



# MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard  
100 First Avenue, Building 39  
Boston, MA 02129

Frederick A. Laskey  
Executive Director

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

## **BOARD OF DIRECTORS' MEETING**

**To be Held on Wednesday, February 15, 2023**

Time: 11:00am

Telephone: (617) 242-6000  
Fax: (617) 788-4899  
TTY: (617) 788-4971

### **To be Held Virtually Pursuant to An Act Relative to Extending Certain State of Emergency Accommodations**

#### **WebEx Meeting Link (Registration Required)**

<https://mwra.webex.com/weblink/register/r2b29d5183c6478cb7d1e6faf4ad157d9>

Event Number: 2333 947 2739      Password: 2152023

### **AGENDA**

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

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

A. Annual Meeting: Election and Appointment of MWRA Officers, Retirement Board Member and Committee Assignments

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

#### **IV. EXECUTIVE SESSION**

i. Approval of January 18, 2023 Executive Session Minutes

##### **A. Litigation**

1. Conservation Law Foundation, Inc. v. MWRA, USDC No. 1:22-CV-10626-RGS, Litigation Update (Verbal)
2. Chelsea Creek Headworks Project: Arcadis U.S., Inc., Contract 7206, BHD/BEC JV 2015, A Joint Venture, Contract 7161, Settlement of Claims (Materials to Follow)

#### **V. ADMINISTRATION, FINANCE & AUDIT**

##### **A. Information**

1. Update on Space Consolidation Project
2. FY23 Second Quarter Orange Notebook
3. Delegated Authority Report – January 2023
4. FY23 Financial Update and Summary through January 2023
5. Preliminary FY2024 Water and Sewer Assessments

**V. ADMINISTRATION, FINANCE & AUDIT (Continued)**

**B. Approvals**

1. FY24 Proposed Current Expense Budget
2. Approval of the 86th Supplemental Resolution
3. Delegation of Authority to Execute Contracts for the Purchase and Supply of Electric Energy and Voluntary Renewable Energy Certificates for the MWRA Interval Accounts

**VI. WASTEWATER POLICY & OVERSIGHT**

**A. Contract Awards**

1. Deer Island Treatment Plant Clarifier Rehabilitation, Phase II: Walsh Construction Company II, LLC, Contract 7395 (Materials to Follow)

**VII. WATER POLICY & OVERSIGHT**

**A. Information**

1. Report on 2022 Water Use Trends and Reservoir Status
2. Update on MWRA Aquatic Invasive Plant Control Activities
3. Public Outreach Plan for Fluoride Shutdown

**B. Contract Amendments/Change Orders**

1. Section 56 Replacement Saugus River Crossing - Section 56, Design Engineering Services During Construction: AECOM Technical Services, Contract 7454, Amendment 1

**VIII. PERSONNEL & COMPENSATION**

**A. Approvals**

1. Approval of the 2023 Affirmative Action Plan
2. PCR Amendments – February 2023

**IX. CORRESPONDENCE TO THE BOARD**

**X. OTHER BUSINESS**

**XI. ADJOURNMENT**

## MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Board of Directors

January 18, 2023

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A meeting of the Massachusetts Water Resources Authority (“MWRA”) Board of Directors was held on January 18, 2023. The meeting was conducted via remote participation by the Board of Directors pursuant to Chapter 20 of the acts of 2021 and subsequent acts extending certain COVID-19 measures adopted during the state of emergency.

Board Secretary Pappastergion served as Chair of the meeting at Secretary Tepper’s request. Chair Pappastergion presided remotely from MWRA headquarters. Also present from the Board were Secretary Tepper (remotely from MWRA headquarters); Messrs. Flanagan (remotely from MWRA headquarters) Foti (remotely from MWRA headquarters); Peña (remotely from MWRA headquarters); Vitale (remote participation); Jack Walsh (remote participation); Patrick Walsh (remote participation); Rev. White-Hammond (remotely from MWRA headquarters); and, Ms. Wolowicz (remote participation). Mr. Carroll was absent.

MWRA Executive Director Frederick Laskey, General Counsel Carolyn Francisco Murphy and Assistant Secretary Kristin MacDougall participated remotely from MWRA headquarters. Other MWRA staff in attendance remotely included David Coppes, Chief Operating Officer; Carolyn Fiore, Deputy Chief Operating Officer; Thomas Durkin, Director, Finance; Michele Gillen, Director, Administration; Kathy Murtagh, Director, Tunnel Redundancy; Patterson Riley, Special Assistant For Affirmative Action; Paula Weadick, Director, MIS, Steve Rhode, Director, Laboratory Services; Valerie Moran, Director, Waterworks; Stephen Estes-Smargiassi, Director, Planning and Sustainability; Wendy Chu, Director, Human Resources; Rita Mercado, Acting Director, Procurement; Matthew Horan, Deputy Director of Finance/Treasurer; Michael Cole, Director, Budget; and, Assistant Secretary Ria Convery. Vandana Rao, Executive Office of Environmental Affairs (EEA), and Joseph Favalaro and Matthew Romero, MWRA Advisory Board, participated remotely from MWRA headquarters.

Chair Pappastergion called the meeting to order at 1:03pm.

### REPORT OF THE CHAIR

On behalf of the Board of Directors, Board Secretary Pappastergion welcomed EEA Secretary Tepper and announced that he would serve as Chair of the meeting at her request. Secretary Tepper introduced herself to Board Members, MWRA and Advisory Board staff and meeting participants. She noted that she recently had a productive meeting with MWRA Executive Director Laskey and looked forward to working with Board Members and MWRA staff. (Ref. II)

### ROLL CALL

MWRA General Counsel Francisco Murphy took roll call of Board Members in attendance. The Chair announced that except for Executive Session, the meeting was open to the public virtually, via a link posted on MWRA’s website. He added that the meeting would be recorded, and that the agenda and meeting materials were available on MWRA’s website. Chair Pappastergion announced that the meeting would move into Executive Session after the Executive Director’s report, and that the Open Session would resume after the adjournment of

Executive Session. He also announced that individual roll call votes would be conducted after each motion was made and given an opportunity for discussion.

#### APPROVAL OF DECEMBER 14, 2022 MINUTES

A motion was duly made and seconded to approve the minutes of the Board of Directors' meeting of December 14, 2022.

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

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

(ref. I)

#### REPORT OF THE EXECUTIVE DIRECTOR

On behalf of MWRA staff, Mr. Laskey welcomed Secretary Tepper to the Board of Directors. He then announced that the Department of Environmental Protection (DEP) had awarded MWRA a \$96,000 Clean Energy Gap Grant to install heat pumps at the Newton Street and New Neponset Pump Stations. Next, he advised that NEFCo, the contract operator of MWRA's pelletizing plant, had received a 21E demand letter relating to Mass Naturals, a Westminster composting facility that had been in the news regarding PFAS. He noted that MWRA staff had no further information at this time, that MWRA had not received such a letter, and that staff would keep Board members posted. Next, Mr. Laskey advised that there continues to be some stress with Waltham city officials over the location of the proposed tunnel and a major water pipeline project. He then updated Board members on annual winter maintenance activities at the Carroll Water Treatment Plant and a recent Ware River water transfer into the Quabbin Reservoir. Finally, Mr. Laskey briefly described agenda items planned for the February 2023 Board Meeting including the annual Board meeting. (ref. III)

#### EXECUTIVE SESSION

Chair Pappastergion requested that the Board move into Executive Session to discuss Litigation, since Open Session may have a detrimental effect on the litigating position of the Authority. He announced that the planned topic of discussion in Executive Session was the Annual Litigation Summary and Update. He 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 this purpose, 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 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 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		
Flanagan		
Foti		
Pappastergion		
Peña		
Vitale		
J. Walsh		
P. Walsh		
White-Hammond		
Wolowicz		

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

The Board moved to Executive Session to discuss Litigation since discussing such in Open Session could have a detrimental effect on the litigating position of the Authority.

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

The meeting entered Executive Session at 1:11pm and adjourned at 1:24pm.

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

## WASTEWATER POLICY AND OVERSIGHT

### Information

#### MWRA's Ongoing Contribution to Wastewater Based Epidemiology

Staff presented an update on MWRA's ongoing contribution to Wastewater Based Epidemiology and how that relates to the current state of the COVID-19 (“Covid”) pandemic. MWRA Chief Operating Officer David Coppes began the presentation with an overview of MWRA's metropolitan sewer system, including its service area, headworks, and facilities for Combined Sewer Overflow (“CSO”) control and wastewater treatment. He then described how wastewater

flows are transported and pumped from MWRA's North and South system service communities to the Deer Island Treatment Plant ("DITP"). Finally, Mr. Coppes explained that DITP wastewater samples have been collected and analyzed for viral RNA since 2020. Next, MWRA Director of Laboratory Services Steve Rhode presented an outline of MWRA's Wastewater Covid-19 Tracking program, for which MWRA staff have provided wastewater samples for analysis by Biobot Analytics, a wastewater epidemiology company, since the start of the pandemic. He presented historical and current data, which showed the peaks and valleys of concentrations of Covid RNA in MWRA wastewater over time. He briefly explained the significance of the test results. Next, Mr. Rhode presented a comparison of wastewater signal to Covid cases as reported by the Massachusetts Department of Public Health ("DPH"). He noted that signal-to-case comparisons have tracked closely until recently, possibly due to individual case underreporting as home Covid testing kits become more prevalent. He then provided background on the program, and noted that it could be the longest continuous daily sample record for wastewater testing of SARS-CoV-2 in the United States. Mr. Rhode then explained that DPH would continue to fund the program through 2023, and could move the testing to its lab in Jamaica Plain in the future. Next, he described how MWRA's Biobot results are shared with the State Command Center and DPH staff as they are received, then posted on [mwra.com](http://mwra.com). He then reported that DPH asked MWRA to participate in a different wastewater scan program run by Verily Public Health that tests for SARS-CoV-2, flu, RSV, influenza and a few other pathogens. Finally, Mr. Rhode noted that the Verily results are posted online and would also be linked to MWRA's website after Verily changes their hyperlink pending their website redesign.

Committee Chair Jack Walsh asked where individuals could report Covid home test results. Mr. Rhode explained that DPH's website notes that such reporting to them is not necessary. He also noted that this change highlights the value of testing wastewater for pathogens, as the results apply to the entire population of a sewer service area, whether individuals are reporting their test results or not.

Hearing no further discussion or questions from the Board, Chair Pappastergion moved to Water Policy and Oversight. (ref. V A.1)

## WATER POLICY AND OVERSIGHT

Committee Chair Vitale welcomed Secretary Tepper to the Board of Directors on behalf of Mayor Wu and Boston residents.

### Information

#### Update on Temporary Fluoride Shutdown for Construction

MWRA staff presented an update on upcoming work on MWRA's fluoride chemical addition system. MWRA Deputy Chief Operating Officer Carolyn Fiore began the presentation with an overview MWRA's water system, including the water service area; reservoirs; the system of water pipes, tunnels, and aqueducts; storage facilities; and, pump stations. She noted that MWRA also supplies Quabbin Reservoir water to the McLaughlin Fish Hatchery and generates electricity at the Oakdale and Cosgrove hydropower facilities. She then presented additional

background on the Brutsch Water Treatment Facility, the Carroll Water Treatment Plant, and their respective treatment processes. Finally, Ms. Fiore described the MWRA/Department of Conservation and Recreation (“DCR”) Watershed Protection Program.

Next, MWRA Director of Waterworks Valerie Moran presented a more detailed review of MWRA’s water treatment steps at the Carroll Plant, including primary and residual disinfection, corrosion control and fluoridation. She highlighted a solar panel array that generates green energy at the Carroll plant. She then advised that MWRA was planning a temporary shutdown of fluoridation at the Carroll Plant to accommodate work to replace chemical feed equipment for fluoridation and corrosion control. She explained that much of the current equipment was approximately 20 years old and nearing the end of its useful life. She further explained that replacement work would begin in mid-March, 2023. Ms. Moran described the equipment and systems that will be replaced under the contract, and explained that the work requires the temporary shutdown of fluoridation cycles. She further noted that MWRA staff recommended the isolation of the fluoridation system once for approximately three months until all the work is complete, rather than initiate three to six, two- to three-week “off-on” cycles. She explained that shutting down fluoridation for one longer period of time rather than for repeated, shorter timeframes promotes worker safety. She further explained that a single shutdown was beneficial because it reduces the frequency of potential regional hazmat team calls in case of emergency. Ms. Moran noted that the Marlborough Fire Chief had also recommended one full isolation period due to potentially long response times for the hazmat team, which is not located in Marlborough. Next, she provided background on fluoridation in the MDC/MWRA’s water system, which has taken place since the 1970s with few interruptions. Mr. Moran then explained that in preparation for the upcoming fluoride shutdown, MWRA staff had coordinated with the DPH and DEP, who reviewed and approved MWRA’s shutdown and community outreach plans. She provided an overview the outreach plan, which includes notifications to all water superintendents and public health officers in the MWRA service area, the advance posting of a public notice with subsequent progress updates on the front page of MWRA’s website, as well as notices on the website’s fluoridation page and in the Monthly Water Quality Update report. She then reviewed the schedule for the fluoride shutdown, beginning with a fluoride dilution process for tank and pipe flushing in January 2023, followed by the handover of flushed equipment to the contractor in mid-March. Finally, Ms. Moran explained that construction was expected to take place through late April or early May, with final testing and the resumption of fluoridation expected to be complete by late May.

Board Member White-Hammond asked for clarification on how much the temporary fluoride shutdown could impact the dental health of constituents, and asked if MWRA and customer communities could potentially partner with local dentists and schools for additional outreach. MWRA Director of Planning and Sustainability Stephen Estes-Smargiassi explained that DPH specified that no additional outreach efforts were required for MWRA’s shutdown due to its short duration. Board member Peña asked about legal strategy to reduce risks. General Counsel Francisco-Murphy explained that Law Division and Risk Management staff work closely to look for any potential risks, and that the upcoming shutdown had not raised concerns.

Rev. White-Hammond suggested that issuing an informational press release could help maintain and build public trust in MWRA. Mr. Estes-Smargiassi explained that MWRA's current outreach strategy for the shutdown included the prominent placement of a notice on mwra.com and outreach to all public health officers in the affected service area. Mr. Laskey asked Board Members if they recommended the issuance of a region-wide press release. Rev. White-Hammond suggested ways that a press release could be framed and Board Members Flanagan and Foti noted benefits of a press release. Chair Pappastergion noted that community-level officials were responsible for informing local ratepayers of any changes to water chemistry, and recommended that MWRA staff encourage local water superintendents and public health officers to notify their constituents. There was discussion about approaches, including a bill flyer and the Consumer Confidence Report (CCR), and what could be included. Secretary Tepper suggested that outreach materials could state that staff had consulted with public health officials and that no dental health impacts were expected. Mr. Estes-Smargiassi advised that staff would reach back out to DPH to collaborate with them on approaches. It was noted that there are some water districts that do not fluorinate; but that the water for fully- and partially-supplied MWRA communities in Eastern Massachusetts water is fluoridated.

Chair Pappastergion asked if there was further discussion or questions from the Board. Hearing none, he moved to Personnel and Compensation. (ref. VI A.1)

## PERSONNEL AND COMPENSATION

### Approvals

#### PCR Amendments - January 2023

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.

MWRA Human Resources Director Wendy Chu explained that the Position Control Register (PCR) is MWRA's tool to track positions and personnel expenses, and provided a brief overview of MWRA policies with respect to Board of Directors' Approval and Delegated Authority for Personnel and Compensation matters. She explained that Diversity, Equity and Inclusion ("DEI") is a priority at MWRA and that staff approaches recruitment and retention through a DEI lens. She noted that MWRA staff actively recruits candidates from minority and underrepresented populations for all of union and non-union positions, and includes staff from Human Resources or the Affirmative Action and Compliance Unit on every interview panel because representation is one of MWRA's core values. Ms. Chu then summarized three proposed PCR amendments, including two title and grade changes for two vacant positions in the Executive Division, Public Affairs Department, and a new position in the Executive Division, Security Department, all to better meet staffing needs. She advised that the two proposed Public Affairs positions reflect MWRA's ongoing efforts to engage in community outreach and also to advance environmental justice, diversity, equity, inclusion and accessibility in MWRA's work. She added that staff had added bilingual preference to these job descriptions to reflect the communities MWRA works in and serves.

Chair Pappastergion asked if there was any discussion or questions from the Board. Hearing



none, he requested a roll call vote in which the members were recorded as follows:

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

(ref. VII A.1)

Appointment of Kristen A. Patneaude, Manager, Energy, Operations Division

A motion was duly made and seconded to approve the appointment of Ms. Kristen A. Patneaude to the position of Manager, Energy (Non-Union, Grade 14) in the Operations Administration Department, at an annual salary of \$143,000, commencing on a date to be determined by the Executive Director.

Ms. Chu described the proposed candidate's work experience and qualifications.

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

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

(ref. VII A.2)

Appointment of Martin McGowan, Director, Construction

A motion was duly made and seconded to approve the appointment of Mr. Martin McGowan to the position of Director, Construction (Non Union, Grade 16), in the Engineering and Construction Department at an annual salary of \$162,542, commencing on a date to be determined by the Executive Director.

Ms. Chu described the proposed candidate's work experience and qualifications.

There was brief discussion about the candidate's Massachusetts Professional Engineer status.

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

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

(ref. VII A.3)

Appointment of Kristen Schuler Scammon Associate General Counsel, Litigation

A motion was duly made and seconded to approve the appointment of Ms. Kristen Schuler Scammon to the position of Associate General Counsel, Litigation, (Non-Union, Grade 15) at an annual salary of \$149,000, commencing on a date to be determined by the Executive Director.

Ms. Chu described the proposed candidate's work experience and qualifications.

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

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

(ref. VII A.4)

Appointment of Kimberley A. McMahon, Associate General Counsel, Labor and Employment

A motion was duly made and seconded to approve the appointment of Ms. Kimberley A. McMahon to the position of Associate General Counsel, Labor and Employment, Law Division (Non-Union, Grade 15) at an annual salary of \$149,000, commencing on a date to be determined by the Executive Director.

Ms. Chu described the proposed candidate's work experience and qualifications.

Mr. Vitale requested a summary of Law Division staffing changes from March 2021 through December 2022, and the Law Division staff count. Ms. Francisco Murphy explained the changes concerning a paralegal and litigation administrative position. Ms. Gillen added that an Associate General Counsel, Energy and Environment position was also added during that time. Chair Pappastergion asked if there was further discussion or questions from the Board. Hearing none, he requested a roll call vote in which the members were recorded as follows:

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

(ref. VII A.5)

ADMINISTRATION, FINANCE AND AUDITInformationDelegated Authority Report – December 2022

MWRA Director of Administration Michele Gillen provided an overview of the Delegated Authority Report's purpose, and MWRA's Management Policies of the Board of Directors with respect to Procurement Delegated Authority. She also described staff's procurement, approval and documentation procedures for delegated authority and sole source purchases.

Mr. Jack Walsh asked if Delegated Authority Report item C-7, Wachusett Dam Lower Gatehouse Pipe Replacement and Southborough Headquarters Electrical Systems Upgrade RE/I Services, was advertised through a competitive bidding process. MWRA Acting Director of Procurement Rita Mercado responded in the affirmative and explained that MWRA had advertised for RFQ/Ps and received only one proposal, from Hazen and Sawyer. She further explained that Hazen and Sawyer was the design consultant for these projects and that the firm was well equipped to provide the expertise and services required. Finally, Ms. Mercado advised that the small number of bids received was indicative of the current, highly competitive market

for qualified RE/RI staff. There was brief, general discussion about the cost of the projects' contract and staffing.

Chair Pappastergion asked if there was further discussion or questions from the Board. Hearing none, he moved to the next Information item. (ref. VIII A.1)

#### FY23 Financial Update and Summary through December 2022

MWRA Director of Finance Thomas Durkin updated Board Members on MWRA's Finance activities through December 2022 and provided a brief overview of MWRA's Current Expense Budget (CEB) development and reporting processes. He noted that direct expenses were underspent by \$6.4 million (-\$4.6%), primarily due to lower than budgeted full time equivalent (FTE) counts (-112 FTEs). Next, he reported that chemicals were overspent by approximately \$1 million (+13%), driven by inflation. Mr. Durkin briefly described recent trends regarding inflation and the consumer price index, and their impacts on MWRA's utilities budgets (approximately \$1 million overspent, or +5.6%). He cited a recent Deer Island diesel fuel purchase as an example. He then reported that indirect expenses were underspent by approximately \$700,000 (-2.3%), primarily attributed to DCR watershed reimbursements. Next, he reported that MWRA's Capital Finance budget had a 0% variance. He described MWRA's Capital Finance strategy, including the management of variable rate borrowings, bond issuances and bond resets. Mr. Durkin then provided an overview of MWRA's bond defeasance and debt service strategies, and how they relate to MWRA community assessments. He reported that MWRA had approximately \$3.5 million set in the defeasance account, and that staff expected that sum to grow over the fiscal year. He advised that that staff would continue to monitor rising variable rate bond rates as they could impact the defeasance budget. Next, Mr. Durkin provided a summary of MWRA's revenue sources, including approximately 97% from community assessments and 3% from other sources such as investments and Other User Charges. He noted that the other sources of revenue category is important to MWRA budgets because that is applied to offset assessments, and reported a positive Revenue variance of approximately \$9.9 million. He then detailed MWRA's strategies for investments, debt service and the management of assets, liabilities and spending. Finally, Mr. Durkin reported a total positive budget variance of approximately \$17 million.

Mr. Vitale asked about the "increased contributions by external new hires" referenced in the Staff Summary. Mr. Durkin explained that this point relates to changes in MWRA health insurance participation as new hires filled vacant positions; based on date of hire, the Authority pays 75% or 80% of an employee's health insurance premium costs. Mr. Vitale requested more information about increased chemical usage... Mr. Durkin explained that reduced flows had created odors that required additional chemical treatment. There was general discussion and questions and answers about MWRA's investment strategy, investment portfolio, the current economic environment, interest rates, and the potential impacts of inflation on MWRA and its ratepayers. Mr. Jack Walsh requested clarification about a figure on page 4 of the Staff Summary regarding the cost of edge switches. MWRA Budget Director Michael Cole advised that staff would review the figure and report back as soon as possible. (Mr. Jack Walsh's question was answered during the discussion for agenda item VIII B.1.)

Hearing no further discussion or questions from the Board, Committee Chair Foti moved to Approvals. (ref. VIII A.2)

### Approvals

#### Transmittal of the FY24 Proposed Capital Improvement Program and Proposed FY24-28 Spending Cap to the MWRA Advisory Board

A motion was duly made and seconded to approve the transmittal of the FY24 Proposed Capital Improvement Program and the Proposed FY24-28 Cap spending to the MWRA Advisory Board for its 60-day review and comment period.

Staff presented the FY24 Proposed Capital Improvement Plan (CIP) and FY24-28 spending Cap to Board Members. Mr. Durkin began the presentation with an overview of the CIP development and approval process. He advised that FY24 would begin the next 5-year spending Cap (“Cap”) for FY24-FY28. He described the purpose and history of the spending Cap. Mr. Durkin noted that staff would introduce two concepts to the proposed spending Cap to increase data validity. He explained that the first change is the disaggregation of the Metropolitan Water Tunnel Program which is much larger in scope than most MWRA projects, to avoid skewing comparisons of total spending over time. He further explained that the second change is a 25% spending rate adjustment similar to the adjustment applied to wages and salaries, to more precisely quantify staffing costs in a volatile job market, based on historic spending data.

Next, MWRA Budget Director Michael Cole presented a review of the proposed FY19-23 proposed Cap (\$984.8 million), the final FY23 Cap (\$672.6 million), and the proposed FY24-28 Cap (\$1.273 billion). He highlighted the proposed Cap’s separate project spending line item for the Tunnel Program (\$1.7 billion, projected), and the 25% spending rate adjustment (-\$424.6 million). He advised that the total projected Cap for FY24-28 was \$1.273 billion, net, and presented Cap projections for FY29-33 (\$1.8 billion total, with \$553.9 million for the Tunnel Program.) Mr. Cole then presented the top 16 spending project sub phases excluding community loans for FY24 and the top 15 for FY24-28. He explained those top projects were driving over 41% of funding for FY24 and 37% for FY24-28. Finally, Mr. Cole presented eight wastewater projects and two water projects added to the proposed FY24-28 Cap, and noted that spending for several wastewater pump station rehabilitation projects was expected to increase in FY29-33.

Next, MWRA Chief Operating Officer David Coppes provided an overview of projects completed during the FY19-23 Cap period, including Chelsea Creek Headworks Rehabilitation, North Dorchester Sewer Lining, Southern Extra High Water Redundancy, Intermediate High Water Redundancy, and Metropolitan Water Tunnel interim projects such as the rehabilitation of WASM 3 and the Commonwealth Avenue Pump Station. He then described challenges encountered during large-scale, complex projects such as Deer Island Clarifier Phase Two, including regulatory, supply chain, bid packaging, procurement and staffing issues, and provided an overview of the scope and purpose of the Deer Island Clarifier project. Finally, Mr. Coppes described the Deer Island Treatment Plant’s current on-site energy and power

generating systems, and presented an overview of MWRA's Combined Heat and Power Study, which aims to increase on-site generation from 57% to 74%, with significant reductions in greenhouse gas emissions from the plant.

Next, MWRA Director of Tunnel Redundancy Kathy Murtagh presented a status update on the Tunnel Program. She explained that the Program is in the preliminary design and environmental review phase, and that the Program's Draft Environmental Impact Report (DEIR) had been recently submitted. She presented the location of the preferred alternative for the tunnel's alignment, and provided an overview of work planned through FY28, including the completion of preliminary design and environmental review, geotechnical investigation and the collection of geotechnical and geologic data; and, the engagement of a final design engineer and construction manager. Finally, Ms. Murtagh noted the first construction package for the Program could potentially be ready to bid and possibly break ground in during the FY24-28 spending Cap timeframe, and that these activities were reflected in the proposed CIP.

Next, Mr. Coppes continued to present an overview of projects in the FY24 Proposed CIP, including South System Pump Station Variable Frequency Drive (VFD) Replacement, Ward Street and Columbus Park Headworks Construction, the rehabilitation of five sewer pump stations and the Prison Point CSO Facility, and the Combined Sewer Overflow Control Program.

Next, MWRA Deputy Director of Finance/Treasurer Matthew Horan presented an overview of MWRA's Capital Spending and Debt Service strategies and their actual and projected outcomes from FY16 through FY24. He explained that controlling and managing debt service is how staff manages MWRA's overall rate structure, and noted that MWRA refunded approximately \$2.4 billion worth of bonds for about \$323 million in present value savings since June 30, 2016. Finally, Mr. Horan explained that based on estimated spending, staff anticipates to continue to see a further reduction of \$321 million in overall debt during the FY24-28 spending Cap period.

Mr. Durkin concluded the presentation with a brief summary of the topics presented, and noted that the \$1.8 billion projected cost of the Metropolitan Water Supply Tunnel Program was due to compounding inflation on top of the originally budgeted cost.

(Rev. White-Hammond left the meeting during the presentation.)

Chair Pappastergion complimented staff on an informative presentation. Mr. Jack Walsh asked if the cost to complete the Metropolitan Water Tunnel Program could exceed the projected amount. Mr. Durkin advised that staff do not know exactly what the cost is going to be yet, as there are a lot of design elements and locations still to be determined. He noted there is more uncertainty than there is certainty, but Ms. Murtagh's team is working hard and staff will know more as contracts are presented to the Board for approval. He noted that the current cost estimate was developed using the most accurate information currently available, and that factors such as inflation could potentially impact the final Program cost. There was brief, general discussion about rising costs and inflation. Mr. Walsh expressed concern regarding the potential for increased costs and encouraged a very close eye be kept on it.

Mr. Durkin briefly followed up on Mr. Walsh's question about edge switches during the earlier Delegated Authority discussion. He reported that the edge switches had been expected to be delivered in January 2023, but had arrived early and were paid for in December 2022. (ref. VIII A.2)

Mr. Vitale asked for clarification on cost contingencies for non-tunnel vs. tunnel projects with regards to the proposed spending Cap. Mr. Durkin explained that the assumption of higher contingencies for underground projects was MWRA's standard practice due to the inherent uncertainties of underground work. Mr. Vitale asked if there were any arbitrage concerns as relates to MWRA bonds. Mr. Horan responded in the negative and explained that MWRA would not borrow the funds until they are needed. Mr. Vitale asked staff for an update on the amounts of MWRA's outstanding fixed and variable debt, and staff's forecast and strategy for balancing fixed and variable debt. Mr. Horan explained that MWRA held about \$4.4 billion in outstanding debt, of which \$435 million is variable, and noted that \$166 million of the variable debt is swapped to fixed. He further explained that including variable debt in MWRA's outstanding debt portfolio helps with defeasance and overall debt management. Mr. Vitale asked if there were any pipes with concerns within MWRA's systems that would be addressed in the FY24 CIP. Mr. Coppes explained that MWRA, like the Boston Water and Sewer Commission, ranks and radars its pipes and bases decisions to replace or rehabilitate them on the results of test pitting, metallurgical analysis, soil conditions and other factors. There was general discussion about pipe testing, ranking and rehabilitation.

Board Member Patrick Walsh asked if MWRA staff had reached out to contractors that didn't usually bid for MWRA jobs, and advised that many general contractors in the City of Boston could be interested in working on large MWRA projects. Mr. Coppes explained that many vertical construction contracts require DCAMM certified contractors, and that staff try to package projects so more can bid on them. But with all the work being done in the area, contractors are busy everywhere. Ms. Mercado added that soliciting bids for Chapter 149 projects has been challenging because the pool of qualified contractors is limited. She further explained that staff will continue to advertise and reach out directly to contractors to try to solicit bids. Mr. Patrick Walsh asked if staff had contacted DCAMM on the issue. Ms. Mercado advised that staff could ask DCAMM if any contractors had tried to get certified, especially in the sewer and water system related certification categories, and whether MWRA could help qualify them to meet their standards.

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

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

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Peña		
Vitale		
J. Walsh		
P. Walsh		

(ref. VIII B.1)

CORRESPONDENCE TO THE BOARD

There was no Correspondence to the Board. (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		
Flanagan		
Pappastergion		
Peña		
Vitale		
J. Walsh		
P. Walsh		

The meeting adjourned at 3:07pm.

Approved: February 15, 2023

Attest:

\_\_\_\_\_  
Andrew M. Pappastergion, Secretary



## STAFF SUMMARY

**TO:** Board of Directors

**FROM:** Rebecca L. Tepper, Chairperson



**DATE:** February 10, 2023

**SUBJECT:** Annual Meeting: Election and Appointment of MWRA Officers, Retirement Board Member and Committee Assignments

---

### RECOMMENDATION:

That the Board of Directors (1) designate this February 15, 2023 meeting as the Annual Meeting which, as provided in the Authority's by-laws, will be deemed a special meeting of the Board for the purpose of election of officers; (2) elect a Vice-Chairman of the Board; and (3) appoint a Secretary of the Board, an MWRA Treasurer, and such Assistant Secretaries and Assistant Treasurers of the Board as the Board deems appropriate. New Committee Chairs will be appointed approximately every two years.

To ratify the following appointments of Board members to standing Committees:

Administration, Finance and Audit	Wastewater Policy and Oversight	Water Policy and Oversight	Personnel and Compensation
Chair: J. Foti Vice Chair: P. Flanagan	Chair: J. Walsh Vice Chair: P. Walsh	Chair: H. Vitale Vice Chair: Vacant	Chair: J. Wolowicz Vice Chair: M. White-Hammond
M. White-Hammond P. Walsh A. Pappastergion B. Pena J. Walsh	M. White-Hammond J. Foti A. Pappastergion B. Pena H. Vitale	J. Foti A. Pappastergion H. Vitale J. Walsh J. Wolowicz	P. Flanagan J. Foti A. Pappastergion H. Vitale J. Walsh

### DISCUSSION:

Article IV, Section 1, of the by-laws, which specifies the officers to be elected, provides that:

“The Board of Directors shall annually elect one of its members as Vice-Chairman and shall annually appoint a Secretary and a Treasurer, who need not be members of the Board of Directors.”

The by-laws also provide that:

“Upon the recommendation of the Executive Director, the Board of Directors may also elect one or more Assistant Secretaries and Assistant Treasurers.”

### Retirement Board Appointments

The provisions of G.L. c. 32 § 20 (4 7/8 D) regarding the MWRA Retirement Board, provide that:

“ . . . the secretary of the Authority shall be a member *ex officio*. . . .”

That same section of that statute further provides that a second member of the Retirement Board “ . . . shall be appointed by the board of directors of the authority for a term of 3 years . . .”. Thomas J. Durkin was appointed as a member of the Retirement Board for a three-year term beginning on July 1, 2021. Mr. Durkin is resigning from his position on the Retirement Board and Matthew Horan is recommended for appointment to complete the unexpired portion of Mr. Durkin’s term, which expires on June 30, 2024.

### Nomination of Officers

Currently, the following individuals serve as the MWRA’s officers:

Vice-Chairman:	John J. Carroll
Secretary:	Andrew M. Pappastergion
Treasurer:	Matthew Horan
Retirement Board Member:	Thomas J. Durkin
Assistant Secretaries:	Kristin MacDougall Rose Marie Convery
Assistant Treasurer:	Michael Cole

The Chairman wishes to request that a motion be made to nominate the following as officers, inclusive of appointments of certain MWRA staff as Treasurer, Retirement Board Member, Assistant Secretaries and Assistant Treasurers, as follows:

Vice-Chairman:	Andrew M. Pappastergion
Secretary:	Brian Pena
Treasurer:	Matthew Horan
Retirement Board Member:	Matthew Horan
Assistant Secretaries:	Kristin MacDougall Rose Marie Convery
Assistant Treasurers:	William Kibaja Michael Cole

There are no special procedures for election of officers, except as governed by Robert’s Rules of Order. Thus, any Board member may make a nomination to elect an officer, and the nomination will carry upon a majority vote of the quorum.

## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** February 15, 2023  
**SUBJECT:** Update on Space Consolidation Project




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**COMMITTEE:** Administration, Finance and Audit

INFORMATION  
 VOTE

Ria Convery, Special Assistant  
Preparer/Title

  
Michele S. Gillen  
Director of Administration

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### RECOMMENDATION:

For information only. This staff summary provides an overview of MWRA's space needs over the years and an update of the ongoing space consolidation project.

### DISCUSSION:

#### *History*

The MWRA was created by the legislature in 1984 and began operations in July 1985. Operations and engineering staff from the Waterworks and Sewerage Divisions of the former Metropolitan District Commission (MDC) were transferred over to MWRA, and efforts began to recruit additional staff to carry out the authority's mission. By 1986, MWRA had secured a lease in the Charlestown Navy Yard for three buildings, which housed most of the administrative functions. Metropolitan operations staff were located at treatment plants at Deer Island and Nut Island, and nine separate old MDC facilities scattered around the service area.

#### Charlestown Navy Yard Lease

MWRA's presence in the Charlestown Navy Yard dates back to 1986 when leases were executed to rent space in three different buildings (Buildings 34, 36 and 39) for a total of approximately 164,000 square feet. As the Chelsea facility came on line and staffing levels were reduced overtime (see "staffing reductions" section below), MWRA's leased footprint shrunk. In 2001, MWRA no longer needed space in three buildings so chose to not renew the building 36 lease. This reduced the total leased space by approximately 50,000 square feet. And, in 2013, MWRA vacated building 34 further reducing the total square footage by about 57,000 square feet. Finally, in 2013, the total square footage in building 39 was reduced by approximately 10,000 square feet resulting in the current 47,000 square feet of leased space, housing approximately 135 staff. Each reduction in leased space resulted in significant cost savings.

The lease terms were renegotiated 4 times resulting in rent reductions, increased operating and tax allowances, building improvements and lease extensions. The current lease rate is \$37 per square foot. The early lease rates were \$25.50 and \$26.50, the lowest rate in 2006 was \$21.75.

## Initial Consolidation to Chelsea Facility

In 1999, MWRA consolidated the Waterworks and Sewerage Divisions into the Operations Division, to support changes in day-to-day work practices and achieve consistency between water and sewer field staffs. The move also allowed MWRA to consolidate water and wastewater trades staff, cross train staff on various facility operations and create a work coordination center.



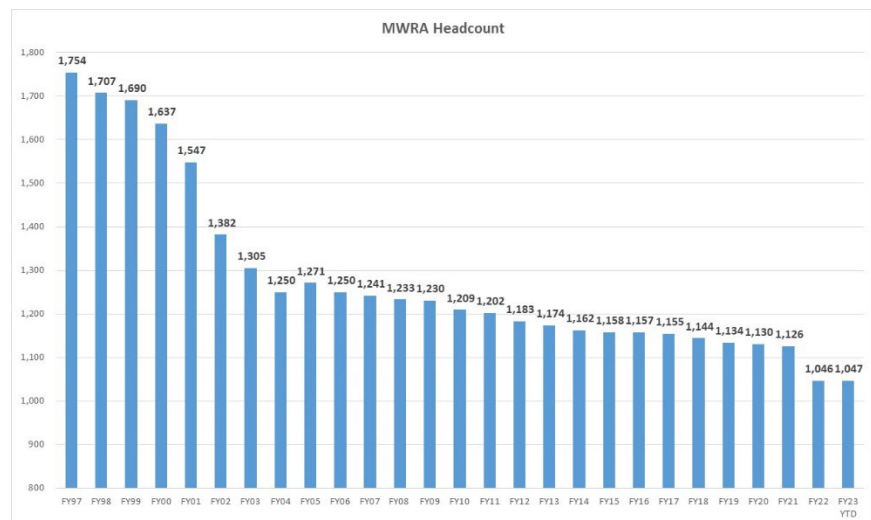
Chelsea Facility

As part of this consolidation, to improve efficiency, and to reduce maintenance and other costs, MWRA decided to surplus the old MDC facilities and vacate one of the buildings in the Navy Yard to consolidate personnel, equipment, and materials into a new facility. In July 1999, MWRA entered into a lease for the property at 2 Griffin Way, Chelsea. The initial term of the lease was 30 years, expiring on May 31, 2032. At the end of the initial lease term there is an option to purchase or extend for 10 followed by a 2<sup>nd</sup> 10-year option to extend, if needed. The property consists of approximately 15 acres and two buildings that have a combined area of approximately 214,000 square feet housing approximately 490 staff. The total lease cost for this year, which includes rent, taxes, insurance and minor maintenance, is approximately \$5,300,000.

## ***Staffing Reductions***

Approximately 700 staff came over from the then MDC to the newly formed MWRA. Over the next several years, staffing increased quickly to carry out the authority's mission to clean-up Boston Harbor and to begin to modernize the water system. From 1985 to 1988, staffing grew from 724 to 1,323.

Staffing hit its peak in 1997 at 1,754 employees and as the Boston Harbor Clean-up started winding down, staffing levels began to drop. This was accelerated by two early retirement programs in 2002 and 2004. Staffing has steadily decreased since that time and current levels are below the target of 1,150 employees.



## ***Current Space Consolidation Project***

Like the Commonwealth of Massachusetts and several other public entities, the pandemic has shown MWRA that telework is a viable and effective option for a subset of its employees, allowing for a number of staff to share offices and workstations. For most office workers, MWRA's hybrid model allows for no more than 50% of their work time at home and 50% in the office over a two week period. This "Future of Work" model has a number of benefits, including the reduced carbon footprint of those who drive in every day, a better work/homelife balance and the expectations of a new generation of workers who are looking for hybrid and flexible schedules.

As noted above, the Charlestown Navy Yard lease expires in May 2023 and, after a review of space at the Chelsea and Deer Island facilities, it was determined that there is enough room at those locations to house Navy Yard staff. Not renewing the Navy Yard lease will result in annual savings of approximately \$2 million. As Deer Island is located within the City of Boston, it will become the new MWRA Headquarters, housing the Executive Office and the Board Room. Staff are finalizing the new address with the City.

The office space at both Chelsea and Deer Island are being upgraded to accommodate hybrid work spaces, replace old furniture and generally update the office spaces, electrical system and MIS services. The Chelsea and Deer Island office spaces have been in service 21 and 26 years, respectively. Both facilities have had only minimal updating of carpeting, painting, lighting and ceiling tiles which are all in need of replacement. All cubicles and desk chairs need to be replaced. Existing office desks will be reused and refurbished, as needed, by in-house staff. The MIS Data systems and communication infrastructure, which are original to each facility, are also being updated. This is significant as all new data cables are being installed to change from the use of desktop computers to the use of laptops that will plug-in to the network. The electrical supply feeds to all cubicles are being replaced due to new office configuration, cubicle sizes and collaboration spaces. A separate design contract is being prepared for HVAC improvements in the Deer Island Administration and Lab Building, and that construction will follow this contract.



Deer Island Admin/Lab/Maintenance/Warehouse

Both facilities are being remodeled to update the mechanical building systems and add or update existing offices to meet current standards and allow for more in-person, collaborative space as well as more effective hybrid work spaces.

## Construction Progress

The design was prepared using the MWRA Agency-Wide Technical Assistance Consulting Services Contract 7692, with CDM Smith Inc. The task orders included architectural, electrical, plumbing, HVAC, fire protection and bidding services. Additional engineering services, including Engineering Services during Construction and limited Resident Engineering Inspections to support the construction is also being provided by CDM Smith. The construction is being done by Wes Construction under a contract awarded by the Board in June 2022 in the amount of \$19.6 million.

The construction is being done in phases to allow staff, primarily operations staff who are in the office every day, to continue to work on site. In Chelsea, the work began on the first and second floors on the east side of the building. Staff who are able to telework have been working from home during this period. This space includes Water Operations, Operations Administration, Security, Safety, MIS, and Engineering and Construction. When construction is completed, Navy Yard staff, including Planning, part of Finance (Accounts Payable, Payroll and Risk Management) and the new Advisory Board offices will also be housed in these areas. For Phase 2, the work will switch over to the west side of the building and, again, space will be provided for staff who are in the office every day and staff who are able to telework will work from home during this phase. This space being renovated currently houses Wastewater Operations, TRAC, Tunnel Redundancy, and Environmental Management. When construction is completed, Navy Yard staff, including Internal Audit, Public Affairs, will also be housed in these areas.

At Deer Island, construction is about two weeks behind the Chelsea work. The Phase 1 work began on the first and second floors in the Administration/Laboratory Building and the second floor of the Maintenance/Warehouse Building. When this phase is completed, Deer Island staff from the Director's office, Process Control, Capital Engineering, and Maintenance will be located together on the second floor of both buildings. When construction is completed, Navy Yard staff from the Law Division, part of the Finance Division, Human Resources and Affirmative Action will also be housed in these areas.

Most senior managers will split their time between the two locations in order to maintain a presence and to better interact with staff.

With Deer Island as the new MWRA headquarters, the Executive Office, Board Room, Chief Operating Officer's Office, Administration Director, Law Division and part of the Finance Division will be located there. Both facilities will have ample swing spaces, or "hoteling" space available so that staff from Human Resources, Affirmative Action, Procurement and other departments



Deer Island Historic Pump Station

will be embedded with the Operations, Engineering and Construction and other groups they are supporting. This will allow for more in-person collaboration among different departments working on projects and issues together. It is anticipated that these improvements and modernization of work environment space will be more conducive to hybrid work schedules as well as recruitment and retention of staff.

### Current Schedule

The Phase 1 space should be ready for staff to move back in to Chelsea by the February 22nd, with the Deer Island space about 2 weeks behind. The Phase 2 construction is still slated to be complete by the end of April. All of the carpet, cubicles and other furniture is in stock, so there is no lead time for these items as there was in Phase 1.

### Future Work

Because of the very tight timeframe for this project, there are some areas that are not being refurbished by the contractor, like the restrooms, additional cubicles and furniture for maintenance staff, etc. However, the FY2024 CEB will include an allowance to complete this work in the near future.

### **BUDGET/FISCAL IMPACT:**

The FY23 Capital Improvement Program (CIP) includes \$15.3 million for contract 7980. This project's funding has been increased to \$19.6 million in the FY24 Proposed CIP. Through January 2023, \$8.7 million has been spent on this project. There has been \$400,000 added to the FY24 Proposed Current Expense Budget (CEB) for additional items that may be needed once the move is complete.

## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** February 15, 2023  
**SUBJECT:** FY2023 Second Quarter Orange Notebook




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**COMMITTEE:** Administration, Finance & Audit

INFORMATION

VOTE

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

  
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 second quarter of fiscal year 2023.

#### Staffing Levels

High levels of staff turnover continue, especially retirements, and hiring replacements continues to be difficult. Hiring has accelerated somewhat, with 123 hires or promotions during the past two quarters. Both the total and external hires compare very favorably with the prior two years. Over the prior two full fiscal years, MWRA had 64 and 65 external hires, compared with 49 in just the first half of this fiscal year. Nonetheless, at the end of December, staffing stood at 1,045 FTEs (full time equivalents), about 106 below the target of 1,151.4 FTEs, which is essentially the same as the end of the prior two quarters. (See page 43.)

The percentage of external hires has been higher than the previous fiscal year, with 40 percent of total hires being from outside, versus 32 percent in fiscal year 2022. While hiring internally fills one vacancy and provides career paths for existing staff, it creates another vacancy, making it difficult to restore overall staffing levels. (See page 43.)

Staff continue to evaluate and prioritize critical maintenance work, so that while backlog is higher than preferable in both field operations and Deer Island, it is affecting areas that do not immediately affect critical operations or regulatory compliance. (See pages 5 and 9 for backlog metrics, pages 7, 8 and 9 for maintenance metrics, and page 15 for laboratory metrics.)



## Water Use and Clinton Treatment Plant NPDES Permit Compliance

The dry summer and fall influenced water use and wastewater flows. A separate staff summary at this Board meeting provides an overview of water use during calendar year 2022, with increases in use due to the dry weather and to some partially served communities taking more MWRA water while they made PFAS related changes to their own sources. (See page 29.)

At the Clinton Wastewater Treatment Plant, the dry period had the beneficial impact of reducing community inflow and infiltration flows from Clinton and Lancaster enough that the plant came back into compliance with its NPDES permit limitation of annual average flow. The difference between monthly flows during the very wet summer and fall of 2021 and this past year is substantial. (See page 28.)

MASSACHUSETTS WATER RESOURCES AUTHORITY

# Board of Directors Report

on

## Key Indicators of MWRA Performance

Second Quarter FY2023

Q1	Q2	Q3	Q4



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

# Board of Directors Report on Key Indicators of MWRA Performance

## 2<sup>nd</sup> Quarter - FY23

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This quarterly report is prepared by MWRA staff to track a variety of MWRA performance measures for routine review by MWRA's board of directors. The content and format of this report is expected to develop as time passes. Information is reported on a preliminary basis as appropriate and available for internal management use and is subject to correction and clarification.

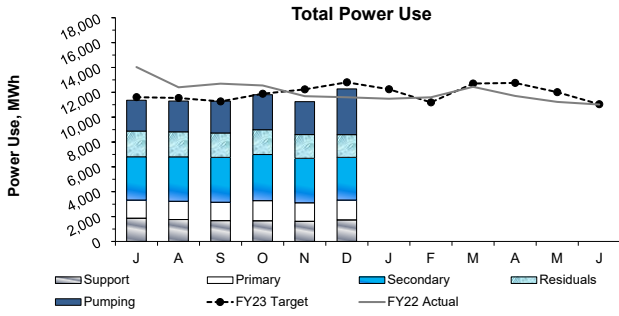
Frederick A. Laskey, Executive Director  
David Coppes, Chief Operating Officer  
February 15, 2023



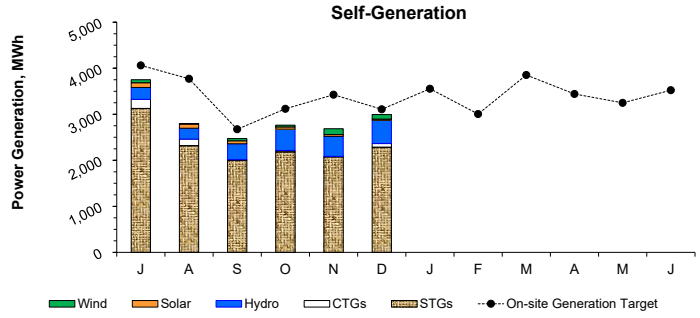
# OPERATIONS AND MAINTENANCE

# Deer Island Operations

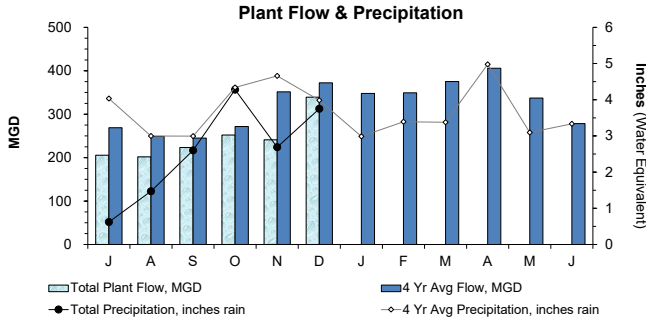
2nd Quarter - FY23



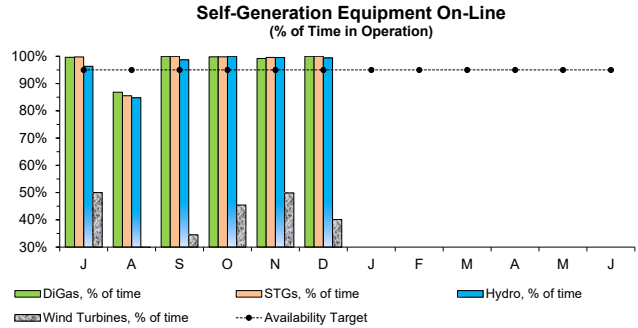
Total power usage in the 2nd Quarter was 4.3% below target as plant flow for this period was 16.4% below target with historical data (4 year average) used to generate the electricity model. As a result, power usage in nearly all areas and treatment processes was similar to or below target, including power used for raw wastewater pumping, which was 13.4% below target.



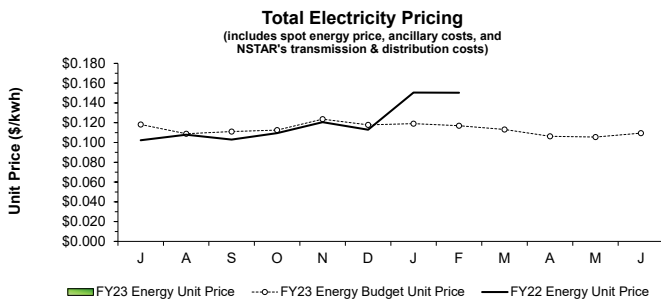
Power generated on-site during the 2nd Quarter was 12.5% below the target. CTGs generation was below target by 84.8% as they were required to operate less than budgeted as operation during high plant flow storm events was not needed. They were operated a total of 9.65 hours, for an ISO-New England (ISO-NE) winter Demand Response audit, an ISO-NE Demand Response event, briefly on four (4) days to allow Eversource to isolate their A- and B- bus transformers for annual scheduled maintenance, and for routine maintenance/checkout purposes. STGs generation was 6.9% below as digester gas production was 9.1% below target. Hydro Turbine generation was 28.6% above target due to improved output following Turbine #1 overhaul maintenance completed in 2019 compared to the historical (pre-overhaul) output used for the FY23 projections. Wind Turbine generation was 55.7% below target as Turbine #1 has been out of service since April 11 pending repairs to the failed main shaft bearing. Solar Panel generation was 6.5% below target due to a failed inverter on the Residuals Odor Control Facility rooftop array which has kept the array out of service since September 12.



Total Plant Flow for the 2nd Quarter was 16.4% below target with the budgeted 4 year average plant flow (277.4 MGD actual vs 331.9 MGD expected) as precipitation was 17.3% below target this quarter (10.72 inches actual vs. 12.98 inches expected).

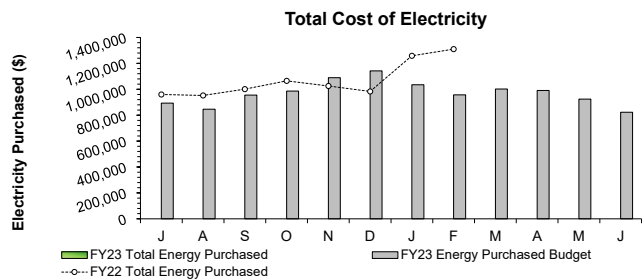


The DiGas System, STGs, and Hydro Turbines availability exceeded the 95% availability in the 2nd Quarter. The combined Wind Turbine availability was only 45.1% due to a main shaft bearing failure on Turbine #1 which has left this turbine out of service since April 11. Wind Turbine #2 was available 90.3% of the time during Quarter 2, slightly below the 95% target, due to scheduled maintenance and the turbine was out of service for several days in December due to an electrical issue and a faulty gear oil motor discovered at the end of the month.



Under the current energy supply contract, a block portion of DI's energy is a fixed rate and the variable load above the block is purchased in real time. The actual Total Energy Unit Prices for July through December are not yet available as the complete invoices have not been received. The Total Energy Unit Price includes a fixed block price, spot energy price, transmission & distribution charges, and ancillary charges. The invoices with the fixed block and spot energy prices have been pending receipt since the March 2022 invoice.

Note: Only the actual energy prices are reported. Therefore, the dataset lags by ten (10) months, since March (FY22), due to the timing of invoice receipt and review.

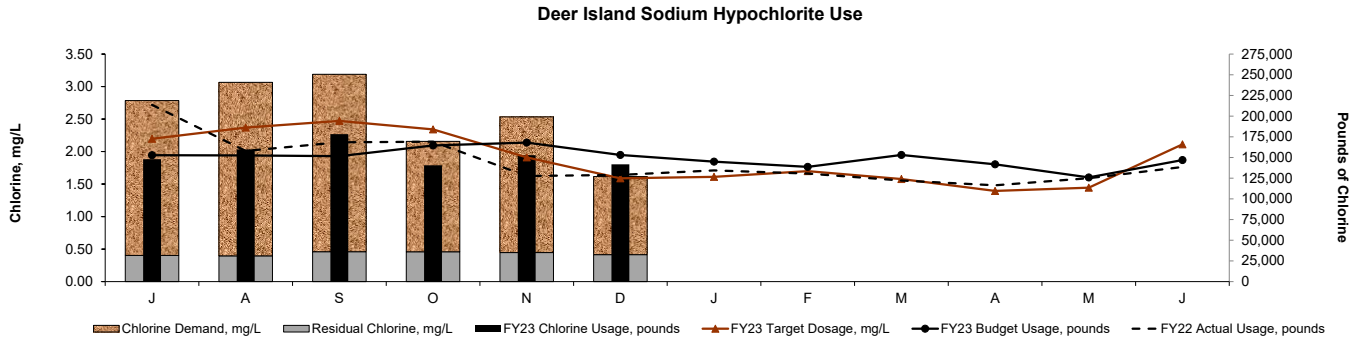


The Electricity cost data for Electricity Purchased in July through December are not yet available as the complete invoices have not been received. The invoices with the fixed block and spot energy prices have been pending receipt since the March 2022 invoice.

Note: Only months with complete Electricity Purchased data are reported. Therefore, the dataset lags by ten (10) months, since March (FY22), due to the timing of invoice receipt and review.

## Deer Island Operations

2nd Quarter - FY23



The disinfection dosing rate in the 2nd Quarter was 8.0% above target with budgetary estimates. However, actual sodium hypochlorite usage in pounds of chlorine was 10.4% lower than expected, as the average plant flow was 16.4% below target. DITP maintained an average disinfection chlorine residual of 0.44 mg/L this quarter with an average dosing rate of 2.10 mg/L (as chlorine demand was 1.66 mg/L). The higher hypochlorite dosing is due to a higher effluent chlorine demand resulting from the lower-than-expected plant flow. Additionally, the disinfection dosing rate was increased temporarily from November 7 to November 9 due to a scheduled maintenance shutdown of one (1) of the two (2) disinfection basins for maintenance. The total contact time for sodium hypochlorite with the plant effluent was reduced by half with the operation of a single basin. As such, the sodium hypochlorite dosing rate was increased to maintain a slightly higher total chlorine residual for proper pathogen inactivation.

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
J	0	0	0	100.0%	0.00
A	0	0	0	100.0%	0.00
S	0	0	0	100.0%	0.00
O	1	1	0	99.8%	2.43
N	1	1	0	99.9%	2.12
D	4	4	0	99.5%	17.95
J					
F					
M					
A					
M					
J					
<b>Total</b>	<b>6</b>	<b>6</b>	<b>0</b>	<b>99.8%</b>	<b>22.50</b>

99.7% of all flows were treated at full secondary during the 2nd Quarter. There were six (6) secondary blending events due to high plant flows from heavy precipitation. These blending events resulted in 22.50 hours of blending and a total of 68.87 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 2nd Quarter.

## Deer Island Operations & Maintenance Report

#### Environmental/Pumping:

The plant achieved an instantaneous peak flow rate of 911.1 MGD during the late morning of October 14. This peak flow occurred during a storm event that brought 2.22 inches of rain to the metropolitan Boston area during a two (2) day span. The Total Plant Flow in Quarter 2 was 16.4% below the 4 year average plant flow target for the quarter.

#### Secondary Treatment:

Annual turnaround maintenance on Train #1 in the Cryogenic Oxygen Facility began on September 26 and was completed on October 7. This two (2) week turnaround maintenance is performed on roughly half of the components and systems in the Cryogenic Oxygen Facility. During this turnaround maintenance, the contractor calibrated all the instrumentation on Train #1, as well as a number of other components in the oxygen plant. The same turnaround maintenance was completed on Train #2 in the spring (April).

#### Disinfection:

On November 7, Operations staff took Disinfection Basin 1 (East) out of service and began draining the basin in preparation for scum baffle replacement. During the basin shutdown, which took place during dry weather and low plant flow conditions, staff also inspected the sodium hypochlorite mixer blade assembly at the head end of the basin, as well as other equipment that could be visually inspected in the drained basin. Corrective maintenance was also completed for piping and other equipment that warranted attention. Staff returned the basin to service following completion of the work during the evening of November 9. Routine regulatory and process control sampling of the effluent in this basin resumed on November 10. Disinfection Basin 2 (West) remained in operation during this period. The total contact time for sodium hypochlorite with the plant effluent was therefore reduced by half with the operation of a single basin. As such, the sodium hypochlorite dosing rate was increased to maintain a slightly higher total chlorine residual for proper pathogen inactivation. In addition to the increased sodium hypochlorite feed, sodium bisulfite feed, to neutralize chlorine, was also increased to ensure the total chlorine residual in the final plant effluent remained below the discharge permit limits.

#### Residuals Treatment:

Module #1 Digester #3 was taken out of service on December 29 due to a clog in the digester's recirculation line which prevented the ability to properly heat the sludge in the digester and also prevented the addition of ferric chloride to control struvite formation to this single digester. The digester was in the process of being emptied of sludge to allow staff to perform essential corrective maintenance to remove the clog as of the end of December. The process of emptying a digester with 3 million gallons of sludge is a lengthy process which continued into January.

## Deer Island Operations

2nd Quarter - FY23

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

#### Odor Control Treatment:

Carbon adsorber (CAD) units #3 through #6 in the West Odor Control (WOC) Facility were emptied and refilled with new regenerated activated carbon media in October as part of routine maintenance to replace spent activated carbon.

The odor control fans in the Secondary Odor Control (SOC) Facility, which is responsible for treating the process airflows from the secondary treatment facilities, were taken offline for 43 minutes on October 18 to allow staff to replace the air filter upstream of the heat exchanger for this odor control treatment system as part of routine preventative maintenance. Process air was contained within the building during this shutdown and there were no odor complaints associated with this work as there are no (negligible) hydrogen sulfides associated with the emissions from this process area.

The Centrifuge Thickener (CT) airflow treatment portion of the Residuals Odor Control (ROC) Facility was taken offline on three (3) separate days in December for approximately six (6) to seven (7) hours each day to allow a contractor to replace the damper on the airflow line from each of the secondary waste sludge wells. Process air was contained within the building during these shutdowns and there were no odor complaints associated with this work. The Gravity Thickener (GT) airflow treatment portion of the ROC Facility remained in operation the entire period during this damper replacement work.

#### Energy and Thermal Power Plant:

Overall, total power generated on-site accounted for 23.9% of Deer Island's total power use for the 2nd Quarter. Renewable power generated on-site (by Solar, Wind, STGs, and Hydro Turbines) accounted for 23.5% of Deer Island's total electrical power use for the quarter.

In October, Eversource, the electric utility company, performed scheduled maintenance on their A-bus and B-bus transformers at their Station 132 located on Deer Island. A CTG was operated briefly on the mornings of October 15 and October 30 to create a cross-tie of the DITP A- and B- buses, respectively, within the Thermal Power Plant (TPP), thus isolating the transformer for Eversource to perform maintenance. This cross-tie configuration also enables the electricity from the non-impacted Eversource bus to energize both the A- and the B- buses on DITP from the single Eversource bus. Eversource conducted maintenance on their A-bus transformer from October 15 to October 25 and on their B-bus transformer from October 30 to November 4. A CTG was operated after the maintenance on each bus transformer was completed, on October 25 (A-bus) and on November 4 (B-bus), to reconnect DITP to the isolated Eversource bus and thus returning the electrical connections for both A- and B- buses to the normal configuration.

During the week of December 12, CTG-2B was taken out of service for annual maintenance on all ancillary systems including instrumentation calibrations. The work was completed by early December 16, with the exception of the fire systems test which was postponed to a later date, in order to return the CTG to standby mode ahead of a storm which was arriving. The fire systems test will require the CTG to be out of service for four (4) to six (6) hours during a future date. CTG-2B was successfully test operated on the morning of December 16 and returned to standby mode (available for operation). CTG-1A was available during this work to act as the backup power unit in the event of a utility power loss.

CTG-1A was successfully operated for approximately 1.8 hours on December 7 for an ISO-New England (ISO-NE) Demand Response winter audit event and for approximately 3.2 hours on December 24 for an unplanned ISO-NE declared Demand Response (DR) curtailment event due to an ISO-NE power grid capacity scarcity event during a period of high electricity demand and an unstable power grid condition which saw ISO-NE electricity prices peak at levels that exceeded \$2,500/MWh.

Wind Turbine #2 was out of service for several days in December due to scheduled maintenance, an electrical issue, and a faulty gear oil motor which took the turbine out of service on December 30. The faulty gear oil motor was later replaced in January. Wind Turbine #1 has been out of service since April 11, 2022 with a main shaft bearing failure and is pending repair.

DITP took delivery of 400,000 gallons of #2 fuel oil, a total of 40 oil tanker trucks, without incident from November 7 through November 16. This fuel oil is used for CTG operation, for boiler startup operations, and for supplemental fuel for boiler operation during periods of low or unstable digester gas production.

### Clinton Operations & Maintenance Report

#### Dewatering Building

Maintenance staff replaced a motor on the # 2 polymer pump. Staff also repacked the # 2 Komline Sanderson piston pump and replaced the expansion tank. Staff completed several monthly Preventative Maintenance (PM) work orders. The Facilities Specialist replaced the threshold and sweep on a hallway door. Maintenance staff and the Facilities Specialist pressure washed the belt filter press conveyor. Staff also replaced all the torn and damaged sections of the conveyor then returned it to service. M&O staff fabricated and installed a new 1 1/2' cooper drain line on Moyno sludge pump #2, and replaced the packing and lantern rings on same pump. A contractor installed new sludge garage door.

#### Chemical Building

Maintenance staff and the Facilities Specialist replaced the drive motor and gear box on the soda ash mixing tank. Staff also disassembled piping in order to remove soda ash buildup from the feed piping and the lower mix tank. Staff disassembled the # 3 WAS (Waste Activated Sludge) pump, removed an obstruction and returned the pump to service. Staff reassembled the louver vent from the back wall of chemical building that had been removed to replace the bird screening. Staff set up staging to replace the exhaust fan motor that was installed by a contractor. Maintenance staff replaced both chlorine contact chamber air diffuser valves.

#### Aeration Basins

Operations staff cleaned the pH and D.O. probes. The Facilities Specialist continues to repair the concrete and the expansion joints.

#### Phosphorus Building

Maintenance staff acid washed all three (3) disk filters, cleaned troughs, and inspected all nozzles. Operation staff cleaned both CL17 chlorine analyzers. The Phosphorus Reduction Facility (PRF) building was taken off line, all the tanks and channels were drained and washed down as part of routine winterization.

#### Headworks Building

Operations and Maintenance staff assisted JK Muir Engineering in gathering data for the screw and submersible pumps for possible National Grid rebates. Deer Island staff replaced the ultrasonic transducer for the influent pump station wet well level sensor. Maintenance staff also cleaned the influent and mechanical bar rack, and greased the upper and lower pin rack. Staff also assisted Xylem Pump with influent pump maintenance. The Heavy Equipment Operator brought the Godwin pump to a contractor to obtain an estimate for possible service.

#### Digester Building

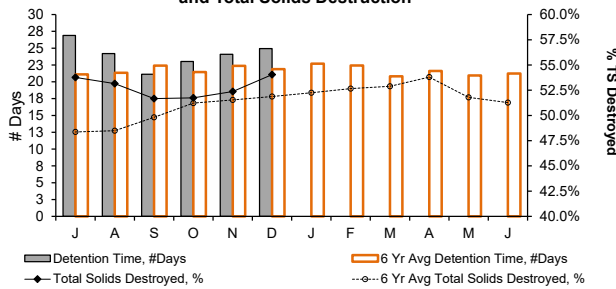
The Facilities Specialist installed a replacement window in the boiler room and also cut and installed planks on the #2 digester to provide access to the Ovivo mixer. Maintenance staff checked all equipment for proper operation and also greased the Ovivo mixer on the floating cover. A contractor repaired a backflow preventer and replaced a miniature hot water heater.



## Deer Island Operations and Residuals

2nd Quarter - FY23

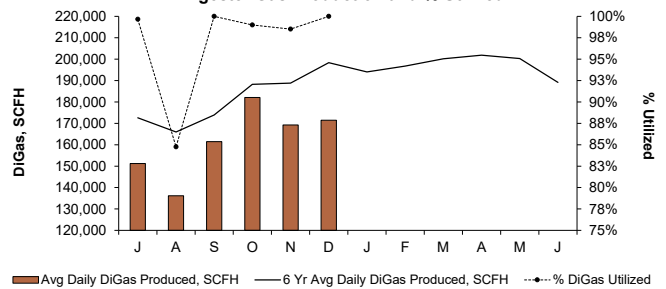
### Sludge Detention Time in Digesters and Total Solids Destruction



Total solids (TS) destruction following anaerobic sludge digestion averaged 52.7% during the 2nd Quarter, 2.3% above target with the 6 year average of 51.5%. Sludge detention time in the digesters was 24.0 days, 9.7% above target. 7.9 digesters were in operation, equal to the target with the the 6 year average of 7.9 digesters. Sludge detention time, and therefore solids destruction, was higher-than-expected as the volume of sludge going to the digesters was lower-than-expected.

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

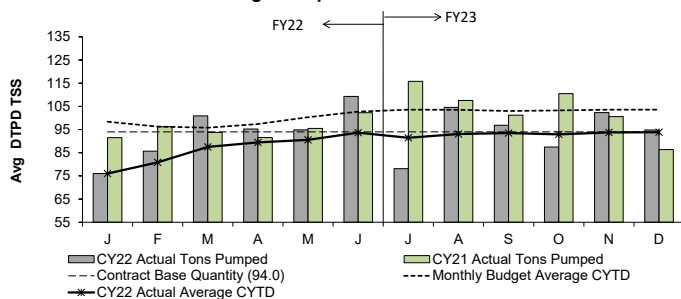


The Avg Daily DiGas Production in the 2nd Quarter was 9.1% below the 6 Year Avg Daily DiGas Production due to 8.6% lower-than-expected primary sludge production as a result of the lower plant flows. 99.2% of the DiGas produced was utilized at the Thermal Power Plant.

## 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, 2022). 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 (FY22's budget is 104.0 DTPD/TSS and the preliminary FY23's budget is 103.3 DTPD/TSS).

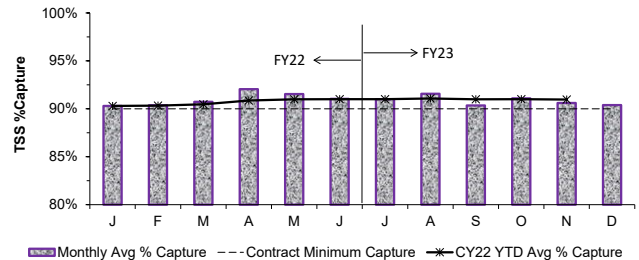
### Sludge Pumped From Deer Island



The average quantity of sludge pumped to the Biosolids Processing Facility (BPF) in the 2nd Quarter was 94.9 TSS Dry Tons Per Day (DTPD), 9.9% below target with the FY23 budget of 105.3 TSS DTPD for the same period due to lower-than-expected primary solids production as a result of the lower-than-expected plant flows.

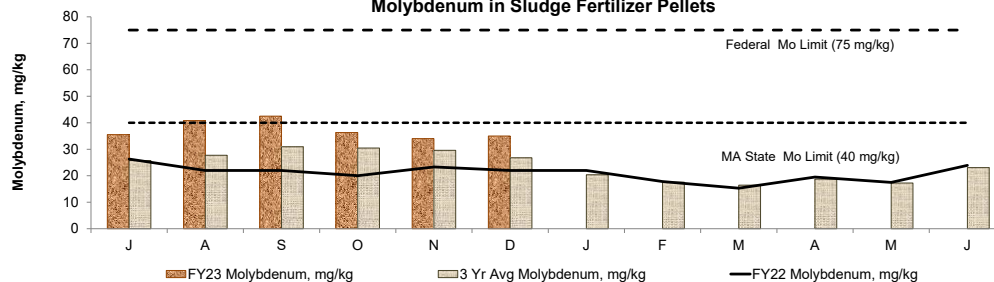
The overall CY22 average quantity of sludge pumped was 93.8 DTPD, 9.4% below target compared to the CY22 average budget of 103.6 DTPD.

### 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 2nd Quarter was 90.7%.

### 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. In 2016, Massachusetts Type 1 biosolids standard for molybdenum was changed to 40 mg/kg from the previous standard of 25 mg/kg. This has allowed 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. This made it an impractical source of fertilizer for local Massachusetts farms since NEFCO does not distribute product that does not meet the suitability standards.

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 2nd Quarter averaged 35.1 mg/kg, 21% above the 3 year average, 12% below target with the MA State Limit, and 53% below the Federal Limit.

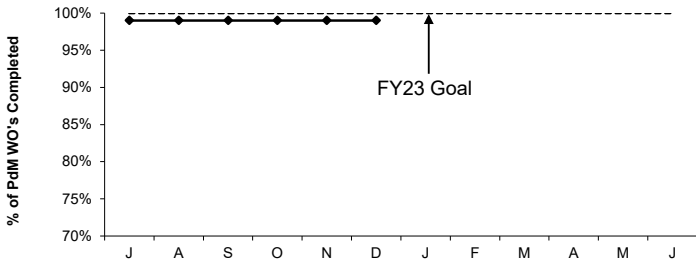
# Deer Island Maintenance

2<sup>nd</sup> Quarter - FY23

## Productivity Initiatives

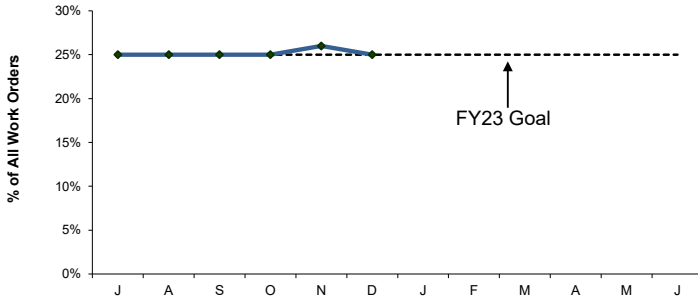
Productivity initiatives include increasing predictive maintenance compliance and increasing PdM work orders. Accomplishing these initiatives should result in a decrease in overall maintenance backlog.

### Predictive Maintenance Compliance



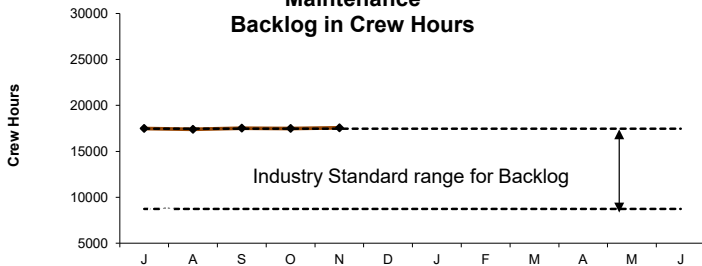
Deer Island's FY23 predictive maintenance goal is 100%. DITP completed 99% of all PdM work orders this quarter.

### Predictive Maintenance



Deer Island's increased FY23 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

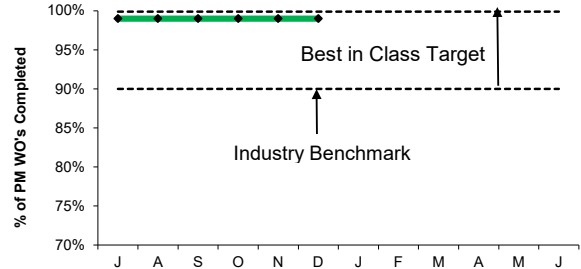


DITP's maintenance backlog at Deer Island is 17,480 hours this quarter. DITP is slightly above the industry average for backlog. The industry Standard for maintenance backlog with 97 staff (currently planned staffing levels) is between 8,730 hours and 17,460 hours. Backlog is affected by (5) vacancies; (2) Electricians, (1) O&M Specialist, (1) HVAC Technician and (1) I&C Tech. Management continues to monitor backlog and to ensure all critical systems and equipment are available.

## Proactive Initiatives

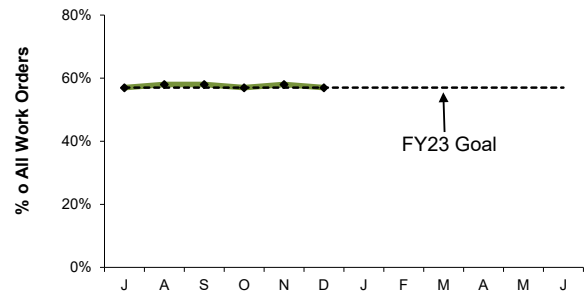
Proactive initiatives include completing 100% of all preventative maintenance tasks and increasing preventative maintenance kitting. These tasks should result in lower maintenance costs.

### Preventative Maintenance Compliance



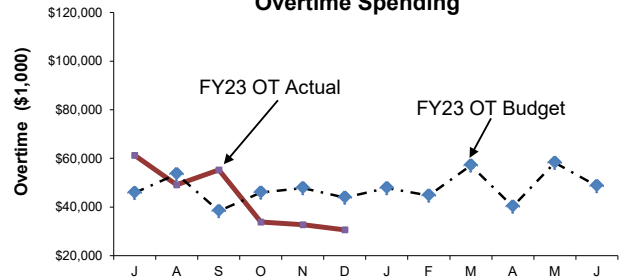
Deer Island's FY23 preventative maintenance goal is 100% completion of all work orders from Operations and Maintenance. DITP completed 99% of all PM work orders this quarter.

### Maintenance Kitting



Deer Island's increased FY23 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

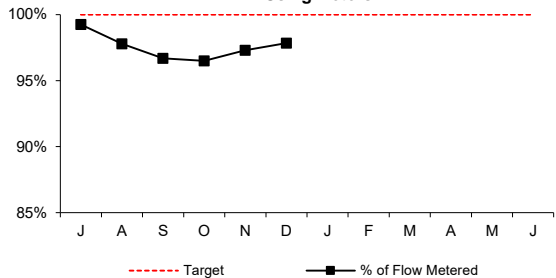


Maintenance overtime was under by \$40K this quarter and \$12k under for the year. Management continues to monitor backlog and to ensure all critical equipment and systems are available. This quarter's overtime was predominately used for Storm Coverage/High Flows, Fabrication of NMPS Sump Level Stairs, Handrails and Platforms, Cleaning of Cooling Towers 1 & 2, HVAC Winter Preparations, Disinfection Scum Baffle, and Clarifier Work.

## Operations Division Metering & Reliability 2<sup>nd</sup> Quarter - FY23

### WATER METERS

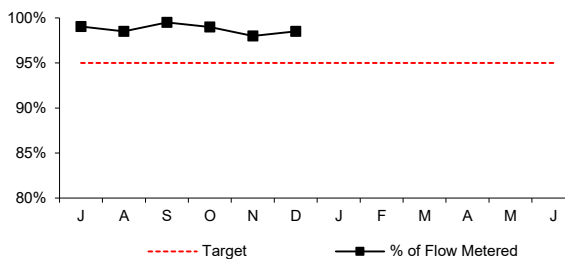
**Percent of Total Revenue Water Deliveries Calculated Using Meters**



The target for revenue water deliveries calculated using meters is 100%. Estimates are generated for meters that are out of service due to instrumentation problems or in-house and capital construction projects. During Q2 FY23, 2.2% of the billed water flow was estimated. The majority of this estimate was because of an unmetered connection at meter 181 in Lexington. A total of 321 MG was estimated at this site alone, 2.9% of the overall total. The meter maintenance crew installed a temporary meter setup in late December to capture demands that this site. A total of 1.2% of the total was measured using annubar meters.

### WASTEWATER METERS

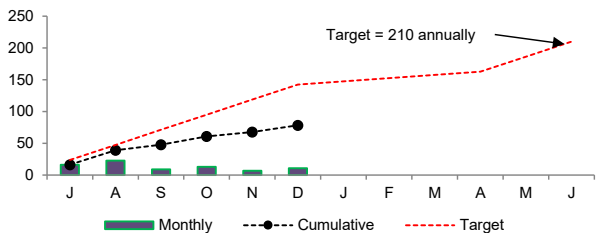
**Percent of Total Wastewater Transport Calculated Using Meters**



The Wastewater Meter Replacement Project is complete. The new meters were installed during the period from April 2021 through December 2021. As of calendar year 2022 rates are being calculated using the new meters. The target for revenue collection meters is a 95% data capture rate. During Q2 FY23, 98.6% of billed data was metered with only 1.4% estimated. All ten months since the new wastewater meters have been online have been above the 95% target with the lowest month at 97.9%.

### WATER DISTRIBUTION SYSTEM PIPELINES

**Miles Surveyed for Leaks**



During Quarter 2 FY23, 30.51 miles of water mains were inspected. The total inspected for the fiscal year to date is 78.33.

Leak Backlog Summary													
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June	Totals
Leaks Detected	2	1	1	1	3	2							10
Leaks Repaired	2	1	1	1	3	0							8
Backlog	4	4	4	4	4	6							n/a

During Quarter 2 FY23 six leaks were detected, and four were repaired. Refer to FY23 Leak Report below for details. Also, community service ranging from individual leak location to surveys were conducted for Belmont, BWSC, Malden, Medford, Milton, Newton, Quincy, Revere, Saugus, Somerville and Wakefield.

#### Quarter 2 - Leak Report FY23

Date Detected	Location of Leaks	Repaired
07/06/22	Felton St @ Water St., Waltham	07/15/22
07/18/22	Felton St @ Water St., Waltham	07/25/22
08/06/22	Duxbury Rd., @ RTE 128 Wellesley	08/06/22
09/22/22	Winthrop Ave. @ Upland Rd., Revere	09/22/22
10/03/22	Riverside Ave. @ Hall St., Medford	10/05/22
11/02/22	Linden St, @ Waverly Oaks Rd, Waltham	11/03/22
11/04/22	42 Waverly Oaks Rd., Waltham	11/07/22
11/07/22	46 Waverly Oaks Rd., Waltham	11/08/22

Date Detected	Location of Leaks/Unrepaired
12/04/16	710 Ashland St/Summer St. Lynn, Sect 91. Not surfacing. Leaking emergency connection valve btw MWRA & LWSC systems. LWSC has difficulty isolating 16" main.
08/27/20	<b>**Hyde Park Ave. @ River St. Hyde Park. BWSC is in process of isolating their water main first.</b>
01/14/22	#2 Woodland Rd., Gillis P.S. - Stoneham
06/09/22	West St. @ Pierce St., Hyde Park. Leak repair to be coordinated with Milton. Mobile Pumping Unit will need to be utilized.
12/08/22	Canal St @ Medford St., Malden
12/21/22	610 Lincoln Ave., Saugus
	<b>** See above for: Hyde Park Ave. = MWRA is currently evaluating the abandonment of this pipeline based on hydraulic needs.</b>

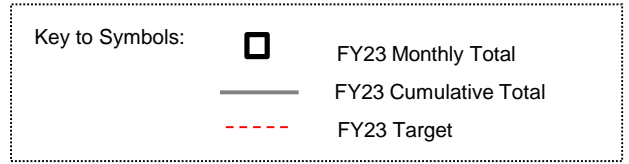
# Water Distribution System Valves

2<sup>nd</sup> Quarter - FY23

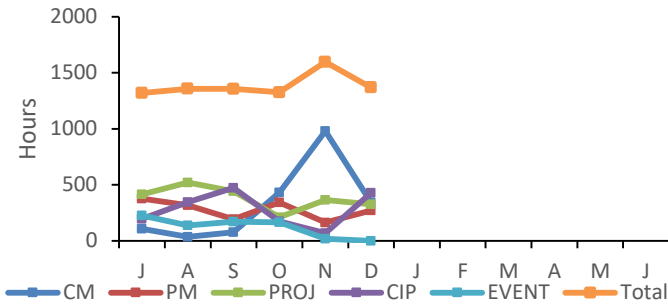
## Background

Valves are exercised, rehabilitated, or replaced in order to improve their operating condition. This work occurs year round. Valve replacements occur in roadway locations during the normal construction season, and in off-road locations during the winter season. Valve exercising can occur year round but is often displaced during the construction season. This is due to the fact that a large number of construction contracts involving rehabilitation, replacement, or new installation of water lines, requires valve staff to operate valves and assist with disinfection, dechlorination, pressure-testing, and final acceptance. Valve exercising can also be impacted due to limited redundancy in the water system; valve exercising cannot be performed in areas where there is only one source of water to the community meters or flow disruptions will occur.

Type of Valve	Inventory #	Operable Percentage	
		FY23 to Date	FY23 Targets
Main Line Valves	2,159	97.0%	95%
Blow-Off Valves	1,682	98.6%	95%
Air Release Valves	1,519	95.9%	95%
Control Valves	49	100.0%	95%

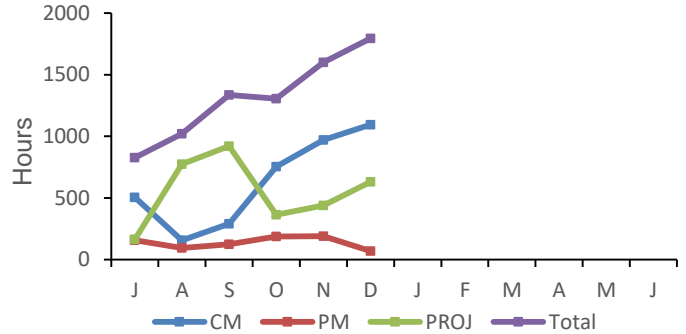


Water Valve Labor Hours



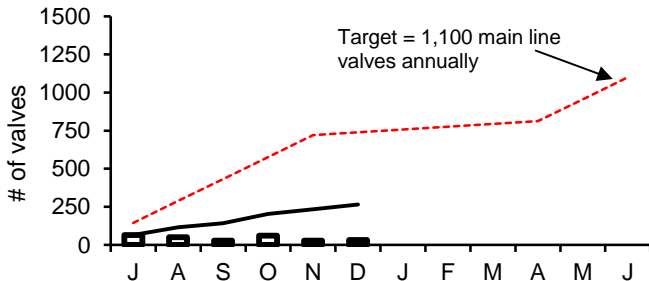
During Q2 of FY23 there was a total of 4,291 hours worked. Percentage breakdown; Corrective Maintenance 41%, Preventative Maintenance 18%, Project 21%, Capital Improvement Project 16%, Event - Wtr Fountain 4%

Water Pipeline Labor Hours



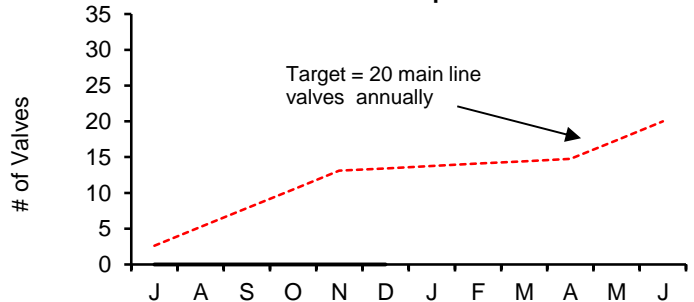
During Q2 of FY23 there was a total of 4,699 hours worked. Percentage breakdown; Corrective Maintenance 60%, Preventative Maintenance 9%, Project 31%

Main Line Valves Exercised



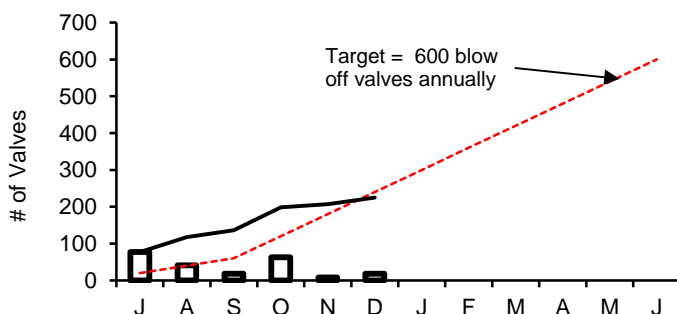
During Q2 of FY23, 122 main line valves were exercised. The total exercised for the fiscal year to date is 265. Below target due to necessary hours spent to support Capital Improvement Projects and in-house construction work.

Main Line Valves Replaced



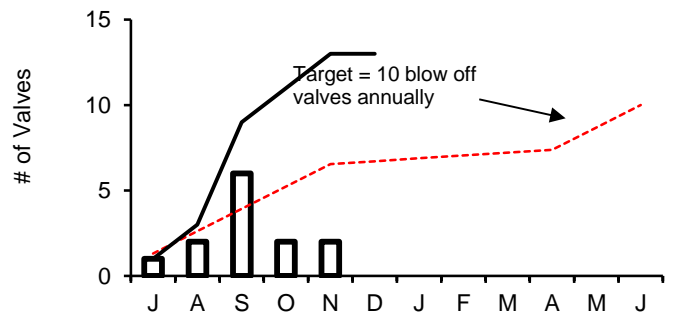
During Q2 of FY23, there were no main line valves replaced. The total replaced for the fiscal year to date is 0. Below target due to staff vacancies.

Blow-Off Valves Exercised



During Q2 of FY23, 89 blow off valves were exercised. The total exercised for the fiscal year to date is 225.

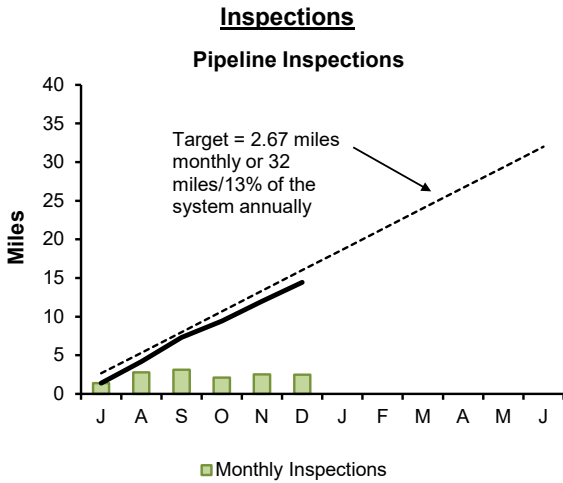
Blow-Off Valves Replaced



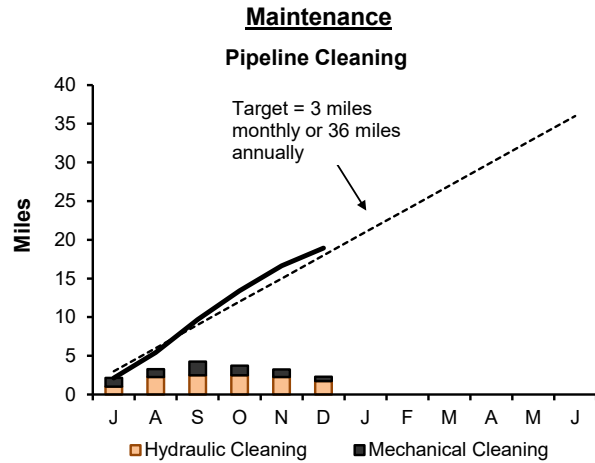
During Q2 of FY23, there were four blow off valves replaced. The total replaced for the fiscal year to date is 13.

# Wastewater Pipeline and Structure Inspections and Maintenance

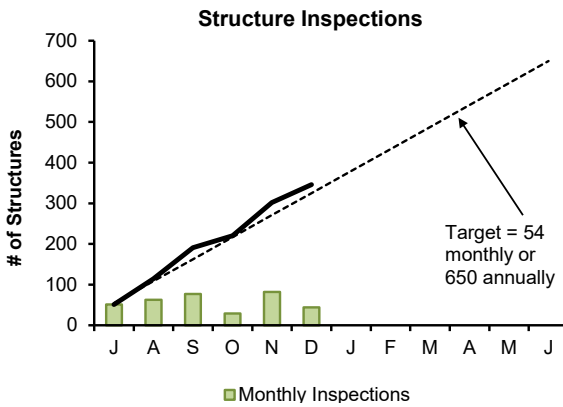
## 2<sup>nd</sup> Quarter - FY23



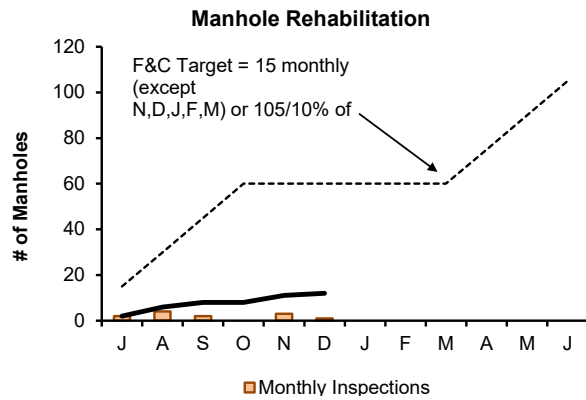
Staff internally inspected 7.11 miles of MWRA sewer pipe during this quarter. The year to date total is 14.44 miles. No Community Assistance was provided.



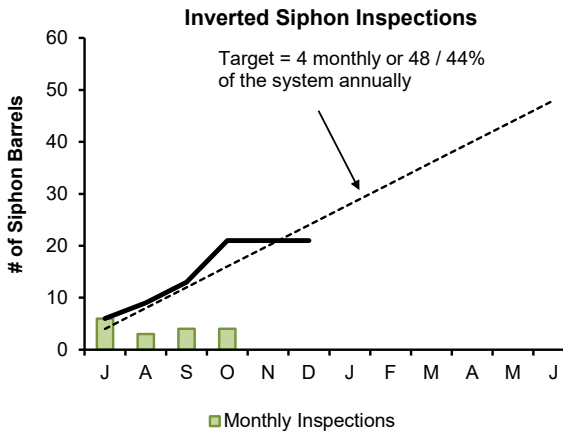
Staff cleaned 9.25 miles of MWRA sewer pipe, and removed 33 yards of grit. The year to date total is 18.93 miles. No Community Assistance was provided.



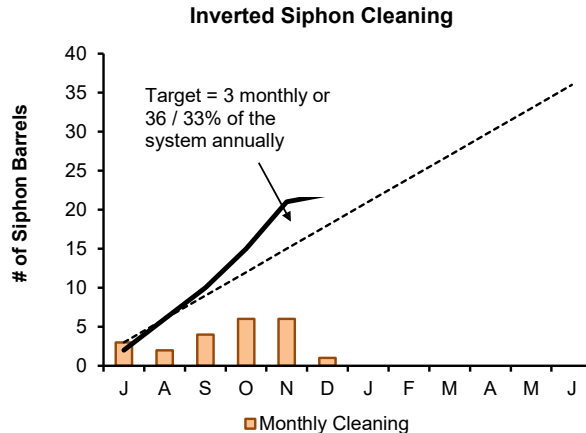
Staff inspected the 36 CSO structures and performed 119 other additional manhole/structure inspections during this quarter. The year to date total is 346 inspections.



Staff replaced 4 frame and cover replacements this quarter. The year to date total is 12.



Staff inspected 4 siphon barrels this quarter. The year total is 21 inspections.

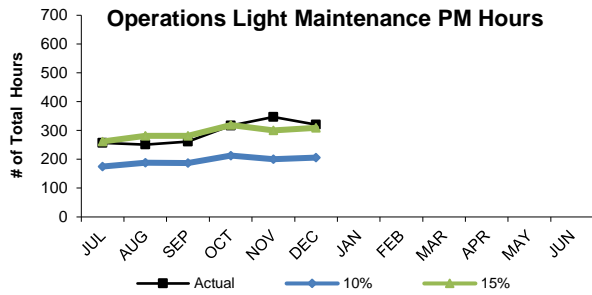


Staff cleaned 13 siphon barrels this quarter.

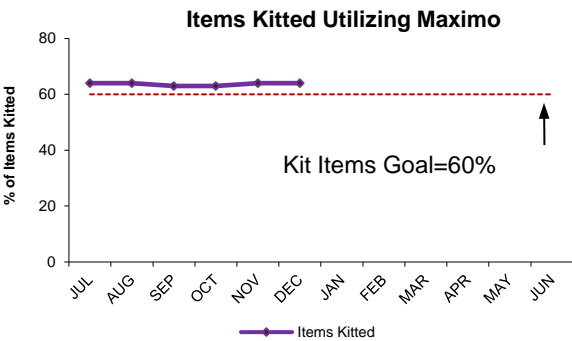
# Field Operations' Metropolitan Equipment & Facility Maintenance

## 2<sup>nd</sup> Quarter - FY FY23

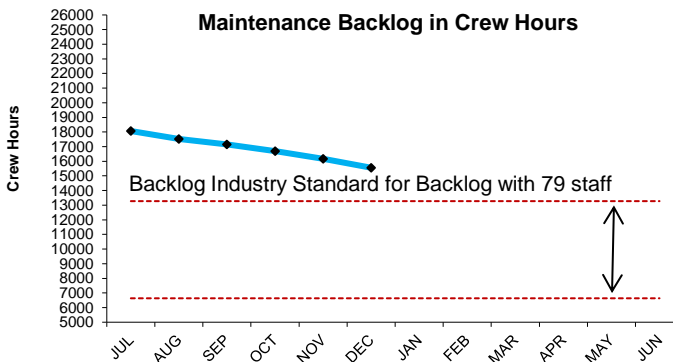
Several maintenance and productivity initiatives are in progress. The goal for the Overall PM completion and the Operator PM completion is 100%. The Operator PM and kitting initiatives frees up maintenance staff to perform corrective maintenance and project work, thus reducing maintenance spending. Backlog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



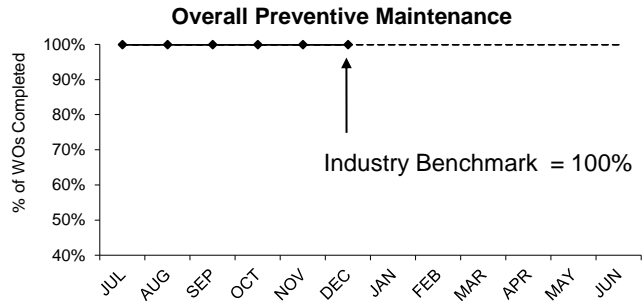
Operations staff averaged 328 hours per month of preventive maintenance during the 2nd Quarter of FY23, an average of 15% of the total PM hours for the 2nd Quarter, which is within the industry benchmark of 10% to 15%.



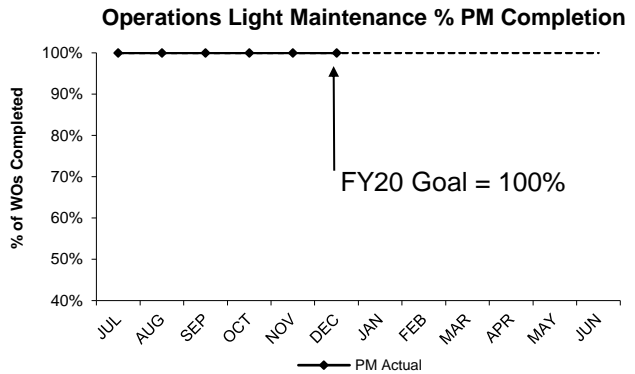
Operations' FY23 maintenance kitting goal has been set at 60% of all work orders to be kitted. Kitting is the staging of parts or material necessary to complete maintenance work. In the 2nd Quarter of FY23, 64% of all applicable work orders were kitted. This resulted in more wrench time and increased productivity.



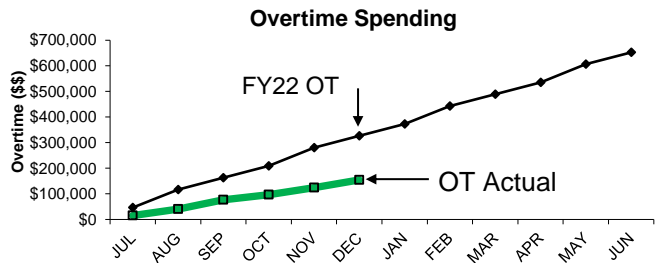
The 2nd Quarter of FY23 backlog average is 16,142 hours. Management's goal is to continue to control overtime and try to get back within the industry benchmark of 6,636 to 13,275 hours. The increase is due to vacations, vacancies and several large maintenance projects.



The Field Operations Department (FOD) preventive maintenance goal for FY23 is 100% of all PM work orders. Staff completed 100% of all PM work orders in the 2nd Quarter of FY23.



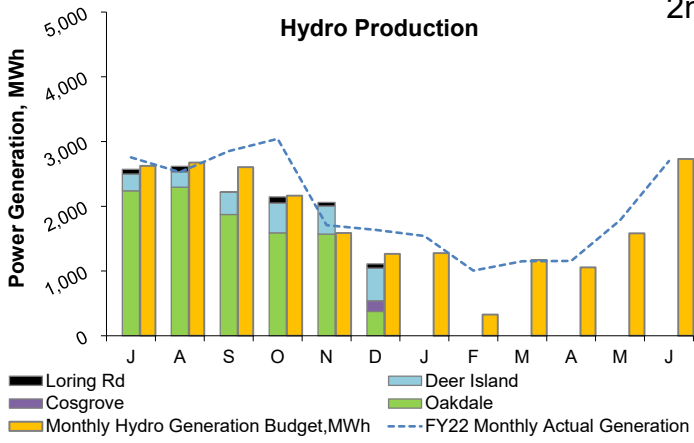
Wastewater Operations complete light maintenance PM's which frees up maintenance staff to perform corrective maintenance. Operations' FY23 PM goal is completion of 100% of all PM work orders assigned. Operations completed 100% of PM work orders in the 2nd Quarter of FY23.



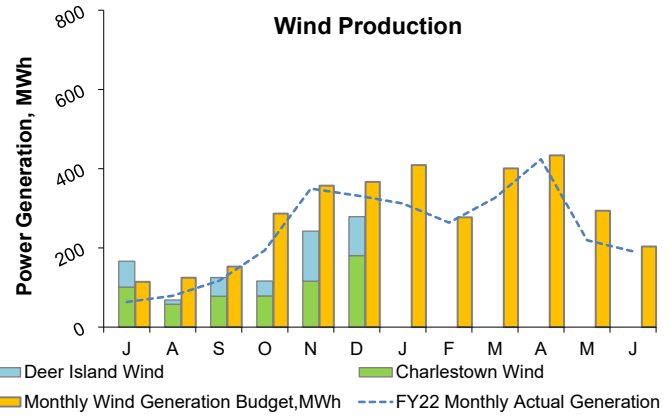
Maintenance overtime was \$28,296 under budget on average, per month, for the 2nd Quarter of FY23. Overtime is used for critical maintenance repairs and wet weather events. The overtime budget through the 2nd Quarter of FY23 is \$326,276. Overtime spending was \$154,459 which is \$171,817 under budget for the fiscal year.

# Renewable Electricity Generation: Savings and Revenue

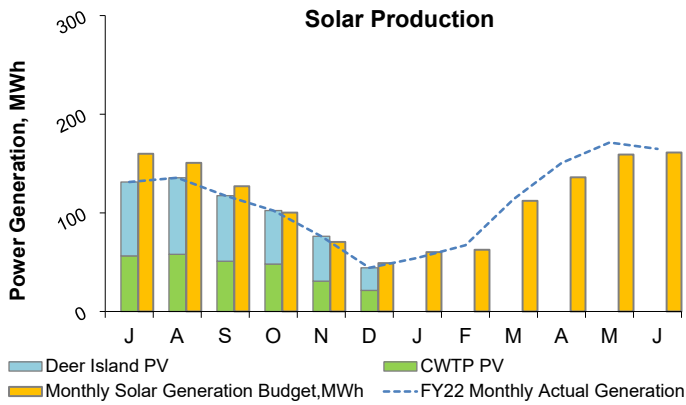
## 2nd Quarter - FY23



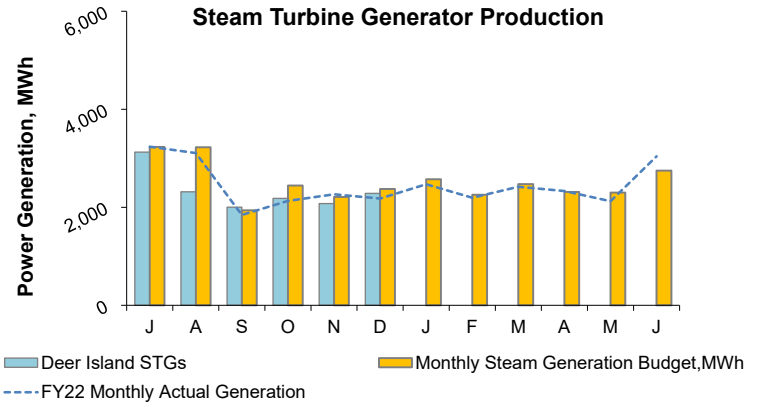
In Quarter 2 of FY23, the renewable energy produced from all hydro turbines totaled 5,425 MWh; 8% above budget<sup>3</sup>. Savings and revenue invoices have not yet been received for this FY23 reporting period.



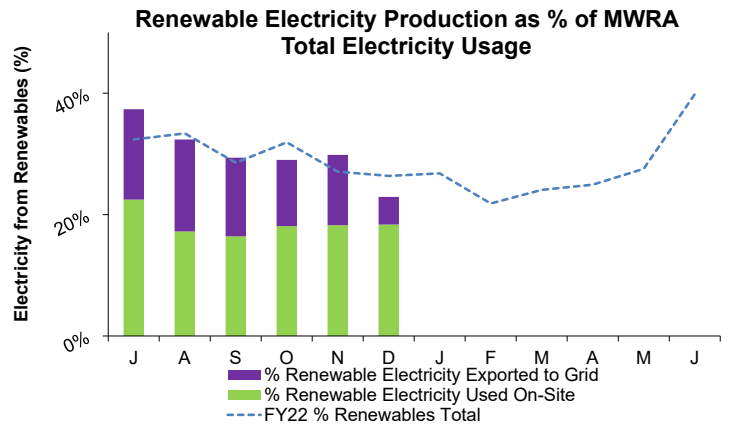
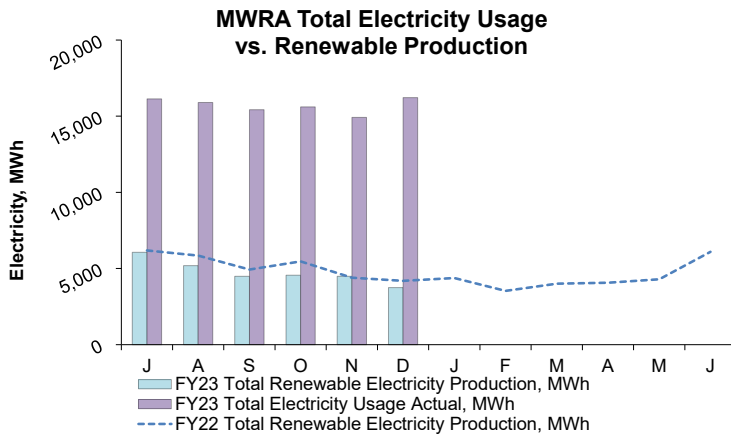
In Quarter 2 of FY23, the renewable energy produced from all wind turbines totaled 637 MWh; 37% below budget<sup>3</sup>. Savings and revenue invoices have not yet been received for this FY23 reporting period.



In Quarter 2 of FY23, the renewable energy produced from all solar PV systems totaled 205 MWh; 7% below budget<sup>3</sup>. Savings and revenue invoices have not yet been received for this FY23 reporting period.



In Quarter 2 of FY23, the renewable energy produced from all steam turbine generators totaled 6,540 MWh; 7% below budget<sup>3</sup>. Savings and revenue invoices have not yet been received for this FY23 reporting period.

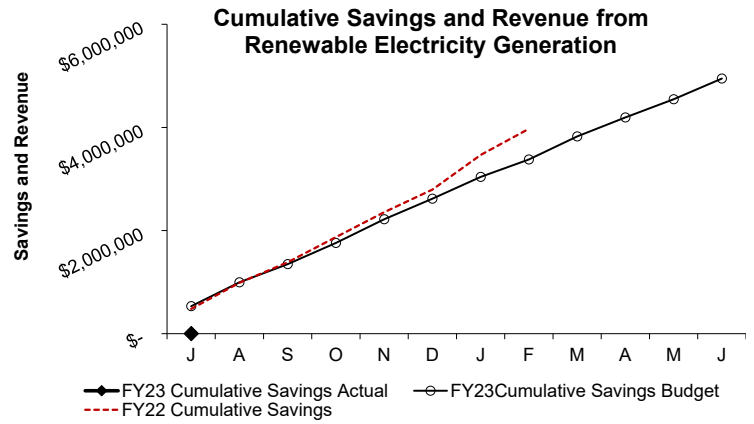
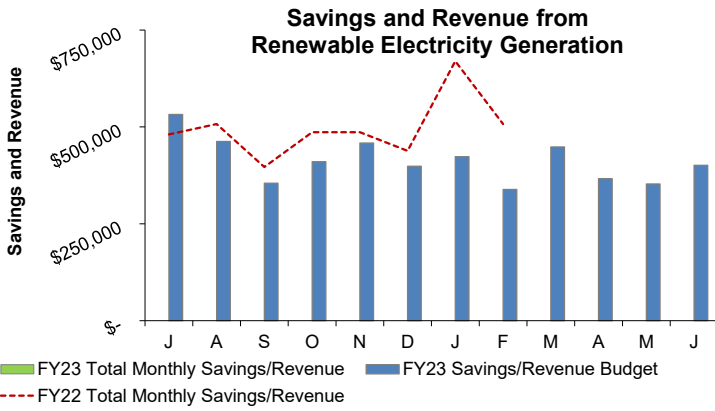


In Quarter 2 of FY23 MWRA's electricity generation by renewable resources totaled 12,807 MWh, 4% below budget. MWRA's total electricity usage was approximately 46,748 MWh. Renewable resources were 27% of total usage. The MWRA total electricity usage is the sum of all electricity purchased for Deer Island 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. Only the actual energy prices are being reported. Therefore, some of the data lags up to 2 months due to timing of invoice receipt.
  2. 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.
  3. Budget values are based on historical averages for each facility and include operational impacts due to maintenance work.

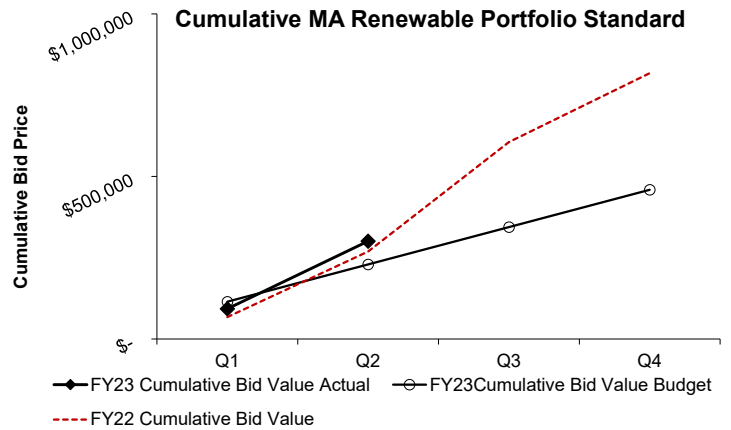
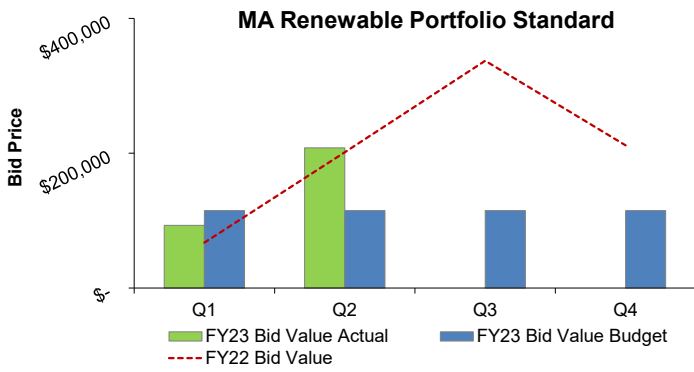
# Renewable Electricity Generation: Savings and Revenue

## 2<sup>nd</sup> Quarter - FY23



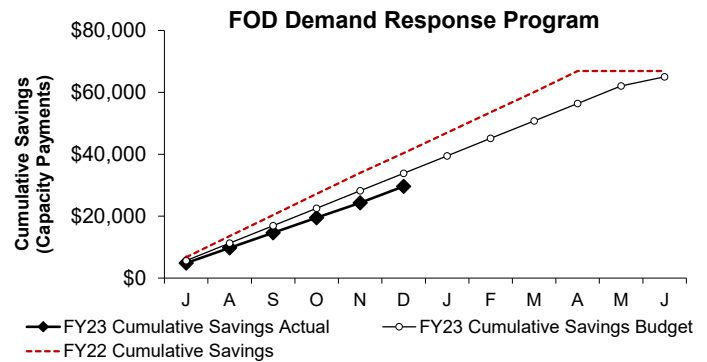
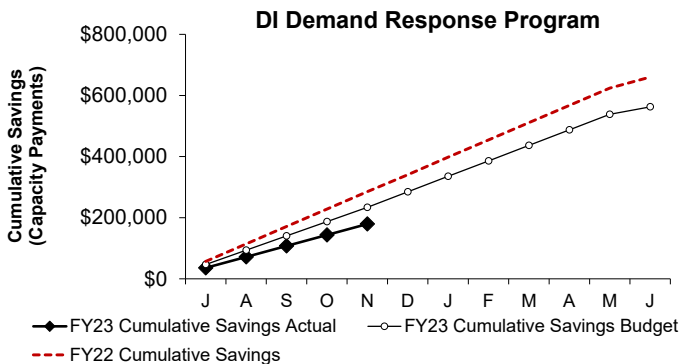
Savings and revenue invoices have not yet been received for this FY23 reporting period.

Savings and revenue<sup>2</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 2nd Quarter<sup>1</sup> from MWRA's renewable energy assets; 3,329 Q2 CY2022 Class 1 Renewable Energy Certificates (RECs); and 3,250 Q2 CY2022 Class 2 RECs were sold for a total value of \$208,058 RPS revenue; which is 81% above budget<sup>3</sup> for the Quarter. REC values reflect the bid value on the date that bids are accepted. Cumulative bid values reflects the total value of bids received to date.

\*MWRA's SRECs have transitioned to the Class 1 REC category starting in FY23.



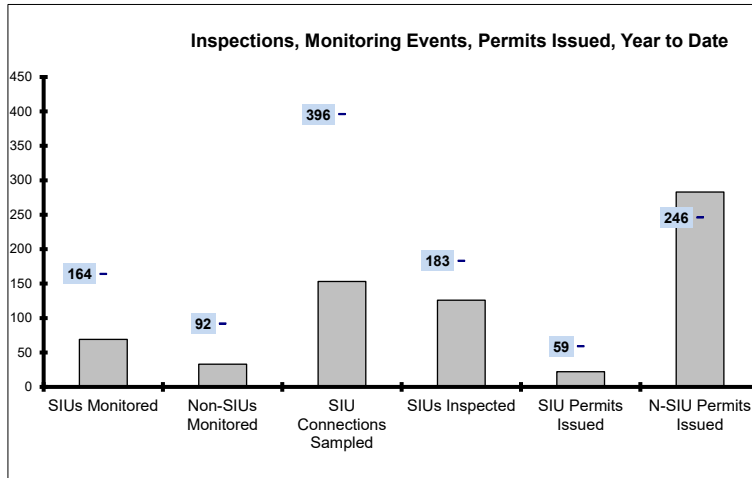
Currently Deer Island, JCWTP, Loring Rd, and Brusch participate in the ISO-New England Demand Response Programs<sup>4</sup>. By agreeing to reduce demand and operate the facility generators to help reduce the ISO New England grid demand during periods of high energy demand, MWRA receives monthly Capacity Payments from ISO-NE. When MWRA operates the generators during an ISO-NE called event, MWRA also receives energy payments from ISO-NE. FY23 Cumulative savings (Capacity Payments only) through November<sup>1</sup> total \$179,345 for DI and payments for FOD total \$29,639 through December<sup>1</sup>.

- Notes:
1. Only the actual energy prices are being reported. Therefore, some of the data lags up to 2 months due to timing of invoice receipt.
  2. 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.
  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 June 2016. MWRA is investigating the cost-benefit of emissions upgrades for future possible participation.



# Toxic Reduction and Control

2nd Quarter - FY23



EPA Required SIU Monitoring Events for FY23: 164  
YTD : **69**

Required Non-SIU Monitoring Events for FY23: 92  
YTD : **33**

SIU Connections to be Sampled For FY23: 396  
YTD: **153**

EPA Required SIU Inspections for FY23: 183  
YTD: **126**

SIU Permits due to Expire In FY23: 59  
YTD: **22**

Non-SIU Permits due to Expire for FY23: 246  
YTD: **283**

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	0	9	0	3	1	8	1	20
Aug	1	38	1	8	1	18	3	64
Sep	5	14	0	5	0	25	5	44
Oct	5	12	0	3	0	12	5	27
Nov	2	31	0	13	0	16	2	60
Dec	3	30	1	7	2	31	6	68
Jan							-	-
Feb							-	-
Mar							-	-
Apr							-	-
May							-	-
Jun							-	-

% YTD	73%	47%	9%	14%	18%	39%	22	283
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This is the end of the second quarter or the first half of the MWRA fiscal year FY23.

In the 2nd quarter, of the 168 permits issued, 13 were SIUs of which 10 were issued within the 120-day timeframe with 2 issued beyond the 180-day timeline.

In the first half, 305 permits were issued, of which 22 were SIUs.

Sixteen of the SIU permits were issued within the 120-day timeframe, with four issued beyond 180 days.

There were 283 non-SIU permits issued, of which more than half were issued late.

Reasons for late issuances continue to include:

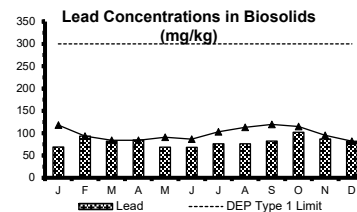
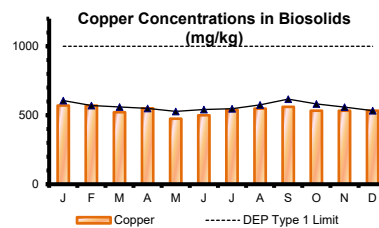
- staffing due to turnover and vacancies
- waiting for critical data needed for permit processing
- delays relating to new start-up operations and
- the late payment of the relevant permit charges.

There are new Industrial Coordinators on board which cause some slow-down in processing while they get acquainted with their roles and there is still a backlog of permits/amendments waiting to be processed.

So far, in FY23, there were 150 completely new permits issued: 2 SIUs and 14 N-SIUs and also including 51 Low Flow Permits, 75-Dental, 1-Food Processing and 5-Construction dewatering.

For the Clinton Sewer Service area, there were no SIU permits issued during the first half of the FY23 fiscal year.

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. Monitoring of SIUs and Non-SIUs is dynamic for several reasons, including: newly permitted facilities; sample site changes within the year 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 also, increased/decreased inspections leading to permit category changes requiring additional monitoring events.



Copper, lead, and molybdenum are metals of concern for MWRA as their concentrations in its biosolids have, at times, exceeded regulatory standards for unrestricted use as fertilizer.

Overall, copper and lead levels remain relatively constant, below the DEP Type 1 Limit, and within the range of values over the past several years.

A discussion of molybdenum concentrations in biosolids is included in the Deer Island Residuals Pellet discussion.

# Field Operations Highlights – 2<sup>nd</sup> Quarter – FY23

## Western Water Operations and Maintenance

- Carroll Water Treatment Plant Side B Maintenance: Staff completed the annual side B maintenance, in November and December. There was substantial project work to fit into this window for Hypo Piping, Fluoride Chemical Feed, and SCADA projects. Side A shutdown for maintenance is scheduled begin in January.
- Norumbega Covered Storage Tank Cleaning: In October staff isolated cell #2 of NCST to support the draining and cleaning project. Most of the water from this cell was pumped into the distribution system for use. Cell #2 of NCST remained isolated during November and December for cleaning. A structural inspection of the ceiling, walls, and floor was completed in December. The initial disinfection process started the last week of December. This cell is expected to be back online in late January.
- Wachusett Aqueduct Pump Station: During October, staff performed testing of the WAPS pumps through the overflow tower. This process begins at the Wachusett Dam Upper Gate House to direct water into the Wachusett Aqueduct that then flows to the Carroll Water Treatment Plant site. All 7 pumps were tested successfully.
- Ware River Diversion to Quabbin: During December, staff completed a training exercise for the Shaft 8 diversion over 2 days. This was the first time since December 2020 due to the construction project at Shaft 2 last winter. Staff coordinated with Barre Falls Dam to maximize river conditions.

## Metro Water Operations and Maintenance

- Water Pipeline Program: Staff completed Blow-Off replacements in Brookline (Sections 96). Additional work during the quarter included leak repairs on the WASM 3 (56-inch main) in Waltham, Section 84 (48-inch main) in Malden and Section 57 (48-inch main) in Medford. Leak detection was performed on over 30 miles of MWRA water main and assistance was provided to ten customer communities.

## Operations Engineering

- Staff continued to provide management and coordination with Arcadis to support the construction phase on the Carroll Water Treatment Plant SCADA system Upgrade project.
  - Section 89 Replacement – Staff continue to provide submittal review and coordinated the isolation and reactivation for all phase 1 work and developed an alternate supply for meter 234 and

contingency plan for Winchester. Continued to develop alternatives for the Fallon Rd linestop.

- Hydraulic Model Upgrades: Staff provided an in-depth review of the draft model and calibrations. Staff continued to support Pipeline and Valve Programs with some of the following activities: Operation Shutdown Plans, Exercise Schedule Packages and Disinfection Plans and Permitting.
- Staff provided support for system expansion to the north and south and to the Metro communities.
- Staff continued with the development of an Emergency Action plan for Newton and the communities supplied by Section 80.

## Wastewater Operations & Maintenance

- Tour of Chelsea Creek HW for DEP Staff: Operations staff conducted a tour of the Chelsea Creek HW for two MassDEP staff on 12/2/22.
- Somerville Marginal CSO Facility MWR205 Tide Gate Replacement: Operations staff continues to work with Construction staff for the replacement of the tide gate at MWR205.
- Nut Island Headwork's Odor Control & HVAC Improvements: The contractor continues to perform work on the facility odor control system and HVAC equipment. Operations staff continue to receive training for the new wet scrubbers and chemical feed systems. Meetings are held on an as-needed basis to review wet scrubber performance and identify issues and concerns.
- Operations & Maintenance Meeting: Operations and maintenance staff attended weekly meetings to discuss the top critical maintenance issues and the schedule and prioritization for addressing maintenance requirements.
- Nuisance Alarm Review: Operations and Operations Engineering staff attended bi-weekly meetings to discuss the top 15 SCADA alarms to determine what steps and procedures are required to minimize nuisance alarms.

- Training: Operations staff attended confined space entry, lock out tag out, OSHA 10 Construction, underground fuel oil tank and PPE training. Staff also attended vendor training for chemical tanks/ pumps, wet scrubbers, recirculation pumps, odor control fans & VFD's as part of the odor control system upgrades at the Nut Island Headworks.

## TRAC

## Compliance and Enforcement

## Field Operations Highlights – 2<sup>nd</sup> Quarter – FY23

- TRAC issued 21 Notices of Noncompliance, 37 Notices of Violation, 2 Rulings on Request for Reconsideration, 4 Return to Permit Letters, and 1 Extension Letter.

### Inspections and Permitting

- This quarter TRAC issued a total of 118 MWRA 8(m) Permits allowing companies to work within an easement or other property interest held by the Authority. Permits were issued in an average of 119 days from the date the application was received.
  - TRAC monitored the septage receiving sites a total of 30 times. Staff conducted inspection at 90 new construction gasoline/oil separators and 282 existing gasoline/oil separators.
  - TRAC staff conducted 63 Annual SIU Inspections as required under TRAC's EPA approved Industrial Pretreatment Program, and 265 other inspections. Other inspections include inspections for permit renewal, enforcement, NSIU, follow-up, construction dewatering sites, group/combined permit audits, out-of-business facility reviews, and surveys.
- 171 MWRA Sewer Use Discharge Permits (Permits) were issued and/or renewed to its sewer users. Three permits were issued and/or renewed in the Clinton Service Area.

### Monitoring

- During the second quarter of FY23, TRAC completed 101 first time SIU monitoring events, 18 first time NSIU monitoring events and 270 other events including Clinton NPDES sampling, Clinton Local Limits sampling, Metropolitan Local Limits sampling, Clinton and Metropolitan Local Limits PFAS sampling, Special Sulfide sampling, Cosgrove and Oakdale NPDES sampling, CSO NPDES sampling, Sudbury Aqueduct monitoring and CSO Hypochlorite Tank chemical sampling.

### **Environmental Quality-Water**

Algae: DCR and MWRA conducted algae sampling at Quabbin & Wachusett Reservoirs. The buoy data continued to help assess chlorophyll-a levels throughout the water column and focus sampling efforts accordingly. Seasonal algal toxin and taste and odor compound sampling is complete for the season with no detections at source or finished water monitoring locations.

Regulatory Sampling: Staff began planning for monitoring associated with EPA's Unregulated

Contaminant Monitoring Rule 5. On October 4th, MWRA staff participated in an emergency desktop drill, along with CVA Community and Mass DEP staff. Discussions focused on potential response actions associated with a disinfection treatment loss at the Brutsch Water Treatment Facility.

Non-Regulatory Sampling: As a pilot of the future EPA Lead & Copper Rule revisions, MWRA is collecting samples at locations near residences that have results over the lead action level. During each sample event, the results met MassDEP pH and alkalinity compliance targets.

Sampling & Analysis: Sampling staff assisted two communities with volatile organic compound sampling. Staff trained three communities on the operation of the HACH SL1000 portable water quality-testing device. Water quality managers presented at the Fall Community Emergency Response Plan Training sessions on UCMR5 and coliform sampling, detection, and response.

Training & Guidance: Staff conducted one coliform sampler training session and met with two communities to assist with a review of Mass DEP sanitary survey findings or an RTCR level assessment.

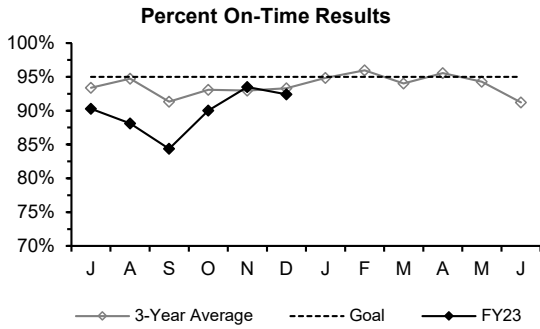
Chemical Supply Contracts: Staff are closely monitoring chemical inventories and continue to check-in with chemical suppliers to review adherence to delivery schedules. Conducted 5-year Spill Prevention Countermeasure & Control (SPCC) review for CWTP along with a qualified contractor. The SPCC plan will be updated, submitted for review and finalized. Where chemical contracts were updated, staff also updated delivery acceptance procedures.

### **Environmental Quality-Wastewater**

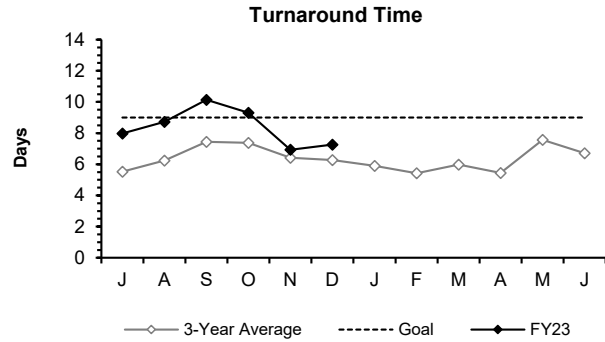
- Ambient Monitoring: The last routine water column surveys of Mass Bay for 2022 were completed in October. MWRA reported exceedances of the Contingency Plan thresholds for dissolved oxygen concentration and/or percent saturation in the outfall nearfield and in Stellwagen Basin, occurring in September and October; there is currently no evidence this lower dissolved oxygen is related to the DITP outfall discharge.
- Harbor/CSO Receiving Water Monitoring: Biweekly harbor monitoring continues year-round; daily CSO receiving water continued through October and will restart in spring 2023.
- Cooperation with other agencies: Continued follow up communication with Boards of Health and metro Boston CSO permittees about the new sewage notification regulation.

# Laboratory Services

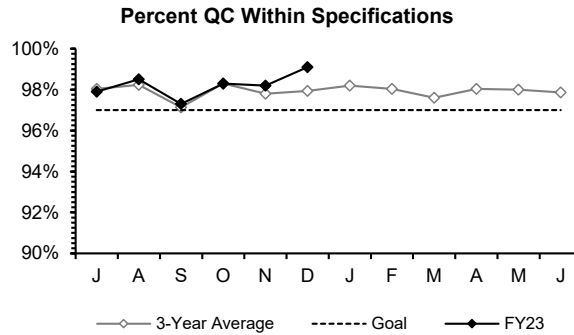
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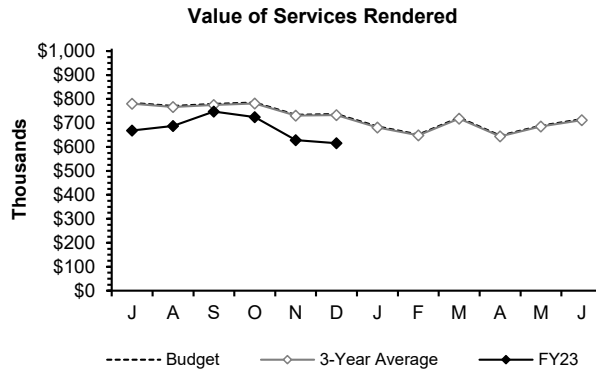
The Percent On-Time measurement continued to run below MWRA's 95% goal due to staffing vacancies, but continued to meet all regulatory deadlines.



Turnaround Time met the 9-day goal.



Percent of QC tests within specifications met the 97% goal.



Value of Services Rendered continued to run below the annual budget projection due to staffing vacancies.

**Performance:** Percent QC within Specification continues to meet the goal, but all other indicators fell short of the goals for the quarter due to reduced staffing levels.

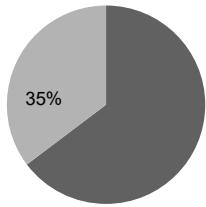
**School Lead Program:** During the 2nd quarter of FY23, MWRA's lab completed 32 tests from 9 schools and childcare facilities in 4 communities. Since 2016, MWRA's Laboratory has conducted over 40,000 tests from 560 schools and daycares in 44 communities. We have also completed over 790 home lead tests under the DPH sampling program since 2017.

# CONSTRUCTION PROGRAMS

# Projects In Construction

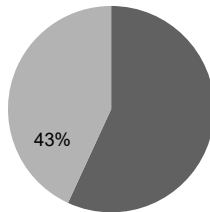
## 2<sup>nd</sup> Quarter – FY23

### Money



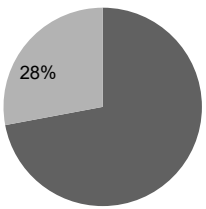
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### Time



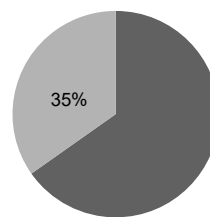
■ Days Remaining  
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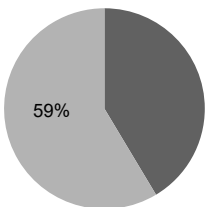
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### Time



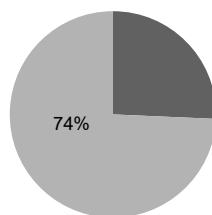
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### Money



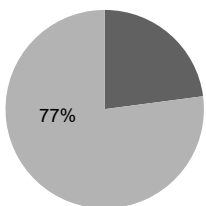
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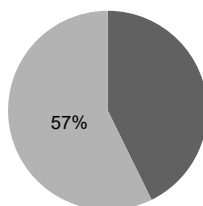
■ Days Remaining  
■ Days Expended

### Money



■ Amount Remaining  
■ Billed to Date

### Time



■ Days Remaining  
■ Days Expended

### Carroll Water Treatment Plant SCADA Improvements

**Project Summary:** This project will replace SCADA Control equipment at the Carroll Plant, to enhance cybersecurity, redundancy, ensure future reliability, and maintain secure plant operations.

**Contract Amount:** \$13,048,534.37

**Contract Duration:** 1,127 Days

**Notice to Proceed:** 1-Sep-21

**Contract Completion:** 2-Oct-24

**Status and Issues:** As of December, the power and communication mockup in the consoles were installed and the smartboard and monitors were mounted and the new circuit breaker was installed. In the Ozone Building in the Server Room, the temporary lighting was installed and the wall penetrations and holes were patched, conduits installed and labeled.

### Section 89 Replacement Pipeline

**Project Summary:** This project will include replacement of a 10,500-foot portion of PCCP with class IV reinforcing wire, line valves and appurtenances, and abandonment of the 118-year old, 24-inch diameter cast iron Section 29 pipeline.

**Contract Amount:** \$32,619,000

**Contract Duration:** 1,475 Days

**Notice to Proceed:** 5-Aug-21

**Contract Completion:** 19-Aug-25

**Status and Issues:** As of December, the Contractor completed installing 15 LF of 36" DI Pipe from Sta.143+73.5 to Sta.143+88.5 including 36" Horizontal Gate Valve/4" Bypass Valve @ Sta.143+81 on Section 89 at Washington Street, Woburn.

### Low Service PRV Improvements

**Project Summary:** This project will replace pressure reducing valves on the Weston Aqueduct Supply Main (WASM) 4 at Nonantum Road in Boston and WASM 3 at Mystic Valley Parkway in Medford

**Contract Amount:** \$11,580,859.21

**Contract Duration:** 720 Days

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

**Contract Completion:** 4-Jul-23

**Status and Issues:** As of December, the Contractor worked on hand finishing joints in the new steel pipes with a cement-mortar lined (CML) coating. They worked on painting pipes in the PRV vault. Installed 48" BFVs and vault base sections, and set the remaining pipes in place, installed couplings and restraint systems.

### Rehabilitation of WASM 3

**Project Summary:** This project consists of the rehabilitation of 13,800 feet of 56-inch and 60-inch diameter water main in Arlington, Somerville and Medford.

**Contract Amount:** \$19,764,209.73

**Contract Duration:** 1,383 Days

**Notice to Proceed:** 28-Oct-20

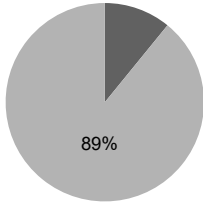
**Contract Completion:** 11-Aug-24

**Status and Issues:** As of December, the Contractor cleaned 720 LF of 56" steel pipe along Pleasant Street, completing approximately 63% of phase 3 cleaning. In addition, they cement lined 550 LF of 56" steel from Swan Street to Maple Street, completing approximately 24% of phase 3 cement lining.

# Projects In Construction

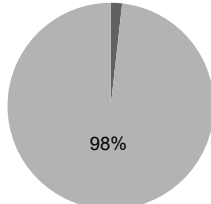
## 2<sup>nd</sup> Quarter – FY23

### Money



■ Amount Remaining  
■ Billed to Date

### Time



■ Days Remaining  
■ Days Expended

### Nut Island Odor Control and HVAC

**Project Summary:** This project will provide upgrades to the odor control system, heating, ventilation and air conditioning system and other equipment.

**Contract Amount:** \$59,919,644.62

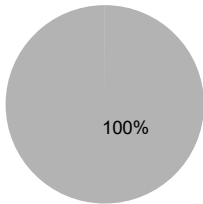
**Contract Duration:** 1,034 Days

**Notice to Proceed:** 12-Feb-20

**Contract Completion:** 12-Dec-22

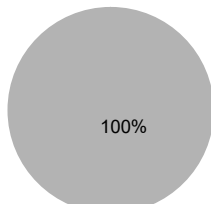
**Status and Issues:** As of December, the Contractor continued to receive deliveries of FRP ducts, CAD vessels, and FRP platforms. They continued installation of FRP ducts, supports, and platforms; rigged and set seven CADs on their equipment pads. In addition, they formed, rebar, and placed concrete for remaining CAD equipment pads and topping slab sections, and also placed concrete Stair 12 landing at the Bottom Level.

### Money



■ Amount Remaining  
■ Billed to Date

### Time



■ Days Remaining  
■ Days Expended

### Chemical Tank Relining & Pipe Replacement

**Project Summary:** This project involves replacing the chlorobutyl rubber linings in 3 sodium hypochlorite and 2 sodium bisulfite storage tanks and assorted gravity thickener overflow piping at Deer Island.

**Contract Amount:** \$8,794,899

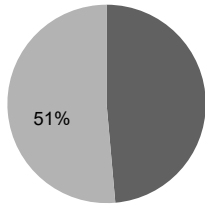
**Contract Duration:** 850 Days

**Notice to Proceed:** 13-Aug-19

**Contract Completion:** 10-Dec-21

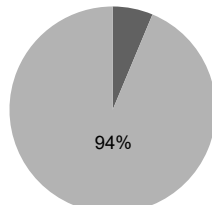
**Status and Issues:** This project is complete. Staff are awaiting bids for a future project to replace this status report.

### Money



■ Amount Remaining  
■ Billed to Date

### Time



■ Days Remaining  
■ Days Expended

### DITP Odor Control Damper Replacement

**Project Summary:** This project involves replacing three existing 30-inch diameter steel dampers with stainless steel dampers, surface preparation and coatings application on the existing 30-inch diameter ductile iron pipe. ,

**Contract Amount:** \$538,000

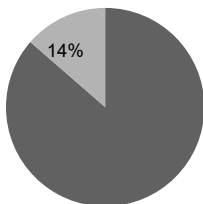
**Contract Duration:** 365 Days

**Notice to Proceed:** 3-Feb-22

**Contract Completion:** 3-Feb-23

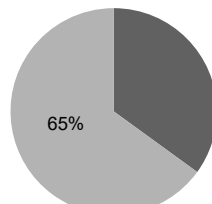
**Status and Issues:** As of December, the stainless steel dampers have been installed and tested.

### Money



■ Amount Remaining  
■ Billed to Date

### Time



■ Days Remaining  
■ Days Expended

### Clinton Screw Pump Replacement

**Project Summary:** This project involves demolishing and replacing three screw pumps and motors and three existing 72-inch by 60-inch pump isolation slide gates and associated electrical and controls.

**Contract Amount:** \$3,452,985

**Contract Duration:** 540 Days

**Notice to Proceed:** 14-Jan-22

**Contract Completion:** 8-Jul-23

**Status and Issues:** As of December, the trailer utility installation has been completed and now awaiting delivery of the pumps.

# CSO CONTROL PROGRAM

2<sup>nd</sup> Quarter – FY23

## Overview

In compliance with milestones in the Federal District Court Order, all 35 projects in the CSO Long-Term Control Plan (LTCP) were complete as of December 2015. Subsequently, MWRA completed a multi-year CSO post-construction monitoring program and performance assessment, filing the Final CSO Post Construction Monitoring Program and Performance Assessment Report with the Court and submitted copies to EPA and DEP in December 2021. The report shows that there has been an 87% reduction in CSOs in a typical year, from 3.3 billion gallons to 414 million gallons, with 70 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 10 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 projects identified to meet performance goals at 10 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.

## 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 **1/19/23** and the next meeting is scheduled for **3/23/23**.

## Ongoing Projects as of December 31, 2022

*East Boston CSO Control:* As part of the East Boston CSO a FAA/MOU was executed in June 2021 for \$2.1M, BWSC designed and is constructing additional sewer separation in East Boston, including modifications to the BOS003 system regulators and modification to the BOS014 system. Work at BOS014, BOS003 is complete and is expected to meet LTCP goals. Sewer separations is expected to be completed in Summer 2023.

*CHE008 Pipe Replacement – Enlarging the CHE008 regulator connection is designed and now in construction. The \$1.57M construction project is expected to be completed September 2023.*

*Somerville Marginal New Pipe Connection* came out of the variance optimization study that recommended adding a new pipe from the facility's CSO influent conduit to the interceptor with an added

control gate. The \$1.2M (est.) construction project is expected to be completed in the Summer 2024.

*Fort Point Channel and Mystic Confluence* - BOS062, BOS065, BOS070 DBC and BOS017: FAA/MOU established for \$10M to design and construct improvement at these 4 CSOs. Currently in design with substantial 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.

- MassDEP and EPA conditionally approved MWRA's Updated CSO Control Plan Scope of Work on **5/11/2022**. The Authority is currently working closely with the CSO communities of Cambridge and Somerville to develop these plans over the upcoming years.
- Schedule Extension Request for Deliverables Associated with Updated CSO Control Plan was submitted 9/22/22. EPA/MassDEP acknowledge that the extension request is officially under consideration, however no determination has been made.
- As identified in the variance the progress is reported at monthly meetings with EPA/MassDEP. The last meeting was on **1/11/23** and the next meeting is scheduled for **2/8/23**. 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.
- The 2nd of 8 planned meetings was held on 12/15/22. **The next Public Meeting is scheduled for the spring.**
- 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

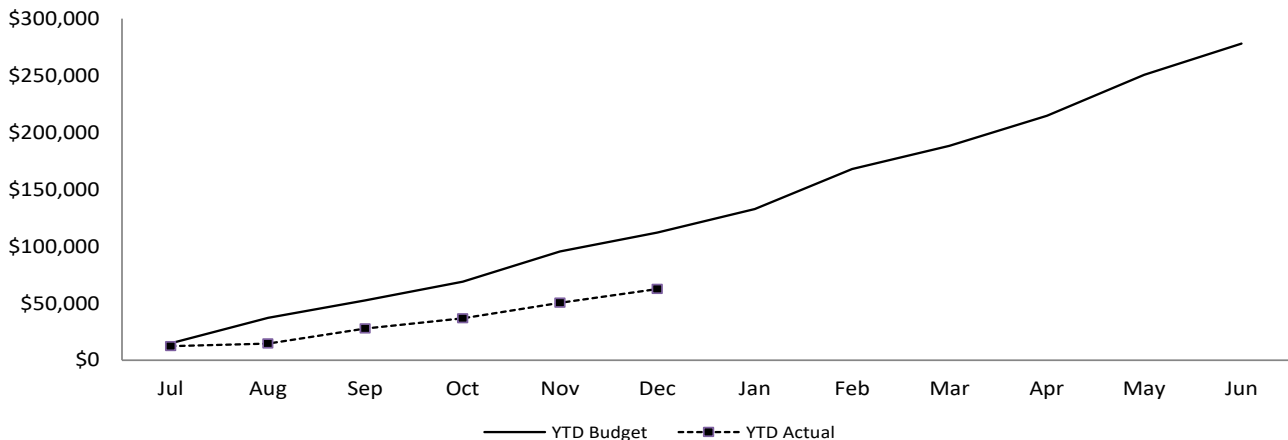


## CIP Expenditures 2<sup>nd</sup> Quarter – FY23

FY23 Capital Improvement Program Expenditure Variances through December by Program - (\$ in thousands)				
Program	FY23 Budget Through December	FY23 Actual Through December	Variance Amount	Variance Percent
Wastewater	\$35,381	\$17,758	(\$17,623)	-50%
Waterworks	\$62,754	\$37,726	(\$25,029)	-40%
Business and Operations Support	\$13,969	\$7,116	(\$6,853)	-49%
<b>Total</b>	<b>\$112,105</b>	<b>\$62,599</b>	<b>(\$49,506)</b>	<b>-44%</b>

Project underspending within Wastewater was due to timing of grant and loan distributions for the I/I Local Financial Assistance program, contractor behind schedule for the Nut Island Odor Control and HVAC Improvements, completion of some design and inspection tasks were later than anticipated for Ward Street and Columbus Park Headworks Upgrades Design/CA, and updated schedule for DITP Roofing Replacement. Project underspending in Waterworks was due to timing of community distributions for the Water Loan program, long lead time for piping materials for Waltham Water Pipeline Construction, timing of work for WASM/SPSM Pressure Reducing Valves, WASM 3 Rehabilitation, Electrical Distribution Upgrades at Southborough, and CP3-Sections 23, 24, 47 Rehabilitation, timing of work and long lead time for materials for CWTP SCADA Upgrades, and scope changes for Cathodic Protection Shafts N & W. This underspending was partially offset by timing of consultant work for Section 53 and 99 Improvements - Design/CA, and contractor progress for CP-1 NEH Improvements, and NIH Section 89 & 29 Replacement.

**Budget vs. Actual CIP Expenditures** (\$ in thousands)  
Total FY23 CIP Budget of \$278,053



### Construction Fund Management

All payments to support the capital program are made from the Construction Fund. Sources of fund in-flows include bond proceeds, commercial paper, SRF reimbursements, loan repayments by municipalities, and current revenue. Accurate estimates of cash withdrawals and grant payments (both of which are derived from CIP spending projections) facilitate planning for future borrowings and maintaining an appropriate construction fund balance.

Cash Balance as of 12/24/22	\$122.6 million
Unused capacity under the debt cap:	\$2.1billion
Estimated date for exhausting construction fund without new borrowing:	Jan-23
Estimated date for debt cap increase to support new borrowing:	Not anticipated at this time
Commercial paper/Revolving loan outstanding:	\$140 million
Commercial paper capacity / Revolving Loan	\$110 million
Budgeted FY23 Cash Flow Expectancy*:	\$248 million

\* Cash based spending is discounted for construction retainage.

# DRINKING WATER QUALITY AND SUPPLY

# Source Water – Microbial Results and UV Absorbance

## 2<sup>nd</sup> Quarter – FY23

### Source Water – Microbial Results

Total coliform bacteria are monitored in both source and treated water to provide an indication of overall bacteriological activity. Most coliforms are harmless. However, fecal coliforms, a subclass of the coliform group, are identified by their growth at temperatures comparable to those in the intestinal tract of mammals. They act as indicators of possible fecal contamination. The Surface Water Treatment Rule for unfiltered water supplies allows for no more than 10% of source water samples prior to disinfection over any six-month period to have more than 20 fecal coliforms per 100mL.

#### Sample Site: Quabbin Reservoir

Quabbin Reservoir water is sampled at the William A. Brutsch Water Treatment Facility raw water tap before being treated and entering the CVA system.

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

#### Sample Site: Wachusett Reservoir

Wachusett Reservoir water is sampled at the CWTP raw water tap in Marlborough before being treated and entering the MetroWest/Metropolitan Boston systems.

In the wintertime when smaller water bodies near Wachusett Reservoir freeze up, many waterfowl will roost in the main body of the reservoir - which freezes later. This increased bird activity tends to increase fecal coliform counts. DCR has an active bird harassment program to move the birds away from the intake area.

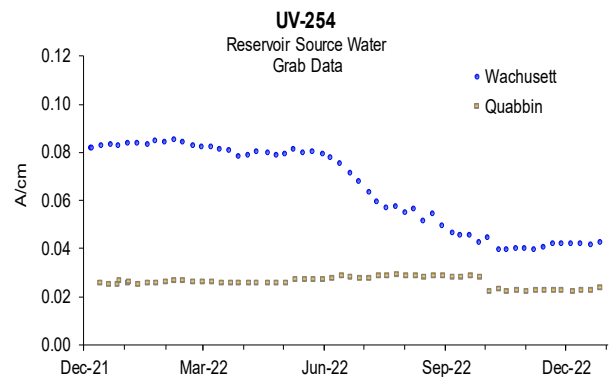
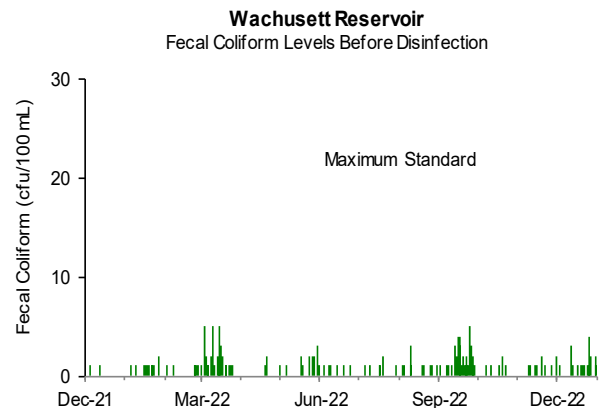
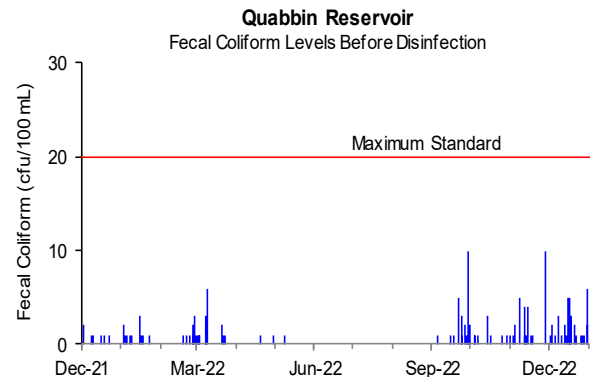
All samples collected during the 2nd Quarter were below 20 cfu/100mL. **For the current six-month period, 0.0% of the samples exceeded a count of 20 cfu/100mL.**

### 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 0.022 A/cm for the quarter.

Wachusett Reservoir UV-254 levels averaged 0.041 A/cm for the quarter.

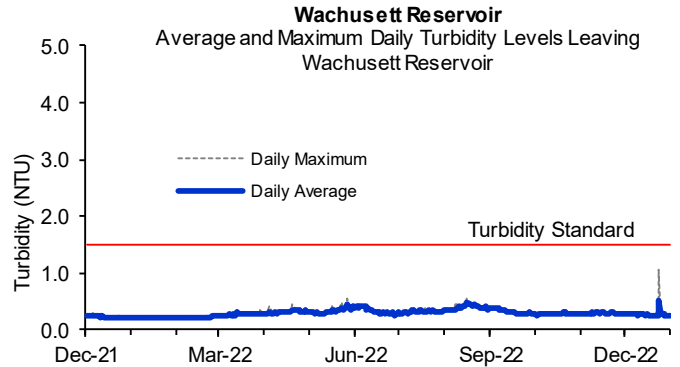
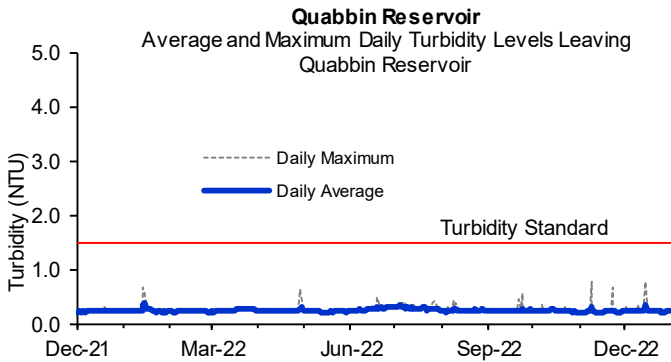


## Source Water – Turbidity 2<sup>nd</sup> Quarter – FY23

Turbidity is a measure of suspended and colloidal particles including clay, silt, organic and inorganic matter, algae and microorganisms. The effects of turbidity depend on the nature of the matter that causes the turbidity. High levels of particulate matter may have a higher disinfectant demand or may protect bacteria from disinfection effects, thereby interfering with the disinfectant residual throughout the distribution system.

There are two standards for turbidity: all water must be below five NTU (Nephelometric Turbidity Units), and water only can be above one NTU if it does not interfere with effective disinfection.

Turbidity of Quabbin Reservoir water is monitored continuously at the Brutsch Water Treatment Facility (BWTF) before UV and chlorine disinfection. Turbidity of Wachusett Reservoir is monitored continuously at the Carroll Water Treatment Plant (CWTP) before ozonation and UV disinfection. Maximum turbidity results at Quabbin and Wachusett were within DEP standards for the quarter.

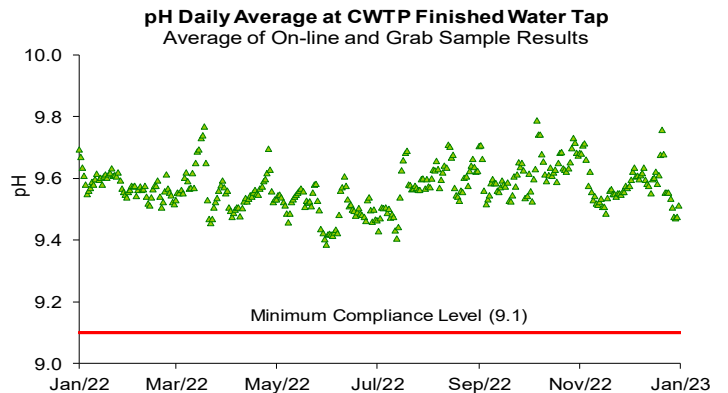
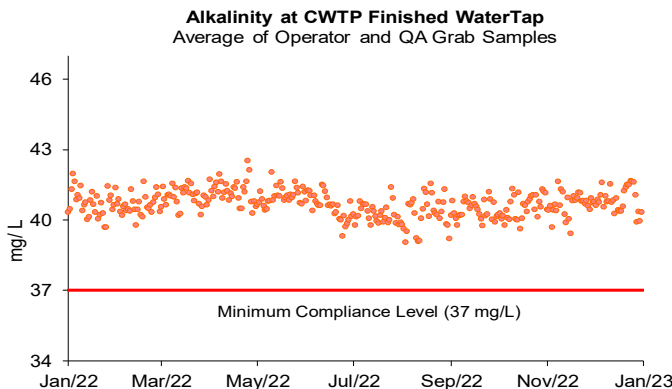


## Treated Water – pH and Alkalinity Compliance

MWRA adjusts the alkalinity and pH of Wachusett water at CWTP to reduce its corrosivity, which minimizes the leaching of lead and copper from service lines and home plumbing systems into the water. MWRA tests finished water pH and alkalinity daily at the CWTP's Fin B sampling tap. MWRA's target for distribution system pH is 9.3; the target for alkalinity is 40 mg/l. Per DEP requirements, CWTP finished water samples have a minimum compliance level of 9.1 for pH and 37 mg/L for alkalinity. Samples from 27 distribution system locations have a minimum compliance level of 9.0 for pH and 37 mg/L for alkalinity. Results must not be below these levels for more than nine days in a six month period. Distribution system samples are collected in March, June, September, and December.

Each CVA community provides its own corrosion control treatment. See the CVA report: [www.mwra.com/water/html/awqr.htm](http://www.mwra.com/water/html/awqr.htm).

Quarterly distribution system samples were collected over a course of two weeks in November. Distribution system sample pH ranged from 9.5 to 9.7 and alkalinity ranged from 40 to 43 mg/L. No sample results were below DEP limits for this quarter.



# Treated Water – Disinfection Effectiveness

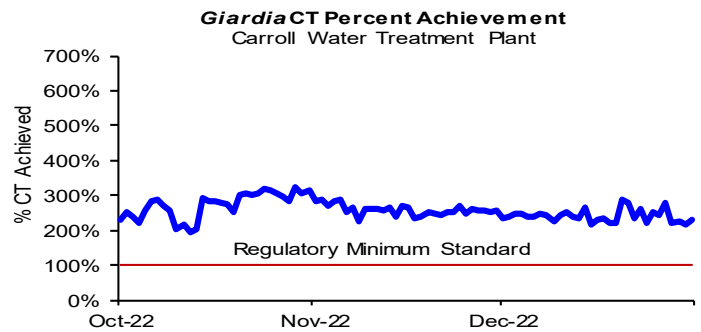
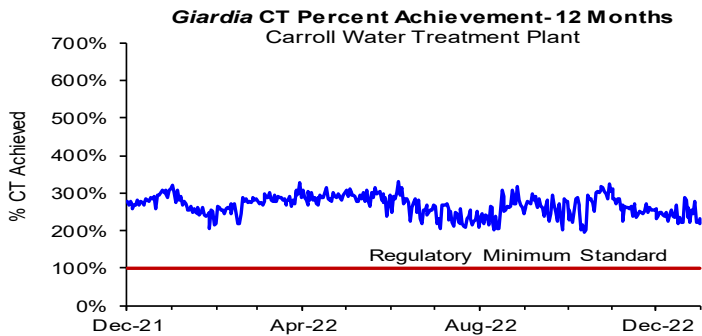
## 2<sup>nd</sup> Quarter – FY23

At the Carroll Water Treatment Plant (CWTP), MWRA meets the required 99.9% (3-log) inactivation of *Giardia* using ozone (reported as CT: concentration of disinfectant x contact time) and the required 99% (2-log) inactivation of *Cryptosporidium* using UV (reported as IT: intensity of UV x time). MWRA calculates inactivation rates hourly and reports *Giardia* inactivation at maximum flow and *Cryptosporidium* inactivation at minimum UV dose. MWRA must meet 100% of required CT and IT.

CT achievement for *Giardia* assures CT achievement for viruses, which have a lower CT requirement. For *Cryptosporidium*, there is also an “off-spec” requirement. Off-spec water is water that has not reached the full required UV dose or if the UV reactor is operated outside its validated ranges. No more than 5% off-spec water is allowed in a month.

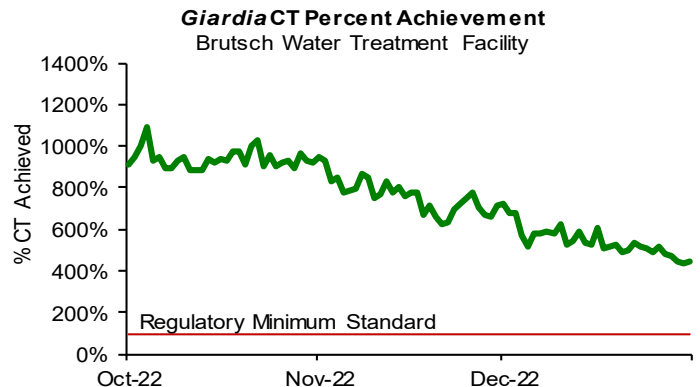
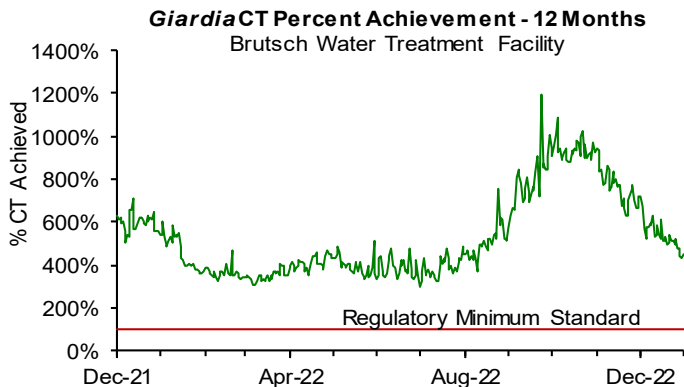
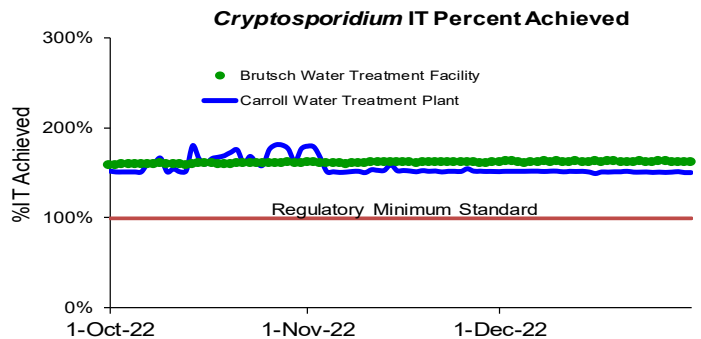
### Wachusett Reservoir – MetroWest/Metro Boston Supply:

- The chlorine dose at the CWTP varied between 3.0 and 3.7 mg/L for the quarter.
- Ozone dose at the CWTP varied between 1.17 to 1.60 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 1.35 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%.

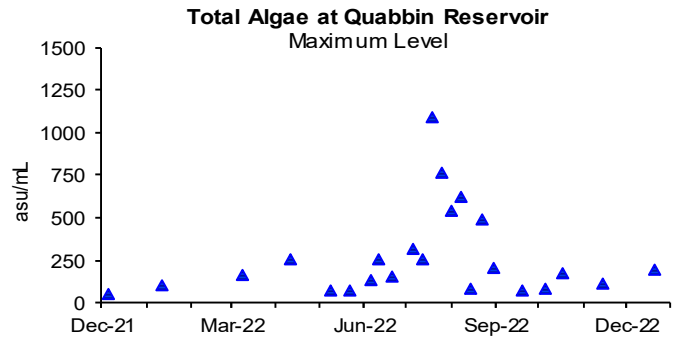
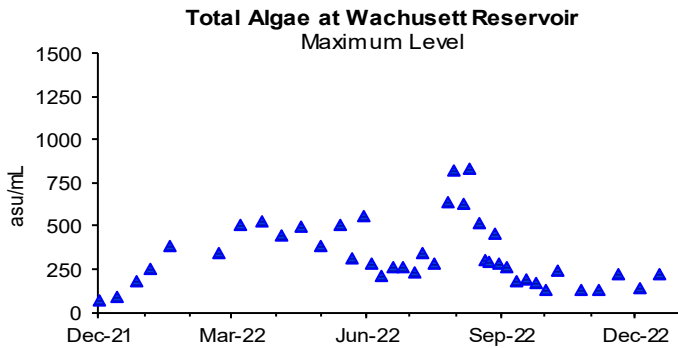


## Source Water - Algae 2<sup>nd</sup> Quarter – FY23

Algae levels in the Wachusett and Quabbin Reservoir are monitored by DCR and MWRA. These results, along with taste and odor complaints, are used to make decisions on source water treatment for algae control.

Taste and odor complaints at the tap may be due to algae, which originate in source reservoirs, typically in trace amounts. Occasionally, a particular species grows rapidly, increasing its concentration in water. When *Synura*, *Anabaena*, or other nuisance algae bloom, MWRA may treat the reservoirs with copper sulfate, an algacide. 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 2nd quarter, there were no complaints which may be related to algae reported from the local water departments.

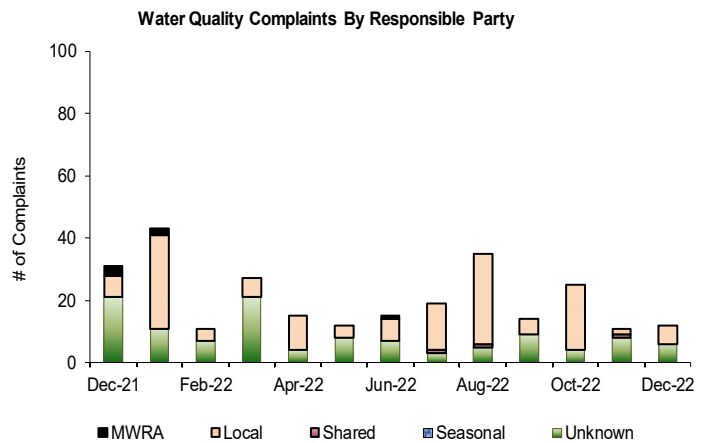
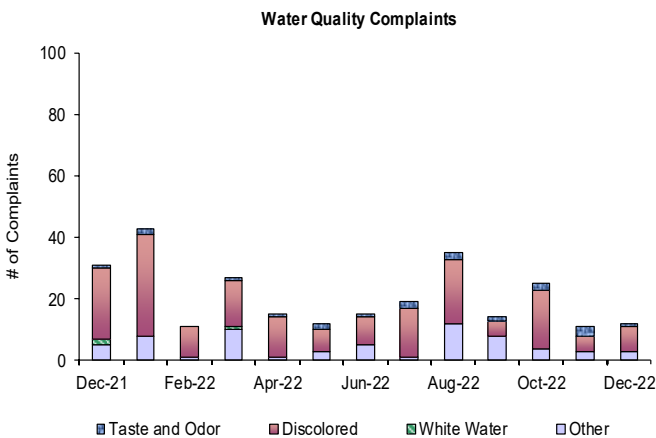


## Drinking Water Quality Customer Complaints: Taste, Odor, or Appearance

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 48 complaints during the quarter compared to 138 complaints from 2nd Quarter of FY22. Of these complaints, 32 were for "discolored water", 6 were for "taste and odor", and 10 were for "other". Of these complaints, 29 were local community issues, 1 was a shared local community and MWRA related issue, and 18 were unknown in origin.



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

## 2<sup>nd</sup> Quarter – FY23

While all communities collect bacteria samples and chlorine residual data for the Total Coliform Rule (TCR), data from the 44 systems that use MWRA’s Laboratory are reported below.

The MWRA TCR program has 144 sampling locations. These locations include sites along MWRA’s transmission system, water storage tanks and pumping stations, as well as a subset of the community TCR locations.

Samples are tested for total coliform and *Escherichia coli* (*E.coli*). *E.coli* is a specific coliform species whose presence likely indicates potential contamination of fecal origin.

If *E.coli* are detected in a drinking water sample, this is considered evidence of a potential public health concern. Public notification is required if repeat tests confirm the presence of *E.coli* or total coliform.

Total coliform provide a general indication of the sanitary condition of a water supply. If total coliform are detected in more than 5% of samples in a month (or if more than one sample is positive when less than 40 samples are collected), the water system is required to investigate the possible source/cause with a Level 1 or 2 Assessment, and fix any identified problems.

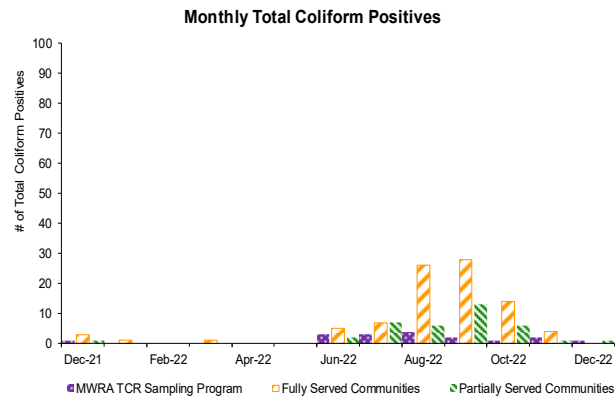
A disinfectant residual is intended to maintain the sanitary integrity of the water; MWRA considers a residual of 0.2 mg/L a minimum target level at all points in the distribution system.

### Highlights

In the 2<sup>nd</sup> Quarter, twenty-six of the 6,295 samples (0.41% system-wide) submitted to MWRA labs for analysis tested positive. Four of the 1862 MWRA locations or Community/MWRA Shared samples (0.21%) tested positive for total coliform. None of the 329 CVA/MWRA community samples tested positive for total coliform. Three communities were required to perform a Level Assessment. (Everett, Melrose, Wakefield – October). Only 0.5% 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		E.coli	#	Assessment
		# Samples (b)	# (%) Positive	Positive		Required
MWRA	a	MWRA Locations	363	2 (0.55%)	0	
		Shared Community/MWRA sites	1499	2 (0.13%)	0	
		<b>Total: MWRA</b>	<b>1862</b>	<b>4 (0.21%)</b>	<b>0</b>	<b>No</b>
Fully Served		ARLINGTON	156	0 (0%)	0	
		BELMONT	104	0 (0%)	0	
		BOSTON	778	0 (0%)	0	
		BROOKLINE	224	0 (0%)	0	
		CHELSEA	169	0 (0%)	0	
		DEER ISLAND	52	0 (0%)	0	
		EVERETT	181	6 (3.31%)	0	Yes
		FRAMINGHAM	240	1 (0.42%)	0	No
		LEXINGTON	119	0 (0%)	0	
		LYNNFIELD	18	0 (0%)	0	
		MALDEN	234	0 (0%)	0	
		MARBLEHEAD	72	0 (0%)	0	
		MARLBOROUGH	126	0 (0%)	0	
		MEDFORD	198	2 (1.01%)	0	No
		MELROSE	126	4 (3.17%)	0	Yes
		MILTON	110	0 (0%)	0	
		NAHANT	30	0 (0%)	0	
		NEWTON	280	1 (0.36%)	0	No
		NORTHBOROUGH	48	0 (0%)	0	
		NORWOOD	99	0 (0%)	0	
		QUINCY	354	1 (0.28%)	0	No
		READING	130	0 (0%)	0	
		REVERE	198	1 (0.51%)	0	No
		SAUGUS	104	0 (0%)	0	
		SOMERVILLE	255	1 (0.39%)	0	No
		SOUTHBOROUGH	30	0 (0%)	0	
	STONEHAM	91	0 (0%)	0		
	SWAMPSCOTT	51	0 (0%)	0		
	WALTHAM	219	1 (0.46%)	0	No	
	WATERTOWN	141	0 (0%)	0		
	WESTON	45	0 (0%)	0		
	WINTHROP	66	0 (0%)	0		
	<b>Total: Fully Served</b>	<b>5048</b>	<b>18 (0.36%)</b>			
Partially Served		BEDFORD	55	0 (0%)	0	
		BURLINGTON	127	0 (0%)	0	
		CANTON	87	0 (0%)	0	
		NEEDHAM	126	1 (0.79%)	0	No
		PEABODY	210	2 (0.95%)	0	No
		WAKEFIELD	138	3 (2.17%)	0	Yes
		WELLESLEY	112	0 (0%)	0	
		WILMINGTON	90	1 (1.11%)	0	No
		WINCHESTER	91	0 (0%)	0	
		WOBURN	211	1 (0.47%)	0	No
	<b>Total: Partially Served</b>	<b>1247</b>	<b>8 (0.64%)</b>			
	<b>Total: Community Samples No CVA</b>	<b>6295</b>	<b>26 (0.41%)</b>			
CVA	d	MWRA CVA Locations	105	0 (0%)	0	
		CHICOPEE	185	0 (0%)	0	
		SOUTH HADLEY FD1	20	0 (0%)	0	
		WILBRAHAM	19	0 (0%)	0	
	<b>Total: CVA</b>	<b>329</b>	<b>0 (0%)</b>			

### Chlorine Residuals in Fully Served Communities

	2021	2022											
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
% <0.1	0.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0
% <0.2	0.8	0.1	0.2	0.0	0.0	0.1	0.0	0.1	0.3	0.4	0.5	0.8	0.2
% <0.5	2.8	1.1	1.1	0.5	0.6	0.5	0.5	1.4	1.6	1.8	2.1	2.4	1.5
% <1.0	7.3	3.7	4.1	2.3	2.3	2.1	2.6	4.0	5.7	6.5	5.8	5.7	3.9
% ≥1.0	92.7	96.3	95.9	97.7	97.7	97.9	97.4	96.0	94.3	93.5	94.2	94.4	96.2

## Treated Water Quality: Disinfection By-Product (DBP) Levels in Communities 2<sup>nd</sup> Quarter – FY23

Total Trihalomethanes (TTHMs) and Haloacetic Acids (HAA5s) are by-products of disinfection treatment with chlorine. TTHMs and HAA5s are of concern due to their potential adverse health effects at high levels. EPA’s locational running annual average (LRAA) standard is 80 µg/L for TTHMs and 60 µg/L for HAA5s.

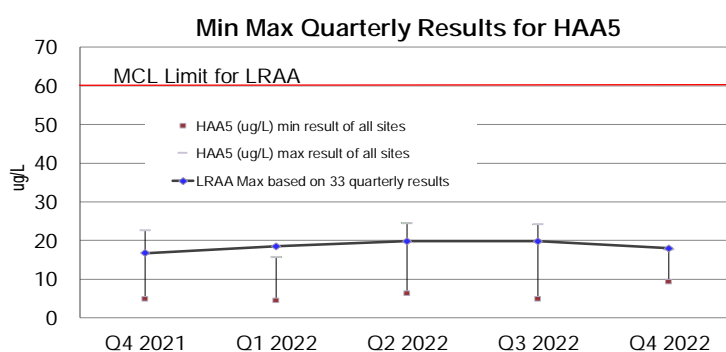
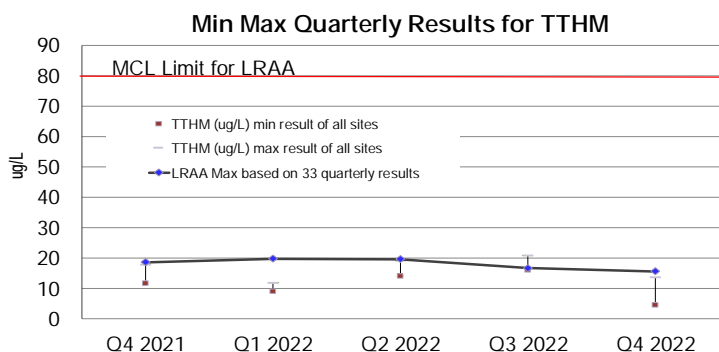
The locational running annual average calculated quarterly at each individual sampling location must be below the Total HAA5 or Total TTHM MCL standard. The charts below show the highest and lowest single values for all sites, and the LRAA of the highest location each quarter.

Partially served and CVA communities are responsible for their own compliance monitoring and reporting, and must be contacted directly for their individual results. The chart below combines data for all three CVA communities data (Chicopee, Wilbraham and South Hadley FD1). Each community is regulated individually.

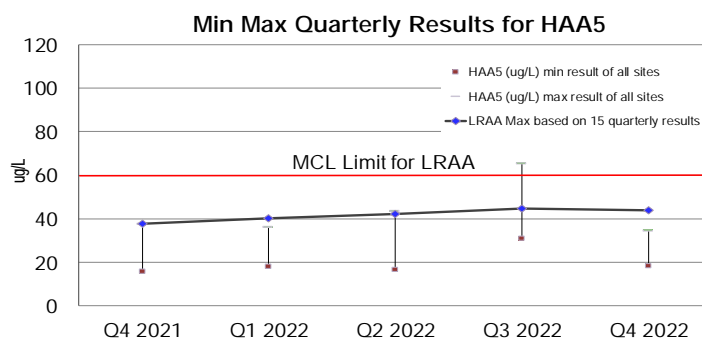
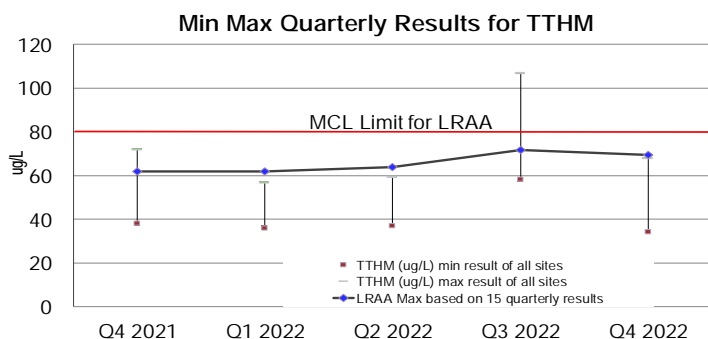
Bromate is tested monthly as required for water systems that treat with ozone. Bromide in the raw water may be converted into bromate following ozonation. EPA’s RAA MCL standard for bromate is 10 µg/L.

The LRAA for TTHMs and HAA5s for MWRA’s Compliance Program (represented as the line in the top two graphs below) remain below current standards. The Max LRAA in the quarter for TTHMs = 15.6 µg/L; HAA5s = 18.0 µg/L. The current RAA for Bromate = 0.0 µg/L. No LRAA exceedances or violations occurred this quarter for MetroBoston and any of the CVA communities. MWRA and the CVA communities continue to closely monitor and manage the disinfection process to minimize DBP production.

### MetroBoston Disinfection By-Products



### CVA Disinfection By-Products (Combined Results)





# Water Supply and Source Water Management

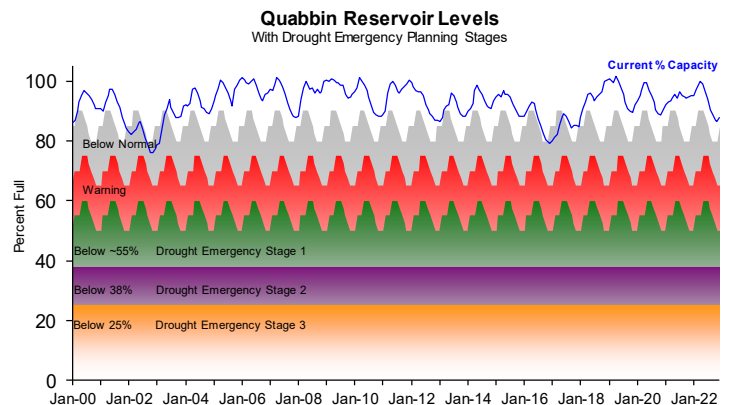
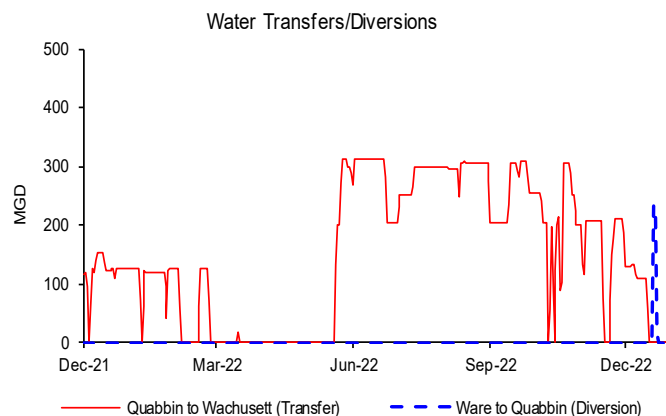
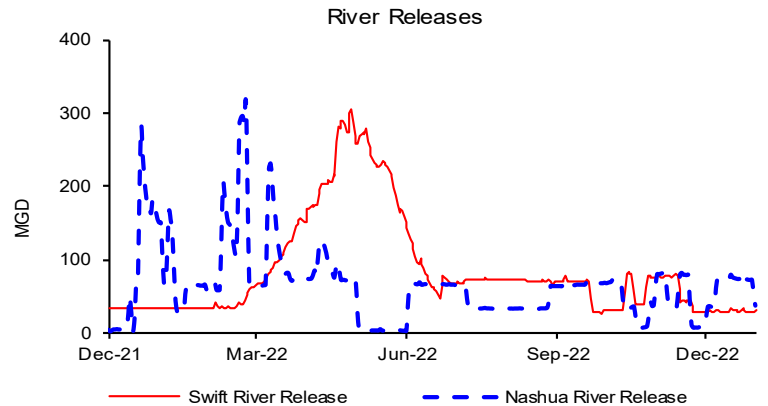
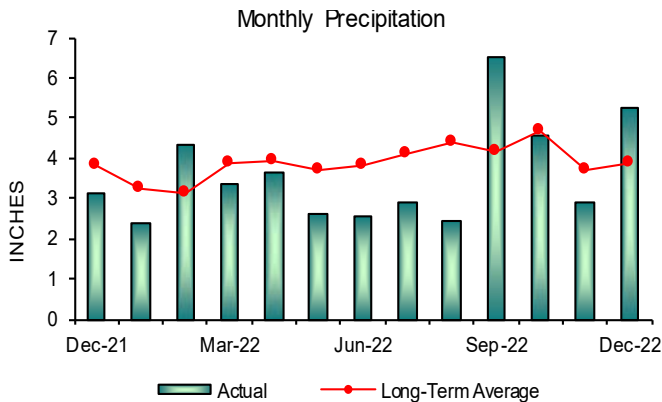
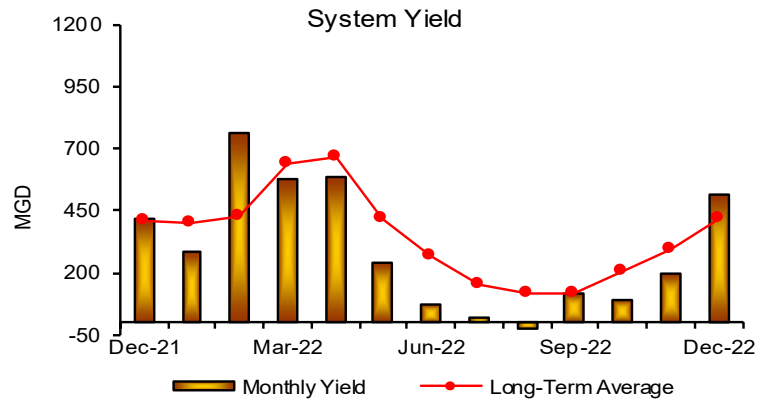
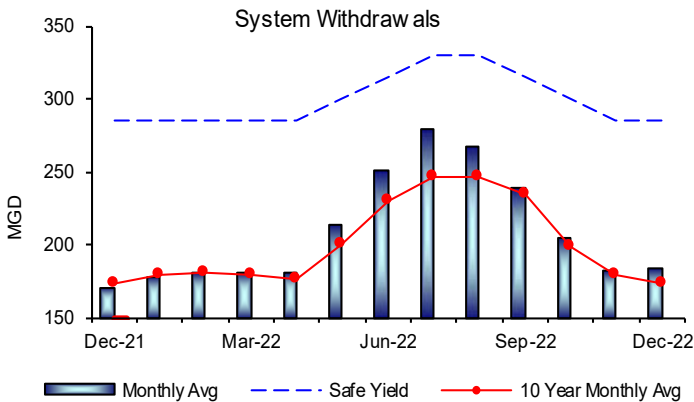
## 2<sup>nd</sup> Quarter – FY23

### Background

A reliable supply of water in MWRA's reservoirs depends on adequate precipitation during the year and seasonal hydrologic inputs from watersheds that surround the reservoirs. Demand for water typically increases with higher summer temperatures and then decreases as temperatures decline. Quabbin Reservoir was designed to effectively supply water to the service areas under a range of climatic conditions and has the ability to endure a range of fluctuations. Wachusett Reservoir serves as a terminal reservoir to meet the daily demands of the Greater Boston area. A key component to this reservoir's operation is the seasonal transfer of Quabbin Reservoir water to enhance water quality during high demand periods. On an annual basis, Quabbin Reservoir accounts for nearly 50% of the water supplied to Greater Boston. The water quality of both reservoirs (as well as the Ware River, which is also part of the System Safe Yield) depend upon implementation of DCR's DEP-approved Watershed Protection Plans. System Yield is defined as the water produced by its sources, and is reported as the net change in water available for water supply and operating requirements.

### Outcome

The volume of the Quabbin Reservoir was at 88.0% as of December 31, 2022; a 0.70 % decrease for the quarter, which represents a loss of more than 3 billion gallons of storage and a decrease in elevation of 0.41'. System withdrawal and yield were below their long term quarterly averages. Precipitation was slightly above its long term quarterly average. Quabbin is in Normal Operating Range for this time of year.



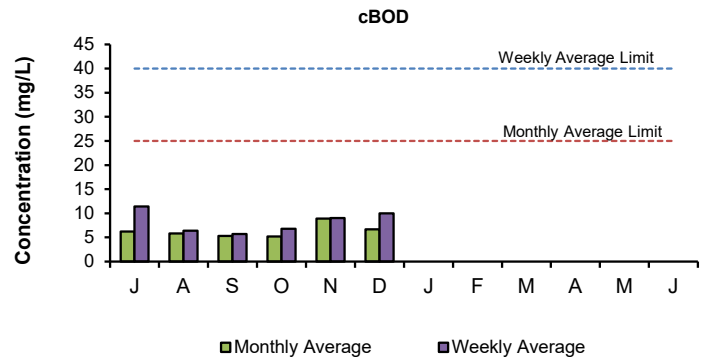
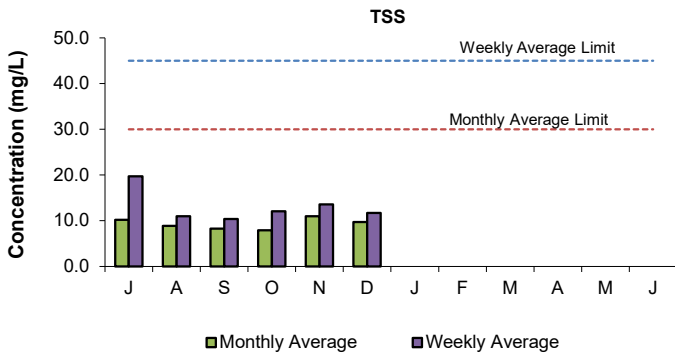
# WASTEWATER QUALITY

## NPDES Permit Compliance: Deer Island Treatment Plant 2<sup>nd</sup> Quarter - FY23

### NPDES Permit Limits

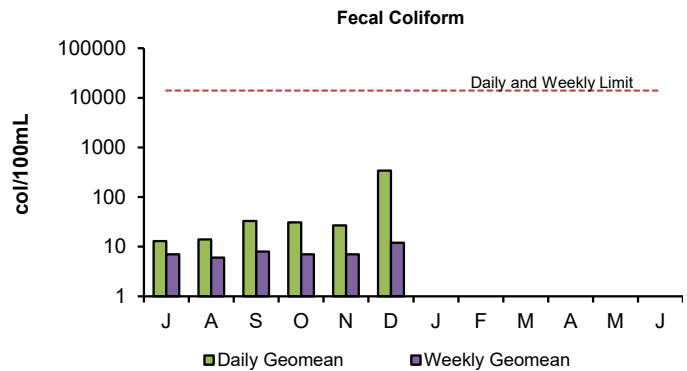
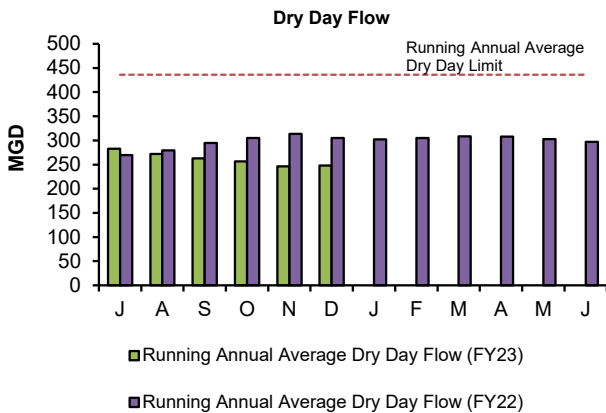
Effluent Characteristics	Units	Limits	October	November	December	2nd Quarter Violations	FY23 YTD Violations	
Dry Day Flow (365 Day Average):	mgd	436	256.6	246.5	248.3	0	0	
cBOD:	Monthly Average	mg/L	5.2	8.9	6.7	0	0	
	Weekly Average	mg/L	6.8	9.0	10.0	0	0	
TSS:	Monthly Average	mg/L	30	7.9	11.0	9.7	0	0
	Weekly Average	mg/L	45	12.1	13.6	11.7	0	0
TCR:	Monthly Average	ug/L	456	0.0	0.0	1.5	0	0
	Daily Maximum	ug/L	631	0.0	0.0	23.3	0	0
Fecal Coliform:	Daily Geometric Mean	col/100mL	14000	31	27	341	0	0
	Weekly Geometric Mean	col/100mL	14000	7	7	12	0	0
	% of Samples >14000	%	10	0	0	0	0	0
	Consecutive Samples >14000	#	3	0	0	0	0	0
pH:	SU	6.0-9.0	6.4-6.9	6.4-6.9	6.5-6.9	0	0	
PCB, Aroclors:	Monthly Average	ug/L	0.000045	UNDETECTED		0	0	
Acute Toxicity:	Inland Silverside	%	≥50	77	93	>100	0	0
	Mysid Shrimp	%	≥50	72.9	91.4	>100	0	0
Chronic Toxicity:	Inland Silverside	%	≥1.5	25	25	50	0	0
	Sea Urchin	%	≥1.5	25	100	100	0	0

There have been no permit violations in FY23 to date at the Deer Island Treatment Plant (DITP).



Total Suspended Solids (TSS) in the effluent is a measure of the amount of solids that remain suspended after treatment. All TSS measurements for the 2nd 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 2nd 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 2nd 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 2nd Quarter, all permit conditions for fecal coliform were met.

# NPDES Permit Compliance: Clinton Wastewater Treatment Plant

2<sup>nd</sup> Quarter - FY23

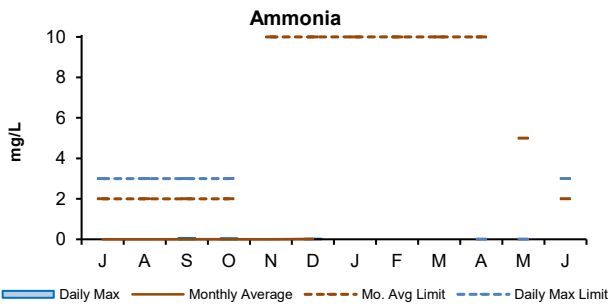
Effluent Characteristics		Units	Limits	October	November	December	2nd Quarter Violations	FY23 YTD Violations
Flow:	12-month Rolling Average:	mgd	3.01	2.51	2.36	2.38	0	1
BOD:	Monthly Average:	mg/L	20	1.4	1.8	2.0	0	0
	Weekly Average:	mg/L	20	1.5	2.8	2.8	0	0
TSS:	Monthly Average:	mg/L	20	1.3	2.2	3.8	0	0
	Weekly Average:	mg/L	20	1.5	3.0	5.1	0	0
pH:		SU	6.5-8.3	7.3-7.7	7.3-7.8	7.1-7.7	0	0
Dissolved Oxygen:	Daily Average Minimum:	mg/L	6	8.6	8.7	9.7	0	0
E. Coli:	Monthly Geometric Mean:	cfu/100mL	126	5	5	5	0	0
	Daily Geometric Mean:	cfu/100mL	409	7	19	17	0	0
TCR:	Monthly Average:	ug/L	17.6	0.13	0.00	0.00	0	0
	Daily Maximum:	ug/L	30.4	4.00	0.00	0.00	0	0
Copper:	Monthly Average:	ug/L	11.6	10.51	7.79	9.27	0	2
	Daily Maximum:	ug/L	14.0	11.10	7.79	10.00	0	0
Total Ammonia Nitrogen:	Monthly Average:	mg/L	10.0	0.01	0.00	0.02	0	0
November 1st - March 31st	Daily Maximum:	mg/L	35.2	0.05	0.00	0.03	0	0
Total Phosphorus:	Monthly Average:	ug/L	1000	56.0	157.8	196.5	0	0
November 1st - March 31st	Daily Maximum:	ug/L	RPT	168.0	383.0	233.0	0	0
Acute Toxicity*:	Daily Minimum:	%	≥100	N/A	N/A	>100	0	0
Chronic Toxicity*:	Daily Minimum:	%	≥62.5	N/A	N/A	100	0	1

There have been four permit violations in FY23 at the Clinton Treatment Plant.

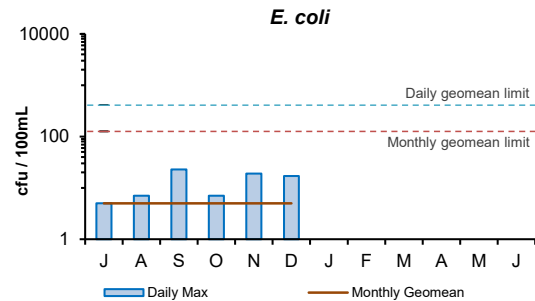
**1st Quarter:** There were four permit violations in the first quarter. In July, plant flows exceeded the 12-month rolling average. July and August copper monthly averages exceeded the permit limit of 11.6 ug/L. The quarterly chronic toxicity result of 12.5% was below the minimum permit limit of 62.5%.

**2nd Quarter:** There were no permit violations in the second quarter.

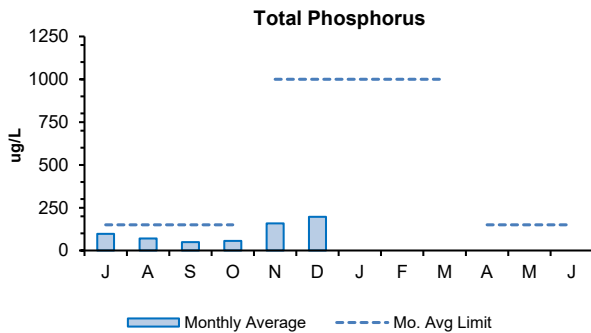
+ Toxicity testing at the Clinton Treatment Plant is conducted on a quarterly basis.



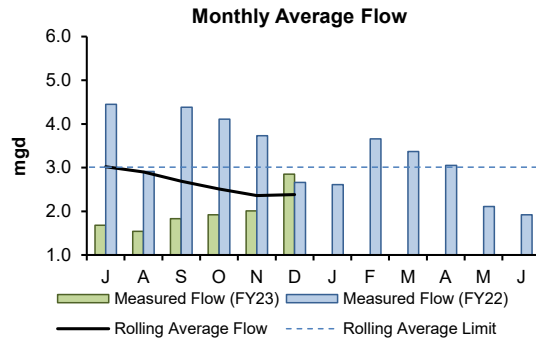
The 2nd Quarter's monthly average and daily maximum concentrations of ammonia were below the permit limits. The monthly average and daily maximum limits for the 2nd Quarter are variable. The permit limits are most stringent from June to October when warm weather conditions are most conducive to potential eutrophication.



*E. coli* is an indicator for the possible presence of pathogens. There were no violations of permit limits in the 2nd Quarter. The monthly and daily limits are 126 cfu/100 mL and 409 cfu/100 mL respectively.



Total phosphorus limits are most stringent during the growing season from April to October. The 2nd Quarter's monthly average concentrations for total phosphorus were below permit limits.



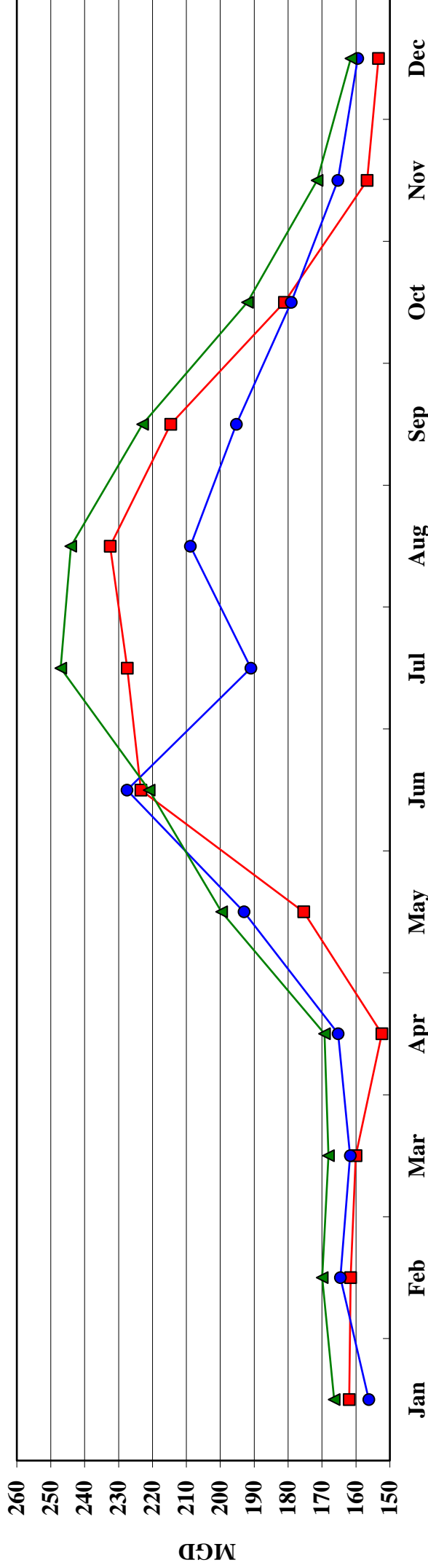
The graph depicts the rolling annual average monthly flow, measured in million gallons per day, exiting the plant. The 12-month rolling average flows during the 2nd Quarter were below the permit limit.

# COMMUNITY FLOWS AND PROGRAMS

# Customer Water Use

## 2<sup>nd</sup> Quarter - FY23

### MWRA Water Supplied: All Revenue Customers



Legend: ■ - CY2020    ● - CY2021    ▲ - CY2022

MGD	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD Average	Annual Average
CY2020	162.016	161.551	160.018	152.368	175.435	223.405	227.454	232.496	214.617	181.110	156.727	153.367	183.462	183.462
CY2021	156.213	164.567	161.697	165.284	192.998	227.522	190.945	208.810	195.229	179.116	165.302	159.442	180.641	180.641
CY2022	166.445	169.923	168.101	169.253	199.626	221.002	247.075	244.069	222.906	192.000	171.454	161.527	194.631	194.631

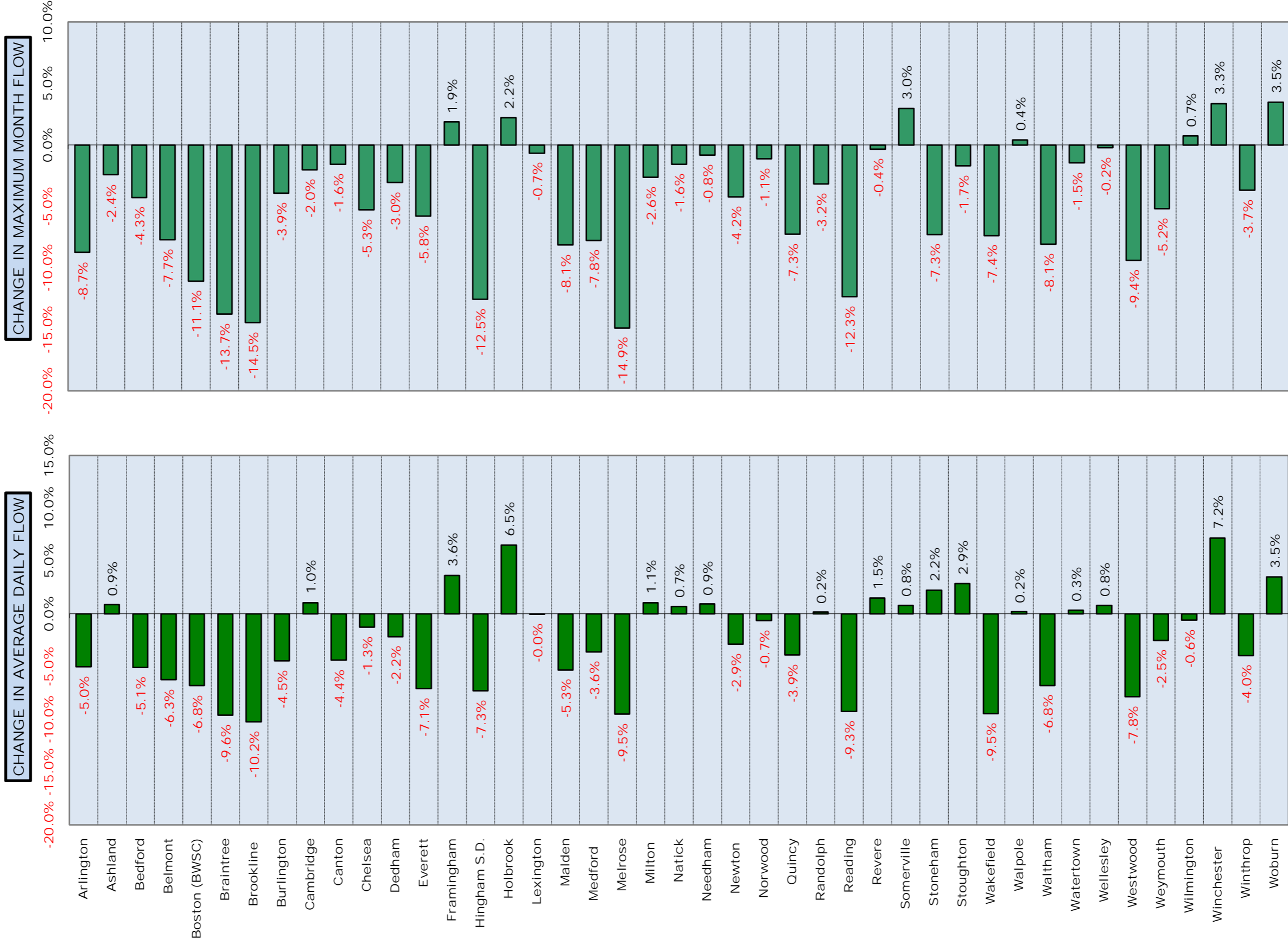
MG	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD Total	Annual Total
CY2020	5,022.510	4,684.968	4,960.567	4,571.025	5,438.470	6,702.146	7,051.078	7,207.384	6,438.520	5,614.399	4,701.821	4,754.375	67,147.263	67,147.263
CY2021	4,842.593	4,607.873	5,012.608	4,958.533	5,982.944	6,825.661	5,919.300	6,473.120	5,856.857	5,552.611	4,959.064	4,942.705	65,933.870	65,933.870
CY2022	5,159.791	4,757.839	5,211.126	5,077.587	6,188.394	6,630.049	7,659.321	7,566.152	6,687.180	5,951.985	5,143.609	5,007.333	71,040.367	71,040.367

The December 2022 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 2022 water use will be used to allocate the FY2024 water utility rate revenue requirement.

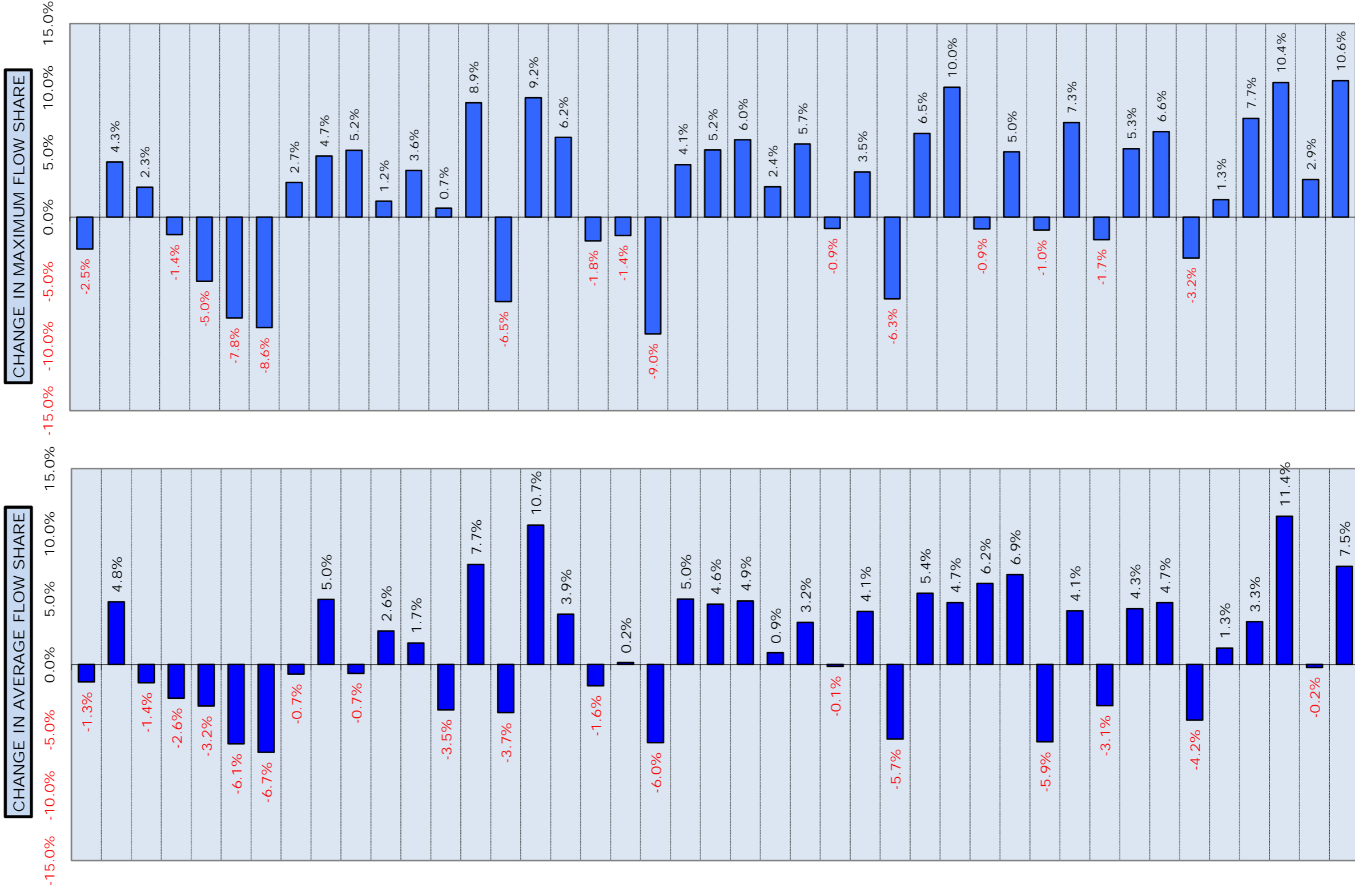
MWRA customers used an average of 175.0 mgd in the 2nd quarter (Oct-Dec 2022) of FY2023. This is an increase of 9.1 mgd or 5.5% compared to the average of the 2nd quarters in FY2020 and FY2021.

# How CY2020-22 Community Wastewater Flows Could Effect FY2024 Sewer Assessments <sup>1,2,3</sup>

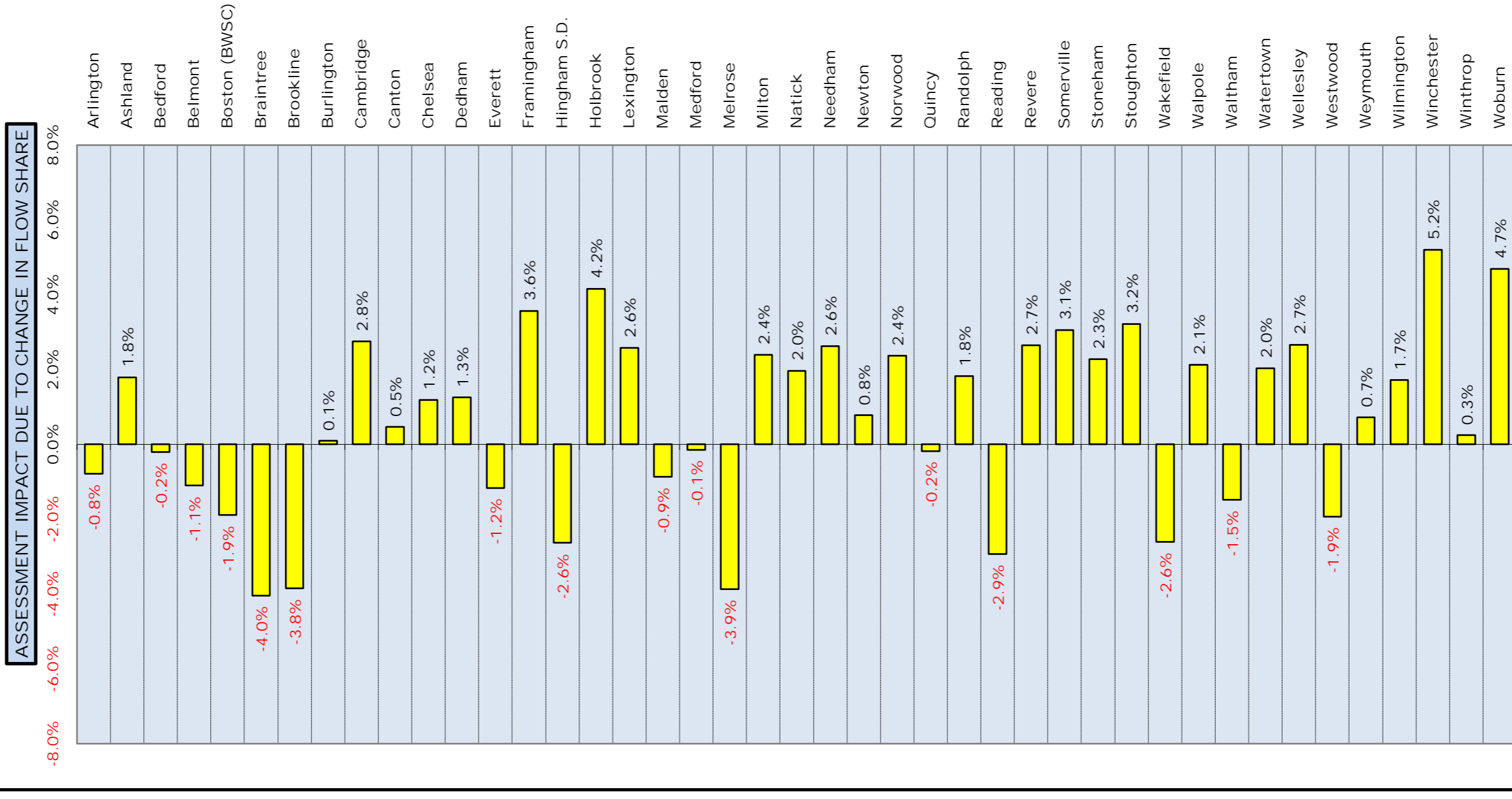
The flow components of FY2024 sewer assessments will be calculated using a 3-year average of CY2020 to CY2022 wastewater flows compared to FY2023 assessments that will use a 3-year average of CY2019 to CY2021 wastewater flows.



But as MWRA's sewer assessments are a ZERO-SUM calculation, a community's assessment is strongly influenced by the RELATIVE change in CY2020 to CY2022 flow share compared to CY2019 to CY2021 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 smooths 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 2019 and 2022, 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.

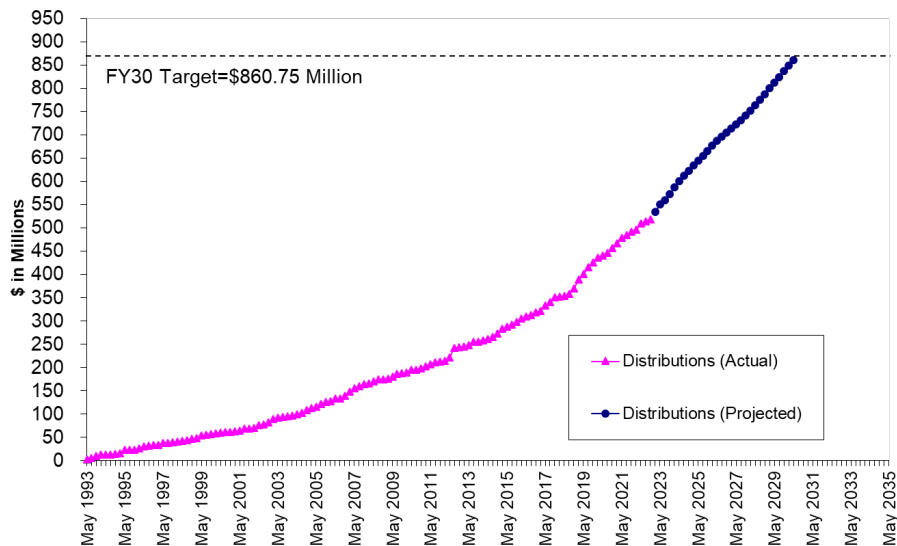
# Community Support Programs

## 2<sup>nd</sup> Quarter – FY23

### Infiltration/Inflow Local Financial Assistance Program

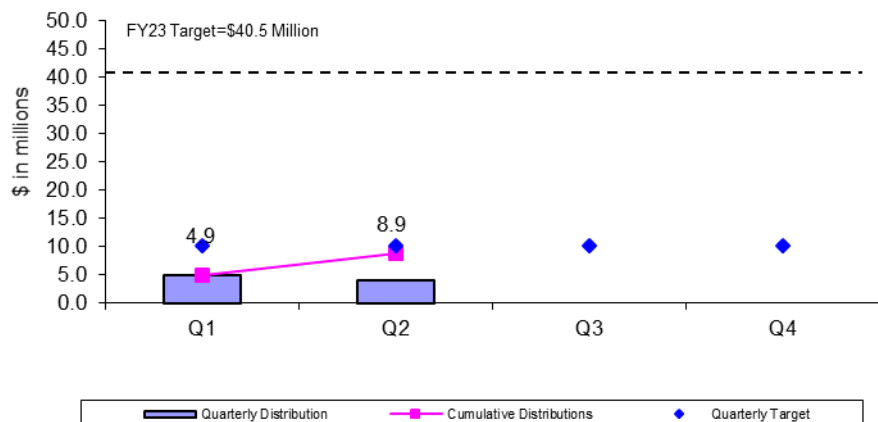
MWRA's Infiltration/Inflow (I/I) Local Financial Assistance Program provides \$860.75 million in grants and interest-free loans (average of about \$22 million per year from FY93 through FY30) to member sewer communities to perform I/I reduction and sewer system rehabilitation projects within their locally-owned collection systems. Eligible project costs include: sewer rehabilitation construction, pipeline replacement, removal of public and private inflow sources, I/I reduction planning, engineering design, engineering services during construction, etc. I/I Local Financial Assistance Program funds are allocated to member sewer communities based on their percent share of MWRA's wholesale sewer charge. Phase 1-8 funds (total \$300.75 million) were distributed as 45% grants and 55% loans with interest-free loans repaid to MWRA over a five-year period. Phase 9 through 12 funds (total \$360 million) are distributed as 75% grants and 25% loans with interest-free loans repaid to MWRA over a ten-year period. Phase 13 provides an additional \$100 million in ten-year loan-only funds. Phase 14 funds (total \$100 million) are distributed as 75% grants and 25% loans with interest-free loans repaid to MWRA over a ten-year period.

### I/I Local Financial Assistance Program Distribution FY93-FY30



During the 2nd Quarter of FY23, \$4.0 million in financial assistance (grants and interest-free loans) was distributed to fund local sewer rehabilitation projects in Bedford, Brookline and Watertown. Total grant/loan distribution to date for FY23 is \$8.9 million. From FY93 through 2nd Quarter of FY23, all 43 member sewer communities have participated in the program and \$519 million has been distributed to fund 651 local I/I reduction and sewer system rehabilitation projects. Distribution of the remaining funds has been approved through FY30 and community loan repayments will be made through FY40. All scheduled community loan repayments have been made.

### FY23 Quarterly Distributions of Sewer Grant/Loans





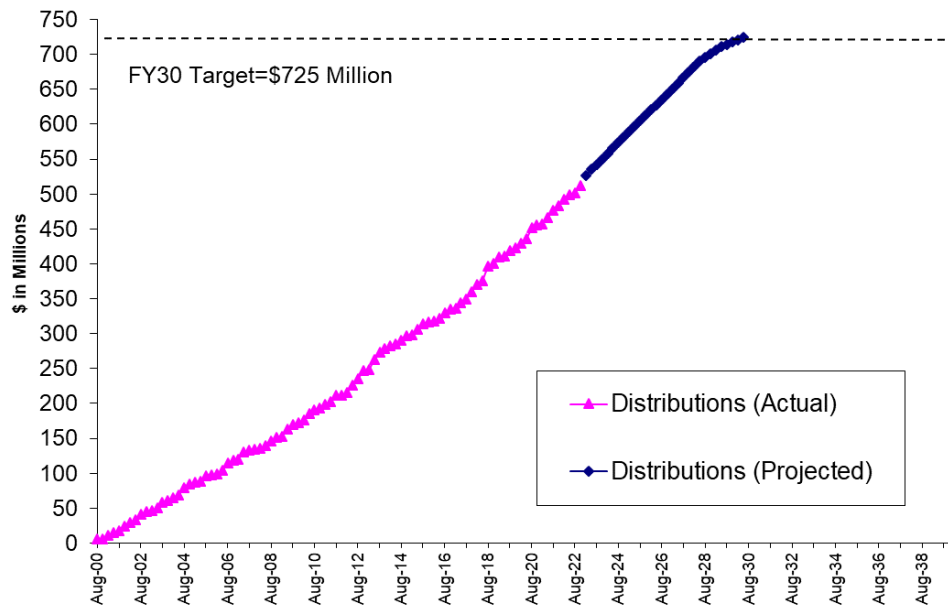
# Community Support Programs

## 2<sup>nd</sup> Quarter – FY23

### Local Water System Assistance Program

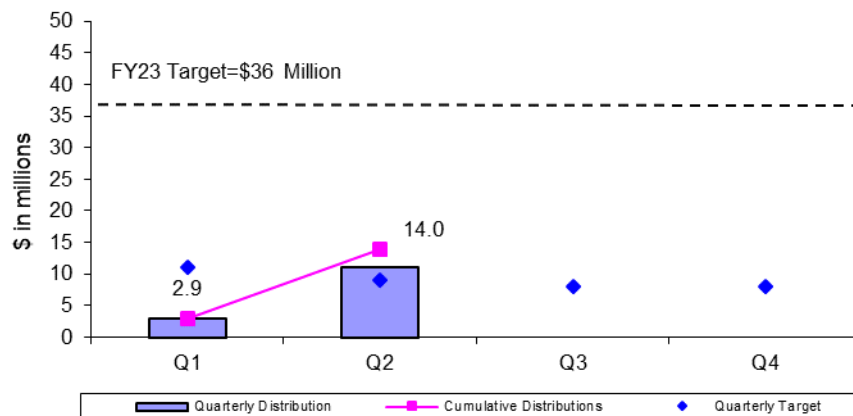
MWRA's Local Water System Assistance Programs (LWSAP) provides \$725 million in interest-free loans (an average of about \$24 million per year from FY01 through FY30) to member water communities to perform water main rehabilitation projects within their locally-owned water distribution systems. There have been 3 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 FY18 through FY30.

### Local Water System Assistance Program Distribution FY01-FY30



During the 2nd Quarter of FY23, \$11.1 million in interest-free loans was distributed to fund local water projects in Medford, Watertown, Wellesley and Weston. Total loan distribution to date for FY23 is \$14.0 million. From FY01 through the 2<sup>nd</sup> Quarter of FY23, \$513 million has been distributed to fund 510 local water system rehabilitation projects in 43 MWRA member water communities. Distribution of the remaining funds has been approved through FY30 and community loan repayments will be made through FY40. All scheduled community loan repayments have been made.

### FY23 Quarterly Distributions of Water Loans



# Community Support Programs

2<sup>nd</sup> Quarter – FY23

## Lead Service Line Replacement Loan Program

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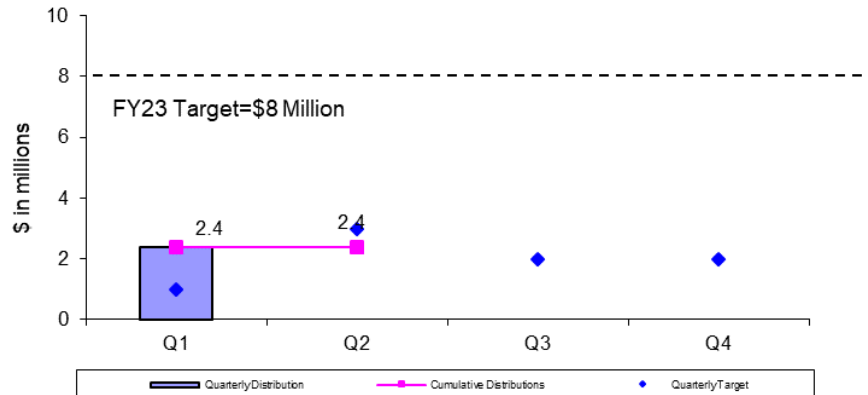
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Summary of Lead Loans:

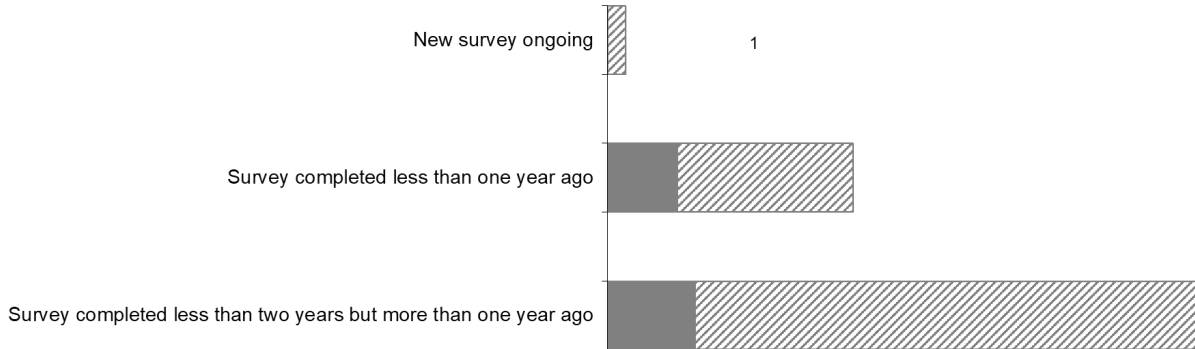
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### FY23 Quarterly Distributions of Lead Service Line Replacement Loans



### Community Water System Leak Detection

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### 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. Distribution targets and totals are provided in the table below. Distributions of water conservation materials are made based on requests from member communities and individual customers.

	Annual Target	Q1	Q2	Q3	Q4	Annual Total
Educational Brochures	100,000	17,985	16			18,001
Low-Flow Fixtures (showerheads and faucet aerators)	10,000	2,302	46			2,348
Toilet Leak Detection Dye Tablets	_____	3,151	21			3,172

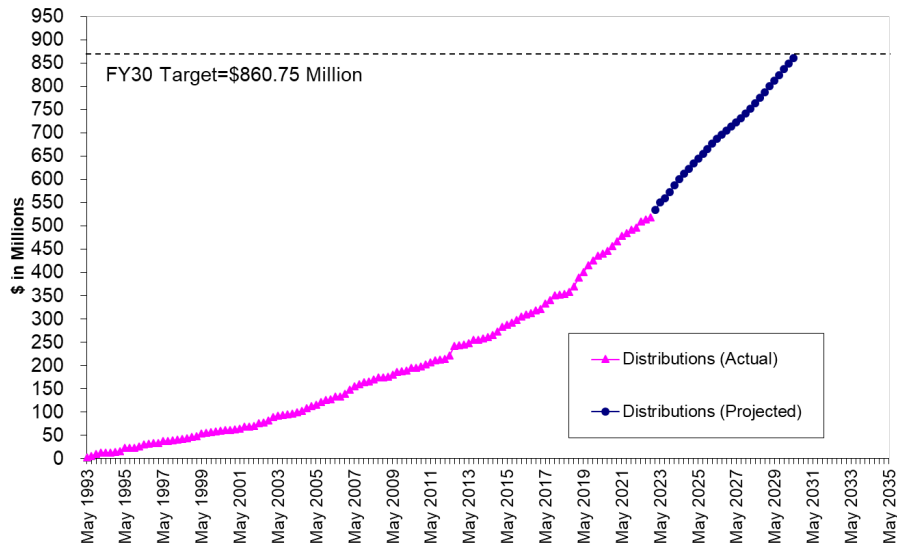
# Community Support Programs

2<sup>nd</sup> Quarter – FY23

## Infiltration/Inflow Local Financial Assistance Program

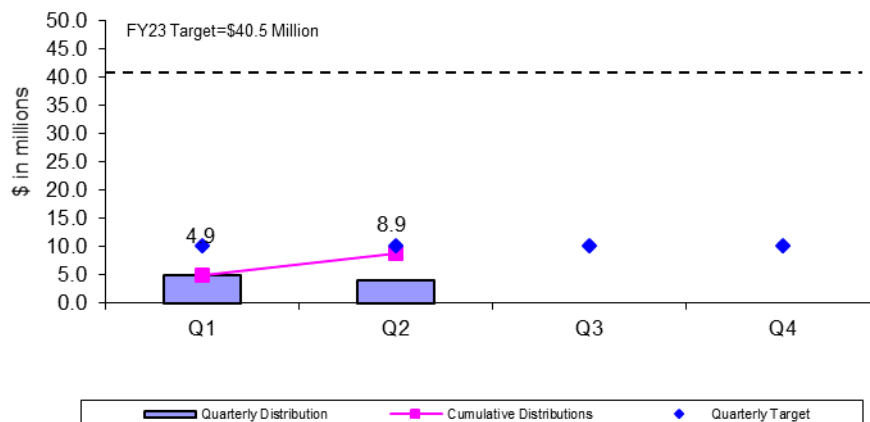
MWRA's Infiltration/Inflow (I/I) Local Financial Assistance Program provides \$860.75 million in grants and interest-free loans (average of about \$22 million per year from FY93 through FY30) to member sewer communities to perform I/I reduction and sewer system rehabilitation projects within their locally-owned collection systems. Eligible project costs include: sewer rehabilitation construction, pipeline replacement, removal of public and private inflow sources, I/I reduction planning, engineering design, engineering services during construction, etc. I/I Local Financial Assistance Program funds are allocated to member sewer communities based on their percent share of MWRA's wholesale sewer charge. Phase 1-8 funds (total \$300.75 million) were distributed as 45% grants and 55% loans with interest-free loans repaid to MWRA over a five-year period. Phase 9 through 12 funds (total \$360 million) are distributed as 75% grants and 25% loans with interest-free loans repaid to MWRA over a ten-year period. Phase 13 provides an additional \$100 million in ten-year loan-only funds. Phase 14 funds (total \$100 million) are distributed as 75% grants and 25% loans with interest-free loans repaid to MWRA over a ten-year period.

### I/I Local Financial Assistance Program Distribution FY93-FY30



During the 2nd Quarter of FY23, \$4.0 million in financial assistance (grants and interest-free loans) was distributed to fund local sewer rehabilitation projects in Bedford, Brookline and Watertown. Total grant/loan distribution to date for FY23 is \$8.9 million. From FY93 through 2nd Quarter of FY23, all 43 member sewer communities have participated in the program and \$519 million has been distributed to fund 651 local I/I reduction and sewer system rehabilitation projects. Distribution of the remaining funds has been approved through FY30 and community loan repayments will be made through FY40. All scheduled community loan repayments have been made.

### FY23 Quarterly Distributions of Sewer Grant/Loans



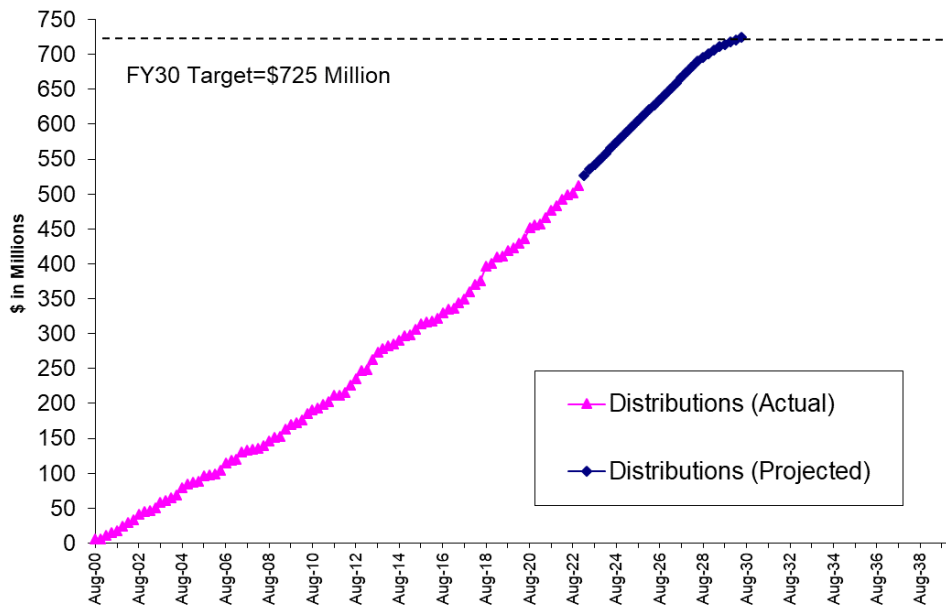
# Community Support Programs

2<sup>nd</sup> Quarter – FY23

## Local Water System Assistance Program

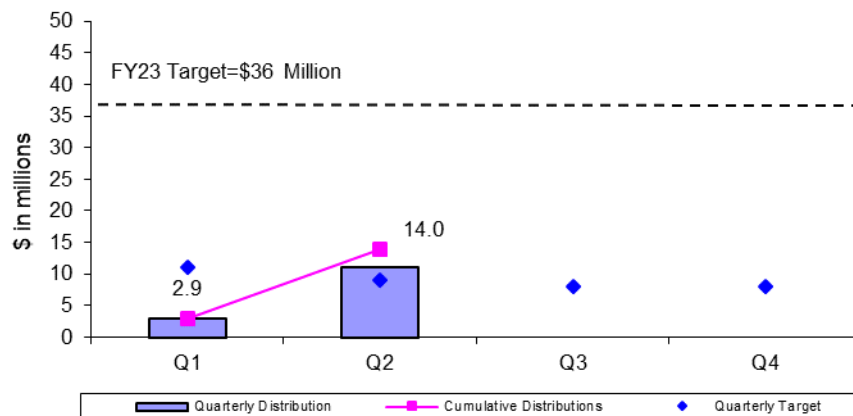
MWRA's Local Water System Assistance Programs (LWSAP) provides \$725 million in interest-free loans (an average of about \$24 million per year from FY01 through FY30) to member water communities to perform water main rehabilitation projects within their locally-owned water distribution systems. There have been 3 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 FY18 through FY30.

### Local Water System Assistance Program Distribution FY01-FY30



During the 2nd Quarter of FY23, \$11.1 million in interest-free loans was distributed to fund local water projects in Medford, Watertown, Wellesley and Weston. Total loan distribution to date for FY23 is \$14.0 million. From FY01 through the 2<sup>nd</sup> Quarter of FY23, \$513 million has been distributed to fund 510 local water system rehabilitation projects in 43 MWRA member water communities. Distribution of the remaining funds has been approved through FY30 and community loan repayments will be made through FY40. All scheduled community loan repayments have been made.

### FY23 Quarterly Distributions of Water Loans



# Community Support Programs

2<sup>nd</sup> Quarter – FY23

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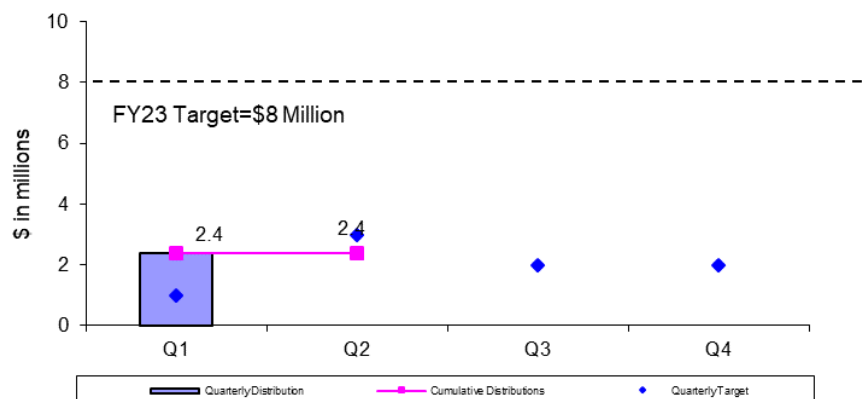
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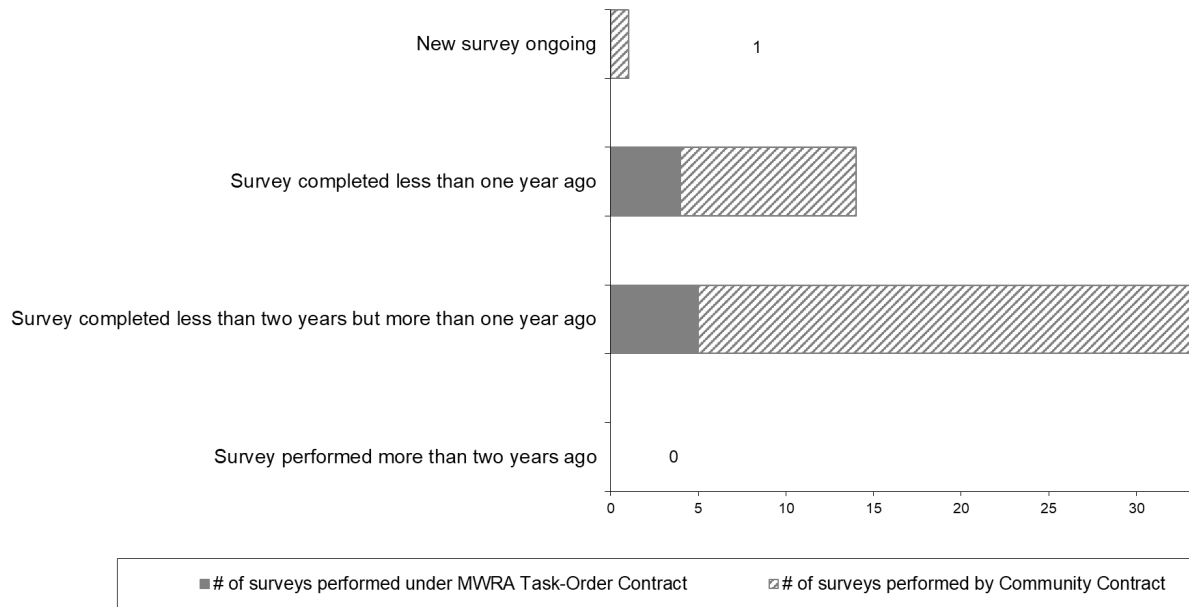
### FY23 Quarterly Distributions of Lead Service Line Replacement Loans



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## BUSINESS SERVICES



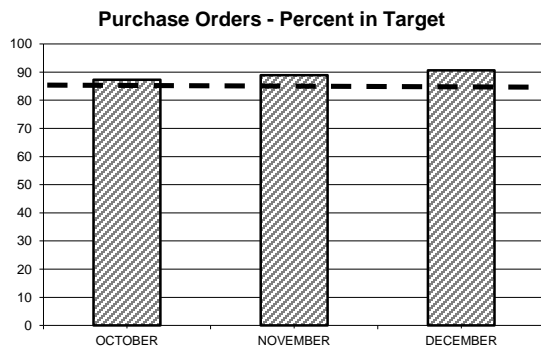
# Procurement: Purchasing and Contracts

2<sup>nd</sup> Quarter - FY23

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

**Outcome:** Processed 93% of purchase orders within target; Average Processing Time was 5.04 days vs. 4.85 days in Qtr 2 of FY22. Processed 33% (2 of 6) of contracts within target timeframes; Average Processing Time was 199 days vs. 217 days in Qtr 2 of FY22.

## Purchasing



	No.	TARGET	PERCENT IN TARGET
\$0 - \$500	461	3 DAYS	88.5%
\$500 - \$2K	558	7 DAYS	95.5%
\$2K - \$5K	481	10 DAYS	96.8%
\$5K - \$10K	75	25 DAYS	88.0%
\$10K - \$25K	60	30 DAYS	78.3%
\$25K - \$50K	14	60 DAYS	100.0%
Over \$50K	29	90 DAYS	89.6%

The Purchasing Unit processed 1678 purchase orders, 27 more than the 1651 processed in Qtr 2 of FY22 for a total value of \$11,782,181 versus a dollar value of \$19,232,725 in Qtr 2 of FY22.

The purchase order processing target was not met for the \$10K - \$25K category due to end user evaluations and price confirmations.

## Contracts, Change Orders and Amendments

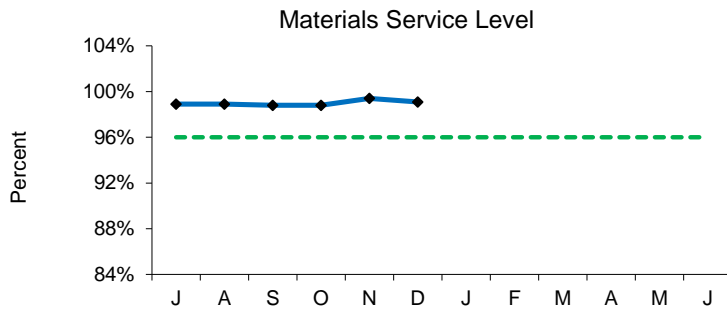
Procurement executed six contracts with a value of \$3,859,265 and seven amendments with a value of \$30,900. Seventeen change orders were executed during the period. The dollar value of all non-credit change orders during Qtr 2 was \$1,612,079 and the value of credit change orders was (\$635,848).

Four contracts were not processed within the target timeframes. One contract was delayed due to additional revisions to the scope of work necessitated by the complexity of the tasks in addition to staffing changes. The second contract was delayed due to several changes to the scope of work and dollar amount as well as additional time required to approve a replacement project manager due to a conflict of interest. Another contract was delayed due to the need to schedule a second pre-bid conference due to non-submittals. Once the contract was awarded, there were additional delays by the company submitting their financial statements. The final contract was delayed due to the necessary approval by the City of Chelsea.

Staff reviewed 35 proposed change orders and 27 draft change orders.

## Materials Management

2<sup>nd</sup> Quarter - FY23



The service level is the percentage of stock requests filled. The goal is to maintain a service level of 96%. Staff issued 7,093 (99.1%) of the 7,157 items requested in Q2 from the inventory locations for a total dollar value of \$1,982,163.

### Inventory Value - All Sites

Inventory goals focus on:

- Maintaining optimum levels of consumables and spare parts inventory
- 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 FY22 goal is to reduce consumable inventory from the July '22 base level (\$8.3 million) by 2.0% (approximately \$167,437), to \$8.2 million by June 30, 2023.

Items added to inventory this quarter include:

- Deer Island – heater, actuator, condensate pump for HVAC; butterfly valve, expansion joints, couplings, converter and pressure regulator for Maintenance; adapters, ells, unions, elbows, couplings and tees for Plumbers; deodorizers for Facilities; contact tips for Welders.
- Chelsea – flanges, valves, elbows, tees, reducers, adapters and unions for Plumbers; air release valves, filter elements and gear boxes for Field Operations; wall mount brackets, sling wire rope, resistors and gaskets for Metering.
- Southboro – there were no new adds.

Property Pass Program:

- Thirteen audits were conducted during Q2.
- Scrap revenue received for Q2 amounted to \$11,870. Year to date revenue received amounted to \$19,746.
- Revenue received from online auctions held during Q2 amounted to \$71,379. Year to date revenue received amounted to \$177,630.

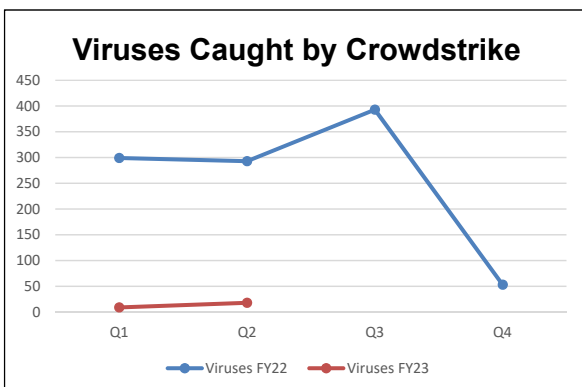
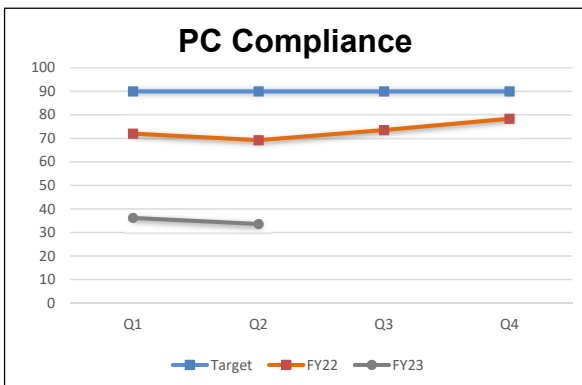
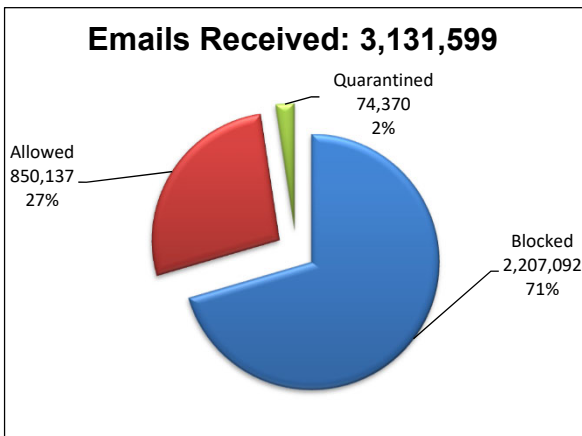
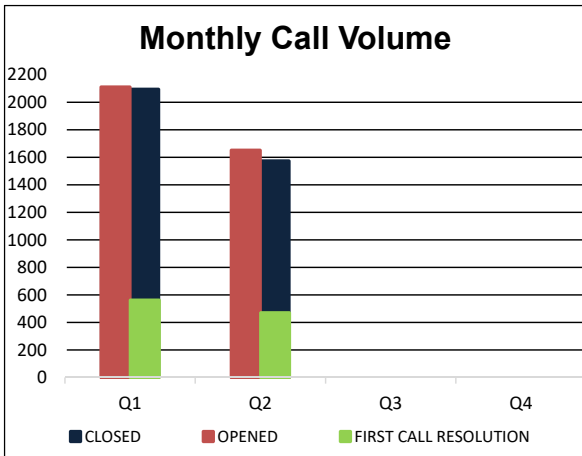
Items	Base Value July-22	Current Value w/o Cumulative New Adds	Reduction / Increase To Base
Consumable Inventory Value	8,371,867	8,278,431	-93,436
Spare Parts	9,447,310	9,549,328	102,018
<b>Total</b>	<b>17,819,177</b>	<b>17,827,759</b>	<b>8,582</b>

**Note:** New adds are items added at an inventory location for the first time for the purpose of servicing a group/department to meet their business needs/objectives.

# MIS Program

2<sup>nd</sup> Quarter – FY23

## Numbers & Statistics



## Project Updates

### Infrastructure & Security

**Managed Security Services Contract:** NTP & go-live occurred during Q2. Additional onboarding tasks also occurred during Q2, in preparation for Task 1 (design review and validation) activities to occur in Q3.

**Firewall Replacement:** New Fortinet firewalls for DITP and intrusion detection sensors at Chelsea, DITP, and Marlborough have gone live. Remote sites' firewalls are still being configured and will be rolled out during Q3, as sites come online (with Comcast).

**Single Sign-on (SSO):** Okta has been deployed and is now working.

**Forticlient VPN Solution:** Fortinet VPN has been implemented. MIS began migrating all users and vendors to the new Fortinet solution.

**PBX (Telephone System Upgrade):** VOIP phones roll-out completed for all site except DITP. Cabling conduit paths are required in order to upgrade cabling to support VOIP phones in all building.

**Expansion of Wi-Fi Networking:** DITP wireless network implementation on hold pending completion of construction.

### Other Software & Custom Applications

**ECM/Electronic Document Management:** Processed Task Order 2 to address additional meetings needed from the SME redesigns and the Okta integration. Finalized scope and held sessions with technical teams to integrate our ECM platform with Okta. Focusing on Records Management (RM) for planned roll out in April. Tested system functionality around borrowing, transferring, and dispositioning and reviewed RM related out-of-the-box reports. Continued to work on data prep for full data migration.

**MWRA Website Refresh:** Procurement process continues. RFQ/P portal posting closed in mid-December; Eight responsive bids were received. Selection Committee will hold demos for finalists and expect to select a winner in January.

**InspectNTrack Upgrade:** User Acceptance Testing (UAT) has begun and is expected to continue through the end of January. MIS continued evaluating and establishing the base configuration for the iPad scanner devices and is reviewing the Wastewater Op Water Meters report in the upgraded system. Implementation of the upgraded application is expected in February.

**BOE Upgrade:** The contractor is continuing to migrate the ENQUAL Discoverer reports, having completed 20/61 workbooks and 80/499 reporting worksheets thus far. MIS and the end users are validating each as they become available.

**Maximo/Lawson Interface:** The vendor Starboard process of finalizing the process flow documentation including the IT Storeroom requirements. Interface development has continued and is approximately 60% complete at this point.

### Library, Record Center, & Training

**Library:** Undertook 10 research requests, supplied 18 books for circulation, provided 10 new books and 1 new standard (aside from subscription). The MWRA Library Portal supported 474 end user searches, including: PFAS state activity tracker, water tank inspection, historic drawings of Charlestown Pump Station, decreasing DBP in water tanks.

**Record Center (RC):** The Record Center added 319 new boxes (595 YTD), handled 356 total boxes (845 YTD), and shredded 22, 65 gallon bins (58 YTD) and 3, 96 gallon bins (11 YTD) of confidential documentation on-site. It performed database/physical box searches for multiple departments, which saved the delivery of physical boxes and resulted in scanning of 379 images to the end user.

**Training:** In Q2, 19 online IT lessons were taken (71 YTD), by 21 employees, spanning 60 hours (135 YTD). 0 standard class lessons were taken.

**Legal Matters**  
2<sup>nd</sup> Quarter - FY2023

**PROJECT ASSISTANCE**

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

- **8(m) Permits and License Agreements:** Reviewed one hundred and fifteen (115) 8(m) permits, including any related MEPA Section 61 findings. Reviewed two (2) wastewater direct connect permits.
- **Real Property:** Drafted licenses for the Arlington Housing Authority and the Town of Lexington related to temporary use of land needed for MWRA Contract 6224 - Siphon and Junction Structure Rehabilitation. Reviewed plans and commenced drafting documents related to land acquisitions for MWRA Contract 6224 - Siphon and Junction Structure Rehabilitation. Reviewed legislation and real property rights related to Norumbega Covered Storage facility. Reviewed T-Mobile Northeast wireless agreement for use of MWRA's Walnut Hill facility in Arlington. Finalized and recorded grant of permanent and temporary easements and plan for MWRA Contract 7117 - Northern Intermediate High Section 89 Replacement Pipeline. Finalized consent letters to owners of property in Chelsea related to construction work for MWRA's Contract OP-339 Eastern Avenue/Griffin Way Traffic Signalization. Drafted staff summary and draft easement language related to the proposed relocation of MWRA's Section 80 water main located at the MBTA's Riverside Green Line Station property in Newton by the developer of the Riverside Station Redevelopment Project. Reviewed draft grant of easement document and easement plan related to DCAMM's grant of easement to the Town of Hingham and drafted grant of easement language for easement from DCAMM to MWRA related to MWRA's access to its Hingham Pump Station. Reviewed property rights in Newton. Researched property rights for bridge located over the Wachusett Aqueduct, Northborough. Reviewed property rights for parcels of interest for Tunnel Redundancy Program and Article 97 restrictions. Finalized lease for Core Storage Facility for Tunnel Redundancy. Reviewed and updated draft legislation for real property disposition in Quincy.
- **Energy:** Assisted MWRA Finance with favorable resolution of a billing dispute with a gas local distribution company regarding an MWRA facility account. Reviewed and prepared summary regarding electricity local distribution company "opt-in" tariff provision in MWRA's WR rate for transmission service pricing. Reviewed contract with the Mass CEC regarding a grant under the Commonwealth Hydro program. Assisted energy team with Site Host Agreement with local electrical utility regarding electric vehicle charging infrastructure at MWRA facility.
- **Environmental/NPDES:** Finalized comments regarding U.S. EPA's proposed rule designating PFOA and PFOS (collectively "PFAS") as CERCLA Hazardous Substances. Supported the preparation of comments regarding proposed revisions to the implementing regulations under (a) the Massachusetts Environmental Policy Act; and (b) the Water Management Act. Finalized a Memorandum of Understanding and Financial Assistance Agreement with the Boston Water and Sewer Commission for the implementation of Fort Point Channel and Mystic/Chelsea Confluence Combined Sewer Overflow Control Projects. Reviewed section 308(b)(1)(2) of the Clean Water Act and provided assistance to ENQUAL staff regarding categorizing public record data/information as shared with EPA, other agencies, and individuals.
- **Miscellaneous:** Archived records for Law Division. Updated memorandum on archiving procedures following current practices of Records Center. Reviewed documents for submission to Records Conservation Board for disposition. Reviewed MIS policies concerning video surveillance, physical security program and terminated employee data. Reviewed property information and updating addresses for MWRA facilities on Deer Island. Verified updates to commonly used codes using the current edition of the Massachusetts Statewide Records Retention Schedule. Assisted with securing electrical inspection for Chelsea Facility by DPS pursuant to MWRA Enabling Act Section 8(k).

Reviewed renewable energy supply contract for request concerning replacement of parental guarantee and release agreement.

- **Public Records Requests:** During the 2nd Quarter of FY23, MWRA received and responded to **One Hundred Fifty-one (151)** public records requests.

## **LABOR, EMPLOYMENT AND ADMINISTRATIVE**

### **New Matters**

Unemployment appeal involving a former employee who claims resignation was due to childcare needs.

Unemployment appeal of a determination that former employee's discharge was not attributable to deliberate misconduct in willful disregard of the employing unit's interest.

Arbitration demand alleging MWRA violated the collective bargaining agreement when it approved an employee overtime rather than callback pay.

Arbitration demand alleging MWRA violated the collective bargaining agreement when it approved an employee overtime rather than callback pay.

Arbitration demand alleging MWRA violated the collective bargaining agreement by reclassifying an employee's position without bargaining over a new pay rate.

Charge filed with the Massachusetts Commission Against Discrimination alleging unlawful discipline based on gender identity and in retaliation for protected activity.

### **Matters Concluded**

Received an arbitrator's decision in favor of the MWRA in a grievance alleging that the Authority violated the collective bargaining agreement by failing to compensate employees who routinely worked unapproved compensatory time during their meal breaks.

A union withdrew a demand for arbitration in a grievance alleging a new employee should have been hired at a higher step in grade after the union and MWRA entered into an agreement regarding a recruitment rate pilot program

A union withdrew a demand for arbitration in a grievance alleging an employee's required use of accrued leave under MWRA's COVID safety protocols was in violation of the collective bargaining agreement.

The Massachusetts Department of Labor Relations dismissed a charge of prohibited practice filed by a union in connection with the MWRA's COVID vaccination requirement after a period of administrative closure.

Received a decision from the Department of Unemployment Assistance in favor of the MWRA in connection with an appeal of unemployment benefits wherein the DUA concluded that the individual failed to establish that he left his job with good cause attributable to the employer or involuntarily for urgent, compelling, and necessitous reasons.

A union withdrew a charge of prohibited practice at the Massachusetts Department of Labor Relations alleging that MWRA violated M.G.L. c. 150E, sections 10(a)(1) and (a)(5), when it posted a position in Unit 3 without bargaining with Unit 2.

## LITIGATION/CLAIMS

### New Lawsuits/Claims:

Massachusetts Water Resources Authority v National Association of Government Employees, Local R1-168, Suffolk Superior Court, 2284CV02453. On October 28, 2022, MWRA filed a complaint in Suffolk Superior Court seeking to vacate an arbitrator's award. MWRA alleges that the arbitrator exceeded his authority by requiring MWRA to negotiate over the wage, and by implication, the contents of a job posting. MWRA maintains that the arbitrator's award infringes on MWRA's non-delegable managerial rights, grants relief beyond which the parties bound themselves during bargaining negotiations, and contravenes public policy.

Jon Eldridge, et. al. v. City of Framingham, MWRA and RJV Construction Corporation, Middlesex Superior Court, 2281CV03049. This is a personal injury lawsuit filed on August 12, 2022 but served on November 7, 2022 arising from an alleged fall at the site of a construction project involving the City of Framingham and a general contractor, RJV Construction Corp. The project involved water and sewer repairs including, without limitation, the replacement of sewer pipe along the eastbound direction of Worcester Road. The project was funded, in part, by MWRA's I/I Local Financial Assistance Program.

RE: Edward Marques; MVA Claim: MWRA received a demand letter with respect to a personal injury claim arising out of a motor vehicle accident that occurred with an MWRA vehicle on November 29, 2021, in Braintree, MA.

RE: Jorge Amaya; MVA Claim: MWRA received a personal injury claim arising from a motor vehicle accident that occurred on March 16, 2021 involving an MWRA vehicle, in Chelsea, MA.

### Significant Developments:

Conservation Law Foundation (CLF) v. MWRA, D. Mass. Case No. 1:22-cv-10626-AK: On July 19, 2022, MWRA filed an Objection to Lack of Relatedness Designation and a Motion of Reassignment; and on September 23, 2022, the Authority filed a Motion to Dismiss the suit. CLF opposed both motions. In October 2022, the parties filed further pleadings regarding the Authority's Motion to Dismiss. To date, no decision has been made by the Court on either of MWRA's motions.

### Closed Cases:

In re: Mercedes-Benz Emissions Litigation, United States District Court for the District of New Jersey, 16-cv-881 (KM) (ESK). Law Division was notified of a class action lawsuit relating to six Mercedes-Benz or Sprinter Blue TEC II diesel vehicles owned or previously owned by MWRA, for which settlement payments may be available following approved emissions modifications. MWRA previously filed a claim and received payment for a vehicle that it sold. In September 2022, MWRA filed claims for the remaining five vehicles. On November 7, 2022, MWRA received a class action settlement payment in the total amount of \$17,950 for those vehicles. This matter is now closed.

### Closed Claims:

There are no closed claims to report.

### Subpoenas:

During Second Quarter FY 2023, no subpoenas were received and no subpoenas were closed.

### Wage Garnishments

There are two wage garnishment matters that are active and monitored by Law Division.

**SUMMARY OF PENDING LITIGATION MATTERS**

<b>TYPE OF CASE/MATTER</b>	<b>As of Dec 2022</b>	<b>As of Sept 2022</b>	<b>As of June 2022</b>
Construction/Contract/Bid Protest	0	0	0
Tort/Labor/Employment	3	1	4
Environmental/Regulatory/Other	4	4	3
Eminent Domain/Real Estate	0	0	0
<b>Total</b>	<b>7</b>	<b>5</b>	<b>7</b>
Other Litigation matters (restraining orders, class action lawsuit, etc.)	1	2	2
<b>Total – all pending lawsuits</b>	<b>8</b>	<b>7</b>	<b>9</b>
<b>Claims not in suit:</b>	3	0	0
3 MVA Claims			
Bankruptcy	2	1	1
Wage Garnishment	2	2	2
TRAC/Adjudicatory Appeals	1	0	0
Subpoenas	0	0	0
<b>TOTAL – ALL LITIGATION MATTERS</b>	<b>16</b>	<b>10</b>	<b>12</b>

**TRAC/MISC.**

**New Appeals:** There was one new appeal in the 2<sup>nd</sup> Quarter FY 2023: IN RE: 1058 Beacon Street, Newton, MA; MWRA Docket No. 22-01. A developer, 1058 Beacon Street, LLC, has filed a claim for an adjudicatory proceeding in response to an administrative order by MWRA, which ordered the removal of a fence on MWRA property.

**Settlement by Agreement of Parties** There were no Settlements by Agreement of Parties in the 2<sup>nd</sup> Quarter FY 2023.

**Stipulation of Dismissal** No Stipulations of Dismissal were filed in 2<sup>nd</sup> Quarter FY 2023.

**Notice of Dismissal Fine paid in full** No Notices of Dismissal for Fines Paid in Full were filed in the 2<sup>nd</sup> Quarter FY 2023.

**Tentative Decision** No Tentative Decisions were issued in the 2<sup>nd</sup> Quarter FY 2023.

**Final Decisions** No Final Decisions were issued in the 2<sup>nd</sup> Quarter FY 2023.

## INTERNAL AUDIT AND CONTRACT AUDIT ACTIVITIES

2<sup>nd</sup> Quarter - FY23

### Highlights

During the 2nd quarter FY23, Internal Audit (IA) substantially completed a fleet physical inventory of all plated vehicles and equipment in coordination with management. In addition, an updated Mandatory Confined Space Entry Training report and a review of water and wastewater license and certifications is nearing completion. An internal review of MIS assets is progressing.

Internal Audit completed preliminary reviews of 3 professional service contracts, 4 labor burden reviews and 1 incurred cost audits is in process. IA also issued 16 indirect cost rate letters to consultants following a review of their consultant disclosure statements. Internal Audit has continued to verify Harbor Electric Energy Company (HEEC) Cross-Harbor Cable project costs as incurred and reviewed HEEC's filing with the DPU.

### Status of Recommendations

During FY23, 1 recommendation was closed.

IA follows-up on open recommendations on a continuous basis. All open recommendations have target dates for implementation. When a recommendation has not been implemented within 36 months, the appropriateness of the recommendation is re-evaluated.

### All Open Recommendations Pending Implementation – Aging Between 0 and 36 Months

Report Title (issue date)	Audit Recommendations		
	Open	Closed	Total
Fleet Services Non-Plated Equipment Inspections (3/30/20)	1	14	15
<b>Total Recommendations</b>	<b>1</b>	<b>14</b>	<b>15</b>

*Note: The Compliance Status of Employees' Mandatory Confined Space Entry Training report issued on 6/30/21 has been retracted. An amended report will be issued in the 3<sup>rd</sup> quarter FY23.*

### Cost Savings

IA's target is to achieve at least \$1,000,000 in cost savings each year. Cost savings vary each year based upon many factors. In some cases, cost savings for one year may be the result of prior years' audits.

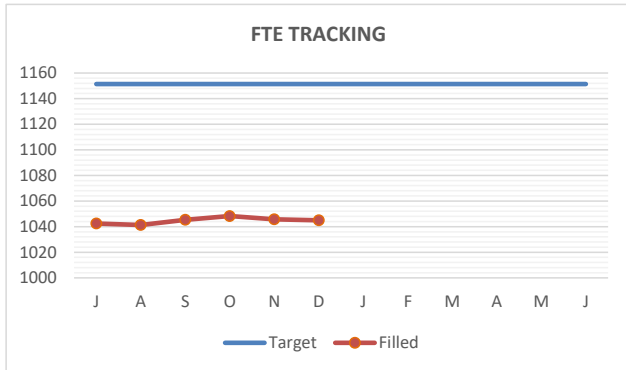
Cost Savings	FY19	FY20	FY21	FY22	FY23 Q2	TOTALS
Consultants	\$262,384	\$643,845	\$563,525	\$39,938	\$215,616	\$1,725,308
Contractors & Vendors	\$3,152,884	\$2,097,729	\$1,547,223	\$1,714,614	\$1,365,128	\$9,877,578
Internal Audits	\$210,063	\$212,517	\$214,458	\$222,554	\$108,574	\$968,166
<b>Total</b>	<b>\$3,625,331</b>	<b>\$2,954,091</b>	<b>\$2,325,206</b>	<b>\$1,977,106</b>	<b>\$1,689,318</b>	<b>\$12,571,053</b>



## OTHER MANAGEMENT

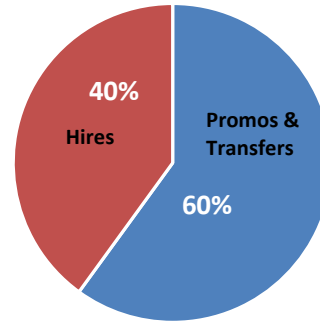
# Workforce Management

## 2<sup>nd</sup> Quarter - FY23

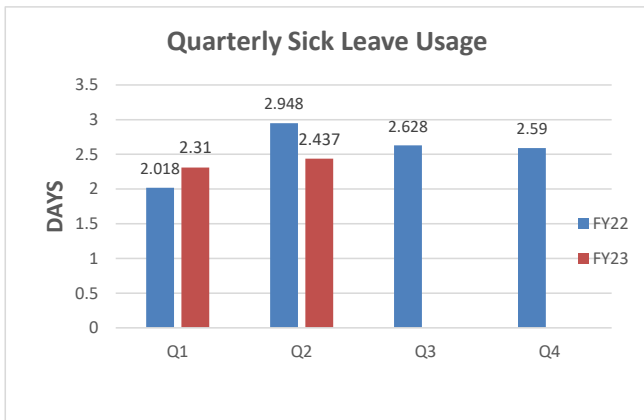


FY23 Target for FTE's = 1151.4  
 FTE's as of December 2022= 1045  
 Tunnel Redundancy as of Dec 2022 = 10

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



	Pr/Trns	Hires	Total
FY21	81 (56%)	64 (44%)	145
FY22	138 (68%)	65 (32%)	203
FY23	74 (60%)	49 (40%)	123



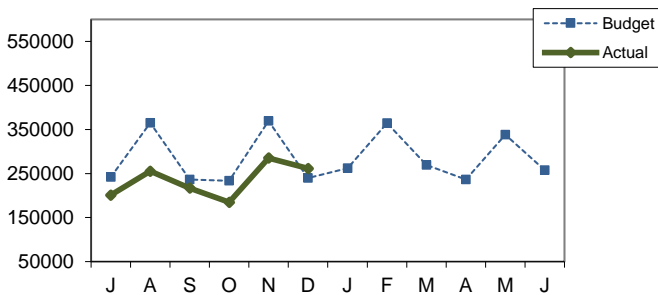
Average quarterly sick leave for the 2nd Quarter of FY23 has decreased as compared to the 2nd Quarter of FY22 (2.437 from 2.948)

### Sick Leave and FMLA Usage by Division

	Number of Employees	YTD (usage to date)	Annualized Total	Annual FMLA %	FY22
Admin	135	5.37	10.74	8.5%	7.57
Aff. Action	5	8.44	9.46	51.7%	8.73
Executive	3	3.57	7.61	0.0%	3.11
Finance	47	3.90	5.47	0.0%	6.21
Int. Audit	5	3.03	3.78	0.0%	1.47
Law	10	3.48	1.90	13.1%	12.27
OEP	4	18.54	0.00	0.0%	5.56
Operations	831	4.70	0.00	21.2%	10.87
Tunnel Red	10	2.92	0.00	29.0%	3.94
Pub. Affs.	9	1.26	2.52	40.4%	11.41
<b>MWRA Avg</b>	<b>1059</b>	<b>2.44</b>	<b>9.49</b>	<b>20.6%</b>	<b>10.16</b>

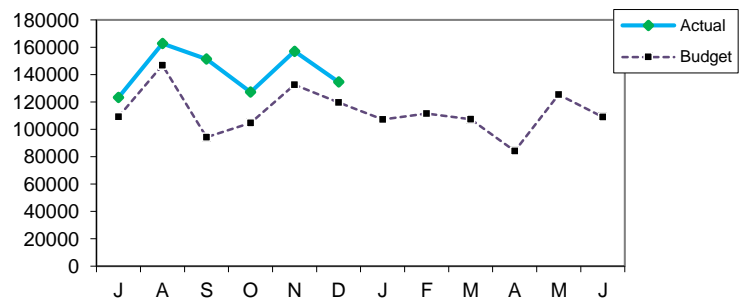
Percent of sick leave usage for FY23, attributable to Family and Medical Leave Act (FMLA) is 20.6%

### Field Operations Second Quarter FY23 Overtime \$



Total Overtime for Field Operations for second quarter was \$731k, which is \$98k or 11.8% under budget. Emergency overtime was \$242k, which is \$186k under budget or 43.4%, primarily due to fewer inclement weather events. Coverage overtime totaling \$232k which is \$86k over budget or 58.9%, primarily due to covering numerous vacant shifts. Planned overtime was \$257k or \$79k over budget with a combination spending of \$123k for scheduled maintenance and \$42k for work completion projects.

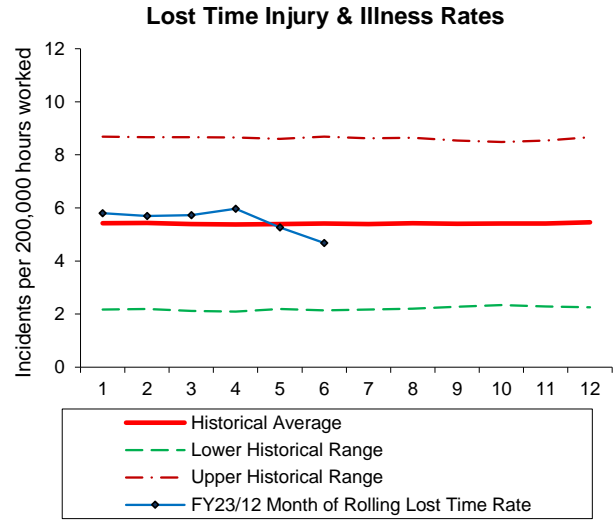
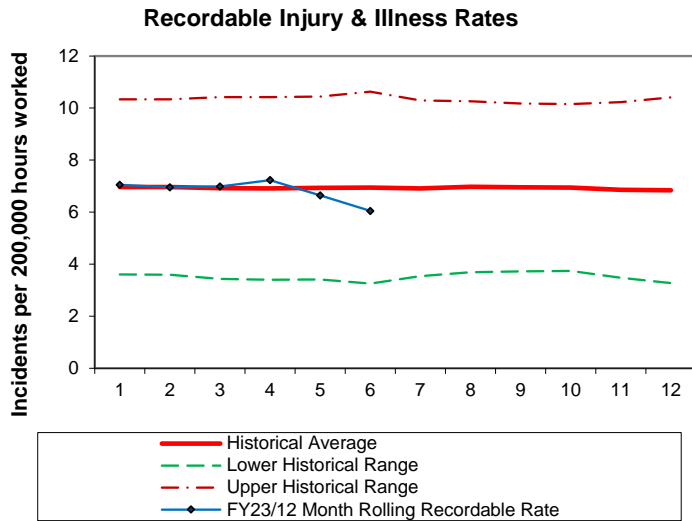
### Deer Island Treatment Plant Second Quarter FY23 Overtime \$



Deer Island's total overtime expenditure second quarter was \$419k, which is \$62k or 17.3% over budget due to higher than anticipated shift coverage of \$177k. This is offset by lower spending for storm coverage of (\$53k) and planned/unplanned overtime of (\$32k). YTD Deer Island's overtime spending is \$856k, which is \$149k or 21.1% over budget due to higher than anticipated shift coverage of \$226k. This is offset by lower than anticipated storm coverage of (\$69k) and planned/unplanned overtime of (\$8k).

# Workplace Safety

2<sup>nd</sup> Quarter - FY23



- 1 "Recordable" incidents are all work-related injuries and illnesses which result in death, loss of consciousness, restriction of work or motion, transfer to another job, or require medical treatment beyond first aid. Each month this rate is calculated using the previous 12 months of injury data.
- 2 "Lost-time" incidents, a subset of the recordable incidents, are only those incidents resulting in any days away from work, days of restricted work activity or both - beyond the first day of injury or onset of illness. Each month this rate is calculated using the previous 12 months of injury data.
- 3 The "Historical Average" is computed using the actual MWRA monthly incident rates for FY99 through FY22. The "Upper" and "Lower Historical Ranges" are computed using these same data – adding and subtracting two standard deviations respectively.
- 4 With Changes in state law, in February 1, 2019, MWRA began record keeping and reporting according to Federal OSHA standards for injury and illness record keeping. Strictly adhering to the federal OSHA reporting regulation has caused an increase in recorded injuries and illnesses. This increase is causing both the Recordable injury and illness Rate and the Lost Time Injury and Illness rate to trend higher than in past years but does not necessarily mean there is an increase in injuries or illnesses. OSHA injuries and illnesses, and lost time are recorded differently than the Massachusetts Workers' Compensation standards and could result in an increase in the OSHA rate while the Workers' Compensation claims are decreasing. Over time, the rise on the charts should stabilize as new data replaces the older data.

## WORKERS COMPENSATION HIGHLIGHTS

	2nd Quarter Information		Open Claims
	New	Closed	
Lost Time	7	24	67
Medical Only	11	16	14
Report Only	15	15	
	QYTD		FYTD
Regular Duty Returns	4		13
Light Duty Returns	1		1
Indemnity payments as of December 2022 included in open claims listed			22

### COMMENTS:

#### Regular Duty Returns

**Oct** 1 Employees returned to full duty/no restrictions  
**Nov** 3 Employees returned to full duty/no restrictions  
**Dec** 0 Employees returned to full duty/no restrictions

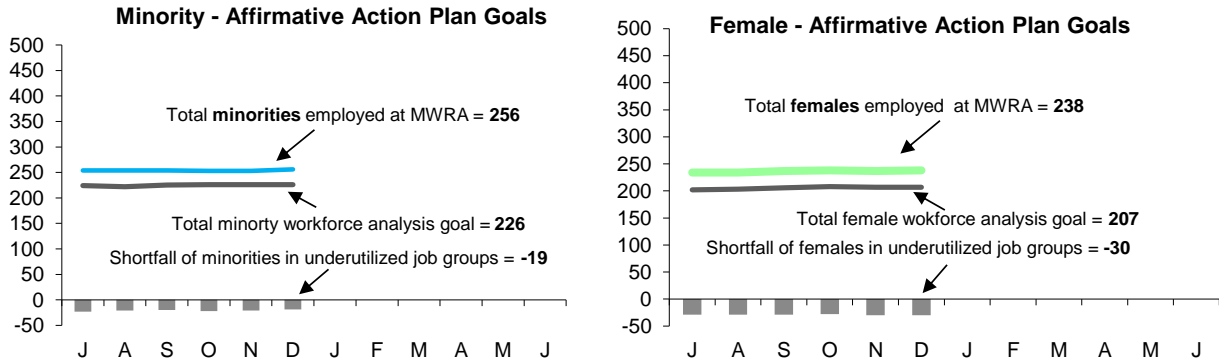
#### Light Duty Returns

**Oct** 1 Employee returned to light duty  
**Nov** N/A  
**Dec** N/A

**Note:** Claims may initially be counted in one category and changed to another category at a later date. Examples include a medical treatment only claim (no lost time from work) but the employee may require surgery at a later date resulting in the claim becoming a lost time claim. At that time we would only count the claim as opened but not as a new claim. \*Report only claims are closed the month they are filed.

## MWRA Job Group Representation

2nd Quarter - FY23



**Highlights:**

At the end of Q2 FY23, 3 job groups or a total of 19 positions are underutilized by minorities as compared to 5 job groups for a total of 22 positions at the end of Q2 FY22; for females 8 job groups or a total of 30 positions are underutilized by females as compared to 5 job groups or a total of 16 positions at the end of Q2 FY22. During Q2, 5 minorities and 3 females were hired. During this same period, 2 minorities and 2 females were terminated.

### Underutilized Job Groups - Workforce Representation

Job Group	Employees	Minorities	Achievement	Minority	Females	Achievement	Female
	as of 12/31/2022	as of 12/31/2022	Level	Over or Under Underutilized	As of 12/31/2022	Level	Over or Under Underutilized
Administrator A	27	5	3	2	14	7	7
Administrator B	22	1	5	-4	4	5	-1
Clerical A	23	7	3	4	19	17	2
Clerical B	24	7	6	1	3	12	-9
Engineer A	82	21	19	2	20	15	5
Engineer B	59	19	15	4	14	14	0
Craft A	111	16	20	-4	0	5	-5
Craft B	123	24	23	1	1	6	-5
Laborer	54	14	12	2	3	2	1
Management A	87	18	18	0	32	24	8
Management B	37	11	7	4	6	9	-3
Operator A	62	4	15	-11	2	4	-2
Operator B	59	19	6	13	3	1	2
Professional A	29	7	7	0	17	11	6
Professional B	153	47	45	2	69	39	30
Para Professional	47	15	10	5	23	25	-2
Technical A	52	18	10	8	6	9	-3
Technical B	8	3	2	1	2	2	0
<b>Total</b>	<b>1059</b>	<b>256</b>	<b>226</b>	<b>49/-19</b>	<b>238</b>	<b>207</b>	<b>61/-30</b>

### AACU Candidate Referrals for Underutilized Positions

Job Group	Title	# of Vac	Requisition Int. / Ext.	Promotions/Transfers	AACU Ref. External	Position Status
Craft A	Asst Auto Tech in Training	1	Int./Ext.	0	0	NH=HM
Craft A	Electrical Operations Supervisor	1	Int.	1	0	PROMO = WM
Craft A	Unit Supervisor-Electrician	1	Int.	1	0	PROMO = WM
Craft A	Vehicle Services Foreman	1	Int.	1	0	PROMO = WM
Craft A	WDS General Foreman	1	Int.	1	0	PROMO = WM
Craft A	Sr WDS Foreman	1	Int.	1	0	PROMO = WM
Craft A	Valve Maintenance Foreman	1	Int./Ext.	1	0	PROMO = WM
Craft B	HVAC Specialist	1	Ext.	0	0	NH=WM
Craft B	Jr Instrument Technician	2	Ext.	0	0	NH=1BM, 1HM
Craft B	Second Class Engineer	1	Int./Ext.	0	0	NH=WM
Craft B	Metal Fabricator/Welder	1	Ext.	0	0	NH=WM
Craft B	Facilities Specialist	3	Int.	3	0	PROMO=2WM, 1BM
Operator A	Area Supervisor	2	Ext.	0	0	NH = 2WM
Technical A	Sr Draftsperson	1	Int./Ext.	0	0	NH=WM
Technical A	Statistical Supervisor	1	Int./Ext.	1	1	PROMO=HF

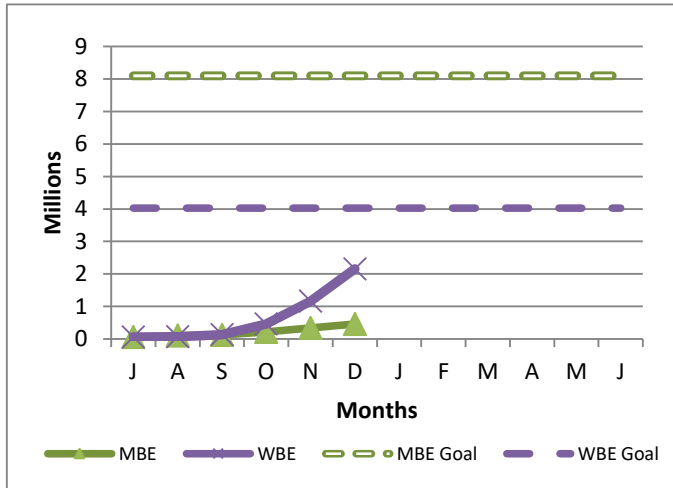
## MBE/WBE Expenditures

2<sup>nd</sup> Quarter - FY23

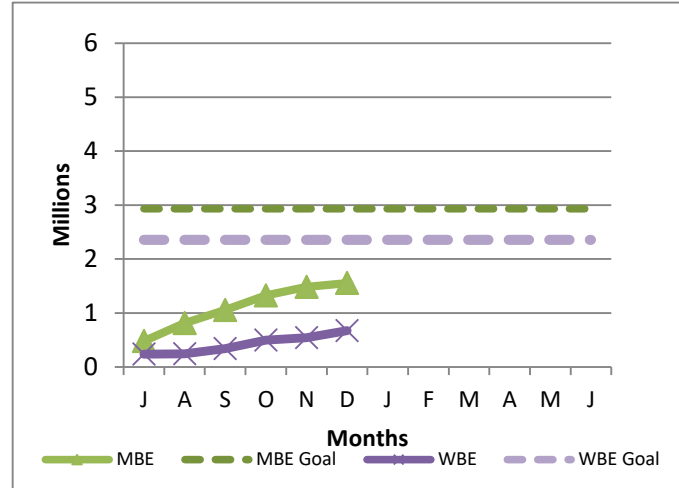
MBE/WBE targets are determined based on annual MWRA expenditure forecasts in the procurement categories noted below. The goals for FY23 are based on 85% of the total construction and 75% of the total professional projected spending for the year. Certain projects have been excluded from the goals as they 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 December.

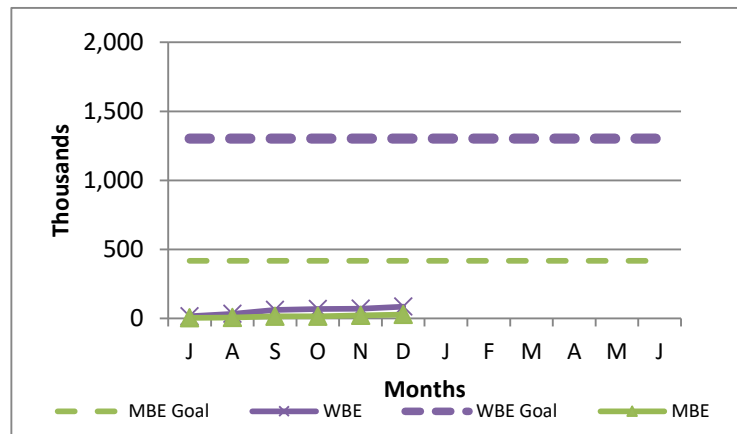
### Construction



### Professional Services



### Goods/Services



FY23 spending and percentage of goals achieved, as well as FY22 performance are as follows:

MBE			
FY23 YTD		FY22	
Amount	Percent	Amount	Percent
460,301	5.7%	3,102,188	56.2%
1,554,614	53.0%	3,156,867	147.1%
21,736	5.2%	387,120	102.7%
2,036,651	17.8%	6,646,175	82.6%

WBE			
FY23 YTD		FY22	
Amount	Percent	Amount	Percent
2,156,721	56.6%	1,276,049	46.5%
674,194	28.6%	1,737,850	100.8%
84,869	6.5%	365,393	27.6%
2,915,784	37.9%	3,379,292	58.3%

Construction  
Prof Svcs  
Goods/Svcs  
**Totals**

FY23 MBE/WBE dollar totals do not include MBE and WBE payments to prime contractors and consultants.

## MWRA FY23 CEB Expenses through 2<sup>nd</sup> Quarter – FY23

As of December 2022, total expenses are \$385.6 million, \$7.1 million or 1.8% lower than budget, and total revenue is \$430.9 million, \$9.9 million or 2.3% over budget, for a net variance of \$17.0 million.

### Expenses –

**Direct Expenses** are \$127.5 million, \$6.4 million or 4.8% under budget.

- **Wages & Salaries** are \$6.1 million under budget or 10.9%. Regular pay is \$6.2 million under budget, due primarily to lower head count, and timing of backfilling positions. YTD through December, the average Full Time Equivalent (FTE) positions was 1,055, one hundred and twelve fewer than the 1,167 FTE's budgeted.
- **Other Services** expenses are \$1.3 million under budget or 9.1%, due to lower Sludge Pelletization expense of \$443k, lower than anticipated Telecommunication costs of \$366k, Space/Lease Rentals of \$148k due to Rock Shed Lease timing, and Grit Screening Removal of \$139k.
- **Fringe Benefits** expenses are \$477k under budget or 4.1%, primarily due to lower health insurance expense \$362k under budget, reflecting the lower headcount.
- **Professional Services** expenses are \$342k under budget or 8.6%, primarily due to under spending for Other Professional Services of \$210k, and Engineering of \$100k. Underspensing was partially offset by higher spending on Lab Testing & Analysis of \$85k.
- **Workers Compensation** expenses are \$322k under budget or 25.6%, primarily due to lower spending for Compensation Payments of \$246k and Medical Payments of \$42k.
- **Chemicals** are \$1.0 million over budget or 13.1% due to higher spending for Sodium Hypochlorite, \$548k over budget due to greater usage at DITP due to lower flows and greater need for odor control and higher contract price at Carroll Water Treatment Plant. Spending for Hydrogen Peroxide and Ferric Chloride were over budget by \$162k and \$156k, respectively.
- **Utilities** expenses are **over** budget by \$853k or 5.6%. This reflects higher spending on Electricity of 816k, 7.0% over budget. Spending at DITP of \$810k above budget due to higher real time pricing as well as higher usage, and peak demand charges.
- **Ongoing Maintenance** is \$462k over budget or 2.6%. The variance reflects the actual timing of projects.

**Indirect Expenses** are \$27.7 million, \$666k or 2.3% under budget due primarily to lower Watershed Reimbursement of \$707k.

**Capital Finance Expenses** totaled \$230.4 million, matching budget after transfer of \$3.5 million to defeasance account. Defeasance savings due primarily to lower than budgeted variable interest expense which was \$2.5 million under budget and lower Senior Debt spending of \$1.1 million as a result of timing for the new money transaction, partially offset by higher SRF spending of \$121k due to timing.

### Revenue and Income –

**Total Revenue and Income** is \$430.9 million, or \$9.9 million over budget or 2.3%. The surplus was driven by Other User Charges which were \$4.7 million over the estimate reflecting water purchases from the City of Cambridge during facility maintenance, Investment income \$4.3 million over budget due to higher than budget interest rates, and Other Revenue of \$0.9 million primarily due to timing for Miscellaneous Revenue of \$0.4 million and Energy Revenue of \$0.3 million.

	Dec 2022			
	Year-to-Date			
	Period 6 YTD Budget	Period 6 YTD Actual	Period 6 YTD Variance	%
<b>EXPENSES</b>				
WAGES AND SALARIES	\$ 56,497,672	\$ 50,359,252	\$ (6,138,420)	-10.9%
OVERTIME	2,696,431	2,492,061	(204,370)	-7.6%
FRINGE BENEFITS	11,757,965	11,281,439	(476,526)	-4.1%
WORKERS' COMPENSATION	1,259,876	937,783	(322,093)	-25.6%
CHEMICALS	7,904,349	8,939,627	1,035,278	13.1%
ENERGY AND UTILITIES	15,331,553	16,184,632	853,079	5.6%
MAINTENANCE	17,529,378	17,991,536	462,158	2.6%
TRAINING AND MEETINGS	271,858	128,940	(142,918)	-52.6%
PROFESSIONAL SERVICES	3,965,968	3,623,646	(342,322)	-8.6%
OTHER MATERIALS	2,255,447	2,438,818	183,371	8.1%
OTHER SERVICES	14,485,930	13,161,951	(1,323,979)	-9.1%
<b>TOTAL DIRECT EXPENSES</b>	<b>\$ 133,956,427</b>	<b>\$ 127,539,685</b>	<b>\$ (6,416,742)</b>	<b>-4.8%</b>
INSURANCE	\$ 1,958,001	\$ 1,906,053	\$ (51,948)	-2.7%
WATERSHED/PILOT	8,608,583	7,901,462	(707,121)	-8.2%
HEEC PAYMENT	3,166,062	3,258,941	92,879	2.9%
MITIGATION	867,847	867,846	(1)	0.0%
ADDITIONS TO RESERVES	1,209,227	1,209,227	-	0.0%
RETIREMENT FUND	12,555,203	12,555,203	-	0.0%
POST EMPLOYEE BENEFITS	-	-	-	---
<b>TOTAL INDIRECT EXPENSES</b>	<b>\$ 28,364,923</b>	<b>\$ 27,698,732</b>	<b>\$ (666,191)</b>	<b>-2.3%</b>
STATE REVOLVING FUND	\$ 43,792,576	\$ 43,914,470	\$ 121,894	0.3%
SENIOR DEBT	148,426,636	147,298,430	(1,128,206)	-0.8%
DEBT SERVICE ASSISTANCE	(1,182,494)	(1,182,494)	-	0.0%
CURRENT REVENUE/CAPITAL	-	-	-	---
SUBORDINATE MWRA DEBT	37,733,455	37,733,455	-	0.0%
LOCAL WATER PIPELINE CP	-	-	-	---
CAPITAL LEASE	1,608,530	1,608,530	-	0.0%
VARIABLE DEBT	-	(2,459,605)	(2,459,605)	---
DEFEASANCE ACCOUNT	-	3,465,918	3,465,918	---
DEBT PREPAYMENT	-	-	-	---
<b>TOTAL CAPITAL FINANCE EXPENSE</b>	<b>\$ 230,378,703</b>	<b>\$ 230,378,703</b>	<b>\$ -</b>	<b>0.0%</b>
<b>TOTAL EXPENSES</b>	<b>\$ 392,700,053</b>	<b>\$ 385,617,120</b>	<b>\$ (7,082,933)</b>	<b>-1.8%</b>
<b>REVENUE &amp; INCOME</b>				
RATE REVENUE	\$ 407,324,000	\$ 407,324,000	\$ -	0.0%
OTHER USER CHARGES	4,759,460	9,443,156	4,683,696	98.4%
OTHER REVENUE	4,338,247	5,214,687	876,440	20.2%
RATE STABILIZATION	490,000	490,000	-	0.0%
INVESTMENT INCOME	4,134,243	8,463,577	4,329,334	104.7%
<b>TOTAL REVENUE &amp; INCOME</b>	<b>\$ 421,045,950</b>	<b>\$ 430,935,420</b>	<b>\$ 9,889,470</b>	<b>2.3%</b>

## Cost of Debt 2<sup>nd</sup> Quarter – FY23

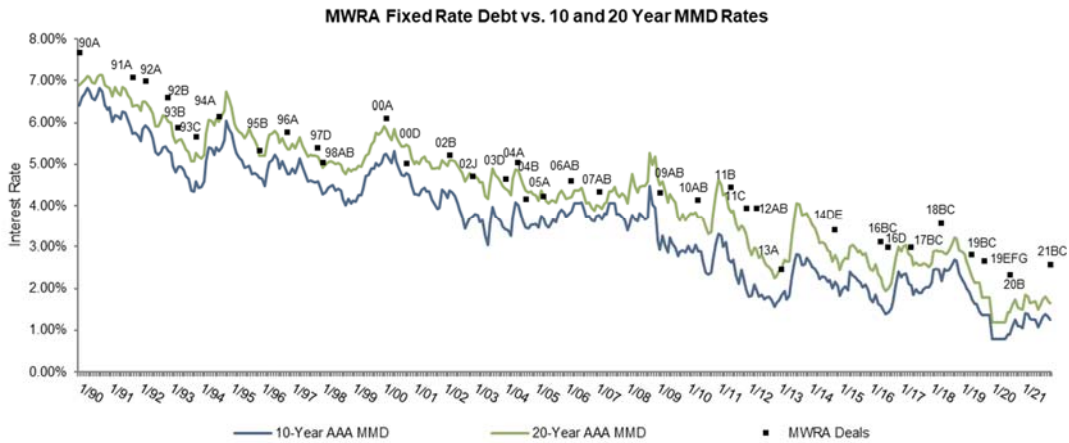
MWRA borrowing costs are a function of the fixed and variable tax exempt interest rate environment, the level of MWRA's variable interest rate exposure and the perceived creditworthiness of MWRA. Each of these factors has contributed to decreased MWRA borrowing costs since 1990.

### Average Cost of MWRA Debt FYTD

Fixed Debt (\$3.20 billion)	3.28%
Variable Debt (\$269.01million)	2.47%
SRF Debt (\$758.6 million)	1.67%
<b>Weighted Average Debt Cost (\$4.22 billion)</b>	<b>2.94%</b>

### Most Recent Senior Fixed Debt Issue December 2021

2021 Series B and C (\$748.0 million) 2.56%

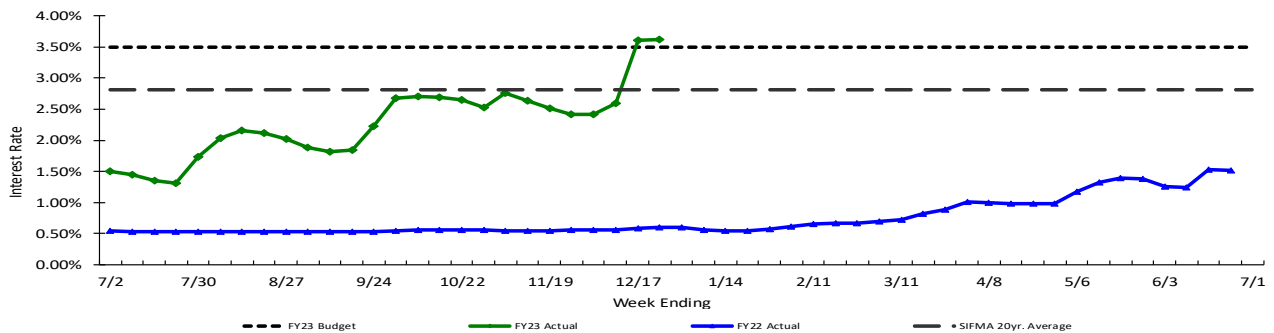


Bond Deal	1996A	1997D	1998AB	2000A	2000D	2002B	2002J	2003D	2004A	2004B	2005A	2006AB	2007AB	2009AB
Rate	5.78%	5.40%	5.04%	6.11%	5.03%	5.23%	4.71%	4.64%	5.05%	4.17%	4.22%	4.61%	4.34%	4.32%
Avg Life	19.5 yrs	21.6 yrs	24.4 yrs	26.3 yrs	9.8 yrs	19.9 yrs	19.6 yrs	18.4 yrs	19.6 yrs	13.5 yrs	18.4 yrs	25.9 yrs	24.4 yrs	15.4 yrs

Bond Deal	2010AB	2011B	2011C	2012AB	2013A	2014D-F	2016BC	2016D	2017BC	2018BC	2019BC	2019EFG	2020B	2021BC
Rate	4.14%	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%
Avg Life	16.4 yrs	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

### Weekly Average Variable Interest Rates vs. Budget

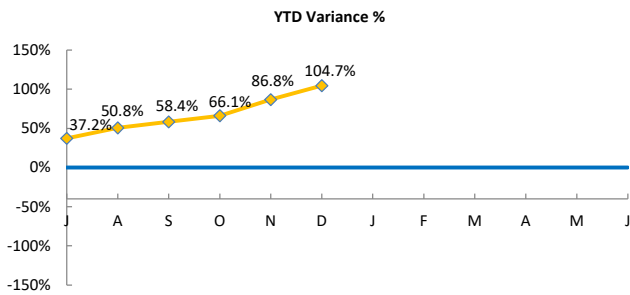
MWRA currently has eight variable rate debt issues with \$443.9 million outstanding, excluding commercial paper. Of the eight outstanding series, three have portions which have been swapped to fixed rate. Variable rate debt has been less expensive than fixed rate debt in recent years as short-term rates have remained lower than long-term rates on MWRA debt issues. In December, the SIFMA rate ranged from a high of 3.80% to a low of 2.21% for the month. MWRA's issuance of variable rate debt, although consistently less expensive in recent years, results in exposure to additional interest rate risk as compared to fixed rate debt.



# Investment Income

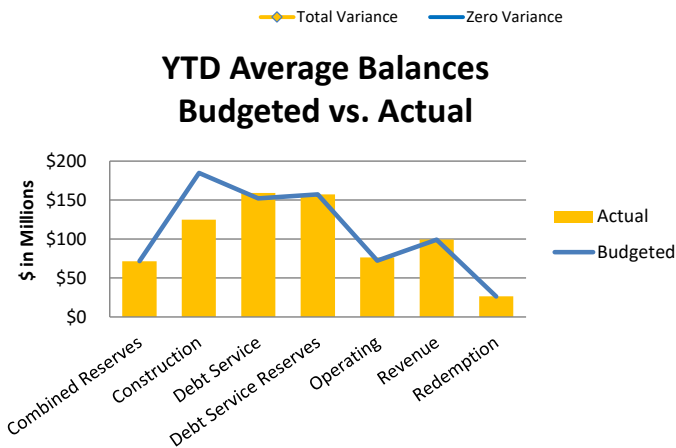
2<sup>nd</sup> Quarter – FY23

Year To Date

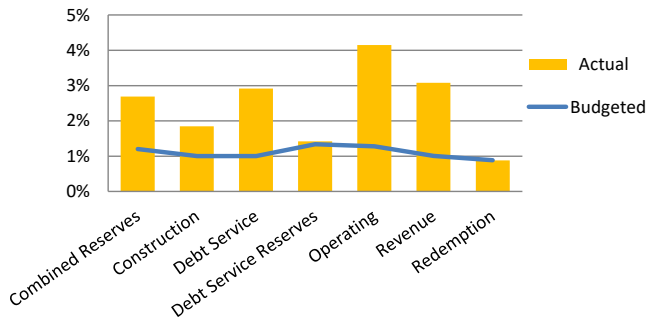


	YTD BUDGET VARIANCE			
	(\$000)			
	BALANCES IMPACT	RATES IMPACT	TOTAL	%
Combined Reserves	\$0	\$518	518	123.8%
Construction	(\$397)	\$903	506	56.3%
Debt Service	\$34	\$1,484	1,517	204.4%
Debt Service Reserves	\$0	\$63	63	6.1%
Operating	\$29	\$696	725	161.9%
Revenue	\$1	\$1,000	1,001	205.3%
Redemption	\$0	(\$1)	(1)	-0.8%
<b>Total Variance</b>	<b>(\$333)</b>	<b>\$4,662</b>	<b>\$4,329</b>	<b>104.7%</b>

**YTD Average Balances Budgeted vs. Actual**

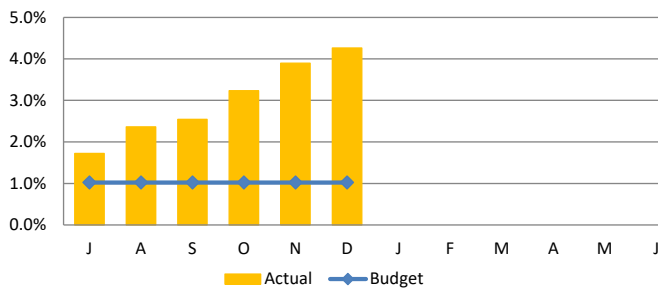


**YTD Average Interest Rate Budgeted vs. Actual**

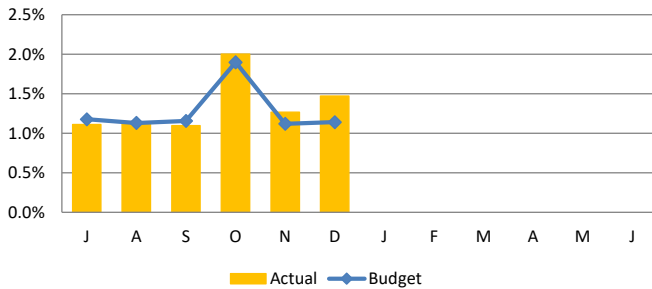


## Monthly

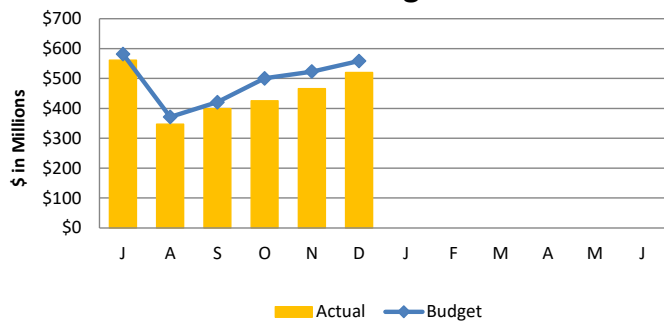
**Short -Term Interest Rates**



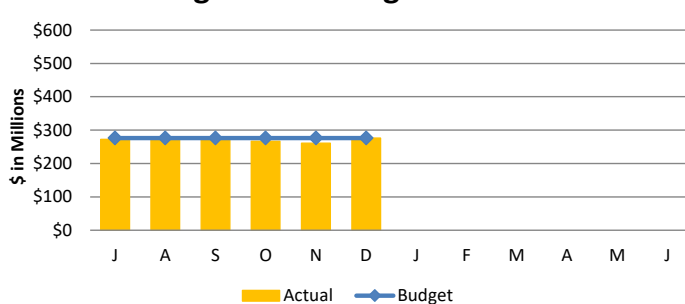
**Long -Term Interest Rates**



**Short-Term Average Balances**



**Long-Term Average Balances**





**STAFF SUMMARY**

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


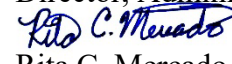


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**COMMITTEE:** Administration, Finance & Audit

X INFORMATION  
  VOTE

Betty Hill, Acting Admin. Systems Coordinator  
Barbara Aylward, Administrator A & F  
Preparer/Title

  
Michele S. Gillen  
Director, Administration  
  
Rita C. Mercado  
Acting 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 January 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 JANUARY 1 - 31, 2023

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	01/10/23	<b>TOP OF SHAFTS 6, 8 AND 9A INTERIM IMPROVEMENTS</b> FINAL BALANCING CHANGE ORDER TO DECREASE THE FOLLOWING BID ITEMS: CONCRETE STRUCTURAL CRACK REPAIR, CONCRETE LEAKING CRACK REPAIR, CONCRETE SURFACE SPALL REPAIR, PRECAST LEAK ROOF/WALL CONSTRUCTION JOIN REPAIR, CAST-IN-PLACE CONCRETE LEAK R/W CONSTRUCTION JOINT REPAIR, ANTI-CORROSION REPAIR COATING. COVID-19 SAFETY ALLOWANCE.	7561	2	NATIONAL WATER MAIN CLEANING CO.	(\$191,500.00)
C-2.	01/20/23	<b>FIRE PROTECTION SPRINKLER SYSTEM SERVICE</b> INCREASE ALLOWANCE FOR REPLACEMENT PARTS TO ENSURE SUFFICIENT FUNDS EXIST TO COVER EXPENSES FOR THE REMAINING TEN MONTHS OF THE MAINTENANCE CONTRACT.	OP-428	1	J.C. CANNISTRARO, LLC	\$66,500.00
C-3.	01/20/23	<b>NORTHERN EXTRA HIGH PRESSURE ZONE IMPROVEMENTS SECTION 63 (LEXINGTON)</b> REMOVE. HANDLE, TRANSPORT AND DISPOSE OF ADDITIONAL ROCK AND BOULDER ENCOUNTERED ON SUMMER STREET IN LEXINGTON.	6522	3	ALBANESE D&S, INC.	\$283,597.50
C-4.	01/20/23	<b>NUT ISLAND HEADWORKS ODOR CONTROL AND HVAC IMPROVEMENTS INSPECTIONS, EVALUATIONS, DESIGN/CA/RE SERVICES</b> EXTEND CONTRACT TERM BY 215 CALENDAR DAYS FROM NOVEMBER 28, 2023 TO JUNE 30,2024 TO PROVIDE ADDITIONAL ENGINEERING SERVICES DURING CONSTRUCTION (ESDC) FOR MWRA CONTRACT 7548 - NUT ISLAND HEADWORKS ODOR CONTROL AND HVAC IMPROVEMENTS. SUBSTANTIAL COMPLETION FOR THE CONSTRUCTION PROJECT IS PROJECTED TO BE ACHIEVED ON JUNE 30, 2023.	7517	4	HAZEN AND SAWYER, P.C.	\$364,804.00
C-5.	01/24/23	<b>REFURBISH SODIUM HYPOCHLORITE TANK 1, WEST ODOR CONTROL</b> AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER TO REFURBISH SODIUM HYPOCHLORITE TANK 1, WEST ODOR CONTROL FOR A TERM OF 90 CALENDAR DAYS.	S607	AWARD	AMERICAN FIBERGLASS TANK REPAIR, LLC	\$84,500.00
C-6.	01/24/23	<b>WINSOR DAM INTAKE BUILDING MASONRY REPOINTING</b> AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE WINSOR DAM INTAKE BUILDING MASONRY REPOINTING FOR A TERM OF 248 CALENDAR DAYS.	OP-449	AWARD	CONTRACTING SPECIALISTS, INC.	\$519,300.00
C-7.	01/24/23	<b>DIESEL GENERATOR MAINTENANCE JOHN J. CARROLL WATER TREATMENT PLANT</b> AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE DIESEL GENERATOR MAINTENANCE AT THE JOHN J. CARROLL WATER TREATMENT PLANT FOR A TERM OF 1,095 CALENDAR DAYS.	OP-447	AWARD	AUTHORIZED SERVICES OF NEW ENGLAND, LLC	\$623,142.14
C-8.	01/24/23	<b>JOHN J. CARROLL WATER TREATMENT PLANT CORROSION CONTROL OPTIMIZATION STUDY</b> AWARD OF A CONTRACT TO THE HIGHEST RANKED PROPOSER FOR THE JOHN J. CARROLL WATER TREATMENT PLANT CORROSION CONTROL OPTIMIZATION STUDY FOR A TERM OF 24 MONTHS.	7737	AWARD	CMD SMITH, INC.	\$937,056.00
C-9.	01/27/23	<b>RIVER ROAD REHABILITATION</b> FURNISH AND INSTALL RIP RAP AND FILTER FABRIC FOR SLOPE AND DRAINAGE SWALE, REMOVE AND DISPOSE OF SOIL DUE TO A HISTORIC AMOUNT OF RAIN RECEIVED DURING THE SUMMARY OF 2021.	7701	2	E.T. & L CORP.	\$84,058.50
C-10.	01/27/23	<b>69kV ELECTRICAL SYSTEMS MAINTENANCE</b> AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE 69kV ELECTRICAL SYSTEMS MAINTENANCE AT THE JOHN J. CARROLL WATER TREATMENT PLANT AND AS-NEEDED REPAIR AT THE OAKDALE POWER STATION FOR A TERM OF 1,095 CALENDAR DAYS.	OP-450	AWARD	INFRA-RED BUILDING AND POWER SERVICE, INC.	\$240,420.00
C-11.	01/27/23	<b>NORTHERN INTERMEDIATE HIGH SECTION 89 REPLACEMENT PIPELINE</b> INSTALL MWRA-SUPPLIED 36-INCH GATE VALVE AT GILLIS PUMPING STATION TO ALLOW SECTION 89 AND SECTION 110 TRANSMISSION PIPELINES TO OPERATE	7117	1	P. GIOIOSO & SONS, INC.	\$250,000.00

## PURCHASING DELEGATED AUTHORITY ITEMS JANUARY 1 - 31, 2023

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMENDMENT	COMPANY	
P-1	01/03/23	<b>DELIVERY OF ULTRA LOW SULFUR DIESEL FUEL</b> AWARD OF A PURCHASE ORDER UNDER MASS STATE CONTRACT ENE47 FOR ULTRA LOW SULFUR DIESEL FUEL FOR THE COLUMBUS PARK HEADWORKS.			DENNIS K. BURKE, INC.	\$28,155.44
P-2	01/03/23	<b>DELIVERY OF ULTRA LOW SULFUR DIESEL FUEL</b> AWARD OF A PURCHASE ORDER UNDER MASS STATE CONTRACT ENE47 FOR ULTRA LOW SULFUR DIESEL FUEL FOR WARD STREET HEADWORKS.			DENNIS K. BURKE, INC.	\$28,385.38
P-3	01/03/23	<b>PURCHASE OF TWO 36-INCH AND TWO 42-INCH BUTTERFLY VALVES</b> AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR TWO 36-INCH AND TWO 42-INCH BUTTERFLY VALVES TO BE USED AS-NEEDED BY MWRA STAFF TO COMPLETE PIPELINE PROJECTS.	WRA-5224		EVERETT J. PRESCOTT, INC.	\$67,650.00
P-4	01/03/23	<b>TRIMBLE APPLICATION SOFTWARE AND IMPLEMENTATION SERVICES</b> AWARD OF A SOLE SOURCE PURCHASE ORDER FOR TRIMBLE APPLICATION SOFTWARE AND IMPLEMENTATION SERVICES. THE TRIMBLE UNITY REMOTE MONITORING APPLICATION IS USED BY OPERATIONS TO QUICKLY RESPOND TO COMMUNITY INQUIRIES.			TRIMBLE INC.	\$72,240.00
P-5	01/04/23	<b>PURCHASE OF TEN LONG-BID ELECTRIC BURDEN CARRIERS</b> AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR TEN LONG-BED ELECTRIC BURDEN CARRIERS FOR THE DEER ISLAND TREATMENT PLANT.	WRA-5210		BRODIE, INC.	\$163,220.30
P-6	01/09/23	<b>PURCHASE OF TWO OZONE SUPPLEMENTAL AIR COMPRESSORS</b> AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR TWO OZONE SUPPLEMENTAL AIR COMPRESSORS FOR THE JOHN J. CARROLL WATER TREATMENT PLANT.	WRA-5231Q		KAESER COMPRESSORS, INC	\$26,488.00
P-7	01/09/23	<b>DISPOSE OF AND/OR RECYCLE EXCAVATED MATERIALS</b> AWARD OF A ONE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER TO DISPOSE OF AND /OR RECYCLE EXCAVATED ROADWAY OR GRAVEL MATERIAL DURING CONSTRUCTION PROJECTS PERFORMED BY MWRA STAFF.	WRA-5227		NORTHGATE RECYCLING, INC.	\$90,000.00
P-8	01/10/23	<b>MAINTENANCE AND SUPPORT OF 28 ARCHITECTURE, ENGINEERING &amp; CONSTRUCTION COLLECTION NETWORK LICENSES</b> AWARD OF A ONE-YEAR PURCHASE ORDER UNDER STATE CONTRACT ITS75 TO THE LOWEST RESPONSIVE BIDDER FOR MAINTENANCE AND SUPPORT OF 28 ARCHITECTURE, ENGINEERING & CONSTRUCTION COLLECTION NETWORK LICENSES. THIS SOFTWARE IS USED BY APPROXIMATELY 120 OPERATIONS STAFF WHICH PROVIDES A SET OF BUILDING INFORMATION MODELING AND COMPUTER AIDED DRAFTING TOOLS.	WRA-5236Q		INSIGHT PUBLIC SECTOR	\$34,704.88
P-9	01/10/23	<b>DATA REPORTING ANALYST (REPORT WRITER) CONSULTANT</b> AWARD OF PURCHASE ORDER UNDER STATE CONTRACT ITS77 TO THE LOWEST RESPONSIVE BIDDER FOR A DATA REPORTING ANALYST (REPORT WRITER) CONSULTANT. THE REPORT WRITER IS A CRITICAL ROLE THAT PROVIDES REPORTING DEVELOPMENT AND SUPPORT FOR VARIOUS DEPARTMENTS ESPECIALLY THE MAXIMO ASSET MANAGEMENT USERS.	WRA-5220Q		MINDLANCE, INC.	\$168,148.50
P-10	01/13/23	<b>13 TRIMBLE INC. R-3330 DATA RECORDERS</b> AWARD OF A SOLE SOURCE PURCHASE ORDER FOR 13 TRIMBLE INC. R-3330 DATA RECORDERS. THE MWRA METERING DEPARTMENT USES DATA RECORDERS THROUGH THE WATER AND WASTEWATER SYSTEMS AT MORE THAN 500 SITES.			TRIMBLE INC.	\$36,355.00
P-11	01/13/23	<b>MAINTENANCE AND SUPPORT OF TWO NETAPP STORAGE SYSTEMS</b> AWARD OF A THREE-YEAR PURCHASE ORDER UNDER STATE CONTRACT ITC73 THE LOWEST RESPONSIVE BIDDER FOR MAINTENANCE AND SUPPORT OF TWO NETAPP STORAGE SYSTEMS. THE NETAPP STORAGE SYSTEMS SUPPORT BACKUPS PERFORMED BY THE COMMVAULT BACKUP SOLUTION IN CHELSEA AND DEER ISLAND.	WRA-5232Q		EPLUS TECHNOLOGY, INC.	\$55,150.98
P-12	01/13/23	<b>PURCHASE OF REPLACEMENT OF 46 BATTERIES AND 2 BATTERY CHARGERS</b> AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE REPLACEMENT OF 46 BATTERIES AND 2 BATTERY CHARGERS FOR THE DIRECT CURRENT SYSTEMS THAT PROVIDE BACKUP POWER TO THE SWITCHGEAR CONTROLS AT THE DEER ISLAND TREATMENT PLANT.	WRA-5225		SAFT AMERICAN INC.	\$59,541.00
P-13	01/24/23	<b>AMENDMENT 1 TO PURCHASE FOR THE SUPPLY AND DELIVERY OF SODIUM BISULFITE</b> AMENDMENT TO PURCHASE ORDER NO. 1202314 TO ADD THE SUPPLY AND DELIVERY OF APPROXIMATELY 11,800 GALLONS OF SODIUM BISULFITE AT AN INCREASE IN OF \$5.95/GAL TO SOMERVILLE MARGINAL CSO FACILITY. THE ORIGINAL PURCHASE ORDER INCLUDED THE SUPPLY AND DELIVERY OF 47,200 GALLONS OF SODIUM TO COTTAGE FARM, PRISON POINT, AND UNION PARK FOR A ONE YEAR PERIOD.	WRA-5198		UNIVAR SOLUTIONS USA, INC.	\$70,210.00
P-14	01/24/23	<b>PURCHASE FOR THE SUPPLY AND DELIVERY OF LIQUID EMULSION POLYMER</b> AWARD OF A ONE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF LIQUID EMULSION POLYMER FOR DEER ISLAND TREATMENT PLANT. THIS POLYMER IS USED AS A SLUDGE-THICKENING AGENT IN THE CENTRIFUGES AT DEER ISLAND BECAUSE IT INCREASES THE EFFICIENCY OF SOLIDS SEPARATION AND CAPTURE.	WRA-5209		POLYDYNE INC	\$711,000.00
P-15	01/24/23	<b>PURCHASE FOR SUPPLY AND DELIVERY OF ALLEN BRADLEY PROGRAMMABLE LOGIC CONTROLLER COMPONENTS</b> AWARD OF A SOLE SOURCE PURCHASE ORDER FOR SUPPLY AND DELIVERY OF ALLEN BRADLEY PROGRAMMABLE LOGIC CONTROLLER COMPONENTS WHICH ARE PART SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) SYSTEM. THE SCADA SYSTEM IS USED TO CONTROL AND OPERATE FACILITIES THROUGHOUT THE WATER WASTEWATER SYSTEM, WITH THE EXCEPTION OF THE DEER ISLAND TREATMENT PLANT.			NORTHEAST ELECTRICAL DISTRIBUTORS INC.,	\$736,175.41
P-16	01/25/23	<b>DELIVERY OF ULTRA LOW SULFUR DIESEL FUEL</b> AWARD OF A PURCHASE ORDER UNDER MASS STATE CONTRACT ENE47 FOR ULTRA LOW SULFUR DIESEL FUEL FOR WARD STREET HEADWORKS.			DENNIS K. BURKE INC.	\$26,616.73


PURCHASING DELEGATED AUTHORITY ITEMS JANUARY 1 - 31, 2023

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMENDMENT	COMPANY	
P-17	01/25/23	<b>DELIVERY OF ULTRA LOW SULFUR DIESEL FUEL</b> AWARD OF A PURCHASE ORDER UNDER MASS STATE CONTRACT ENE47 FOR ULTRA LOW SULFUR DIESEL FUEL FOR THE COLUMBUS PARK HEADWORKS.			DENNIS K. BURKE INC.	\$27,881.89
P-18	01/26/23	<b>PURCHASE ORDER TO INSULATE TEMPERED WATER SYSTEM AT THE DISINFECTION FACILITY &amp; WASTE GAS BURNER #2 IN THE RESIDUALS COMPLEX</b> AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER TO INSULATE TEMPERED WATER SYSTEM AT THE DISINFECTION FACILITY & WASTE GAS BURNER #2 IN THE RESIDUALS COMPLEX FOR DEER ISLAND TREATMENT PLANT.	WRA-5226Q		THERMAL-DYNAMICS INTERNATIONAL, INC.	\$48,700.00
P-19	01/26/23	<b>PURCHASE OF TWO HEAT EXCHANGER PLATE PACKS</b> AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR PURCHASE OF TWO HEAT EXCHANGER PLATE PACKS FOR THE DIGESTER MODULE AT THE DEER ISLAND TREATMENT PLANT.	WRA-5218Q		APPLIED COOLING TECHNOLOGY, LLC	\$32,815.00
P-20	01/27/23	<b>ONE YEAR OF MAINTENANCE AND SUPPORT FOR THE INFO WATER SUITE, INFOSURGE, AND INFO WORKS SEWER SOFTWARE</b> AWARD OF A SOLE SOURCE PURCHASE ORDER FOR ONE YEAR MAINTENANCE AND SUPPORT FOR THE INFO WATER SUITE, INFOSURGE, AND INFO WORKS SEWER SOFTWARE. THIS SOFTWARE IS USED FOR HYDRAULIC MODELING WHICH PROVIDES IMPORTANT INFORMATION FOR MAKING BOTH DESIGN AND OPERATIONAL DECISIONS.			INNOVYZE INC.	\$51,188.00

POSITION CONTROL REGISTER (PCR) LOCATION CHANGES January 2023

DATE OF CHANGE	POSITION TITLE	CURRENT PCR#	CURRENT COST CENTER	NEW PCR #	NEW COST CENTER	REASON FOR CHANGE
1/1/2023	Assistant Contracts Manager	8810015	Procurement	Same	Same	Title change from Deputy Purchasing Manager to meet staffing needs.
1/1/2023	Assistant Buyer	8740019	Procurement	Same	Same	Title change from Administrative Coordinator to meet staffing needs.
1/28/2023	Administrative Coordinator	3370018	EnQual - Water	2250022	EnQual - Wastewater	Title change from Technical Information Assistant to meet staffing needs.

## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** February 15, 2023  
**SUBJECT:** FY23 Financial Update and Summary through January 2023

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**COMMITTEE:** Administration, Finance & Audit


X INFORMATION

     VOTE

Michael J. Cole, Budget Director

James J. Coyne, Budget Manager

Preparer/Title

  
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 2023 through January 2023, comparing actual spending to the budget, and includes a projection to June 30, 2023.

### DISCUSSION:

MWRA is continuing the practice of setting aside favorable Capital Finance variances into the Defeasance Account with the intention of recommending Board approval to use these funds to defease debt and provide rate relief in future years. Targeted defeasances are a critical component of the Authority's multi-year rate management strategy. As such, in January the year-to-date debt related savings of \$4.5 million was transferred to the Defeasance Account. This variance is primarily due to lower than budgeted variable interest expense and lower senior debt spending.

The total Year-to-Date variance for the FY23 Current Expense Budget (CEB) is \$18.7 million, due to lower direct expenses of \$7.2 million and indirect expenses of \$0.3 million, as well as higher revenue of \$11.2 million. The year-end favorable variance is projected at \$39.8 million, of which \$15.6 million is related to debt service. Beyond debt service savings, staff project a favorable variance of approximately \$24.2 million at year-end of which \$6.6 million would be from lower direct expenses, \$0.4 million from lower indirect expenses, and \$17.2 million from greater than budgeted revenues.

As the year progresses and more actual spending information becomes available, staff will continue to refine the year-end projections and update the Board accordingly.

### FY23 Current Expense Budget

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

- Lower Direct Expenses of \$7.2 million or 4.6% under budget. Spending was lower for Wages & Salaries, Other Services, Fringe Benefits, Professional Services, Workers

Compensation, Overtime, Training & Meetings, and Other Materials. Spending was higher than budget for Utilities, Chemicals, and Maintenance.

- Lower Indirect Expenses of \$0.3 million or 1.1% under budget due primarily to lower Watershed Reimbursements.
- Debt Service expenses were right on budget after the transfer to the defeasance account, driven by lower than budgeted variable interest expense and timing of the new money and SRF transactions.
- Revenue was \$11.2 million or 2.3% over budget driven by Investment Income of \$5.7 million due to higher than budgeted interest rates, Other User Charges of \$4.6 million for water usage by the City of Cambridge and Other Revenue of \$0.9 million.

**FY23 Budget and FY23 Actual Variance by Expenditure Category  
(in millions)**

	FY23 Budget	FY23 Actual	\$ Variance	% Variance
Direct Expenses	\$154.8	\$147.6	-\$7.2	-4.6%
Indirect Expenses	\$31.4	\$31.1	-\$0.3	-1.1%
Capital Financing	\$266.8	\$266.8	\$0.0	0.0%
<b>Total</b>	<b>\$453.1</b>	<b>\$445.5</b>	<b>-\$7.5</b>	<b>-1.7%</b>

*Totals may not add due to rounding*

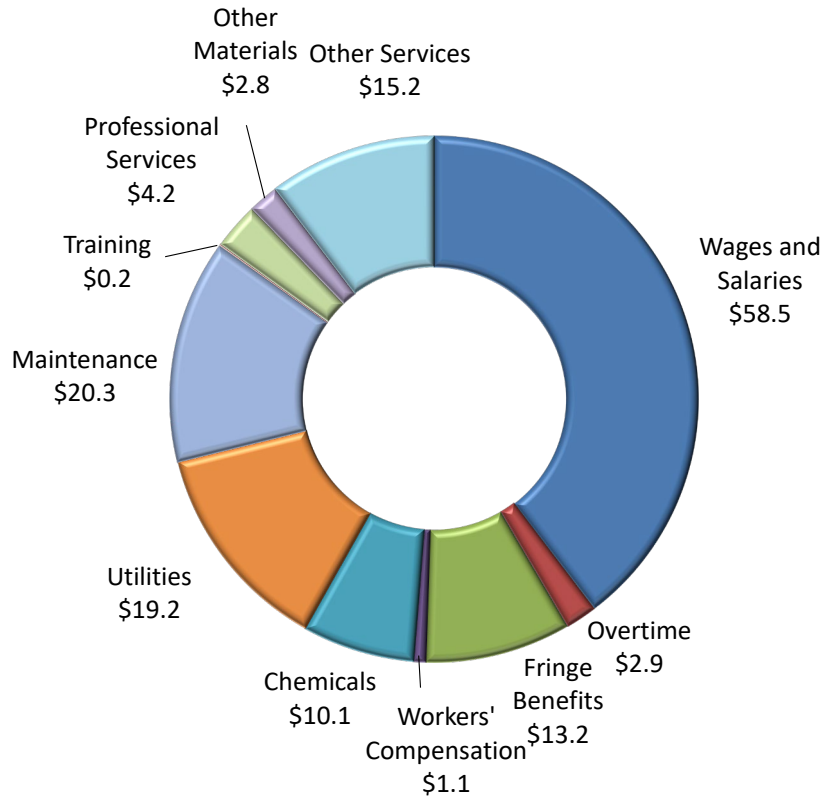
*Please refer to Attachment 1 for a more detailed comparison by line item of the budget variances for FY23.*

**Direct Expenses**

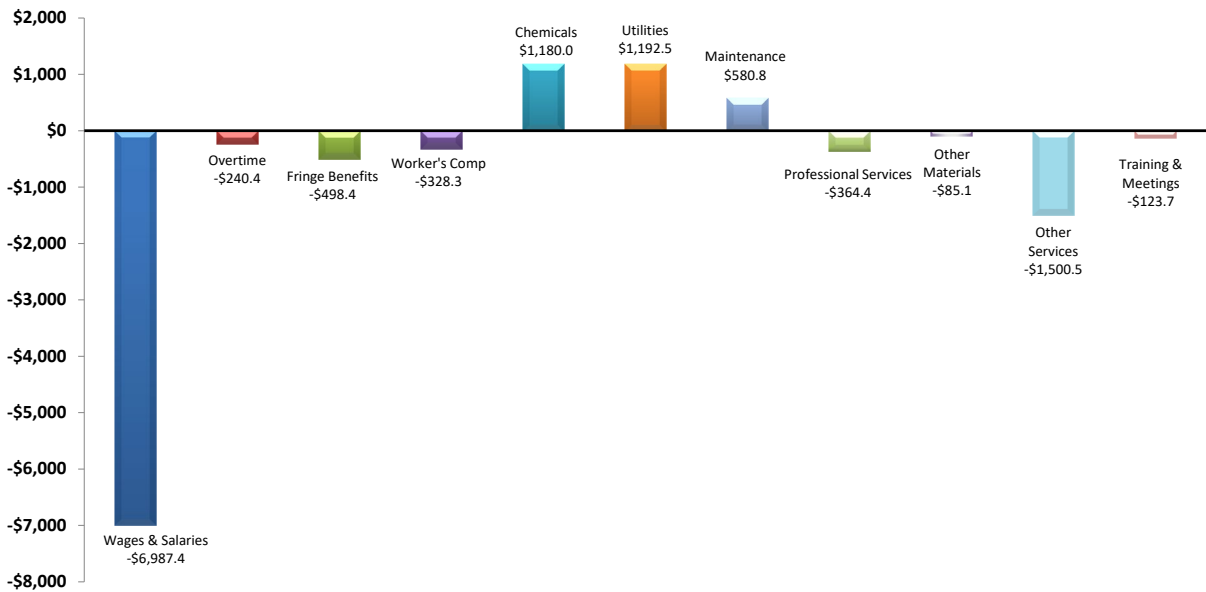
FY23 direct expenses through January totaled \$147.6 million, which was \$7.2 million or 4.6% less than budgeted.



**FY23 Direct Expenses  
(in millions)**

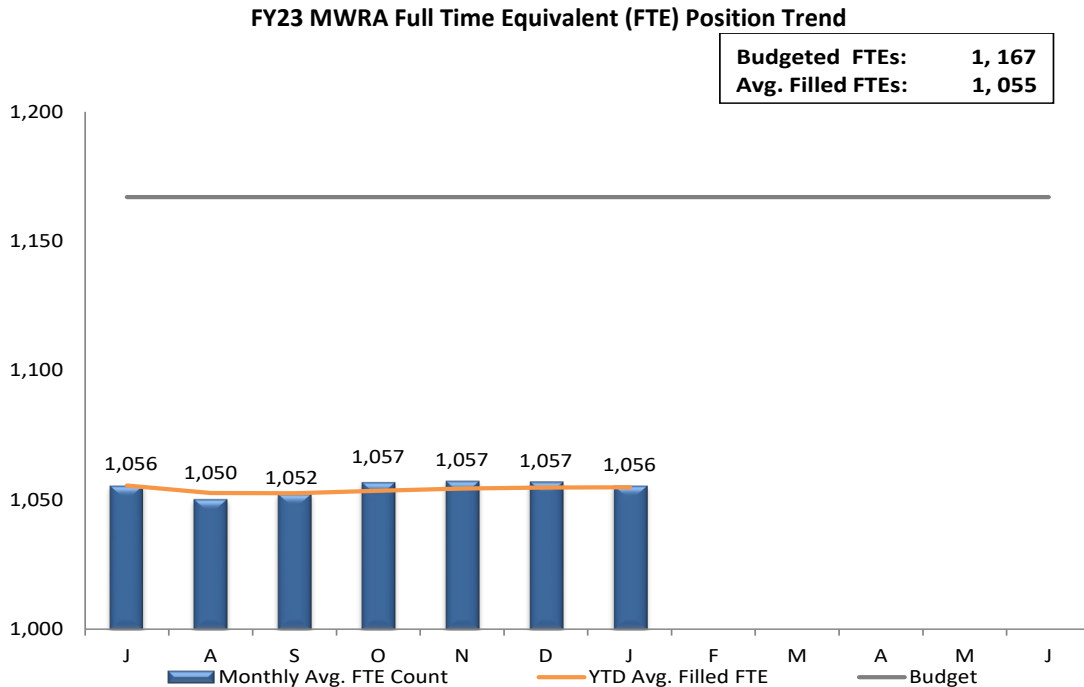


**FY23 Direct Expense Variance  
(in thousands)**



## Wages and Salaries

Wages and Salaries was under budget by \$7.0 million or 10.7%. Through January, there were 112 fewer average FTEs (1,055 versus 1,167 budget) or 9.6% and lower average salaries for new hires versus retirees. The timing of backfilling vacant positions also contributed to Regular Pay being under budget.



## Other Services

Other Services was less than budget by \$1.5 million or 9.0% for Sludge Pelletization of \$545,000 and Grit & Screenings Removal \$110,000 both due to lower quantities, and lower Telecommunications costs of \$446,000 due to timing of spending.

## Utilities

Utilities were greater than budget by \$1.2 million or 6.6%. Overspending in Electricity of \$1.3 million primarily at Deer Island of \$1.0 million driven by higher real time pricing as well as higher usage and peak demand charges. Electricity in Field Operations was greater than budget by \$254,000 due to T&D and Generation costs were greater than budget.

## Chemicals

Chemicals were greater than budget by \$1.2 million or 13.2%. Higher than budget spending on Sodium Hypochlorite of \$708,000 driven by Deer Island of \$546,000 due to additional usage for disinfection and odor control due to lower flows and higher pricing, \$46,000 at Carroll mostly due to higher contract price, and \$98,000 in Wastewater Operations primarily at Nut Island Headworks, Ferric Chloride of \$238,000 driven by Deer Island to keep the orthophosphate levels

in the digesters at the desired target level and higher pricing, Hydrogen Peroxide of \$185,000 driven by Deer Island to reduce elevated Hydrogen Sulfide (H<sub>2</sub>S) levels for pretreatment and odor control. Deer Island flows are 14.4% lower than the budget and Carroll preliminary flows are 5.0% greater than the budget through January. 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 greater than budget by \$581,000 or 2.9%, largely driven by the timing of projects. Maintenance Services are over budget by \$397,000 due to higher Plant and Machinery Services of \$1.5 million due to timing of some service contracts and the Norumbega Tank Cleaning award being greater than budgeted, Computer Software Licenses of \$86,000 due to timing (and includes Windows Exchange renewal and the multi-factor authentication software support renewal that was greater than budgeted). These are partially offset by lower Building & Grounds Services of \$742,000 due to timing and includes the Eastern Ave Traffic Light and Shaft 8 Retaining Wall work and lower Computer Services of \$389,000 also due to timing. Maintenance Materials are over budget by \$184,000 driven by higher Computer Materials of \$89,000, timing for HVAC Materials of \$59,000 and Plant & Machinery Materials of \$57,000.

### **Fringe Benefits**

Fringe Benefit spending was lower than budget by \$498,000 or 3.6%. This was primarily driven by lower than budgeted Health Insurance of \$344,000 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 Paid Family Medical Leave of \$53,000 and Tuition Reimbursement of \$36,000.

### **Professional Services**

Professional Services were less than budget by \$364,000 or 8.0% driven by lower Other Services of \$146,000, Computer Systems Consultant of \$109,000, and Engineering of \$79,000, all primarily due to timing.

### **Worker's Compensation**

Worker's Compensation expenses were lower than budget by \$328,000 or 22.3%. The lower expenses were due to favorable variances in Compensation Payments of \$255,000, Medical Payments of \$44,000, and Administrative Expenses of \$29,000. Due to uncertainties of when spending will happen, the budget is spread evenly throughout the year.

### **Overtime**

Overtime expenses were less than budget by \$240,000 or 7.7%. Lower spending mainly in Field Operations of \$315,000 primarily for planned overtime (due to vacancies), emergency overtime being under budget and minimal bad weather conditions, and Engineering & Construction of

\$66,000, are partially offset by higher spending at Deer Island of \$164,000 for shift coverage due to vacancies for Deer Island Operations positions.

### **Training & Meetings**

Training & Meetings expenses were lower than budget by \$124,000 or 44.3% driven by the timing of spending.

### **Other Materials**

Other Materials were lower than budget by \$85,000 or 3.0% driven by Vehicle Expense of \$282,000 primarily due to delay in installation of electrical vehicle chargers, Computer Software of \$86,000 and Equipment Furniture of \$65,000 due to timing, partially offset by Vehicle Purchase/Replacements of \$391,000 also due to timing of purchases.

### **Indirect Expenses**

Indirect Expenses totaled \$31.1 million, which is \$347,000 or 1.1% lower than budget. The variance is driven by lower Watershed reimbursements.

Based on FY23 operating activity only, the Watershed Division is \$797,000 or 7.6% under budget. Lower spending on Fringe Benefits and Wages and Salaries are slightly offset by higher spending on Maintenance and Utilities/Fuel due to timing. When factoring in the FY22 balance forward of \$273,000 which was paid during Q1 of FY23, Watershed Reimbursement is \$524,000 or 5.0% below budget through January 2023.

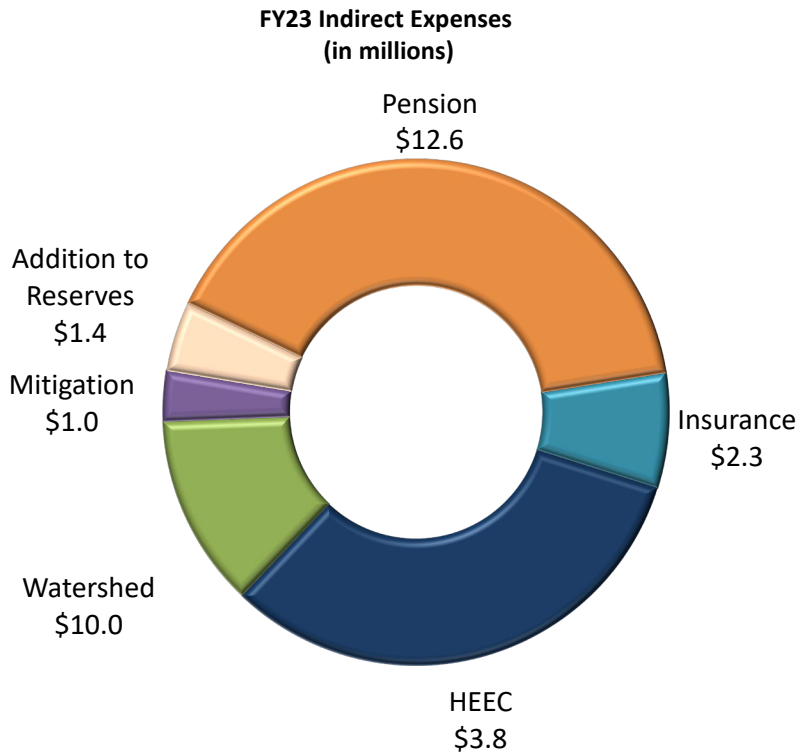
#### **FY23 Watershed Protection Variance**

<b>\$ in millions</b>	<b>YTD Budget</b>	<b>YTD Actual</b>	<b>YTD \$ Variance</b>	<b>YTD % Variance</b>
Operating Expenses	11.1	11.1	0.0	-0.4%
Operating Revenues - Offset	0.6	1.4	0.8	127.7%
<b>FY23 Operating Totals</b>	<b>10.5</b>	<b>9.7</b>	<b>-0.8</b>	<b>-7.6%</b>
DCR Balance Forward (FY22 year-end accrual true-up)	0.0	0.3	0.3	
<b>FY23 Adjusted Operating Totals</b>	<b>10.5</b>	<b>10.0</b>	<b>-0.5</b>	<b>-5.0%</b>
PILOT	0.0	0.0	0.0	0.0%
<b>Total Watershed Reimbursement</b>	<b>10.5</b>	<b>10.0</b>	<b>-0.5</b>	<b>-5.0%</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 January was 140 (and 141.3 on a year-to-date basis) vs. a budget of 150.

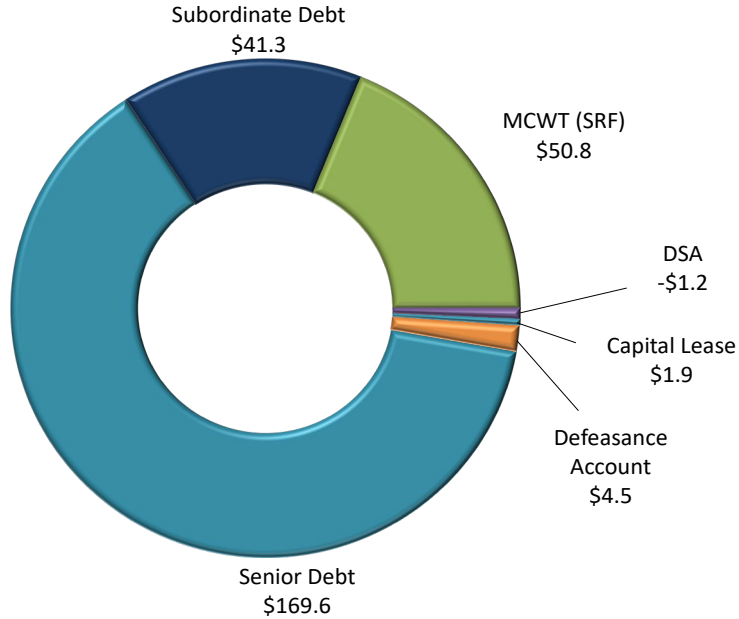


### **Capital Financing**

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.

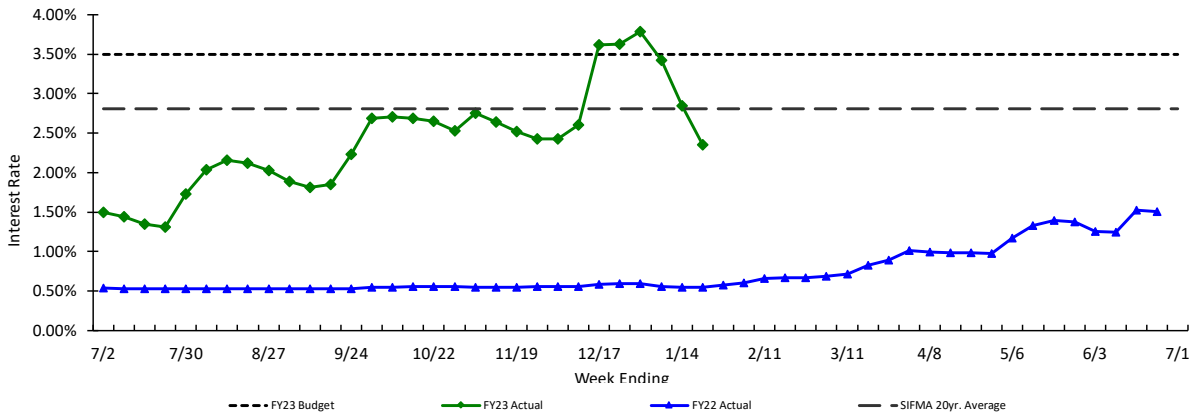
Capital Financing expenses for FY23 through January totaled \$266.8 million which matches the budget after the transfer of \$4.5 million to the Defeasance account. The positive year-to-date variance of \$4.5 million is driven by lower than budgeted variable interest expense of \$2.5 million and lower Senior Debt spending of \$2.3 million as a result of the new money transaction, offset by higher SRF spending of \$244,000 based on timing.

**FY23 Capital Finance  
(\$ in millions)**



The graph below reflects the FY23 actual variable rate trend by week against the FY23 Budget.

**Weekly Average Interest Rate on MWRA Variable Rate Debt  
(Includes liquidity support and remarketing fees)**



**Revenue & Income**

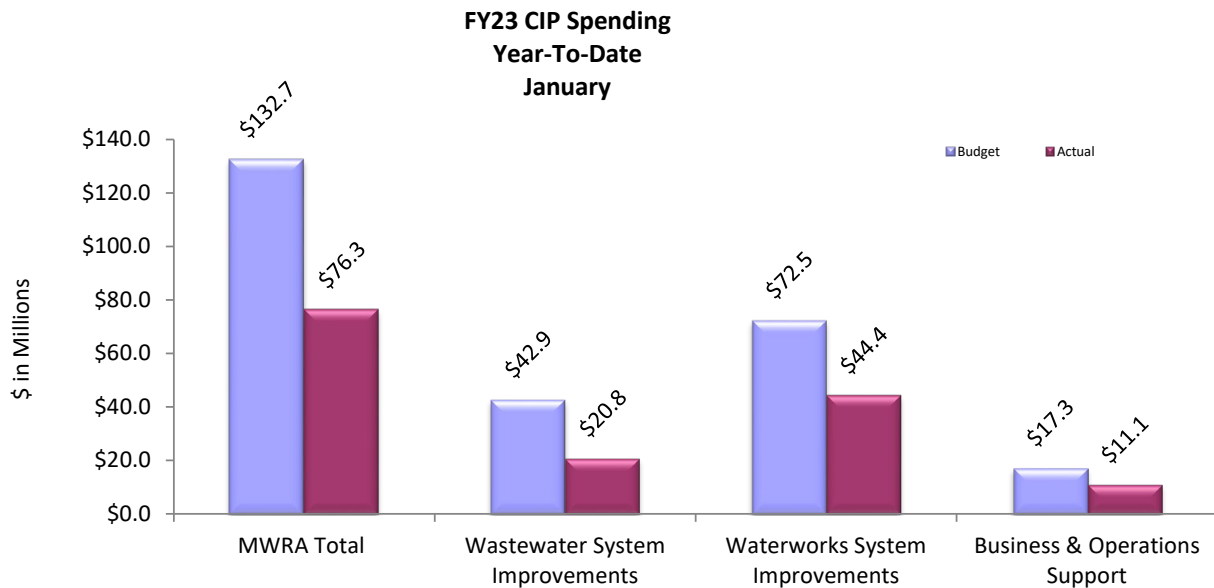
Revenues of \$497.9 million were \$11.2 million or 2.3% over budget. Other User Charges were \$4.6 million over budget primarily due to water usage by the City of Cambridge. Investment Income was \$5.7 million over budget due to higher than budgeted interest rates (2.57% actual vs

1.10% budget). Other Revenue was \$895,000 or 19.3% over budget due to Miscellaneous Revenue of \$412,000, Energy Revenue of \$264,000, and Permit Fees of \$144,000, all primarily due to timing.

### FY23 Capital Improvement Program

Capital expenditures in Fiscal Year 2023 through January total \$76.3 million, \$56.3 million or 42.5% 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 \$72.3 million, \$37.0 million or 33.9% under planned spending.



Overall, CIP spending reflects the underspending in Wastewater Improvements (\$22.0 million), Waterworks (\$28.1 million) and Business and Operations Support (\$6.2 million). Major variances in Wastewater are primarily due to timing of community grants and loans for the I/I Local Financial Assistance Program, contractor behind schedule on Nut Island Odor Control and HVAC Improvements, completion of some design and inspection tasks later than anticipated for the Ward Street and Columbus Park Headworks Upgrades Design/ESDC, schedule change for Deer Island Roofing Replacement, and lower than projected task order work on Deer Island As-needed Design contracts.

Waterworks variances are primarily due to timing of community loan distributions for the Water Loan Program, long lead-time for piping material for Waltham Water Pipeline, timing of contractors work for WASM/SPSM West PRV, and timing of purchases for Watershed Land. This was partially offset by timing of consultants work for Tunnel Redundancy Preliminary Design and

MEPA Review, Section 53 and 99 Improvements - Design/CA and NEH Improvements Design – ESDC, and contractor progress for Section 89/29 Replacement and CP-1 NEH Improvements.

**FY23 Budget and FY23 Actual Variance by Program**  
(in millions)

\$ in Millions	Budget	Actuals	\$ Var.	% Var.
<b>Wastewater System Improvements</b>				
Interception & Pumping	22.0	14.3	(7.7)	-34.9%
Treatment	6.5	0.8	(5.8)	-88.3%
Residuals	0.0	0.0	0.0	0.0%
CSO	1.2	1.3	0.1	11.5%
Other	13.1	4.4	(8.7)	-66.5%
<b>Total Wastewater System Improvements</b>	<b>\$42.9</b>	<b>\$20.8</b>	<b>(\$22.0)</b>	<b>-51.4%</b>
<b>Waterworks System Improvements</b>				
Drinking Water Quality Improvements	2.5	1.1	(1.4)	-55.1%
Transmission	32.2	18.4	(13.8)	-42.7%
Distribution & Pumping	20.9	21.1	0.2	0.9%
Other	16.9	3.8	(13.2)	-77.8%
<b>Total Waterworks System Improvements</b>	<b>\$72.5</b>	<b>\$44.4</b>	<b>(\$28.1)</b>	<b>-38.8%</b>
<b>Business &amp; Operations Support</b>	<b>\$17.3</b>	<b>\$11.1</b>	<b>(\$6.2)</b>	<b>-36.0%</b>
<b>Total MWRA</b>	<b>\$132.7</b>	<b>\$76.3</b>	<b>(\$56.3)</b>	<b>-42.5%</b>

*Totals may not add due to rounding*

**FY23 Spending by Program:**

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

**Waterworks Transmission:** Net underspending of \$13.8 million

- \$7.9 million for Waltham Water Pipeline due to long lead time for piping material.
- \$1.2 million for WASM/Spot Pond Supply Main Pressure Reducing Valves Improvements and \$0.2 million for CP-1 WASM 3 Rehabilitation due to timing of contractors work.
- \$0.8 million for Maintenance Garage/Wash Bay/Storage Building - Construction due to schedule change.
- \$0.8 million for CP-2 Shaft 5 Construction due to updated schedule.
- \$0.7 million for Watershed Land due to timing of purchases.
- \$0.3 million for Program Support Services due to timing of consultant work.
- This underspending was partially offset by overspending of \$0.9 million for Tunnel Redundancy Preliminary Design & MEPA Review due to timing of consultant work.

**Other Waterworks:** Net underspending of \$13.2 million

- \$11.4 million for Local Financial Assistance due to timing of community loan distributions.
- \$1.5 million for Carroll SCADA Upgrades construction due to timing of work and long lead time for materials.
- \$0.8 million for Electrical Distribution Upgrades at Southborough due to timing of work.



**Other Wastewater:** Net underspending of \$8.7 million

- \$8.7 million for Community I/I due to timing of community distributions of grants and loans.

**Interception & Pumping:** Net underspending of \$7.7 million

- \$3.5 million for Nut Island Odor Control & HVAC Improvements Phase 2 – Construction due to contractor behind schedule.
- \$2.0 million for Ward Street and Columbus Park Headworks - Design/CA due to completion of some design and inspection tasks later than anticipated.
- \$0.3 million for Remote Headworks Shaft Access Improvements due to slower than anticipated start-up.

**Business & Operations Support:** Net underspending of \$6.2 million

- \$1.1 million for FY19-23 Vehicle Purchases due to timing of purchases and supply chain issues.
- \$2.6 million for Cabling, \$0.8 million for Oracle Database Appliance, \$0.5 million for MAXIMO Interface Enhancements due to timing of work.
- \$0.8 million for Security Equipment & Installation due to timing of security initiatives.
- This underspending was partially offset by \$1.0 million for Office Space Modification due to contractor progress is ahead of projected spending.

**Wastewater Treatment:** Net underspending of \$5.8 million

- \$2.2 million for Clarifier Rehab Phase 2 Construction due to schedule change.
- \$1.0 million for Deer Island Roofing Replacement due to schedule change.
- \$0.8 million for South System Pump Station VFD Design/ESDC due to updated construction schedule.
- \$0.6 million for As-needed Design due to lower than projected task order work.

**Drinking Water Quality Improvements:** Net underspending of \$1.4 million

- \$0.7 million for Carroll Chemical Feed System Improvements – Construction due to timing of work.
- \$0.4 million for Carroll Technical Assistance for lower than projected task order work.
- \$0.3 million for Marlborough Pumping Station Construction due to timing of work.

**Water Distribution and Pumping:** Net overspending of \$0.2 million

- \$0.7 million for Cathodic Protection Shafts N & W due to scope changes.
- \$0.6 million for Section 56 Replacement/Saugus River - Design/CA due to permitting delays.
- \$0.2 million for CP3-Sections 23, 24, 47 Rehabilitation due to timing of work.
- This underspending was partially offset by overspending of \$0.5 million for Section 53 and 99 Improvements - Design/CA, \$0.5 million NEH Improvements Design – ESDC and \$0.4 million for Sections 25, 75, 24, 47, 59 & 60 - Design/CA due to timing of consultants work, and \$0.8 million for Section 89/29 Replacement – Construction and \$0.6 million for CP-1 NEH Improvements due to contractors progress.

**Combined Sewer Overflow:** Net overspending of \$0.1 million

- \$0.8 million for unplanned Fort Point Channel Sewer Separation work, partially offset by \$0.5 million for Chelsea 008 Pipe Replacement due to schedule change and long lead time for materials.

**Construction Fund Balance**

The construction fund balance was \$111.4 million as of the end of January. Commercial Paper/Revolving Loan available capacity was \$110 million.

**ATTACHMENTS:**

Attachment 1 – Variance Summary January 2023

Attachment 2 – Current Expense Variance Explanations

Attachment 3 – Capital Improvement Program Variance Explanations

Attachment 4 – Year-End Current Expense Projections vs. Budget

ATTACHMENT 1  
FY23 Actuals vs. FY23 Budget

	Jan 2023 Year-to-Date				
	Period 7 YTD Budget	Period 7 YTD Actual	Period 7 YTD Variance	%	FY23 Approved
<b><u>EXPENSES</u></b>					
WAGES AND SALARIES	\$ 65,497,836	\$ 58,510,414	\$ (6,987,422)	-10.7%	\$ 118,980,689
OVERTIME	3,103,465	2,863,066	(240,399)	-7.7%	5,337,896
FRINGE BENEFITS	13,677,220	13,178,831	(498,389)	-3.6%	23,961,641
WORKERS' COMPENSATION	1,469,855	1,141,529	(328,326)	-22.3%	2,519,751
CHEMICALS	8,954,663	10,134,680	1,180,017	13.2%	14,994,036
ENERGY AND UTILITIES	18,012,853	19,205,359	1,192,506	6.6%	30,896,365
MAINTENANCE	19,716,916	20,297,744	580,828	2.9%	33,241,023
TRAINING AND MEETINGS	279,479	155,786	(123,693)	-44.3%	492,197
PROFESSIONAL SERVICES	4,579,530	4,215,144	(364,386)	-8.0%	8,197,575
OTHER MATERIALS	2,842,858	2,757,727	(85,131)	-3.0%	6,728,862
OTHER SERVICES	16,685,337	15,184,835	(1,500,502)	-9.0%	28,372,237
<b>TOTAL DIRECT EXPENSES</b>	<b>\$ 154,820,012</b>	<b>\$ 147,645,115</b>	<b>\$ (7,174,898)</b>	<b>-4.6%</b>	<b>\$ 273,722,272</b>
INSURANCE	\$ 2,259,232	\$ 2,286,169	\$ 26,937	1.2%	\$ 3,916,002
WATERSHED/PILOT	10,542,685	10,018,853	(523,832)	-5.0%	28,890,762
HEEC PAYMENT	3,675,978	3,825,485	149,507	4.1%	6,225,566
MITIGATION	1,001,361	1,001,361	-	0.0%	1,735,694
ADDITIONS TO RESERVES	1,395,261	1,395,261	-	0.0%	2,418,453
RETIREMENT FUND	12,555,203	12,555,203	-	0.0%	12,555,203
POST EMPLOYEE BENEFITS	-	-	-	---	4,754,061
<b>TOTAL INDIRECT EXPENSES</b>	<b>\$ 31,429,720</b>	<b>\$ 31,082,332</b>	<b>\$ (347,388)</b>	<b>-1.1%</b>	<b>\$ 60,495,741</b>
STATE REVOLVING FUND	\$ 50,529,896	\$ 50,773,683	\$ 243,787	0.5%	\$ 96,342,495
SENIOR DEBT	171,825,606	169,569,194	(2,256,412)	-1.3%	302,169,940
DEBT SERVICE ASSISTANCE	(1,182,494)	(1,182,494)	-	0.0%	(1,182,494)
CURRENT REVENUE/CAPITAL	-	-	-	---	18,200,000
SUBORDINATE MWRA DEBT	43,774,575	43,774,575	-	0.0%	75,491,975
LOCAL WATER PIPELINE CP	-	-	-	---	6,233,882
CAPITAL LEASE	1,855,996	1,855,996	-	0.0%	3,217,060
VARIABLE DEBT	-	(2,464,173)	(2,464,173)	---	-
DEFEASANCE ACCOUNT	-	4,476,798	4,476,798	---	-
DEBT PREPAYMENT	-	-	-	---	5,500,000
<b>TOTAL CAPITAL FINANCE EXPENSE</b>	<b>\$ 266,803,579</b>	<b>\$ 266,803,579</b>	<b>\$ -</b>	<b>0.0%</b>	<b>\$ 505,972,858</b>
<b>TOTAL EXPENSES</b>	<b>\$ 453,053,311</b>	<b>\$ 445,531,026</b>	<b>\$ (7,522,286)</b>	<b>-1.7%</b>	<b>\$ 840,190,871</b>
<b><u>REVENUE &amp; INCOME</u></b>					
RATE REVENUE	\$ 469,989,230	\$ 469,989,230	\$ -	0.0%	\$ 814,648,000
OTHER USER CHARGES	6,714,313	11,298,090	4,583,777	68.3%	9,836,507
OTHER REVENUE	4,643,265	5,538,598	895,333	19.3%	6,139,104
RATE STABILIZATION	565,385	565,385	-	0.0%	980,000
INVESTMENT INCOME	4,781,510	10,470,554	5,689,044	119.0%	8,587,260
<b>TOTAL REVENUE &amp; INCOME</b>	<b>\$ 486,693,703</b>	<b>\$ 497,861,858</b>	<b>\$ 11,168,154</b>	<b>2.3%</b>	<b>\$ 840,190,871</b>

**ATTACHMENT 2  
Current Expense Variance Explanations**

Total MWRA	FY23 Budget YTD January	FY23 Actuals January	FY23 YTD Actual vs. FY23 Budget		Explanations
			\$	%	
<b>Direct Expenses</b>					
Wages & Salaries	65,497,836	58,510,414	(6,987,422)	-10.7%	Wages and Salaries are under budget by \$7.0 million. Year to date, there have been 112 fewer average FTEs (1,055 versus 1,167 budget), lower average new hire salaries versus retirees, the timing of backfilling vacant positions.
Overtime	3,103,465	2,863,066	(240,399)	-7.7%	Overtime expenses were less than budget by \$240,000 or 7.7%. Lower spending mainly in Field Operations of \$315,000 primarily for planned overtime (due to vacancies), emergency overtime being under budget and minimal bad weather conditions, and Engineering & Construction of \$66,000, are partially offset by higher spending at Deer Island of \$164,000 for shift coverage due to vacancies for DITP Operations positions.
Fringe Benefits	13,677,220	13,178,831	(498,389)	-3.6%	Fringe Benefit spending was lower than budget by \$498,000 or 3.6%. Lower than budget in <b>Health Insurance</b> of \$344,000, 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. Also, <b>Paid Family Medical Leave</b> of \$53,000 and <b>Unemployment Insurance</b> of \$29,000 were less than budget.
Worker's Compensation	1,469,855	1,141,529	(328,326)	-22.3%	Worker's Compensation expenses were lower than budget by \$328,000 or 22.3%. The lower expenses were due to favorable variances in <b>Compensation Payments</b> of \$255,000, <b>Medical Payments</b> of \$44,000, and <b>Administrative Expenses</b> of \$29,000. Due to uncertainties of when spending will happen, the budget is spread evenly throughout the year.
Chemicals	8,954,663	10,134,680	1,180,017	13.2%	Chemicals were greater than budget by \$1.2 million or 13.2%. Higher than budget spending on <b>Sodium Hypochlorite</b> of \$708,000 driven by DITP of \$546,000 due to additional usage for disinfection and odor control due to lower flows and higher pricing, \$46,000 at JCWTP mostly due to higher contract price, and \$98,000 in Wastewater Operations primarily at Nut Island Headworks, <b>Ferric Chloride</b> of \$238,000 driven by DITP to keep the orthophosphate levels in the digesters at the desired target level and higher pricing, <b>Hydrogen Peroxide</b> of \$185,000 driven by DITP to reduce elevated Hydrogen Sulfide (H2S) levels for pretreatment and odor control and provide maintenance safely, <b>Carbon Dioxide</b> of \$117,000 primarily due to increased contract price, <b>Activated Carbon</b> of \$106,000 driven by DITP of \$43,000 and Wastewater Operations of \$59,000 due to timing of replacements, partially offset by <b>Sodium Bisulfite</b> of \$125,000 primarily in Wastewater Operations. DITP flows are 14.4% lower than the budget and CWTP preliminary flows are 5.0% greater than the budget through January. 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	FY23 Budget YTD January	FY23 Actuals January	FY23 YTD Actual vs. FY23 Budget		Explanations
			\$	%	
Utilities	18,012,853	19,205,359	1,192,506	6.6%	Utilities were greater than budget by \$1.2 million or 6.6%. Overspending in <b>Electricity</b> of \$1.3 million primarily at DITP of \$1.0 million driven by higher real time pricing as well as higher usage and peak demand charges. Electricity in Field Operations was greater than budget by \$254,000 due to T&D and Generation costs were greater than budget.
Maintenance	19,716,916	20,297,744	580,828	2.9%	Maintenance was greater than budget by \$581,000 or 2.9%, largely driven by the timing of projects. <i>Maintenance Services</i> are over budget by \$397,000 due to higher <b>Plant &amp; Machinery Services</b> of \$1.5 million due to timing of some service contracts and the Norumbega Tank Cleaning award being greater than budgeted, <b>Computer Software Licenses</b> of \$86,000 due to timing (and includes Windows Exchange renewal and the multi-factor authentication software support renewal that was greater than budgeted). These are partially offset by lower <b>Building &amp; Grounds Services</b> of \$742,000 due to timing and includes the Eastern Ave Traffic Light and Shaft 8 Retaining Wall work and lower <b>Computer Services</b> of \$389,000 also due to timing. <i>Maintenance Materials</i> are over budget by \$184,000 driven by Warehouse Inventory of \$213,000, higher <b>Computer Materials</b> of \$89,000, timing for <b>HVAC Materials</b> of \$59,000 and <b>Plant &amp; Machinery Materials</b> of \$57,000, partially offset by <b>Pipeline Materials</b> of \$115,000 and Electrical Materials of \$83,000 also due to timing.
Training & Meetings	279,479	155,786	(123,693)	-44.3%	Training & Meetings was lower than budget by \$124,000 or 44.3% is primarily due to timing driven by MIS (\$103,000), DITP (\$16,000), Water Redundancy (\$12,000), Procurement (\$8,000), and Engineering & Construction (\$10,000), partially offset by higher spending in Field Operations \$26,000.
Professional Services	4,579,530	4,215,144	(364,386)	-8.0%	Professional Services were less than budget by \$364,000 or 8.0% driven by lower <b>Other Services</b> of \$146,000, <b>Computer Systems Consultant</b> of \$109,000, <b>Engineering Services</b> of \$79,000, and <b>Lab &amp; Testing and Analysis</b> of \$62,000 primarily due to timing, partially offset by higher <b>Legal Services</b> of \$59,000, also due to timing.
Other Materials	2,842,858	2,757,727	(85,131)	-3.0%	Other Materials were lower than budget by \$85,000 or 3.0% driven by <b>Vehicle Expense</b> of \$282,000 primarily due to delay in installation of electrical vehicle chargers, <b>Computer Software</b> of \$86,000 and <b>Equipment Furniture</b> of \$65,000 due to timing, partially offset by <b>Vehicle Purchase/Replacements</b> of \$391,000 also due to timing of purchases.
Other Services	16,685,337	15,184,835	(1,500,502)	-9.0%	Other Services were lower than budget by \$1.5 million or 9.0% for <b>Sludge Pelletization</b> of \$545,000 and <b>Grit &amp; Screenings Removal</b> \$110,000 due to lower quantities, <b>Telecommunications</b> of \$446,000, <b>Memberships/Dues/Subscriptions</b> of \$41,000 primarily due to timing. Also, lower <b>Police Details</b> of \$42,000 was due to less than anticipated as-needed details.
<b>Total Direct Expenses</b>	<b>154,820,012</b>	<b>147,645,115</b>	<b>(7,174,897)</b>	<b>-4.6%</b>	

**ATTACHMENT 2  
Current Expense Variance Explanations**

Total MWRA	FY23 Budget YTD January	FY23 Actuals January	FY23 YTD Actual vs. FY23 Budget		Explanations
			\$	%	
<b>Indirect Expenses</b>					
Insurance	2,259,232	2,286,169	26,937	1.2%	Higher Premiums of \$30,000 than budgeted and lower Payments/Claims of \$3,000 than budgeted.
Watershed/PILOT	10,542,685	10,018,853	(523,832)	-5.0%	Lower Watershed Reimbursement of \$524,000 favorable variance to budget driven by lower spending on Fringe Benefits and Wages & Salaries, partially offset by higher spending on Maintenance and Equipment due to timing, and Utilities and Fuel.
HEEC Payment	3,675,978	3,825,485	149,507	4.1%	HEEC True Up of \$93,000, HEEC Revenue Requirement of \$54,000, and O&M Charge of \$3,000.
Mitigation	1,001,361	1,001,361	-	0.0%	
Addition to Reserves	1,395,261	1,395,261	-	0.0%	
Pension Expense	12,555,203	12,555,203	-	0.0%	
Post Employee Benefits	-	-	-		
<b>Total Indirect Expenses</b>	<b>31,429,720</b>	<b>31,082,332</b>	<b>(347,388)</b>	<b>-1.1%</b>	
<b>Debt Service</b>					
Debt Service	266,803,579	267,986,073	1,182,494	0.4%	Debt Service matches the budget after the transfer of 4.5 million to the Dereasance account, driven by lower than budgeted variable interest expense of \$2.5 million, lower Senior Debt spending of \$2.3 million as a result of the refunding and new money transactions, partially offset by higher SRF spending of \$0.2 million due to timing.
Debt Service Assistance	-	(1,182,494)	(1,182,494)		
<b>Total Debt Service Expenses</b>	<b>266,803,579</b>	<b>266,803,579</b>	<b>-</b>	<b>0.0%</b>	
<b>Total Expenses</b>	<b>453,053,311</b>	<b>445,531,026</b>	<b>(7,522,284)</b>	<b>-1.7%</b>	

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

Total MWRA	FY23 Budget YTD January	FY23 Actuals January	FY23 YTD Actual vs. FY23 Budget		Explanations
			\$	%	
<b>Revenue &amp; Income</b>					
Rate Revenue	469,989,230	469,989,231	1	0.0%	
Other User Charges	6,714,314	11,298,091	4,583,777	68.3%	Water usage by the City of Cambridge.
Other Revenue	4,643,266	5,538,599	895,333	19.3%	Other Revenue was \$895,000 or 19.3% over budget due to <b>Miscellaneous Revenue</b> of \$412,000, <b>Energy Revenue</b> of \$264,000, <b>Permit Fees</b> of \$144,000, and <b>Energy Rebates</b> of \$59,000 primarily due to timing.
Rate Stabilization	565,385	565,385	-	0.0%	HEEC Reserve.
Investment Income	4,781,510	10,470,555	5,689,045	119.0%	Investment Income is over budget due to higher than budgeted interest rates (2.57% actual vs 1.10% budget).
<b>Total Revenue</b>	<b>486,693,705</b>	<b>497,861,861</b>	<b>11,168,156</b>	<b>2.3%</b>	
<b>Net Revenue in Excess of Expenses</b>	<b>33,640,394</b>	<b>52,330,835</b>	<b>18,690,440</b>		

**ATTACHMENT 3  
FY23 CIP Year-to-Date Variance Report (\$000s)**

	FY23 Plan YTD January	FY23 Actuals YTD January	YTD Actuals vs. Plan		Explanations
			\$	%	
<b>Wastewater</b>					
Interception & Pumping (I&P)	\$22,029	\$14,349	(\$7,680)	-34.9%	<u>Underspending</u> Nut Island Odor Control & HVAC Improvements Phase 2 - Construction: \$3.5M (contractor behind schedule) Ward Street & Columbus Park Headworks Upgrades - Design/CA: \$2.0M (completed some design and inspection tasks later than anticipated) Remote Headworks Shaft Access Improvements - Construction: \$309k (slower than anticipated start-up) Wastewater Meter System Equipment Replacement: \$324k (timing of final work)
Treatment	\$6,542	\$766	(\$5,777)	-88.3%	<u>Underspending</u> Primary & Secondary Clarifier Rehab Phase 2 Construction: \$2.2M (schedule change) DITP Roofing Replacement: \$1.0M (updated schedule) South System Pump Station VFD Design/ESDC: \$0.8 million (construction schedule change) As-Needed Design: \$582k (lower than projected task order work)
Residuals	\$0	\$0			
<u>Overspending</u>					
CSO	\$1,210	\$1,349	\$139	11.5%	Fort Point Channel Sewer Separation: \$750k (unplanned community managed work) <u>Underspending</u> Chelsea 008 Pipe Replacement: \$525k (updated schedule and long lead time for materials)
Other Wastewater	\$13,086	\$4,383	(\$8,703)	-66.5%	<u>Underspending</u> I/I Local Financial Assistance: \$8.7M (timing of community distributions of grants and loans)
<b>Total Wastewater</b>	<b>\$42,868</b>	<b>\$20,847</b>	<b>(\$22,021)</b>	<b>-51.4%</b>	



**ATTACHMENT 3  
FY23 CIP Year-to-Date Variance Report (\$000s)**

	FY23 Plan YTD January	FY23 Actuals YTD January	YTD Actuals vs. Plan		Explanations
			\$	%	
<b>Waterworks</b>					
Drinking Water Quality Improvements	\$2,461	\$1,106	(\$1,355)	-55.1%	<u>Underspending</u> CWTP Chemical Feed System Improvements - Construction: \$687k, and Marlboro Pump Station Construction: \$273k (timing of work)
					CWTP Technical Assistance: \$399k (lower than projected task order work)
Transmission	\$32,214	\$18,445	(\$13,769)	-42.7%	<u>Underspending</u> Waltham Water Pipeline - Construction: \$7.9M (long lead time for piping material) WASM/SPSM West Pressure Reducing Valves - Construction: \$1.2M, and WASM 3 Rehabilitation, CP-1 : \$231k (timing of contractors work) Quabbin Maintenance Garage/Wash Bay/Storage Building - Construction: \$806K (schedule change) CP-2 Shaft 5 Construction: \$0.8 million (schedule change) Watershed Land: \$662k (timing of purchases) Program Support Services: \$300k (timing of consultant work) <u>Offset Overspending</u> Preliminary Design & MEPA Review: \$895k (timing of consultant work)
Distribution & Pumping	\$20,906	\$21,098	\$191	0.9%	<u>Underspending</u> Cathodic Protection Shafts N & W: \$700k (scope changes) CP3-Sections 23, 24, 47 Rehabilitation: \$161k (timing of work) Section 56 Replacement/Saugus River - Design/CA: \$589k (permitting delays) <u>Offset Overspending</u> Section 53 and 99 Improvements - Design/CA: \$470k, Sections 25, 75, 24, 47, 59 & 60 - Design/CA: \$359k, and NEH Improvements Design - ESDC: \$513k, and (timing of consultants work) Section 89/29 Replacement - Construction: \$783k and CP-1 NEH Improvements: \$643k (contractors progress)
Other Waterworks	\$16,916	\$3,756	(\$13,161)	-77.8%	<u>Underspending</u> Local Water Pipeline Financial Assistance Program: \$11.4M (timing of community distributions) CWTP SCADA Upgrades: \$1.5M (timing of work and long lead time for materials) Electrical Distribution Upgrades at Southborough: 760k (timing of work) <u>Offset Overspending</u> New Roofs at Water Pump Stations - Construction: \$621k (timing of work)

**ATTACHMENT 3  
FY23 CIP Year-to-Date Variance Report (\$000s)**

	FY23 Plan YTD January	FY23 Actuals YTD January	YTD Actuals vs. Plan		Explanations
			\$	%	
<b>Total Waterworks</b>	\$72,498	\$44,405	(\$28,094)	-38.8%	

**ATTACHMENT 3  
FY23 CIP Year-to-Date Variance Report (\$000s)**

	FY23 Plan YTD January	FY23 Actuals YTD January	YTD Actuals vs. Plan		Explanations
			\$	%	
<b>Business &amp; Operations Support</b>					
<b>Total Business &amp; Operations Support</b>	\$17,303	\$11,081	(\$6,222)	-36.0%	<u>Underspending</u> Cabling: \$2.6M, Oracle Database Appliance: \$775k, and MAXIMO Interface Enhancements: \$519k (timing of work) FY19-23 Vehicle Purchases: \$1.1M (timing of purchases and supply chain issues) Security Equipment & Installation: \$824k (timing of security initiatives) MSSP/SIEM: \$627k (scope reduction) <u>Offset Overspending</u> Office Space Modifications: \$1.0M (contractor progress is ahead of projected spending)
<b>Total MWRA</b>	\$132,669	\$76,333	(\$56,337)	-42.5%	


**Attachment 4**  
**FY23 Budget vs. FY23 Projection**

TOTAL MWRA	FY23 Budget	FY23 Projection	Change FY23 Budget vs FY23 Projection	
			\$	%
<b>EXPENSES</b>				
WAGES AND SALARIES	\$ 118,980,689	\$ 107,083,089	\$ (11,897,600)	-10.0%
OVERTIME	5,337,896	5,437,896	100,000	1.9%
FRINGE BENEFITS	23,961,641	23,242,792	(718,849)	-3.0%
WORKERS' COMPENSATION	2,519,751	2,141,788	(377,963)	-15.0%
CHEMICALS	14,994,036	18,335,315	3,341,279	22.3%
ENERGY AND UTILITIES	30,896,365	35,376,697	4,480,332	14.5%
MAINTENANCE	33,241,022	32,741,022	(500,000)	-1.5%
TRAINING AND MEETINGS	492,197	369,148	(123,049)	-25.0%
PROFESSIONAL SERVICES	8,197,575	8,033,624	(163,952)	-2.0%
OTHER MATERIALS	6,728,862	6,228,862	(500,000)	-7.4%
OTHER SERVICES	28,372,237	28,172,237	(200,000)	-0.7%
<b>TOTAL DIRECT EXPENSES</b>	<b>\$ 273,722,272</b>	<b>\$ 267,162,470</b>	<b>\$ (6,559,802)</b>	<b>-2.4%</b>
INSURANCE	\$ 3,916,002	\$ 3,962,994	46,992	1.2%
WATERSHED/PILOT	28,890,762	27,867,171	(1,023,591)	-3.5%
HEEC PAYMENT	6,225,566	6,798,522	572,956	9.2%
MITIGATION	1,735,694	1,735,694	-	0.0%
ADDITIONS TO RESERVES	2,418,452	2,418,452	-	0.0%
RETIREMENT FUND	12,555,203	12,555,203	-	0.0%
POSTEMPLOYMENT BENEFITS	4,754,061	4,754,061	-	0.0%
<b>TOTAL INDIRECT EXPENSES</b>	<b>\$ 60,495,741</b>	<b>\$ 60,092,097</b>	<b>\$ (403,643)</b>	<b>-0.7%</b>
STATE REVOLVING FUND	\$ 96,342,495	\$ 88,499,360	(7,843,135)	-8.1%
SENIOR DEBT	302,169,940	297,519,940	(4,650,000)	-1.5%
SUBORDINATE DEBT	75,491,975	73,222,379	(2,269,596)	-3.0%
LOCAL WATER PIPELINE CP	6,233,882	5,384,397	(849,485)	-13.6%
CURRENT REVENUE/CAPITAL	18,200,000	18,200,000	-	0.0%
CAPITAL LEASE	3,217,060	3,217,060	-	0.0%
DEBT PREPAYMENT	5,500,000	5,500,000	-	0.0%
DEBT SERVICE ASSISTANCE	(1,182,494)	(1,182,494)	-	0.0%
<b>TOTAL DEBT SERVICE</b>	<b>\$ 505,972,858</b>	<b>\$ 490,360,642</b>	<b>\$ (15,612,216)</b>	<b>-3.1%</b>
<b>TOTAL EXPENSES</b>	<b>\$ 840,190,871</b>	<b>\$ 817,615,209</b>	<b>\$ (22,575,661)</b>	<b>-2.7%</b>
<b>REVENUE &amp; INCOME</b>				
RATE REVENUE	\$ 814,648,000	\$ 814,648,000	-	0.00%
OTHER USER CHARGES	9,836,508	14,548,590	4,712,082	47.9%
OTHER REVENUE	6,139,104	6,983,303	844,199	13.8%
RATE STABILIZATION	980,000	980,000	-	0.0%
INVESTMENT INCOME	8,587,259	20,276,259	11,689,000	136.1%
<b>TOTAL REVENUE &amp; INCOME</b>	<b>\$ 840,190,871</b>	<b>\$ 857,436,152</b>	<b>\$ 17,245,281</b>	<b>2.1%</b>

**VARIANCE:**

**\$ (39,820,943) \$ (39,820,942)**


**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** February 15, 2023  
**SUBJECT:** Preliminary FY24 Water and Sewer Assessments

**COMMITTEE:** Administration, Finance & Audit

INFORMATION  
 VOTE

Michael Cole, Budget Director  
Leo Norton, Asst. Mgr, Rates, Revenue and Finance  
 Preparer/Title

  
Thomas J. Durkin  
 Director of Finance

*Consistent with the Proposed FY24 Current Expense Budget (CEB), preliminary FY24 water and sewer assessments are based on a Rate Revenue Requirement of \$842,545,600, a 3.4% increase over the FY23 Rate Revenue Requirement. This includes a 3.9% increase for water assessments, and a 3.1% increase for sewer assessments.*

*The preliminary FY24 Rate Revenue Requirement will be allocated to MWRA communities based on their respective shares of CY22 MWRA water use, the average of CY20-CY22 wastewater flows, corresponding strength of flows, and population.*

**RECOMMENDATION:**

For information only. This staff summary provides information on preliminary FY24 wholesale water and sewer assessments. Staff plan to transmit preliminary FY24 assessments to MWRA communities on or before Thursday, February 16, 2023.

**DISCUSSION:**

The Proposed FY24 CEB recommends a Rate Revenue Requirement of \$842,545,600, an increase of 3.4% over the final FY23 requirement.

	Rate Revenue Requirement		Change from FY23	
	FY24 Preliminary	FY23 Approved	\$\$	Percent
<b>Water</b>	\$299,674,196	\$288,304,865	\$11,369,331	3.9%
<b>Sewer</b>	\$542,871,404	\$526,343,135	\$16,528,269	3.1%
<b>Total</b>	\$842,545,600	\$814,648,000	\$27,897,600	3.4%

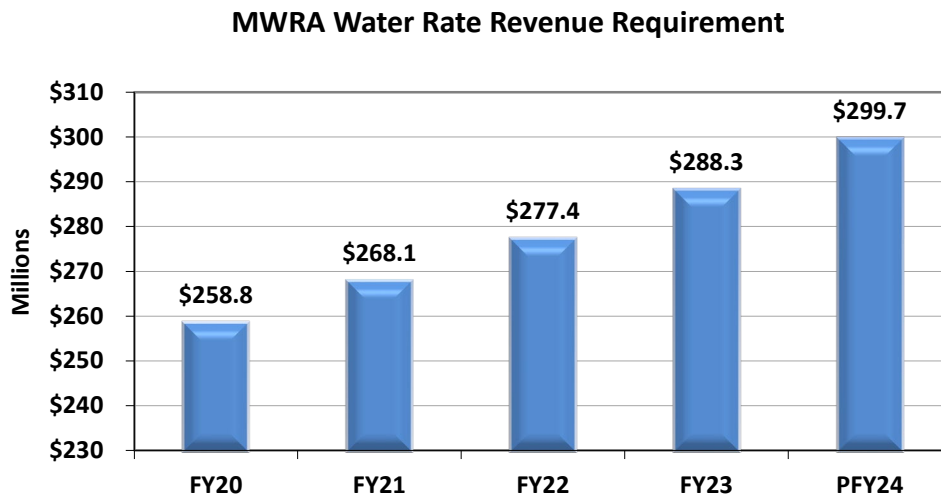
*Attachment 1* summarizes preliminary FY24 wholesale water and sewer charges for each MWRA community.

The estimated annual impact of the preliminary FY24 assessment increase on the MWRA portion of the average household bill for water and sewer service in a fully served MWRA community that uses close to the system average of 61,000 gallons of water per year is approximately \$20.

### Water Assessments

MWRA calculates water assessments for customer communities by apportioning the water rate revenue requirement according to each community's share of total water use for the most recent calendar year. Preliminary FY24 assessments are based on each community's share of CY22 water use of 66.099 billion gallons, a 6.1% increase compared to CY21 water use of 62.294 billion gallons. Changes in FY24 water assessments for customer communities compared to FY23 assessments will vary considerably, depending on each community's use of water and how that use factors into their share of the water system in CY22 compared to CY21. This is particularly true for communities that receive only part of their water from MWRA.

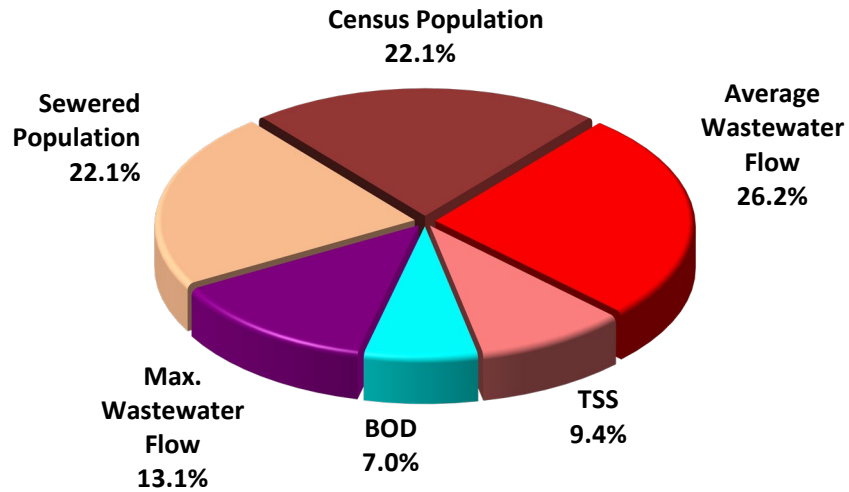
The graph below illustrates the water Rate Revenue Requirement for the past 5 years. The changes from FY23 to PFY24 are primarily the result of increased debt service related to water system rehabilitation and improvements.



### Sewer Assessments

MWRA allocates sewer assessments based on each community's share of the following allocation parameters: three-year average of annual wastewater flow, maximum month flow, strength of flow, census population, and sewer population.

On average, approximately 56% of a community's preliminary FY24 sewer assessment is based on each community's share of wastewater flow and strength of flow (total suspended solids or TSS and biochemical oxygen demand or BOD), and approximately 44% is based on population as illustrated in the following graph.

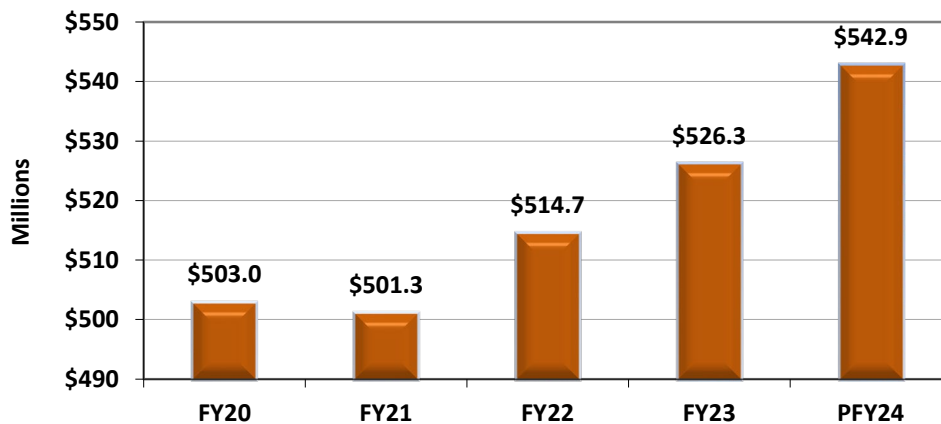


Both the preliminary and final FY24 assessments for population will be calculated using July 2021 community population estimates from the U.S. Census Bureau, as well as the percentage of total population receiving municipal sewer service reported by each MWRA community.

Preliminary FY24 assessments have also been calculated using the average of CY20, CY21 and CY22 wastewater flows. CY21 wastewater flows were estimated during the sewer system meter replacement project, and are based on the average of CY18, CY19, and CY20 flows.

The graph below illustrates the sewer Rate Revenue Requirement for the past 5 years. As with the water utility, the annual changes continue to be primarily the result of increased debt service related to sewer system rehabilitation and improvements.

**MWRA Sewer Rate Revenue Requirement**



## **Clinton and Lancaster Sewer Assessments**

Proposed FY24 operating and maintenance (O&M) and capital expenses attributable to the Clinton Wastewater Treatment Plant are \$5,255,341, an increase of 7.7% from FY23. This includes a 10.3% increase in operating costs, and a 2.4% increase in capital expenses.

In accordance with the agreement that allows the City of Worcester to take water from the Wachusett watershed, Worcester is charged approximately 7.9% of the direct operating expenses for the Clinton Wastewater Treatment Plant. Proposed FY24 direct operating expenses for the plant total \$3,016,112, resulting in a preliminary FY24 charge of \$238,604 for the City of Worcester. Worcester has been paying this annual charge to MWRA or its predecessors since 1914.

The Town of Clinton and the Lancaster Sewer District are allocated proportional shares of the remaining expenses based on annual metered wastewater flow to the Clinton Plant. Based on proposed FY24 expenses and CY22 wastewater flows, Lancaster's preliminary FY24 charge is \$503,432, an increase of 9.5% from FY23.

The preliminary FY24 charge for the Town of Clinton is \$4,460,022. However, pursuant to Chapter 307, Section 8 of the Acts of 1987, Clinton is only liable for the first \$500,000 of its share of O&M and capital costs.

*Attachment 2* details the expenses and corresponding charges for the Clinton Sewer Service Area.

## **CVA Water Assessments**

Based on the Proposed FY24 CIP and CEB for the Chicopee Valley Aqueduct (CVA) water system, the preliminary FY24 system assessment is \$5,595,448, an increase of 2.6% from FY23.

MWRA's CVA water assessment methodology allocates CVA assessments to the three communities served by the CVA system based on their share of prior calendar year water use. Based on CY22 water use, preliminary FY24 assessments are as follows:

- City of Chicopee: \$3,934,611 (+3.4%)
- South Hadley Fire District #1: \$ 780,674 (-3.1%)
- Town of Wilbraham: \$ 880,163 (+4.1%)

As with the metropolitan water system, changes in preliminary FY24 water assessments for each CVA community compared to FY23 assessments vary depending on their water use and how that use factors into their share of the CVA water system in CY22 compared to CY21.

*Attachment 3* details the expenses and corresponding assessments for the CVA Water Service Area.



### **Wholesale Water Rate**

MWRA's wholesale water rate per million gallons is applied to customers purchasing MWRA water on a pay-as-you-go basis (including customers with emergency agreements). The preliminary wholesale water rate for FY24 is \$4,533.73 per million gallons. The proposed FY24 CEB includes revenue of \$149,264 from these customers.

### **Retail Sewer Rate**

MWRA provides direct retail sewer service to Regis College in Weston and the New England Center for Children in Southborough. In accordance with MWRA Policy #OP.11, "Admission of New Community to MWRA Sewer System and Other Requests for Sewer Service to Locations Outside MWRA Sewer Service Area", both entities are charged a modified per million gallon "retail" rate that captures both sanitary and non-sanitary flows. Based on preliminary FY24 sewer assessments, the FY24 retail sewer rate will be \$8,624.33 per million gallons. The Proposed FY24 CEB includes revenue of \$66,300 from these customers.

### **ATTACHMENTS:**

1. Preliminary FY24 Water and Sewer Assessments
2. Clinton Wastewater Treatment Plant Sewer User Charge Determination
3. Chicopee Valley Aqueduct System Assessment

MWRA Fully Served Water and Sewer Customers	Final FY23 Water Assessment	Preliminary FY24 Water Assessment	Percent Change from FY23	Final FY23 Sewer Assessment	Preliminary FY24 Sewer Assessment	Percent Change from FY23	Final FY23 Combined Assessment	Final FY24 Combined Assessment	Dollar Change from FY23	Percent Change from FY23
ARLINGTON	\$5,648,095	\$5,720,769	1.3%	\$9,392,520	\$9,540,188	1.6%	\$15,040,615	\$15,260,957	\$220,342	1.5%
BELMONT	3,134,847	3,279,924	4.6%	5,677,771	5,750,128	1.3%	8,812,618	9,030,052	217,434	2.5%
BOSTON (BWSC)	99,390,501	101,386,970	2.0%	149,691,865	150,452,142	0.5%	249,082,366	251,839,112	2,756,746	1.1%
BROOKLINE	8,018,472	8,531,815	6.4%	14,277,393	14,169,817	-0.8%	22,295,865	22,701,632	405,767	1.8%
CHELSEA	5,460,876	5,463,330	0.0%	9,362,781	9,685,642	3.4%	14,823,657	15,148,972	325,315	2.2%
EVERETT	6,422,774	6,175,804	-3.8%	10,050,691	10,215,285	1.6%	16,473,465	16,391,089	(82,376)	-0.5%
FRAMINGHAM	9,531,024	9,521,962	-0.1%	13,631,754	14,461,853	6.1%	23,162,778	23,983,815	821,037	3.5%
LEXINGTON	8,493,467	8,828,116	3.9%	8,432,789	8,984,837	6.5%	16,926,256	17,812,953	886,697	5.2%
MALDEN	8,758,033	8,561,057	-2.2%	14,707,651	15,024,152	2.2%	23,465,684	23,585,209	119,525	0.5%
MEDFORD	7,666,268	7,819,151	2.0%	13,036,799	13,751,572	5.5%	20,703,067	21,570,723	867,656	4.2%
MELROSE	3,499,715	3,518,885	0.5%	7,179,811	7,110,592	-1.0%	10,679,526	10,629,477	(50,049)	-0.5%
MILTON	4,022,582	4,174,377	3.8%	6,075,110	6,417,188	5.6%	10,097,692	10,591,565	493,873	4.9%
NEWTON	14,157,661	14,422,960	1.9%	22,803,614	23,854,723	4.6%	36,961,275	38,277,683	1,316,408	3.6%
NORWOOD	4,502,690	4,644,379	3.1%	8,789,271	9,423,014	7.2%	13,291,961	14,067,393	775,432	5.8%
QUINCY	13,856,502	14,034,325	1.3%	22,536,756	23,400,943	3.8%	36,393,258	37,435,268	1,042,010	2.9%
READING	2,807,828	2,825,027	0.6%	5,378,343	5,337,985	-0.8%	8,186,171	8,163,012	(23,159)	-0.3%
REVERE	6,348,919	6,408,428	0.9%	12,301,606	12,736,382	3.5%	18,650,525	19,144,810	494,285	2.7%
SOMERVILLE	9,471,778	9,495,582	0.3%	17,021,568	18,045,573	6.0%	26,493,346	27,541,155	1,047,809	4.0%
STONEHAM	3,289,382	3,615,828	9.9%	5,652,234	5,988,841	6.0%	8,941,616	9,604,669	663,053	7.4%
WALTHAM	11,044,210	11,989,985	8.6%	14,787,236	15,019,139	1.6%	25,831,446	27,009,124	1,177,678	4.6%
WATERTOWN	4,147,401	4,200,455	1.3%	6,800,255	7,130,880	4.9%	10,947,656	11,331,335	383,679	3.5%
WINTHROP	1,918,276	1,864,410	-2.8%	3,970,824	4,041,335	1.8%	5,889,100	5,905,745	16,645	0.3%
<b>TOTAL</b>	<b>\$241,591,301</b>	<b>\$246,483,539</b>	<b>2.0%</b>	<b>\$381,558,642</b>	<b>\$390,542,211</b>	<b>2.4%</b>	<b>\$623,149,943</b>	<b>\$637,025,750</b>	<b>\$13,875,807</b>	<b>2.2%</b>

MWRA Sewer and Partial Water Customers	Final FY23 Water Assessment	Preliminary FY24 Water Assessment	Percent Change from FY23	Final FY23 Sewer Assessment	Preliminary FY24 Sewer Assessment	Percent Change from FY23	Final FY23 Combined Assessment	Final FY24 Combined Assessment	Dollar Change from FY23	Percent Change from FY23
ASHLAND	\$0	\$0	-	\$2,886,179	\$2,983,380	3.4%	\$2,886,179	\$2,983,380	\$97,201	3.4%
BURLINGTON	1,253,355	1,667,173	33.0%	6,021,745	6,244,520	3.7%	7,275,100	7,911,693	636,593	8.8%
CANTON	2,022,211	2,488,876	23.1%	4,862,293	5,093,614	4.8%	6,884,504	7,582,490	697,986	10.1%
NEEDHAM	1,464,186	1,886,141	28.8%	6,760,857	7,197,220	6.5%	8,225,043	9,083,361	858,318	10.4%
STOUGHTON	118,822	103,512	-12.9%	5,471,765	5,887,949	7.6%	5,590,587	5,991,461	400,874	7.2%
WAKEFIELD	2,617,209	3,335,982	27.5%	6,848,039	6,926,012	1.1%	9,465,248	10,261,994	796,746	8.4%
WELLESLEY	3,325,451	4,209,290	26.6%	6,273,591	6,739,505	7.4%	9,599,042	10,948,795	1,349,753	14.1%
WILMINGTON	716,510	1,144,770	59.8%	3,230,781	3,217,849	-0.4%	3,947,291	4,362,619	415,328	10.5%
WINCHESTER	1,943,817	2,355,584	21.2%	4,592,965	4,959,019	8.0%	6,536,782	7,314,603	777,821	11.9%
WOBURN	5,385,782	5,848,063	8.6%	9,810,353	10,756,215	9.6%	15,196,135	16,604,278	1,408,143	9.3%
<b>TOTAL</b>	<b>\$18,847,343</b>	<b>\$23,039,391</b>	<b>22.2%</b>	<b>56,758,568</b>	<b>60,005,283</b>	<b>5.7%</b>	<b>\$75,605,911</b>	<b>\$83,044,674</b>	<b>\$7,438,763</b>	<b>9.8%</b>

MWRA Sewer-only Customers	Final FY23 Water Assessment	Preliminary FY24 Water Assessment	Percent Change from FY23	Final FY23 Sewer Assessment	Preliminary FY24 Sewer Assessment	Percent Change from FY23	Final FY23 Combined Assessment	Final FY24 Combined Assessment	Dollar Change from FY23	Percent Change from FY23
BEDFORD				\$3,696,476	\$3,833,925	3.7%	\$3,696,476	\$3,833,925	\$137,449	3.7%
BRAINTREE				10,873,607	10,899,682	0.2%	10,873,607	10,899,682	26,075	0.2%
CAMBRIDGE				28,578,466	30,601,129	7.1%	28,578,466	30,601,129	2,022,663	7.1%
DEDHAM				6,153,063	6,487,689	5.4%	6,153,063	6,487,689	334,626	5.4%
HINGHAM SEWER DISTRICT				2,132,148	2,203,534	3.3%	2,132,148	2,203,534	71,386	3.3%
HOLBROOK				1,936,897	2,066,903	6.7%	1,936,897	2,066,903	130,006	6.7%
NATICK				6,287,053	6,533,310	3.9%	6,287,053	6,533,310	246,257	3.9%
RANDOLPH				6,940,976	7,268,264	4.7%	6,940,976	7,268,264	327,288	4.7%
WALPOLE				4,449,490	4,695,133	5.5%	4,449,490	4,695,133	245,643	5.5%
WESTWOOD				3,274,618	3,305,699	0.9%	3,274,618	3,305,699	31,081	0.9%
WEYMOUTH				13,703,131	14,428,642	5.3%	13,703,131	14,428,642	725,511	5.3%
<b>TOTAL</b>				<b>\$88,025,925</b>	<b>\$92,323,910</b>	<b>4.9%</b>	<b>\$88,025,925</b>	<b>\$92,323,910</b>	<b>\$4,297,985</b>	<b>4.9%</b>

MWRA Water-only Customers	Final FY23 Water Assessment	Preliminary FY24 Water Assessment	Percent Change from FY23	Final FY23 Sewer Assessment	Preliminary FY24 Sewer Assessment	Percent Change from FY23	Final FY23 Combined Assessment	Final FY24 Combined Assessment	Dollar Change from FY23	Percent Change from FY23
LYNNFIELD WATER DISTRICT	\$865,543	\$945,421	9.2%				\$865,543	\$945,421	\$79,878	9.2%
MARBLEHEAD	2,941,372	3,128,400	6.4%				2,941,372	3,128,400	187,028	6.4%
NAHANT	578,355	592,179	2.4%				578,355	592,179	13,824	2.4%
SAUGUS	5,020,868	5,444,071	8.4%				5,020,868	5,444,071	423,203	8.4%
SOUTHBOROUGH	984,014	1,201,452	22.1%				984,014	1,201,452	217,438	22.1%
SWAMPSCOTT	2,552,649	2,608,664	2.2%				2,552,649	2,608,664	56,015	2.2%
WESTON	2,456,156	2,866,120	16.7%				2,456,156	2,866,120	409,964	16.7%
<b>TOTAL</b>	<b>\$15,398,957</b>	<b>\$16,786,307</b>	<b>9.0%</b>				<b>\$15,398,957</b>	<b>\$16,786,307</b>	<b>\$1,387,350</b>	<b>9.0%</b>

MWRA Partial Water-only Customers	Final FY23 Water Assessment	Preliminary FY24 Water Assessment	Percent Change from FY23	Final FY23 Sewer Assessment	Preliminary FY24 Sewer Assessment	Percent Change from FY23	Final FY23 Combined Assessment	Final FY24 Combined Assessment	Dollar Change from FY23	Percent Change from FY23
DEDHAM-WESTWOOD WATER DISTRICT	\$256,078	\$670,539	161.8%				\$256,078	\$670,539	\$414,461	161.8%
LYNN (LWSC)	187,732	133,607	-28.8%				187,732	133,607	(54,125)	-28.8%
MARLBOROUGH	6,733,069	7,134,455	6.0%				6,733,069	7,134,455	401,386	6.0%
NORTHBOROUGH	1,508,715	1,475,638	-2.2%				1,508,715	1,475,638	(33,077)	-2.2%
PEABODY	3,781,670	3,950,720	4.5%				3,781,670	3,950,720	169,050	4.5%
<b>TOTAL</b>	<b>\$12,467,264</b>	<b>\$13,364,959</b>	<b>7.2%</b>				<b>\$12,467,264</b>	<b>\$13,364,959</b>	<b>\$897,695</b>	<b>7.2%</b>
<b>SYSTEMS TOTAL</b>	<b>\$288,304,865</b>	<b>\$299,674,196</b>	<b>3.94%</b>	<b>\$526,343,135</b>	<b>\$542,871,404</b>	<b>3.14%</b>	<b>\$814,648,000</b>	<b>\$842,545,600</b>	<b>\$27,897,600</b>	<b>3.42%</b>

Massachusetts Water Resources Authority  
Clinton Wastewater Treatment Plant  
Sewer User Charge Determination

BUDGETED EXPENSES: Preliminary FY24	
Clinton Direct Operating Expenses:	\$3,016,112
MWRA Support Allocation:	601,166
Subtotal O&M Expenses:	\$3,617,278
Total Debt Service Expenses:	\$1,638,063
Total Clinton Service Area Expenses	\$5,255,341
Less Revenue (City of Worcester Payment)	-238,604
Clinton WWTP Rate Revenue Requirement:	\$5,016,737

WASTEWATER FLOW and FLOW SHARES:	CY2022		
	Town of Clinton Flow	Lancaster Sewer District Flow	Total Wastewater Flow
Average Daily Flow (MGD)	2.039	0.254	2.293
Average Flow (MG/YR)	744.134	92.885	837.019
Proportional Share of Flow	88.90%	11.10%	100.0%

Sewer User Charge Determination

TOWN OF CLINTON	
O&M Expenses	\$3,617,278
Less Revenue (City of Worcester Payment)	-238,604
O&M Expenses to be Recovered	\$3,378,673
Clinton's Share of Flow	88.90%
Clinton's Share of O&M Costs	\$3,003,737
<b>Total Clinton O&amp;M Charge</b>	<b>\$3,003,737</b>
Debt Service Costs to be Recovered	\$1,638,063
Clinton's Share of Wastewater Flow	88.90%
<b>Total Clinton Debt Service Charge</b>	<b>\$1,456,285</b>
<b>Total Clinton O&amp;M and Debt Service Charge</b>	<b>\$4,460,022</b>
Less MWRA Water Ratepayer Subsidy	-3,960,022
Billable Charge to the Town of Clinton as per CH. 307, Section 8 The Acts of 1987	\$500,000

LANCASTER SEWER DISTRICT	
O&M Expenses	\$3,617,278
Less Revenue (City of Worcester Payment)	-238,604
O&M Expenses to be Recovered	\$3,378,673
Lancaster's Share of Flow	11.10%
Lancaster's Share of O&M Costs	\$374,936
<b>Total Lancaster Sewer District O&amp;M Charge</b>	<b>\$374,936</b>
Debt Service Costs to be Recovered	\$1,638,063
Lancaster's Share of Wastewater Flow	11.10%
<b>Total Lancaster Sewer District Debt Service Charge</b>	<b>\$181,778</b>
<b>Total Lancaster O&amp;M and Debt Service Charge</b>	<b>\$556,714</b>
Billable Charge to Lancaster Sewer District	\$556,714

Clinton WWTP Charges and Payment Schedule

Sewer Customer	Billable Charges	Change from Prior Year	
		Amount	Percentage
Town of Clinton (billable)	\$500,000	\$0	0.0%
Lancaster Sewer District (before adj.)	\$556,714		
Lancaster Sewer District (prior yr. adj.)	-\$53,282		
Lancaster Sewer District (billable)	\$503,432	\$43,548	9.5%
<b>Total Billable Sewer Use Charges</b>	<b>\$1,003,432</b>		
City of Worcester	\$238,604	\$210,531	13.3%

Payment 1 on or before Sept 15, 2023	Payment 2 on or before Nov 15, 2023	Payment 3 on or before Feb 15, 2024	Payment 4 on or before May 15, 2024
\$125,000	\$125,000	\$125,000	\$125,000
\$125,858	\$125,858	\$125,858	\$125,858
<b>\$250,858</b>	<b>\$250,858</b>	<b>\$250,858</b>	<b>\$250,858</b>
\$0	\$0	\$238,604	\$0

# Massachusetts Water Resources Authority

Chicopee Valley Aqueduct Water System Assessment

## Preliminary FY2024 Budget and Assessments

CVA Operating Budget	FY23	PFY24	Change from Prior Year	
			Dollars	Percent
CVA Cost Center Expenses	\$1,077,970	\$1,198,278	\$120,308	11.2%
Allocated Waterworks Expenses	149,654	140,609	-9,045	-6.0%
Allocated Watershed/PILOT	509,913	492,720	-17,193	-3.4%
Allocated Watershed Land Acquisition	30,433	29,889	-544	-1.8%
Allocated MWRA Indirect Expenses	700,654	696,055	-4,599	-0.7%
<b>SUBTOTAL OPERATING BUDGET</b>	<b>\$2,468,624</b>	<b>\$2,557,551</b>	<b>\$88,927</b>	<b>3.6%</b>

CVA Capital Budget	FY23	PFY24	Change from Prior Year	
			Dollars	Percent
Capital Expenses	\$3,047,744	\$3,080,800	\$33,056	1.1%
<b>TOTAL CVA BUDGET</b>	<b>\$5,516,368</b>	<b>\$5,638,351</b>	<b>\$121,983</b>	<b>2.2%</b>

BASE COMMUNITY ASSESSMENT	FY23 <sup>1</sup>	PFY24 <sup>2</sup>	Change from Prior Year	
			Dollars	Percent
Chicopee	\$3,847,836	\$3,964,421	\$116,585	3.0%
South Hadley Fire District #1	814,572	787,057	-27,514	-3.4%
Wilbraham	853,960	886,872	32,912	3.9%
<b>CVA BASE SYSTEM ASSESSMENT</b>	<b>\$5,516,368</b>	<b>\$5,638,351</b>	<b>\$121,983</b>	<b>2.2%</b>

PRIOR PERIOD ADJUSTMENTS <sup>3</sup>	FY23	PFY24	Change from Prior Year	
			Dollars	Percent
Chicopee	-\$43,446	-\$29,810	\$13,636	-31.4%
South Hadley Fire District #1	-9,107	-6,384	2,723	-29.9%
Wilbraham	-8,833	-6,709	2,125	-24.1%
<b>TOTAL ADJUSTMENTS</b>	<b>-\$61,386</b>	<b>-\$42,903</b>	<b>\$18,484</b>	<b>-30.1%</b>


ADJUSTED ASSESSMENT	FY23	PFY24	Change from Prior Year	
			Dollars	Percent
Chicopee	\$3,804,390	\$3,934,611	\$130,221	3.4%
South Hadley Fire District #1	805,465	780,674	-24,791	-3.1%
Wilbraham	845,127	880,163	35,036	4.1%
<b>ADJUSTED ASSESSMENT</b>	<b>\$5,454,982</b>	<b>\$5,595,448</b>	<b>\$140,466</b>	<b>2.58%</b>

<sup>1</sup> Based on CY2021 water use and before prior period adjustments.

<sup>2</sup> Based on CY2022 water use and before prior period adjustments.

<sup>3</sup> Prior period adjustment to account for budget to actual expenses.

**STAFF SUMMARY**


**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** February 15, 2023  
**SUBJECT:** Transmittal of the FY24 Proposed Current Expense Budget

**COMMITTEE** Administration, Finance & Audit

     INFORMATION

  X   VOTE

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

  
Thomas J. Durkin  
Director, Finance

*MWRA's long-term goal has been to provide sustainable and predictable assessments to its member communities. Over the past few years, the Advisory Board challenged MWRA to limit the assessment increases at a level less than 4%. MWRA has continuously been successful in achieving this goal by utilizing a multi-year rates management strategy, which includes controlled spending, the use of historical variable rate assumptions, and the practice of targeted debt defeasance.*

*To ensure that the MWRA's long-term goals will continue to be met in future years, staff recommend continuing conservative, fiscally responsible budgeting practices while addressing all outstanding long-term liabilities.*

*The FY24 Proposed Budget puts forth a 3.42% combined assessment increase.*

*The FY24 Proposed Budget reflects the benefits of a planned \$15.4 million defeasance to be executed in FY23 with targeted savings during FY24-28. Besides the planned defeasances, the Authority is continuing to address the Pension and the Other Post Employment Benefits (OPEB) obligations, which are the largest long-term liabilities after the debt payments.*

**RECOMMENDATION:**

To approve transmittal of the FY24 Proposed Current Expense Budget to the MWRA Advisory Board for its 60 day review and comment period.

## **DISCUSSION:**

This staff summary presents an overview of the FY24 Proposed Current Expense Budget (CEB) and projects the Rate Revenue Requirement for the next five years.

### **Summary**

The FY24 Proposed Budget recommends a combined increase in rates and charges of 3.42%. Capital Financing costs remain the largest component of the CEB and account for 57.0% of total expenses. Total expenses are \$879.8 million, an increase of \$39.7 million or 4.7% over the FY23 Budget. There are no offsets from Debt Service Assistance (DSA) assumed for FY24 or in any future years.

Total expenses include \$501.3 million for Capital Financing costs and \$378.5 million for operating expenses, of which \$310.0 million is for Direct Expenses and \$68.5 million is for Indirect Expenses. The total expense increase over FY23 was driven by the following:

- Lower Capital Financing costs of \$4.6 million due to the structure of the existing debt, the FY24 projected borrowings, and the impact of the projected defeasance.
- Higher Direct Expenses of \$36.3 million mainly due to higher Chemicals due to updated costs, Other Services due to increased costs for Sludge Pelletization, Wages & Salaries, Maintenance due to updated costs and needs, and Utilities due to updated electricity costs.
- Higher Indirect Expenses of \$8.0 million mainly due to latest valuation for the Retirement Fund contribution, updated HEEC costs and updated costs for Watershed Reimbursement.

The FY24 Proposed Budget revenues, excluding rate revenue, total \$37.3 million, an increase of \$11.8 million or 46.0% over the FY23 Budget. The FY24 Proposed Budget non-rate revenue budget includes \$16.1 million in Other User Charges and Other Revenue, \$20.9 million for Investment Income, and \$0.3 million in Rate Stabilization.

The FY24 Proposed Rate Revenue Requirement is \$842.5 million, an increase of \$27.9 million or 3.42% over the FY23 Budget.

*Table 1 on the following page provides a comparison of the FY24 Proposed CEB and FY23 Budget by major categories. Additional detail by line item is provided in Attachments A.*

<b>Table 1</b>				
<b>MWRA Current Expense Budget</b>				
<b>FY24 Proposed Budget versus FY23 Approved Budget</b>				
(\$ in Millions)	FY23 Approved Budget	FY24 Proposed Budget	\$ Change	% Change
Directs	\$ 273.7	\$ 310.0	\$ 36.3	13.3%
Indirects	60.5	68.5	8.0	13.3%
<b>Sub-Total Operating Expenses</b>	<b>\$ 334.2</b>	<b>\$ 378.5</b>	<b>\$ 44.3</b>	<b>13.3%</b>
Capital Financing (before Offsets)	507.2	501.3	(5.8)	-1.1%
<i>Offsets: Bond Redemption</i> <sup>1</sup>	-	-	-	0.0%
Variable Debt Savings	-	-	-	0.0%
Debt Service Assistance	(1.2)	-	1.2	-100.0%
<b>Sub-Total Capital Financing</b>	<b>\$ 506.0</b>	<b>\$ 501.3</b>	<b>\$ (4.6)</b>	<b>-0.9%</b>
<b>Total Expenses</b>	<b>\$ 840.2</b>	<b>\$ 879.8</b>	<b>\$ 39.7</b>	<b>4.7%</b>
Investment Income	\$ 8.6	\$ 20.9	\$ 12.3	143.3%
Non-Rate Revenue	16.0	16.1	0.1	0.8%
Rate Stabilization <sup>1</sup>	1.0	0.3	(0.7)	-68.8%
<b>Sub-Total Non-Rate Revenue</b>	<b>\$ 25.5</b>	<b>\$ 37.3</b>	<b>\$ 11.8</b>	<b>46.0%</b>
Rate Revenue	814.6	842.5	27.9	3.42%
<b>Total Revenue &amp; Income</b>	<b>\$ 840.2</b>	<b>\$ 879.8</b>	<b>\$ 39.7</b>	<b>4.7%</b>
<b>FY24 Rate Revenue Increase</b>		<b>3.42%</b>		
<b>Combined Use of Reserves</b>		<b>\$ 0.3</b>		

*1 MWRA has two reserve funds (Bond Redemption and Rate Stabilization) which can be used at the discretion of the Authority to manage the rate revenue requirement. Use of the Bond Redemption reduces total expenses and Rate Stabilization increases total revenue. Under the terms of the General Bond Resolution the annual use of Rate Stabilization funds cannot exceed 10% of the year's senior debt service. Bond Redemption funds can be used only to retire or prepay outstanding debt. There is no annual limit on the amount of Bond Redemption funds used in a year, however the use is tied to the bonds' maturity dates and it is utility specific.*

**EXPENSES:**

Direct Expenses

FY24 Direct Expenses total \$310.0 million, an increase of \$36.3 million, or 13.3%, over the FY23 Budget.

<b>FY24 PROPOSED CURRENT EXPENSE BUDGET</b>				
<b>MWRA DIRECT EXPENSES BY LINE ITEM</b>				
Line Item	FY23 Approved Budget	FY24 Proposed Budget	Change FY24 vs FY23	
WAGES AND SALARIES	\$118,980,689	\$123,095,429	\$4,114,740	3.5%
OVERTIME	\$5,337,896	\$5,575,588	\$237,692	4.5%
FRINGE BENEFITS	\$23,961,641	\$25,365,846	\$1,404,205	5.9%
WORKERS' COMPENSATION	\$2,519,751	\$2,144,395	(\$375,356)	-14.9%
CHEMICALS	\$14,994,036	\$28,340,408	\$13,346,372	89.0%
ENERGY AND UTILITIES	\$30,896,365	\$33,097,598	\$2,201,233	7.1%
MAINTENANCE	\$33,241,022	\$36,521,085	\$3,280,063	9.9%
TRAINING AND MEETINGS	\$492,197	\$498,597	\$6,400	1.3%
PROFESSIONAL SERVICES	\$8,197,575	\$10,146,844	\$1,949,269	23.8%
OTHER MATERIALS	\$6,728,862	\$7,309,691	\$580,829	8.6%
OTHER SERVICES	\$28,372,237	\$37,900,991	\$9,528,754	33.6%
<b>TOTAL</b>	<b>\$273,722,272</b>	<b>\$309,996,472</b>	<b>\$36,274,200</b>	<b>13.3%</b>

- *Wages and Salaries* – The budget includes \$123.1 million for Wages and Salaries as compared to \$119.0 million in the FY23 Budget, an increase of \$4.1 million or 3.5%. Regular Pay makes up \$121.1 million or 98.4% of the total Wages and Salaries. The FY24 Proposed Budget includes 1,168.0 FTE’s which is 0.6 more than the FY23 Budget. As always, new hires and backfilling of vacant positions will be managed at the agency level and addressed on a case-by-case basis by senior management. A vacancy adjustment (reduction) of \$2.7 million is factored in to the FY24 Proposed Budget.
- *Overtime* – The budget includes \$5.6 million for Overtime, an increase of \$238,000 or 4.5% over the FY23 Budget. Overtime was increased to reflect wage increases and recent trends in planned overtime for off-hours maintenance, emergency, coverage, and planned projects that include construction.
- *Fringe Benefits* – The budget includes \$25.4 million for Fringe Benefits, an increase of \$1.4 million or 5.9% over the FY23 Budget. Health Insurance premiums total \$21.8 million, an increase of \$1.4 million or 6.6% over the FY23 Budget largely due to an anticipated 6.0% increase in rate structure offset by a change to the number and mix of plans based on FY23 enrollment changes.



- *Workers' Compensation* – The budget includes \$2.1 million for Workers' Compensation. This is \$375,000 or 14.9% less than the prior year's level and is based on historical average spending for Worker's Compensation.
- *Chemicals* – The budget includes \$28.3 million for Chemicals, an increase of \$13.3 million or 89.0% over the FY23 Budget. Higher prices drove the budget increase. Several chemicals increased including Sodium Hypochlorite by \$6.9 million or 135.1%, Ferric Chloride by \$3.4 million or 142.5%, Carbon Dioxide by \$727,000 or 166.4%, Sodium Bisulfite by \$513,000 or 116.4%, Aqua Ammonia by \$413,000 or 142.0%, Liquid Oxygen by \$332,000 or 67.9%, Hydrofluosilic Acid by \$327,000 or 87.8%, and Polymer by \$217,000 or 31.8%. The FY24 Budget includes \$489,000 for the anticipated Deer Island National Pollutant Discharge Elimination System (NPDES) permit, which is projected to have more stringent requirements for enterococcus treatment compliance.
- *Utilities* – The budget includes \$33.1 million for Utilities, which is an increase of \$2.2 million or 7.1% over the FY23 Budget. The budget funds \$25.4 million for Electricity, an increase of \$2.4 million or 10.3% over the FY23 budget primarily due to higher pricing. Natural Gas budget of \$1.1 million is \$277,000 or \$33.1% greater than the FY23 Budget primarily due to higher pricing in Wastewater Operations and Western Facilities. The Diesel Fuel budget of \$3.8 million is \$247,000 or 6.0% lower than the FY23 Budget primarily due to decrease in price and volume at Deer Island and Nut Island Headworks.
- *Maintenance* – The budget includes \$36.5 million for Maintenance projects, an increase of \$3.3 million or 9.9% over the FY23 budget. The increase is driven by Special Equipment Materials of \$1.2 million primarily for hatch cover replacement at Loring Road and for PLCs, cards and parts; Plant and Machinery Services of \$1.0 million for Norumbega and Nash Hill Tank cleaning, Spare Parts for Alewife Brook Pump Station, Deer Island spare disinfection gearbox and spare ALP blower overhauls and coating of centrifuge bases; Computer Software Licenses of \$684,000 for updated costs including Microsoft Office Upgrade, Financial Management System Maintenance, Adobe subscriptions, MAXIMO maintenance, and Oracle DBMS maintenance amongst others; HVAC Services of \$304,000 at Deer Island for glycol feeders, thermal air dryer and isolation valves for hot water loop, and HEX plates for the mechanical room in the Admin/Lab Bldg; and Building and Grounds Services of \$228,000 for updated cost for CVA Intake Repointing and work for Dam Asset Maintenance Plan at Goodnough Dike drain cleaning and relief well redevelopment at Sudbury Dam. These increases are partially offset by lower Plant and Machinery Materials of \$180,000 for materials that were purchased in FY23 including at Deer Island for centrifuge polymer pumps, replace disinfection instrument air compressor, and spare mixer gearbox and other reductions to as-needed items and Computer Services of \$114,000 primarily for SCADA Protocol Software that was not compatible with MWRA network configuration.

- *Training and Meetings* – The budget includes \$499,000 for Training and Meetings, an increase of \$6,000 or 1.3% over the FY23 Budget.
- *Professional Services* – The budget includes \$10.1 million for Professional Services, an increase of \$1.9 million or 23.8% over the FY23 Budget. The increase is driven by Affirmative Action’s Disparity Study of \$800,000 (with the remaining portion to be budgeted in FY25), MIS for Managed Security Service Provider (MSSP)/Security Information and Event Management (SIEM) monitoring of \$462,000, additional Legal services for NPDES permit of \$450,000, Security of \$287,000 for updated rates, and Lab & Testing Analysis of \$284,000 primarily for updated costs including PFAS testing of \$187,000. This increase was partially offset by a decrease in Engineering cost of \$327,000 primarily due to work completed in FY23 or work deleted.
- *Other Materials* – The budget includes \$7.3 million for Other Materials, an increase of \$0.6 million or 8.6% over the FY23 Budget. The increase reflects \$406,000 in Other Materials largely due to office space modifications costs for Phase 3 fit-out for the CNY to Chelsea and Deer Island move that is not funded in the CIP contract. Also, Vehicle Expense Increased by \$113,000 primarily due to increase in fuel costs. This is partially offset by a reduction to Computer Software of \$103,000 driven by SCADA Maintenance software.
- *Other Services* – The budget includes \$37.9 million for Other Services, an increase of \$9.5 million or 33.6% over the FY23 Budget. Sludge Pelletization increased by \$9.9 million or 58.1%. This increase reflects \$6.2 million for 6 months of potential landfill disposal costs due to PFAS issues and \$3.7 million due mainly to the projected cost increase of the NEFCo contract primarily due to inflation. Also, Grit & Screenings Removal of \$207,000 due to updated cost for new contract partially offset by reduced quantities based on historical trends. This increase was partially offset by Space/Lease Rentals of \$1.0 million due to the termination of the CNY lease, partially offset by an increase in cost for Rock Core Shed Lease, and increase in cost of the Chelsea Facility lease.

### Indirect Expenses

Indirect Expenses for FY23 total \$68.5 million, an increase of \$8.0 million or 13.3% over the FY23 Budget. Below are the highlights of major changes:

- The budget includes \$4.3 million for Insurance, an increase of \$349,000 or 8.9% over the FY23 Budget. Insurance Premiums includes a 10% increase due to market conditions and inflation. Claim payments decreased based on a 5-year average.
- The budget includes \$29.3 million for the Watershed Management budget, an increase of \$442,000 or 1.5% above the FY23 Budget. The budget includes \$20.4 million for reimbursement of operating expenses net of revenues, and \$8.9 million for Payment in Lieu of Taxes (PILOT). The budget increase is driven by wage increases. A vacancy

adjustment of \$344,000 (based on 3 FTEs) has been applied to reflect the actual timing of hiring.

- The budget includes \$7.4 million for the Harbor Energy Electric Company (HEEC), an Increase of \$1.2 million or 19.6% over the FY23 Budget. The budget reflects the latest cost estimates and true up payment due for prior calendar year.
- The budget includes \$1.8 million for Mitigation payments to the City of Quincy and Town of Winthrop in accordance with mitigation agreements, which expire in FY25.
- Funding for the Operating Reserve for FY24 is \$6.9 million. The Operating Reserve balance is in compliance with MWRA General Bond Resolution which requires a balance of one-sixth of annual operating expenses. Based on the FY24 Proposed Budget, the required balance is \$56.6 million versus the \$49.7 million required in FY23.
- The budget includes \$16.0 million for the Retirement Fund, an increase of \$3.4 million or 27.2% over the FY23 budget. The increase is comprised of the the January 2022 actuarial valuation of \$1.5 million combined with the addition of OPEB savings of \$1.9 million. Recognizing the investment losses in 2022, staff recommend allocating the \$1.9 million reduced OPEB contribution to the Pension. MWRA's pension fund is at the 89.1% funding level and projected to be fully funded by June 30, 2030.
- The Authority has complied with the GASB 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other than Pensions (OPEB)*, by disclosing this liability in the year-end Financial Statements. As part of the multi-year strategy to address its unfunded liabilities for OPEB and pension holistically, the Board approved a plan to pay down the pension liability and upon reaching full funding, move to address the OPEB obligation. To maximize the benefits in terms of returns and accounting treatment, an irrevocable OPEB Trust was established with Board approval and funding started on April 23, 2015. The OPEB Trust balance was \$63.5 million as of December 31, 2022. Starting in FY18, GASB 75 is the governing regulation for employee OPEB contributions. The proposed \$2.8 million budget is based on 50% of the contribution determined in the December 31, 2021 actuarial report. This is a \$1.9 million reduction from FY23. Staff are recommending that these funds be deposited into the Pension.

### Capital Financing

As a result of the Authority's Capital Improvement Program, capital financing as a percent of total expenses (before offsets) has increased from 36% in 1990 to 57% in the FY24 Proposed Current Expense Budget. Much of this debt service is for completed projects, primarily the Boston Harbor Project, the Integrated Water Supply Improvement Program, and the Combined Sewer Overflow (CSO) projects. MWRA's capital spending, from its inception, has been dominated by projects mandated by court ordered or regulatory requirements, which in total have accounted for ~72% of capital spending to date. Going forward, the majority of spending will be focused on asset protection and water redundancy initiatives.

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

The FY24 Proposed Budget capital financing costs total \$501.3 million and remains the largest portion of the MWRA's budget.

The FY24 Proposed Budget includes a planned defeasance of \$15.9 million in late FY23 which will reduce debt service by approximately \$647,250 in FY24, \$647,250 in FY25, \$647,250 in FY26, \$5.7 million in FY27, and \$8.3 million in FY28.

The FY24 Proposed Budget assumes a 4.25% interest rate for variable rate debt which is 0.75% greater than the FY23 rate. The Authority's variable rate debt assumption is comprised of three separate elements: the interest rate for the daily and weekly series; liquidity fees for the Standby Bond Purchase Agreement, Letter of Credit, and Direct Purchase providers; and remarketing fees. Since March of 2022, the Federal Reserve Open Market Committee has raised interest rates by 4.25% resulting in higher short-term variable interest costs.

The FY24 Proposed Budget capital financing costs decreased by \$4.6 million or 0.9% compared to the FY23 Budget. This decrease in the MWRA's debt service is the result of projected FY24 borrowings and the structure of the existing debt, and by the impact of the projected defeasance.

The FY24 capital financing budget includes:

- \$301.3 million in principal and interest payments on MWRA's senior fixed rate bonds. This amount includes \$24.7 million to support new money issuances of \$175.0 million in May 2023 and \$200.0 million in May 2024;
- \$68.8 million in principal and interest payments on subordinate bonds;
- \$95.1 million in principal and interest payments on SRF loans. This amount includes \$13.3 million to support an issuances of \$160.0 million during fiscal 2024;
- \$19.2 million to fund ongoing capital projects with current revenue and to meet coverage requirements;
- \$6.0 million in debt prepayment;
- \$7.7 million to fund the interest expense related to the Local Water Pipeline Assistance Program; and,
- \$3.2 million for the Chelsea Lease.

## Revenue

FY24 non-rate revenue totals \$37.3 million, which is an increase of \$11.8 million or 46.0% versus the FY23 Budget. The FY24 non-rate revenue budget includes:

- \$10.2 million in Other User Charges, including \$5.6 million for the Chicopee Valley Aqueduct (CVA) communities, \$2.1 million for Deer Island water usage, \$500,000 for the Commonwealth's partial reimbursement for Clinton Wastewater Treatment Plant expenses, and \$426,000 for entrance fees payments from existing member communities. Other User Charges are \$408,000 or 4.1% higher than the FY23 Budget.
- \$5.9 million in Other Revenue, a decrease of \$279,000 or 4.5% from the FY23 Budget. Other Revenue includes \$1.4 million from the sale of the Authority's Renewable Portfolio Credits, revenue from participating in load response programs, and the sale of generated power to the grid. Energy related revenue decreased by \$716,000 reflecting decreased power sales revenue and reduced pricing for Renewable Portfolio Credits. The balance of Other Revenue includes \$2.7 million in permit fees and penalties, an increase of \$220,000 over the FY23 Budget.
- \$20.9 million in Investment Income, an increase of \$12.3 million or 143.3% from the FY23 Budget. The budget reflects rate impacts as a result of interest rate increases experienced over the last year and are expected to continue.

The Rate Revenue Requirement for FY24 is \$842.5 million, an increase \$27.9 million or 3.42% over the FY23 Budget. The Rate Revenue Requirement is the difference between total expenses of \$879.8 million and non-rate revenue of \$37.3 million.

## Planning Estimates and Future Rate Projections

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

Table 3 below presents the combined estimated future rate increases and household charges based on the Proposed FY24 Budget. The planning estimates shown below assume no Debt Service

Assistance from the Commonwealth or use of Bond Redemption reserves through FY28. It does, however, assume the use of Rate Stabilization through FY28.

**Table 3**

<b>Rates &amp; Budget Projections</b>						
<b>Proposed FY24 CEB</b>	<b>FY2023</b>	<b>FY2024</b>	<b>FY2025</b>	<b>FY2026</b>	<b>FY2027</b>	<b>FY2028</b>
Total Rate Revenue (\$000)	\$ 814,648	\$ 842,546	\$ 871,281	\$ 900,505	\$ 927,497	\$ 953,540
Rate Revenue Change from Prior Year (\$000)	\$ 22,564	\$ 27,898	\$ 28,735	\$ 29,224	\$ 26,992	\$ 26,043
Rate Revenue Increase	2.8%	3.4%	3.4%	3.4%	3.0%	2.8%
Use of Reserves (\$000)	\$ 980	\$ 305	\$ 917	\$ 809	\$ 780	\$ 782

***Estimated Household Bill***

Based on annual water usage of 61,000 gallons	\$1,331	\$1,389	\$1,450	\$1,513	\$1,577	\$1,644
Based on annual water usage of 90,000 gallons	\$1,963	\$2,049	\$2,139	\$2,232	\$2,327	\$2,425

**CEB Review and Adoption Process**

The Advisory Board has a minimum of 60 days from the transmittal of the FY24 Proposed Budget to review the budget and prepare comments and recommendations. During the review period, Advisory Board and MWRA staff will continue to meet and evaluate the impact of changing circumstances as they arise. Following the receipt of the Advisory Board’s comments and recommendations, MWRA presents its official responses to the Board of Directors at budget hearings. Staff will present the final budget and the final assessments and for Fiscal Year 2024 to the Board for approval in June 2023.

**ATTACHMENTS:**

- Attachment A FY24 Proposed Current Expense Budget compared to FY23 Budget
- Attachment B FY24 Proposed Current Expense Budget compared to FY23 Projection

## ATTACHMENT A

### FY24 Proposed Budget vs. FY23 Approved Budget

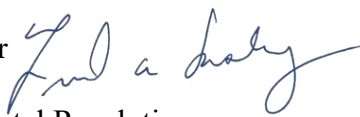
TOTAL MWRA	FY23 Approved Budget	FY24 Proposed Budget	Change FY24 Proposed Budget vs FY23 Approved Budget	
			\$	%
<b>EXPENSES</b>				
WAGES AND SALARIES	\$ 118,980,689	\$ 123,095,429	\$ 4,114,740	3.5%
OVERTIME	5,337,896	5,575,588	237,692	4.5%
FRINGE BENEFITS	23,961,641	25,365,846	1,404,205	5.9%
WORKERS' COMPENSATION	2,519,751	2,144,395	(375,356)	-14.9%
CHEMICALS	14,994,036	28,340,408	13,346,372	89.0%
ENERGY AND UTILITIES	30,896,365	33,097,598	2,201,233	7.1%
MAINTENANCE	33,241,022	36,521,085	3,280,063	9.9%
TRAINING AND MEETINGS	492,197	498,597	6,400	1.3%
PROFESSIONAL SERVICES	8,197,575	10,146,844	1,949,269	23.8%
OTHER MATERIALS	6,728,862	7,309,691	580,829	8.6%
OTHER SERVICES	28,372,237	37,900,991	9,528,754	33.6%
<b>TOTAL DIRECT EXPENSES</b>	<b>\$ 273,722,272</b>	<b>\$ 309,996,472</b>	<b>\$ 36,274,200</b>	<b>13.3%</b>
INSURANCE	\$ 3,916,002	\$ 4,265,380	\$ 349,378	8.9%
WATERSHED/PILOT/DEBT	28,890,762	29,332,594	441,832	1.5%
HEEC PAYMENT	6,225,566	7,445,441	1,219,875	19.6%
MITIGATION	1,735,694	1,779,086	43,392	2.5%
ADDITIONS TO RESERVES	2,418,452	6,884,074	4,465,622	184.6%
RETIREMENT FUND	12,555,203	15,972,805	3,417,602	27.2%
POSTEMPLOYMENT BENEFITS	4,754,061	2,849,365	(1,904,696)	-40.1%
<b>TOTAL INDIRECT EXPENSES</b>	<b>\$ 60,495,741</b>	<b>\$ 68,528,745</b>	<b>\$ 8,033,004</b>	<b>13.3%</b>
STATE REVOLVING FUND	\$ 96,342,495	\$ 95,120,996	\$ (1,221,499)	-1.3%
SENIOR DEBT	302,169,940	301,278,236	(891,704)	-0.3%
SUBORDINATE DEBT	75,491,975	68,763,592	(6,728,383)	-8.9%
LOCAL WATER PIPELINE CP	6,233,882	7,744,625	1,510,743	24.2%
CURRENT REVENUE/CAPITAL	18,200,000	19,200,000	1,000,000	5.5%
CAPITAL LEASE	3,217,060	3,217,060	-	0.0%
DEBT PREPAYMENT	5,500,000	6,000,000	500,000	9.1%
DEBT SERVICE ASSISTANCE	(1,182,494)	0	1,182,494	-100.0%
<b>TOTAL DEBT SERVICE</b>	<b>\$ 505,972,858</b>	<b>\$ 501,324,509</b>	<b>\$ (4,648,349)</b>	<b>-0.9%</b>
<b>TOTAL EXPENSES</b>	<b>\$ 840,190,871</b>	<b>\$ 879,849,727</b>	<b>\$ 39,658,856</b>	<b>4.7%</b>
<b>REVENUE &amp; INCOME</b>				
RATE REVENUE	\$ 814,648,000	\$ 842,545,600	\$ 27,897,600	3.42%
OTHER USER CHARGES	9,836,508	10,244,658	408,150	4.1%
OTHER REVENUE	6,139,104	5,860,303	(278,801)	-4.5%
RATE STABILIZATION	980,000	305,482	(674,518)	-68.8%
INVESTMENT INCOME	8,587,259	20,893,685	12,306,426	143.3%
<b>TOTAL REVENUE &amp; INCOME</b>	<b>\$ 840,190,871</b>	<b>\$ 879,849,727</b>	<b>\$ 39,658,856</b>	<b>4.7%</b>
<b>Rate Revenue Increase over FY23</b>	<b>2.85%</b>	<b>3.42%</b>		

**Attachment B**  
**FY24 Proposed vs. FY23 Projection**

TOTAL MWRA	FY23 Budget	FY23 Projection	FY24 Proposed	Change	
				FY24 Proposed Budget vs FY23 Projection	
				\$	%
<b>EXPENSES</b>					
WAGES AND SALARIES	\$ 118,980,689	\$ 107,083,089	\$ 123,095,429	\$ 16,012,340	15.0%
OVERTIME	5,337,896	5,437,896	5,575,588	137,692	2.5%
FRINGE BENEFITS	23,961,641	23,242,792	25,365,846	2,123,054	9.1%
WORKERS' COMPENSATION	2,519,751	2,141,788	2,144,395	2,607	0.1%
CHEMICALS	14,994,036	18,335,315	28,340,408	10,005,093	54.6%
ENERGY AND UTILITIES	30,896,365	35,376,697	33,097,598	(2,279,099)	-6.4%
MAINTENANCE	33,241,022	32,741,022	36,521,085	3,780,063	11.5%
TRAINING AND MEETINGS	492,197	369,148	498,597	129,449	35.1%
PROFESSIONAL SERVICES	8,197,575	8,033,624	10,146,844	2,113,221	26.3%
OTHER MATERIALS	6,728,862	6,228,862	7,309,691	1,080,829	17.4%
OTHER SERVICES	28,372,237	28,172,237	37,900,991	9,728,754	34.5%
<b>TOTAL DIRECT EXPENSES</b>	<b>\$ 273,722,272</b>	<b>\$ 267,162,470</b>	<b>\$ 309,996,472</b>	<b>\$ 42,834,002</b>	<b>16.0%</b>
INSURANCE	\$ 3,916,002	\$ 3,962,994	\$ 4,265,380	\$ 302,386	7.6%
WATERSHED/PILOT	28,890,762	27,867,171	29,332,594	1,465,423	5.3%
HEEC PAYMENT	6,225,566	6,798,522	7,445,441	646,919	9.5%
MITIGATION	1,735,694	1,735,694	1,779,086	43,392	2.5%
ADDITIONS TO RESERVES	2,418,452	2,418,452	6,884,074	4,465,622	184.6%
RETIREMENT FUND	12,555,203	12,555,203	15,972,805	3,417,602	27.2%
POSTEMPLOYMENT BENEFITS	4,754,061	4,754,061	2,849,365	(1,904,696)	-40.1%
<b>TOTAL INDIRECT EXPENSES</b>	<b>\$ 60,495,741</b>	<b>\$ 60,092,097</b>	<b>\$ 68,528,745</b>	<b>\$ 8,436,648</b>	<b>14.0%</b>
STATE REVOLVING FUND	\$ 96,342,495	\$ 88,499,360	\$ 95,120,996	\$ 6,621,636	7.5%
SENIOR DEBT	302,169,940	297,519,940	301,278,236	3,758,296	1.3%
SUBORDINATE DEBT	75,491,975	73,222,379	68,763,592	(4,458,786)	-6.1%
LOCAL WATER PIPELINE CP	6,233,882	5,384,397	7,744,625	2,360,228	43.8%
CURRENT REVENUE/CAPITAL	18,200,000	18,200,000	19,200,000	1,000,000	5.5%
CAPITAL LEASE	3,217,060	3,217,060	3,217,060	-	0.0%
DEBT PREPAYMENT	5,500,000	5,500,000	6,000,000	500,000	9.1%
DEBT SERVICE ASSISTANCE	(1,182,494)	(1,182,494)	0	1,182,494	-100.0%
<b>TOTAL DEBT SERVICE</b>	<b>\$ 505,972,858</b>	<b>\$ 490,360,642</b>	<b>\$ 501,324,509</b>	<b>\$ 10,963,867</b>	<b>2.2%</b>
<b>TOTAL EXPENSES</b>	<b>\$ 840,190,871</b>	<b>\$ 817,615,209</b>	<b>\$ 879,849,727</b>	<b>\$ 62,234,517</b>	<b>7.6%</b>
<b>REVENUE &amp; INCOME</b>					
RATE REVENUE	\$ 814,648,000	\$ 814,648,000	\$ 842,545,600	\$ 27,897,600	3.42%
OTHER USER CHARGES	9,836,508	14,548,590	10,244,658	(4,303,932)	-29.6%
OTHER REVENUE	6,139,104	6,983,303	5,860,303	(1,123,000)	-16.1%
RATE STABILIZATION	980,000	980,000	305,482	(674,518)	-68.8%
INVESTMENT INCOME	8,587,259	20,276,259	20,893,685	617,426	3.0%
<b>TOTAL REVENUE &amp; INCOME</b>	<b>\$ 840,190,871</b>	<b>\$ 857,436,152</b>	<b>\$ 879,849,727</b>	<b>\$ 22,413,575</b>	<b>2.6%</b>
<b>VARIANCE:</b>		<b>\$ (39,820,943)</b>		<b>\$ (39,820,942)</b>	




**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** February 15, 2023  
**SUBJECT:** Approval of the Eighty-Sixth Supplemental Resolution

**COMMITTEE:** Administration, Finance & Audit

X VOTE  
 \_\_\_\_\_ INFORMATION

Matthew R. Horan, Deputy Director, Finance/Treasurer  
 Preparer/Title

  
Thomas J. Durkin  
 Director of Finance

**RECOMMENDATION:**

To adopt the Eighty-Sixth Supplemental Resolution authorizing the issuance of up to \$650,000,000 of Massachusetts Water Resources Authority Tax-Exempt General Revenue Bonds and General Revenue Refunding Bonds and the supporting Issuance Resolution.

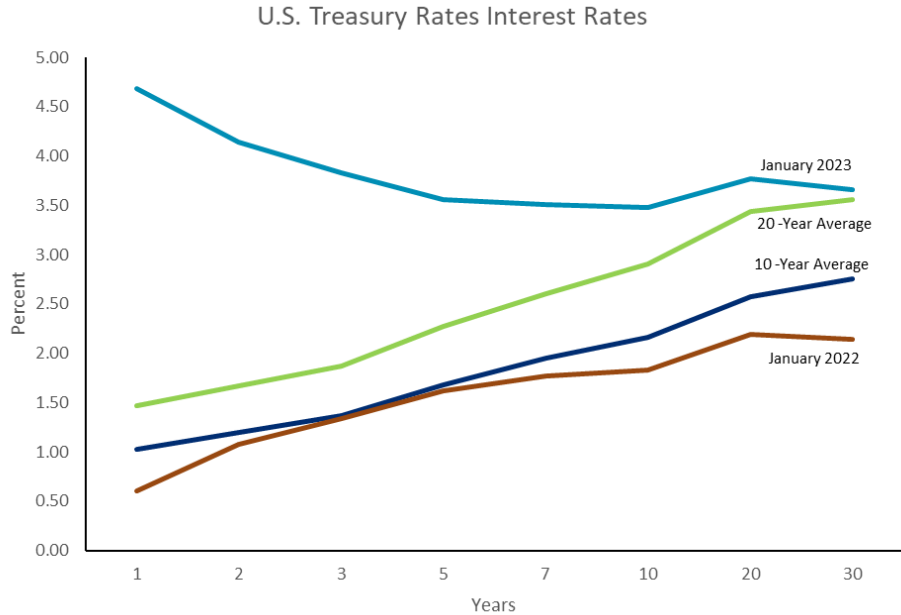
**DISCUSSION:**

The bonds to be issued under this authorization will include approximately \$500 million in refunding bonds and \$150 million in new money bonds. The new money bonds will be used to permanently finance outstanding short-term borrowings used for construction in progress. The \$500 million in refunding bonds will be utilized to complete a refunding of outstanding bonds for interest rate savings. Since tax-exempt advanced refundings are no longer permitted by the internal Revenue Service these bonds will be refunded using a tender process discussed in this staff summary. The following table provides a breakdown of the components of the proposed transaction.

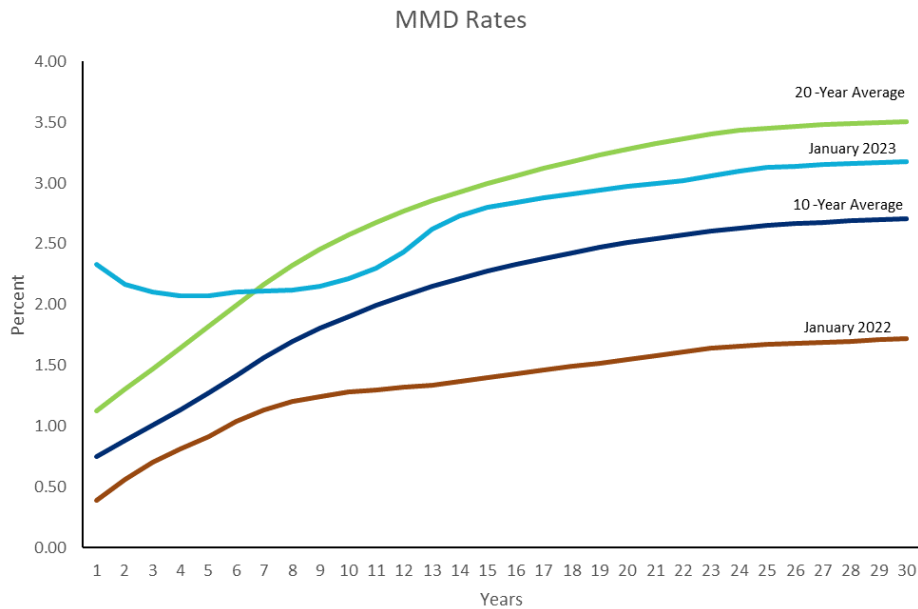
Bond Type	Proposed Issuance Amount
New Money	\$ 150,000,000
Refunding Bonds	\$ 500,000,000
<b>Total Authorization</b>	<b>\$ 650,000,000</b>

Prior to the passage of the Tax Reform and Jobs Act of 2017, MWRA would have utilized tax-exempt bonds to complete an advance refunding for interest rate savings. Where bond proceeds would be placed in an escrow until the time at which the bonds could be called. Unfortunately, the 2017 Act eliminated the ability to use tax-exempt debt to advance refund outstanding tax-exempt bonds. As a result, the use of tax-exempt debt for refundings is limited to current refundings, which limits the new debt issuance to within 90-days of the call date of the outstanding bonds. In 2019 and 2021, MWRA utilized taxable bonds to complete a refunding transaction for

interest rate savings. Starting in March 2022, the Federal Reserve Open Market Committee has increased short-term interest rates by 4.25%. These increases have pushed taxable interest rates much higher across the yield curve. The following graph details the 10 and 20 year averages as compared to the current and last year's US Treasury interest rates.



In addition to the pressure on taxable interest rates, there have been increases to the tax-exempt yield curves. The following graph details the 10 and 20 year averages as compared to the current and last year's Municipal Market Data tax-exempt yield curves.



Given these current market dynamics, tender prices that are attractive to bondholders but below the face value of the bonds are possible. MWRA's 2019 and 2021 taxable bonds were issued when interest rates were extremely low, which makes them good candidates for a tender transaction. As a result of the increasing interest rates, the value of MWRA's bonds held by investors has decreased. Under current market conditions many of these taxable bonds that were issued at par are trading on the secondary market at significant discounts. At the time a bond is initially sold to an investor, the yield that they receive on the bonds is based on the interest rate payment and the market at that time. As interest rates rise and fall, the value of that yield on that bond changes. For example, based on market conditions at the time of issuance a bond has a yield of 4%, if the owner wanted to sell the bond they could get \$1 for every dollar of principal. As interest rates rise, investors can purchase bonds with higher yields in the bond market and as a result that 4% bond has less value. If the owner of that bond wants to sell the bond in this higher interest rate market, they will not receive a dollar for every dollar of principal, but might only receive 95 cents on the dollar. This decreased value for the bonds has created a desire by investors to remove these bonds from their portfolios and allow MWRA to purchase the bonds at less than face value.

In order to determine whether bondholders might have an interest in selling their bonds back to MWRA, a two-week public tender process will be conducted. Under that process, a notice of tender will be sent to applicable MWRA bondholders asking them if they are willing to sell their bonds back and to indicate the price at which they are willing to sell. At the end of the tender period, the offers to sell will be reviewed by MWRA, its financial advisor and the dealer manager to determine which bonds can be purchased at a discount that will result in refunding savings that meet MWRA's criteria. MWRA can execute a tender for these taxable bonds using the proceeds from the newly issued tax-exempt refunding bonds to pay for the tendered bonds. Purchasing the bonds at a discount coupled with the refunding bonds being issued at a lower spot on the yield curve than when the tendered bonds were originally issued drives the savings. Staff will utilize MWRA's debt policy's parameters when reviewing candidates for a refunding for interest rate savings. The criteria are as follows:

- overall savings has a present value of 4.0% or greater;
- individual maturities have a 3% present value savings or an option value above 70%; and
- the efficiency of the escrow is greater than 50% (not applicable/no escrow)

In addition to these criteria, bonds may be refunded or restructured to meet particular organizational and/or strategic needs when it is advantageous to do so. All refunding transactions require the approval of the Board of Directors. Based on current market conditions, approximately \$1.0 billion in bonds have a decreased market value and meet MWRA's refunding criteria. Currently in the market, issuers that have issued tender requests have seen a typical range of 20% to 30% participation rate from bond holders which would result in approximately \$200 million to \$300 million in bonds being tendered. Since the amount of bonds that are tendered will be determined by bondholder interest and market conditions, staff are seeking an authorization of up to \$500 million to ensure that the refunding can be maximized if market conditions became more favorable and generate a larger tender response.

Based on a 30% response to the offer to tender under current market conditions could result in \$15.5 million in budgetary savings with \$10.6 million or 4.6% in present value savings for the recommended bonds. The table to the right details the refunding savings by fiscal year.

Fiscal Year	Prior Debt Service	Refunding Debt Service	Savings
2023	\$ 3,862,335	\$ 2,633,436	\$ (1,228,899)
2024	\$ 20,744,670	\$ 19,905,500	\$ (839,170)
2025	\$ 26,442,238	\$ 25,604,500	\$ (837,738)
2026	\$ 25,577,301	\$ 24,739,000	\$ (838,301)
2027	\$ 25,602,362	\$ 24,766,750	\$ (835,612)
2028	\$ 20,181,882	\$ 19,343,250	\$ (838,632)
2029	\$ 29,253,824	\$ 28,419,000	\$ (834,824)
2030	\$ 33,992,575	\$ 33,155,500	\$ (837,075)
2031	\$ 22,085,875	\$ 21,250,500	\$ (835,375)
2032	\$ 21,922,584	\$ 21,086,500	\$ (836,084)
2033	\$ 6,191,370	\$ 5,352,750	\$ (838,620)
2034	\$ 6,669,483	\$ 5,831,000	\$ (838,483)
2035	\$ 8,902,034	\$ 8,062,750	\$ (839,284)
2036	\$ 7,168,182	\$ 6,328,750	\$ (839,432)
2037	\$ 11,429,733	\$ 10,591,250	\$ (838,483)
2038	\$ 10,166,554	\$ 9,329,000	\$ (837,554)
2039	\$ 12,179,778	\$ 11,342,000	\$ (837,778)
2040	\$ 73,250	\$ 33,500	\$ (39,750)
2041	\$ 1,538,250	\$ 703,500	\$ (834,750)
<b>Total</b>	<b>\$ 293,984,281</b>	<b>\$ 278,478,436</b>	<b>\$ (15,505,845)</b>

These bonds will represent the second time in MWRA’s history that it has conducted a tender process to purchase back bonds at a discount from bondholders. Long-term taxable fixed interest rates would have to increase by 100 basis points for the entire refunding transaction to fall below the 4% threshold.

In addition to the refunding, staff are recommending issuing \$150 million of new money bonds. The new money bonds would be utilized to permanently finance the outstanding tax-exempt commercial paper and revolving loan. Both the commercial paper and revolving loan are utilized for short-term borrowings, primarily for projects under construction. Currently MWRA could issue the new money at an All-In TIC of 3.31%.


Similar to previous bond transactions, staff will structure these bonds around the existing bonds to continue to minimize peaks and valleys in debt service. Staff intend to issue both the refunding and new money bonds as “Green Bonds.” Green Bonds are marketed to environmentally responsible investment funds. While there is no required certification for Green Bonds, MWRA will be required to document that the funds were used to pay for projects that provided an environmental benefit. Given MWRA’s mission, its projects are green by their nature. To date, MWRA has issued \$2.4 billion in Green Bonds making it one of the largest Green Bond issuers in the country.

Under the terms of the last procurement approved by the Board in June 2021, Bank of America Securities Inc. will serve as the lead underwriter for this transaction. Staff will continue to work with MWRA’s financial advisor to determine the most appropriate size and structure for the transaction.

**BUDGET/FISCAL IMPACT:**

There are sufficient funds available in the FY23 CEB to pay the debt service costs associated with these borrowings. The potential refunding for savings component will reduce future debt service. The amount of the potential reduction will be determined based on market conditions and the ultimate pricing of the refunding transaction.

**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** February 15, 2023  
**SUBJECT:** Delegation of Authority to Execute Contracts for the Purchase and Supply of Electric Energy and Voluntary Renewable Energy Certificates for the MWRA Interval Accounts


**COMMITTEE:** Administration, Finance & Audit

           INFORMATION  
  X   VOTE

  
Michele S. Gillen

Director of Administration

Carolyn M. Fiore, Deputy Chief Operating Officer  
Denise K. Breiteneicher, Prog. Mgr., Energy and Env. Mgmt.  
Preparer/Title

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

*MWRA has competitively procured electricity supply since 2001. Historically, it has been economically beneficial for MWRA to buy electricity in the competitive market as opposed to paying for basic service from the utilities. In the competitive bid process, the challenge is to determine the level of risk versus certainty that MWRA is willing to assume, and to estimate the potential budget impact for a variety of options. The current contract for the Interval Accounts electricity supply expires in June 2023. Staff traditionally take electricity bids in spring or fall because the energy market pricing is typically more favorable during these seasons. Additionally, prices will be sought for a supply of enough Renewable Energy Certificates (RECs) to offset 100% of the Interval Accounts' electricity usage.*

*In a commodity market where prices change within a very short period of time, MWRA must be prepared to award the contract almost immediately after bids are received to lock in pricing. Therefore, on the day they are received, staff will evaluate the bids based on market conditions and pricing received. To ensure that MWRA is prepared to execute replacement power contracts if the pricing received is favorable, staff recommend that the Board authorize the Executive Director to award a contract(s) to the successful bidder(s). Staff will report to the Board on the bid results and on the new contract(s) that are executed for electric power supply and the supply of 100% renewable energy credits for the Interval Accounts.*

**RECOMMENDATION:**

To authorize the Executive Director, on behalf of the Authority, to execute a contract for the supply of electric power to the Interval Accounts, consisting of the Carroll Water Treatment Plant and the larger Field Operations and Facility Management Accounts, and a contract to purchase additional Renewable Energy Certificates to voluntarily increase the percentage of the energy supply for the Interval Accounts to be 100% renewable, with the lowest responsive and responsible bidder(s) for the period and pricing structure selected, as determined by staff to be in MWRA's best interest, and for a contract supply term not to exceed 36 months. This delegation of authority is necessary because MWRA will be required to notify the selected bidders within a few hours of bid submittal to lock in the bid prices in a constantly changing market.

## **DISCUSSION:**

Based on MWRA account load profiles and prior consults with energy advisors, MWRA has established three distinct electricity supply contracts. The largest contract is for the Deer Island Treatment Plant, which represents approximately 66% of MWRA's total purchased electricity. The next largest contract is for the Interval Accounts, which include the larger facilities, such as the Carroll Water Treatment Plant, the wastewater headworks facilities, the Clinton Treatment Plant, and most of the water and wastewater pump stations, representing approximately 30% of MWRA's total purchased load. The third contract is for the smaller, non-time-of-use accounts, known as Profile Accounts, (e.g., the smaller pump stations and CSO facilities, and the Charlestown Navy Yard), representing the remaining 4% of MWRA's total purchased load.

The current contract for the Interval Accounts expires in June 2023. Bids were received for the Deer Island account in May 2021, with a November 2021 start date for a three-year contract, and bids were received for the Profile Accounts in October 2022, expiring in November 2023. The three electricity supply contracts are structured to have staggered end dates to mitigate the risk of procuring the bulk of MWRA's load at the same time. The electricity supply contract for MWRA's smaller Profile Accounts is procured separately because these accounts are based on a fixed pricing structure and typically have higher administrative contract management costs, which make them less attractive to prospective bidders.

Additionally, when the current Interval Account contract was bid, MWRA sought price offers for renewable energy certificates (RECs) sufficient to drive the Interval Accounts' energy supply to be 100% renewable.<sup>1</sup> MWRA accepted the lowest bid of \$7.76/REC from Direct Energy Business.

Historically, bids have been taken for three different contract structures, including a 100% all-in, fixed rate, a blended structure with a fixed-price block and the balance of the load purchased from the ISO real-time market, and a 100% ISO real-time market structure.

The current Interval Accounts contract was awarded in May 2022 as a fixed price contract. The contract was structured as a 13-month fixed price contract due to the high bid prices and volatility of the market at the time. The Russian invasion of Ukraine, among other factors, caused significant price spikes in energy markets and as a result, staff received higher bid prices than has been the norm for the Interval Accounts over the past several bid cycles.

MWRA's current contract for Interval Accounts consists of 28 accounts with an annual electricity use of approximately 45.7 million kWh per year and is set to expire in June 2023. Staff intend to pursue a new contract to take its place, targeting March for solicitation of bids in order to take advantage of anticipated favorability in the energy market during the spring season. The contract start date will be the first meter read date available for enrollment for each account in June 2023.

Bids for three pricing structures will be sought, each for 12, 24 and 36-month terms with pricing to include all services and products necessary to provide firm delivery of energy to the Interval Accounts. The first structure will be for an all-in, firm fixed price. The second will be for purchase of 100% of the electricity from the ISO-NE real-time market. The third blended option will be for supply of a base block of power at a fixed-price per kWh, 3.7 MW each hour, with the remaining power each hour purchased from the ISO-NE real-time market. The size of the base blocks of power will be the same as the existing contract structure, with a fixed fraction of approximately

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<sup>1</sup> A portion of the energy supply is already required to be renewable to comply with the Massachusetts Renewable Portfolio Standard.

70%. Although there may be a moderate premium for the fixed blocks of power, this fixed strategy provides budget certainty and protects MWRA from potential price spikes in the winter (due to natural gas supply constraints) and summer (due to increased air conditioning demand) and still offers an opportunity to see potential real-time spot market price savings.

Staff have also looked at other electricity purchasing options available to state agencies and authorities, such as purchasing electricity through collaboratives or a state contract. While a collaborative may generate more interest from the market by offering energy providers a larger block of electricity to bid on, MWRA has been advised in the past that both the Deer Island and the Interval Accounts are large enough to warrant competitive rates when bid alone. State contract pricing was obtained in October 2022 when bidding the smaller profile accounts and the MWRA bid price received at that time was more favorable.

In preparation for the receipt of bids, staff review market conditions and electricity price forecasts to obtain a sense of what is going on in the electricity market prior to bidding. This helps staff quantify price impacts of the various contract structures, which is important for determining the ideal structure to execute at that time.

As required by the Massachusetts Renewable Portfolio Standard, a minimum percentage of electricity supply (33.1% in 2023) offered by bidders must be from renewable resources, accomplished through the purchase of Renewable Energy Certificates. As part of MWRA's evolving sustainability efforts, staff will again obtain bids for additional RECs to voluntarily increase the percentage to 100%, as was done with the previous Deer Island, Interval Accounts, and Profile Accounts electricity bids.

To ensure that MWRA is prepared to execute replacement power and renewable energy certificate contracts if the bid pricing received is favorable, staff request that the Board authorize the Executive Director to award contracts to the successful bidders.

#### **BUDGET/FISCAL IMPACT:**

MWRA's total electricity budget for FY23 is \$23.1 million, with approximately \$9.7 million of this amount for the Interval Accounts. The total electricity budget includes approximately \$13.1 million for electricity supply and \$10.0 million for the transmission and distribution costs charged by the local distribution companies. The authorization staff are seeking today is for:


- purchasing the Interval Accounts electricity supply, which represents approximately 30% of MWRA's total purchased electricity supply; and
- purchasing enough voluntary Renewable Energy Certificates to offset 100% of the Interval Accounts electricity usage.

Staff will assess the impact of the bids taken in comparison with the budgeted amounts and update the Board accordingly.

#### **MBE/WBE PARTICIPATION:**

There will be no MBE or WBE participation requirements established for this procurement due to the lack of subcontracting opportunities.

## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** February 15, 2023  
**SUBJECT:** Deer Island Treatment Plant Clarifier Rehabilitation, Phase II  
Walsh Construction Company II, LLC  
Contract 7395

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**COMMITTEE:** Wastewater Policy and Oversight

Dave Duest, Director, Deer Island Treatment Plant  
Richard Adams, Manager, Engineering Services  
Preparer/Title

           INFORMATION

  X   VOTE



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 7395, Clarifier Rehabilitation, Phase II at the Deer Island Treatment Plant, to the lowest responsible and eligible bidder, Walsh Construction Company II, LLC and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$289,359,690, for a contract term of 1620 calendar days from the Notice to Proceed.

### DISCUSSION:

The Deer Island Treatment Plant was built in several phases (construction packages) starting in 1987 and was completed in 2001. The plant provides wastewater treatment for 43 greater Boston communities and is designed to handle 1.3 billion gallons of wastewater per day during high-flow events.

The primary treatment facilities at Deer Island were constructed in the mid-1990s and include four primary clarifier batteries identified from east to west as Batteries A, B, C, and D. There are 48 primary clarifiers in total located at the center of Deer Island and each of the four batteries contains 12 stacked sets (upper and lower) of primary clarifiers. Flows enters aerated primary battery influent channels and are equally distributed to each of the 12 stacked clarifiers through eight 14-inch diameter inlet ports located at the same centerline elevation in the influent channel. Primary treatment is provided as flow moves slowly to the opposite end of the upper and lower clarifiers. Gravity separates sludge and scum from the wastewater and it is removed from the clarifiers using chain-driven longitudinal sludge and scum collectors.

Construction began on the secondary treatment facilities (pictured below) in the mid-1990s and was completed in 2001. The biological secondary treatment facility at Deer Island is a high-purity, oxygen-activated sludge system. The secondary facilities consist of three oxygen reactor batteries



followed by three clarifier batteries. These facilities provide secondary clarification to separate the liquid and solid components of what is referred to as the “mixed liquor” for the oxygen activated sludge process. The three clarifier batteries each contain 18 stacked (upper and lower) clarifiers for a total of 54 clarifiers. Each clarifier battery receives flow from the corresponding oxygen reactor battery in an influent channel.



The primary and secondary treatment equipment has been in operation for 22 to 26 years. This equipment is subjected to very corrosive environments and is approaching the end of its useful life.

All of the sludge and scum collection longitudinal chains and head shaft sprockets were replaced in a contract awarded in 2009 at a cost of \$59,377,664. To complete that work, all clarifiers (48 primary and 54 secondary) were sequentially dewatered and cleaned. During that contract, as each clarifier was dewatered, additional equipment deficiencies were discovered (e.g., influent gates, aeration systems, etc.) that could not be practically addressed at that time. The condition of the concrete coating in some areas of the clarifiers was starting to indicate signs of delamination.

A follow-on contract was awarded in 2013 for an amount of \$20,163,462 to replace the original carbon steel scum skimmers due to significant corrosion. The new skimmers were manufactured from Type 316 stainless steel and do not display any signs of deterioration to date.

The proposed contract, will include the replacement of the original remaining scum and sludge equipment, as follows: over 400 Primary Clarifier influent, effluent, and dewatering gates; 384 primary effluent cross channel gate actuators; approximately 450 secondary scum influent gates and actuators; wear strip rails, 768 head shaft and idler sprockets; over 3000 linear feet of influent channel aerations piping systems; 360 head shafts collector drives and chains; return sludge line vent piping; approximately 400 concrete and aluminum hatches and associated electrical and control systems. The work also includes various repairs and upgrades, such as installation of concrete cores for head shaft maintenance, interior tank expansion joint repairs, and over 250,000 square feet of concrete repairs and over 450,000 square feet of recoating the upper section of the Primary Clarifier tanks. In addition, replacement of consumable wear items, such as the fiberglass wear strips, flights and shoes will also be replaced under this contract.

The work included in this contract is required in order to maintain the overall integrity and reliability of the Primary and Secondary Clarifier tank assets which is required to meet the EPA issued Deer Island Treatment Plant National Pollutant Discharge Elimination System permit. This

equipment, with the exception of the consumable wear products, is the original mechanical systems and is in need of replacement in order to prevent future failures. The scum and sludge equipment is continuously subjected to a very corrosive environment (hydrogen sulfide) and have reached the end of its useful life. The interior concrete structures of the Primary Clarifier tanks have experienced moderate deterioration. Additional deterioration may lead for the need of major structural repairs (replacement of rebar, etc.).

**Procurement Process**

Contract 7395, designed by CDM Smith, was publically advertised and bid utilizing MWRA’s e-procurement system in accordance with Chapter 149 of Massachusetts General Laws and was originally advertised on July 11, 2020 with Filed Sub-Bids due on September 9, 2020. Staff received one Painting Filed Sub-Bid that was approximately 550% higher than the engineer’s estimate. After conducting a bid review staff determined that the paint contractor included work that was not part of the painting scope. The specifications were modified and the Filed Sub-Bid work was rebid. On February 26, 2021, the Authority once again only received one painting Filed Sub-Bid that was 420% higher than the revised engineer’s estimate. The Authority decided to cancel the project and examine how best to proceed.

Based on the delta between the Painting Filed Sub-Bid and the Engineer’s Estimate, procurement staff attempted to generate more competition in that category of work and contacted DCAMM and the Attorney General’s Bid Protest Unit for advice. Ultimately, it was determined that the most viable option for moving forward and obtaining competitive bids from the most qualified contractors was to keep the project as a Ch. 149 project, but re-categorize the paint specifications into an industrial coating specification and have the General Contractor carry that specialized coating work.

Staff modified the bid documents and they were made available on the MWRA’s e-procurement system on October 26, 2022. Filed Sub-Bids were received on November 30, 2022. The Authority received the General Contractor bids on January 11, 2023 as follows:

<u>Bidder</u>	<u>Bid Amount</u>
<i>Engineer’s Estimate</i>	\$227,800,000
<b>Walsh Construction Company II, LLC</b>	<b>\$289,359,690*</b>

\*The general bid was adjusted to reflect the lowest responsible and eligible painting Filed Sub-Bid opened on January 18, 2023 following a re-bid of the Filed Sub-Bid category.

Given the significantly large scope and the long duration of this project, staff did not expect to receive many general bids. However, the possibility of joint venturing by general contractors provided for at least the possibility of more than a single bid. As a Chapter 149 project, potential general bidders must be DCAMM certified with a single project limit that is under or equal to the Contractor’s bid price. The Authority sought contractors who are DCAMM certified in General Building Construction and/or Sewage and Water Treatment Plants. (There is currently only one contractor who is DCAMM certified in Sewage and Water Treatment Plants with a single project limit over \$150,000,000 and twenty-seven contractors who are DCAMM certified in General Building Construction with single project limit over \$150,000,000.) Staff were relying on contractors forming joint ventures and for large general building construction contractors to bid on this project. Staff contacted a contractor who had entered into a joint venture when this project

was originally advertised in 2020 to determine why it did not submit a bid. Staff were advised that the contractor elected not to bid because it viewed the project as cost prohibitive given the scope and duration as well as the potential liabilities of the work, among other things. Unfortunately, the size, scope, long duration and nature (Ch. 149) of this project limited competition and ultimately resulted in the Authority receiving only one bid.

Staff interviewed representatives from Walsh Construction Company II, LLC (Walsh) and reviewed its bid in detail, which is approximately 26.7% higher than the Engineer's Estimate. Staff have determined that there were three major items that contributed to the \$67,559,690 difference between the Engineer's Estimate and the bid received from Walsh: 1) scum/sludge mechanical equipment costs were significantly higher (approximately \$27,000,000); 2) concrete remediation and coating (approximately \$24,000,000) and 3) General Conditions cost which includes items such as insurance, safety, quality control, etc. (approximately \$8,800,000). The Design Consultant experienced significant difficulty in attempting to obtain equipment costing information from suppliers due to the volatility in the marketplace. The Consultant relied on information received earlier in 2022 and added an escalation factor to attempt to account for the marketplace. In addition, it appears that the Design Consultant had underestimated the cost to perform the concrete coating work. This work is extremely difficult to perform due to limited access to the majority of the interior clarifier tanks; they are considered permitted confined spaces that require significant safety oversight to ensure the work is performed in a safe manner. The Contractor's labor and equipment costs were significantly higher than the Engineer's Estimate. The Consultant also appears to have underestimated the insurance, mobilization and management costs that are part of the General Conditions requirements in the bid documents.

Staff conducted a review of the OSHA database and noted that Walsh had three serious OSHA violations in the last five years relating to excavation and demolition work. One citation they intend to dispute. Walsh has performed recent contract work for MWRA on Deer Island and Nut Island and staff report that Walsh is very safety conscious and proactive in handling safety issues.

Staff have determined that the bid is complete, reasonable, and includes the payment of prevailing wages as required. References for Walsh Construction Company II, LLC were checked and found to be favorable. Walsh Construction Company II, LLC has successfully completed several construction contracts at Deer Island. Based on the information received during the interview, staff are of the opinion that Walsh Construction Company II, LLC 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.

#### **BUDGET/FISCAL IMPACT:**

The proposed FY23 CIP includes \$195,000,000 for Contract 7395. The proposed award amount is \$289,859,690 or \$94,859,690 over budget. This amount will be absorbed within the next five-year CIP spending cap. This project is included in the Massachusetts DEP 2022 Intended Use plan for State Revolving Fund (SRF) loans. The SRF utilizes federal and state money to provide low interest loans to participants. Staff submitted the necessary paperwork to the SRF program and on February 14, 2023 received MassDEP authorization to award the contract. Borrowing the entire \$289.4 million through the SRF program would save MWRA approximately \$26.1 million in interest cost over 20 years versus current market rates.

**MBE/WBE PARTICIPATION:**

MassDEP establishes D/MBE and D/WBE participation goals for SRF funded projects. The current goals applicable to this project are 4.2% for D/MBE and 4.5% for D/WBE. Walsh represented that it will be able to meet the D/MBE goal and obtained 4.34% participation (a dollar value of \$12,540,162), and only partially meet the D/WBE goal with 1.29% participation (a dollar value of \$3,745,530). Walsh requested a partial waiver of the D/WBE requirement citing, among other reasons, the limited certified D/WBE subcontractors available to do the work on the project despite good faith efforts made by Walsh to solicit participation.

### STAFF SUMMARY


**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** February 15, 2023  
**SUBJECT:** Report on 2022 Water Use Trends and Reservoir Status



**COMMITTEE:** Water Policy & Oversight

X  INFORMATION  
  VOTE

Carolyn Fiore, Deputy Chief Operating Officer  
Daniel Nvule, Senior Program Manager  
Stephen Estes-Smargiassi, Director, Planning and Sustainability  
Preparer/Title

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

### RECOMMENDATION:

For information only. At the beginning of each year, staff provide the Board with a review of the previous year's water use data and discuss trends.

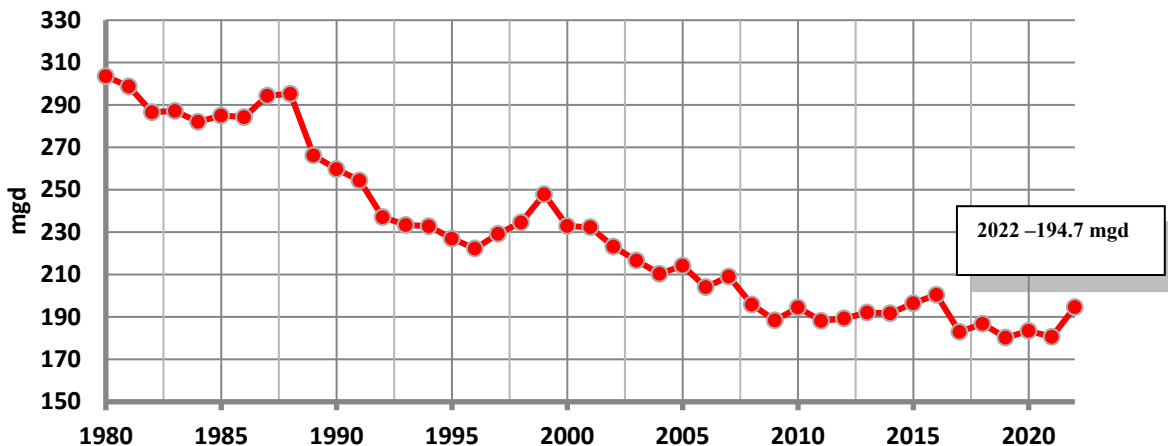
### DISCUSSION:

This staff summary provides an overview of water consumption by communities; base and seasonal water use trends; use by MWRA's partial and emergency customers; and reservoir withdrawals and reservoir status.

#### Water Consumption by MWRA Communities

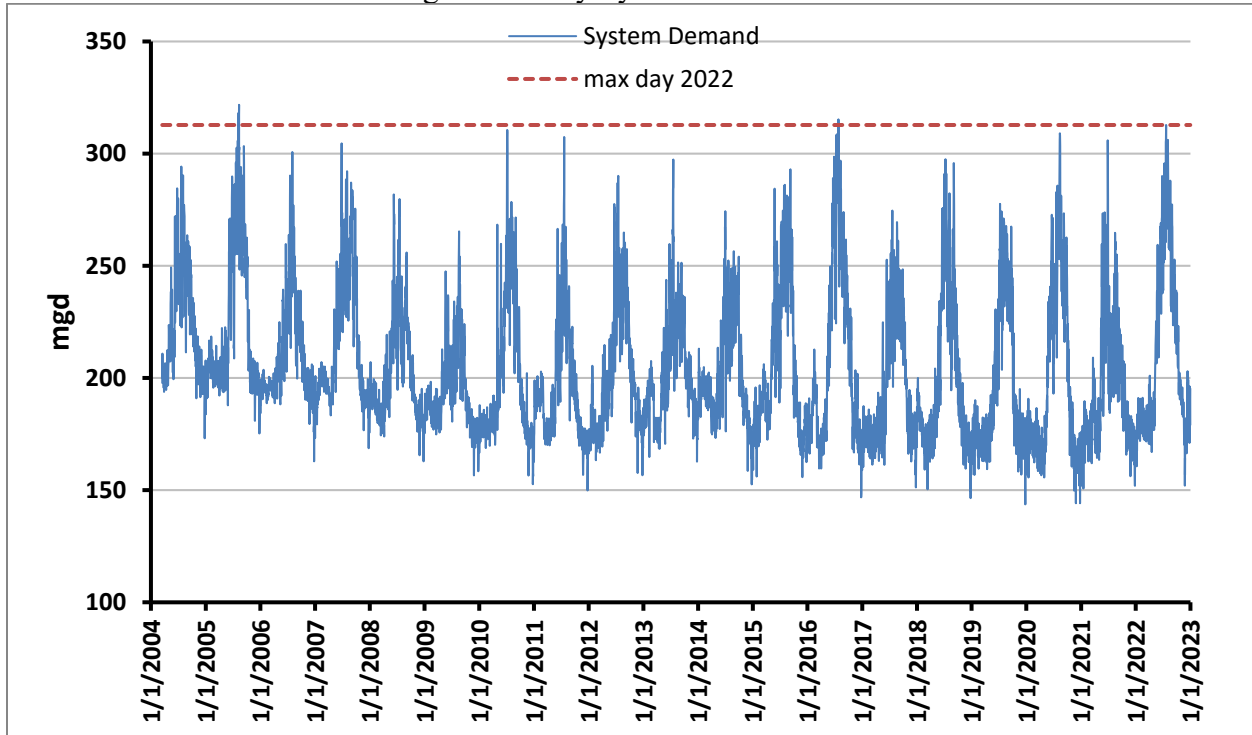
Water consumption by all MWRA communities of 194.7 million gallons per day (mgd) was about 14.1 mgd (7.8 percent) higher than 2021, as shown on Figure 1, due in part to the drought, and in part to additional use as communities responded to elevated PFAS levels. Reservoir withdrawals, the metric to be compared with the system's safe yield of 300 mgd, are discussed on page 5.

Figure 1 – Total Consumption by MWRA Communities (1980 to 2022)



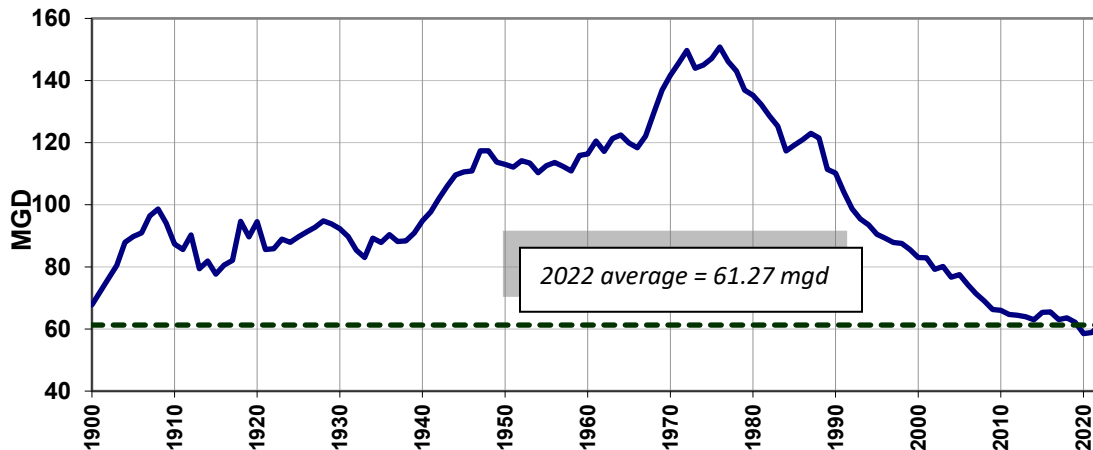
System wide, 2022 had a maximum day reservoir withdrawal of 312.75 mgd on July 22 (2.2 percent higher than 2021, but lower than during the drought in 2016). At the opposite extreme, Thanksgiving Day at 152 mgd was the lowest day of the year. Figure 2 below shows daily system withdrawals since 2004.

Figure 2: Daily System Withdrawals



Demand from MWRA's largest customer, the Boston Water and Sewer Commission, was 61.27 mgd, which was higher than last year by 2.43 mgd (4.1 percent). Current Boston demand continues to be lower than demand before 1900 as shown on Figure 3 below.

Figure 3: Boston Water Use (1900-2022)

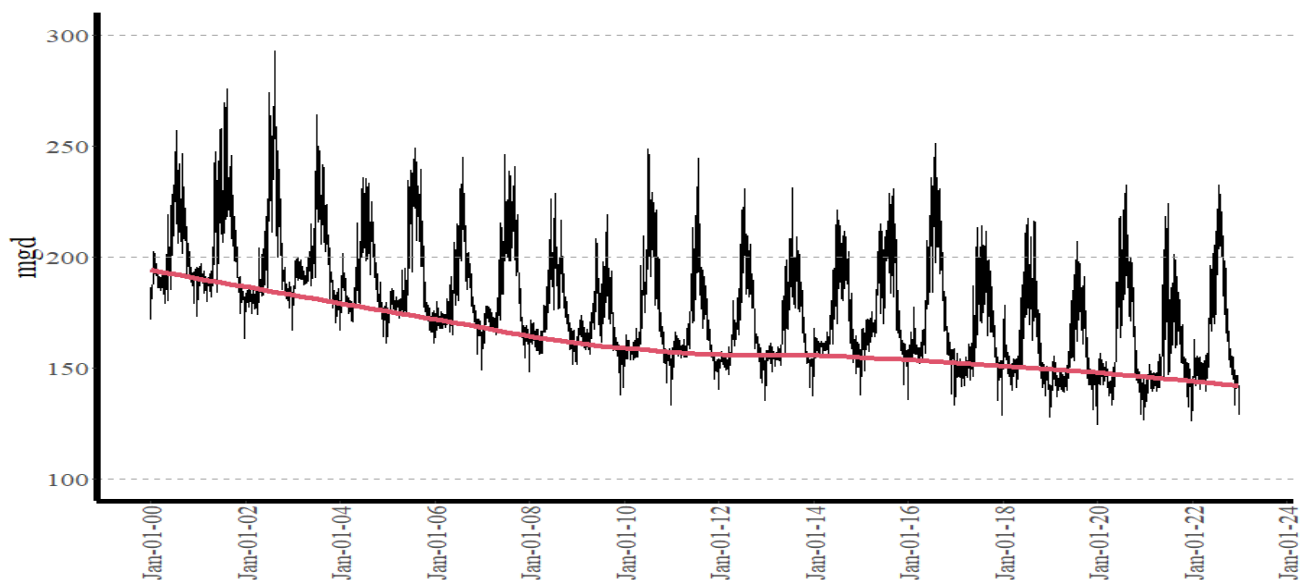


Many communities, including Boston, saw increases in demand. Despite the increase, Boston’s change in flow share decreased by 1.9 percent, as demand from more suburban communities and partially supplied communities increased by a higher percentage. See Attachment A for community demands and system share data.

### Base or Indoor Demand

Over time, there have been substantial water use reductions in both base (or indoor) use, defined as water use, from November to March, and outdoor use (or seasonal use), defined as the increase over the base demand during the irrigation season from May to September. Base or indoor water use, shown as the red line on Figure 5 below, has dropped substantially over the past several decades, and continues to decrease, due to the improvements in the efficiency of water use in homes and businesses as water-saving technologies continue to increase market share, and consumers react to increases in water, sewer, and energy costs. Water use reductions also reflect the success of MWRA and community leak reduction programs with reduced pipeline leaks. Countervailing pressures include population and employment increases.

Figure 4: Fully Supplied Communities Demand (1999 to 2022)<sup>1</sup>



### Seasonal or Outdoor Demand

Seasonal water use is more variable than indoor demand and driven in large part by weather during the irrigation season. Factors influencing seasonal use include the total irrigation season precipitation, the number of dry days between rainfall events, temperature, and the total amount of sunshine. During drought conditions, mandatory restrictions or general media exposure will reduce outdoor use over what it would have been, but dry years still tend to have higher demand. Over time, the price of water also influences seasonal use.

<sup>1</sup> Certain analyses can be done only on fully supplied communities where MWRA has information on their daily use available from MWRA’s revenue meters. MWRA receives data on monthly total use for partially supplied communities, but not until they provide that data to DEP in their Annual Statistical Reports in March. Fully supplied communities represent almost 90 percent of the total annual demand.

Figures 5 and 6 show the variation in seasonal water use in fully supplied communities over time, and both the longer-term decline in both base and total use and the relatively small impact that seasonal demand has on total water use. Seasonal use in 2022 of 24.2 mgd was the third highest since 2000 on a volume basis (seasonal use during the 2015/2016 drought was higher) and the highest (14.5 percent) on a percentage basis (reflecting in part the continued reduction in base demand). Most of the outdoor use season was affected by a significant to critical drought over much of the service area, although as discussed below, MWRA’s reservoirs remained in Normal Operating Range throughout the drought.

Figure 5: Fully Supplied Communities Annual Base and Seasonal Demand

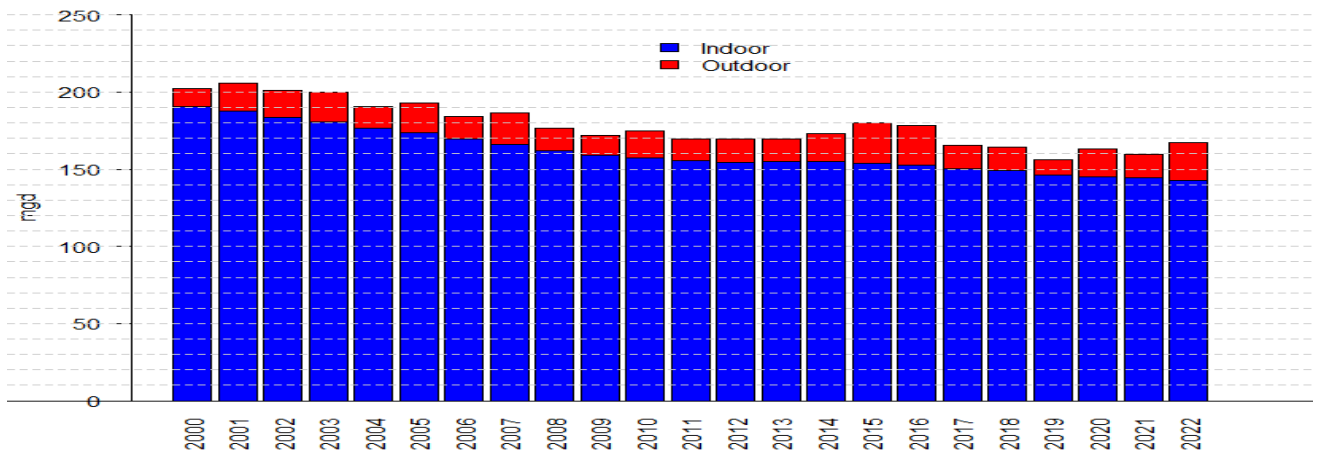
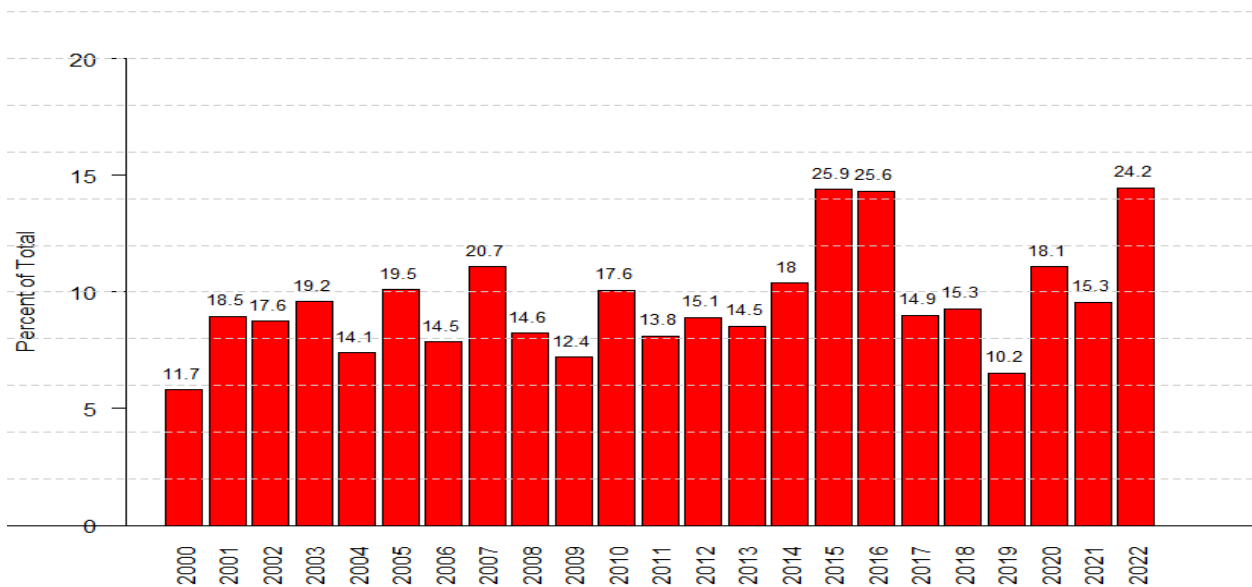


Figure 6: Fully Supplied Communities’ Annual Seasonal Demand (Labels show demand in mgd)

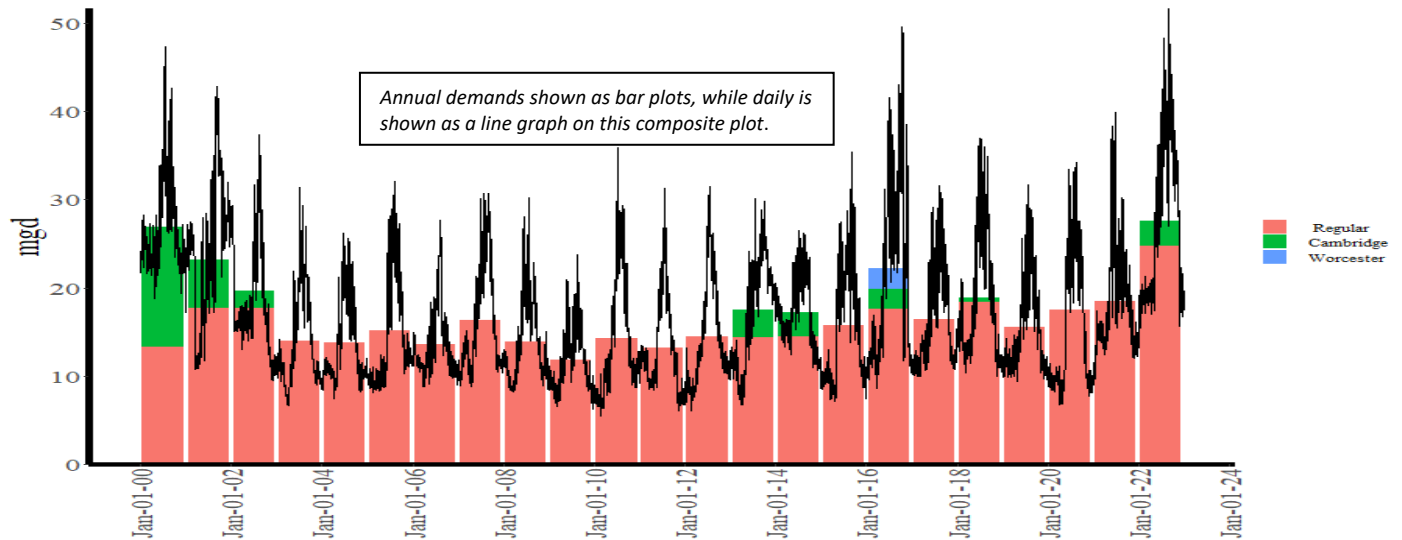




## Partially Supplied Communities

Demand for the partially supplied communities, shown on Figure 7 below, was up by 6.45 mgd (30.6 percent) when compared to 2021.

Figure 7: Partially Supplied Communities – MWRA Supplied Demand (Daily and Annual)



About half of the increase was due to three communities: Cambridge, Wellesley and Burlington. Cambridge used 1,018 million gallons between September and November as its treatment plant was being upgraded to handle PFAS contamination. Wellesley relied more heavily on MWRA as it worked to add temporary PFAS treatment for some of its wells, as did Burlington. Burlington will continue to draw more water from MWRA as MWRA and the town strengthen the pipe network supplying them.

## Reservoir Withdrawals and Releases

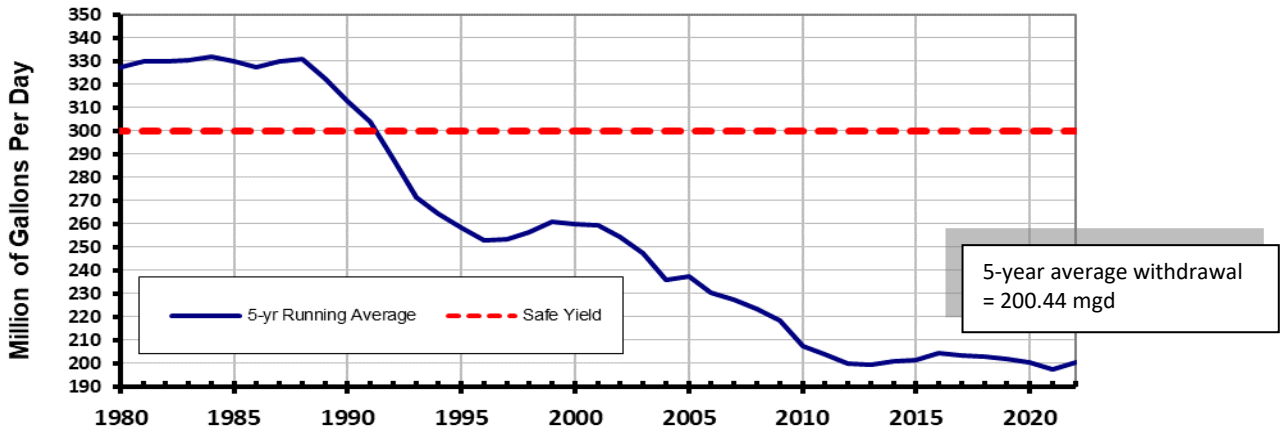
Reservoir withdrawals are the metric used to compare to the 300 mgd safe yield of the watershed/reservoir system<sup>2</sup>. Withdrawals include water sold to MWRA communities, as well as other non-revenue generating uses in the watershed and MWRA system. Total MWRA water withdrawals increased by 8.8 percent in 2022, from 194.56 mgd in 2021 to 211.62 mgd.

The pipeline supplying the McLaughlin Fish Hatchery in Belchertown was in service for the entire year, with an average withdrawal of 6.19 mgd. Without that withdrawal, total reservoir withdrawals for community water supply in 2022 would have been 205.43 mgd. MWRA began serving the hatchery through the dedicated hydroelectric station and pipeline in December 2016.

Figure 8 on the next page shows five-year averages of withdrawals from 1980 to present. The five-year averaging reduces the effects of year-to-year variability due to weather, and provides a good indication of longer-term trends. The average shows a 1.6 percent increase from 2021, although the trend line is essentially flat for most of the past decade.

<sup>2</sup> The 300-mgd safe yield is based on the drought of the 1960s. Use of a less conservative 20-year recurrence drought, as allowed by DEP, would result in a safe yield as high as 350 mgd. MWRA's Water Management Act registration is for 312 mgd.

Figure 8: Total Reservoir Withdrawals – Five-Year Running Average 1980 to 2022



It is worth noting that since MWRA was created, MWRA has added demand from eight additional communities and the McLaughlin Fish Hatchery, as well as the added demand from the substantial growth in population and employment within the original service area. Without the added communities and hatchery demands, the five-year average demand would have been almost nine mgd lower at 191.4 mgd. This further demonstrates the substantial improvements in water use efficiency within the MWRA service area, which have improved system reliability and allowed MWRA to provide service to additional communities in need of that reliable supply.

Reservoir Status

As staff briefed the Board last September, the whole of Massachusetts was impacted by a critical to severe drought during a large portion of 2022, and portions of the state were still in drought condition in January 2023. In spite of the drought, demands were well below Safe Yield and Quabbin Reservoir levels were well within normal range throughout the year. Figure 9 on the next page shows a comparison of Quabbin volume levels between 2021 and 2022. During 2022, reservoir levels displayed the expected seasonal variability. The green line on the figure shows the seasonal monthly benchmarks for the operating band under MWRA’s approved drought plan<sup>3</sup>. Levels above the line are considered normal and below the line are considered below normal. Further operating bands for varying degrees of drought status are significantly lower still.

<sup>3</sup> In January 2023, MassDEP issued final changes to the Water Management Act (WMA) regulations. The changes affect water systems with only WMA registrations – those communities which are still using less water now than they did in the early 1980s when the WMA “registered” existing water use, setting that as the allowable withdrawal limit for the system. The changes create new requirements for registered systems when the state declares a drought in their region of the Commonwealth. As a system with large multi-year storage reservoirs, MWRA qualifies for the use of a system specific drought plan, rather than the generic limits placed on all other systems. This will require that MWRA update and submit its drought plan for acceptance by MassDEP by April of 2025. Staff have begun to work on the update.

Figure 9: Quabbin Reservoir Volumes and Drought Status for 2021 to present

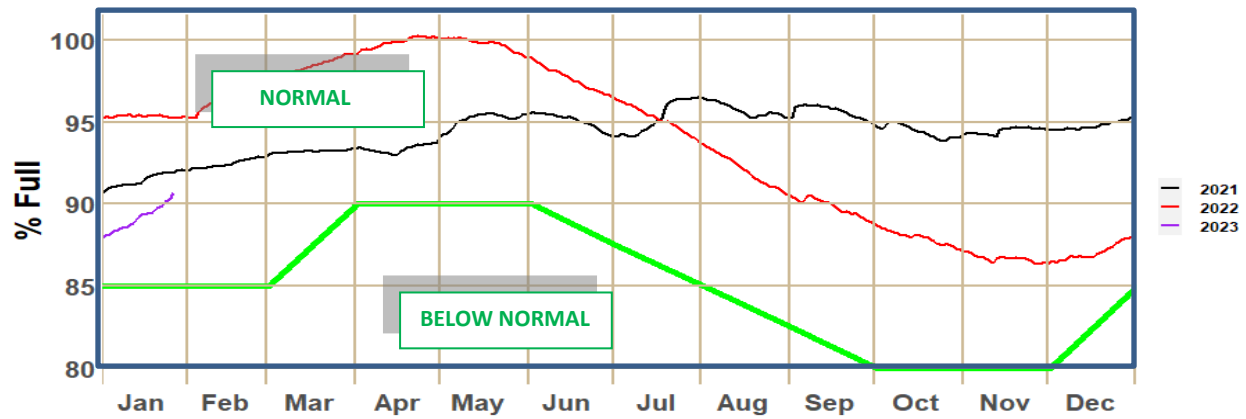
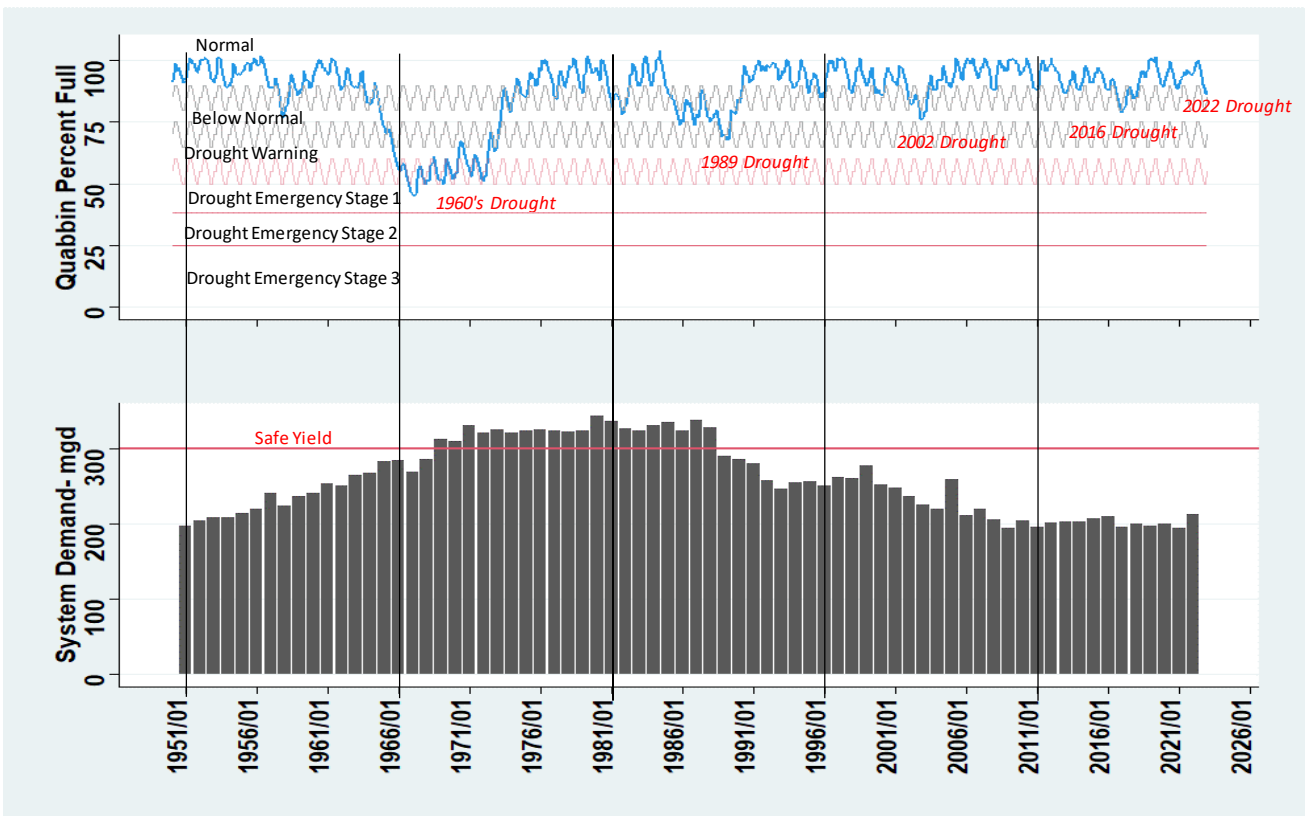


Figure 10 below further shows the relationship between the historical droughts, reservoir volume and annual demand.

Figure 10: Quabbin Storage, Annual System Demand & Drought Stage from 1950 to 2022



The Quabbin Reservoir spilled 14.1 billion gallons to the Swift River in 2022, beginning on February 12 and spilling for 141 days. In order to meet metro Boston water demand and to maintain water quality, 55 billion gallons of the higher quality Quabbin water was transferred to the Wachusett Reservoir during 2022. The transfer was equivalent to about 85 percent of Wachusett’s volume and about 83 percent of the water used by MWRA’s customers in the metro Boston system. To maintain Wachusett Reservoir in its normal narrow operating band, MWRA released 17.9 billion gallons to the Nashua River through controlled releases.

**CONCLUSION:**

The reduced demand has improved system reliability and allowed MWRA to provide service to additional communities in need of that reliable supply. Despite dry conditions for a substantial portion of the year and increased demands due to communities using MWRA water as they responded to PFAS issues with their local sources in 2022, and despite the addition of hundreds of thousands of new residents and jobs to our service area over the past three decades, MWRA's sources continued to perform well in 2022. The system stayed in the normal operating range during the entire year, both the Swift and Nashua rivers received substantial releases from the reservoirs, well above their minimum requirements, and the water quality delivered to our customers was excellent. The system is well situated to provide a reliable supply of safe water to our customers, economic vitality to the region, and to be an option for communities struggling with water quality or source reliability issues.

**ATTACHMENT:**

Community Water Use Data

**Massachusetts Water Resources Authority**  
**MWRA Water Supplied**  
**Reporting Period: December 2022**

ALL DATA SUBJECT TO CHANGE OR ADJUSTMENT PENDING ADDITIONAL MWRA AND COMMUNITY REVIEW

	Monthly (MG)			YTD (MG)			YTD System Share			Prior Year-End Totals	
	Dec		Flow Change	YTD		Flow Change	Flow Share <sup>1</sup>		% Change in YTD Flow Share	Annual Flow (mg)	Flow Share <sup>1</sup>
	2022	2021		2022	2021		2022	2021			
<b>Metro-System (Fully Served)</b>											
Arlington	85.7	95.5	-10.2%	1,261.8	1,220.4	3.4%	1.90%	1.96%	-2.6%	1,220.4	1.96%
Belmont	46.8	46.1	1.5%	723.5	677.3	6.8%	1.09%	1.09%	0.6%	677.3	1.09%
Boston (BWSC)	1,737.5	1,716.2	1.2%	22,362.8	21,475.3	4.1%	33.76%	34.41%	-1.9%	21,475.3	34.41%
Brookline	122.7	124.2	-1.2%	1,881.9	1,732.6	8.6%	2.84%	2.78%	2.3%	1,732.6	2.78%
Chelsea	93.3	94.3	-1.0%	1,205.0	1,179.9	2.1%	1.82%	1.89%	-3.8%	1,179.9	1.89%
Everett	105.6	109.2	-3.3%	1,362.2	1,387.8	-1.8%	2.06%	2.22%	-7.5%	1,387.8	2.22%
Frammingham	148.5	156.7	-5.2%	2,100.3	2,059.4	2.0%	3.17%	3.30%	-3.9%	2,059.4	3.30%
Lexington <sup>2</sup>	113.0	113.0	0.0%	1,947.2	1,835.2	6.1%	2.94%	2.94%	-0.0%	1,835.2	2.94%
Lymfield W.D.	9.6	11.8	-18.3%	208.5	187.0	11.5%	0.31%	0.30%	5.0%	187.0	0.30%
Malden	149.0	157.8	-5.6%	1,888.3	1,892.4	-0.2%	2.85%	3.03%	-6.0%	1,892.4	3.03%
Marblehead	37.6	40.1	-6.2%	690.0	635.5	8.6%	1.04%	1.02%	2.3%	635.5	1.02%
Medford	136.0	131.2	3.7%	1,724.7	1,656.5	4.1%	2.60%	2.65%	-1.9%	1,656.5	2.65%
Melrose	54.0	56.6	-4.5%	776.2	756.2	2.6%	1.17%	1.21%	-3.3%	756.2	1.21%
Milton	54.5	62.2	-12.4%	920.7	869.2	5.9%	1.39%	1.39%	-0.2%	869.2	1.39%
Nahant	7.3	8.5	-14.3%	130.6	125.0	4.5%	0.20%	0.20%	-1.5%	125.0	0.20%
Newton	211.1	215.4	-2.0%	3,212.7	3,059.0	5.0%	4.85%	4.90%	-1.1%	3,059.0	4.90%
Norwood	71.0	71.7	-0.9%	1,024.4	972.9	5.3%	1.55%	1.56%	-0.8%	972.9	1.56%
Quincy	229.8	240.5	-4.5%	3,095.5	2,994.0	3.4%	4.67%	4.80%	-2.6%	2,994.0	4.80%
Reading	40.2	41.2	-2.4%	623.1	606.7	2.7%	0.94%	0.97%	-3.2%	606.7	0.97%
Revere	110.1	111.9	-1.6%	1,413.5	1,371.8	3.0%	2.13%	2.20%	-2.9%	1,371.8	2.20%
Saugus	79.9	84.5	-5.4%	1,200.8	1,084.9	10.7%	1.81%	1.74%	4.3%	1,084.9	1.74%
Somerville	169.2	160.9	5.1%	2,091.7	2,046.6	2.2%	3.16%	3.28%	-3.7%	2,046.6	3.28%
Southborough	22.5	20.4	10.6%	374.5	322.1	16.3%	0.57%	0.52%	9.5%	322.1	0.52%
Stoneham	53.3	48.9	9.1%	797.5	710.7	12.2%	1.20%	1.14%	5.7%	710.7	1.14%
Swampscott	34.7	43.0	-19.4%	575.4	551.6	4.3%	0.87%	0.88%	-1.7%	551.6	0.88%
Waltham	189.2	178.5	6.0%	2,644.6	2,386.3	10.8%	3.99%	3.82%	4.4%	2,386.3	3.82%
Watertown	69.8	66.7	4.7%	926.5	896.1	3.4%	1.40%	1.44%	-2.6%	896.1	1.44%
Weston	22.4	29.7	-24.5%	632.2	530.7	19.1%	0.95%	0.85%	12.2%	530.7	0.85%
Winthrop	32.2	32.5	-0.8%	411.2	414.5	-0.8%	0.62%	0.66%	-6.5%	414.5	0.66%
<b>Subtotal Metro-System (Fully Served)</b>	<b>4,236.6</b>	<b>4,269.2</b>	<b>-0.8%</b>	<b>58,207.4</b>	<b>55,637.4</b>	<b>4.6%</b>	<b>87.9%</b>	<b>89.2%</b>	<b>-1.4%</b>	<b>55,637.4</b>	<b>89.16%</b>
<b>Metro-System (Partially Served)</b>											
Ashland (P)	-	-	0.0%	-	-	0.0%	0.00%	0.00%	0.0%	-	0.0%
Burlington (P)	34.2	32.9	3.8%	367.7	270.8	35.8%	0.56%	0.43%	27.9%	270.8	0.4%
Canton (P)	53.5	14.2	275.2%	549.0	436.9	25.6%	0.83%	0.70%	18.4%	436.9	0.7%
Dedham-Westwood W.D. (P)	0.1	13.4	-100%	147.9	55.3	167%	0.22%	0.09%	151.8%	55.3	0.1%
Leominster (P)	-	-	0.0%	-	-	0.0%	0.00%	0.00%	0.0%	-	0.0%
Lynn (LWSC) (P)	3.9	3.4	14.7%	32.6	40.6	-19.6%	0.05%	0.07%	-24.3%	40.6	0.1%
Marlborough (P)	115.4	114.0	1.2%	1,573.6	1,454.8	8.2%	2.38%	2.33%	1.9%	1,454.8	2.3%
Needham (P)	8.56	-	100%	416.02	316.4	31.5%	0.63%	0.51%	23.9%	316.4	0.5%
Northborough (P)	25.6	24.4	4.9%	325.5	326.0	-0.2%	0.49%	0.52%	-5.9%	326.0	0.5%
Peabody (P)	71.1	54.7	29.8%	871.4	817.1	6.6%	1.32%	1.31%	0.5%	817.1	1.3%
Stoughton (P)	1.4	1.5	-2.5%	22.8	25.7	-11.1%	0.03%	0.04%	-16.2%	25.7	0.0%
Wakefield (P)	51.2	48.0	6.6%	735.8	565.5	30.1%	1.11%	0.91%	22.6%	565.5	0.9%
Wellesley (P)	38.2	52.7	-27.4%	928.4	718.5	29.2%	1.40%	1.15%	21.7%	718.5	1.2%
Wilmington (P)	5.2	2.5	108.8%	252.5	154.8	63.1%	0.38%	0.25%	53.7%	154.8	0.2%
Winchester (P)	28.4	16.9	67.6%	519.6	420.0	23.7%	0.78%	0.67%	16.5%	420.0	0.7%
Woburn (P)	59.3	49.5	19.6%	1,289.9	1,163.7	10.8%	1.95%	1.86%	4.4%	1,163.7	1.9%
<b>Subtotal Metro-System (Partially Served)</b>	<b>495.8</b>	<b>428.2</b>	<b>15.8%</b>	<b>8,032.8</b>	<b>6,766.2</b>	<b>18.7%</b>	<b>0.12127</b>	<b>10.8%</b>	<b>11.8%</b>	<b>6,766.2</b>	<b>10.8%</b>
<b>Subtotal Metro-System (Full &amp; Partial)</b>	<b>4,732.4</b>	<b>4,697.4</b>	<b>0.7%</b>	<b>66,240.2</b>	<b>62,403.6</b>	<b>6.1%</b>	<b>100%</b>	<b>100%</b>		<b>62,403.6</b>	<b>100%</b>
<b>Chicopee Valley Aqueduct</b>											
Chicopee	133.3	124.6	7.0%	1,970.8	1,811.7	8.8%	70.31%	69.75%	0.80%	1,811.7	69.8%
South Hadley FD #1	24.5	25.3	-3.1%	391.3	383.5	2.0%	13.96%	14.77%	-5.47%	383.5	14.8%
Wilbraham	25.0	24.6	1.7%	440.9	402.1	9.7%	15.73%	15.48%	1.61%	402.1	15.5%
<b>Subtotal CVA System</b>	<b>182.7</b>	<b>174.4</b>	<b>4.8%</b>	<b>2,803.0</b>	<b>2,597.3</b>	<b>7.9%</b>	<b>100%</b>	<b>100%</b>		<b>2,597.3</b>	<b>100%</b>
<b>Other Revenue Supply</b>											
Cambridge (P)	-	-	0%	1,017.6	0.05	2133844%				0.048	
Clinton <sup>3</sup>	47.2	32.0	47.8%	487.1	449.5	8.4%				449.5	
Worcester (P)	-	-	0.0%	-	-	0.0%				0.0	
Other Revenue Customers <sup>4</sup>	44.5	39.0	14.2%	514.8	483.5	6.5%				483.5	
<b>Subtotal Other Revenue Supply<sup>5</sup></b>	<b>91.7</b>	<b>70.9</b>	<b>29.3%</b>	<b>2,019.5</b>	<b>933.0</b>	<b>116.5%</b>				<b>933.0</b>	
<b>Total Water Supplied</b>											
Fully Supplied Metro Communities	4,236.6	4,269.2	-0.8%	58,207.4	55,637.4	4.6%				55,637	
CVA Communities	182.7	174.4	4.8%	2,803.0	2,597.3	7.9%				2,597	
Partially Supplied Communities	495.8	428.2	15.8%	8,032.8	6,766.2	18.7%				6,766	
Other Revenue Customers	91.7	70.9	29.3%	2,019.5	933.0	116.5%				933.0	
<b>Total Water Supplied<sup>6</sup></b>	<b>5,006.9</b>	<b>4,942.7</b>	<b>1.3%</b>	<b>71,062.7</b>	<b>65,933.9</b>	<b>7.8%</b>				<b>65,933.9</b>	

1) System share for each rate revenue community is the community's share of total MWRA water use for all rate revenue communities. System share for each Chicopee Aqueduct Valley (CVA) community is each CVA community's share of total MWRA water supplied to the CVA system. Water assessments for revenue communities are calculated by allocating the total annual water rate revenue requirement based on each community's share of flow. Water assessments for CVA communities are calculated by allocating the annual CVA rate revenue requirement based on each CVA community's share of CVA flow.

2) Lexington supplies Bedford with partial MWRA water service.

3) The Town of Clinton receives up to 800 million gallons of water per year free of charge and is charged a flat wholesale rate per million gallons for water in excess of 800 million gallons per year.

4) Other Revenue Customers: D.C.R. (Parks & Pools), DCR Blue Hills Ski Area, Stone Zoo, and the Deer Island WWTP.


5) Other Revenue Customers are charged a flat wholesale rate per million gallons of water supplied.

6) This report includes only water supplied for which revenue is collected in accordance with existing water agreements. It does not include water utilized for system maintenance, or water provided to the McLaughlin Fish Hatchery.

(P) Community is partially supplied by MWRA. Marlborough & Northborough are temporarily being fully supplied.

Questions regarding water supplied can be directed to Tim Beallou @ (617) 660-7680 or Leo Norton @ (617) 788-2256.


**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** February 15, 2023  
**SUBJECT:** Update on Invasive Aquatic Plants Management at MWRA Source and Emergency Reservoirs

**COMMITTEE:** Water Policy & Oversight

INFORMATION  
 VOTE

Valerie Moran, P.E., Director, Waterworks  
John J. Gregoire, Program Manager, Reservoir Operations  
 Preparer/Title

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

**RECOMMENDATION:**

For information only.

**DISCUSSION:**

MWRA’s control of aquatic invasive plants started at the Wachusett Reservoir in 2002. Since then, MWRA has diligently monitored source and emergency reservoirs for aquatic invasive plant species, and modified removal and treatment efforts as conditions have changed. The program goal is to identify new infestations and respond quickly with control measures to prevent spread. Staff have documented successful responses in locations where the repeated removal of invasive plants has led to the return of native plants. While staff report successes in a number of areas, continued diligence and program investment are required to prevent future aquatic invasive plant expansions. The current program focus and target plants are at the following reservoirs:

Location (west to east)	Target Plants (Figure 1)
Quabbin Reservoir	No current aquatic invasive plants in main body of reservoir
Wachusett Reservoir	Variable Milfoil, Eurasian Milfoil, Fanwort
Ware River at Shaft 8	Variable Milfoil
Sudbury Reservoir	Fanwort, Water Chestnut
Foss Reservoir	Eurasian Milfoil, Water Chestnut
Weston Reservoir	Eurasian Milfoil
Chestnut Hill Reservoir	Eurasian Milfoil

Table 1. Aquatic Plant Control areas

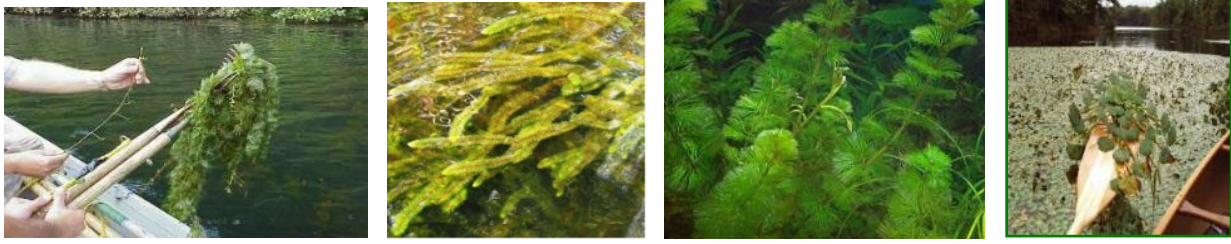


Figure 1. Left to Right: Eurasian Milfoil, Variable Milfoil, Fanwort, Water Chestnut

Pioneering aquatic invasive plants can quickly outcompete native species, grow to nuisance levels, and ultimately choke off water bodies, resulting in water quality problems. Plant die-off and decay consumes oxygen and loads the reservoir with organic matter. This creates a disinfectant demand and increased treatment cost. Added nutrients from this decay can also promote algal growth with the potential for associated toxins and additional water quality concerns. Lastly, aquatic invasive plants can clog intake screens and be an aesthetic nuisance.

The invasive plants Eurasian Milfoil, Fanwort and Variable Milfoil are the focus of most of MWRA's control efforts. These plants spread naturally by roots, seeds and fragmentation, as well as by people, boats, and wildlife. Wildlife is the most challenging vector to control, particularly wading birds, which can transport fragments and seeds from other water bodies to reservoirs.

Aquatic invasive plants respond to subtle changes in environmental conditions. Nutrient inputs, mild or cold winters, wet or dry seasons, duration of reservoir ice cover or lack of ice cover, and reservoir elevations can all have a seasonal impact on the growth of invasive plants. Some years have seen marked reductions in invasive plants through harvest and other control operations. In contrast, other years have seen a rebound of invasive plants in several areas.

Detailed annual surveys are performed at all reservoirs starting from the Quabbin Reservoir in the west and through the metropolitan emergency reservoirs in the east. Each season's findings are compared to the previous season for monitoring of shifts in plant community and as an early warning of the arrival of new aquatic invasive plants. Enhanced surveillance has now become the norm to scout for any new or changing conditions, and staff have built-in contingency efforts to respond rapidly to new infestations.

Control measures include Diver Assisted Suction Harvesting (DASH), hand removal by divers and by boat, mechanical harvesting, and winter drawdowns at two locations (Foss Reservoir and Chestnut Hill Reservoir) to expose and freeze the plants deep into their root systems.

Staff expect that invasive aquatic management at MWRA reservoirs will be a necessary and continuous annual activity to protect water quality for the foreseeable future with levels of effort adjusted to changing conditions.



Figure 1. DASH boat and operations

Quabbin Reservoir:

In 2009, the highly invasive Zebra Mussel was discovered in Laurel Lake, just 50 miles west of Quabbin. Due to this proximal threat, MWRA led the way to establish protocols on boats entering the reservoir. After an initial moratorium, a boat decontamination, inspection and quarantine program was established. This program remains in place to prevent all aquatic invasives from entering Quabbin by hitchhiking on boats and trailers.

Each year, consultant aquatic biologists perform a detailed survey of the Quabbin Reservoir littoral zone (areas of light penetration and potential for plant growth). A prior pioneering colony of the invasive plant *Brittle Naiad* was discovered in 2014. In accordance with established procedures, this was immediately reported to staff, which triggered a rapid contractor response to remove the infestation. This plant has not returned. In 2017, the invasive *Swollen Bladderwort* was discovered in a small concentration, reported and immediately removed. It has not returned.

As of the recent 2022 seasonal survey, the Quabbin Reservoir is free of aquatic invasive plants in the main body of the reservoir. Variable Milfoil is present in two remote upstream areas at Pottapaug Pond and O’Laughlin Pond, both impounded by regulating dams (Fig. 2). In this most recent survey, this plant was found to have decreased in coverage from the prior 2021 survey, and was found in fewer locations compared to the initial 2010 survey. MWRA deploys floating fragment barriers at both locations to prevent migration downstream. In 2022, new fragment barriers were deployed.



Figure 2. Remote ponds at Quabbin Reservoir



## Wachusett Reservoir:

Wachusett Reservoir continues to require the most effort for aquatic plant control and continued diligence due to the large area of shallow water, particularly in the northern basin near Cosgrove Intake (red and yellow areas on the map). The goal is to prevent aquatic invasive plants from colonizing these areas. As of the 2022 season, nearly all of the main reservoir coves were found to have had minimal aquatic invasive plants present, which were removed.

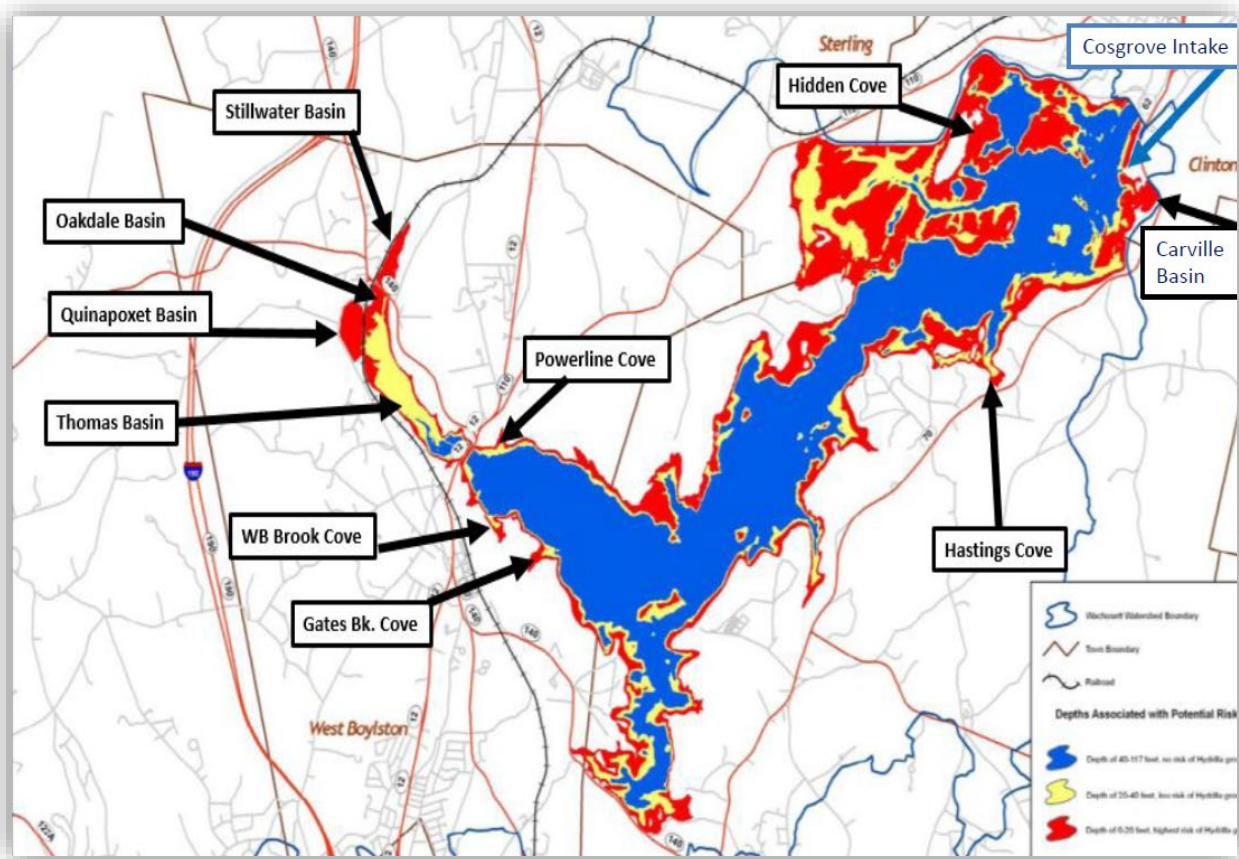


Figure 3. Wachusett DASH Areas

In 2013, control methods here switched from diver hand pulling of aquatic invasive plants to DASH. This occurred first at Stillwater Basin, a densely weed-choked area at the northern end of the reservoir, and subsequently at all reservoir locations. This method has proven to be very effective at removing the plants and their roots. Post-DASH Quality Control video surveys have shown a remarkable return of native plants to these cleared areas.

Figure 4 below shows the continued reduction of plant removal from Stillwater Basin (left side of chart) in gallons of plant matter removed through 2019. One measure of program success is that the plant harvest volume has decreased due to physical removal, but also smaller stems at regrowth since MWRA started the program. Consequently, MWRA now measures plant removal as stem counts, as opposed to gallons.

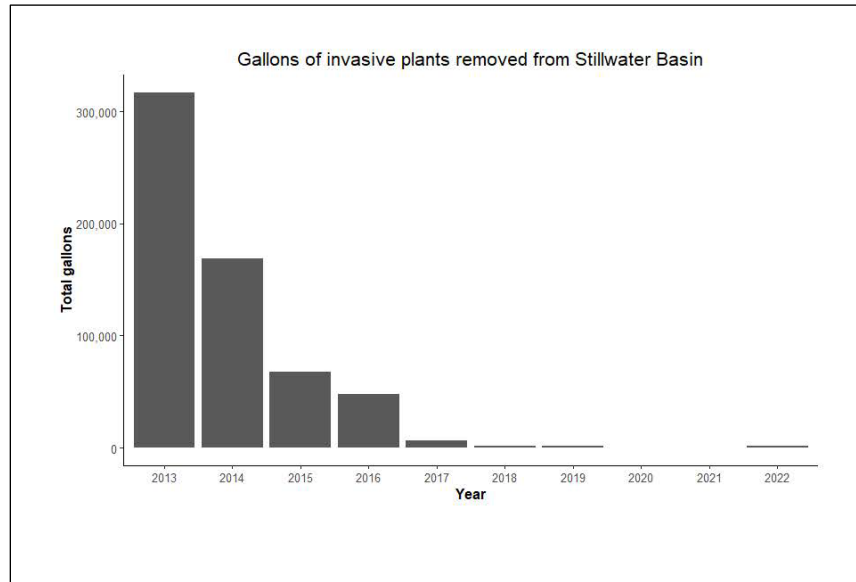


Figure 4. Stillwater Basin Aquatic Invasive Plants Removal (Gallons) 2013-2022.

The Wachusett main reservoir coves and most of the basin system appear to be under control with annual maintenance-level removal and survey passes. Because changing climate can effect plant growth on any given year, staff continue to carry contingency hours in the maintenance contracts.

In 2018, DASH control measures were undertaken in the Quinapoxet Basin targeting a dense Variable Leaf Milfoil population. Full-scale basin wide removal efforts commenced in 2020. This effort has reduced the amount of Variable Milfoil in this basin. As Figure 5 shows, after two heavy removal years, the DASH removal volume decreased as did the number of necessary diver hours.

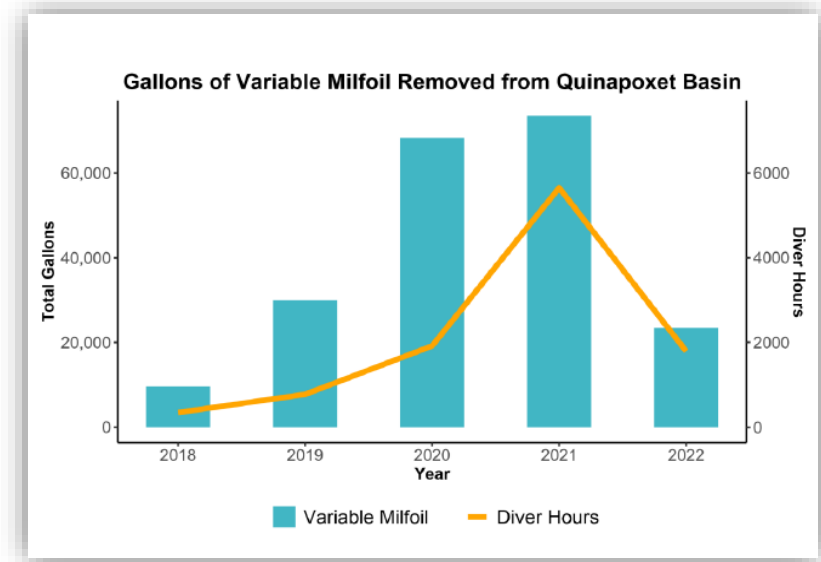


Figure 5. Quinapoxet Basin Variable Milfoil Removal (Gallons) 2018-2022

Emergency Reservoirs:

Different programs are deployed at the emergency reservoirs to control aquatic invasive plants.

Location (west to east)	Control Technique (target plant)
Ware River at Shaft 8	Manual removal (Variable Milfoil) from basin at drawdown
Sudbury Reservoir	DASH (Variable Milfoil) and manual removal (Water Chestnut)
Foss Reservoir	Winter drawdown (Eurasian Milfoil), manual removal (Water Chestnut)
Weston Reservoir	DASH (Eurasian Milfoil)
Chestnut Hill Reservoir	Mechanical harvest and winter drawdown (Eurasian Milfoil)

Table 2. Invasive Plants Removal at Emergency Reservoirs

The next annual survey and emergency reservoirs monitoring contract will commence on July 1, 2023. A key directive in the survey contract is that if any new or expanded aquatic invasive plants are discovered, they must be immediately reported for MWRA response to deploy resources.

**BUDGET/FISCAL IMPACT:**

The FY24 proposed CEB includes \$806,000 for Reservoir Operations invasive plants control program, which includes a comprehensive plant survey of all reservoirs and emergency reservoir water quality monitoring, aquatic invasives control operations, and quality assurance diver inspections for the DASH projects.

**STAFF SUMMARY**


**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** February 15, 2023  
**SUBJECT:** Public Outreach Plan for Temporary Fluoride Shutdown



**COMMITTEE:** Water Policy & Oversight

X  INFORMATION  
  VOTE

Ria Convery, Special Assistant  
Stephen Estes-Smargiassi, Director, Planning and Sustainability  
Preparer/Title

  
David Coppes, P.E.  
Chief Operating Officer

*At the January 18, 2023 Board meeting, staff presented a staff summary outlining a plan to temporarily shut down the fluoride system while the equipment is being replaced. During the discussion, Board members suggested a more comprehensive public outreach program. This staff summary describes those planned efforts.*

**RECOMMENDATION:**

For information only.

**DISCUSSION:**

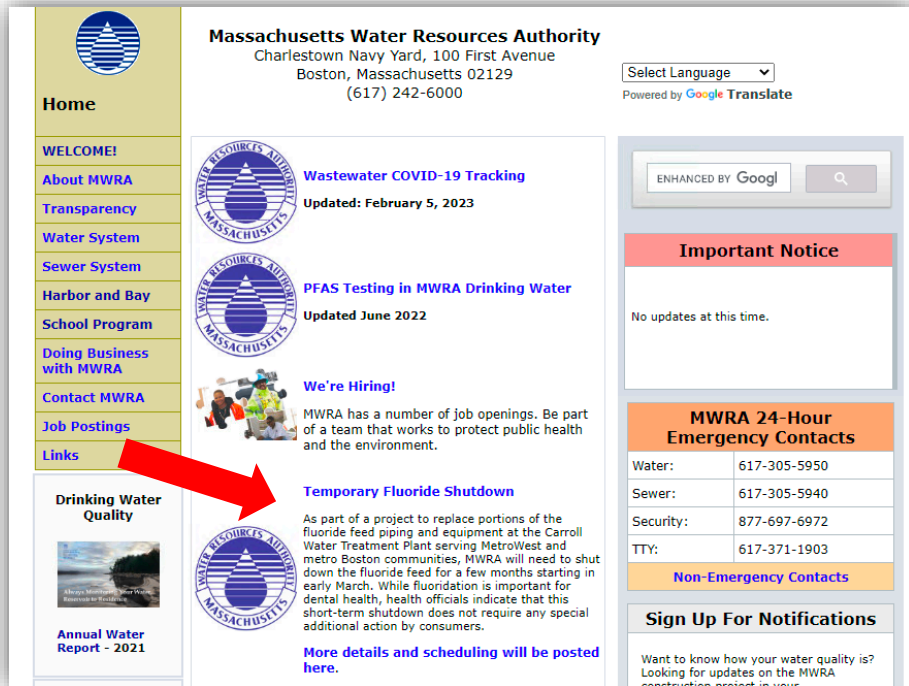
MWRA is about to replace large portions of the almost 20-year-old chemical feed system for fluoride at the plant. To safely and efficiently perform the work, it will be necessary to shut down the fluoride feed system for several months. MWRA has been providing fluoridated water to its member communities since the 1970s, and due to its importance in protecting dental health, consulted with the Department of Public Health Oral Health Office on appropriate outreach prior to the shutdown.

Staff had briefed staff from the Department of Public Health (DPH) and Department of Environmental Protection (MassDEP) on the project and proposed notification process and received their approval for the manner in which MWRA was planning to provide outreach. However, Board members thought additional public outreach would be valuable. Staff has had further conversations with DPH and has modified the public outreach program.

**Planned Notification Procedures:**

To date, MWRA has provided notice to all the communities served by the Carroll Water Treatment Plant prior to and during the shutdown, as detailed below:

- email notice from MWRA to all local water superintendents and local health officers;
- note on highlights page of MWRA Monthly Water Quality report beginning in January and continuing throughout the shutdown;
- notice on front page of the MWRA website; and
- detailed notice of the temporary shutdown on MWRA’s fluoridation website page.



Staff have also added more information about good oral health practices to the web page notice.

Additional outreach in the next few weeks will include:

- press release to local papers, including non-English outlets (draft below);
- social media posts;
- notice to neighborhood health centers; and
- notice to dentists through MassDPH
- MWRA will inform staff of the issue in case they get questions from family and friends

#### MWRA To Temporarily Shutdown Fluoride System

Starting in March, the Massachusetts Water Resources Authority will be replacing portions of the equipment that feeds fluoride into its drinking water. During this period, MWRA will not be adding fluoride to the water. This work is expected to take about three months to complete.

MWRA has worked closely with the Massachusetts Department of Public Health on this issue. While fluoride is important for dental health, health officials believe that this short-term shutdown will not pose any risk to dental health and will not require any special action by consumers.

Fluoride has been added to the region's water since the 1970s. The US Centers for Disease Control recommends its usage for reducing tooth decay and promoting community public health. MWRA also consulted with the Department of Public Health Oral Health Office and the Massachusetts Department of Environmental Protection, both of which approved this temporary fluoride shutdown.

MWRA treats drinking water from the Quabbin and Wachusett Reservoirs at the John J. Carroll Treatment Plant in Marlborough. In addition to fluoride, water is treated with both ozone and ultraviolet light for disinfection, and the pH is adjusted to make the water less corrosive and less likely to leach lead from home plumbing.

If you have any concerns, check with your dental care provider. For more information on your drinking water, please visit [www.mwra.com](http://www.mwra.com) or call 617-242-7283.

### STAFF SUMMARY


**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** February 15, 2023  
**SUBJECT:** Section 56 Replacement of Saugus River Crossing  
 Design Engineering Services During Construction  
 AECOM Technical Services, Inc.  
 Contract 7454, Amendment 1



**COMMITTEE:** Water Policy & Oversight

Peter F. Grasso, Program Manager  
John P. Colbert, P.E., Chief Engineer  
 Preparer/Title

         INFORMATION  
  X   VOTE



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

**RECOMMENDATION:**

To authorize the Executive Director, on behalf of the Authority, to approve Amendment 1 to Contract 7454, Section 56 Replacement of Saugus River Crossing Design Engineering Services During Construction, with AECOM Technical Services, Inc., increasing the contract amount by \$999,993, from \$3,345,887, to \$4,345,880, and extending the contract term by 27 months from 51 months to 78 months.

**DISCUSSION:**

Section 56 is part of the MWRA’s Northern High Service Zone and was originally constructed in 1934. Section 56 primarily consists of a 20-inch diameter cast iron pipe for most of its length and runs along Ocean Avenue, Revere Street, Revere Beach Boulevard, the Lynnway, State Route 1A north onramp and North Shore Road (State Route 1A) in Revere, which previously crossed the Saugus River on the General Edwards Bridge and continues in Lynn on the Lynnway (State Route 1A) and Broad Street to the intersection with Washington Street. Section 56 supplies MWRA Meters 116 and 126 in Revere and Meter 208 to the General Electric Company in Lynn. It is an important pipeline that provides redundancy for the MWRA’s Northern High Service Zone. A steel section of the pipeline that crossed over the Saugus River on the General Edwards Bridge was taken out of service in February 2014 due to severe corrosion and subsequently removed from the bridge in 2017.



In 2017, a feasibility study conducted by Weston & Sampson, Inc. evaluated the options to restore reliable water transmission through Section 56 at its crossing of the Saugus River. The 2017 report identified eight potential replacement route alignments in the project area, and four pipe installation methods, including open trench river crossing, horizontal directional drilling, microtunneling, and removal and replacement on the bridge. The route alternatives were screened with respect to pipeline performance, program risks, cost, and schedule. Screening resulted in the selection of two highest ranked pipeline route alternatives to be evaluated under this contract, horizontal directional drilling pipe replacement alternatives Routes 3 and Route 7. (See Figure 1 attached.)

This contract's preliminary design report evaluated these two route alternatives. Route 7 was recommended by the consultant for final design and construction. Although Route 7 is a longer route for horizontal directional drilling, it has significantly fewer construction impacts on the community and residents of Revere.

Section 56 Replacement of Saugus River Crossing Design Engineering Services During Construction, Contract 7454, is a 51-month professional services contract for design and engineering services during construction (27 months for design/bidding, 12 months for construction and a 12-month warranty period). The design includes approximately 4,500 linear feet of 20-inch diameter water pipeline, of which approximately 2,700 linear feet will be constructed using horizontal directional drilling to install the pipeline under the Saugus River. The new river crossing will replace the removed portion of the Section 56 pipeline that crossed over the General Edwards Bridge. This project will also install new line valves and appurtenances at the new connections to the existing Section 56 in Revere and Lynn.

The scope of services includes performing geotechnical and hazardous waste exploration and assessment programs along the alignments; evaluating traffic impacts; obtaining permits; evaluating and recommending the final pipeline alignment; determining construction control measures for residents, businesses, and pedestrians; developing final design and construction contract documents including drawings and specifications; and bidding services. The scope also includes engineering services during construction to review submittals, evaluate change orders and respond to contractor questions. Resident Engineering Inspection Services will be procured through a separate procurement process.

## **This Amendment**

### Time Extension

27 Months

Amendment 1 is for a 27-month time extension. During the preliminary design phase, the project encountered delays during the geotechnical phase of preliminary design. The delays are largely due to project permitting and associated geotechnical field investigations and reporting. The additional permitting was related to Massachusetts Historical Commission (MHC), Bureau of Underwater Archeological Resources (BUAR), Massachusetts Environmental Policy Act (MEPA), and Massachusetts Department of Environmental Protection (MassDEP).

The additional MHC and BUAR requirements were not anticipated at the start of the contract and the permitting required MWRA to engage the services of a geoarcheologist to perform a reconnaissance survey and generate reports, secure a curatorial storage facility for any potential

artifacts (if found) and, operate all geotechnical investigation sites with geoarcheologist staff. This delayed the start of the geotechnical program by nine months because the program could not begin until the permit requirements were provided by BUAR and the necessary services were in place to complete the additional work.

Moreover, at project inception in 2019, it was also not anticipated that the project would require a full MEPA review and a Chapter 91 license. Staff worked with MassDEP and MEPA to discuss filing requirements; proposed MEPA rule revisions, if enacted at the end of 2022 may have resulted in this project being exempt from filing with MEPA. Those proposed rule changes were not promulgated and MWRA staff met with MEPA on January 10, 2023; MEPA staff stated that the project would require an expanded Environmental Notification Form and a single Environmental Impact Report. Staff estimate the MEPA process will require 12 months to complete. Additionally, Chapter 91 licensing cannot begin until the MEPA review is completed and MWRA receives MEPA certification. Staff estimate time for Chapter 91 licensing to take an additional 6 months.

#### Out of Scope Preliminary Design

\$659,278

During the preliminary design, the geotechnical and hazardous materials field investigation were started on the terrestrial areas on the riverbanks and in the Saugus River to provide information necessary for the installation of the horizontal directional drill pathways and onshore pipeline installation. This work required project notifications for several agencies, including: MHC, BUAR, and the United States Army Corps of Engineers. The original scope of work did not account for additional permitting requirements, an archeological examination of the materials removed from all borings and test pits to look for primordial deposits or items of archeological significance; it only anticipated notifications or self-monitoring. The out of scope work was funded using several task orders under the technical assistance allowance in order to complete the work. However, additional services were required, beyond the original task order, for a site survey, additional meetings with senior level permitting staff, and drafting correspondence for permitting. After completion of this additional work, no archeological materials were found in the river. Despite no finding, additional archeological monitoring during installation of the pipeline along Rice Avenue will be required. The additional costs for these activities is \$49,778.

After completion of the draft preliminary design, additional out of scope services were required. This included additional services to: fully develop the Revere exit work location due to the tight space constraints at the Point of Pines Yacht Club, (i.e. proposed site for pulling back the piping once drilling is complete); revise the risk assessment (i.e. Risk Register) for the horizontal directional drilling pipeline and incorporate the differing marine soil strata, which had more complex subsurface soil profiles than expected; address community impacts for this project; and revise the alignment of the two proposed horizontal directional drilling routes to account for a proposed mixed used development in Lynn adjacent to the originally designed locations. This required additional geotechnical work to incorporate the new horizontal directional drilling access pit locations and the shift of the route into the preliminary design report. In addition, due to the complexity and specialized nature of the geotechnical requirements associated with horizontal directional drilling, multiple rounds of comments and revisions to the work plan, Geotechnical Data Report and Hazardous Materials Reports were required. Additional meetings with senior level geotechnical and permitting staff related to the geotechnical and hazardous material data reports were needed in order to finalize the documents so they could be used in the contract documents. The additional costs for these geotechnical activities was \$351,500.



The scope of services for this contract anticipated an amendment to the existing Chapter 91 license for the original Section 56 pipeline, which was installed as a siphon in the river. Discussions with MassDEP staff concluded that a full permit application for a new Chapter 91 license is required. In addition, the initial scope of services included only a MEPA notification of the project. The new MEPA regulatory requirements (effective January 1, 2022) requiring proponents to assess impacts of projects to Environmental Justice (EJ) populations means that an expanded Environmental Notification Form and single Environmental Impact Report will be required. Work on the Lynn side of the Saugus River is within a census tract characterized as Minority. Additional census blocks in close proximity to the project area are characterized as EJ populations due to income or Minority status. Within the census blocks containing EJ populations in the vicinity of this project, Spanish Creole, Cambodian, and Arabic have been identified as languages spoken by 5% or more of residents who also identify as having limited English proficiency. The proximity of EJ populations to this work require additional public involvement and completion of an analysis of any environmental impacts to these populations. These out of scope work activities are an additional cost of \$258,000.

Project Management \$225,580

Additional costs are required for project management for the extra 27 months of project work. The increased budget is required to manage engineering and subconsultant staff for additional meetings and progress reports for the longer contract time period.

Escalation Due to Time Extension \$115,135

The 27-month time extension results in additional costs for salary escalation for work that is completed later in the project schedule than originally proposed. The consultant has used 3.5% escalation per year. The additional escalation cost for Project Administration is \$3,335, Final Design is \$51,800, and Engineering Services during Construction is \$60,000.

**CONTRACT SUMMARY:**

	<u>Amount</u>	<u>Time</u>	<u>Dated</u>
Original Contract:	\$3,345,887.34	1,735 Days	11/1/19
Amendment 1	<u>\$999,992.75</u>	<u>808 Days</u>	Pending
Amended Contract:	\$4,345,880.09	2,362 Days	

The percentage of amendments for this contract is 29.9% of the original contract value.

**BUDGET/FISCAL IMPACT:**

The FY23 CIP includes \$3,845,887 for Contract 7454. Including this amendment for \$999,992.75, the adjusted subphase total will be \$4,345,880.09 or \$499,993.09 over the CIP amount. This amount will be absorbed within the five-year CIP spending cap.

**MBE/WBE PARTICIPATION:**












The minimum MBE and WBE participation requirements for this project were established at 4.94% and 10.85 % respectively.

**MWRA SECTION 56 WATER MAIN  
SAUGUS RIVER CROSSING**

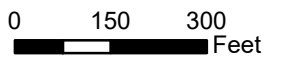
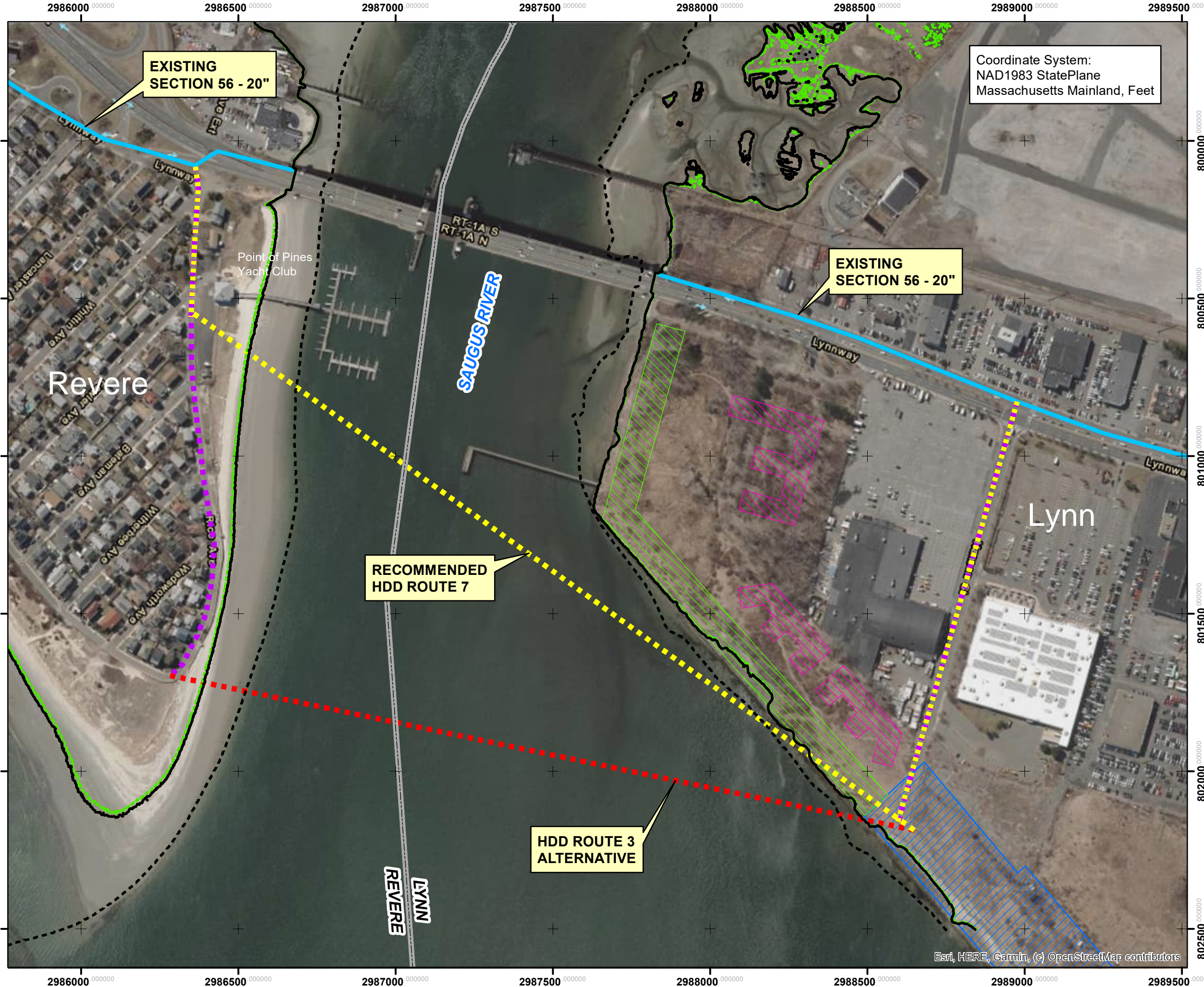
**PROPOSED ALTERNATIVES &  
RECOMMENDED ALIGNMENT  
OVERVIEW PLAN**

**FIGURE 1**

**Legend**

-  Existing Water Main
-  Land Portion Proposed Water Main
-  HDD Route 3
-  HDD Route 7
-  High Tide Line (HTL)\* (4.94 ft. Relative to MSL)  
(4.6 NAVD88, estimated from LiDAR)
-  Mean High Water (MHW)\* (4.50 ft. Relative to MSL)  
(4.2 NAVD88 ft, estimated from LiDAR)
-  Mean Low Water (MLW) (-4.66 ft. Relative to MSL)  
(-5.0 NAVD88 ft, estimated from LiDAR)
-  National Grid Disposal Site
-  Proposed Residential Development
-  Future Lynn Waterfront Park
-  City Boundary

\* Note that at scale shown, HTL and MHW lines are indistinguishable in many locations.



1 inch = 300 feet



**AECOM**

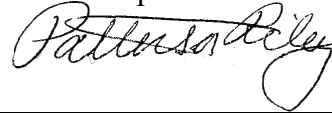
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Massachusetts Mainland, Feet

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Esri, HERE, Garmin, (c) OpenStreetMap contributors

## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Patterson Riley, Special Assistant, Affirmative Action & Compliance Unit  
**DATE:** February 15, 2023  
**SUBJECT:** Approval of the 2023 Affirmative Action Plan



---

**COMMITTEE:** Personnel & Compensation

           INFORMATION  
  X   VOTE

Patterson Riley, Special Assistant, AACU  
Preparer/Title

---

### RECOMMENDATION:

That the Board of Directors approve the Massachusetts Water Resources Authority's Affirmative Action Plan effective for a one-year period from January 1, 2023 through December 31, 2023.

### DISCUSSION:

The Affirmative Action Plan sets out the basic parameters of MWRA's commitment to Equal Opportunity in the areas of Employment (EEO) and Minority/Women Business Enterprise (M/WBE) participation in MWRA procurements and contracted services. The Plan has been prepared pursuant to Section 7(g) of the Authority's Enabling Act, which states:

“The Authority shall develop policies and plans for affirmative action in employment, procurement, and contracting in accordance with laws and consistent with general policies and plans for the Commonwealth.”

MWRA updates its Affirmative Action Plan annually and provides information on the development, implementation and monitoring of the various plan elements in accordance with guidelines of the U.S. Department of Labor, Office of Federal Contract Compliance Programs (OFCCP). Since 2002, MWRA has utilized Affirmity, a nationally known computer software package to produce the required workforce staffing summary reports for each Affirmative Action Plan. Affirmative Action and Compliance Unit staff works with staff from the MIS and Human Resources Departments to convert personnel transaction data from the MWRA's Human Resources Information System and to validate the proposed workforce goals for CY2023.

The text of the plan is attached Attachment A. Copies of the full plan, including appendices are available by request. Attachment B, “MWRA Job Group Representation,” shows the actual number of minority and female employees currently, along with the numbers of over-and under-utilized job groups. The underutilized job groups denote areas for AACU recruitment focus if positions become available. This report is included in the MWRA Orange Notebook, presented to the Board on a quarterly basis.

During the 2022 Affirmative Action Plan year, MWRA hired a total of 81 new employees, including 21 (26%) females and 18 (22%) minorities. There were 112 employees promoted during this period, including 35 (31%) females and 25 (22%) minorities. MWRA is in full compliance with all aspects and requirements of its federally approved affirmative action program and in following those strict guidelines with its Affirmative Action Plan, a promotion only occurs when the individual employee moves from a position within one job group to a new position within a different job group. For Affirmative Action Plan reporting purposes, 75 of these promotions reflect employee promotions where there has been a change in Job Group as described under “Availability Analysis.” Of this total, 17 (23%) females and 21 (19%) minorities were promoted. However, as an employer, the MWRA considers an employee to be promoted at such time that the individual moves into a new position within the same job group, with an increase in pay, grade, different and new job duties. In addition, to enhance upward mobility and avail all employees of a career track where one exists, there were 37 transfers during the 2022 Affirmative Action Plan year and of these, 3 (8%) were minorities and 10 (27%) were females.

A total of 95 terminations occurred during CY 2022. Of the total number of terminations, 24 (25%) were females and 18 (19%) were minorities. Of the total number of terminations, 97% left voluntarily, 52% were employees who retired, and 42% were employees who resigned.

In comparison, during the 2021 Affirmative Action Program year, a total of 88 terminations occurred, including 15 (17%) females and 21 (24%) minorities. Of the total number of terminations, 20% were employees who resigned and 67% were employees who retired. A review of the total number of termination statistics for calendar years 2020, 2021 and 2022 is included in Table A below.

**Table A**

<b>Termination Statistics</b>	<b>Employee Count</b>	<b>Minority</b>		<b>Female</b>	
Total Terminations CY2020	35	9	26%	3	9%
Total Terminations CY2021	88	21	24%	15	17%
Total Terminations CY2022	95	18	19%	24	25%

The race/sex composition of the workforce did not change significantly during the 2022 Affirmative Action Plan year, particularly as compared to Plan years 2020 and 2021.

The current race/sex composition of the workforce for minorities of 23.9% greater than the overall 2022 MWRA workforce staffing goal of 21.3%; and the current sex composition of the workforce for females of 22.4% is greater than the overall 2022 workforce staffing goal of 19.3%.

A review of MWRA workforce staffing statistics for calendar years 2020, 2021, and 2022 is included in Table B below:

**Table B**

<b>Calendar Year</b>	<b>Minority</b>	<b>Female</b>
12/31/20	23.2%	23.5%
12/31/21	23.9%	23.1%
12/31/22	24.2%	22.5%

The 2023 Affirmative Action Plan documents include detailed workforce data for the reporting period December 1, 2021 through November 30, 2022. The data indicates that the number of underutilized job groups for females has increased. In calendar year 2021, there were 6 job groups underutilized by women and this number has increased to 8 job groups for 2022. In calendar year 2021, the data indicate that the number of underutilized job groups for minorities has decreased. In calendar year 2022, there were 5 job groups underutilized by minorities and this number has decreased to 4 job groups for 2022.

MWRA will continue its good faith efforts to maintain minority and female workforce staffing representation and to further reduce the number of job groups underutilized by women and minorities. There may be opportunities to fill critical positions through promotions of qualified internal candidates, including women and minority employees. The Affirmative Action and Compliance Unit will continue to focus its efforts to assist senior management to fill vacancies through the promotion of qualified women and minorities in the Management, Skilled Crafts, Operator, and Professional job groups. In addition, where external recruitment efforts are necessitated by the absence of qualified internal candidates, and senior management deem that the need exists to fill critical position vacancies, AACU will work with MWRA hiring managers and Human Resources to recruit qualified minority and female candidates.

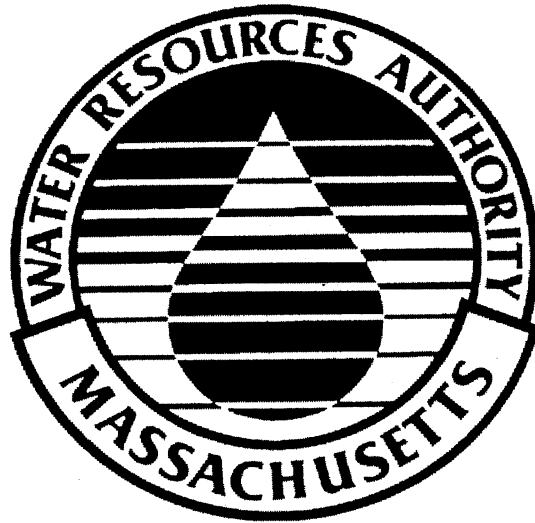
It is the policy of the MWRA to ensure the equitable participation of Minority Business Enterprises (MBEs) and Women Business Enterprises (WBEs) in the award of all contracts including contracts for construction, goods/non-professional services and professional services. As required by the Massachusetts Department of Environmental Protection via the Environmental Protection Agency, the program will also include Disadvantaged Business Enterprises (DBEs) which means an ongoing, independent small business concern which is at least 51% owned and controlled by one or more individual(s) who are both socially and economically disadvantaged and meets the U.S. Department of Transportation eligibility criteria specified under 49 CFR Part 23 and 26 and has certification issued by the federal government or the Massachusetts Supplier Diversity Office. As of January 1, 2018, the goals for all categories – Construction, Professional Services, Goods and Equipment are 4.2% for D/MBE and 4.5% for D/WBE.

The Plan also includes information on the MBE/WBE/DBE Procurement Program. The MWRA spent \$6.6 million and \$3.3 million, respectively, with minority-and women-owned businesses in the last fiscal year. These amounts were 82.6% and 58.3% of the respective MBE and WBE targets, which reflect the achievements of the last fiscal year.

**ATTACHMENT:**

Affirmative Action Plan

**MASSACHUSETTS WATER RESOURCES AUTHORITY**



**AFFIRMATIVE ACTION PROGRAM**

**JANUARY 1, 2023 - DECEMBER 31, 2023**

Frederick A. Laskey  
Executive Director

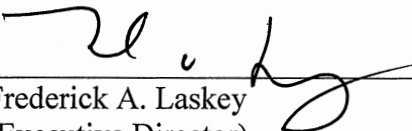
Patterson A. Riley  
Special Assistant  
Affirmative Action & Compliance Unit

Affirmative Action Program

Massachusetts Water Resources Authority  
Charlestown Navy Yard  
100 First Avenue  
Boston, Massachusetts 02129

AAP Completed by: Patterson A. Riley 1/18/2023 January 18, 2023  
Patterson A. Riley Date  
(Special Assistant for Affirmative Action)

Telephone Number: (617) 788-4070

Approved by:  January 18, 2023  
Frederick A. Laskey Date  
(Executive Director)

Inclusive Dates of the AAP: January 1, 2023 - December 31, 2023

**Massachusetts Water Resources Authority  
Affirmative Action Plan**

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## **INTRODUCTION**

The Affirmative Action Plan for the Massachusetts Water Resources Authority (the “MWRA” or “Authority”), is prepared and adopted under Section 7(g) of the Enabling Act, which states:

“The Authority shall develop policies and programs for Affirmative Action in employment, procurement and contracting in accordance with law and consistent with general policies and programs of the Commonwealth.”

The AA Plan was developed to be consistent with federal and state laws and regulations:

Federal Executive Order 11246, as amended.

41 CFR Parts 60-1, 60-2, 60-20, 60-50, 60-250, 60-300, 60-741; Office of Federal Contract Compliance Programs (OFCCP): Affirmative Action Requirements.

The Rehabilitation Act of 1973, as amended.

The Vietnam-era Veterans’ Readjustment Assistance Act of 1974, as amended.

In addition, MWRA’s policies and personnel practices adhere to the nondiscrimination provisions of all applicable federal and state laws, as amended, including the following:

- Title VII of the Civil Rights Act of 1964.
- Civil Rights Act of 1991.
- Age Discrimination in Employment Act of 1967.
- Equal Pay Act of 1963.
- Americans with Disabilities Act of 1990, as amended.
- Massachusetts General Laws, Chapter 151B.
- Massachusetts Comparable Pay Act.

The AA Plan has been developed by the Affirmative Action and Compliance Unit (AACU) to cover the time period January 1, 2023 through December 31, 2023. The Plan includes a results-oriented set of procedures designed to achieve the full utilization of minorities and women in all levels of the MWRA’s workforce and to promote job opportunities for individuals with disabilities and covered veterans. The Plan has been reviewed by the MWRA Board of Directors, voted on and approved for full implementation.

The Massachusetts Legislature created the MWRA in December 1984 to manage water and sewer services for 3.0 million people and 5,500 businesses in 61 communities. While the Boston Harbor Clean-up is the best known of its projects, MWRA has also completed a modernization of the drinking water system. MWRA also maintains 400 miles of water pipes, aqueducts, and tunnels and 228 miles of sewers. Also, nearly completed are projects to control combined sewer overflows, provide adequate water delivery and meet all federal, state and local water and wastewater standards.

## **II. POLICY STATEMENT**

### **Executive Director's Statement**

Our agency serves citizens in every neighborhood, economic class and cultural group in our service area. MWRA will be in harmony with its social role only when our work environment reflects our broader social aspirations for equal opportunity, justice, personal dignity and cross-cultural respect. To that end, we must take personal responsibility for diversity in our organization and in our community.

All of us at the MWRA recognize that we must take affirmative action to prevent and to remedy any discriminatory effects of business or employment practices based on race, color, religion, sex, sexual orientation, gender identity and expression, genetic information, national origin, age, ancestry, citizenship, disability, veteran and marital status.

On behalf of the MWRA, its managers and employees, I am committed to taking those steps which ensure equitable participation in our employment opportunities by the members of any protected class group without regard to race, color, religion, sex, sexual orientation, gender identity and expression, genetic information, national origin, age, ancestry, citizenship, disability, veteran status and marital status. We are committed to achieving equal opportunity for all through fair and effective implementation of our affirmative action plan.

Frederick A. Laskey  
Executive Director

## **Board of Directors' Statement**

We, the Board of Directors of the MWRA, take great pride in our diverse and talented workforce. We recognize that our continued success depends largely on the collective strengths of our employees. Developing the right mix of skills, ideas and individuals requires an unwavering commitment to Equal Employment Opportunity and Affirmative Action. Accordingly, it is our policy to recruit, hire, and advance individuals without regard to their race, color, religion, sex, sexual orientation, gender identity and expression, genetic information, national origin, age, ancestry, citizenship, disability, veteran and marital status.

Our commitment to the principles of Affirmative Action and Equal Employment Opportunity is reflected in all of our policies and procedures from recruitment and hiring to training, compensation, benefits, transfers and promotions. This commitment is based on sound management and business practices, as well as legal requirements.

In keeping with fair employment practices, we will maintain a positive and productive work environment which calls for the highest standard of personal conduct. In accordance with this standard, any type of harassment or discrimination directed toward any employee or applicant for employment on the basis of race, color, religion, sex, sexual orientation, gender identity and expression, genetic information, national origin, age, ancestry, citizenship, disability, veteran and marital status will not be tolerated.

MWRA is committed to Equal Employment Opportunity and Affirmative Action. We expect each employee to be an active partner in this effort by supporting, in word and deed, the spirit and principles of Equal Employment Opportunity and Affirmative Action. Further, we expect that these values will govern the relationships we establish with communities we serve and others with whom we do business. Working together, we can build upon this commitment and create an environment that reflects diversity in its fullest and truest sense.

The Special Assistant, Affirmative Action and Compliance Unit, has responsibility for implementing and monitoring the Authority's Affirmative Action and Compliance Plan. Employees are encouraged to contact the Affirmative Action & Compliance Unit directly in order to obtain a copy of the Authority's Policy on Equal Employment Opportunity and Affirmative Action.

### **III. RESPONSIBILITY FOR IMPLEMENTATION**

#### **Senior Management Responsibilities**

The responsibility for achieving affirmative action goals and objectives rests with the Executive Director, the Special Assistant of Affirmative Action and Compliance Unit, the Director of Human Resources, Division/Department Directors and other managers and supervisors.

#### **Affirmative Action and Compliance Staff**

The Special Assistant, AACU is provided with sufficient authority, senior management support, and staff to execute these responsibilities, and is identified in all internal and external communications regarding the AAP. The Special Assistant may propose additional programs and activities to strengthen the MWRA's commitment to equal employment opportunity and affirmative action and to effectively address AAP/EEO matters.

The Special Assistant, AACU in conjunction with the appropriate staff, is responsible for:

- Implementing affirmative action programs.
- Developing policy statements.
- Designing and conducting audit and reporting systems to monitor protected class status for the following:
  - Recruiting
  - Hiring
  - Promotions
  - Transfers
  - Terminations
  - Demotions
- Periodically reviewing, with the Chairman of the Board of Directors and the Executive Director, the progress of senior managers in furthering the achievement of the Authority's goals.
- Serving as a liaison between MWRA and enforcement agencies.
- Acting as a liaison between MWRA and minority organizations, women's organizations and community action groups concerned with employment opportunities of minorities and women.
- Reviewing the MWRA's AAP with managers and supervisors to ensure the policy is understood and followed.

The MBE/WBE Program Manager in conjunction with the appropriate staff is responsible for:

- Administration and monitoring of the MWRA's MBE/WBE/DBE Plan.

- Assisting divisions in the implementation of the MWRA's MBE/WBE/DBE Program.
- Ensuring that the program is consistent with the MWRA's Supplementary Provision for Equal Employment Opportunity, Anti-Discrimination, and Affirmative Action.

### **Line Management Responsibilities**

Managers and supervisors will implement the program in the following ways:

- Assist in identifying problem areas, establishing goals, and developing time lines.
- Maintain open door policy for employees to discuss issues of equal opportunity and affirmative action.
- Meet with other managers, supervisors, and employees to adhere to MWRA EEO/AA policies.
- Assist in the performance of internal audits to determine compliance.
- Evaluate the performance of subordinate managers and supervisors in achieving affirmative action plan objectives.

### **Other Key Staff**

The Director, Human Resources, has developed and implemented appropriate mechanisms to ensure equal employment opportunity for all applicants and employees.

The General Counsel and the Associate General Counsel for Labor & Employment provide legal advice regarding equal employment opportunity and affirmative action as they affect the Authority.

## **IV. EQUAL EMPLOYMENT OPPORTUNITY**

### **Dissemination of the Plan**

MWRA will communicate its equal employment opportunity policies and affirmative action programs to all relevant audiences in the following manner:

#### **Internally**

Communicate to employees the existence of the Affirmative Action Plan and make it available for inspection. Prominently display EEO/AA posters throughout all business locations identifying appropriate staff to contact.

Conduct special meetings with managers, supervisors and employees to explain the intent of the equal employment opportunity policies, discuss individual responsibility for implementation and make clear the Executive Director's support of the policies.

Discuss the policies in employee orientation sessions and reference it in management training sessions.

Include the policies in the Policies and Procedures Manual.

Publicize the policy on the MWRA's internal and external websites, reports and other media.

Publish articles covering EEO programs, updates, and promotions in newsletters and other publications.

Include non-discrimination clauses in union agreements, and work to eliminate contract provisions that may have discriminating effects.

#### **Externally**

Communicate to applicants for employment the existence of the Affirmative Action Plan, and make it available for review if requested.

Incorporate the EEO clause in all purchase orders, leases and contracts.

Ensure that both minority and non-minority men and women, Veterans, and persons with disabilities are represented in recruitment advertisements.

Communicate to all recruitment sources the existence of the Affirmative Action Plan.

## Development and Execution of the Plan

### Development

#### Workforce Analysis

As of November 30, 2022, MWRA employed 1,061 people. The MWRA divides its workforce into 31 organizational units in Executive, Administration, Finance, Law, and Operations as follows:

Board of Directors	Operations - Administration
Executive - Office of the Executive Director	Operations - ENQUAL
Executive - Affirmative Action	Operations - Facilities Management
Executive - Office of Emergency Preparedness Services	Operations - Laboratory Services
Executive - Internal Audit	Operations - Planning
Executive - Public Affairs	Operations - Toxic Reduction & Control
Executive - Tunnel Redundancy Department	Operations - Engineering & Construction
Administration - MIS	Operations - Wastewater Operations
Administration - Facilities	Operations - Water Distribution & Pumping
Administration - Fleet Services	Operations - Water & Wastewater O&M
Administration - Human Resources	Operations - Water Treatment & Transmission
Administration - Procurement	Operations - Operation Support
Administration - Real Property & Environmental	
Finance - Director's Office	
Finance - Rates & Budget	
Finance - Treasury	
Finance- Controller	
Finance - Risk Management	
Law	

The Office of Federal Contract Compliance Programs requires that non-construction contracts maintain an organizational profile or a workforce analysis to depict staffing patterns. It is a method to determine whether barriers to equal opportunity exist within an organization.

Pursuant to 41 C.F.R. § 60-2.11(a), the Workforce Analysis Report (Appendix A) lists each job title as it appears in the applicable collective bargaining agreements or payroll records, ranked from the highest paid to the lowest paid within each of the 31 organizational units.

The reports display within each organizational unit for each job title, the total number of incumbents, the total number of male and female incumbents, and the total number of male and female incumbents who are White, Black, Hispanic, Asian, American Indian, Native Hawaiian and Other, and Two or More Races. Finally, the reports also supply a wage rate code for each job title.



## Employment Activities December, 2021 - November, 2022

From December 1, 2021 through November 30, 2022, there were a total of 81 new hires at the MWRA, including 21 (26%) females and 18 (22%) minorities. The current race/sex composition of the workforce for minorities of 23.9% is greater than the overall 2022 MWRA workforce staffing goal of 21.3%; and the current race/sex composition of the workforce for females of 22.4% is greater than the overall 2022 workforce staffing goal of 19.3%.

A total of 112 promotions, voluntary demotions and transfers occurred during this reporting period, including 35 (31%) females and 25 (22%) minorities. For Affirmative Action Plan reporting purposes 75 of these promotions reflect employee promotions where there has been a change in Job Group as described under "Availability Analysis." Of this total, 17 (23%) females and 21 (19%) minorities were promoted. In addition, to enhance upward mobility and avail all employees of a career track where one exists, there were 37 transfers and a voluntary demotion during the 2022 Affirmative Action Plan Year and of these 3 (8%) were females and 10 (27%) were minorities.

A total of 95 terminations occurred within the period, and of these, 24 (25%) were females and 18 (19%) were minorities. Of the total number of terminations, 97% left voluntarily, and of those, 52% were employees who retired and 42% were employees who resigned.

### Availability Analysis

Pursuant to 41 C.F. R. 60-2.11(b), an analysis of all major Job Groups is included in the Plan (see Appendix B Job Group Analysis Report). Those jobs having similar content, wage rates and opportunities had been grouped together into 18 Job Groups:

Administrator A	Management A
Administrator B	Management B
Clerical A	Operator A
Clerical B	Operator B
Engineers A	Para Professional
Engineers B	Professional A
Craft A	Professional B
Craft B	Technical A
Laborers	Technical B

Moreover, the 18 Job Groups have been kept sufficiently large enough to make for meaningful statistical analyses. The grouping avoids placing job titles from different EEO-4 categories within the same Job Group, wherever possible. Alternative job groupings were reflected because they do not make substantial differences and do not mask any potential underutilization of minorities or women. This analysis of the major Job Groups on the Availability Analysis forms is shown in Appendix C.

### Action-Oriented Program for Affirmative Employment Opportunities

MWRA is committed to a strong policy of equal employment opportunity and affirmative action and this commitment is clearly expressed in its Affirmative Action Plan, which covers all aspects of the employment process from recruiting and hiring to training and promotion.

MWRA takes affirmative action to ensure that applicants for employment and employees are treated fairly during employment, without regard to their race, color, religion, sex, national origin and other protected groups. MWRA also takes affirmative action steps and make good faith efforts to develop and implement action-oriented programs designed to remove any employment barriers, expand employment opportunities and strive to achieve established workforce staffing goals and objectives.

During the 2023 Affirmative Action Plan year and continuing, MWRA will make good faith efforts to continue to develop and implement an action-oriented program designed to increase employment opportunities, while tailoring the size of its workforce to meet its future mission and maintain organizational efficiency.

The Special Assistant of the Affirmative Action and Compliance Unit, working in conjunction with MWRA Division Directors, will take affirmative steps to establish the following joint accountability good faith efforts to direct their attention toward employee development programs and career counseling initiatives to prepare all interested employees including individuals in targeted EEO groups for consideration of future promotional opportunities, as follows:

- Assist Divisions in efforts to promote qualified employees including minorities and females to fill current or unanticipated vacancies, particularly those positions in underutilized job groups.
- Review the appropriate education, experience and skill requirements for successful job performance.
- Participate in programs, which may impact protected group members, especially in the areas of the development of training and recruitment.
- Schedule confidential meetings with employees who request information on MWRA affirmative action policies, including promotion and training.
- Encourage current employees to take advantage of the above listed training and developmental opportunities, as well as opportunities for promotion.
- Monitor and review, where appropriate, the qualifications of all employees to assure that protected group members are given full opportunities for training and promotion.
- Implement strategic recruitment strategies for underutilized positions likely to require external recruitment.
- Ensure that all promotional opportunities are posted.

#### Identification of Areas for Special Attention/Goals

Underutilization exists in the following job groups: Administrator B, Clerical B, Craft A, Craft B, Management B, Operator A, Para Professional, and Technical A. Special attention is required to increase the representation of minority and/or females in these job groups by the following:

- Identify any applicable barriers to equal employment opportunity.
- Conduct training/awareness sessions with managers and continue to make them aware of the Affirmative Action Plan elements designed to ensure that the Authority policy and affirmative action program objectives are being followed.

During this affirmative action plan period, there may be 125 opportunities to fill vacant positions. These positions may be filled by new hires, promotions or transfers. For unanticipated position vacancies that occur in other job groups, good faith efforts will be made to attain the established goals for women and minorities. Based on the two-factor availability analysis, the following goals have been set. The chart listed below identifies the goals for those projected vacancies.

Goals for Projected Vacancies							
JOB GROUP ADMINISTRATIVE B	# Opportunities	% Availability		% Workforce		Goal	
		Minority	Female	Minority	Female	Minority	Female
Total	3	11.41	22.81	4.55	18.18	1	
JOB GROUP CLERICAL B	# Opportunities	% Availability		% Workforce		Goal	
		Minority	Female	Minority	Female	Minority	Female
Total	6	24.18	50.11	29.17	12.50	2	4
JOB GROUP CRAFT A	# Opportunities	% Availability		% Workforce		Goal	
		Minority	Female	Minority	Female	Minority	Female
Total	9	15.99	5.98	13.76	0.00	1	1
JOB GROUP CRAFT B	# Opportunities	% Availability		% Workforce		Goal	
		Minority	Female	Minority	Female	Minority	Female
Total	7	18.65	3.49	17.89	0.81	1	1
JOB GROUP MANAGEMENT B	# Opportunities	% Availability		% Workforce		Goal	
		Minority	Female	Minority	Female	Minority	Female
Total	5	15.96	23.77	30.00	16.67	1	1
JOB GROUP OPERATOR A	# Opportunities	% Availability		% Workforce		Goal	
		Minority	Female	Minority	Female	Minority	Female
Total	4	20.69	16.40	25.61	10.62	2	1
JOB GROUP PARA PROFESSIONAL	# Opportunities	% Availability		% Workforce		Goal	
		Minority	Female	Minority	Female	Minority	Female
Total	3	24.53	51.59	33.33	50.00	1	
JOB GROUP TECHNICAL A	# Opportunities	% Availability		% Workforce		Goal	
		Minority	Female	Minority	Female	Minority	Female
Total	3	22.17	22.29	33.33	11.11		1

## **Execution**

### Advertising and Recruitment

- The Special Assistant, AACU, annually submits an ad specifically targeted at a publication that has a high minority and female readership.
- The Director, Human Resources ensures that reasonable recruiting and advertising dollars are being targeted to reach minority and female candidates and conducts an analysis to determine the effectiveness of the employment advertisements.
- Recruiters send vacancy announcements to over 30 public and private recruitment sources. The sources included state employment offices, community organizations, interest groups, and other sources.
- Recruiters distribute literature, attend career fairs, and maintain contact with referral sources to assure a steady flow of qualified protected class applicants.

### Selection

- Human Resources and Affirmative Action staff review existing promotion, transfer, training and selection procedures to ensure equal opportunity.
- Human Resources, Affirmative Action, and Division staff develop selection criteria that do not discriminate or tend to screen out women, minorities, covered veterans and/or individuals with disabilities.
- Human Resources and Affirmative Action staff monitor the selection process to ensure equal opportunity and the absence of adverse impact on protected class applicants.
- Human Resources and Affirmative Action staff review application forms to ensure non-discrimination.
- Managers and Supervisors ensure that employees in protected classes receive equal consideration in all selections.

### Promotion, Transfer, Layoff and Recall

Promotions and transfer policies are designed to provide equal opportunity to all employees regardless of race, color, religion, sex, sexual orientation, gender identity and expression, national origin, age, ancestry, citizenship, disability, veteran and marital status. All employees who demonstrate management potential are encouraged to seek advancement into supervisory or other managerial positions. All employees are encouraged to take advantage of the benefits and financial support provided to them for professional development and continuing education, which may enhance their promotional opportunities.

## Compensation

The principle of equal pay for equal work for all employees is a reality. All employees, including females and minorities, receive compensation in accordance with the same standards. Opportunities for overtime work or otherwise earning increased compensation, when available, is afforded to qualified employees without discrimination based on race, color, religion, sex, sexual orientation, gender identity and expression, genetic information, national origin, age, ancestry, citizenship, disability, veteran and marital status. MWRA does not reduce the amount of compensation offered because of any disability income, pension or other benefit the applicant or employee receives from another source.

## Facilities

MWRA maintains all of its facilities on a non-segregated basis. MWRA maintains appropriate facilities for both sexes and handicapped individuals unless the construction of such facilities would create an undue burden on the Authority, its facilities or its operations.

## Training/Career Development

MWRA assures that training programs and seminars are offered to all employees, including members of protected classes on the basis of appropriate and realistic need. All eligible employees are encouraged to participate in the Authority's tuition reimbursement and tuition remission benefit for continued education, career development and job advancement. Training programs are monitored to assure equal opportunity for protected class employees in all training opportunities.

Training needs are re-evaluated annually to determine the areas of highest priority. Emphasis is on programs to increase productivity and meet job requirements.

Human Resources and Division staff have conducted cross-functional training, to facilitate promotional opportunities and reassignments. This training often requires new skills, licenses and/or certifications.

During calendar year 2023, the Authority will continue to offer, as needed, a series of 6 classes which make up the training component of the Unit 2 and Unit 3 Productivity Improvement Program (PIP) and a series of 12 classes which make up the Unit 1 Administrative Certificate Program (ACP). In calendar year 2022, MWRA will continue to provide wastewater and water license preparatory courses to enhance new skills and development, as well as appropriate licenses and certifications to staff. While PIP and ACP classes are required for employees in designated job titles, classes are available for general enrollment by individuals developing their qualifications for future job openings.

## Consideration of Minorities and Females not Currently in the Workforce

MWRA recruits minorities and women, not currently in our workforce, who have the qualifications and requisite skill for employment. All employees engaged in recruiting are committed to the development of sources of minorities and females from organizations, institutions, community agencies, training schools and colleges.

## Support for Community Action Programs

### School Education Program

The MWRA offers School Education Program presentations for grades K-12. The MWRA School Education Program has provided meaningful educational experiences to a number of students of the MWRA service community, including those in the urban communities of the metropolitan area.

Subjects range from the Quabbin Reservoir and the water distribution system to Deer Island and the transformation of wastewater into effluent. One of the School Education Program's goals and objectives is to increase outreach to the schools in the communities that reflect the diverse population of the MWRA service area. The School Education Program has been instrumental in informing students, and by extension, the general public of these communities, of the operation and work of the MWRA.

## **Sex Discrimination Guidelines**

MWRA does not discriminate against any applicant or employee on the basis of sex in hiring, recruiting, promoting, transferring, layoff, termination, compensation or in selecting employees for training or other related programs.

### Recruiting and Advertising

Job advertisements placed by the MWRA in newspapers and other online media for employment do not express a sex preference.

### Job Policies and Practices

- Written personnel policies for affirmative action expressly indicate that there shall be no discrimination against employees on account of sex.
- Employees of both sexes have equal opportunity to any available position which the individuals are qualified to perform.
- MWRA does not make any distinction based upon sex in employment contributions, wages, hours or other conditions of employment. MWRA contribution for insurance, pension, welfare programs and other fringe benefits is the same for men and women, resulting in equal benefits.
- MWRA does not support distinctions between married and unmarried persons of one sex that are not made between married and unmarried persons of the other sex.
- MWRA provides appropriate and comparable physical facilities to both sexes.
- MWRA does not deny a female employee the right to any job which she is qualified to perform.
- MWRA does not penalize women in their conditions of employment because they require time away from work on account of child bearing.
- MWRA does not specify differences for male or female employees on the basis of sex in either involuntary or optional retirement age.

### Wages

- MWRA's wage schedules do not relate to and are not based on the sex of its employees.
- MWRA does not discriminatorily restrict one sex to certain job classifications.

## Sexual Harassment

Acts of harassment by employees are prohibited employment practices under Title VII of the Civil Rights Act of 1964, Massachusetts General Laws, Chapter 151(B) and MWRA policy and are subject to sanctions and disciplinary measures.

It is the goal of the MWRA to promote a workplace that is free from sexual harassment. Sexual harassment means sexual advances, requests for sexual favors, and verbal or physical conduct of a sexual nature when:

- Submission to or rejection of such advances, requests or conduct is made explicitly or implicitly a term or condition of employment or as a basis for employment decisions; or
- Such advances, requests or conduct have the purpose or effect of unreasonably interfering with an individual's work performance by creating an intimidating, hostile, humiliating or sexually offensive work environment.

MWRA's Harassment Prevention Policy, policy [HR.21](#), updated January 3, 2019, sets forth procedures for employees to follow and notify management of any sexual harassment violations. All MWRA employees received Diversity, Equity and Inclusion training sessions in 2021, and Recognizing and Preventing Workplace Harassment training sessions in 2022. In 2023, Human Resources will roll out Respect in the Workplace training sessions for managers, supervisors, and employees.

MWRA personnel investigate complaints of sexual harassment in a prompt, thorough and confidential manner, and recommend appropriate discipline up to and including termination for offenders. Employees should feel confident that retaliation against an individual who has complained about sexual harassment and retaliation against individuals for cooperating with an investigation of a sexual harassment complaint is unlawful and will not be tolerated by this organization.



## **Religion and National Origin Discrimination Guidelines**

MWRA's affirmative action policy prohibits discrimination against employees or applicants for employment on the basis of religion or national origin.

MWRA makes every effort to accommodate the religious observances and practices of employees and prospective employees who regularly observe Friday evening or some other day of the week as their day of religious observance, and/or who observe certain religious holidays during the year and who are conscientiously opposed to performing work or engaging in similar activity on such days when such accommodations can be made without undue hardship on the operation of the Authority's business.

In determining the extent of its obligations under this section, MWRA considers the following factors:

- Business necessity;
- Financial cost and expenses; and
- Resultant personnel problems.

To assure non-discrimination based on religion or national origin, MWRA is engaged in the following activities:

- Internal communications;
- Development of internal procedures described previously;
- Regular notification to employees of EEO policy regarding religion or national origin;
- Utilization of external recruitment sources, including those educational institutions with substantial enrollments of students from various religious and ethnic groups;
- Utilization of religious and ethnic media for institutional and employment advertising.

# **Affirmative Action Program for Individuals with Disabilities**

## **Policy Statement**

The MWRA is committed to take affirmative action to assure equal employment opportunity for qualified individuals with disabilities.

### Definition of Qualified Individual with Disability

A “qualified individual with a disability” is a person who:

- Has a physical or mental impairment that substantially limits a “major life activity”,
- Has a record of such an impairment, or
- Is regarded as having such an impairment and
- Is capable of performing the essential functions of the job with or without reasonable accommodation to his or her disability.

### Pregnancy and Childbirth

Disabilities caused or contributed to by pregnancy, childbirth or other related medical conditions, will be treated the same as disabilities caused or contributed to by other medical conditions.

### Definition of Reasonable Accommodation

A “reasonable accommodation” for a qualified individual with a disability may include, but is not limited to,

- Making existing facilities readily accessible;
- Job restructuring; part-time or modified work schedules; reassignment to a vacant position; modification of equipment or devices; or other similar accommodations.

Note: An accommodation must be reasonable and is not required if it would impose an “undue hardship” on the MWRA.

### Request for Reasonable Accommodations

MWRA commits to making reasonable accommodations to the limitations of qualified individuals with disabilities and qualified disabled veterans, unless such an accommodation would impose on undue hardship on the MWRA’s business.

An employee with a disability may make a request for reasonable accommodations at any time to their supervisor or directly to the Affirmative Action and Compliance Unit or the Director of Human Resources. The Special Assistant of Affirmative Action & Compliance or his or her designee shall be notified of all reasonable accommodation requests by supervisors or managers and shall ensure that reasonable accommodation records are kept separate from individual employee files.

## Communication of Policy

- The Executive Director or his designee will communicate to Division and Department Directors and other managers the MWRA's policy statement concerning employment of qualified individuals with disabilities.
- Where the MWRA conducts employment activities, posters will be prominently displayed setting forth such information regarding the employment of individuals with disabilities as may be required by government agencies.
- The MWRA will ensure that a list of schools, private and state placement agencies and community and social service organizations receive job listings which are externally posted and advertised by the Authority and that the list is reviewed annually.
- The MWRA will continue to notify relevant organizations as well as appropriate public employment agencies and unions, of MWRA's commitment to equal employment opportunity and affirmative action for individuals with disabilities, including veterans.
- A clause concerning the commitment to equal employment opportunity and affirmative action for individuals with disabilities will continue to be included in contracts and purchase orders of \$2,500 or more.
- The MWRA will continue to notify labor unions and (sub) contractors of the commitment to equal employment opportunity and affirmative action for individuals with disabilities and will seek their cooperation and assistance.

## Voluntary Disclosure

An individual may voluntarily self-identify himself/herself as an individual with disabilities by completing the Affirmative Action Data Form, at any time.

Information submitted will be kept confidential, except that (i) supervisors and managers may be informed regarding restrictions on the work or duties of individuals with disabilities, and regarding necessary accommodations; (ii) first aid and safety personnel may be informed, when and to the extent appropriate, if the individual has a condition that might require emergency treatment; and (iii) Government officials engaged in enforcing laws administered by OFCCP, or enforcing the Americans with Disabilities Act, as amended, may be informed.

## Review of Selection Process

All human resources processes shall be reviewed to determine whether present procedures assure careful, thorough and systematic consideration of the job qualifications of disabled applicants and employees for job vacancies filled either by hiring or promotion, and for all training opportunities offered or available.

### Consideration of Qualifications

Records are kept by the Human Resources Department identifying those vacancies, including promotions, for which known disabled persons have been considered. Should any known disabled person be rejected for employment, promotion, or training, a record is made and kept of the reason. If such reason is medically related, the record is treated as a confidential medical record.

Where applicants or employees are selected for hire, promotion, or training, MWRA will undertake any reasonable accommodation which makes it possible to place a disabled person on the job. Records are maintained to describe the accommodation; such records are treated as confidential medical records.

### Miscellaneous

- All MWRA job descriptions reflect the essential qualifications and requirements of each job.
- When an opportunity for hiring or promotion occurs, the MWRA will review the applicable job descriptions to ensure that the qualifications are job related and consistent with business necessity and the safe performance of the job.

## **Affirmative Action Program for Protected Veterans**

### **Policy Statement**

The Authority is committed to take affirmative action to assure equal employment opportunity in every respect for disabled veterans, Armed Forces service medal veterans, recently separated veterans, or other veterans who served during a war, or in a campaign or expedition for which a badge has been authorized (“protected veterans”).

### **Communication of Policy**

- The Executive Director or his designee will communicate to Division and Department Directors and other managers the Authority’s policy statement concerning employment of qualified protected veterans.
- The MWRA will ensure that a list of established veteran’s organizations and public and private recruitment services, included in Appendix D of this Plan, including the appropriate local employment service offices, will receive copies of all positions, which are externally posted and advertised by the MWRA, and that this list will be reviewed annually and MWRA will continue to notify veteran’s service organizations as well as appropriate public employment agencies of the commitment to equal employment opportunity and affirmative action for protected veterans.
- A clause concerning the commitment to equal employment opportunity and affirmative action for protected veterans will continue to be included in contracts and purchase orders of \$10,000 or more.
- The MWRA will continue to notify labor unions and contractors of the commitment to equal employment opportunity and affirmative action for protected veterans and will seek their cooperation and assistance.
- The MWRA will use the outreach measures it uses for others covered by MWRA’s Affirmative Action Program to recruit and employ veterans also covered by this program.
- The MWRA will submit to the Office of the Assistant Secretary of Veterans Employment and Training no later than March 31<sup>st</sup> of each year, a form titled Federal Contract Veterans Employment Report, which shall contain a list of new employees, and those individuals who have self-identified as protected veterans hired during the period covered by the Report.

## Voluntary Disclosure

- Subsequent to making a job offer, but prior to commencing duties, a prospective employee will be offered the opportunity to self-identify as a special disabled veteran, disabled veteran, a veteran of the Vietnam Era or other protected veteran. The MWRA will consider only that portion of the veteran's military record that is relevant to the job for which the veteran is being considered. After beginning employment, an employee may voluntarily self-identify him/herself at any time as a protected veteran.
- Information submitted will be kept confidential, except that (i) supervisors and managers may be informed regarding restrictions on the work or duties of disabled veterans, and regarding necessary accommodations; (ii) first aid and safety personnel may be informed, when and to the extent appropriate, if a veteran has a condition that might require emergency treatment; and (iii) Government officials engaged in enforcing laws administered by OFCCP, or enforcing the Americans with Disabilities Act, as amended, may be informed.

## Review of Selection Process

All human resources processes shall be reviewed to determine whether present procedures assure careful, thorough and systematic consideration of the job qualifications of protected veteran applicants and employees for job vacancies filled either by hiring or promotion, and for all training opportunities offered or available.

## Consideration of Qualifications

In determining the qualifications of a covered veteran, MWRA will consider only that portion of the military record, including discharge papers, relevant to the specific job qualifications for which the veteran is being considered.

Records are kept by the Human Resources Department identifying those vacancies, including promotions, for which known disabled persons and protected veterans have been considered. Should any known disabled person or protected veteran be rejected for employment, promotion, or training, a record is made and kept of the reason. If such reason is medically related, the record is treated as a confidential medical record.

Where applicants or employees are selected for hire, promotion, or training, MWRA will undertake any reasonable accommodation which makes it possible to place a disabled person or veteran on the job, that is not an undue hardship. Records are maintained to describe the accommodation; such records are treated as confidential medical records.

## Miscellaneous

- All MWRA job descriptions reflect the essential qualifications and requirements of each job.
- When an opportunity for hiring or promotion occurs, the MWRA will review the applicable job descriptions to ensure that the qualifications are job related and consistent with business necessity and the safe performance of the job.

- MWRA has established a hiring benchmark for veterans of 8% for the 2021 Affirmative Action Plan year.
- The MWRA will not reduce the amount of compensation to veterans by the amount the veteran receives from disability income, pension or other benefits related to his or her status as a veteran.

## **Internal Auditing and Reporting Systems**

Internal auditing and reporting for Affirmative Action is managed through the use of monthly, quarterly, and annual reports generated by AACU and shared with management. Reports reflecting workforce compensation, promotions, transfers and terminations are reviewed to ensure that the policy of non-discrimination and equal employment opportunity is carried out. State and local governments information reports (EEO-4) are prepared and submitted in accordance with regulation and written instructions.

## **Internal Complaint Procedure**

The internal complaint procedure provides the opportunity for any individual (employee or applicant) who believes that she or he has been harassed, discriminated against or unfairly treated by the MWRA to file a complaint using the procedures set forth below.

### Filing a Complaint

- The individual alleging discrimination should file a written and signed complaint with the Special Assistant of Affirmative Action and Compliance Unit (form available in AACU), or the Director of Human Resources. Detailed and specific allegations should be provided along with an indication of the action(s) or resolution the individual is seeking.
- The complaint must be filed in as timely a fashion as possible.

### No Retaliation

Employees and applicants shall not be subject to harassment, intimidation, threats, coercion or discrimination because they have engaged in or may engage in the following activities:

- Filing a complaint;
- Assisting or participating in an investigation, compliance evaluation, hearing, or any other activity related to the administration of the affirmative action provisions of the Federal, state or local law requiring equal opportunity for women, minorities, individuals with disabilities or protected veterans;
- Opposing any act or practice made unlawful by any Federal, state or local law requiring equal opportunity for women, minorities, individuals with disabilities or protected veterans; or

- Exercising any other right protected by any Federal, state or local law requiring equal opportunity for women, minorities, individuals with disabilities or protected veterans.

### Procedure

- The Special Assistant of Affirmative Action and Compliance Unit and/or Director of Human Resources, will be responsible for accepting complaints of discrimination in writing.
- Upon receiving a complaint of discrimination, a complaint investigator will be assigned, who shall attempt to determine through preliminary fact finding if a formal investigation is warranted.
- Upon determination that an investigation is warranted, a date will be scheduled for an in-depth interview with the complainant and other relevant parties. The complaint investigator shall attempt to bring about a satisfactory resolution with the complainant and appropriate management and make recommendations accordingly.
- Any agreement or resolution may be in writing and if in writing, copies provided to all appropriate parties.
- The complaint resolution process shall be concluded in an expeditious manner. It is the MWRA's intention to resolve all complaints internally and every effort will be made to maintain confidentiality to the extent practicable.
- The complaint investigator will advise the complainant of his or her administrative rights and the right to file a formal charge with a state or federal agency and the time limits imposed on the exercise of these rights.



## Rejection or Cancellation of the Complaint

The MWRA will indicate when a complaint has been rejected for further processing.

In the event an individual files an external complaint, the MWRA's legal counsel will handle all communications. All investigations shall be conducted in a confidential manner to the extent practicable.

In addition to the above, you may file a formal complaint with the government agencies listed below. Using MWRA's complaint process does not prohibit you from filing a complaint with these agencies.

Massachusetts Commission Against  
Discrimination (MCAD)  
One Ashburton Place, 6<sup>th</sup> Floor  
Boston, MA 02108

Massachusetts Office of Diversity and Equal  
Opportunity  
One Ashburton Place - Rm. 213  
Boston, MA 02108

Springfield Office  
MCAD  
436 Dwight Street - Rm. 220  
Springfield, MA 01103

U.S. Equal Employment Opportunity  
Commission  
JFK Federal Building  
475 Government Center  
Boston, MA 02203

Worcester Office  
MCAD  
455 Main Street - Rm. 101  
Worcester, MA 01608

U.S. Department of Labor  
Office of Federal Contract  
Compliance Programs  
JFK Federal Building - Rm. E235  
Boston, MA 02203

New Bedford Office  
MCAD  
800 Purchase Street - Rm. 501  
New Bedford, MA 02740

## **V. MBE/WBE/DBE Program**

### **Policy Statement**

It is the policy of the Massachusetts Water Resources Authority (Authority) to ensure the equitable participation of Minority Business Enterprises (MBEs) and Women Business Enterprises (WBEs) and Disadvantaged Business Enterprise (DBEs) in the award of all contracts including contracts for construction, goods/non-professional services (supplies and equipment) and professional services (design selection and consultants).

### **Definitions**

- Minority Business Enterprise (MBE) means an ongoing and independent business enterprise which is owned and controlled by one or more minority persons and meets the Massachusetts Supplier Diversity Office (SDO) criteria specified under 425 CMR 2.03 (d) (and, if applicable, one or more of the provisions of 425 CMR 2.06).
- Women Business Enterprise (WBE) means an ongoing and independent business enterprise which is owned and controlled by one or more women and meets SDO certification criteria specified under 425 CMR 2.03 (d) (and, if applicable, one or more of the provisions of 425 CMR 2.06).
- Disadvantaged Business Enterprise (DBE) means an ongoing, independent small business concern which is at least 51% owned and controlled by one or more individual(s) who are both socially and economically disadvantaged and meets the U.S. DOT eligibility criteria specified under 49 CFR Part 23 and 26 and has certification issued by the federal government or the SDO.

### **Outreach**

The Authority communicates with appropriate advocacy groups and representatives such as SDO, Massachusetts Minority Contractors, and National Association of Minority and Women Owned Law Firms, as well as others, to develop new sources of supply, discuss the M/W/DBE Program and develop initiatives designed to enhance the Plan's effectiveness.

### **Monitoring and Reporting**

The Affirmative Action and Compliance Unit will maintain such records, data and information as may be required to document compliance with Authority policies and procedures, and applicable federal, state and local laws and regulations.

### MassDEP Procurement Goals

MassDEP has undertaken an Availability Analysis with Clean Water Trust in 2016 and the first half of 2017 to develop new DBE goals. As of January 1, 2018, the goals for all categories – Construction, Professional Services, Goods and Equipment are 4.2% for D/MBE and 4.5% for D/WBE.

<b>Procurement Categories</b>		
	Construction Goals	Professional Goals
D/MBE	4.2%	4.2%
D/WBE	4.5%	4.5%

In FY22, EPA-assisted contracts totaled 5.2% for construction, with the balance related to engineering, environmental consulting and other services. On this basis, MassDEP has utilized the above goals for both construction and professional services. The specific sub-industries such as water and wastewater engineering, etc. accounted for some of the dollars of these prime contracts and subcontracts.

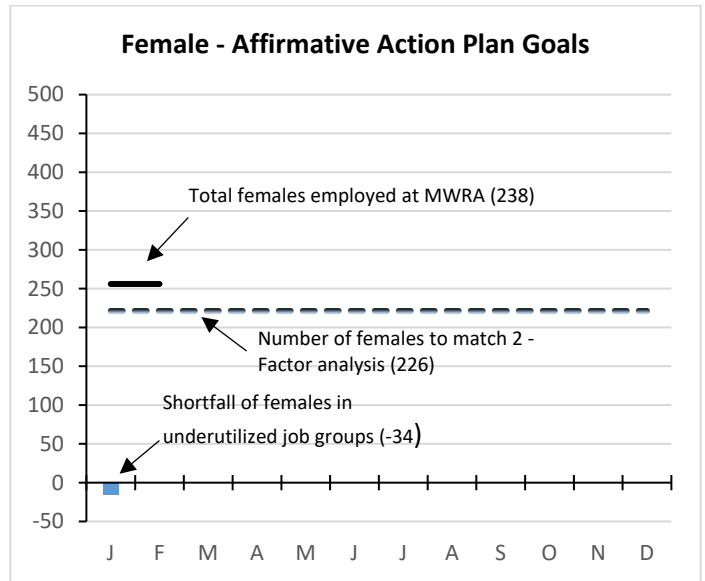
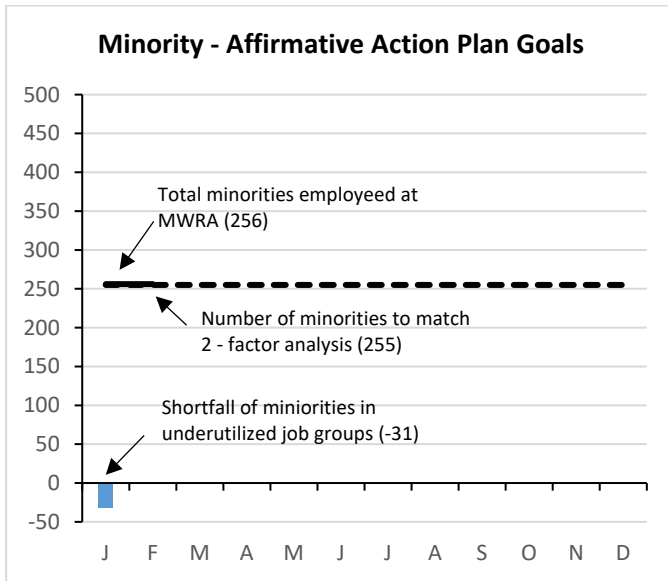
### MWRA Procurement Goals

Based upon the Authority's 2002 Availability Study, the MBE and WBE procurement goals are as follows:

<b>Procurement Categories</b>			
	Construction Goals	Professional Goals	NonProfessional Goals
MBE	7.24%	7.18%	5.61%
WBE	3.60%	5.77%	4.88%

For FY22 the MWRA spent \$6.6 million and \$3.3 million respectively with minority and women owned business. These amounts were 82.6% and 58.3% of the respective MBE and WBE targets.

**Attachment B**  
**MWRA Job Group Representation**  
**CY23**



**Underutilized Job Groups – Workforce Representation**

Job Group	Total Employees as of 1/1/2022	Actual Minorities as of 1/1/2022	Achievement Level	Minority Over or Under utilized	Actual Females As of 1/1/2022	Achievement Level	Female Over or Under utilized
Administrative A	27	5	3	2	14	6	8
Administrative B	22	1	4	-3	4	7	-3
Clerical A	23	7	5	2	19	17	2
Clerical B	24	7	6	1	3	12	-9
Engineer A	82	21	21	0	20	21	-1
Engineer B	59	19	17	2	14	14	0
Craft A	111	16	25	-9	0	6	-6
Craft B	123	24	26	-2	1	5	-4
Laborers	54	14	15	-1	3	2	1
Management A	87	18	21	-3	32	24	8
Management B	37	11	10	1	6	9	-3
Operators A	62	4	16	-12	2	7	-5
Operators B	59	19	9	10	3	2	1
Professional A	29	7	8	-1	17	13	4
Professional B	153	47	45	2	69	49	20
Para Professional	47	15	11	4	23	22	1
Technical A	52	18	11	7	6	9	-3
Technical B	8	3	2	1	2	1	1
<b>Total</b>	<b>1059</b>	<b>256</b>	<b>255</b>	<b>32/-31</b>	<b>238</b>	<b>226</b>	<b>46/-34</b>

**STAFF SUMMARY**

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




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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 an amendment 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.

**February 2023 PCR Amendments**

There is one PCR Amendment this month.

Organizational Changes:

1. Salary adjustment to one filled position in the Operations Division, Pipe Maintenance - Water Department for Master Welder I (Unit 2, Grade 16) per union agreement for internal pay adjustment due to new recruitment rate.

**BUDGET/FISCAL IMPACT:**

The annualized budget impact of these PCR amendments will be \$3,873. Staff will ensure that the cost associated with these PCR amendments will not result in spending over the approved FY23 Wages and Salaries budget.

**ATTACHMENTS:**

Job Description

MASSACHUSETTS WATER RESOURCES AUTHORITY  
 POSITION CONTROL REGISTER AMENDMENTS  
 FISCAL YEAR 2023

PCR AMENDMENTS REQUIRING BOARD APPROVAL - February 15, 2023															
Number	Current PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Current/Budget Salary	Estimated New Salary		Estimated Annual		Reason For Amendment
													\$ Impact		
B21	Operations Pipe Maint. Water 3383036	F	S	Master Welder I	2	16	Master Welder I	2	16	\$60,657	\$64,530	\$64,530	\$3,873	\$3,873	Per union agreement. Internal pay adjustment due to new recruitment rate.
<b>BOARD TOTAL=</b>					1										
										<b>TOTAL:</b>		\$3,873	-	\$3,873	

**MWRA  
POSITION DESCRIPTION**

**POSITION:** Master Welder I  
**DIVISION:** Operations  
**DEPARTMENT:** Pipe Maintenance - Water

**BASIC PURPOSE:**

Performs inspection, servicing and maintenance on structural components of vehicles, shop equipment and steel water mains.

**SUPERVISION RECEIVED:**

Sr.WDS Foreman, WDS General Foreman and/or Sr. Program Manager, Pipelines

**SUPERVISION EXERCISED:**

None.

**RESPONSIBILITIES:**

- Inspects structural components of vehicles and equipment to locate trouble and determine needed repairs.
- Installs pipe and valve restraints and pipe supports.
- Performs welding, grinding and cutting procedures under the direction of the Sr. WDS Foreman, WDS General Foreman and/or Sr. Program Manager, Pipelines.
- Performs repairs to MWRA steel water mains, tanks and hatches.
- Keeps inventory of welding and cutting stock including structural steel members and recommends needed supplies.
- Keeps and updates records of work performed.

**SECONDARY DUTIES:**

- Performs other related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) A high school diploma or GED; and
- (B) One (1) year certificate from college or technical school; and
- (C) Three (3) to six (6) years experience in welding, grinding and cutting in an automotive and heavy equipment area; or
- (D) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Knowledge of methods, tools, materials and practices used in repairing, rebuilding and adjusting automotive equipment. Welding, grinding and cutting are key skills required.
- (B) Skill in the use of the tools and equipment employed in repairs, rebuilding and adjustment work.
- (C) Skill in diagnosing structural problems in conjunction with Foreman and Master Mechanic.
- (D) Ability to operate any motor-driven equipment in section.
- (E) Ability to understand and follow oral and written instructions.
- (F) Excellent interpersonal, oral, and written communications skills.
- (G) Basic reading, writing, mathematical, and scientific, skills.

**SPECIAL REQUIREMENTS:**

Valid Class D Massachusetts Motor Vehicles Operator's License.



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

Power, hand and welding tools, construction equipment, mobile radio, telephone, personal computers 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 handle, finger, feel or operate objects, tools, or controls and reach with hands and arms. The employee frequently is required to stand and talk or hear. The employee is occasionally required to walk; sit; climb or balance; stop, kneel, crouch, or crawl.

The employee must frequently lift and/or move up to 50 pounds and occasionally lift and/or move more than 100 pounds. Specific vision abilities required by this job include close vision, distance 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 occasionally works in outside weather conditions. The employee occasionally works near moving mechanical parts and is occasionally exposed to wet and/or humid conditions and vibration. The employee occasionally works in high, precarious places and is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals and risk of electrical shock. The employee occasionally works in extreme bright light or extreme inadequate light conditions, cramped work space that requires getting into awkward positions.

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

**September 2016**