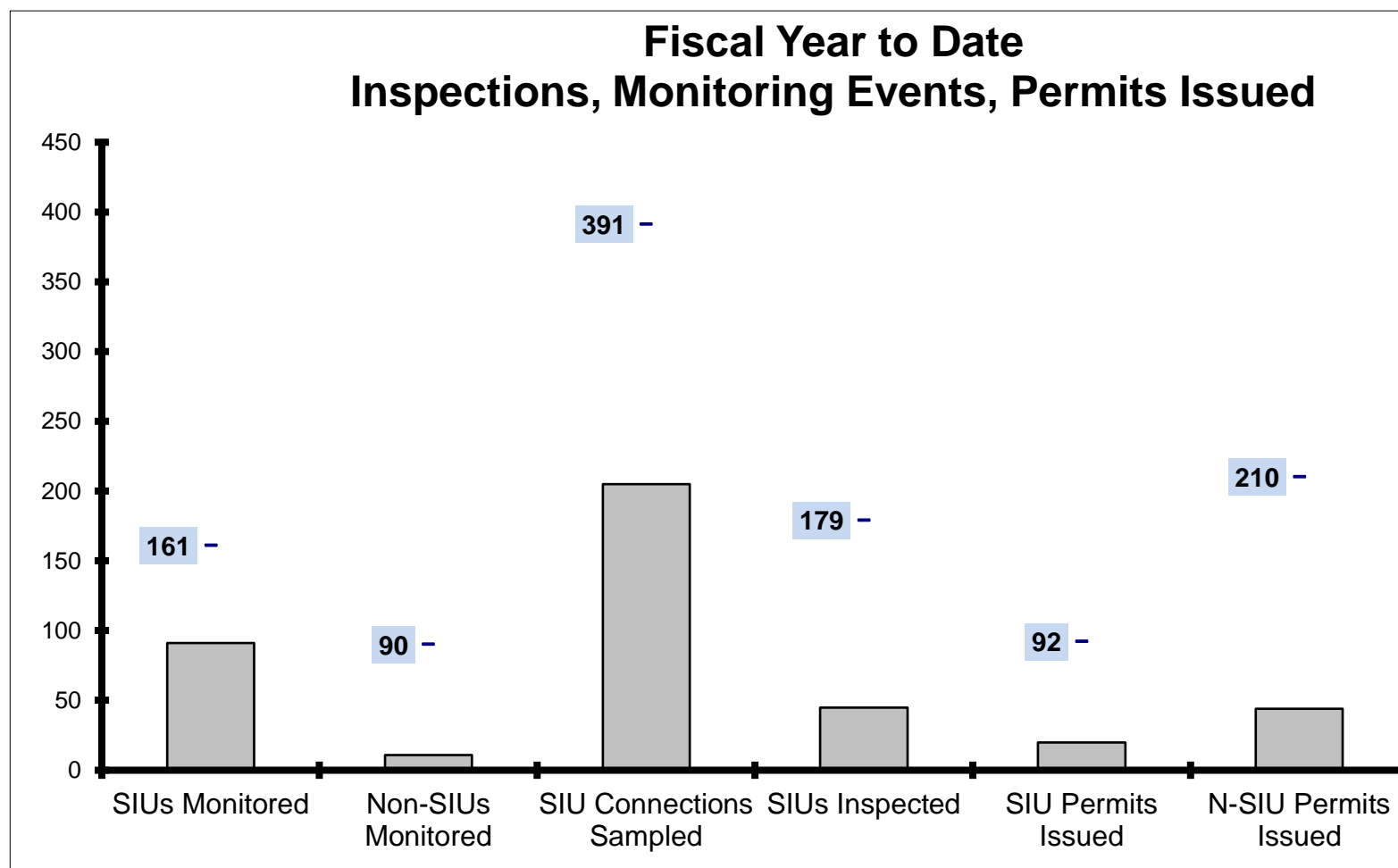
Currently Deer Island, Loring Rd, and Brutch Hydro participate in the ISO-New England Demand Response Programs<sup>4</sup>. By agreeing to reduce demand and operate the facility generators to help reduce the ISO New England grid demand during periods of high energy demand, MWRA receives monthly Capacity Payments from ISO-NE. When MWRA operates the generators during an ISO-NE called event, MWRA also receives energy payments from ISO-NE. No Capacity Payments have been received for Deer Island yet in FY24, and payments for FOD total \$876 through September<sup>2</sup>. FOD Capacity Payments are much lower in FY24 than FY23 because the JCWTP is no longer enrolled in the Demand Response Program.

- 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

1<sup>st</sup> Quarter - FY24



EPA Required SIU Monitoring Events  
for FY24: 161  
YTD : **91**

Required Non-SIU Monitoring Events  
for FY24: 90  
YTD : **11**

SIU Connections to be Sampled  
For FY24: 391  
YTD: **205**

EPA Required SIU Inspections  
for FY24: 179  
YTD: **45**

SIU Permits due to Expire  
In FY24: 92  
YTD: **20**

Non-SIU Permits due to Expire  
in FY24: 210  
YTD: **44**

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	3	0	1	0	0	1	4
Aug	5	7	0	1	0	1	5	9
Sep	14	28	0	3	0	0	14	31
Oct								
Nov								
Dec								
Jan								
Feb								
Mar								
Apr								
May								
Jun								
% YTD	100%	86%	0%	11%	0%	2%	20	44

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 addition to the Annual SIU inspections required under TRAC's EPA approved Industrial Pretreatment Program, other inspections are usually undertaken, 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 first quarter of the MWRA fiscal year, FY24.

In this quarter, 64 permits issued.

There were 20 SIUs, all of which were issued on time.

There were 44 non-SIUs of which 38 were issued on time, with one late beyond 180 days.

In FY24, there have been 12 completely new permits issued: 3-DEW, 6-LFLP, 2-02 N-SIUs, 1-Dental

For the Clinton Sewer Service area, there were no SIU permits issued during the FY24 fiscal year.



# Field Operations Highlights

1<sup>st</sup> Quarter – FY24

## Metro Water Operations and Maintenance

- Valve Program: Valve operations continued to support in-house work including providing isolations on: Section 94 (Blow Off Replacement), Section 73 (Blow off Replacement), Section 56 (Main Line Valve Installation). CIP Contractors were supported by isolation and dewatering of portions of Section 29 and 89 (Contract 7117), Section 63 (Contract 6522), Section 23, 24 & 47 (Contract 6392) and inspection of Section 53 & 84 (Contract 7485). Other work included the replacement of a valve operator on WASM 8, Shaft 7 and 7B inspections, CWTP 120" valve inspection and mainline valve exercising of 20 water main sections.
- Water Pipeline Program: Staff completed Blow-Off replacements in Arlington (Section 60) and Mattapan (Sections 94 and 73). Main line valves were installed in Lynn (Section 56) and at the Quincy Pump Station. Test pits were completed at Shaft 7C to determine pipe diameters for future valve replacements. Additional work during the quarter included leak repairs on the Section 58 (36-inch main) in Mattapan and Quincy Pump Station (12-inch line). Leak detection was performed on over 32 miles of MWRA water main and assistance was provided to four customer communities.

## 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, Sections 23, 24 and 47 Rehabilitation, Shaft Improvements, IHS Improvements CP1 and 2, 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.
- 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.

## 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 water system; Continued on support for the PRV improvement project; Continued support for the Wachusett Lower Gate House Project and Steel Tank Project; supported Soda Ash Dry Feed Upgrade project; improved communication alarming throughout SCADA west.
- Wastewater System: continued work on Ward/Columbus, Hayes P.S. Improvements, Braintree/Weymouth Pump Station Improvements Project, and Fuel Tank Replacement Project; made improvements to WR03 HMI; revised control calculations at South Boston CSO. Worked with Verizon to update communication lines at various facilities.

## TRAC

### Compliance and Enforcement

- TRAC issued 33 Notices of Noncompliance, 66 Notices of Violation, 3 Return to Permit Letters, 1 Ruling, and 1 Administrative Settlement.

### Inspections and Permitting

- TRAC issued a total of 96 MWRA 8(m) Permits allowing companies to work within an easement or

# Field Operations Highlights

## 1<sup>st</sup> Quarter – FY24

other property interest held by the Authority. The total number includes 53 permits issued for work within water infrastructure easements and 43 permits issued for work within sewer infrastructure easements. Permits issued this quarter were issued in an average of 85 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 69 new construction gasoline/oil separators and 108 existing gasoline/oil separators.
- TRAC staff conducted 45 Annual SIU Inspections and 217 other inspections.
- 64 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 below levels of concern.

### Community & In-House Support

- Community Support: This quarter, staff assisted two communities with repeat coliform sampling due to a single *E. coli* result at a monitoring site. Water quality managers also assisted with planning for a Boil Water order, yet one was never required. Staff assisted Lynnfield, BWSC (Boston), Medford and Everett with repeat or other water quality investigative sampling.
- Projects: Staff continued to sample at the CWTP lead pipe-rig. In preparation for the Norumbega Cell 3 Cleaning Project, staff sampled the dewatering line. All samples were acceptable and staff commenced the dewatering of cell 3 into cells 1 & 2.

### Data Management

- Staff submitted monthly DEP and DPH reports on schedule and fulfilled eleven data requests this quarter. The group has completed several applications (nutrient reporting, chlorine dosing, and buoy application reconfiguration) and are currently

being updated per user feedback. Group also performed maintenance on all current applications & the internal website. Group also successfully launched container (Docker) based applications, the first of which is Superset.

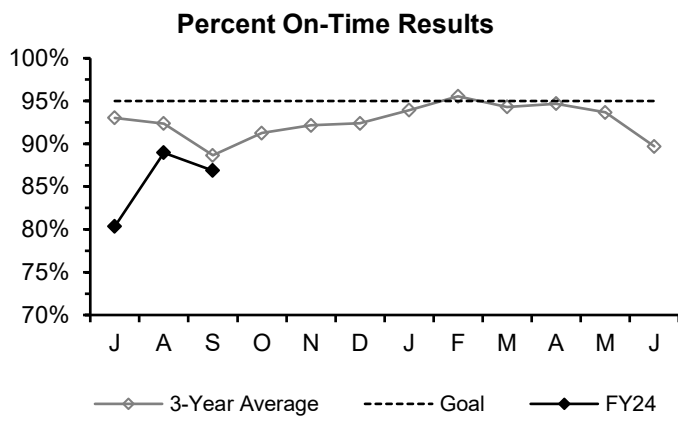
### Environmental Quality-Wastewater

- Ambient Monitoring: Massachusetts Bay water column surveys completed each month. Sampling of the seafloor (benthic) sediments near the outfall and in Boston Harbor was done in August. The consultant also completed the triennial video survey of benthic habitats near the outfall.
- 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, and as-needed notifications of CSOs and blending. Submitted annual reports on Demand Management and Infiltration/Inflow as required by the Deer Island permit. Continued preparing comments to EPA on draft permit for Deer Island Treatment Plant and CSOs. Received reauthorization to discharge cooling water from the hydroelectric power stations. Provided data appendices for pretreatment annual report. The NPDES Steering Committee met in August. Reported Contingency Plan exceedances for Stellwagen Basin bottom water dissolved oxygen to EPA, DEP, OMSAP, and others. These were observed on July and September Massachusetts Bay monitoring surveys.
- Cooperation with other agencies: Continued follow up communication with metro Boston CSO permittees and with Boards of Health about the new sewage notification regulation. Assisted City of Chelsea with near-real-time notifications of CSO activations from CHE008. Staff attended EPA briefing/hearing and OMSAP listening session on the draft NPDES permit, and met with Mass. DMF and with other wastewater agencies, Wastewater Advisory Committee, and with metro Boston CSO communities about relevant issues in the draft permit. Discussed data sharing opportunities with NERACOOS for studies of zooplankton in the Gulf of Maine and the extraordinary algae bloom in the region this summer. Shared insights on rapid response environmental monitoring with the Northeast Coastal Acidification Network.

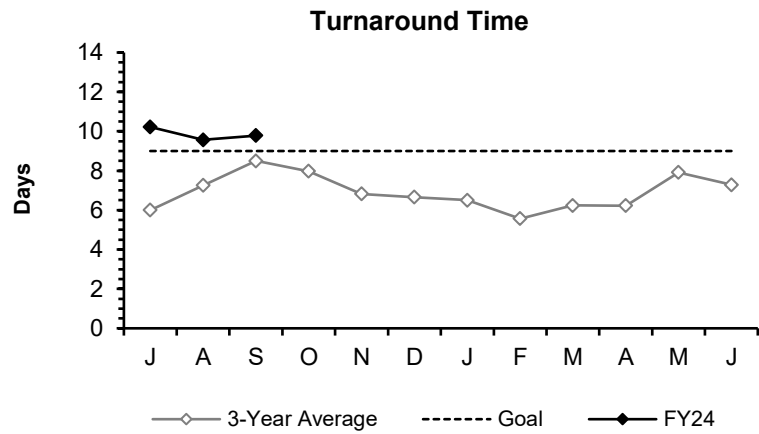
# Laboratory Services

## 1<sup>st</sup> Quarter - FY24

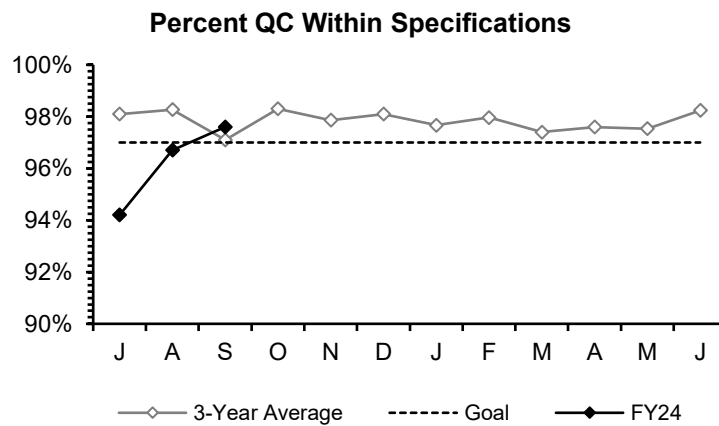
Laboratory Services supports the laboratory sampling, testing, and consulting needs of various client groups primarily in the Operations Division. This includes drinking water transmission and treatment, wastewater collection and treatment, wastewater residuals management, industrial-pretreatment monitoring, and environmental quality.



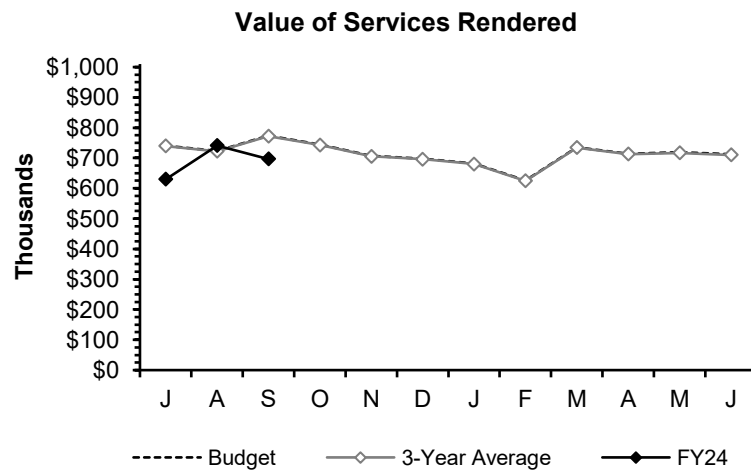
The Percent On-Time measurement assesses performance against internal client due dates. These due dates are shorter than the compliance reporting requirements to allow for internal review of the data.



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.

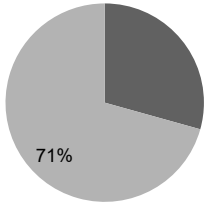
**Performance Summary:** All metrics fell below the monthly goals. Department staffing was at ~80% of budgeted level.

**School Lead Program:** During the 1<sup>st</sup> quarter of FY24, MWRA's lab completed 186 tests from 48 schools and childcare facilities in 23 communities. Since 2016, MWRA's Laboratory has conducted over 40,000 tests from 571 schools and daycares in 44 communities. We have also completed 899 home lead tests under the DPH sampling program since 2017.

# CONSTRUCTION PROGRAMS

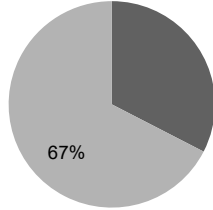
# Engineering & Construction Projects In Construction 1<sup>st</sup> Quarter – FY24

## Cost



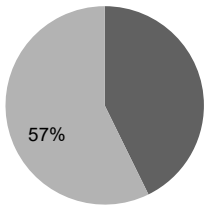
- Amount Remaining
- Billed to Date

## Time



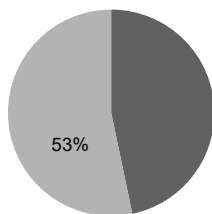
- Time Remaining
- Time Expended

## Cost



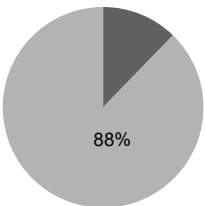
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- Billed to Date

## Time



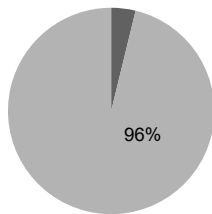
- Time Remaining
- Time Expended

## Cost



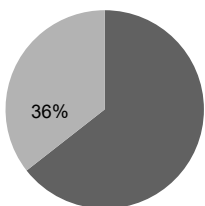
- Amount Remaining
- Billed to Date

## Time



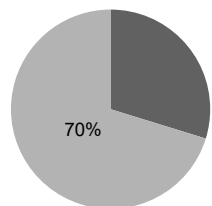
- Time Remaining
- Time Expended

## 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:** \$13,187,618.29

**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:** \$33,309,138.83

**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:** \$12,149,099

**Contract Duration:** 840 Days

**Notice to Proceed:** 14-Jul-21

**Contract Completion:** 1-Nov-23

## Construction of Water Mains – Section 101

**Project Summary:** This construction contract consists of a new 36-inch diameter water main and appurtenances extending from MWRA's Meter 182 at the Waltham/Lexington town line down Lexington Street to Totten Pond Road, where it will connect to Waltham's water system. This new water main will provide sufficient capacity to maintain water service to Waltham during the anticipated shutdown of MWRA's WASM 3 pipeline and the Lexington Street Pumping Station for future rehabilitation.

**Contract Amount:** \$32,400,000

**Contract Duration:** 635 Days

**Notice to Proceed:** 12-Jul-22

**Contract Completion:** 7-Apr-24

# CSO CONTROL PROGRAM

1<sup>st</sup> Quarter – FY24

## 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 are moving forward with plans to bring 8 of the 16 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 will be evaluated until the end of the year.

## 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 **9/28/23** and the next meeting is scheduled for **12/28/23**

## Ongoing Projects as of November 15, 2023

- *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.  
*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.

- **CAM005 weir raising and lengthening for reducing CSO activation and frequency volume.** Cost estimate \$250,000. Anticipated 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**.
- o Schedule extension request for deliverables associated with Updated CSO Control Plan was submitted 9/22/22. In May 2023 EPA/DEP advised that MWRA, Cambridge and Somerville proceed according to our revise extended schedule.
- o As identified in the variance the progress is reported at monthly meetings with EPA/MassDEP. The last meeting was on **10/11/23** and the next meeting is scheduled for **11/8/23**. 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.
- o **Watershed Association meeting held on 10/24/2023 providing an update on the Updated CSO Control Plan development.**

# CIP Expenditures

1<sup>st</sup> Quarter – FY24

FY24 Capital Improvement Program Expenditure Variances through September by Program - (\$ in thousands)				
Program	FY24 Budget Through September	FY24 Actual Through September	Variance Amount	Variance Percent
Wastewater	\$19,102	\$9,198	(\$9,904)	-52%
Waterworks	\$35,454	\$31,156	(\$4,298)	-12%
Business and Operations Support	\$3,091	\$797	(\$2,295)	-74%
<b>Total</b>	<b>\$57,648</b>	<b>\$41,151</b>	<b>(\$16,497)</b>	<b>-29%</b>

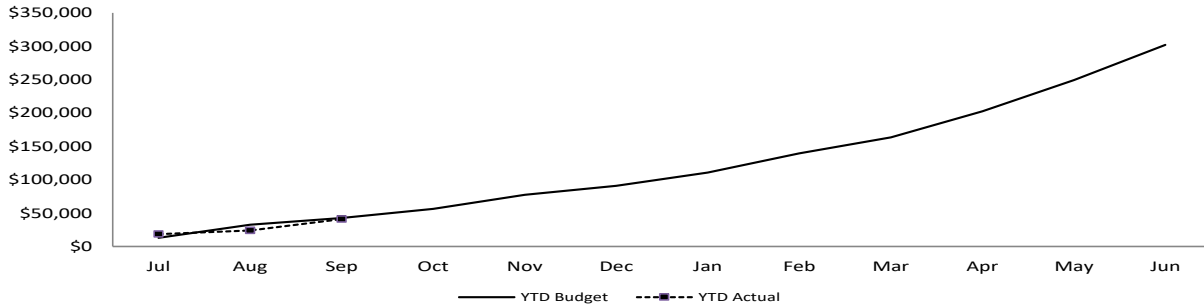
## Wastewater:

- Spending was less than planned in Wastewater due to timing of community loans and distributions for the I/I Local Financial Assistance program, timing of work and long lead time for equipment for Braintree/Weymouth Improvements – Construction, timing of work for Primary & Secondary Clarifier Rehab Phase 2 Construction, and work scheduled for FY24 that was completed in FY23 for Chelsea 008 Pipe Replacement construction.
- This less than planned spending was partially offset by timing of work for Clinton Screw Pumps Replacement Phase 1, and planned FY23 work completed in FY24 for Nut Island Odor Control & HVAC Improvements Phase 2 – Construction.

## Water:

- Spending was less than planned in Waterworks due to timing of contractor work for Section 89/29 Replacement, CP-1 NEH Improvements and CP3-Sections 23, 24, 47 Rehabilitation, timing of consultant work for Metropolitan Tunnel Redundancy Preliminary Design & Massachusetts Environmental Policy Act Review, previous permit issues for Waltham Water Pipeline, timing of consultant services for Geotechnical Support Services and WASM 3 MEPA/Design/CA/RI, and lower than projected task order work for CWTP Technical Assistance.
- This less than planned spending was partially offset by timing of community distributions for the Water Loan program, and planned FY23 work completed in FY24 for Wachusett Lower Gatehouse Pipe & Boiler Replacement, and timing of work for CWTP Chemical Feed System Improvements.

**Budget vs. Actual CIP Expenditures** (\$ in thousands)  
Total FY24 CIP Budget of \$302,200



## 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 9/23/23	\$126.0 million
Unused capacity under the debt cap:	\$2.4 billion
Estimated date for exhausting construction fund without new borrowing:	December 2023
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 FY24 Cash Flow Expectancy*:	\$246 million

\* Cash based spending is discounted for construction retainage.

# DRINKING WATER QUALITY AND SUPPLY



## Source Water – Microbial Results and UV Absorbance

1<sup>st</sup> Quarter – FY24

### 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.

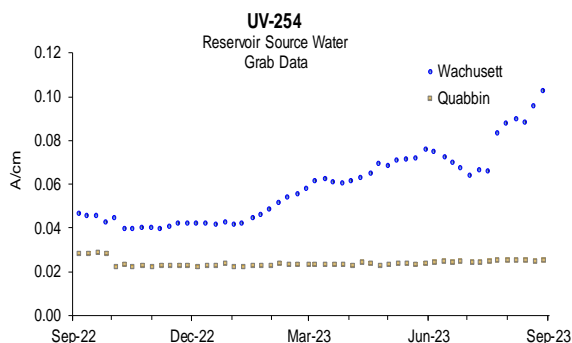
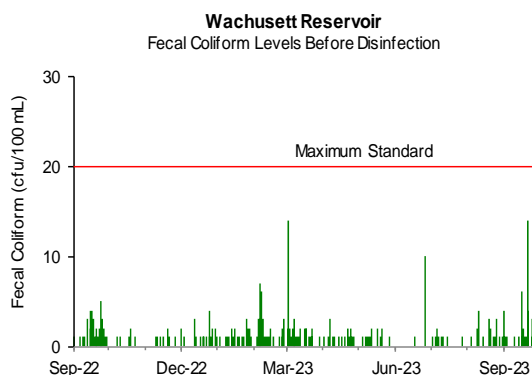
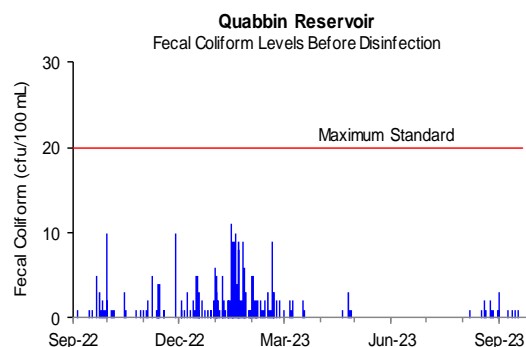
All samples collected during the 1st Quarter were below 20 cfu/100mL. **For the current six-month period, 0.0% of the samples exceeded a count of 20 cfu/100mL.**

### 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 0.024 A/cm for the quarter.

Wachusett Reservoir UV-254 levels averaged 0.084 A/cm for the quarter.



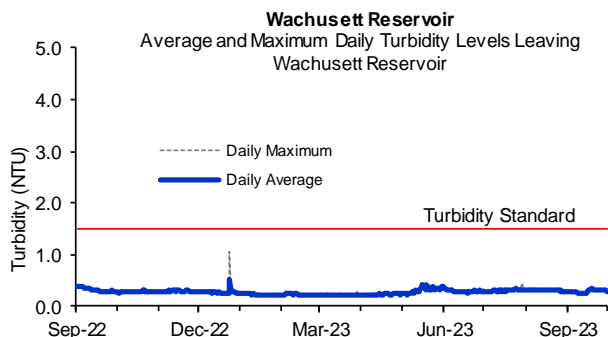
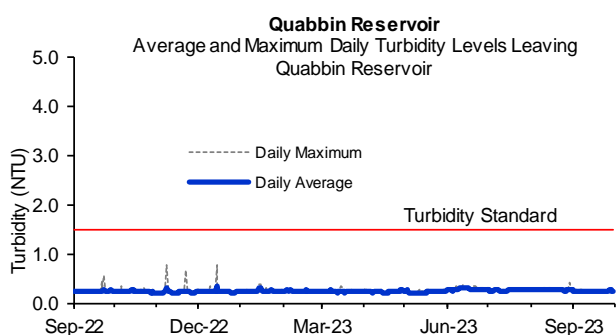
## Source Water – Turbidity

### 1<sup>st</sup> Quarter – FY24

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.

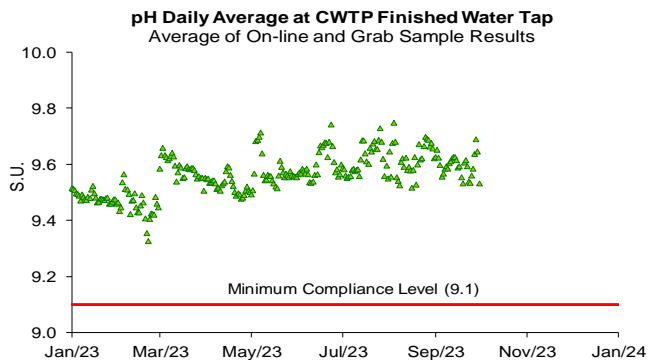
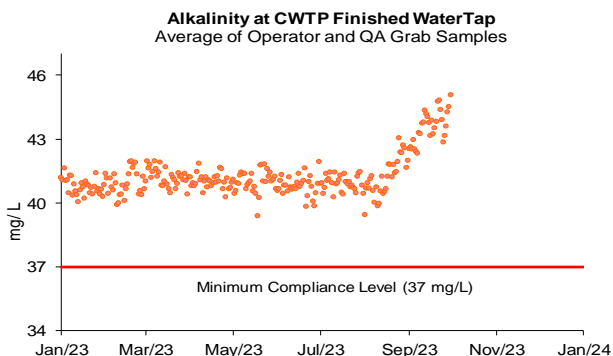


## Treated Water – pH and Alkalinity Compliance

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](http://www.mwra.com/water/html/awqr.htm).

Quarterly distribution system samples were collected over a course of two weeks in September. Distribution system sample pH ranged from 9.4 to 9.5 and alkalinity ranged from 43 to 44 mg/L. No sample results were below DEP limits for this quarter.



## Treated Water – Disinfection Effectiveness

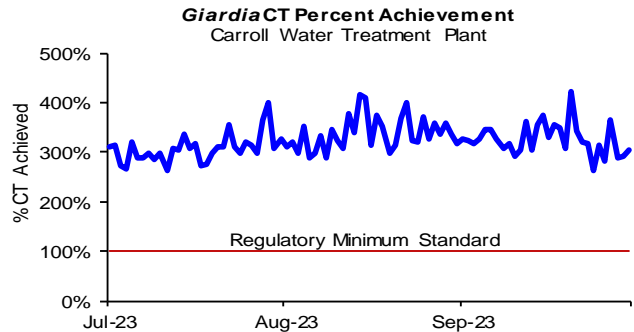
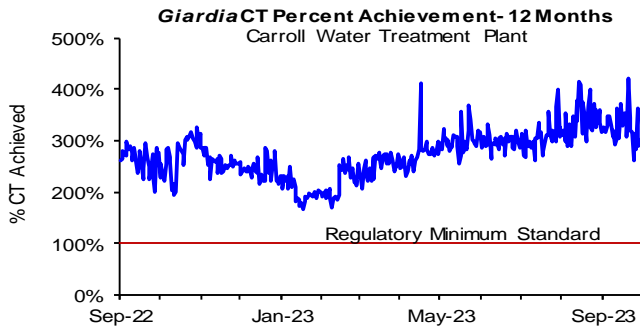
1<sup>st</sup> Quarter – FY24

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.

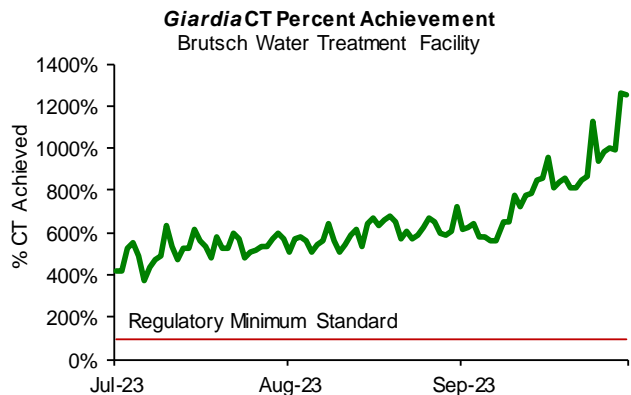
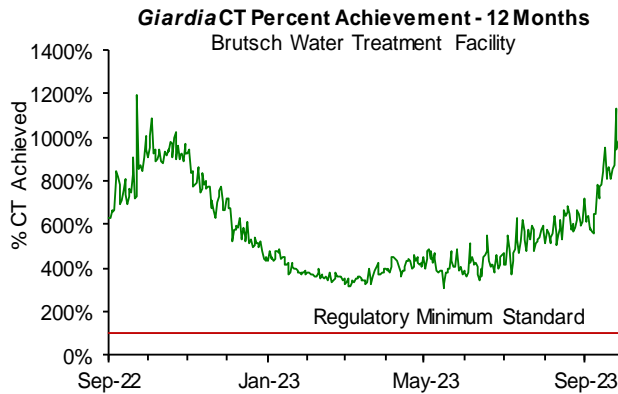
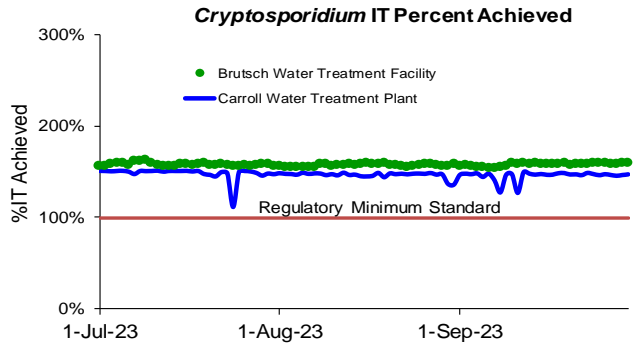
### Wachusett Reservoir – MetroWest/Metro Boston Supply:

- The chlorine dose at the CWTP varied between 3.9 and 4.7 mg/L for the quarter.
- Ozone dose at the CWTP varied between 2.2 to 4.3 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 1.55 to 1.80 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%.



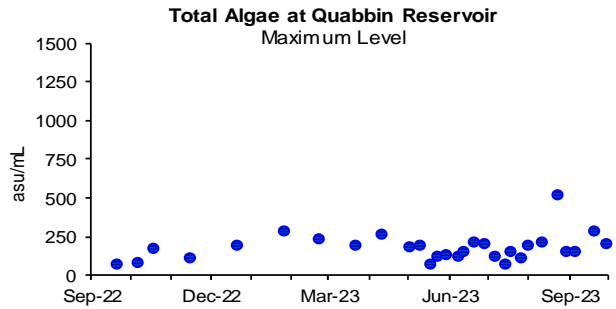
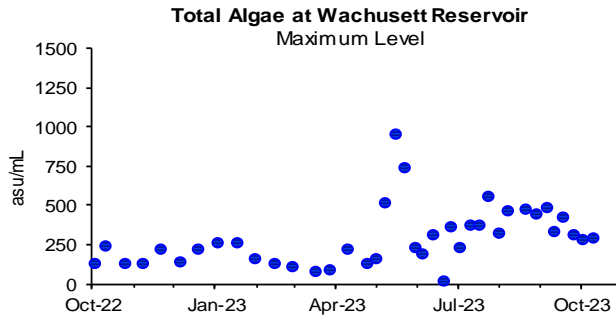
## Source Water - Algae

### 1<sup>st</sup> Quarter – FY24

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 1st 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.

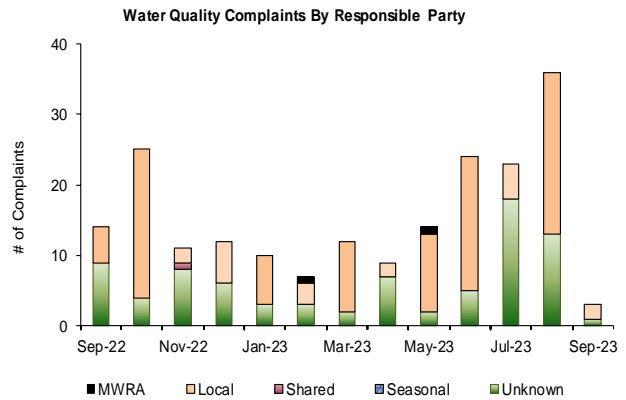
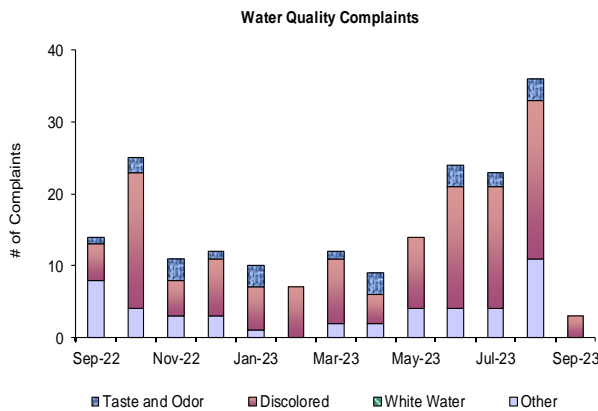
MWRA routinely contacts communities to classify and tabulate water complaints from customers. This count, reflecting only telephone calls to towns, probably captures only a fraction of the total number of customer complaints. Field Operations staff have improved data collection and reporting by keeping track of more kinds of complaints, tracking complaints to street addresses and circulating results internally on a daily basis.

Communities reported 62 complaints during the quarter compared to 68 complaints from 1st Quarter of FY23. Of these complaints, 42 were for "discolored water", 5 were for "taste and odor", and 15 were for "other". Of these complaints, 30 were local community issues and 32 were unknown in origin.

Communities with discolored water (DW) complaints due to hydrant flushing performed during the quarter:

(July – Northborough(1DW), Lynnfield(1DW), Somerville(1DW); August – Arlington(6DW), Somerville(15DW); September – Somerville(2DW).

In July, Arlington reported eleven discolored water complaints due to a water main break.



# Bacteria & Chlorine Residual Results for Communities in MWRA Testing Program

1<sup>st</sup> Quarter – FY24

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.

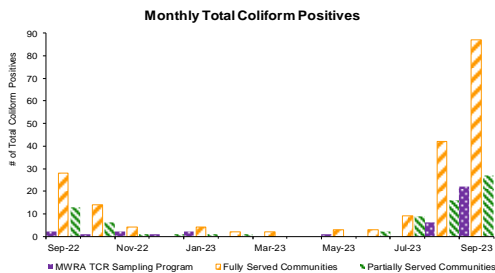
## Highlights

In the 1st Quarter, 190 of the 6646 fully and partially served samples (2.9%) submitted to MWRA labs for analysis tested positive for total coliform. 28 of the 1905 Shared Community/MWRA samples (1.5%) tested positive for total coliform. 2 of the 398 CVA/MWRA community samples (0.5%) tested positive for total coliform.

Community breakdown by month: in July: Bedford, Boston, Framingham, Marblehead, Newton, Peabody, Reading, Somerville, Wakefield, Wellesley, Winthrop; in August: Bedford, Boston, Burlington, Everett, Lexington, Lynnfield, Marblehead, Marlborough, Medford, Newton, Peabody, Quincy, Waltham, Wakefield, Wellesley, Winthrop; in September: Bedford, Boston, Brookline, Burlington, Chelsea, Everett, Framingham, Ludlow MS, Lynnfield, Malden, Medford, Melrose, Newton, Peabody, Revere, Somerville, Stoneham, Wakefield, Waltham, Watertown, Winthrop. Chelsea, Newton, Revere, Somerville, and Wellesley are required to conduct a Level 1 Assessment since this their first occurrence within a rolling 12-month period. Bedford, Everett, Lynnfield, Medford, Wakefield, and Winthrop are required to conduct a Level 2 Assessment since this is their second occurrence within a rolling 12-month period. One sample in each community (Newton, July 19; Quincy, August 8), tested positive for *E.coli*. Repeat samples did not confirm for total coliform or *E.coli*, thus, no Level Assessment or Boil Water Order was required. MWRA was required to conduct a Level 1 Assessment for the CVA system based on two positive total coliform samples at Ludlow Monitoring Station. For the quarter, 0.7% 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> Positive	# Assessment Required
	# Samples (b)	# (%) Positive		
MWRA	MWRA Locations	404	1 (0.3%)	0
	Shared Community/MWRA sites	1501	27 (1.8%)	0
	<b>Total: MWRA</b>	<b>1905</b>	<b>28 (1.5%)</b>	0
Fully Served	ARLINGTON	169	0 (0%)	0
	BELMONT	104	0 (0%)	0
	BOSTON	834	19 (2.3%)	0
	BROOKLINE	240	1 (0.4%)	0
	CHELSEA	187	9 (4.8%)	0
	DEER ISLAND	52	0 (0%)	0
	EVERETT	201	16 (8.0%)	0
	FRAMINGHAM	243	2 (0.8%)	0
	LEXINGTON	123	1 (0.8%)	0
	LYNNFIELD	30	7 (23.3%)	0
	MALDEN	240	2 (0.8%)	0
	MARBLEHEAD	78	2 (2.6%)	0
	MARLBOROUGH	129	1 (0.8%)	0
	MEDFORD	237	12 (5.1%)	0
	MELROSE	120	1 (0.8%)	0
	MILTON	102	0 (0%)	0
	NAHANT	30	0 (0%)	0
	NEWTON	308	12 (3.9%)	1
	NORTHBOROUGH	48	0 (0%)	0
	NORWOOD	99	0 (0%)	0
	QUINCY	325	1 (0.3%)	1
	READING	133	1 (0.8%)	0
	REVERE	210	7 (3.3%)	0
	SAUGUS	104	0 (0%)	0
	SOMERVILLE	270	10 (3.7%)	0
	SOUTHBOROUGH	30	0 (0%)	0
STONEHAM	94	1 (1.06%)	0	
SWAMPSCOTT	57	0 (0%)	0	
WALTHAM	222	2 (0.9%)	0	
WATERTOWN	146	1 (0.7%)	0	
WESTON	45	0 (0%)	0	
WINTHROP	93	30 (32.3%)	0	
<b>Total: Fully Served</b>	<b>5303</b>	<b>138 (2.6%)</b>		
Partially Served	BEDFORD	93	29 (31.2%)	0
	BURLINGTON	143	3 (2.1%)	0
	CANTON	90	0 (0%)	0
	NEEDHAM	123	0 (0%)	0
	PEABODY	232	5 (2.2%)	0
	WAKEFIELD	148	11 (7.4%)	0
	WELLESLEY	125	4 (3.2%)	0
	WILMINGTON	87	0 (0%)	0
	WINCHESTER	94	0 (0%)	0
	WOBURN	208	0 (0%)	0
<b>Total: Partially Served</b>	<b>1343</b>	<b>52 (3.9%)</b>		
<b>Total: Community Samples No CVA</b>		<b>6646</b>	<b>190 (2.9%)</b>	
CVA	MWRA CVA Locations	107	2 (1.9%)	0
	CHICOPEE	186	0 (0%)	0
	SOUTH HADLEY FD1	60	0 (0%)	0
	WILBRAHAM	45	0 (0%)	0
<b>Total: CVA</b>	<b>398</b>	<b>2 (0.5%)</b>		

## Chlorine Residuals in Fully Served Communities

	2022				2023								
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
% $\leq$ 0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
% $\leq$ 0.2	0.4	0.5	0.8	0.2	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.3	1.8
% $\leq$ 0.5	1.8	2.1	2.4	1.5	1.2	0.7	0.5	0.3	0.3	1.0	1.2	3.1	6.2
% $\leq$ 1.0	6.5	5.8	5.7	3.9	2.4	1.8	1.3	1.4	1.9	3.4	4.8	12.5	16.0
% $\geq$ 1.0	93.5	94.2	94.4	96.2	97.7	98.2	98.7	98.6	98.1	96.6	95.2	87.5	84.0

## Treated Water Quality: Disinfection By-Product (DBP) Levels in Communities

### 1<sup>st</sup> Quarter – FY24

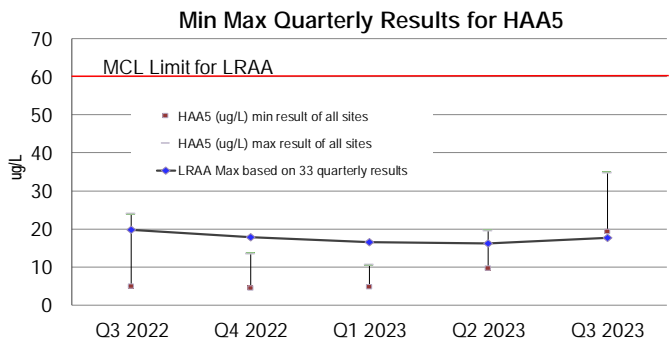
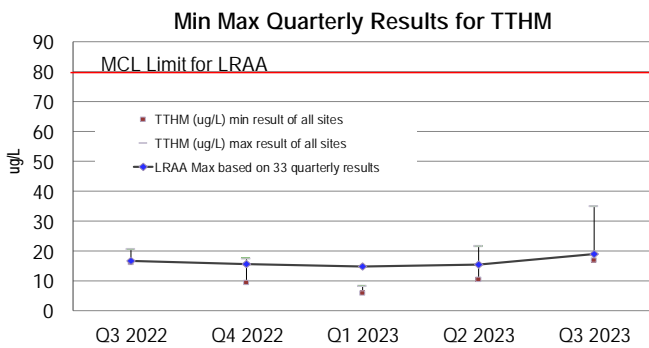
Total Trihalomethanes (TTHMs) and Haloacetic Acids (HAA5s) are by-products of disinfection treatment with chlorine. They are of concern due to their potential adverse health effects at high levels. EPA’s locational running annual average (LRAA) standard, using the most recent four quarterly results, 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.

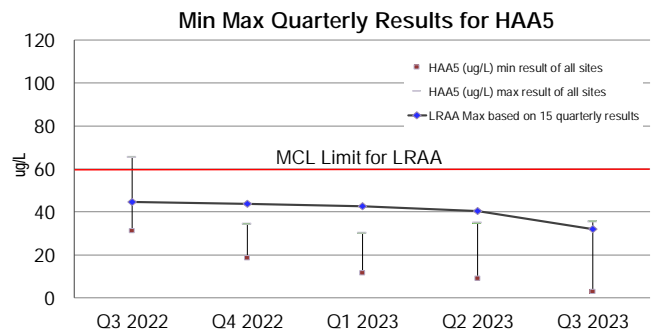
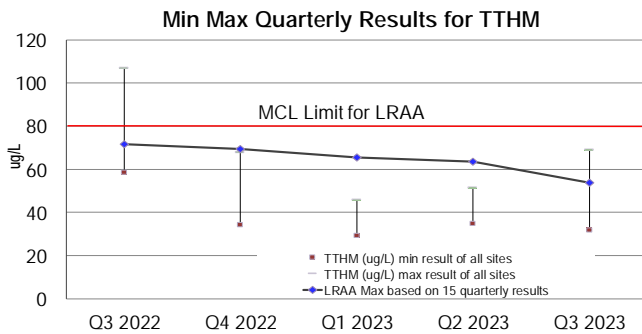
MWRA’s TTHM and HAA5 sampling program includes sampling at 33 MetroWest and Metro Boston communities sites. Partially served and CVA communities are responsible for their own compliance monitoring and are regulated individually.

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 = 19.0 µg/L; HAA5s = 17.7 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

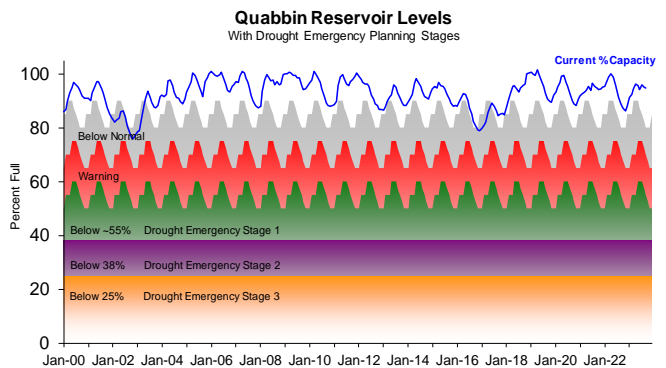
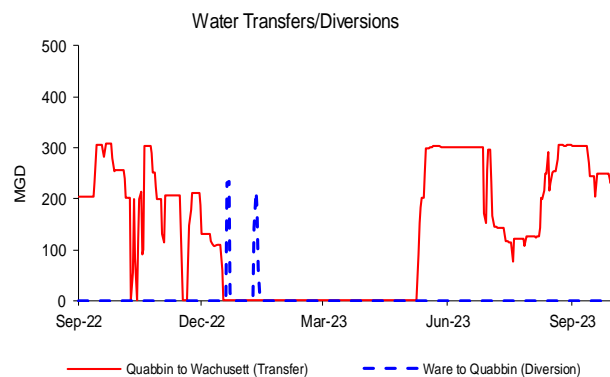
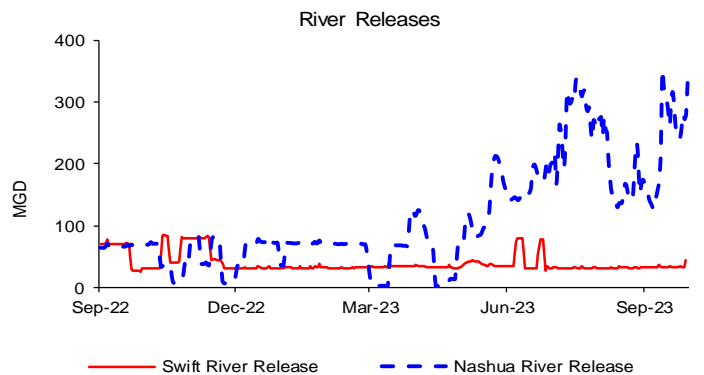
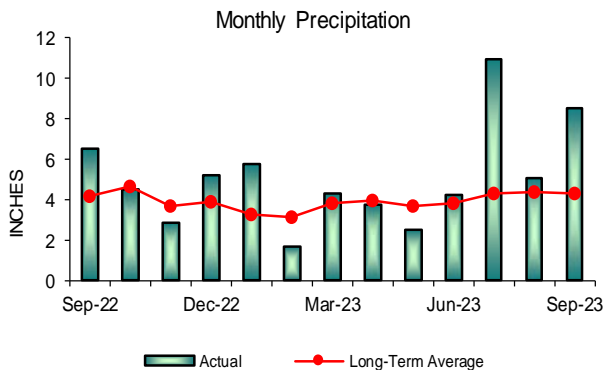
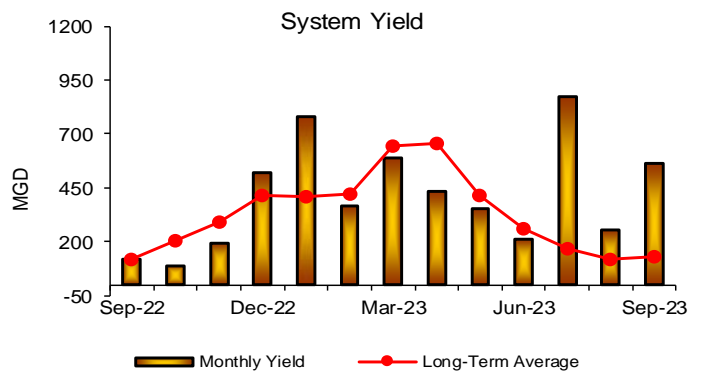
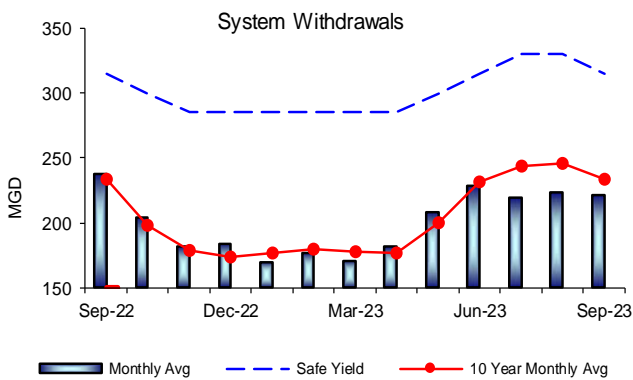
1<sup>st</sup> Quarter – FY24

## 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 94.8% as of September 30, 2023; a 1.0 % decrease for the quarter, which represents a loss of more than 3.8 billion gallons of storage and a decrease in elevation of 0.51'. System withdrawal was below its long term quarterly average. Precipitation and Yield quarterly averages were above their respective long term quarterly averages. Quabbin is in Normal Operating Range for this time of year.



# WASTEWATER QUALITY



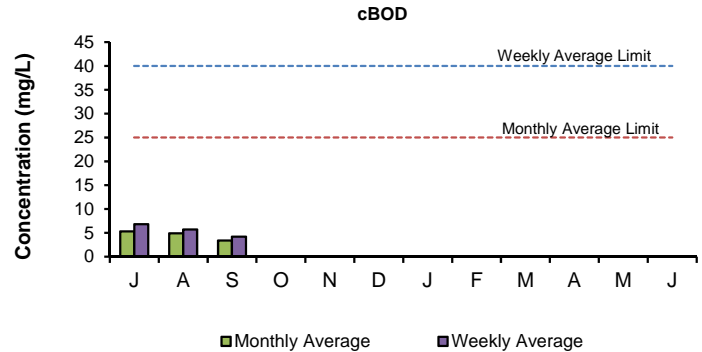
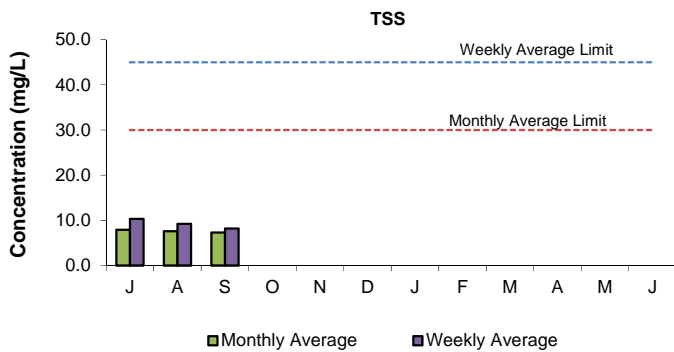
## NPDES Permit Compliance: Deer Island Treatment Plant

### 1<sup>st</sup> Quarter - FY24

#### NPDES Permit Limits

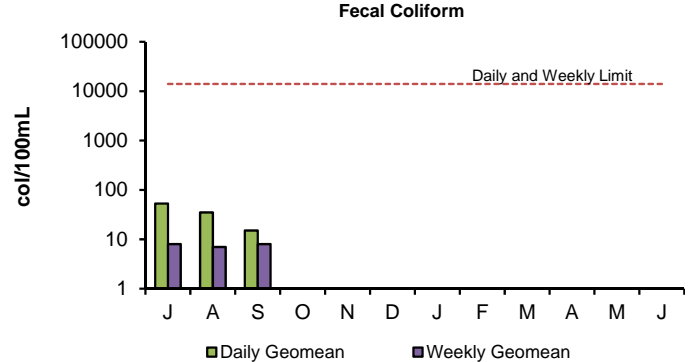
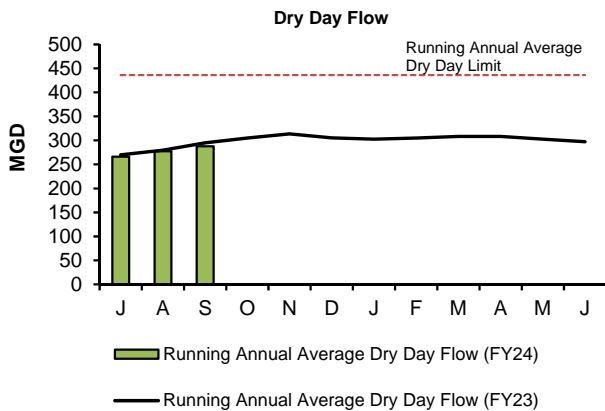
Effluent Characteristics	Units	Limits	July	August	September	1st Quarter Violations	FY24 YTD Violations
Dry Day Flow (365 Day Average):	mgd	436	266.3	277.5	287.8	0	0
cBOD:	Monthly Average	mg/L	5.3	4.9	3.4	0	0
	Weekly Average	mg/L	6.8	5.7	4.2	0	0
TSS:	Monthly Average	mg/L	7.9	7.6	7.3	0	0
	Weekly Average	mg/L	10.3	9.2	8.2	0	0
TCR:	Monthly Average	ug/L	456	0.0	0.0	0	0
	Daily Maximum	ug/L	631	0.0	0.0	0	0
Fecal Coliform:	Daily Geometric Mean	col/100mL	14000	53	35	15	0
	Weekly Geometric Mean	col/100mL	14000	8	7	8	0
	% of Samples >14000	%	10	0	0	0	0
	Consecutive Samples >14000	#	3	0	0	0	0
pH:	SU	6.0-9.0	6.4-6.8	6.5-6.8	6.5-6.8	0	0
PCB, Aroclors:	Monthly Average	ug/L	0.000045	UNDETECTED		0	0
Acute Toxicity:	Inland Silverside	%	≥50	>100	>100	>100	0
	Mysid Shrimp	%	≥50	>100	>100	>100	0
Chronic Toxicity:	Inland Silverside	%	≥1.5	6	50	25	0
	Sea Urchin	%	≥1.5	100	100	100	0

There have been no permit violations in FY24 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 1<sup>st</sup> 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 1<sup>st</sup> 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 1<sup>st</sup> 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 1<sup>st</sup> Quarter, all permit conditions for fecal coliform were met.

# NPDES Permit Compliance: Clinton Wastewater Treatment Plant

1<sup>st</sup> Quarter - FY24

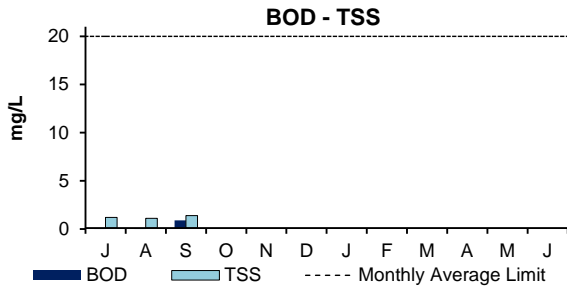
## NPDES Permit Limits

Effluent Characteristics		Units	Limits	July	August	September	1st Quarter Violations	FY24 YTD Violations
Flow:	12-month Rolling Average:	mgd	3.01	2.71	2.86	3.01	0	0
BOD:	Monthly Average:	mg/L	20	<1.7	<1.7	0.9	0	0
	Weekly Average:	mg/L	20	<1.9	<1.8	2.1	0	0
TSS:	Monthly Average:	mg/L	20	1.2	1.1	1.4	0	0
	Weekly Average:	mg/L	20	1.9	1.5	1.7	0	0
pH:		SU	6.5-8.3	7.1-7.6	7.4-7.8	7.3-7.7	0	0
Dissolved Oxygen:	Daily Average Minimum:	mg/L	6	7.8	8.6	8.4	0	0
E. Coli:	Monthly Geometric Mean:	cfu/100mL	126	6	10	6	0	0
	Daily Geometric Mean:	cfu/100mL	409	12	46	18	0	0
TCR:	Monthly Average:	ug/L	20	<20	0.13	<20	0	0
	Daily Maximum:	ug/L	30.4	<20	4.00	<20	0	0
Copper:	Monthly Average:	ug/L	11.6	6.34	7.76	8.68	0	0
	Daily Maximum:	ug/L	14.0	7.04	7.76	8.68	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	0.05	<0.1	<0.1	0	0
Total Phosphorus: April 1st - October 31st	Monthly Average:	mg/L	0.15	0.07	0.05	0.03	0	0
	Daily Maximum:	mg/L	RPT	0.12	0.06	0.04	0	0
Acute Toxicity <sup>+</sup> :	Daily Minimum:	%	≥100	>100	N/A	N/A	0	0
Chronic Toxicity <sup>+</sup> :	Daily Minimum:	%	≥62.5	100.0	N/A	N/A	0	0

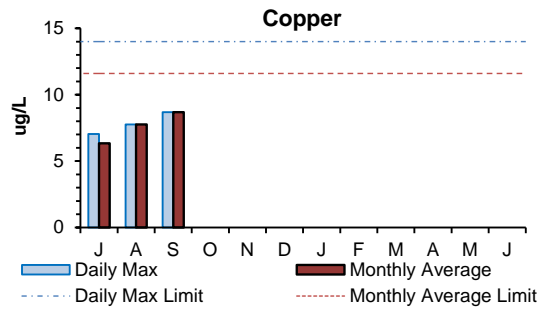
There have been no permit violations in FY24 at the Clinton Treatment Plant.

**1st Quarter:** There were no permit violations in the first quarter.

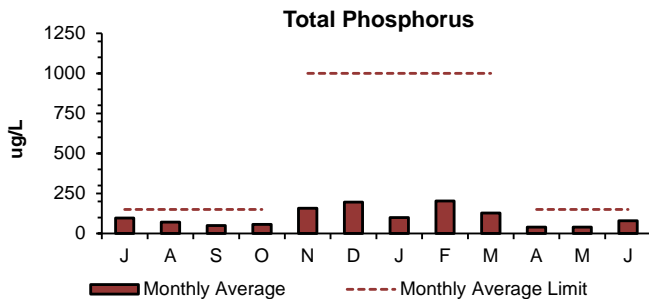
+ Toxicity testing at the Clinton Treatment Plant is conducted on a quarterly basis.



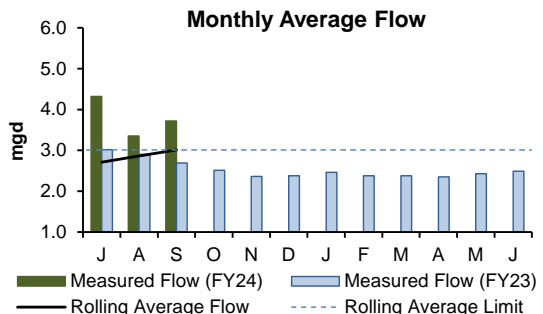
Monthly average concentrations of BOD and TSS were below permit limits in the 1<sup>st</sup> Quarter. The permit monthly limit for both parameters is 20 mg/L.



Daily maximum and monthly average concentrations of copper were below permit limits in the 1<sup>st</sup> Quarter. Permit daily and monthly limits are 14.0 ug/L and 11.6 ug/L respectively.



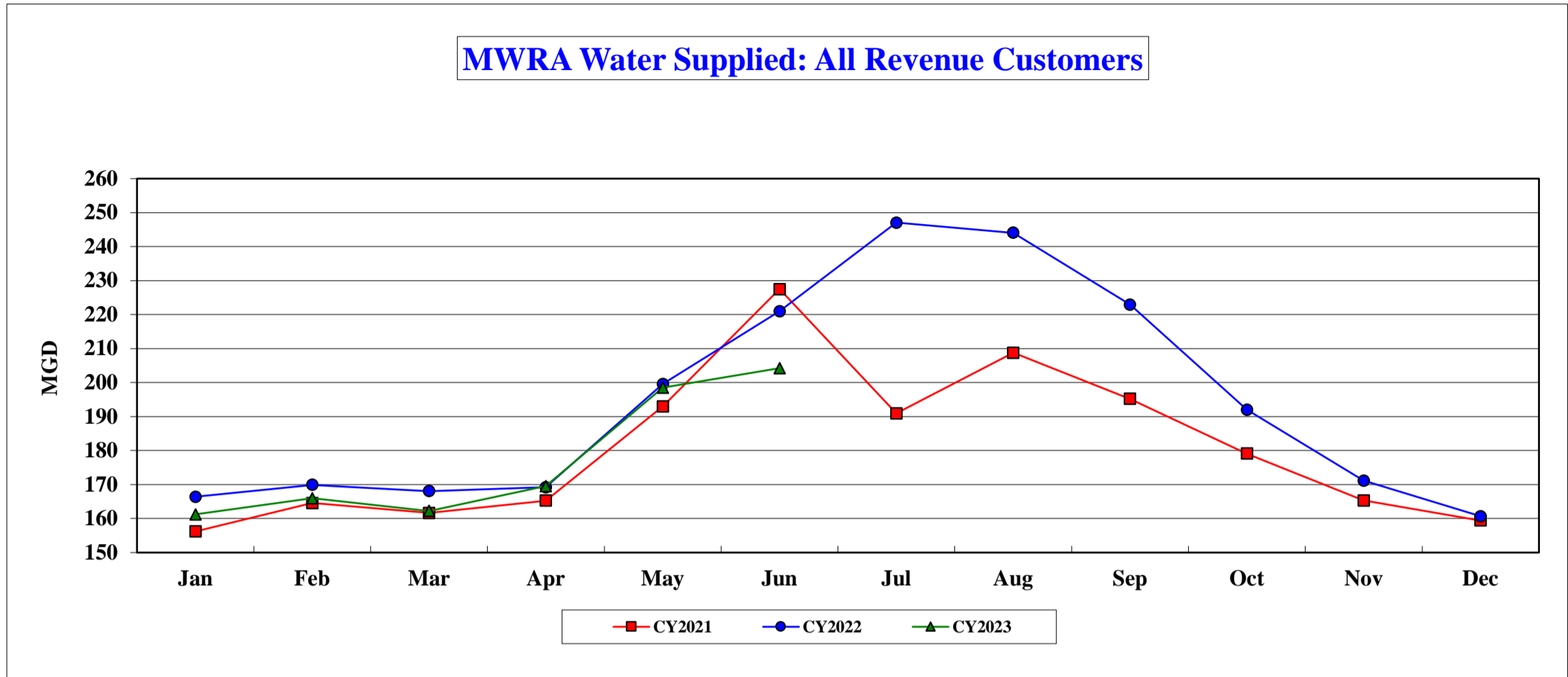
Total phosphorus limits are most stringent during the growing season from April to October. The 1<sup>st</sup> Quarter's monthly average concentrations for total phosphorus were below permit limits.



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 1<sup>st</sup> Quarter were below or at the permit limit.

# COMMUNITY FLOWS AND PROGRAMS

## Customer Water Use 1<sup>st</sup> Quarter - FY24



Water Use (million gallons per day)														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD Average	Annual Average
<b>CY2021</b>	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
<b>CY2022</b>	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
<b>CY2023</b>	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.

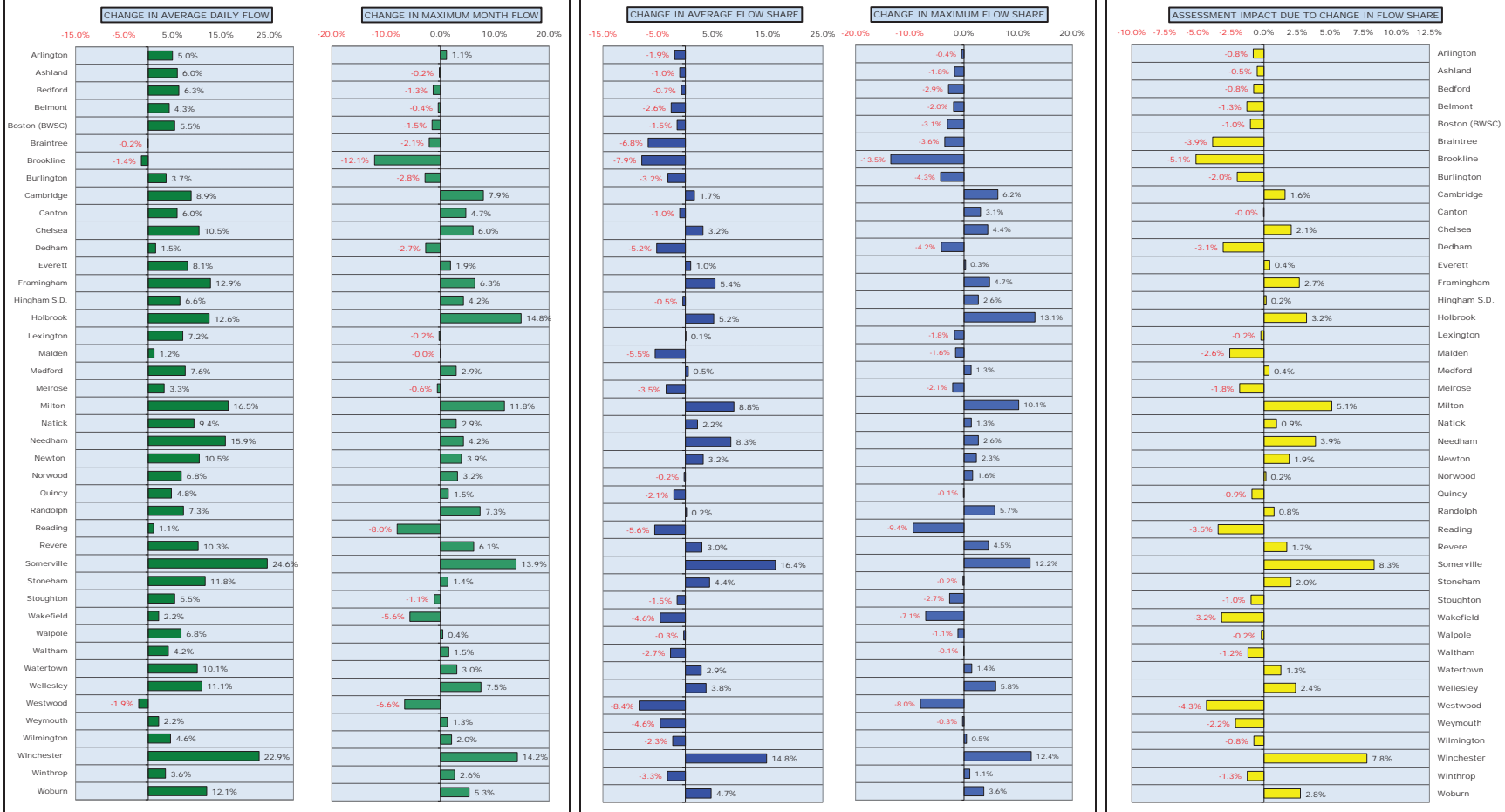
MWRA customers used an average of 196.7 mgd in the 4th quarter (Apr-Jun 2023) of FY2023. This is a decrease of 5.8 mgd or 3.0% compared to the 4th quarter of FY2022.

## How CY2021-23 Community Wastewater Flows Could Effect FY2025 Sewer Assessments <sup>1,2,3</sup>

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. <sup>4</sup>



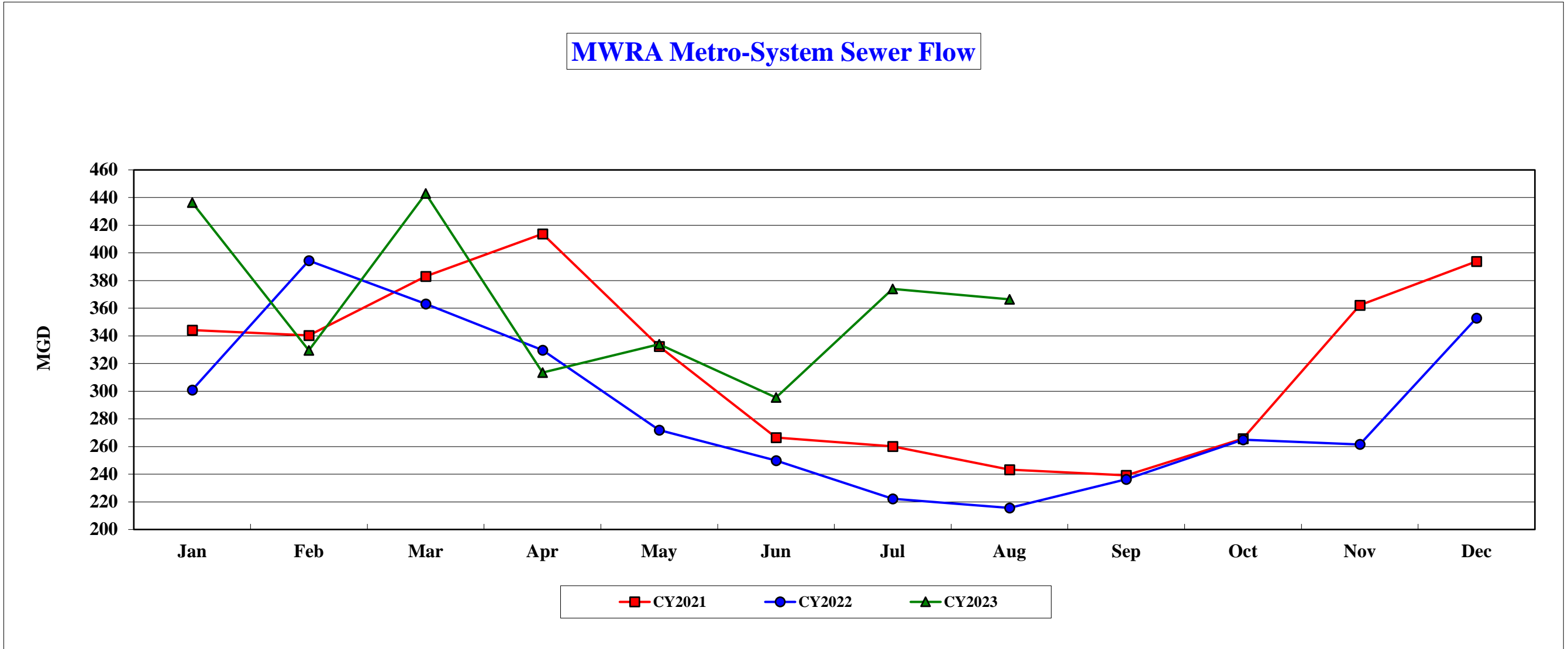
<sup>1</sup> MWRA uses a 3-year flow average to calculate sewer assessments. Three-year averaging smoothes the impact of year-to-year changes in community flow share, but does not eliminate the long-term impact of changes in each community's relative contribution to the total flow.

<sup>2</sup> Based on actual flows for 2022 and 2023 (through August), 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.

<sup>3</sup> Flow data is preliminary and subject to change pending additional MWRA and community review.

<sup>4</sup> Represents ONLY the impact on the total BASE assessment resulting from the changes in average and maximum wastewater FLOW SHARES.

## Community Sewer Flow YTD - FY24



Sewer Flow (million gallons per day)														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD Average	Annual Average
<b>CY2021</b>	344.203	340.320	383.107	413.769	332.385	266.443	260.030	243.310	239.147	265.670	362.143	393.833	322.590	320.199
<b>CY2022</b>	300.930	394.400	363.110	329.710	271.890	249.840	222.280	215.600	236.380	264.960	261.560	352.870	292.254	287.969
<b>CY2023</b>	436.460	329.510	442.870	313.530	333.930	295.380	373.960	366.470	-	-	-	-	362.378	338.212

The 2023 8-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 362.4 mgd in the first eight months of CY2023. This is an increase of 70.1 mgd or 24.0% compared to the first eight months of CY2022.

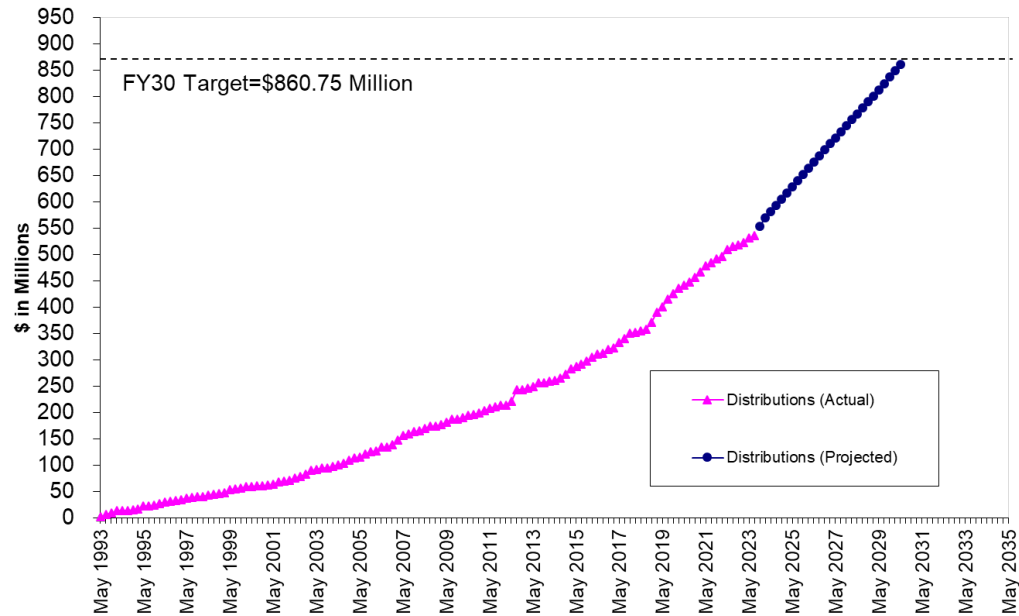
# Community Support Programs

1<sup>st</sup> Quarter – FY24

## Infiltration/Inflow Local Financial Assistance Program

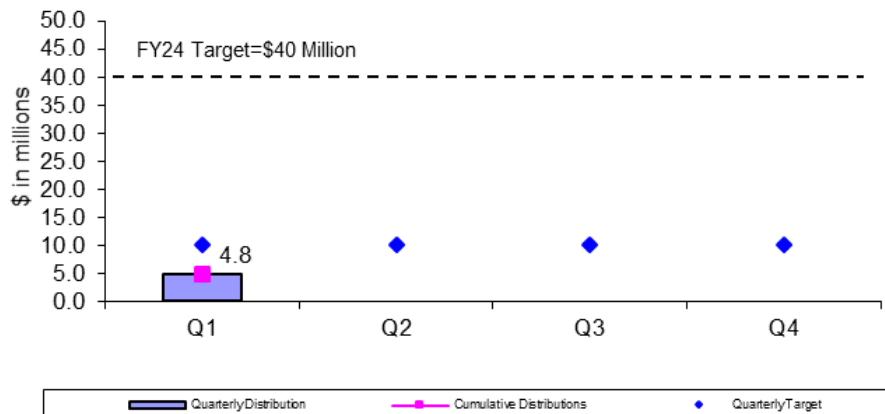
MWRA's Infiltration/Inflow (I/I) Local Financial Assistance Program provides \$860.75 million in grants and interest-free loans (average of about \$22 million per year from FY93 through FY30) to member sewer communities to perform I/I reduction and sewer system rehabilitation projects within their locally-owned 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 1st Quarter of FY24, \$4.8 million in financial assistance (grants and interest-free loans) was distributed to fund local sewer rehabilitation projects in Hingham, Lexington, Milton and Woburn. Total grant/loan distribution to date for FY24 is \$4.8 million. From FY93 through the 1st Quarter of FY24, all 43 member sewer communities have participated in the program and \$536 million has been distributed to fund 668 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.

### FY24 Quarterly Distributions of Sewer Grant/Loans



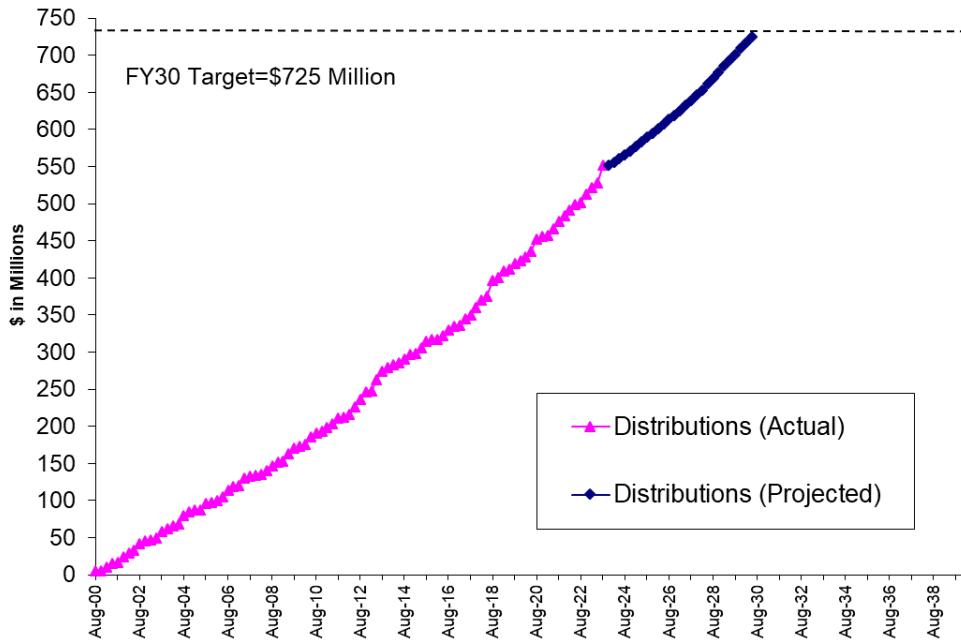
# Community Support Programs

1<sup>st</sup> Quarter – FY24

## Local Water System Assistance Program

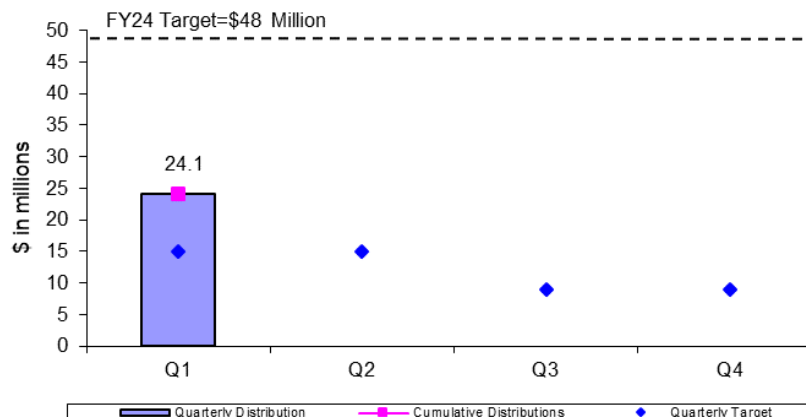
MWRA's Local Water System Assistance Programs (LWSAP) provides \$725 million in interest-free loans (an average of about \$24 million per year from FY01 through FY30) to member water communities to perform water main rehabilitation projects within their locally-owned water distribution systems. There 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 1<sup>st</sup> Quarter of FY24, \$24.1 million in interest-free loans was distributed to fund local water projects in Belmont, Chicopee, Malden, Norwood, Quincy, Saugus, Somerville, and Woburn. Total loan distribution to date for FY24 is \$24.1 million. From FY01 through the 1<sup>st</sup> Quarter of FY23, \$552 million has been distributed to fund 526 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.

### FY24 Quarterly Distributions of Water Loans





# Community Support Programs

1<sup>st</sup> Quarter – FY24

## 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, \$36.3 million dollars have been distributed to 15 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.

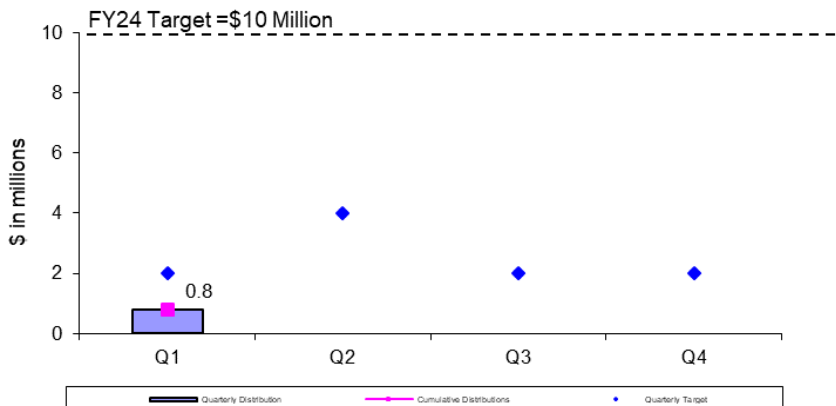
FY23 is the seventh year in the Lead Loan Program - MWRA has made six Lead Loans.

FY24 is the eighth year in the Lead Loan Program - MWRA has made two Lead Loans in the first quarter.

Summary of Lead Loans:

Watertown in FY24	\$0.3 Million	Winthrop in FY20	\$0.7 Million
Malden in FY24	\$0.5 Million	Weston in FY20	\$0.2 Million
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	<u>Winchester in FY17</u>	<u>\$0.5 Million</u>
Boston in FY21	\$2.6 Million	<b>TOTAL</b>	<b>\$36.3 Million</b>
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		

### FY24 Quarterly Distributions of Lead Service Line Replacement Loans

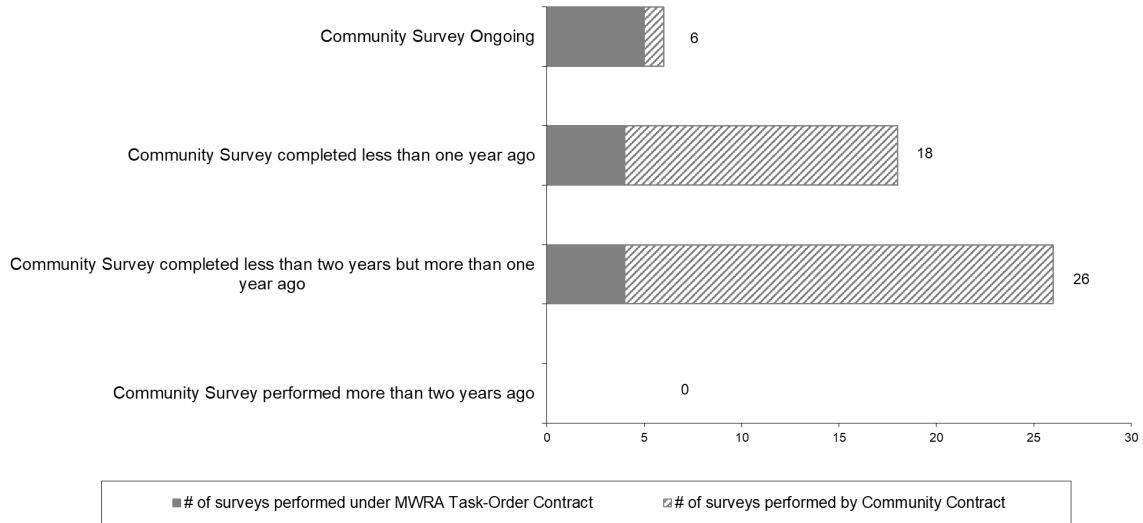


# Community Support Programs

1<sup>st</sup> Quarter – FY24

## 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 1<sup>st</sup> Quarter of FY24, 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	357				357
Low-Flow Fixtures (showerheads and faucet aerators)	10,000	1,175				1,175
Toilet Leak Detection Dye Tablets	_____	1,065				1,065

## BUSINESS SERVICES

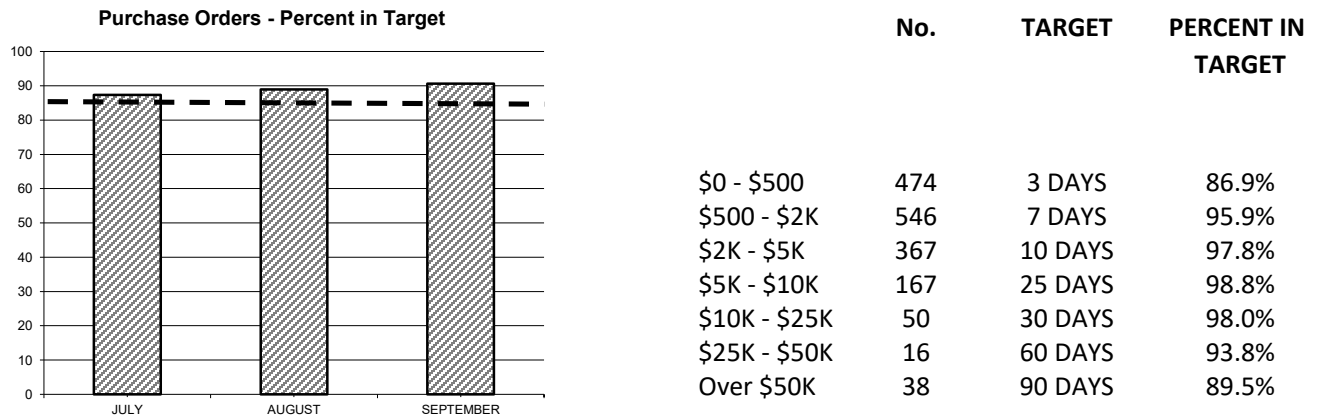
# Procurement: Purchasing and Contracts

1<sup>st</sup> Quarter - FY24

**Background:** Goal is to process 85% of Purchase Orders and 80% of Contracts within Target timeframes.

**Highlights:** Processed 94% of purchase orders within target; Average Processing Time was 5.05 days vs. 5.66 days in Qtr 1 of FY23. Processed 70% (7 of 10) of contracts within target timeframes; Average Processing Time was 149 days vs. 264 days in Qtr 1 of FY23.

## Purchasing



The Purchasing Unit processed 1658 purchase orders, 4 less than the 1662 processed in Qtr 1 of FY23 for a total value of \$25,743,025 versus a dollar value of \$23,371,557 in Qtr 1 of FY23.

The purchase order processing target was met for all categories.

## Contracts, Change Orders and Amendments

Procurement executed ten contracts with a value of \$25,743,025 and five amendments with a value of \$1,154,643. Three contracts were not executed within the target timeframe. One contract was delayed due to discussions between the MWRA and the consultant regarding contract terms. Another contract was delayed due to the need for several addendas. Also, the staff summary required additional background information. The final contract was not executed within the target time frame due to additional procurement requirements necessary for insurance services. Insurance for all categories of coverage was obtained timely and according to schedule.

Staff reviewed 60 proposed change orders and 26 draft change orders.

Twenty six change orders were executed during the period. The dollar value of all non-credit change orders during Qtr 1 of FY24 was \$929,819 and the value of credit change orders was (\$1,028,430).

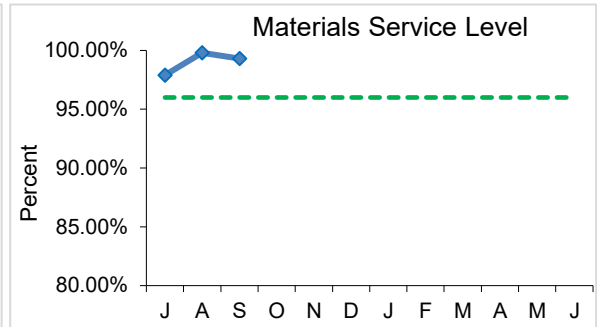
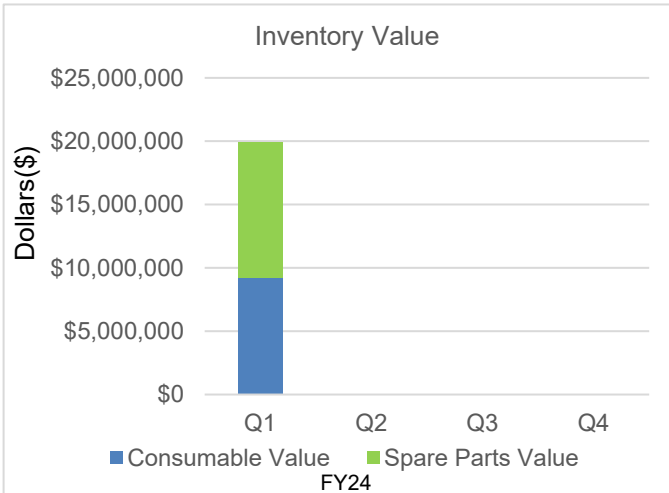
## Materials Management

### 1<sup>st</sup> Quarter - FY24

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:

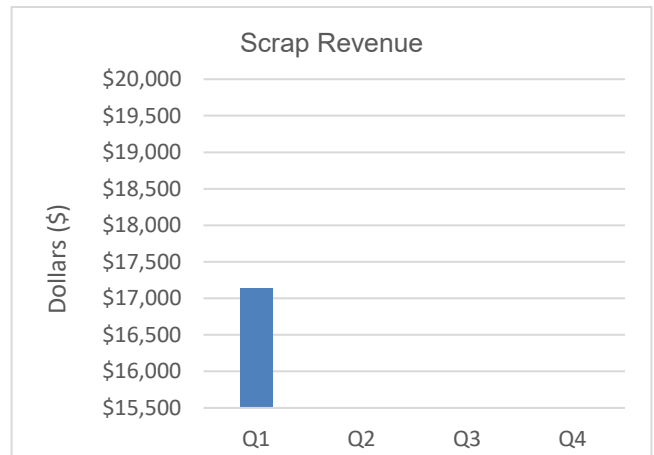
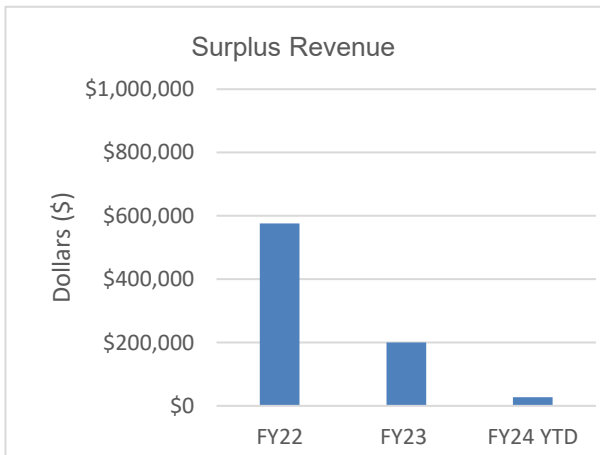
- Maintaining optimum levels of consumables inventory (office supplies, electrical, safety, etc.) and spare parts inventory (critical items such as actuators, motors, muffin monsters, etc.) necessary to support MWRA Operations and Maintenance. Typically spare parts carry longer lead times.
- Adding new 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 6,957 (99.2%) of the 7,015 items requested in Q1 from the inventory locations for a total dollar value of \$528,871.

Property Pass Program:

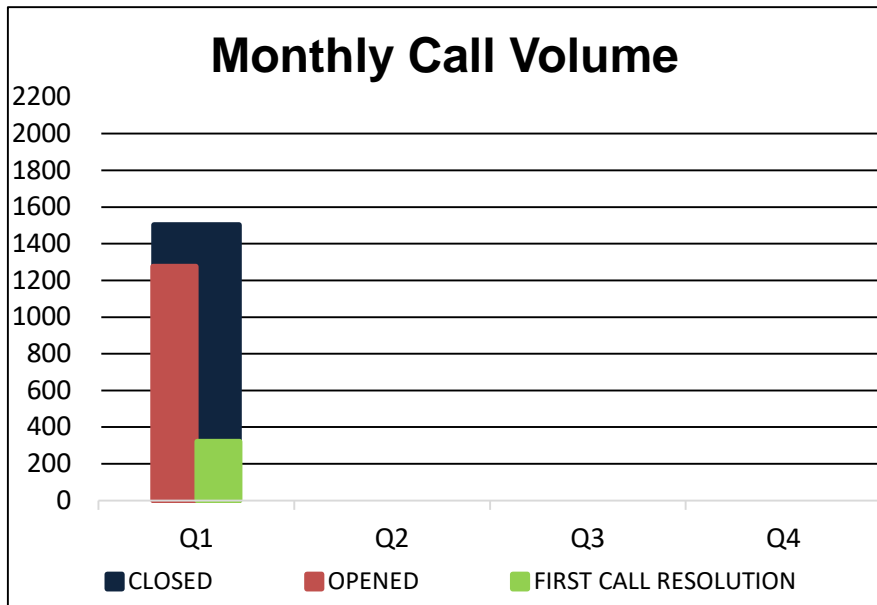
- Conducts audits of tools and equipment to ensure the safeguarding of MWRA assets.
- Manages the disposition and sale of surplus tools and equipment through GovDeals, an online auction site.
- Manages the surplusing of scrap metals and materials generating revenue to the MWRA staff.



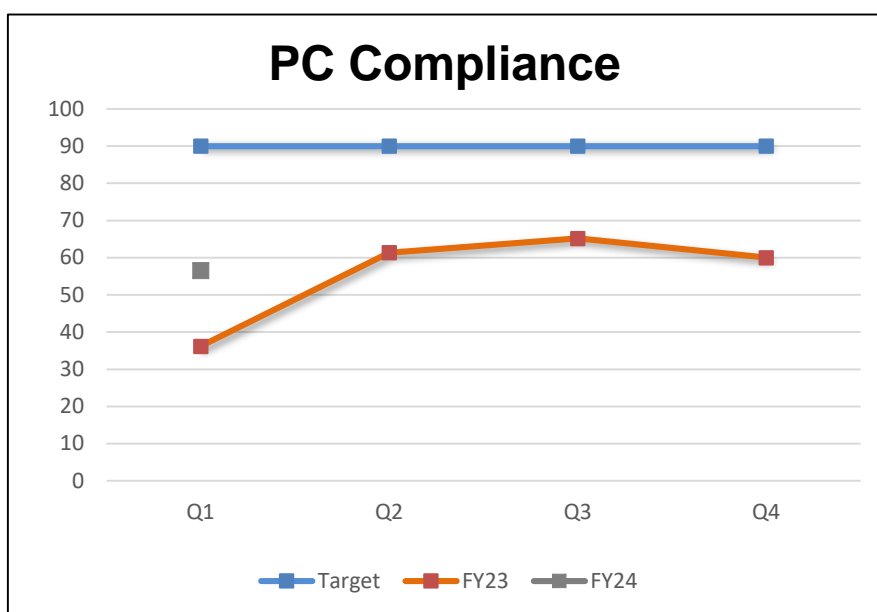
# MIS Program

1<sup>st</sup> Quarter – FY24

## Numbers & Statistics



Summary of calls managed by the Helpline.



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:** Continued identification and reporting of the new cabling issues at Chelsea and DI. Configured, and installed Switches at RT building. Addressed printer and configured ports for printer new locations.

**Network Resiliency Improvements:** Added new internet circuits and firewalls to improve the access for remote sites and enhance resiliency to network services such as phone services, Webex and internet access. Cosgrove completed in August.

**VMWare Workspace ONE:** Smartphone users migrated to the new solution for email access on mobile devices.

**Conference Room Media Upgrades:** Moving all conference rooms to new MWRA meeting standard. 13 of 16 conference rooms have been upgraded across the Authority. The remaining rooms are awaiting procurement of additional media kits.

**Distributed Antenna System:** The vendor completed the installation of the 4 new casa efemtos at Deer Island and integrated into the Mobile Access DAS.

**Security Awareness Training:** Curriculum for next round of annual training being developed.

**PICS PI Virtualization:** Completed the update to the PI DITP System. This update virtualized the server and streamlined backups

### Library, Record Center, & Training

**Library:** Undertook 18 research requests, supplied books and reports for circulation, provided access to 57 new books/reports and 17 new standards (aside from subscriptions), The MWRA Library Portal supported 470 end user searches. Research topics included: floatables control, national cso data, and historic data on Alewife brook.

**Record Center (RC):** The Record Center added 47 new boxes and handled a total of 230 boxes during the first quarter of the FY. It shredded eight, 65-gallon and four, 96-gallon bins of confidential documentation onsite and researched 84 topics for various departments. Research included database and physical box searches and was looking for topics related to administrative information, staff summaries, Law research and project related information.

**MIS Training:** In Q1, 5 online IT lessons were taken by 62 employees.

## Applications

**ECM/Electronic Document Management:** Successfully migrated all of DITP base drawings into the staging environment in preparation for User Acceptance Testing. Began User Acceptance Testing for all Engineering and Construction workflows. Go-live planned for mid November.

**MWRA Website Refresh:** Met, finalized, and signed off on the design proposal for the new website. Vendor has been working to build out the new website based on that approved design. Will meet in October to begin the process of migrating the information on our current website into our new website.

**Infor Upgrade/Migration:** A contractor was selected for the Infor application upgrade and migration project. The contract was signed and MIS staff is working with RPI to finalize the project details and timeline, with an anticipated October start.

**Maximo/Lawson Interface:** MIS and the contractor completed requirements discussions for the MIS Storeroom and the Service Contracts. Currently unit testing the development work that the vendor completed on the interface touchpoints. User Acceptance Testing is planned to start in October with a production implementation to follow.

**Discoverer to Business Objects Enterprise (BOE) Migration:** The largest phase of the project (report conversions) is complete. Currently verifying the converted reports and migrating them into production. Training is currently being planned for November.

**Trimble Unity:** MIS and the Metering department configured and tested the Trimble Unity remote monitoring application for external user access.

**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**  
1<sup>st</sup> Quarter - FY24

**PROJECT ASSISTANCE - 1st Quarter FY 2024**

**Real Estate, Contract, Energy, Environmental and Other Support:**

- **8(m) Permits and License Agreements:** Reviewed one hundred nine (109) 8(m) permits, including any related MEPA Section 61 Findings. Drafted license for antenna and related equipment at the Chelsea Creek Headworks facility for emergency management services. Finalized public access 8(m) permit.
- **Real Property:** Drafted thirteen (13) notice of offer letters, revised three based on new information from property owners, and drafted seven (7) licenses for the acquisition of certain property rights to support MWRA's Siphon Junction Rehabilitation Project. Drafted three (3) notice of offer letters related to the acquisition of certain property rights for MWRA's Northern Intermediate High Section 89 Pipeline. Reviewed property rights for WASM 3. Reviewed and authorized a watershed real property acquisition project by the Department of Conservation and Recreation. Researched property rights for Metropolitan Water Tunnel Program and prepared license and access letters for survey and boring work. Researched MetroWest Water Supply Tunnel Project's special legislation, appraisal methodology, property acquisitions and compensation process. Finalizing conveyancing documents for 12 Cleverly Court, Quincy in accordance with Section 88 of Chapter 28 of the Acts of 2023.
- **Energy:** Provided ongoing counsel and support for energy team and other MWRA divisions regarding energy related issues, including electric vehicle infrastructure charging equipment and a potential solar canopy array.
- **Environmental/NPDES:** Provided ongoing counsel and support to ENQUAL and other MWRA divisions regarding NPDES and other environmental related issues, including: preparation of comments regarding U.S. Senate Environment and Public Works Committee Draft PFAS Legislation; memorandum of agreement regarding Quinapoxet Dam project; preparation of Cottage Farm Facility Second Interim Measure Status Report for filing with EPA; solicitation and draft contractor agreement for Pellet Plant; and closeout documents associated with a Combined Sewer Overflow Control Program memorandum of understanding and financial assistance agreement with a member community.
- **Miscellaneous:** Researched Public Lands Preservation Act for disposition of property interests for Metropolitan Water Tunnel Program. Provided guidance on MWRA's acceptance of a new 71 foot tower, generator and related equipment at Nash Hill Reservoir site, along with the Town of Ludlow's 8(m) application for operation and maintenance of its antenna and radio equipment on the new tower. Prepared correspondence in connection with the procurement of a disparity study. Finalized revisions to renewable energy supply contract concerning parental guarantee and release agreement. Finalized MWRA policies for Physical and Environmental Security, and Visitor Management. Finalized settlement documents relating to claims on a construction project.

- **Public Records Requests:** MWRA received and responded to one hundred sixty five (165) 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 MWRA's electronic content management system. Approved documents for submission to Records Conservation Board for disposition.

## LITIGATION/CLAIMS - 1st Quarter FY 2024

### New Lawsuits

- In re: Yellow Corporation, et al.; United States Bankruptcy Court (Delaware), Case No. 23:11069-CTG. Law Division received a Notice of Deadlines for filing proof of claim in a Ch. 11 bankruptcy matter.

### New Claims:

- Massachusetts Natural Fertilizer Company et. al., – Notice of Potential Liability. In July, 2023, the Authority received a Notice of Potential Liability pursuant to M.G.L. c. 21E from Massachusetts Natural Fertilizer Co., Inc., ("Mass Natural"), Otter Farm, Inc. and The Newark Group (collectively, "Claimants"). The notice asserts there was a release of certain per- and polyfluoroalkyl substances (generally, "PFAS") in the vicinity of Bean Porridge Hill Road, Westminster, Massachusetts, identified by MassDEP Tracking Number 2-21866, and that MassDEP issued notices of responsibility to, among others, the Claimants. The notice alleges that testing of nearby private wells has identified PFAS at levels that exceed the drinking water Maximum Contaminant Level for PFAS and the Applicable Imminent Hazard Levels for PFAS as established by the Massachusetts Contingency Plan. The notice alleges that the Authority is a source of the release. The notice alleges that materials originating at MWRA's Deer Island facility and processed into biosolids at MWRA's Fore River Pelletizing Plant by the plant operator, New England Fertilizer Company ("NEFCO"), were delivered to Mass Natural and that the biosolids were determined to contain PFAS. In addition to an indemnity for future claims, the Claimants are seeking reimbursement from the Authority for forty percent of their past and future response costs and any other liability under Chapter 21E and all real and personal property damage suffered as a result of the release of PFAS. As of the date of the notice, the Claimants allege that they had incurred in excess of \$3.5 million in costs and damages. In addition, they maintain that they are not in a position to provide a firm estimate of the total anticipated remedial costs, but those costs "may be in the range of \$30-50 million" according to the notice. The Authority responded to the notice, contesting liability. Although the Authority asserted that it is not liable, it indicated in its response that it would participate in good faith in Chapter 21E's required negotiation process and requested certain information necessary to further inform the process. NEFCO has confirmed that, under its contract with the Authority, it is required to defend and indemnify the Authority against the claims.

### Significant Developments:

- (Current employee) v. MWRA, et al.; Suffolk Superior Court C.A. No. 284CV01434. Mediation was held on July 11, 2023. Mediation did not result in settlement and discovery will continue.
- 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 was served with the Complaint on July 11 and MWRA's Answer was filed and served on July 31, 2023. In September, this matter was transferred to the Business Litigation Section of the Suffolk Superior Court.

- MWRA v. Department of Unemployment Assistance and (former MWRA employee), Chelsea District Court, 2314CV180. The Court allowed MWRA's Motion for Judgment on the Pleadings and reversed the DUA's decision, ordering the entry of a finding of ineligibility. The DUA has 60 days to appeal, which expires on October 10, 2023.

**Closed Lawsuits:**

- There are no Closed lawsuits to report.

**Closed Claims:**

- Jorge Amaya MVA claim: settled for \$7,950, the release is signed and the matter is closed.

**Subpoenas:**

- There are no new subpoenas received and no subpoenas that closed in 1<sup>st</sup> Quarter FY 2024.

**Wage Garnishments**

- There is one wage garnishment matter that is active and monitored by Law Division

**SUMMARY OF PENDING LITIGATION MATTERS**

<b>TYPE OF CASE/MATTER</b>	<b>As of Sept 2023</b>
Construction/Contract/Bid Protest	1
Tort/Labor/Employment	4
Environmental/Regulatory/Other	2
Eminent Domain/Real Estate	0
<b>TOTAL</b>	<b>7</b>
Other Litigation matters (restraining orders, etc.) - Class Action suit	1
<b>TOTAL – all pending lawsuits</b>	<b>8</b>
Claims not in suit	1
Bankruptcy	3
Wage Garnishment	1
TRAC/Adjudicatory Appeals	2
Subpoenas	0
<b>TOTAL – ALL LITIGATION MATTERS</b>	<b>15</b>

## TRAC Appeals/MISC.

**Pending Appeals:** There are two pending Administrative Appeals:

- 1058 Beacon Street; MWRA Docket No. 22-10
- Tri-Town Regional Water District; MWRA Docket No. 23-03

### **Settlement by Agreement of Parties**

There were two Settlements by Agreement of Parties in 1<sup>st</sup> Quarter FY 2024.

- Indigo Hotel Boston Garden; MWRA Docket No. 23-02
- Tradebe Treatment and Recycling of Stoughton, LLC; MWRA Docket No. 23-01

### **Stipulation of Dismissal**

There were no Stipulations of Dismissal in 1<sup>st</sup> Quarter FY 2024.

### **Notice of Dismissal Fine paid in full**

No Notices of Dismissal, Fines Paid in Full in 1<sup>st</sup> Quarter FY 2024.

### **Tentative**

No Decisions were issued in 1<sup>st</sup> Quarter FY 2024.

### **Final Decisions**

No Final Decisions were issued in 1<sup>st</sup> Quarter FY 2024.

## LABOR AND EMPLOYMENT – 1st Quarter FY 2024

### **New Matters**

- A Union filed a request for arbitration after the MWRA denied a grievance alleging that MWRA filled shift vacancies with staff out of classification and out of the bargaining unit before members of the bargaining unit in the same classification.
- A Union filed a request for arbitration after the MWRA denied a grievance asserting that the MWRA should have offered the Grievant an overtime shift on a Saturday.
- A Union filed a charge of prohibited practice at the Department of Labor Relations, alleging that the MWRA unilaterally altered working conditions when it filled an open position with an employee in an acting roll.

## **Significant Developments**

- An arbitrator dismissed a grievance in which a Union asserted that the grievant worked out of grade, performing the duties of a position covered by a different collective bargaining unit, without appropriate compensation, allowing the Union to re-file the grievance. The Union sought clarification of the arbitrator's decision under M.G.L. c. 150C, § 8.

## **Matters Concluded**

- An arbitrator sustained a grievance in which a Union asserted that the MWRA should have paid grievants 4 hours of call back pay, rather than overtime for hours actually worked, when the MWRA scheduled an early start time due to expected inclement weather during the grievants' commutes to work.
- The District Court allowed MWRA's Motion for Judgment on the Pleadings, reversing the Department of Unemployment Assistance's Board of Review's earlier decision granting unemployment benefits to a former employee and finding that the former employee is ineligible for benefits.
- The Department of Labor Relations dismissed a union's charge of prohibited practice that alleged that MWRA violated the state labor relations law M.G.L. c. 150E, when it posted a position at Grade 19 rather than Grade 21.
- The Department of Unemployment Assistance modified its prior decision granting unemployment benefits to a former employee, determining that the former employee is not entitled to unemployment benefits.
- The Massachusetts Commission Against Discrimination dismissed a charge filed against MWRA alleging discrimination based upon age, sexual orientation, race and color.

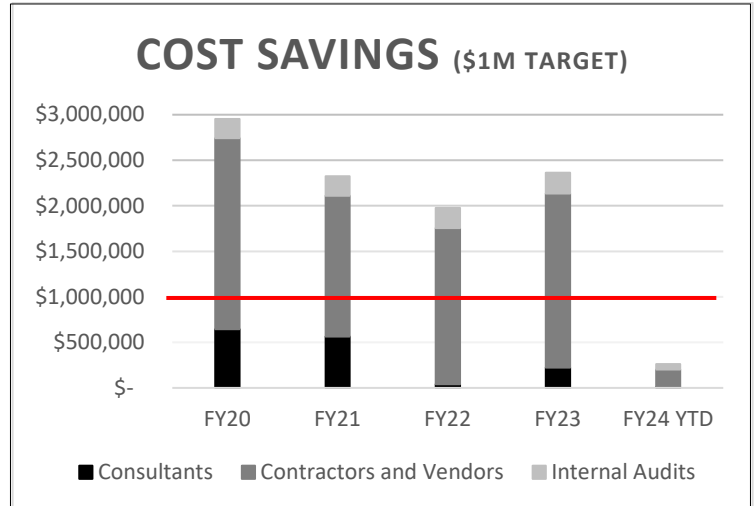
## INTERNAL AUDIT AND CONTRACT AUDIT ACTIVITIES

### 1<sup>st</sup> Quarter - FY24

#### Purpose

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.

Cost Savings	FY24 YTD
Consultants	\$8,050
Contractors and Vendors	\$194,181
Internal Audits	\$58,555
<b>Total</b>	<b>\$260,786</b>



#### Highlights

During the 1st quarter FY24, Internal Audit (IA) progressed on an audit of Accounts Payable Process controls and procedures and an audit of Payroll Process controls and procedures. A review of travel reimbursement (employee owned car usage) and an internal review of MIS assets is progressing.

In addition, IA completed 3 incurred cost audits, 3 labor burden reviews, and 3 consultant preliminary reviews. There are 2 incurred cost audits, 3 labor burden reviews, and 1 consultant review in process. IA also issued 23 indirect cost rate letters to consultants following a review of their consultant disclosure statements.

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#### Status of Recommendations

During FY24, 2 recommendations were closed.

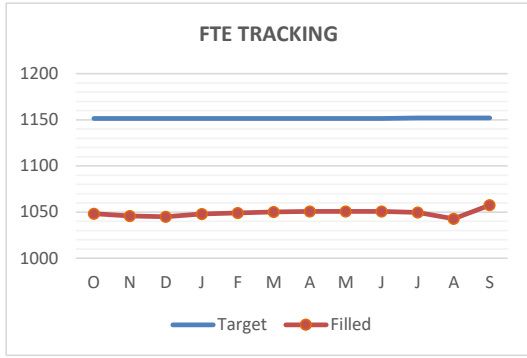
IA follows-up on open recommendations on a continuous basis. All open recommendations have target dates for implementation and are generally targeted to be closed within 12 months of the audit report issue date.

Report Title (issue date)	Audit Recommendations		
	Open	Closed	Total
Fleet Services Non-Plated Equipment Inspections (3/30/20)	0	15	15
Compliance Status of Employees' Mandatory Confined Space Entry Training (2/24/23)	0	4	4
Water and Wastewater Licenses and Certifications (3/31/23)	2	1	3
<b>Total Recommendations</b>	<b>2</b>	<b>20</b>	<b>22</b>

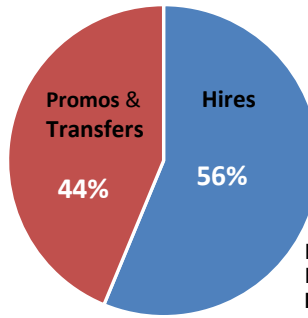
## OTHER MANAGEMENT

# Workforce Management

## 1<sup>st</sup> Quarter - FY24



### Position Filled by Hires/Promos & Transfer for YTD



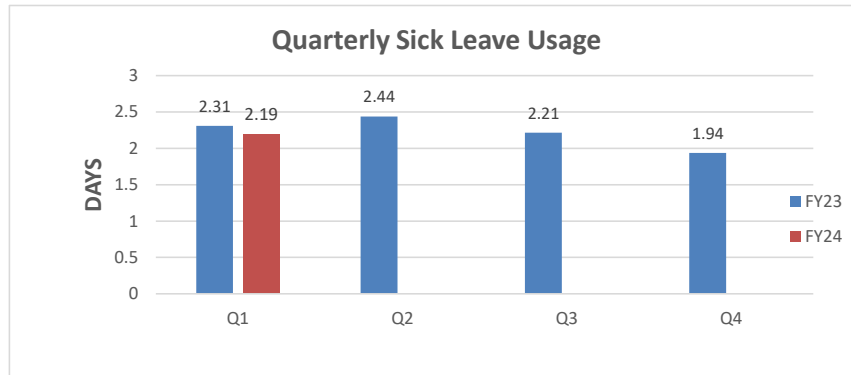
	<u>Pr/Trns</u>	<u>Hires</u>	<u>Total</u>
FY22	138 (68%)	65 (32%)	203
FY23	133 (59%)	91(41%)	224
<b>FY24</b>	<b>28 (44%)</b>	<b>36 (56%)</b>	<b>64</b>

FY24 Budget for FTEs = 1152  
 FTEs as of Sept = 1057.5  
 Tunnel Redundancy as of Sept 2023 = 9

### POSITION CHANGE by FY

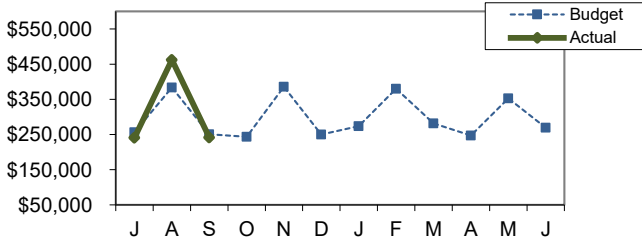
FY	HIRES	PROMOS	TRANSFER	RETIRE	RESIGN	DISMISS	DECEASED
FY20	58	70	14	38	23	2	1
FY21	64	66	15	58	15	2	2
FY22	65	108	30	82	45	2	3
FY23	91	118	15	46	31	5	5
<b>FY24*</b>	<b>36</b>	<b>25</b>	<b>3</b>	<b>20</b>	<b>9</b>	<b>2</b>	<b>1</b>

\* as of 9/30/2023

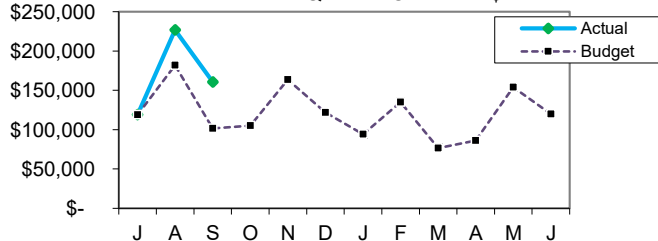


Average quarterly sick leave for the 1st Quarter of FY24 has decreased as compared to the 1st Quarter of FY23. (2.19 from 2.31)

### Field Operations First Qtr Overtime \$



### Deer Island Treatment Plant First Quarter Overtime \$



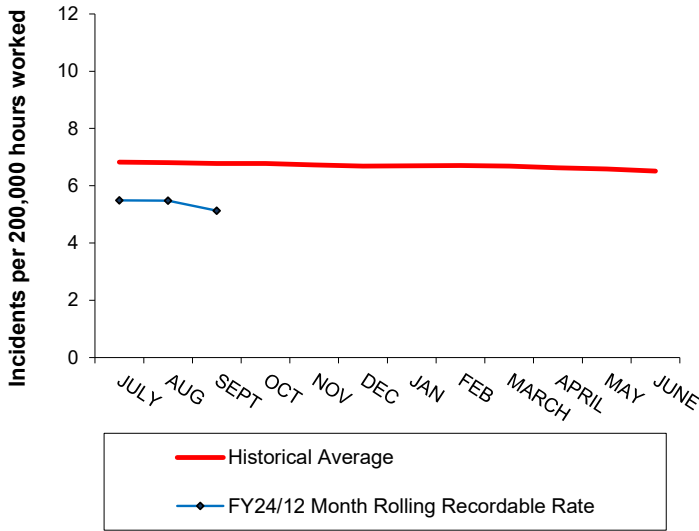
Total Overtime for FOD for 1st Quarter FY24 was \$945k which is \$54k over budget, or 6.1%. Emergency overtime was \$412k, or 43.5% of expended OT, primarily due to excessive rain events. Rain events totaled \$340k and Emergency Maintenance was \$74k. Coverage overtime was \$257k, which is 27% of the 1st Qtr OT, primarily due to vacant shift coverage requirements. Planned overtime was \$276k.

Deer Island's total overtime expenditure first quarter was \$507K, which is \$104K or 25.9% over budget due to higher than anticipated shift coverage of \$140K. This is offset by lower than anticipated planned/unplanned overtime of (\$19K) and storm coverage of (\$16K).

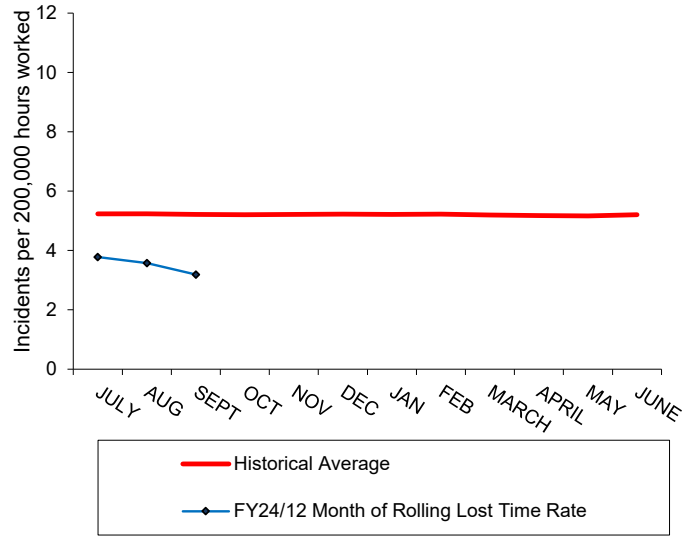
# Workplace Safety

## 1<sup>st</sup> Quarter - FY24

**Recordable Injury & Illness Rates**



**Lost Time Injury & Illness Rates**

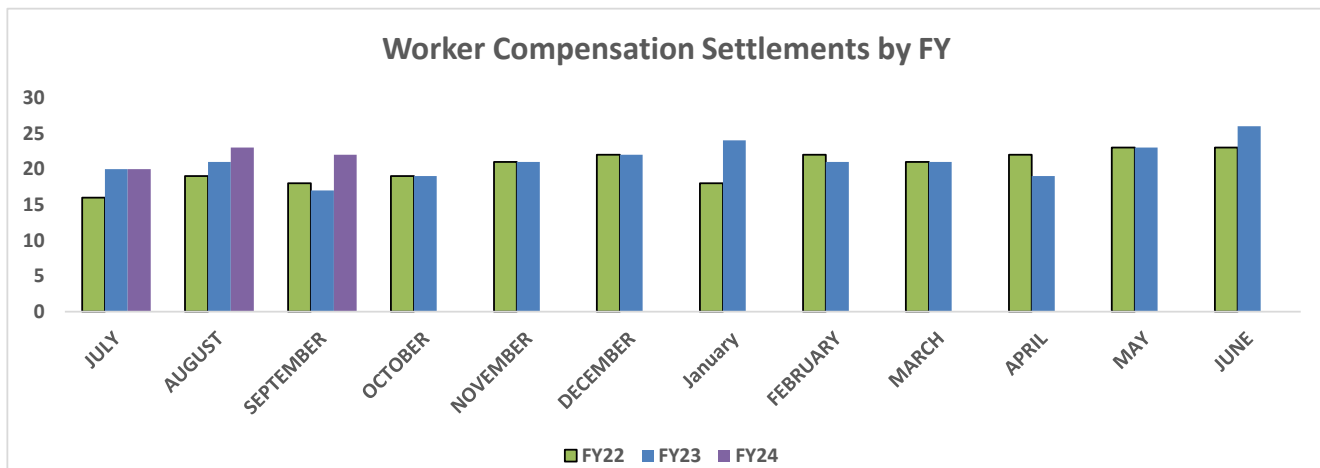


- 1 "Recordable" incidents are all work-related injuries and illnesses which result in death, loss of consciousness, restriction of work or motion, transfer to another job, or require medical treatment beyond first aid. Each month this rate is calculated using the previous 12 months of injury data.
- 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 FY03 through FY24

### **WORKERS COMPENSATION HIGHLIGHTS**

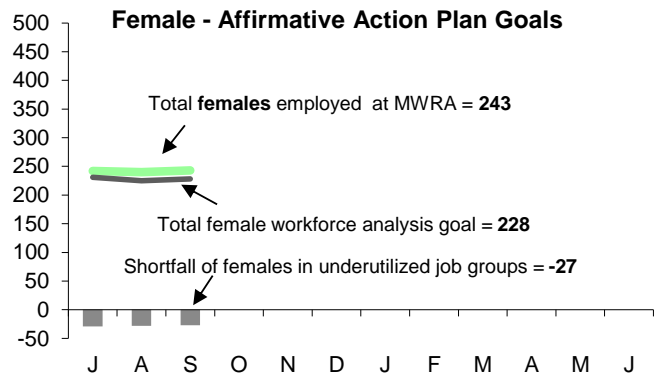
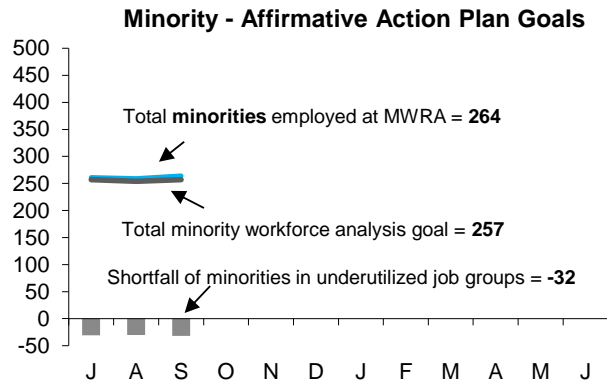
	1st Quarter Information		Open Claims
	New	Closed	
Lost Time	3	14	35
Medical Only	12	13	111
Report Only	15	17	
	QYTD		FYTD
Regular Duty Returns	3		3
Light Duty Returns	0		0
Indemnity payments as of October 2023 included in open claims listed			22

**Worker Compensation Settlements by FY**



# MWRA Job Group Representation

1<sup>st</sup> Quarter - FY24



### Highlights:

At the end of Q1 FY24, 7 job groups or a total of 32 positions are underutilized by minorities as compared to 4 job groups for a total of 20 positions at the end of Q1 FY23; for females 6 job groups or a total of 27 positions are underutilized by females as compared to 8 job groups or a total of 29 positions at the end of Q1 FY23. During Q1, 9 minorities and 9 females were hired. During this same period 4 minorities and 9 females were terminated.

### Underutilized Job Groups - Workforce Representation

Job Group	Employees as of 9/30/2023	Minorities as of 9/30/2023	Achievement Level	Minority Over or Underutilized	Females As of 9/30/2023	Achievement Level	Female Over or Underutilized
Administrator A	25	4	2	2	11	6	5
Administrator B	24	3	5	-2	7	7	0
Clerical A	22	7	4	3	18	16	2
Clerical B	22	6	5	1	3	11	-8
Engineer A	81	18	21	-3	22	21	1
Engineer B	59	21	17	4	15	14	1
Craft A	111	18	25	-7	0	6	-6
Craft B	125	25	27	-2	1	5	-4
Laborer	61	15	17	-2	5	3	2
Management A	88	19	22	-3	32	25	7
Management B	37	11	10	1	5	9	-4
Operator A	64	3	16	-13	4	7	-3
Operator B	59	20	9	11	3	2	1
Professional A	28	8	7	1	15	13	2
Professional B	160	48	47	1	71	51	20
Para Professional	48	18	11	7	24	23	1
Technical A	51	17	11	6	7	9	-2
Technical B	4	3	1	2	0	0	0
<b>Total</b>	<b>1069</b>	<b>264</b>	<b>257</b>	<b>39/-32</b>	<b>243</b>	<b>228</b>	<b>42/-27</b>

### 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	Deputy Dir, Procurement	1	Int.	1	0	PROMO = AF
Engineer A	Sr Engineer	1	Ext.	0	0	NH = WM
Engineer A	Program Manager, Electrical	1	Ext.	0	0	NH = WM
Craft A	M & O Specialist	3	Int./Ext.	2	0	NH=WM,PROMO=2WM
Craft A	OMC Laborer in Training	1	Ext.	0	0	NH = HM
Craft A	Sr WDS Foreman	1	Int.	1	0	PROMO = BM
Craft B	Master Welder I	1	Ext.	0	0	NH = WM
Craft B	Electrician	2	Ext.	0	0	NH = 1WM, 1HM
Craft B	Facilities Specialist	2	Ext.	0	0	NH = 2WM
Craft B	Junior Instrument Technician	2	Ext.	0	0	NH=WM,PROMO=WM
Laborer	OMC Laborer	7	Ext.	0	0	NH=5WM, 1WF, 1HM
Laborer	Building/Grounds Worker	3	Ext.	0	0	NH=1WM, 1WF, 1HM
Management A	Warehouse Manager	1	Int.	1	0	PROMO = WF
Management B	Area Manager	1	Int.	1	0	PROMO = WM
Operator A	Area Supervisor	2	Ext.	0	0	NH = 1WM, 1WF
Operator A	Transmission & Treatment Opera	1	Int.	1	0	PROMO= WM
Technical A	Data Analyst	46	Ext.	0	0	NH = WF



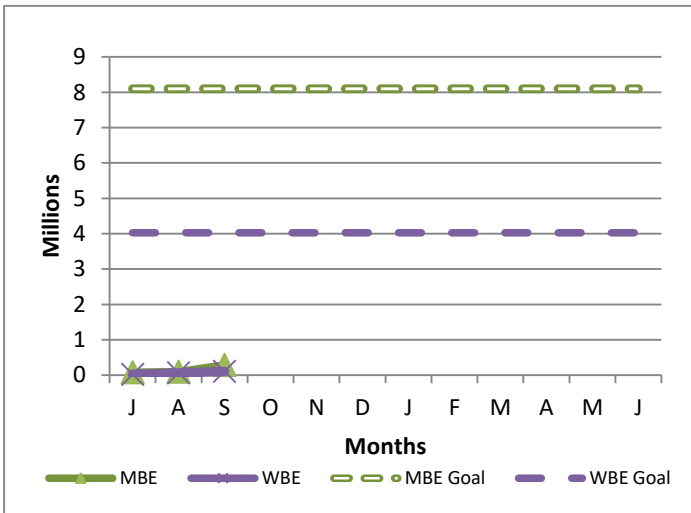
## MBE/WBE Expenditures

1<sup>st</sup> Quarter - FY24

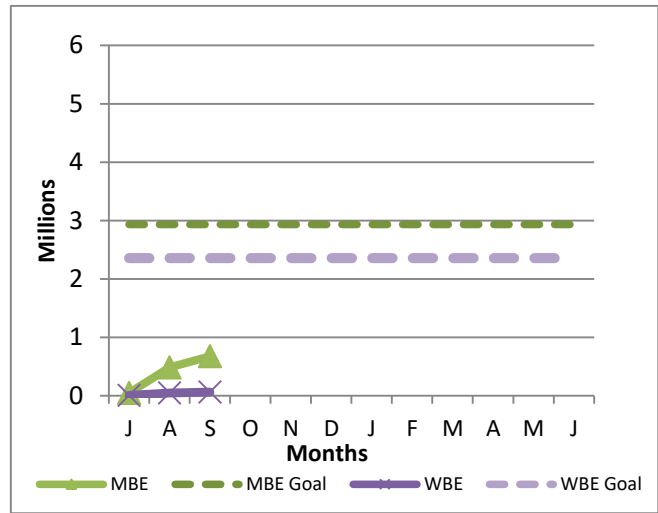
MBE/WBE targets are determined based on annual MWRA expenditure forecasts in the procurement categories noted below. The goals for FY24 are based on 85% of the total construction and 75% of the total professional projected spending for the year. Certain projects have been excluded from the goals as they have no MBE/WBE spending goals.

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 September.

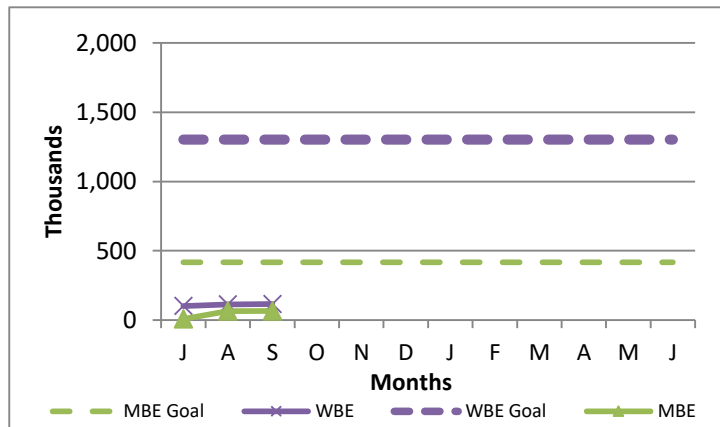
### Construction



### Professional Services



### Goods/Services



FY24 spending and percentage of goals achieved, as well as FY23 performance are as follows:

MBE			
FY24 YTD		FY23	
Amount	Percent	Amount	Percent
290,286	3.8%	2,808,124	34.7%
674,210	14.7%	2,794,126	95.3%
65,616	16.1%	69,250	16.6%
<b>1,030,112</b>	<b>8.1%</b>	<b>5,671,500</b>	<b>49.6%</b>

WBE			
FY24 YTD		FY23	
Amount	Percent	Amount	Percent
106,025	2.8%	4,927,964	95.3%
61,424	1.7%	1,220,172	51.8%
115,082	8.4%	174,521	13.4%
<b>282,531</b>	<b>3.2%</b>	<b>6,322,657</b>	<b>82.3%</b>

Construction  
Prof Svcs  
Goods/Svcs  
**Totals**

FY24 MBE/WBE dollar totals do not include MBE and WBE payments to prime contractors and consultants.

# MWRA FY24 CEB Expenses

## 1<sup>st</sup> Quarter – FY24

As of September 2023, total expenses are \$200.9 million, \$6.9 million or 3.3% lower than budget, and total revenue is \$218.9 million, \$1.4 million or 0.7% over the estimate, for a net variance of \$8.3 million.

### Expenses –

**Direct Expenses** are \$67.7 million, \$5.8 million or 7.9% under budget.

- **Wages & Salaries** are \$3.3 million under budget or 11.6%. Regular pay is \$3.3 million under budget, due to lower head count, and timing of backfilling positions. YTD through September, the average Full Time Equivalent (FTE) positions was 1,059, 109 below the 1,168 FTE's budgeted.
- **Ongoing Maintenance** expenses are \$1.5 million under budget or 12.5% due to the actual timing of projects.
- **Fringe Benefits** expenses are \$761k under budget or 12.0%, primarily due to under spending for Healthcare Insurance of \$634k, reflecting the lower than budget head count. As of September, FTEs were 109 below budget.
- **Professional Services** expenses are \$723k under budget or 28.9%, primarily due to lower Other Professional Services of \$307k, lower Legal expense of \$148k, and Computer Consultant of \$129k.
- **Utilities** expenses are over budget by \$550k or 8.5%. This reflects higher spending on Electricity of \$483k, 8.3% over budget. Spending at Deer Island Treatment Plant (DITP) was \$339k above budget due to higher demand usage charges due to the many rain events and higher real time pricing on the supply contract. Electricity in Field Operations was greater than budget by \$97k due to higher use than budget.
- **Other Materials** are \$540k over budget or 47.0%, due to overspending for computer hardware \$304K and vehicle expense of \$165k primarily due to timing of installation of electrical vehicle chargers.
- **Chemicals** are \$486k under budget or 7.3% due to lower spending for Sodium Hypochlorite of \$336k under budget due to lower contract pricing for Water Operations of \$572k, partially offset by DITP of \$262k due to additional usage for disinfection and odor control given higher flows. In addition, spending for Carbon Dioxide was under budget by \$137k due to lower deliveries. Overspending on Ferric Chloride of \$178k was driven by DITP to keep the orthophosphate levels in the digesters at the desired level. DITP flows are 21.4% greater than the budget and CWTP flows are 6.2% less than the budget through September.

**Indirect Expenses** are \$25.2 million, \$447k or 1.7% under budget due primarily to lower Watershed Reimbursement of \$497k.

**Capital Finance Expenses** totaled \$108.0 million, \$644k under budget or 0.6%. The positive variance was a result of lower than budget variable interest expense of \$644k due to lower interest rates.

### Revenue and Income –

**Total Revenue and Income** is \$218.9 million, \$1.4 million or 0.7% over the estimate. The favorable variance was driven by Investment Income of \$6.7 million, \$1.6 million or 30.2% over the budget due to higher than budget interest rates.

	Sep 2023 Year-to-Date			
	Period 3 YTD Budget	Period 3 YTD Actual	Period 3 YTD Variance	%
<b>EXPENSES</b>				
WAGES AND SALARIES	\$ 28,098,801	\$ 24,837,402	\$ (3,261,399)	-11.6%
OVERTIME	1,459,281	1,586,433	127,152	8.7%
FRINGE BENEFITS	6,341,629	5,580,480	(761,149)	-12.0%
WORKERS' COMPENSATION	536,099	542,695	6,596	1.2%
CHEMICALS	6,696,321	6,210,059	(486,262)	-7.3%
ENERGY AND UTILITIES	6,511,238	7,061,712	550,474	8.5%
MAINTENANCE	11,809,266	10,331,150	(1,478,116)	-12.5%
TRAINING AND MEETINGS	123,660	33,455	(90,205)	-72.9%
PROFESSIONAL SERVICES	2,505,416	1,782,356	(723,060)	-28.9%
OTHER MATERIALS	1,149,343	1,689,490	540,147	47.0%
OTHER SERVICES	8,260,673	8,061,236	(199,437)	-2.4%
<b>TOTAL DIRECT EXPENSES</b>	<b>\$ 73,491,727</b>	<b>\$ 67,716,468</b>	<b>\$ (5,775,262)</b>	<b>-7.9%</b>
INSURANCE	\$ 1,016,345	\$ 1,066,446	\$ 50,101	4.9%
WATERSHED/PILOT	4,518,943	4,021,583	(497,360)	-11.0%
HEEC PAYMENT	1,699,632	1,699,632	-	0.0%
MITIGATION	444,772	444,772	-	0.0%
ADDITIONS TO RESERVES	1,965,259	1,965,259	-	0.0%
RETIREMENT FUND	15,972,804	15,972,804	-	0.0%
POST EMPLOYEE BENEFITS	-	-	-	---
<b>TOTAL INDIRECT EXPENSES</b>	<b>\$ 25,617,755</b>	<b>\$ 25,170,495</b>	<b>\$ (447,258)</b>	<b>-1.7%</b>
STATE REVOLVING FUND	\$ 20,460,231	\$ 20,460,231	\$ -	0.0%
SENIOR DEBT	71,273,286	71,273,286	-	0.0%
DEBT SERVICE ASSISTANCE	(1,187,297)	(1,187,297)	-	0.0%
CURRENT REVENUE/CAPITAL	-	-	-	---
SUBORDINATE MWRA DEBT	17,257,308	17,257,308	-	0.0%
LOCAL WATER PIPELINE CP	-	-	-	---
CAPITAL LEASE	804,265	804,265	-	0.0%
VARIABLE DEBT	-	(655,369)	(655,369)	---
DEFEASANCE ACCOUNT	-	-	-	---
DEBT PREPAYMENT	-	-	-	---
<b>TOTAL CAPITAL FINANCE EXPENSE</b>	<b>\$ 108,607,793</b>	<b>\$ 107,952,424</b>	<b>\$ (655,369)</b>	<b>-0.6%</b>
<b>TOTAL EXPENSES</b>	<b>\$ 207,717,275</b>	<b>\$ 200,839,387</b>	<b>\$ (6,877,889)</b>	<b>-3.3%</b>
<b>REVENUE &amp; INCOME</b>				
RATE REVENUE	\$ 208,567,000	\$ 208,567,000	\$ -	0.0%
OTHER USER CHARGES	2,952,059	2,925,466	(26,593)	-0.9%
OTHER REVENUE	727,035	614,627	(112,408)	-15.5%
RATE STABILIZATION	76,371	76,371	-	0.0%
INVESTMENT INCOME	5,172,290	6,732,860	1,560,570	30.2%
<b>TOTAL REVENUE &amp; INCOME</b>	<b>\$ 217,494,755</b>	<b>\$ 218,916,324</b>	<b>\$ 1,421,569</b>	<b>0.7%</b>

# Cost of Debt

## 1<sup>st</sup> Quarter – FY24

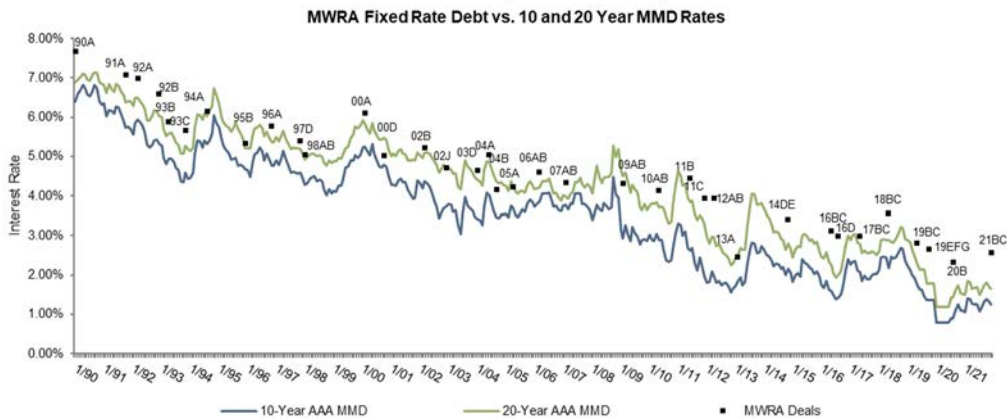
MWRA borrowing costs are a function of the fixed and variable tax exempt interest rate environment, the level of MWRA’s variable interest rate exposure and the perceived creditworthiness of MWRA. Each of these factors has contributed to decreased MWRA borrowing costs since 1990.

### Average Cost of MWRA Debt FYTD

Fixed Debt (\$3.07 billion)	3.30%
Variable Debt (\$231.20 million)	2.77%
SRF Debt (\$808.83 million)	1.70%
<b>Weighted Average Debt Cost (\$4.11 billion)</b>	<b>2.96%</b>

### Most Recent Senior Fixed Debt Issue April 2023

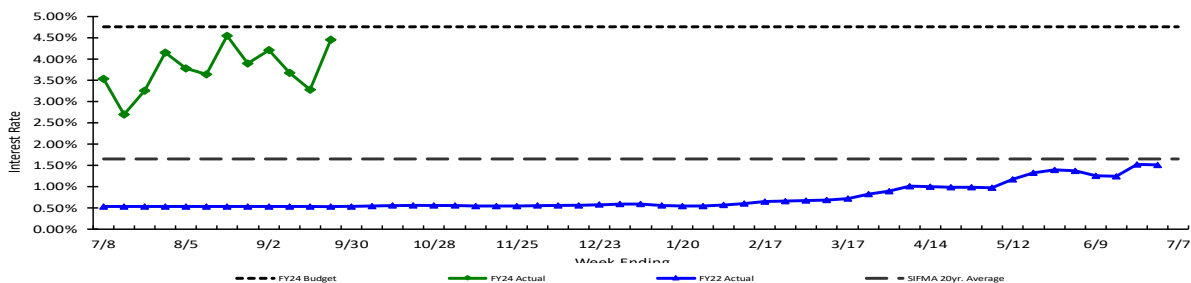
2023 Series B and C (\$234.3 million) 3.35%



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	18.8 yrs	11.2 yrs	11.7 yrs	11.9 yrs	9.73 yrs.	15.6 yrs	12.2 yrs	10.45 yrs

### Weekly Average Variable Interest Rates vs. Budget

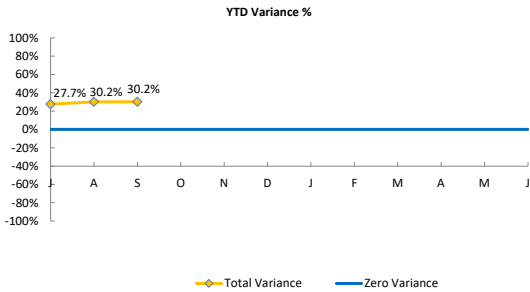
MWRA currently has eight variable rate debt issues with \$391.0 million outstanding, excluding commercial paper. Of the eight outstanding series, three have portions which have been swapped to fixed rate. Variable rate debt has been less expensive than fixed rate debt in recent years as short-term rates have remained lower than long-term rates on MWRA debt issues. In September, the Securities Industry and Financial Markets Association rate ranged from a high of 4.30% to a low of 2.97% 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

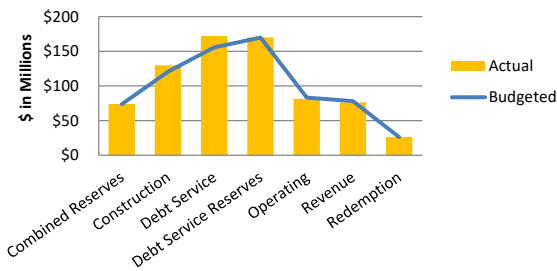
## 1<sup>st</sup> Quarter – FY24

➤ YTD variance is 30.2%, \$1.56 million, over budget due higher than budgeted interest rates.



	YTD BUDGET VARIANCE			
	(\$'000)			
	BALANCES IMPACT	RATES IMPACT	TOTAL	%
Combined Reserves	\$0	\$445	\$445	166.8%
Construction	\$95	-\$64	\$31	2.6%
Debt Service	\$162	\$477	\$639	41.5%
Debt Service Reserves	\$0	\$61	\$62	9.7%
Operating	-\$15	\$220	\$205	26.2%
Revenue	-\$15	\$193	\$178	25.6%
Redemption	\$0	\$0	\$0	-0.7%
<b>Total Variance</b>	<b>\$228</b>	<b>\$1,333</b>	<b>\$1,561</b>	<b>30.2%</b>

**YTD Average Balances Budgeted vs. Actual**

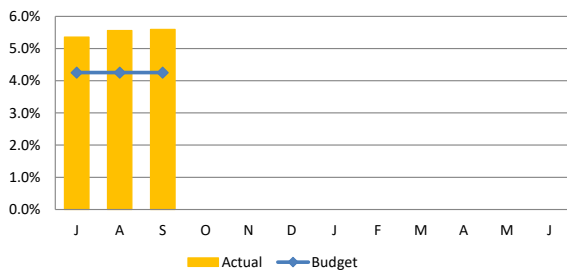


**YTD Average Interest Rate Budgeted vs. Actual**

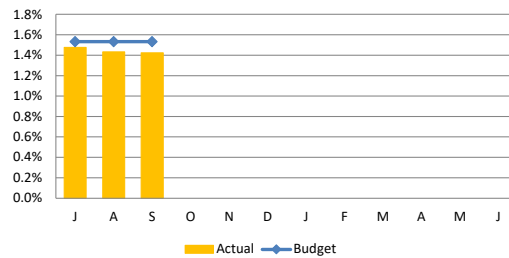


### Monthly

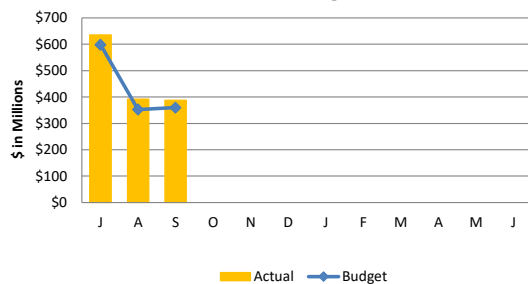
**Short -Term Interest Rates**



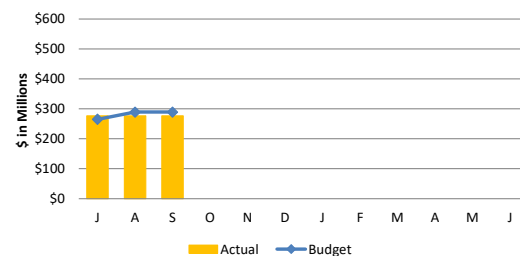
**Long -Term Interest Rates**



**Short-Term Average Balances**



**Long-Term Average Balances**



## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** November 15, 2023  
**SUBJECT:** Security Equipment Maintenance and Repair Services  
Contract EXE-047  
Viscom Systems, Inc.



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COMMITTEE: Administration, Finance & Audit

     INFORMATION  
  X   VOTE

Kathryn T. White, Manager, Security Services  
Preparer/Title

Gary S. Cacace  
Director of Security



*The security equipment maintenance and repair services contract has previously included two distinct, but related components: preventative, scheduled and as-needed maintenance, as well as software integration, programming services and network administration. Historically, this contract has generated very little competition.*

*In response to questions from the Board, in an effort to generate more competition and assure the uninterrupted delivery of these critical services, staff proceeded with two separate contracts: security equipment preventive, scheduled and as needed repair services, which is the subject of this staff summary, and network services. Network services is currently being procured using a state blanket contract and is expected to be awarded under the Executive Director's delegated authority no later than December 31, 2023.*

### RECOMMENDATION:

To approve the award of Contract EXE-047, Security Equipment Maintenance and Repair Services, to the lowest responsible bidder, Viscom Systems, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$2,395,680.05 for a contract term of 1095 days from the Notice to Proceed.

### DISCUSSION:

Protecting critical water and wastewater facilities is one of MWRA's highest priorities. MWRA currently employs a comprehensive security system to monitor and control access its assets and facilities. MWRA's security system is primarily comprised of a card access system, an intrusion alarm system, a video surveillance system (closed circuit television) as well as other devices designed to enhance security. These components operate in concert to provide MWRA a high degree of security at its facilities. This contract will cover systems located at 48 different assets and facilities, stretching from the Quabbin Reservoir to the Deer Island Wastewater Treatment Plant, which are centrally monitored at a command post that is staffed on a twenty-four hour, three

hundred and sixty-five day per year basis<sup>1</sup>. The size, breadth, and complexity of the physical security system requires daily attention from the contractor, and close interaction with MWRA staff.

Contract EXE-047 is a three-year contract that provides preventive and scheduled maintenance as well as-needed repair services for all components of MWRA's extensive security system, with the exception of the overarching administration of MWRA's security information technology network. Provisions for software integration at the application level and response to unforeseen emergencies are also included in the contract. Staff have developed an appropriate preventive maintenance schedule for each piece of equipment and determine on a case-by-case basis when to call the Contractor to repair critical equipment outside of normal business hours.

The work of this contract includes the provision of scheduled preventive maintenance services of the specified security equipment comprising MWRA's security system, non-emergency and emergency on-call maintenance and repair services.

### **Procurement Process**

Contract EXE-047 was procured under the provisions of the Commonwealth of Massachusetts State Blanket Contract ITC-71: Security, Surveillance, Monitoring, and Access Control System and bid as a direct solicitation to companies under the State Blanket Contract ITC-71 for a MWRA Non-Professional Services Contract. In addition, bids were made available for public downloading on MWRA's eProcurement system (Event 5722). MWRA invited eight companies from the ITC-71 vendor list to bid in an effort to directly solicit competition for this contract. There were nine attendees, representing five different vendors at the pre-bid conference held at MWRA's Chelsea Facility on October 25, 2023. All five vendors, two of which were new vendors to the Authority, viewed the bid documents. However, only one bid was received. After reaching out to the vendors that accessed the bid documents, the vendors commented that they did not submit proposals because of several factors, including lack of certifications as an authorized service provider for the Authority's security equipment, and the effort required to support a contract of this scale.

Bids were received and opened on November 3, 2023, with the following results:

<b>Contractor</b>	<b>Bid Amount</b>
Viscom Systems, Inc.	\$2,395,680.05
<i>Staff Estimate</i>	<i>\$2,433,904.37</i>

References were checked and found to be favorable. Viscom has successfully served as the MWRA's security equipment maintenance and repair services vendor for over twenty years and was the consecutive awardee of several previous iterations of this contract. Viscom is intimately familiar with MWRA's security system and has been highly responsive to mitigating alarm service issues. When appropriate, Viscom works cooperatively with other MWRA business units to ensure a high standard of protection for MWRA's resources, assets, facilities, employees and visitors. During 2023, Viscom helped design and integrate security systems for a new MWRA facility in Needham, Massachusetts, and temporarily relocated, and subsequently restored, critical security system components during construction at the Chelsea and Deer Island Facilities. Viscom has previously provided highly skilled and knowledgeable employees to work on MWRA's security

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<sup>1</sup> Security guard services are provided by Universal Protection Service, LLC d/b/a Allied Universal Security Services under a separate Board approved contract.

systems. Viscom's employees often functioned unilaterally, requiring very little direction to observe, diagnose and remedy any system interruptions. Further, Viscom has been highly responsive in addressing emergency "after hours" repairs at MWRA's critical assets. Five years of OSHA records were reviewed and no violations for Viscom were found.

Viscom has successfully completed numerous projects for MWRA and is experienced with performing similar work. Staff have concluded that Viscom possesses the skill, ability, and integrity necessary to perform the work under this contract, and is qualified to do so. Viscom is confident in its ability and experience in the class of work required to perform Contract EXE-047, and advised staff that it has sufficient capital and capacity to enable successful performance within the contract time.

Staff have determined that the bid price is reasonable, complete and includes the payment of prevailing wage rates, as required. Therefore, staff recommend the award of Contract EXE-047 to Viscom Systems, Inc. as the lowest responsible and eligible bidder.

**BUDGET/FISCAL IMPACT:**

The FY24 Current Expense Budget includes sufficient funds for this contract.

**MBE/WBE PARTICIPATION:**

There were no MBE or WBE participation requirements established for this contract due to the specialized nature of the work and limited opportunities for subcontracting.



## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** November 15, 2023  
**SUBJECT:** Maximo Lawson Interface Enhancements  
Starboard Consulting, LLC  
Contract No.7649 - Amendment 3




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**COMMITTEE:** Administration, Finance & Audit

INFORMATION  
 VOTE

Paula Weadick, Director, MIS  
Paul Fentross / Business Applications Manager, MIS  
Preparer/Title

  
Michele S. Gillen  
Director of Administration

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### RECOMMENDATION:

That the Executive Director, on behalf of the Authority, approve Amendment 3 to Contract 7649, Maximo Lawson Interface Enhancements, with Starboard Consulting, LLC, to extend the contract term by six months from December 26, 2023 to June 26, 2024 at no additional cost to the Authority.

### DISCUSSION:

On June 23, 2021, the Board approved the award of Contract 7649 to Starboard Consulting, LLC to provide professional services for the Maximo Lawson Interface Enhancements. The original contract, in the amount of \$1,184,000, was for 18 months. The scope of work associated with these professional services was to provide for enhancement to MWRA's existing Computerized Maintenance Management System, Maximo, and its interface to our current ERP System, Lawson.

Maximo is the Computerized Maintenance Management System (CMMS) currently used for managing asset lifecycle and maintenance activities for MWRA's water, wastewater, fleet and IT assets. It also tracks costs, including original asset cost, spare parts, consumables used in maintenance, and staff support hours to realize the total cost of ownership of an asset. MWRA is presently managing more than 126,200 pieces of equipment that generate approximately 6,340 work orders a month.

Since Lawson is the system of record for all procurement, accounts payable and staffing information, Maximo relies heavily on the synchronization of this information for tracking costs. During the Maximo upgrade and consolidation process, which began in 2015 and ended in 2019, numerous touchpoints were developed for the interface between Maximo and Lawson. Based on staff experience with the interface over the past few years, staff recommend building upon the existing interface to streamline process flows, enhance functionality, and add data validation for optimal performance and transaction integrity.



Staff identified 18 touchpoints where improvements could be made, resulting in increased effectiveness of the transactions in a shorter time. Examples are the Maximo Work Order touchpoint, which triggers a Lawson event for picking materials from the warehouse, and the Lawson Item touchpoint, which triggers an inventory update in Maximo.

Amendment 1 added an additional six months to accommodate more workshops with MWRA and Starboard staff to further clarify requirements elicited during previous workshops with the vendor. These additional workshops were not anticipated in the initial project schedule, and included analysis, which took six months to complete and needs to be incorporated into the project schedule. There was no additional cost associated with this amendment.

Amendment 2 extended the contract end date an additional five months to restore the project time used to resolve the Maximo upgrade and IT Storeroom issues with no additional cost.

To date, Starboard has completed defining the touchpoint modification requirements and has made code modifications and process changes to meet these requirements. For example, code was added to automate the setup of new inventory items between Lawson and Maximo. All code modifications utilize native Maximo functionality removing the use of custom TRM Rules Manager code. MWRA staff are currently testing these modifications in the development environment and plan to have formal User Acceptance Testing in November.

**This Amendment**

MWRA staff and the vendor, Starboard Consulting, LLC, unit tested the newly developed interfaces and made significant progress, but encountered unforeseen functional and technical issues that added more development and testing time to the project schedule.

Amendment 3 is to extend the contract end date an additional six months to complete the remaining project tasks (e.g. development, unit testing, user acceptance testing, production implementation and warranty). There is no additional cost associated with the contract extension.

**CONTRACT SUMMARY:**

	<u>Amount</u>	<u>Time</u>	<u>Dated</u>
Original Contract:	\$1,184,000	18 Months	7/26/2021
Amendment 1	\$0	6 Months	11/01/2022
Amendment 2	\$0	5 months	10/12/2023
Amendment 3	\$0	6 months	Pending
Amended Contract:	\$1,184,000	35 Months	

The percentage of amendments for this contract is 0% of the original contract value.

**BUDGET/FISCAL IMPACT**

The FY24 CIP includes \$1,184,000 for Contract 7649. Amendment 3 is for a time extension only.

**MBE/WBE PARTICIPATION:**

There were no MBE/WBE participation requirements established for this contract due to limited opportunities for subcontracting.

## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** November 15, 2023  
**SUBJECT:** Dental Insurance  
Delta Dental of Massachusetts, Inc., d/b/a Delta Dental of Massachusetts,  
Contract A631, Amendment 2




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**COMMITTEE:** Administration, Finance & Audit

       INFORMATION  
  X   VOTE

Wendy Chu, Director of Human Resources  
Preparer/Title



Michele Gillen  
Director of Administration

### RECOMMENDATION:

To approve Amendment 2 to Contract A631 with Delta Dental of Massachusetts, Inc., d/b/a Delta Dental of Massachusetts, exercising the second option to renew, increasing the contract amount by \$240,000 for a total not-to-exceed amount of \$764,000, and extending the term by 12 months from January 1, 2024 to December 31, 2024 for a total contract term of 36 months.

### DISCUSSION:

MWRA has been providing dental insurance to all Non-Union employees since July 1, 1985. This benefit is also available to confidential employees, as well as a number of union employees who were accreted into collective bargaining units in 1994. The remaining MWRA union employees receive dental coverage through the Health and Welfare plans of their respective unions.

In December 2021, the Board of Directors approved Contract A631 with Delta Dental of Massachusetts to provide dental insurance to eligible employees for a period of 12 months (Calendar Year 2022) with further options to renew the contract for up to three additional 12-month periods subject to Board approval. In October 2022, the Board of Directors approved Amendment 1 to Contract A631 to extend the contract through Calendar Year 2023 and increase the contract amount by \$235,000.

This amendment is for the second extension covering Calendar Year 2024 and would maintain the level of coverage currently offered to eligible employees in the areas of diagnostic, preventative, basic and major restorative services as well as limited orthodontic coverage.

<b>Contract Summary</b>	<b>Amount</b>	<b>Term</b>	<b>Dated</b>
Original Contract	\$289,000	One Year	1/1/2022
Amendment 1	\$235,000	One Year	1/1/2023
Amendment 2	\$240,000	One Year	1/1/2024
<hr/>			
Amended Contract Total	\$764,000		


**BUDGET/FISCAL IMPACT:**

The contract covers the second half of FY24 and the first half of FY25. The FY24 Current Expense Budget includes the cost of the dental insurance for eligible employees through the end of Calendar Year 2023 and there are sufficient funds to cover an extension of the contract. The remaining cost of the contract extension will be included in the FY25 Current Expense Budget.

**MBE/WBE UTILIZATION:**

There are no MBE/WBE participation requirements established for this contract due to the limited opportunities for subcontracting.

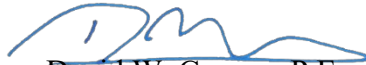
## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** November 15, 2023  
**SUBJECT:** MWRA Comment Letter on the Deer Island Wastewater Treatment Plant Draft National Pollutant Discharge Elimination System (NPDES) Permit and Draft State Surface Water Discharge Permit

**COMMITTEE:** Wastewater Policy & Oversight

X  INFORMATION  
  VOTE

Rebecca Weidman, Deputy Chief Operating Officer  
Wendy S. Leo, Sr. Program Manager, NPDES  
Betsy Reilley, Director, Environmental Quality  
Preparer/Title

  
David W. Coppes, P.E.  
Chief Operating Officer

*On May 31, 2023, EPA issued a draft permit for the Deer Island Wastewater Treatment Plant and Combined Sewer Overflows and MassDEP also issued a draft state surface water discharge permit. The public comment period for both was initially set for 60 days but was extended to August 30, 2023 and then to November 28, 2023. MWRA is preparing comments to request revisions to the draft permits. Providing comment also preserves MWRA's right to appeal portions of the final permit when it is ultimately issued. This staff summary provides an overview of issues staff will address in MWRA's comment letter.*

### RECOMMENDATION:

For information only.

### DISCUSSION:

MWRA's Deer Island Treatment Plant requires a National Pollutant Discharge Elimination System (NPDES) permit to discharge into Massachusetts Bay. The permit currently in effect was issued in July 2000 and has been administratively continued since its August 2005 expiration date. In May 2023, the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) each issued draft permits<sup>1</sup> encompassing operation of the Deer Island Treatment Plant; combined sewer overflows (CSOs) currently permitted to MWRA, Boston Water & Sewer Commission (BWSC), Cambridge, Chelsea, and Somerville; and the sewer collection systems of MWRA and all of its wastewater member communities.

The state and federal draft permits were issued for public comment on May 31, 2023; MWRA and members of the public have until November 28, 2023 to provide comments to EPA and MassDEP

<sup>1</sup> In Massachusetts, NPDES permits are no longer issued jointly by EPA and MassDEP. Although jointly administered by EPA and MassDEP in the past, as of June 20, 2020, the NPDES permit program is administered solely by the EPA. MassDEP administers a parallel surface water discharge permitting program. In this instance, the draft state surface water discharge permit generally incorporates the draft federal permit by reference and adds a few state-specific requirements relating to monitoring of per-and polyfluoroalkyl substances (PFAS) and reporting.

on the draft permits. After the comment period closes, EPA and MassDEP will make any changes to the draft permits they deem appropriate based on comments received. EPA and MassDEP will issue “Response to Comments” documents with the final permits. The new permits will be in effect for five years.

The permitting process requires that in order to preserve the right to appeal, MWRA must raise all reasonably ascertainable issues and submit all comments supporting its position by the close of the public comment period. If MWRA wishes to appeal EPA’s final permit decision, it must petition the Environmental Appeals Board within 30 days of the issuance of the final permit. MWRA may appeal any issue that it provided comment on during the public comment period or any changes from the draft to the final permit decision. The administrative appeal process is similar on the state side. During the 30 day period following the issuance of the MassDEP surface water discharge permit, any person aggrieved by the issuance of the permit may file a request for an adjudicatory hearing with MassDEP’s Office of Appeals and Dispute Resolution.

MWRA intends to comment on the following topics.

#### *Co-permittees*

As previously reported to the Board, the draft permit includes all sewer system member communities as “Co-permittees” and BWSC, Cambridge, Chelsea and Somerville as “CSO-responsible Co-permittees.” This draft permit has specific requirements with which the towns must comply including: reporting requirements for unauthorized discharges from the municipal collection systems (*e.g.* sanitary sewer overflows); operation and maintenance (O&M) requirements for their respective collection systems, including provisions for infiltration/inflow (I/I) reduction programs and for updating existing O&M plans; a new requirement for “Major Storm Plans;” and requirements for backup power.

The CSO-responsible communities already have (administratively continued) NPDES permits and applied for renewal as required. Staff believe they should be covered by these individual permits. The remainder of the MWRA wastewater communities have not applied for NPDES permits, yet they are included in the draft permits and will be responsible for certain requirements. Staff believe these communities should also not be combined into the Deer Island permit.

#### *Operation and Maintenance of the MWRA- and Community-Owned Sewer Systems*

Requirements for adequate operation and maintenance staffing, I/I reduction to prevent high-flow-related unauthorized discharges from the collection system, preventive maintenance, and alternative power sources are much more detailed than what is in the existing permit. The requirements apply to MWRA as well as to the co-permittees. Each permittee must develop a collection system O&M plan for their respective system, which must describe staffing, preventative maintenance, funding, I/I program and related work, and annually report on activities carried out under the plan. The O&M plans must include a Major Storm Plan, with requirements that are extensive and very prescriptive. EPA has modified this language in other recently finalized permits, and the new “Adaptation Plan” language is an improvement. MWRA will comment on the language in its draft permit, as well as the new Adaptation Plan language.

### *Wet Weather Blending (Bypass of Secondary Treatment)*

One of the bedrock tools that MWRA utilizes to reduce CSO discharges during wet weather events is the maximizing of sewage flow to Deer Island for treatment. Maximizing flow in this fashion is one of the nine minimum controls set forth in EPA's 1994 CSO Policy and the terms of the existing Deer Island NPDES permit. Also, permit writers are provided information to accommodate these flows in the permit; *Combined Sewer Overflows Guidance for Permit Writers*, EPA 832-B-95-008 at Section 4.9.1. (September 1995).

Pursuant to the terms of a Stipulation and Order entered in the Boston Harbor Case in July 2008, MWRA has been required to maintain a secondary process limit of at least 700 million gallons per day (MGD) (while primary treatment and disinfection at the plant can handle flows up to 1,270 MGD). The term "secondary process limit" generally refers to the setting in the process control system for the Deer Island Treatment Plant, which directs flows up to and including that flow rate through secondary treatment. In the draft NPDES permit, EPA did not maintain or reference the secondary process limit of 700 MGD or otherwise introduce a new secondary process limit. The draft permit is, at best, ambiguous insofar as it is unclear whether the provisions of the Stipulation and Order continue to govern.

### *CSOs*

The BWSC and the cities of Cambridge, Chelsea and Somerville have partially combined sewer systems and are named as "CSO-responsible Co-permittees" in the draft permit. The draft permit incorporates and updates requirements that are currently in MWRA's permit as well as the individual community CSO NPDES discharge permits.

The draft permit also incorporates as requirements the CSO Long-Term Control Plan goals for Typical Year CSO outfall activations and volumes as permit limitations, as well as the current CSO Variances for the Charles River Basin and Alewife Brook/Mystic River.

Among other permit provisions for which MWRA is providing comments are the following.

- CSO treatment facility "seasonal event" monitoring schedule – While frequency of sampling annually is unchanged, targeting seasons as required in the draft permit will add complexity and potentially more staffing to try and capture one spring, two summer, and one fall event.
- Outfall Video Survey – The draft permit requires an inspection of the Massachusetts Bay outfall (by a diver or remotely-operated submersible). Given that in-plant monitoring can detect, via changes in the head height in the outfall drop shaft, if there are any changes in outfall operation that might be caused by damage to or occlusion of the diffuser, this inspection is unnecessary unless the remote monitoring indicates a problem. Performing a survey of this nature is a significant undertaking, highly weather dependent, costly, and provides little information of value compared to continuous monitoring of flows and elevation.
- Nuisance and Harmful Algal Bloom Monitoring – The draft permit requires revisions to the ambient monitoring plan, with additional monitoring focus on nuisance and harmful algal species. Enhanced sampling is required when these algal species are observed at

certain threshold values; expert review indicates that the thresholds set by EPA in the draft permit are not well grounded in current science, are not demonstrated to be linked to MWRA's effluent discharge, and monitoring costs are likely to be costly.

- Pretreatment – Many of the pretreatment requirements in the draft permit are standard and similar to the existing permit. However, staff believe the time frame of 90 days to submit a local limits evaluation is too short and will therefore seek at least 180 days, which is in the existing permit. Also, the annual reporting requirement is out of sync with MWRA's longstanding reporting schedule. Finally, there are several new requirements, including information about Significant Noncompliance in the annual pretreatment report, which go beyond the EPA pretreatment regulations.
- Whole Effluent Toxicity – Because Deer Island Treatment Plant met its permit limits for acute and chronic whole effluent toxicity for many years, the draft permit reduces the sampling frequency for both to quarterly, and reduces the chronic toxicity tests required from two organisms to one. However, it also makes the acute toxicity permit limit more stringent; instead of requiring that test organisms show sufficient survival in a solution of 50% effluent/50% dilution water, the limit in the draft permit requires the same survival in 100% effluent. EPA concludes in the fact sheet to this draft permit that there is no reasonable potential for water quality excursions in the Bay. Even by applying the conservative dilution factor of 70:1 set by EPA for the Deer Island Treatment Plant at the nearfield, the chemicals will be completely dissipated in the water column after mixing. Therefore, the more stringent acute limit in the draft permit has no technical basis.
- Narrative general prohibition – The draft permit includes the general prohibition that discharges “shall not cause or contribute to violations of federal or state Water Quality Standards.” Such generic water quality prohibition raises concerns regarding vagueness and lack of specificity for compliance.

#### **BUDGET/FISCAL IMPACTS:**

There will be additional costs for chemicals, and monitoring of PFAS. There will be further costs related to revision of the pollution prevention plan, technical evaluation of industrial local limits, completing dye studies for CSO treatment facilities, and costs for monitoring harmful algal blooms. The full budget impacts are unknown until the final permit is issued.

Increased costs may be partly offset by savings due to eliminating the requirement to monitor chlorinated pesticides and PCBs, and possible cost savings from refocusing the Ambient Monitoring Plan.

Member communities will also incur costs for developing and implementing Major Storm or Adaptation Plans, I/I Reduction Plans, and Sanitary Sewer Overflow Mitigation Plans.



## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** November 15, 2023  
**SUBJECT:** Harbor and Outfall Monitoring, 2024-2027  
Contract OP-466  
Battelle Memorial Institute




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**COMMITTEE:** Wastewater Policy and Oversight

       INFORMATION  
  X   VOTE

Rebecca Weidman, Deputy Chief Operating Officer  
Betsy Reilley, Ph.D., Director, Environmental Quality  
David Wu, Senior Program Manager  
Preparer/Title

Michele S. Gillen  
Director of Administration  
  
David W. Coppes, P.E.  
Chief Operating Officer

*The Harbor and Outfall Monitoring contract provides environmental monitoring of potential outfall impacts as required by the Environmental Protection Agency (EPA) in MWRA's National Pollutant Discharge Elimination System (NPDES) permit for Deer Island. The scope of work for Contract OP-466 reflects water column monitoring requirements in the permit-attached Ambient Monitoring Plan. This contract will provide field monitoring in 2024, 2025, and 2026, and sample analysis and report preparation in 2024 through 2027.*

*A draft NPDES permit for Deer Island was issued on May 31, 2023. Given the uncertainty as to when the permit will be finalized and its ultimate conditions, the scope of work for Contract OP-466 contains clauses to modify or terminate contract tasks as appropriate, based on the final version of the NPDES permit for Deer Island.*

*Historically, this contract has been paired with a similar contract for benthic (seafloor) monitoring as well as fish and shellfish monitoring. Both of those types of monitoring have been deleted in the draft NPDES permit. However, MWRA is still required to do those monitoring tasks until the issuance of a final NPDES permit, so staff are pursuing a contract amendment to the existing benthic monitoring contract to continue those services.*

### RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to award Contract OP-466, Harbor and Outfall Monitoring 2024-2027, to Battelle Memorial Institute and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount not to exceed \$3,581,397.74 for a contract term of 48 months from the Notice to Proceed.

## DISCUSSION:

The National Pollutant Discharge Elimination System (NPDES) permit for Deer Island includes an Ambient Monitoring Plan to examine potential environmental effects of the outfall on Massachusetts Bay. This Plan includes specific, detailed regulatory requirements for environmental monitoring. As the Plan is attached to the permit, its requirements are enforceable. The environmental monitoring requirements reflect several critical issues discussed during the planning and construction of the Deer Island Treatment Plant and the outfall. These issues include questions about environmental impacts of nutrients in MWRA's effluent, the environmental effects of the elimination of Secondary Treatment Battery D, endangered species issues raised by Cape Cod groups and the National Marine Fisheries Service, and EPA's decision to incorporate into the NPDES permit the provisions of the Contingency Plan. MWRA prepared the Contingency Plan under agreement with EPA and the National Marine Fisheries Service in response to a recommendation issued with the Biological Opinion.

Results of the monitoring clearly document the dramatic environmental benefits of MWRA's investments in the Boston Harbor Project. This long-term monitoring began in 1992, and results have been presented in over 200 detailed technical reports and peer-reviewed journal articles. The monitoring has allowed MWRA to document that its outfall discharge into Massachusetts Bay has had only minimal impacts and has not caused environmental degradation. MWRA has also provided these data to address concerns from regulatory agencies, public advocacy organizations, the media, and ratepayers when phenomena that could be perceived to be caused by the outfall have occurred. For example, in the 23 years that the outfall has been online, staff have used the data to address questions regarding the following: (a) algal blooms in the harbor and the bay, including several major red tide events; (b) changes in zooplankton populations; (c) lobster fishery issues; (d) a pattern of female-dominated winter flounder in MWRA's monitoring; (e) shellfish safety; (f) beach contamination; (g) floatables; and (h) dissolved oxygen issues. None of these evaluations have suggested a negative impact related to outfall discharge.

The results of MWRA's Ambient Monitoring for calendar year 2022 are discussed in the NPDES-permit-required 2022 *Outfall Monitoring Overview*, which was described in a staff summary presented to the Board at the meeting on October 18, 2023.

Contract OP-466 will provide field monitoring for three years (2024 through 2026), and sample analysis and report preparation in 2024 through 2027, as described in more detail below:

- Conduct nine water quality surveys per year at 11 stations in Massachusetts Bay (see Figure 1), in compliance with the permit-required monitoring plan<sup>1</sup>;
- At each station, sensors collect data at frequent intervals, from the surface to within a few feet of the seafloor, of water temperature, salinity, water clarity, dissolved oxygen, chlorophyll and other water quality parameters;
- In addition to sensor measurements, samples are collected at five water depths for dissolved and particulate nutrients, and for laboratory analyses of chlorophyll used to calibrate the chlorophyll sensor measurement. Chlorophyll and nutrient analyses are carried out by MWRA's Department of Laboratory Services;

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<sup>1</sup> Monitoring at the three stations in Cape Cod Bay shown in Figure 1 from 2023 to 2026 is conducted under a separate cost-share agreement (Contract OP-453) with the Center for Coastal Studies in Provincetown.

- Samples for the determination of the phytoplankton (microscopic algae) community are collected at two depths at every station except N21, and a single zooplankton sample is collected to identify the community of tiny animals that eat the phytoplankton;
- Surveys of Massachusetts Bay conducted in response to blooms of the algae responsible for red tide and a paralytic shellfish poisoning toxin in New England waters. When these blooms are observed in Massachusetts Bay, weekly surveys are triggered that continue until the bloom subsides. In years when no blooms or toxin are observed, no surveys are conducted; and
- Annual technical reports are prepared on the results of the water quality monitoring, and under contract OP-466 the consultant, along with MWRA staff, will compile and develop the annual *Outfall Monitoring Overview* report summarizing the Ambient Monitoring results for the year.

With the release of the draft NPDES permit for Deer Island in May 2023, staff concentrated on writing a scope of services for this contract to maximize flexibility; the draft NPDES permit added some monitoring items and deleted others relative to the current permit and Ambient Monitoring Plan. However, until the issuance of the final NPDES permit, the current Ambient Monitoring Plan requirements are still in place. The scope of services for this contract allows MWRA the flexibility to accommodate the Ambient Monitoring Plan in both its present and future forms.

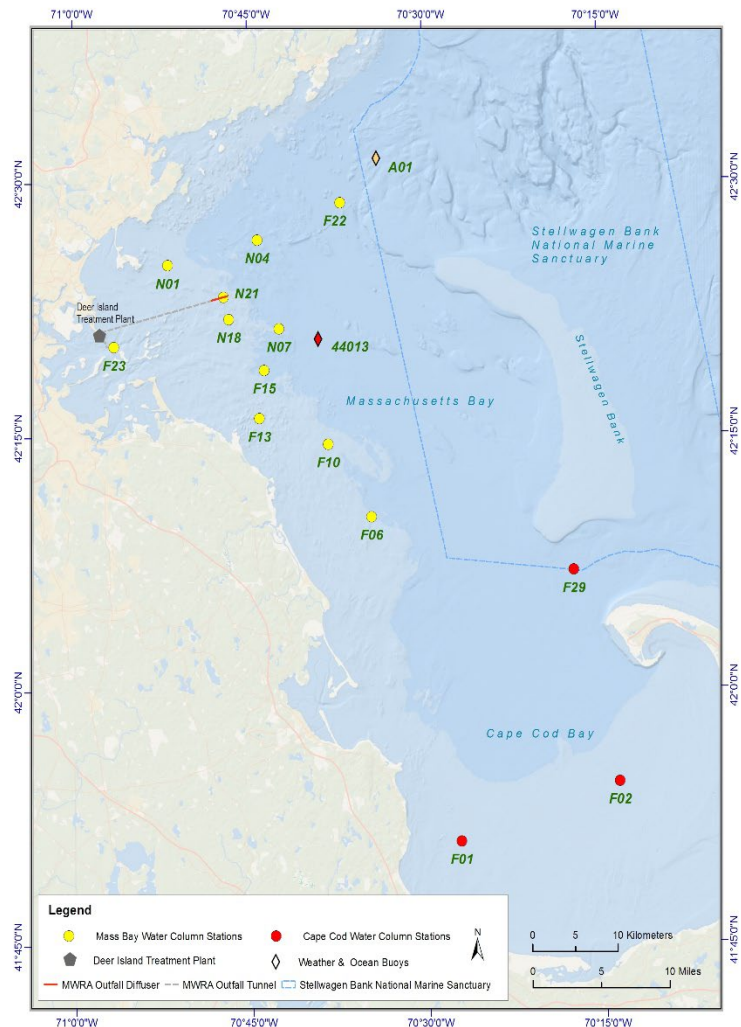


Figure 1. Location of MWRA's water quality monitoring stations.

### Procurement Process

On September 13, 2023, MWRA issued a one-step Request for Qualifications/Proposals (RFQ/P) that was publicly advertised in the Central Register, the Boston Herald, Banner Publications, El Mundo, on the MWRA Supplier Portal, and emailed to 25 firms and individuals active in the local marine environmental monitoring field. Thirteen firms accessed the RFQ/P documents. The RFQ/P included the following evaluation criteria and points: Cost (25 points); Technical Approach, Capacity, Organization and Management Approach (25 points); Qualifications/Key

Personnel (25 points); Relevant Experience/Past Performance (23 points); and Minority and Women-Owned Business Enterprise Participation (2 points).

On October 11, 2023, MWRA received a proposal from Battelle Memorial Institute. Historically, Battelle has been the only proposer for water column monitoring since at least 2005. In addition, after reaching out to firms that accessed the RFQ/P documents, firms commented that they did not submit proposals because of several factors including certification costs, geographical location of the project area and testing lab, and existing workloads. The following table represents the costs proposed.

<b>Proposer</b>	<b>Proposed Cost</b>
Battelle Memorial Institute	\$3,581,397.74
<i>Staff Estimate</i>	<i>\$3,400,000.00</i>

In accordance with the Authority’s management policies and procedures for professional services contracts, the Selection Committee reviewed the proposal to determine if the proposal was responsible and included the requested scope of services. The Selection Committee members found that Battelle’s technical approach follows the Ambient Monitoring Plan, as required, and the project organization continues the proven structure used previously. Battelle’s proposed personnel are excellent and include, as it has in the past, well known experts on a number of aspects of the Gulf of Maine ecosystem. Battelle has been the consultant for the monitoring program since 1997 and it has done an exemplary job in data collection and analysis, as well as data and project management. Battelle’s team of scientists played a major role in helping MWRA design and justify monitoring plan changes that led to the reductions in monitoring that were approved in 2004 and again in 2010.

The Selection Committee determined that the proposal met MWRA’s requirements, and the price, while slightly higher than the staff estimate, was reasonable. The staff estimate underestimated the increase in vessel costs, which are greatly impacted by fuel costs, which in turn, are heavily influenced by the worldwide geopolitical situation. The proposed cost also includes additional task order money relative to previous monitoring contracts for flexibility to adapt to potential changes in the Ambient Monitoring Plan.

Based on the reasons set forth above, the Selection Committee recommends the award of Contract OP-466, Harbor and Outfall Monitoring, 2024-2027 to Battelle Memorial Institute in an amount not to exceed \$3,581,397.74.

**BUDGET/FISCAL IMPACTS:**

The FY24 Current Expense Budget (CEB) includes \$336,470 for OP-466 and the expected FY24 costs for OP-466 once the contract is executed are \$341,330. There are sufficient funds included in the Operations Division’s FY24 CEB to absorb the overage of \$4,860. Adequate funding will be requested in the proposed FY25 through FY28 CEBs to cover anticipated costs in later years.

**MBE/WBE PARTICIPATION:**

Due to the specialized nature of this work, MBE/WBE participation was set to 0% for both categories. Battelle did not commit to any MBE/WBE participation in their proposal.

## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** November 15, 2023  
**SUBJECT:** Roofing Replacement at Various Buildings  
Deer Island Treatment Plant  
Greenwood Industries, Inc.  
Contract 7734





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**COMMITTEE:** Wastewater Policy & Oversight

INFORMATION  
 VOTE

David F. Duest, Director, Deer Island Treatment Plant  
Richard J. Adams, Manager, Engineering Services  
Raymond W. Snyder, Sr. Program Manager, Deer Island  
Preparer/Title

  
Michele S. Gillen  
Director of Administration  
  
David W. Coppes, P.E.  
Chief Operating Officer

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### RECOMMENDATION:

To approve the award of Contract 7734, Roofing Replacement at Various Buildings, Deer Island Treatment Plant to the lowest eligible and responsible bidder, Greenwood Industries, Inc. and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the amount of \$8,873,000 for a contract term of 365 calendar days from the Notice to Proceed.

### DISCUSSION:

Contract 7734 includes the removal and replacement of 86,500 square feet of roofing on the following buildings: Cryogenic Compressor; Gravity Thickener Complex; Thermal/Power Plant; Main Switchgear; and Digester Complex Modules 1, 2 and 3.<sup>1</sup>

Deer Island Treatment Plant has been in operation for over 25 years. All the buildings in Contract 7734 are experiencing roof failures, but both the Cryogenics Compressor roof (Figure 2) and the Thermal/Power Plant roofs (Figure 3) are in need of immediate replacement. The Thermal/Power Plant roofs were previously replaced in 2011, and the Cryogenic Compressor roof and the Digester Complex Modules 1, 2 and 3 roofs were replaced in 2009.

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<sup>1</sup> Buildings to be reroofed in the Digester Complex include: Module 1- Digester Equipment Complex Roof, Elevator/Stair Lobby Roof and Elevator Penthouse Roof; Module 2 - Digester Equipment Complex Roof; and Module 3- Digester Equipment Complex Roof and Elevator Penthouse Roof.



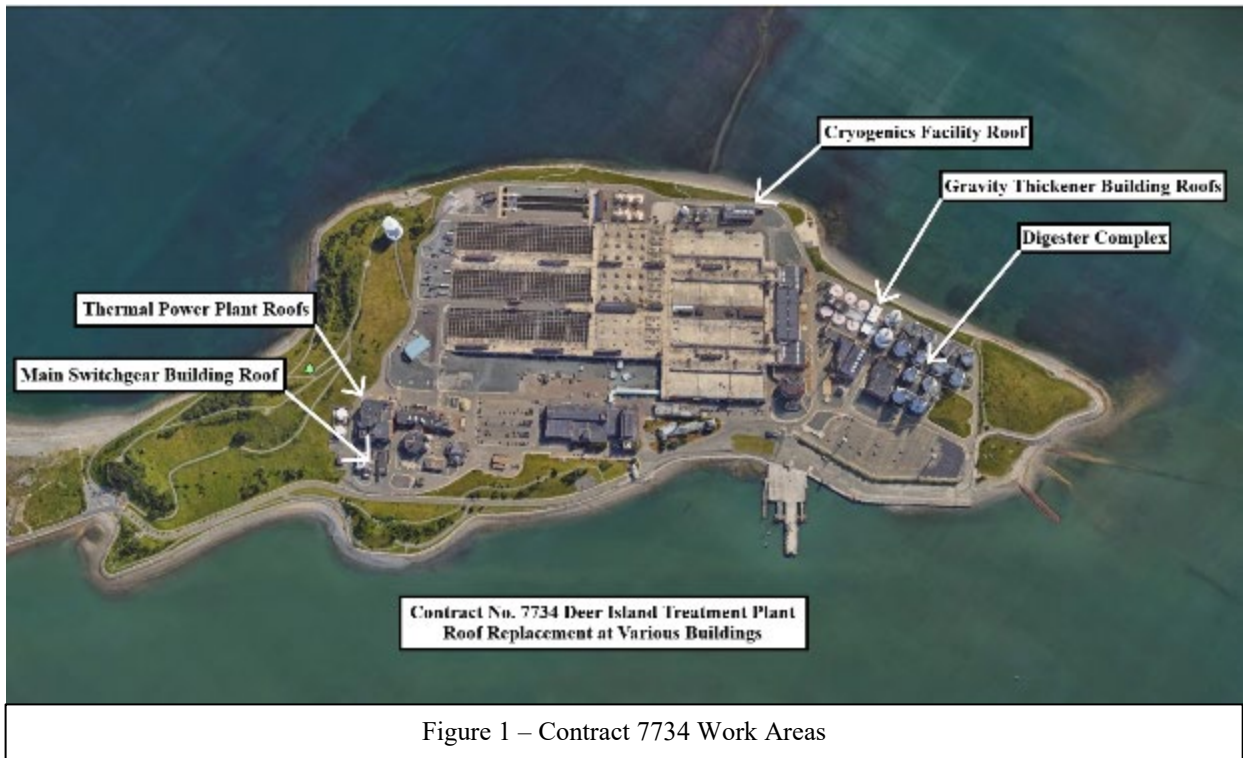


Figure 1 – Contract 7734 Work Areas

The Cryogenics Compressor Building and the Thermal/Power Plant face the northeast side of Deer Island and have the highest exposure to the elements. Staff believe these roofs failed prematurely due to weather and high winds coupled with the traditional roofing design utilized. The replacement roofing will be a more robust installation than the original installation.

The new roofs on the Cryogenics Compressor Building and the Thermal/Power Plant will utilize a “built-up-roof system” consisting of layers of reinforced roofing material and an overall minimum thickness of 300 mils (thousandths of an inch.). The other roofs in this contract will be a more typical 90 mil ethylene propylene diene monomer (EPDM) system, similar to what is there now, due to less severe wind exposure. The Main Switchgear Building will also be replaced with the heavier built-up-roof system, as it houses some of the most critical equipment for the operation of the Deer Island, including the 13,800 volt electrical distribution equipment. Since all of these roofs are over process buildings with no air conditioning, the use of white roofs was not deemed effective.

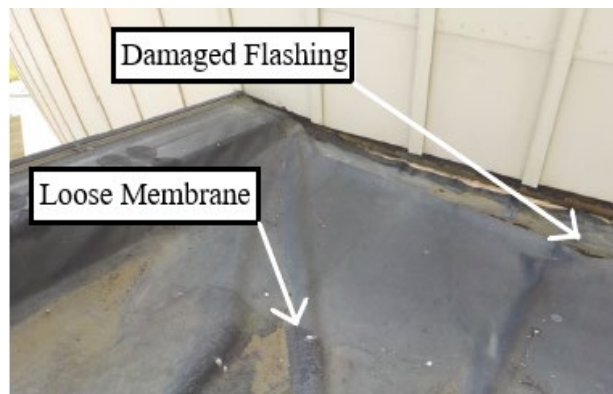


Figure 2 – Contract 7734 Damaged Digester Flashing and Membrane

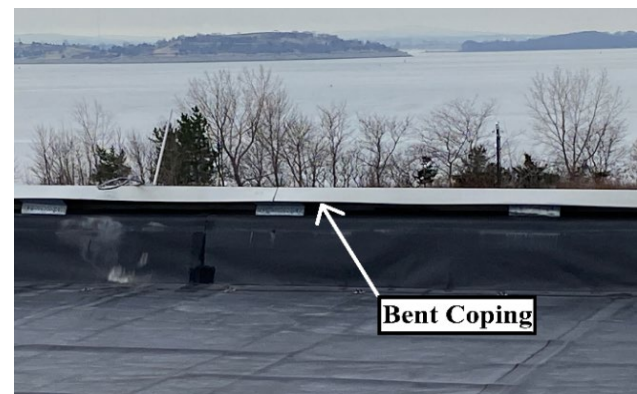


Figure 3 – Contract 7734 Thermal/Power Plant Failed Aluminum Coping



**Procurement Process**

Contract 7734, designed by Hazen and Sawyer, was publicly advertised and bid utilizing MWRA’s e-procurement system and was advertised on May 13, 2023 with filed sub-bids due on July 12, 2023. Four plumbing filed sub-bids (for roof drain relocation) were received and considered responsive and acceptable. Three electrical filed sub-bids (for code required electrical receptacles) and one HVAC filed sub-bid (for temporary cooling equipment for the Main Switchgear Building) were received, and rejected due to errors on the form for sub-bid.

A second advertisement for the electrical and HVAC filed sub-bids appeared on July 22, 2023, and acceptable sub-bids were received on August 31, 2023.

Contract 7734 was advertised in the Central Register, the Boston Herald, El Mundo, Banner Publication and COMMBUYS and bid in accordance with Chapter 149 of Massachusetts General Laws. General bids were received and opened on September 19, 2023 from the following three contractors:

<u><b>Bidder</b></u>	<u><b>Bid Amount</b></u>
<b>Greenwood Industries</b>	<b>\$8,873,000</b>
Reliable Roofing & Sheet Metal	\$8,900,000
Titan Roofing	\$9,146,000
<i>Engineer’s Estimate</i>	<i>\$9,600,000</i>

Staff interviewed representatives from Greenwood Industries, Inc. and reviewed the bid in detail, which is approximately 7.5% lower than the Engineer’s Estimate. Staff have determined that the bid is complete, reasonable, and includes the payment of prevailing wages as required. Greenwood Industries Inc. has worked with MWRA in the past and completed several smaller construction contracts. Staff also completed reference checks. The OSHA website was checked and there were no injuries noted of any kind. Based on the information received, staff are of the opinion that Greenwood Industries, Inc. understands the nature and complexity of the project, has the skill, ability and integrity necessary to complete the work, and is qualified to do so.

Therefore, staff recommend that Contract 7734 be awarded to Greenwood Industries, Inc. as the lowest responsible and eligible bidder.

**BUDGET/FISCAL IMPACT:**

The FY24 CIP includes \$9,000,000 for Contract 7734. The award amount is \$8,873,000 is \$127,000 below the FY24 CIP budget.

**MBE/WBE PARTICIPATION:**

The MBE and WBE participation requirements for this contract were established at 7.24% and 3.6%, respectively. The Affirmative Action and Compliance Unit has reviewed the bid and has determined that it meets these requirements.



**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** November 15, 2023  
**SUBJECT:** Operations and Maintenance of the Fore River Pelletizing Plant  
New England Fertilizer Company  
Contract S592




**COMMITTEE:** Wastewater Policy & Oversight

     INFORMATION  
  X   VOTE

  
Michele S. Gillen

Director of Administration

David F. Duest, Director, Deer Island Treatment Plant  
Carl Pawlowski, Manager, Residuals Operations  
Preparer/Title

  
David W. Coppes, P.E.  
Chief Operating Officer

**RECOMMENDATION:**

To approve the recommendation of the Selection Committee to award Contract S592, Operations and Maintenance of the Fore River Pelletizing Plant, to the New England Fertilizer Company and to authorize the Executive Director, on behalf of the Authority, to execute said contract for the base amount of \$229,289,350 plus escalation, cost of excess quantities and, if necessary, additional costs associated with alternate disposal, with a contract term of ten years from January 1, 2024 through December 31, 2033.

**DISCUSSION:**

Residuals collected by primary and secondary treatment at Deer Island are processed in the egg-shaped anaerobic digesters. The remaining residuals (liquid sludge), after digestion, are temporarily stored on Deer Island and then pumped seven miles through a pipeline to MWRA's Pelletizing Plant located in the Fore River Staging Area in Quincy (pictured at right). At this facility, the digested sludge is dewatered in centrifuges and then dried in thermal dryers (see Figures 2 and 3 below).



Figure 1: MWRA's Pelletizing Plant

Historically, the resulting fertilizer pellets are beneficially marketed and used as a Class A Exceptional Quality fertilizer. The pellets are currently distributed throughout the eastern and

midwest sections of the United States; 23% of the product was distributed within Massachusetts between 2018 and 2022.



Figure 2: Dewatering Centrifuges



Figure 3: Thermal Dryers

Operation of the Pelletizing Plant began in December 1991 following a competitive procurement process that resulted in MWRA awarding the first operations and maintenance contract to the New England Fertilizer Company (NEFCO). The successor contract, Contract S345, also competitively bid, was awarded to NEFCO in 2001 for a 15-year period ending December 31, 2015. There were three amendments to Contract S345, ultimately extending the contract for eight more years, for a total of 23 years. In May 2023, the New England Fertilizer Company became a wholly-owned, indirect subsidiary of Synagro Technologies, Inc. Staff's recommendation in October of 2020 and June of 2022 to extend Contract S345 by two years, with an optional third-year extension, was based on the regulatory uncertainty of emerging contaminants like per- and polyfluoroalkyl substances (PFAS) and changes in the marketing and disposal of wastewater-derived fertilizers. It is, as yet, unclear what impact these emerging contaminants will have on the beneficial use of biosolids in the fertilizer market.

On average, the Pelletizing Plant converts approximately 105 dry tons per day of digested sludge to fertilizer pellets. Production rates have varied annually from 96 dry tons per day to 112 dry tons per day over the life of Contract S345. NEFCO is responsible for pelletizing plant maintenance and is required to return a fully operating plant to MWRA at the close of the contract.

Originally, MWRA decided to contract for the operation of the Pelletizing Plant because it involved the use of a newer treatment technology and involved developing and maintaining national markets for a Class A fertilizer product, tasks unlike anything with which existing staff had ever been involved. In addition, there were only limited U.S. installations of this technology. (The Quincy facility was among the first five built in this country.) While today there are many more "dryer facilities" – approximately 25 throughout the country – there are only a few firms remaining that specialize in the operation and maintenance of these facilities.

### **This Contract**

This contract was structured such that the successful contractor will continue to be responsible for contract operations of MWRA's Pelletizing Plant; will be responsible for receiving digested sludge from Deer Island, processing that material into a fertilizer pellet and then disposing of that material in a beneficial way. More specifically, the contractor will use the pellet plant systems to receive sludge via the sludge pipelines between Deer Island and the Pellet Plant, store the liquid sludge, dewater the liquid digested sludge using centrifuges, dry that product using thermal dryers, and

produce a marketable fertilizer pellet. The contractor will then characterize (sample and test) the resulting pellets to determine regulatory compliance and the most efficient marketing and disposal strategy through a diversified portfolio of customers to ensure that the material has an end use 365 days per year. This end use could include disposal in a landfill if the product is outside EPA's guidelines for beneficial use. The contractor will continue to accept title to the sludge, and the contract includes indemnity obligations of the contractor relating to its performance of the services and the marketing and disposal of the pellets. The contractor will also be responsible for all maintenance of the facility and its systems. Capital design, construction and oversight remains the responsibility of MWRA. Capital project decisions will be based on feedback and maintenance reports from the contract operator, subject to approval by the MWRA Board of Directors, and will be separate from this contract.

A new provision of this contract provides MWRA an option to dispose of all pellets via landfill essentially removing MWRA pellets from the beneficial use market. MWRA placed this option in the contract provisions to provide rapid response to any regulatory changes due to PFAS. Once notified, the contractor has up to 60 days to switch from beneficial use to landfill disposal. Proposers were required to submit a landfill cost for years one and two of the contract term; beyond that, the Operator will be paid its costs plus a 20% fee. Using the proposed amount for years one and two, the additional base cost per year if MWRA were to activate this alternate disposal option would be \$2,825,360, before escalation and cost of excess quantities are applied.

## **Procurement Process**

On April 25, 2023, MWRA issued a Request for Qualifications (RFQ), the first step in a two-step Request for Qualifications/Request for Proposals (RFP) process. The RFQ was publicly advertised in the Boston Herald, Banner Publications, El Mundo, the Goods and Services Bulletin and via the MWRA Supplier Portal. A total of 15 firms were directly solicited. The RFQ documents were requested by ten firms. A pre-proposal conference and tour was held on May 23, 2023 with three firms attending. Three firms submitted qualifications statements; one was non-responsive and the other two firms were deemed qualified to proceed to the RFP stage: the New England Fertilizer Company (NEFCo) and Veolia Water North America – Northeast, LLC (Veolia).

The RFP was issued directly to the two pre-qualified firms on June 14, 2023. The RFQ/P included the following evaluation criteria and points: Cost - 26 points; Technical Approach – 22 points; Experience and Past Performance - 20 points; Qualifications and Key Personnel – 18 points; Capacity, Organization and Management Approach – 12 points; and MBE/WBE Participation – 2 points. As the contract specifies that the firms accept the Pelletizing Plant in as-is condition, qualified firms were required to conduct scheduled mandatory onsite inspections in order to remain eligible to submit a proposal.

MWRA staff reviewed and responded to approximately 150 questions from the potential proposers over the course of the procurement. Due to the regulatory uncertainty around PFAS and its impact on the industry, the firms requested whether MWRA would be amendable to retaining title to the sludge, a cap on the contractor's liability and a mutual indemnity. The Authority was ultimately not amendable to such risk-shifting contractual provisions. Primarily due to the risk allocation described above, one of the two qualified firms (Veolia) decided that it would not proceed with submitting a proposal.

MWRA received one proposal on September 29, 2023 from NEFCO:

<b>Proposer</b>	<b>Proposal Price*</b>
NEFCO	\$229,289,350
Engineer's Estimate	\$189,777,563

\* The price shown is the base price for ten years of operation and maintenance of the facility from January 1, 2024 through December 31, 2033. Additional costs for escalation and excess quantities will be incurred over the contract term, adding an estimated \$111,478,942 to NEFCO's price shown above (totaling \$340,768,294). Additional costs associated with alternative disposal may be incurred if beneficial use of the pellets is not desired and are estimated at an additional \$2,825,360 per year that this provision is activated, before escalation and cost of excess quantities are applied.

NEFCO is the incumbent on this contract and has operated the Pelletizing Plant since it was commissioned in 1991. Its proposal is 20.8% higher than the Engineer's Estimate. A review of the line item costs in the Engineer's Estimate relative to the proposal shows NEFCO's largest single increase to be electricity costs, accounting for approximately a \$2 million variance from the Engineer's Estimate. Electricity costs have shown to be volatile as seen by all MWRA operations groups. These costs will be subject to index adjustments using December 2022 as the base index. As such, MWRA expects these costs to drop in 2024 upon reconciliation.

In accordance with the Authority's management policies and procedures for professional services contracts, the Selection Committee reviewed the proposal to determine if the proposal was responsible and included the requested scope of services. The Selection Committee members found NEFCO's proposal to be "excellent" or "very good" overall. The company submitted a good technical approach, a highly experienced team and has the capacity to perform the work as proposed. It has an excellent record operating and maintaining the pellet plant and has proven to be responsible and effective, producing a high quality product with diversified end-markets for the movement of product. Reference checks were completed and all other treatment plants called confirmed similar exemplary performance by NEFCO. All references said they would have no issue rehiring NEFCO to perform work in the future. Synagro's acquisition of NEFCO will not change the NEFCO team assigned to the Pellet Plant, but will enhance it with added depth at the support level, providing extra options for disposal (capacity in both incineration and landfill options).

Based on the reasons set forth above, the Selection Committee recommends the award of Contract S592 to New England Fertilizer Company in an amount of \$229,289,350 plus escalation, cost of excess quantities, and if necessary, additional costs associated with alternative disposal, with a contract term of 10 years from January 1, 2024 through December 31, 2033.

**BUDGET/FISCAL IMPACT:**

The FY24 Current Expense Budget (CEB) includes \$20.3 million for the operations, maintenance, and the marketing and beneficial use costs associated with the Pelletizing Plant contract. An additional \$6.2 million is included in the FY24 CEB for PFAS uncertainty to cover potential landfilling costs. Any overspending will be absorbed within the Operations Division FY24 CEB. MWRA will budget accordingly for future fiscal years to fund the operation of the Pelletizing Plant, including the disposal of its product.

**MBE/WBE PARTICIPATION:**

Due to the specialized nature of this work, the Affirmative Action and Compliance Unit established a MBE/WBE participation requirement of 0% for this contract. NEFCO did not propose any MBE and WBE participation.

**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** November 15, 2023  
**SUBJECT:** Update on Lead and Copper Rule Compliance – Fall 2023



**COMMITTEE:** Water Policy & Oversight

X INFORMATION  
 \_\_\_\_\_ VOTE

Beverly Anderson, Project Manager, Public Health  
 Stephen Estes-Smargiassi, Director, Planning and Sustainability  
 Preparer/Title

  
 David W. Coppes, P.E.  
 Chief Operating Officer

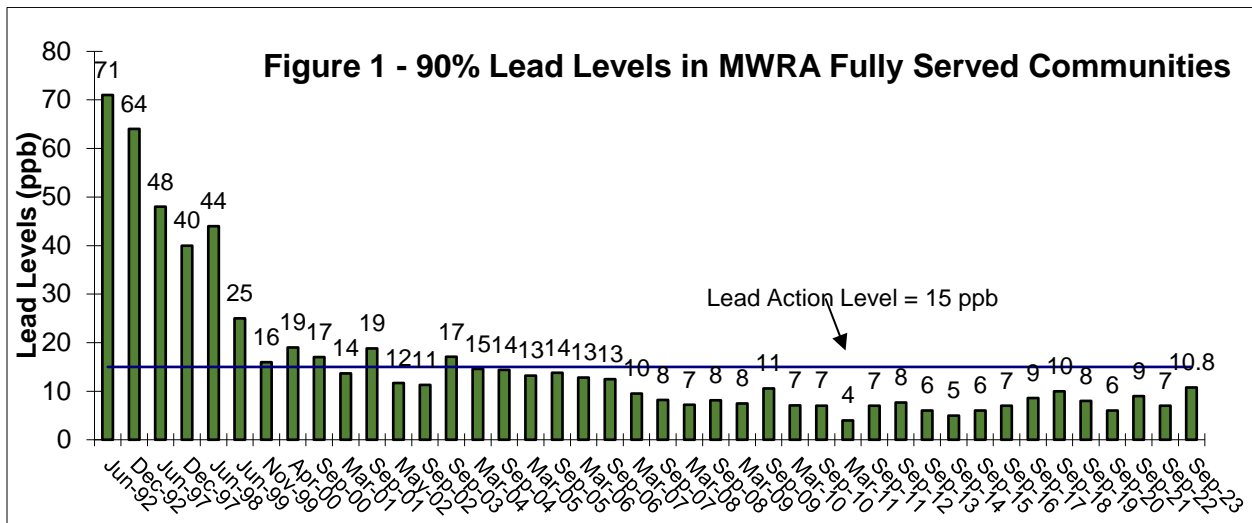
**RECOMMENDATION:**

For information only.

**DISCUSSION:**

Under EPA’s Lead and Copper Rule (LCR), each year MWRA and every fully supplied community must collect and test tap water in a sample of homes *that are likely to have high lead levels*. These are usually homes with lead services or lead solder. EPA requires that nine out of ten of the sampled homes have lead levels at or below the Action Level of 15 parts per billion (ppb).

MWRA and its communities conducted the 2023 LCR sampling round beginning in September 2023. The preliminary 90th percentile lead value for the system as a whole is 10.8 ppb<sup>1</sup>. The MWRA system has been below the lead Action Level of 15 ppb in every round since 2004.



<sup>1</sup> Results are preliminary as one community has not turned in its final sample at the time of the writing of this staff summary. The data presented and conclusions are based on the samples analyzed to date. Final results may vary slightly from those presented, though staff do not anticipate significant changes.

In addition to determining how the system performs as a whole, EPA looks at each individual community. Six communities were individually over the lead Action Level - Winthrop, Boston, Quincy, Medford, Revere and Melrose - and will need to take individual actions as described below.

Both the system-wide 90<sup>th</sup> percentile result and the number of communities over the Action Level were higher than experienced in recent years. While staff are still reviewing the results in more detail, a number of factors appear to have contributed to the disappointing results.

As discussed with the results of last year's sampling at the November 2022 Board of Directors' meeting, there were substantial changes in the composition of the sampling pool due to EPA Region 1's changes to MWRA's sampling agreement. Those changes accelerated compliance with some aspects of the LCR Revisions, which otherwise would not be effective until October 2024, including more samples taken and more emphasis on testing homes with lead service lines. Over the past several years, the percentage of samples from homes with lead service lines has increased for approximately 40 percent of the sampling pool, to approximately 65 to 70 percent. MWRA's data matches that of most other water systems, in that homes with lead service lines are more likely to have elevated lead levels. In MWRA's sampling data, samples from homes with lead service lines typically are several times higher than those from homes that have copper pipes with lead solder. With a higher proportion of samples from homes with lead service lines, individual community and system results will be higher. In this sampling round, 35 out of 595 samples were above the lead Action Level; of the 35 samples above the Action Level, 31 were from homes with lead service lines.

A second factor influencing sample results is how seasonal precipitation patterns affect key reservoir water quality characteristics, as discussed at the October Board of Directors' meeting. For example, this year's extremely wet weather, combined with current demand levels, limited MWRA's ability to maximize the benefit of transferring more of the "well-aged" higher quality Quabbin Reservoir water into the "fresher" Wachusett Reservoir water. Staff worked diligently and creatively to safely manage Wachusett Reservoir levels, without risking downstream flooding, while maximizing possible transfer from Quabbin. One measure of the difference between the two reservoirs is the UV254 absorbance, which is a measure of the amount and reactivity of the natural organic matter in the water. Staff have long suspected a correlation between higher UV254 levels and lead levels, based on the limited data of a single 90<sup>th</sup> percentile result once or twice a year. The ongoing bi-weekly data collection at the lead pipe test rig during its acclimation period provided much more discrete data, further supporting that hypothesis. Staff do not know whether it is the more reactive organic matter itself or if UV254 is a marker for another underlying cause. As previously reported, this summer was very wet and UV254 levels are higher than typical.

A third factor creating uncertainty in understanding data trends is that there has been increased turnover in the sampling pool. In some ways, this is good news as lead service lines are removed, those homes are no longer eligible to be in the sample pool, and must be replaced by other sample sites. However, it does limit the ability to evaluate how specific buildings behave over time. Nearly a quarter of the samples in this sampling round were from new locations, and 40 percent of the samples over the Action Level were from new sites.

### **Responses to Each High Sample:**

Every sample over the Action Level is taken seriously. MWRA staff immediately contact the community, and the community contacts the resident(s) within three days of receiving notice from MWRA with the results. This is followed up with additional information to the resident about the health risks of lead, and simple actions they can take. In addition to the rapid notification MWRA staff were already doing, the new “find and fix” requirements from the accelerated LCR revisions have added several additional actions. Within five days, MWRA sampling staff check the water in the vicinity to assess whether the pH and alkalinity meet MWRA’s corrosion control targets. In each of the 35 cases, results were typical and within limits. Within 30 days, the community contacts the resident to offer to further investigate the possible causes of the elevated levels. In many cases this results in the lead service lines being replaced.

### **Community Actions:**

Another aspect of EPA Region 1’s accelerated implementation of the Lead and Copper Rule Revisions is in public outreach by communities individually over the lead Action Level. Each community is judged based on its own smaller number of samples (typically 20 per community.) Each community over the lead Action Level was required to do a “Tier 1 Public Notice” within 24 hours of exceeding the Lead Action Level. This entailed providing the public notice to news outlets and posting it on their websites (and in some cases community access TV) within 24 hours, and publishing it in a newspaper within 14 days. MWRA provided technical assistance to each community in advance, as well as providing assistance in working with MassDEP. Press coverage has focused on the need to replace lead service lines, providing some additional impetus for homeowners to work with the communities to determine if they have a lead service line and to remove it.

Each community individually over the lead Action Level must also conduct a lead service line replacement program. All six of the communities identified above have had programs underway, and Revere has reported that since its sample collection this fall it has removed all known lead service lines on both the public and private side. As all communities will need to complete service line inventories by October 2024, additional information about the number of lead service lines, particularly on private property and the number of “unknown” service lines, will become available over the next year.

Each community will also need to provide a public education brochure on lead in water to all of its customers within 60 days. MWRA provides graphics and printing support.

MWRA has formally transmitted the sample results to MassDEP and each community. The communities are required to transmit the results to each individual resident that collected a sample within 30 days. Lead data from all samples collected under the LCR since 1992, as well as under other programs, is posted on MWRA’s website.

### **School and Childcare Sampling:**

Under the LCR, each community is also required to collect samples from two schools or childcare facilities. Only one school sample out of 122 (from 61 schools or childcare facilities tested) was above the lead Action Level as part of the LCR testing. As with residential samples, MWRA staff immediately contact any community that has a school sample above the Action Level. All school



data were provided to each community to transmit to the schools, and are available on DEP's online school database that includes over 40,000 school test results from MWRA communities. A link to the DEP database is available on the MWRA webpage.

In addition to the testing done under the LCR, MWRA continues to offer no-cost laboratory analysis services to any of our customer communities that want to sample drinking water taps in schools or childcare facilities. The program is offered in coordination with the MassDEP's similar program. MWRA's laboratory has conducted over 40,000 tests from 571 schools and childcare facilities in 44 communities since 2016.

Under the revised LCR, beginning after October 2024, communities will be required to conduct sampling in 20 percent of elementary schools and licensed childcare facilities each year. This will be a substantial increase in community and MWRA workload.

### **Revisions to the Lead and Copper Rule**

As discussed in a January 2022 staff summary, EPA's long awaited revisions to the Lead and Copper Rule were released in December 2021. MWRA staff have provided training to community staff on the new requirements in several venues since then, including two sessions in September of this year. Additional training sessions will be offered as EPA issues guidance on aspects of the revised rule in preparation for its October 2024 deadlines. Current priorities include working with communities as they conduct service line inventories and create lead service line replacement plans before October 2024.

EPA has announced that it intends to make additional changes to the recently finalized LCR Revisions, with a draft now expected in November 2023 and a final rule expected before October 2024. One potential change that some stakeholders are urging EPA to make is to reexamine the Action Level of 15 ppb and new Trigger Level of ten ppb. One option being considered is to reduce the Action Level to ten ppb (and eliminate the Trigger Level). During this sampling round, eight communities were individually over ten ppb, and over the past several rounds, between six and 12 were over ten ppb. The change would potentially mean that those communities would be required to do the 24-hour public notice described above, as well as mandatory lead service line replacement.

Other expected changes include:

- a replacement goal of all lead service lines within ten years;
- use of highest of first and fifth liter lead sample for calculating 90<sup>th</sup> percentile (for sites with lead service lines) (resulting in high reported levels);
- requiring that disadvantaged neighborhoods be prioritized for full lead service line replacement; and
- requiring even more galvanized service lines be replaced by focusing on lead goosenecks.

Staff anticipate that there will be a limited comment period given EPA's goal of having the final rule promulgated by October 2024, but are preparing to review and comment on the draft.

In March 2021, staff reported that EPA Region 1 revised MWRA's consecutive system sampling plan, thereby accelerating compliance with parts of the LCR Revisions. MWRA staff worked with

MassDEP and EPA Region 1 to work out the details of the requirements, as EPA had not yet issued guidance manuals for the requirements, which otherwise would not be in place until October 2024.

The changes included:

- mandatory 24-hour public notice if a community exceeded the Lead Action Level;
- increase in the number of required residential samples by 33%;
- use of only sites with lead service lines, if a community has any;
- provision of sample results within three days for any residential site over the lead Action Level; and
- required “find and fix” evaluations of the residence and local distribution system for any residential sample site over the Action Level.

MWRA worked with communities to understand and successfully implement all the requirements. The number of residential samples increased from about 450 to just under 600, with many newly added sites with lead service lines.

### Lead Service Line Replacement Program

In March 2016, the Board made \$100 million in ten-year interest-free loans available to communities solely for efforts to fully replace lead service lines. Under MWRA’s Lead Service Line Replacement Loan Program, each community can develop its own replacement program, tailored to its local circumstances.

During the first seven years of the program (through November 2023), MWRA has distributed a total of \$40 million in Lead Service Line Replacement Loan Program funds to 16 communities, with an additional \$2 million distribution expected in December 2023:

- **BWSC:** \$2,602,419 in FY21 and \$862,500 in FY22 (\$3.5 million total);
- **Chelsea:** \$100,000 in FY19, \$300,000 in FY20, \$300,000 in FY21, \$300,000 in FY22, \$500,000 in FY23, and \$300,000 in FY24 (\$1.8 million total);
- **Everett:** \$1.0 million in FY19, \$1.0 million in FY20, \$500,000 in FY20, \$1.5 million in FY21, and \$1.5 million in FY22 (\$5.5 million total);
- **Malden:** \$500,000 in FY24;
- **Marlborough:** \$1.0 million in FY18, \$1.0 million in FY19, \$1.0 million in FY20, and \$2.0 million in FY21 (\$5.0 million total);
- **Needham:** \$1.0 million in FY18;
- **Newton:** \$4.0 million in FY17;
- **Lexington:** \$3.9 million in FY24;
- **Quincy:** \$1.5 million in FY17;
- **Reading:** \$1.5 million in FY23;
- **Revere:** \$195,000 in FY18, and \$1,300,000 in FY22 (\$1.5 million total);
- **Somerville:** \$900,000 in FY20 and \$1,555,000 in FY22 (\$2.5 million total);
- **Watertown:** \$600,000 in FY21, \$600,000 in FY23, and \$300,000 in FY23 (\$1.5 million total);
- **Weston:** \$160,000 in FY20;
- **Winchester:** \$500,000 in FY17, \$500,000 in FY18, \$600,000 in FY20, \$600,000 in FY21, and \$600,000 in FY23 (\$2.8 million total); and

- **Winthrop:** \$284,000 in FY18, \$487,850 in FY19, \$690,000 in FY20, \$750,000 in FY21, \$750,000 in FY22, and \$750,125 in FY23 (\$3.7 million total).

Melrose and Winthrop have recently submitted funding applications for \$1.035 million and \$980,000, respectively. Both communities are awaiting borrowing authorization votes. If borrowing authorization is approved, the communities will be funded in December 2023.

The MWRA’s Lead Service Line Replacement Loan Program has funded the replacement of approximately 4,002 lead service lines and approximately 948 lead goosenecks.

Several communities are using the MWRA loans to fully fund replacement of the entire lead service line, while others have developed various incentives for the portion of the line on private property. The Boston Water and Sewer Commission has enhanced its long standing Lead Service Line Incentive Program and is now replacing lead service lines on private property at no cost to the owner.

### Review of Corrosion Control Treatment

As staff reported in September, the experimental phase of the pipe rig system with “harvested” lead service lines began in August, testing several different doses of orthophosphate against MWRA’s current treatment. This work is being done proactively, rather than waiting to see if the MWRA system exceeds the new Trigger Level once the revised LCR comes into effect in October 2024, enabling MWRA to carefully manage the evaluation without the arbitrary and restrictive regulatory timelines.



*Lead Pipe Rig Corrosion Control Treatment Experiment*

Evaluating a corrosion control treatment change is a significant undertaking. Any decision to change treatment will require careful consideration of both the level of confidence in the expected changes in long-term lead levels, as well as the likelihood of significant water quality problems during the treatment transition. The status and pace of lead service line removal programs will also likely play a role in decision making, given that homes without lead service lines have much lower lead levels.

As a key part of this review, staff consulted with a panel of outside experts to provide input into the type of treatment adjustments to be considered and the type of evaluations to be included. Staff from MassDEP and EPA, as well as community and Advisory Board staff, participated in the panel discussions, as has been MWRA’s practice for all prior treatment evaluations. The current technical contract will also include an external review panel to provide review and validation of the work that staff and our consultant will be undertaking.

**BUDGET /FISCAL IMPACT:**

MWRA began modern effective corrosion control treatment to reduce lead and copper levels at the tap in 1997. MWRA's corrosion control treatment involves raising the pH and alkalinity in the water to make it stable and non-corrosive, reducing the potential for both lead and copper to leach from customers' home plumbing. The annual cost for corrosion control is approximately \$3.7 million.

## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** November 15, 2023  
**SUBJECT:** Northern Intermediate High Section 89 Replacement Pipeline  
P. Gioioso & Sons, Inc.  
Contract 7117, Change Order 5

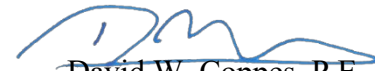


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**COMMITTEE:** Water Policy & Oversight

INFORMATION  
 VOTE

Martin E. McGowan, Director, Construction  
Jeremiah Sheehan, Construction Coordinator  
Preparer/Title

  
David W. Coppes, P.E.  
Chief Operating Officer

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### RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Change Order 5 to Contract 7117, Northern Intermediate High Section 89 Replacement Pipeline, with P. Gioioso & Sons, Inc. for an amount not to exceed \$2,000,000, increasing the contract amount from \$33,309,138.83 to \$35,309,138.83, with no increase in contract term.

Further, to authorize the Executive Director to approve additional change orders as may be needed to Contract 7117 in an amount not to exceed the aggregate of \$1,000,000 in accordance with the Management Policies and Procedures of the Board of Directors.

### DISCUSSION:

MWRA's Northern Intermediate High (NIH) pressure zone has supplied water to the communities of Reading, Stoneham, Wakefield, Wilmington, Winchester, and Woburn through a single 48-inch diameter pipeline fed by the Gillis and Spot Pond Pumping Stations in Stoneham. MWRA recently completed the NIH Redundancy Project with the installation and activation of the new Section 110 pipeline through the communities of Stoneham, Reading and Woburn. Section 110 provides full pipeline redundancy for the water supply to the NIH communities. Activation of the new Section 110 pipeline has allowed MWRA to proceed with design and construction for the replacement of Section 89, which has previously been the single spine transmission line to the NIH communities.

The MWRA Section 89 pipeline was constructed in the 1970s with pre-stressed concrete cylinder pipe (PCCP) and is the primary transmission line from Gillis Pumping Station to Bear Hill Tank in Stoneham. Distribution of water from Bear Hill Tank to the communities of Reading, Stoneham, Wakefield, Wilmington, Winchester, and Woburn occurs based on demand. This contract includes replacement of 10,500 linear feet of existing Section 89 pipeline from Gillis Pump Station to Fallon Road at the foot of Bear Hill Tank with new ductile piping as well as installation of additional isolation valve structures. Replacement of this pipeline is necessary because the PCCP manufactured during this timeframe has been susceptible to catastrophic failure.

## This Change Order

Change Order 5 consists of the following two items:

### Bear Hill Tank Bypass

Not to Exceed \$1,500,000

One of the critical constraints in the contract specifications is maintaining water supply to Bear Hill Tank for distribution to communities during construction. To achieve this, the design requires installation of two line stops to bypass the water flow around the construction. The contract also requires that the pipeline working pressure be maintained at 80 psi when any work is being performed on the existing PCCP, as a reduction in the pipeline working pressure would cause supply issues to some communities.

After commencement of the contract, the Contractor provided a submittal for the line stops that included stress calculation indicating the existing steel liner of the PCCP could not be tapped safely at the minimum required pressure. The Design Engineer reviewed and analyzed the calculations and conceded that tapping the PCCP pipe in the designated location at the 80-psi working pressure was above the calculated safety factor and could result in potential catastrophic failure. The Design Engineer should have performed all necessary evaluations and stress calculations during design to ensure the temporary bypass system was constructible.

To complete the contract work while maintaining the Bear Hill Tank system required an alternative bypass design. The Design Engineer collected information on the Bear Hill Tank pipeline that had not been obtained during design, and identified another location with a thicker steel liner that could be tapped safely in accordance with the specifications. The new tapping location is approximately 350 feet away from the original location and increases the bypass piping from approximately 60-feet to almost 900-feet. Since there were no alternative locations to install a linestop on Section 89, a brief shutdown is needed to install a new 36-inch butterfly valve to provide isolation from the active main and construction work. During this

shutdown, Stoneham's distribution system will be used to maintain a connection to the Bear Hill Tank using the expanded bypass piping system. As part of the re-design, the Design Engineer also re-evaluated the pipeline forces and determined the thrust restraints had to be increased significantly with larger concrete thrust blocks with additional reinforcing steel. Without this revised bypass design, the remaining pipe replacement work included in the contract cannot proceed.



Test pit for PCCP in Alternate Location



As a result, the Contractor was required to perform additional test pits to support the redesign; and will be required to furnish and install an additional tapping sleeve and valve to connect to the Town of Stoneham water line with 100 linear feet of ductile iron pipe, furnish and install 700 linear feet of HDPE plastic temporary water bypass with ancillary valves from the Town of Stoneham water line on the opposite side of Route 93, install a MWRA-supplied 36-inch butterfly valve and increase the thrust blocks to provide required restraint. During construction, the Contractor must provide additional traffic controls and protection of the temporary bypass using jersey barriers to prevent vehicular damage and provide safe pedestrian access. After construction is complete, the Contractor must subsequently remove the temporary bypass pipelines and restore the site.

This item was identified by MWRA staff as a design error. MWRA staff and the Contractor have agreed to an amount not to exceed \$1,500,000 for this additional work. The Contractor has not begun this work.

Future Connection to Bear Hill Tank

Not to Exceed \$500,000

After commencement of the contract and during the redesign of the Bear Hill Tank bypass configuration, staff conducted a vulnerability analysis of water supply versus critical supply to the towns served by the Bear Hill Tank. This analysis determined a need for a secondary storage tank with supply line at Bear Hill for redundancy to minimize water supply risk. This redundant storage tank and supply line will be completed in a future design and construction contract. Since the Contractor will be installing new pipe in this location, staff determined that the installation of isolation valves to allow for the possibility of the future tank and supply line installed under this contract would eliminate the need to deactivate, cut and disinfect Section 89 piping at a future date. As a result of this design change, the Contractor must furnish and install two 36-inch gate valves with a 36-inch-by-36-inch tee and a 20-foot section of 36-inch pipe with cap for the future Bear Hill Tank connection.

This item was identified by MWRA staff as a design change. MWRA staff and the Contractor have agreed to an amount not to exceed \$500,000 for this additional work. The Contractor has not begun this work.

**CONTRACT SUMMARY:**

	<u>Amount</u>	<u>Time</u>	<u>Dated</u>
Original Contract:	\$32,619,000.00	1,475 Days	08/05/21
Change Orders:			
Change Order 1*	\$250,000.00	0 Days	02/09/23
Change Order 2*	\$150,809.10	0 Days	07/25/23
Change Order 3*	\$13,404.89	0 Days	07/25/23
Change Order 4*	\$275,924.84	0 Days	09/05/23
Change Order 5	<u>\$2,000,000.00</u>	<u>0 Days</u>	Pending
Total Change Orders:	\$2,690,138.83	0 Days	
Adjusted Contract:	\$35,309,138.83	1,475 Days	

\*Approved under delegated authority

If Change Order 5 is approved, the cumulative value of all change orders will be \$2,690,138.83 or 8.25% of the original contract. Work on this contract is 58% complete.

**BUDGET/FISCAL IMPACTS:**

The FY24 Capital Improvement Program includes \$33,659,000 for Contract 7117. Including this change order for \$2,000,000, the adjusted subphase total will be \$35,309,138.83 or \$1,650,138.83 greater than the amount in the CIP. This amount will be absorbed within the five-year CIP spending cap.

**MBE/WBE PARTICIPATION:**

The D/MBE and D/WBE participation requirements for this project were established at 4.2% and 4.5%, respectively. The Contractor has been notified that it is still expected to meet these requirements.