



# 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:* A. Pappastergion  
*Secretary:* B. Peña  
*Board Members:*  
P. Flanagan  
J. Foti  
H. Vitale  
J. Walsh  
P. Walsh  
M. White-Hammond  
J. Wolowicz

## **BOARD OF DIRECTORS' MEETING**

**To be Held on Wednesday, April 12, 2023**

Time: 1:00pm

**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/r7ac9b178cf1f800cc947fd59e6ad4b84>

Event Number: 2331 051 1558

Password: 041223

Telephone: (617) 242-6000  
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## **REVISED AGENDA (2)**

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

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

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

### **IV. EXECUTIVE SESSION**

i. Approval of March 15, 2023 Executive Session Minutes

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

1. Watershed Land Acquisition

#### **B. Collective Bargaining**

1. Collective Bargaining – All Bargaining Units (verbal)

### **V. PERSONNEL & COMPENSATION**

#### **A. Approvals**

1. PCR Amendments – April 2023

### **VI. WASTEWATER POLICY & OVERSIGHT**

#### **A. Approvals**

1. Approval of Appointment of Alfredo Vargas to the Wastewater Advisory Committee

**VII. ADMINISTRATION, FINANCE & AUDIT**

**A. Information**

1. 2023 Amendment and Change Order Report
2. Update on MWRA's Maintenance Program
3. 2022 Annual Update on New Connections to the MWRA System
4. Delegated Authority Report – March 2023
5. FY23 Financial Update and Summary through March 2023

**VIII. CORRESPONDENCE TO THE BOARD**

- A. WSCAC Comments on March 15, 2023 MWRA Staff Summary Regarding Watershed Forestry Review

**IX. OTHER BUSINESS**

**X. ADJOURNMENT**

**MASSACHUSETTS WATER RESOURCES AUTHORITY**

Meeting of the Board of Directors

March 15, 2023

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A meeting of the Massachusetts Water Resources Authority (“MWRA”) Board of Directors was held on March 15, 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.

Chair Tepper presided remotely from MWRA headquarters. Also present from the Board were Messrs. Foti (remotely from MWRA headquarters), Pappastergion (remotely from MWRA headquarters), Peña (remotely from MWRA headquarters), Vitale (remote participation), Jack Walsh (remotely from MWRA headquarters), Patrick Walsh (remotely from MWRA headquarters), Rev. White-Hammond (remotely from MWRA headquarters) and, Ms. Wolowicz (remote participation). Mr. Flanagan was absent.

MWRA Executive Director Frederick Laskey, General Counsel Carolyn Francisco Murphy, Chief Operating Officer David Coppes, and Assistant Secretary Kristin MacDougall participated remotely from MWRA headquarters. Other MWRA staff in attendance remotely included Carolyn Fiore, Deputy Chief Operating Officer; Thomas Durkin, Director, Finance; Kathy Murtagh, Director, Tunnel Redundancy; Patterson Riley, Special Assistant for Affirmative Action; Paula Weadick, Director, MIS; Stephen Estes-Smargiassi, Director, Planning and Sustainability; Daniel Nvule, Senior Program Manager, Planning; John Gregoire, Program Manager, Operations; Jon Szarek, Senior Program Manager, Planning; Wendy Chu, Director, Human Resources; Rita Mercado, Acting Director, Procurement; Matthew Horan, Deputy Director of Finance/Treasurer; and, Ria Convery, MWRA Special Assistant to the Executive Director and Board Assistant Secretary. Undersecretary María Belén Power, Executive Office of Environmental Affairs (EEA) attended remotely from MWRA headquarters. Vandana Rao, EEA, participated remotely. Joseph Favaloro and Matthew Romero, MWRA Advisory Board, participated remotely from MWRA headquarters.

Chair Tepper called the meeting to order at 1:07pm.

**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. She added that the meeting would be recorded, and that the agenda and meeting materials were available on MWRA’s website. Chair Tepper 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. She also announced that individual roll call votes would be conducted after each motion was made and given an opportunity for discussion.

**APPROVAL OF FEBRUARY 15, 2023 MINUTES**

A motion was duly made and seconded to approve the minutes of the Board of Directors’ meeting of February 15, 2023.

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

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

(ref. I)

#### REPORT OF THE CHAIR

Chair Tepper invited Board Members and MWRA staff to say a few words about retired Board Member John Carroll, who passed away on February 25, 2023, at the age of 95.

Vice Chair Pappastergion spoke in tribute to Mr. Carroll. He noted that Mr. Carroll was not only a key, original Board Member, but also a respected role model and personal mentor for himself and many public works officials. He noted that the John J. Carroll Public Works Administration Building in Norwood and MWRA's Carroll Water Treatment Plant stood to preserve his remarkable legacy as a public servant. Mr. Pappastergion added that in his view, one of Mr. Carroll's most significant roles as a Board Member was that of a gifted negotiator, able to affect compromise in disagreements, and that his influence was a major factor in the Board's success over the years. He then invited Board Members, MWRA staff, and other meeting participants to observe a moment of silence.

Following a moment of silence, MWRA Executive Director Fred Laskey offered some thoughts in Mr. Carroll's memory. He noted that Mr. Carroll was an honest and forthright mentor and friend, and a man of strong faith, character and integrity. He added that the Town of Norwood had honored Mr. Carroll on the day of his funeral by lining the route to the cemetery with DPW trucks and equipment. Mr. Laskey concluded by stating that Mr. Carroll will be remembered as a family man, and as a valued member of the Norwood and MWRA communities. (ref. II)

#### REPORT OF THE EXECUTIVE DIRECTOR

Mr. Laskey advised that a March 14, 2023 storm had produced over 3.5 inches of rain in less than 24 hours. He reported that staff worked throughout the storm, and that MWRA's facilities had held steady throughout. He advised that there is an issue with the South Boston pump station in the tunnel, but that staff had managed the flows to minimize impacts, adding that more information would be provided by staff at a later date. Mr. Laskey then noted that the MWRA Advisory Board would soon elect a new member of the MWRA Board of Directors. Finally, Mr. Laskey advised that the EPA announced a proposed a new PFAS regulation for drinking water, which was not a surprise and was expected. He

explained that the proposed regulations were not a concern for MWRA at this time, because MWRA's source waters are protected through a watershed protection program. He noted that staff had distributed a fact sheet about the matter to Board Members and invited Stephen Estes-Smargiassi, MWRA Director of Planning and Sustainability, to provide more information.

Mr. Estes-Smargiassi briefed the Board on the EPA's proposed PFAS regulations, and their implications for MWRA's water system. He provided background on the regulations' development, and explained that EPA was proposing new limits for six PFAS compounds. He noted that under the new standard, two compounds are measured in Maximum Contaminant Levels (MCLs), while four others are measured on a Hazard Index, which is a new approach. Next, Mr. Estes-Smargiassi explained that, based on current data, MWRA staff does not anticipate difficulty in meeting the new requirements; therefore, MWRA's fully-supplied communities were expected to meet the standard. He advised that MWRA's partially-supplied communities and water utilities nationwide will need to look closely at their own data and water sources. He noted that some Massachusetts communities that currently meet the state standard could potentially fall short of the new federal standards, that MWRA had issued an advisory to its water service communities and that staff would provide guidance and assistance to communities as needed. Mr. Estes-Smargiassi advised that the proposed PFAS detection limits were very, very low, measured in parts per trillion vs. parts per million. He noted that MWRA is blessed with well protected sources and while we see very small amounts of some of these compounds, probably from atmospheric deposition, none of them were at levels that rise close enough to the standards. Finally, Mr. Estes-Smargiassi advised that staff would keep Board Members apprised as they carefully reviewed the EPA's proposed regulations and prepare comments.

Secretary Tepper asked whether the same compounds were regulated in the proposed EPA regulations in comparison with the state regulations, or additional ones. Mr. Estes-Smargiassi explained that four of the six compounds included in the proposed EPA regulation overlap with the six that the state regulates; however, two of them do not, and two that Massachusetts regulates are not among the six included in the proposed EPA regulation. He advised that staff expects there will be changes to the state regulations as well as additions. Board Member White-Hammond requested clarification on requirements for the six PFAS compound values. Mr. Estes-Smargiassi explained the calculation of reportable values. (ref. III)

#### EXECUTIVE SESSION

Chair Tepper 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. She announced that the planned topics of discussion in Executive Session were an update on the Conservation Law Foundation Case relating to MWRA's industrial pretreatment program; an update on the Boston Harbor Case pending in federal district court; and, a proposed settlement of claims with BHD/BEC JV 2015, a Joint Venture and Arcadis U.S. Inc. on the Chelsea Creek Headworks Project. She announced that the Board would return to Open Session after the conclusion of Executive Session.

A motion was duly made and seconded to enter Executive Session for 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 other person is present or able to hear the discussion at their remote location. A response of “yes” to the Roll Call to enter Executive Session when their name was called would also be deemed their statement that no other person was present or able to hear the Executive Session discussion.

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Tepper		
Foti		
Pappastergion		
Peña		
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 1:20pm and adjourned at 2:19pm.

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

#### WATER POLICY AND OVERSIGHT

##### Information

##### Report on 2022 Water Use Trends and Reservoir Status

Staff presented a report on MWRA’s water use trends and reservoir status for CY2002. Mr. Estes-Smargiassi began with a brief overview of the MWRA water supply system, including its water sources, watersheds and storage capacity. He explained that the MWRA water system’s safe yield is 300 million gallons per day (MGD) and presented MWRA’s water system demand levels over time. He noted that that current water system demand is approximately 200 MGD, which is below safe yield and significantly lower than 1985’s demand level of approximately 330 MGD. He then reported that the five-year average for MWRA water system demand stayed within the 200 MGD range throughout the 2022 Massachusetts drought.

Next, Daniel Nvule, MWRA Senior Program Manager, Planning, presented MWRA service community water consumption data. He reported that total annual water consumption by communities rose by 8% in 2022, attributable to dry weather and extra water purchases by partially-supplied communities in response to PFAS concerns. He then reported that maximum daily demand during CY22 was approximately 313 MGD on July 22, and the minimum daily demand was approximately 152 MGD which usually happens around Christmas or Thanksgiving. He noted that the City of Boston's water use was 61.3 MGD average for CY2022, lower than levels recorded in 1900. Mr. Nvule then presented trends in base (indoor) MWRA water system demand vs. seasonal (outdoor) demand. He noted that base use continued to trend lower due to increased water efficiency and that outdoor was less than 15% of total use. Next, he described the variability of water demand by partially-supplied communities since CY2000, and noted that supplies to these communities increased by approximately 31% in 2022. He advised that MWRA expects and plans for increased use by partially-supplied communities due to dry weather, and that MWRA reserves capacity for its partially-supplied communities like Cambridge and Wellesley when they need to make treatment upgrades for newly-recognized contaminants such as PFAS. Next, Mr. Nvule reported that the Quabbin Reservoir stayed within its normal range throughout 2022, and that its levels displayed the expected seasonal variability.

Finally, Mr. Estes-Smargiassi presented a summary of the MWRA water system's drought performance from 1950 through 2022, noting that conservation efforts have reduced system demand with no negative impacts on its reliability.

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

#### Watershed Forestry Review

Mr. Estes-Smargiassi presented an update on the Department of Conservation and Recreation (DCR) Watershed Forestry Program. He explained the watershed forestry program goals, and that the main goal of the program is to protect the quality of the water that MWRA must treat and that the customers drink, and that the protection of lands and the continuing quality of the source water are the cornerstone of MWRA's ability to continue to meet EPA and DEP requirements for unfiltered water systems; and contribute to the kind of good results that were reported on PFAS. Mr. Estes-Smargiassi discussed MWRA's reliance, in large part, on protecting the watershed forest from natural disasters and disease and promoting a diverse, resilient forest. He noted that the watershed forest was not always diverse or resilient; and described the design of forestry programs to make incremental progress over the decades toward long-term goals. Mr. Estes-Smargiassi also discussed the carefully designed cutting practices. Finally, he discussed MWRA's objectives of consistent high quality water, well protected forested lands, over the long term and maintenance of MWRA's filtration avoidance determination and noted that DCR's watershed forestry programs meets these objectives.

Secretary Tepper requested more information about the schedule for DCR's planned cutting activities. Mr. Estes-Smargiassi advised that he would provide more details as soon as possible.

Mr. Vitale requested clarification on the term “unmanaged forest”. Mr. Estes-Smargiassi explained some of the circumstances where the goal is not to do any cutting, or occasional very selective cutting, and that it is basically to let those areas maintain long-term growth.

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

#### Update on Invasive Aquatic Plants Management at MWRA Source and Emergency Reservoirs

John Gregoire, MWRA Program Manager, Reservoir Operations presented an update on MWRA’s program for invasive aquatic plant (“invasives”) management at its reservoirs. He presented the locations of MWRA’s invasives control activities and described how invasive plants such as Eurasian milfoil and fanwort spread in reservoirs. He noted that no invasives were present in the main body of the Quabbin Reservoir, but that variable milfoil was present in its upstream settling ponds, which are separated from the main body by regulating dams. He described invasives control methods for those areas and reported that as of the last survey the population is actually starting to decrease. Next, he reviewed the history of MWRA’s efforts to control zebra mussels, which were first discovered near the Quabbin Reservoir in 2009. He described the zebra mussel control process for the Quabbin, including a program for boat decontamination, inspection and quarantine run by the DCR Watershed Division. Mr. Gregoire then discussed the efforts for controlling invasive aquatic plants in the Wachusett Reservoir, where the most intensive activities to control invasives have taken place. He reported that invasives control efforts have resulted in a decrease in invasive plant matter, and that areas of the Wachusett now require only regular surveying and maintenance. Next, Mr. Gregoire presented an example of diver assisted suction harvesting (DASH) to control invasives at the Wachusett Reservoir. He noted that invasives control operations are showing success in removing unwanted plants and allowing native plants to regrow. Finally, Mr. Gregoire explained that DASH and other invasives control methods such as mechanical harvesting and winter drawdowns are also used with success at MWRA’s emergency reservoirs.

Secretary Tepper complimented staff on the program’s success. Board Member White-Hammond suggested that this type of presentation would be a good agenda item for a potential Board Meeting at the reservoirs.

Hearing no further discussion or questions from the Board, Mr. Vitale moved to the next Information item. (ref. V A.3)

#### Local Water System Assistance Program Annual Update

Jon Szarek, MWRA Senior Program Manager, Planning, presented an update on MWRA’s Local Water System Assistance Program (LWSAP) activities for CY2022. He explained that the goal of the LWSAP is to maintain high water quality through the funding of community water rehabilitation projects such as water main lining, lead service line replacements and water tank rehabilitations. He noted that the Board had approved three LWSAP funding phases totaling \$725 million to date, and described the timing of the phases and how the funds are allocated. He added that MWRA has distributed approximately



\$513 million for over 500 local water system projects through December 2022. Mr. Szarek then presented a brief summary of community projects funded through the LWSAP, including water main replacements in Somerville, a water tank rehabilitation in Lynnfield, and over 600 miles of water main lining projects. Finally, he presented an overview of MWRA's Lead Service Line Replacement Program, which provides interest-free loans to communities for local lead service line identification and replacement projects. He described the program's terms and requirements and reported that MWRA has distributed approximately \$34 million loans to 14 communities to replace approximately 3,500 lead service lines since the program began in FY2017.

Secretary Tepper asked if MWRA communities received federal funding for local water pipeline improvements. Mr. Szarek explained that some communities had received State Revolving Fund (SRF) Loan funding with 100% loan forgiveness, and therefore have withdrawn or deferred their applications for MWRA's LWSAP loans. (ref. V A.4)

#### PERSONNEL AND COMPENSATION

##### Approvals

##### PCR Amendments – March 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 summarized the eight proposed PCR Amendments, including six salary adjustments to maintain pay equity for existing staff in relation to new hires' recruitment rates; a title and grade change for a vacant MIS position, and the creation of a new position in Western Maintenance.

(Mr. Peña temporarily left the meeting during the summary.)

Mr. Vitale requested clarification on the estimated annual financial impact of the .Net Programmer Developer/Programmer II position. Ms. Chu explained that the estimate reflected the budgetary impacts of the position's salary range.

Hearing no further discussion or questions from the Board, Secretary Tepper requested a roll call vote in which the members were recorded as follows:

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

(ref. VI A.1)

Approval of the 2023 Affirmative Action Plan

A motion was duly made and seconded to approve the Massachusetts Water Resources Authority's Affirmative Action Plan effective for a one-year period from January 1, 2023 through December 31, 2023.

MWRA Special Assistant for Affirmative Action Patterson Riley discussed the effects of the "great resignation" like other employers, including being approximately 87 people below where the Authority wants to be. He noted that he believes it has leveled off and that staff continue to work hard to attract qualified women and minorities to work at the Authority.

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

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

(ref. VI A.2)

(Mr. Peña returned to the meeting after the roll call vote; and Ms. Wolowicz left the meeting after the roll call vote.)

WASTEWATER POLICY AND OVERSIGHTInformationInfiltration/Inflow Local Financial Assistance Program Annual Update

Mr. Szarek presented an update on MWRA's Infiltration/Inflow ("I/I") Financial Assistance Program for CY2022. He explained that the main goal of the I/I program is to rehabilitate local sewer systems and to reduce I/I in the regional collection system by funding community sewer rehabilitation and replacement projects, I/I reduction planning, and engineering design services. He described common I/I sources and noted that the Board has approved 14 funding phases totaling approximately \$861 million in grants and interest-free loans since FY1993. He then explained how MWRA allocates I/I Program funding to communities. Mr. Szarek reported that MWRA has distributed a total of approximately \$519 million for over 650 local I/I identification and rehabilitation projects to date, and that communities have repaid all scheduled loans. He then presented examples of I/I identification techniques such as TV inspection and smoke testing, and successful rehabilitation projects, including the raising of sewer manholes in coastal areas. Finally, Mr. Szarek explained that MWRA's I/I Program, along with its CSO Control Program and reductions in indoor water use, have reduced flow volumes in the regional sewer collection system

tributary to the Deer Island Wastewater Treatment Plant.

Committee Chair Jack Walsh asked how dry day wastewater flows are calculated. Mr. Estes-Smargiassi explained that dry day flows are calculated by analyzing detailed community flow data over sequential dry days. Mr. Walsh asked why North System MWRA communities have seen greater reductions in wastewater volumes than South System communities. Mr. Estes-Smargiassi explained that the south system is essentially fully separated and that North system includes both CSO and non-CSO communities; and it is expected to see greater reduction on the South side based on the effort put on CSO. He further explained that the South System is impacted by groundwater during heavy rains, and that reducing infiltration by repairing leaks is an ongoing effort.

(Mr. Pappastergion temporarily left the meeting during the discussion.)

Hearing no further discussion or questions from the Board, Chair Tepper moved to Administration, Finance and Audit. (ref. VII A.1)

#### ADMINISTRATION, FINANCE AND AUDIT

##### Information

##### Delegated Authority Report – February 2023

MWRA Acting Director of Procurement Rita Mercado invited questions from Board Members.

Mr. Jack Walsh requested information about Delegated Authority item C-2 (Braintree-Weymouth Intermediate Pump Station Transformer Replacement). MWRA Chief Operating Officer David Coppes explained that item C-2 was for the purchase of a new stainless steel transformer to replace a transformer made from different materials that had failed due to corrosion. Mr. Walsh asked for more details on item C-3 (Intermediate High Pipeline Improvements CP2 Materials Pre-Purchase, Watertown). Mr. Coppes explained that the purpose of the item C-3 pre-purchase was to avoid supply chain delays on a planned construction project, for which the design was complete. There was brief, general discussion about the benefits and logistics of pre-purchasing certain construction materials. Mr. Walsh requested clarification on item C-7 (Enterprise Content Management System Purchase and Implementation.) MWRA MIS Director Paula Weadick explained that the purpose of item C-7 was to amend an existing contract with a timeline extension and software maintenance renewal for an ongoing project to digitize engineering and construction paper workflows.

(Mr. Pappastergion returned to the meeting and Secretary Tepper temporarily left the meeting during the discussion.)

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

##### FY23 Financial Update and Summary through February 2023

MWRA Finance Director Thomas Durkin provided a financial summary through February 2023. He

advised that some budgetary patterns continued, such as overspending on chemicals and energy, attributable to the current financial climate, and underspending on wages and salaries, primarily due to ongoing staffing challenges. He reported that budgetary expenses were at -1.4% overall. Finally, Mr. Durkin reported that investment income was higher than anticipated. He explained that short term money market investment returns were currently at 4.75%, vs. the assumed rate of 1.0%, resulting in a surplus of approximately \$7.4 million (+133%).

(Secretary Tepper returned to the meeting during the summary.)

Mr. Vitale asked if MWRA staff had any concerns about its banking relationships in light of the recent failure of Silicon Valley Bank and other financial institutions. MWRA Deputy Finance Director and Treasurer Matthew Horan advised that MWRA's primary banks were the Massachusetts Municipal Depository Trust (MMDT) and Webster Bank. He explained that MMDT is controlled by the State Treasurer's office with an Oversight Board, and that staff had reviewed MMDT's holdings and confirmed that they are diverse, and did not include any holdings related to Silicon Valley Bank or other recently failed banks. Mr. Horan further explained that a review of Webster Bank had confirmed that its credit ratings and bank status continued to be high, and noted that staff consistently monitor the statuses of MWRA's banking partners. There was brief, general discussion about current events related to banking in the United States.

Mr. Vitale requested information about MWRA Finance staff's view regarding debt investment strategies. Mr. Horan explained that MWRA hasn't issued a significant amounts of variable rate debt due to the current variability of short term interest rates, and that MWRA's strategy is to buy and hold, manage reserve fund balances to meet MWRA's resolution, and reinvest as money matures. There was general discussion the Silicon Valley Bank failure, and the current economic climate. (ref VIII A.2)

### Approvals

#### Retiree Cost of Living Increase

A motion was duly made and seconded pursuant to Chapter 269 of the Acts of 2022, to approve the MWRA Employees' Retirement Board's vote of February 23, 2023, to accept an additional 2.0% Cost of Living Adjustment to bring the total adjustment to 5.0% for fiscal year 2023.

Mr. Horan advised that the MWRA Employees' Retirement Board had voted to grant a one-time cost of living adjustment (COLA) of 2% for FY23 only, which would raise retiree benefits by approximately \$28.00 per month. He explained that the proposed COLA is consistent with recent adjustments approved by the State Retirement System, the Mass teacher's retirement and approximately 15 other retirement systems in Massachusetts to date. He added that MWRA employees who have retired within the state system have received this benefit and that the proposed COLA would provide the same benefit to members of the MWRA Retirement System.

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

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

(ref. VIII B.1)

#### Contract Awards

##### MWRA Internet Website Replacement: Upanup Studios, Inc., Contract A634

A motion was duly made and seconded to approve the recommendation of the Consultant Selection Committee to award Contract A634 to Upanup Studios, Inc., for development, maintenance and support of a new website, and to authorize the Executive Director, on behalf of the Authority, to execute said contract in an amount not to exceed \$168,720.00 for a term of 48 months from the Notice to Proceed. Further, to authorize the Executive Director, on behalf of the Authority, to approve and execute up to two one-year extensions for ongoing maintenance and support, with the first one-year extension at a price of \$17,280.00 and the second one-year extension at a price of \$18,260.00, if the Executive Director determines that one or both extensions are in the best interest of the Authority.

MWRA Special Assistant to the Executive Director Ria Convery summarized the scope and purpose of the contract for the development, maintenance and support of a new replacement MWRA website. She described the history of the existing site and the benefits that an updated site would provide for website visitors and MWRA staff.

(Mr. Pappastergion left the meeting during the summary.)

Mr. Vitale requested and Ms. Convery provided clarification on the duration of the proposed contract. Mr. Vitale asked if the proposed contract included cloud storage. Ms. Convery responded in the affirmative.

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

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
P. Walsh		
White-Hammond		

(ref. VIII C.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		
Foti		
Peña		
Vitale		
J. Walsh		
P. Walsh		
White-Hammond		

The meeting adjourned at 1:28pm.

Approved: April 12, 2023

Attest:

\_\_\_\_\_  
Brian Peña, Secretary

**STAFF SUMMARY**

**TO:** Board of Director  
**FROM:** Frederick A Laskey, Executive Director  
**DATE:** April 12, 2023  
**SUBJECT:** PCR Amendments - April 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 amendments to the Position Control Register (PCR) included in the attached chart.

**DISCUSSION:**

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

**April 2023 PCR Amendments**

There are three PCR Amendments this month.

Organizational Changes:

1. Salary adjustment to one filled position in the Operations Division, Deer Island Thermal/Power Plant Department for Second Class Engineer Unit 3 Grade 24 per union agreement.
2. Title and grade change to one vacant position in the Operations Division, Engineering and Construction Department from Senior Staff Engineer, Electrical, Unit 9 Grade 25 to Program Manager, Electrical, Unit 9 Grade 29 to support recruitment for this hard-to-fill role.
3. Title and grade change to one vacant position in the Operations Division, Environmental Quality Department from Water Quality Technician, Unit 9 Grade 15 to Chemist I Unit 9 Grade 18 to better meet staffing needs.

**BUDGET/FISCAL IMPACT:**

The budget impact of these PCR amendments will be a maximum cost of \$39,315. 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 Descriptions





**MWRA  
POSITION DESCRIPTION**

**POSITION:** Second Class Engineer (Thermal/Power Plant)

**DIVISION:** Operations

**DEPARTMENT:** Thermal

**BASIC PURPOSE:**

Under the direction of the Manager, Power Generation, responsible for supervision of Third Class Engineer watch personnel. Coordinates set up, operation, adjustment and maintenance of Thermal Power Plant equipment as necessary to maintain critical required supply to heat and electrical power. Trains and mentors Third Class Engineers who are preparing to become Second Class Engineers.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Manager, Power Generation.

**SUPERVISION EXERCISED:**

Exercises close supervision of assigned Third Class Engineer staff. Provides supervision to outside contractors providing maintenance services.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Supervises assigned shift of Thermal/Power Plant personnel in the proper operation of all Thermal/Power Plant equipment in accordance with M.G.L. Chapter 146: high pressure boilers, steam topping turbine, combustion turbine generators, fuel oil and waste gas supply systems, pumps, blowers, compressors, water treatment cooling and heating systems, electrical distribution, instrumentation systems, burner management systems, central control systems, hydroturbines.
- Works closely with Third Class Engineer/Second Class Engineer-in-Training. Provides mentoring, coaching, and training to help prepare Third Class Engineer to be prepared to acquire Second Class Engineer License.
- Operates the boilers, turbines, and other plant equipment from the plant control room using a DCS (Distributed Control System).
- Implements the standard operating procedures (SOPs) for the Thermal/Power Plant and

the electrical distribution system.

- Is responsible for casualty control training of assigned personnel.
- Coordinates plant operation with contract personnel
- Inspects engineering plant machinery and operation to determine efficiency and need for maintenance requirements.
- Supervises the lubrication of equipment and machinery.
- Communicates with other Thermal/Power Plant supervisors on the Thermal/Power Plant Operations.
- Oversees equipment for Lock Out/Tag Out in the Thermal/Power Plant.
- Ensures operating logs and records are properly maintained.
- Ensures that safety policies are being followed and work environment is safe.
- Writes the performance reviews of subordinates as per the MWRA evaluation system.
- Attends all Toolbox Talks to ensure safety.
- Monitors the chemicals and fuel oil consumption and reorders as needed.
- Submits maintenance requests using the MAXIMO system
- Ensures the completion of scheduled Preventive Maintenance and minor Corrective Maintenance including all shift, daily, weekly and monthly checks as required.
- Performs light maintenance independently or as part of a team. Light maintenance shall include but not limited to:
  - Inspects and troubleshoots various systems and equipment.
  - Installs and retrofits/new equipment related to plant systems.
  - Modifies and/or aligns existing equipment to specifications.
  - With proper training sets up ladders, staging and rigging and utilizes hoists, jacks, dollies, lifts, etc. for proper access to job and to remove and install equipment.

- Operates portable pumping and/or ventilation equipment to prepare work area for access.
- Opens hatches.
- Installs safety rails.
- Removes snow from immediate work area.
- Routine testing, lockout/tagout, operations (startup/shutdown) and adjustment of process equipment.

**SECONDARY DUTIES:**

- Performs other related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Basic technical and communication skills as normally attained through a high school education or the equivalent. Trade School or vocational training preferred; and
- (B) Four (4) to six (6) years of experience in the principles of operation of the Thermal/Power plant equipment, high pressure boilers, topping turbines and related auxiliary equipment, of which two (2) year must be in a supervisory capacity; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Knowledge of operation of generating equipment, plant heating, electrical distribution systems, combustion turbine generators, and hydroturbines.
- (B) Ability to plan, organize, direct, train and assign duties to subordinates.
- (C) Ability to understand responsibility and work with minimal supervision.
- (D) Extensive knowledge of safety practices and application in the Steam Engineering and Wastewater facilities.
- (E) Ability to operate a steam plant from a central control room using a DCS (Distributed Control System) or similar type of control system.

(F) Ability to work as a team to support the goals of the Deer Island Facility.

**SPECIAL REQUIREMENTS:**

- Required to respond to emergencies and provide overtime shift coverage as required.
- A valid Massachusetts Second Class Engineer's License.
- Complete productivity improvement competency-based training program related to **ESSENTIAL DUTIES AND RESPONSIBILITIES** as outlined above and successfully demonstrates required competencies.
- Annual completion of the following training: Right to Know, Confined Space Entry Refresher, Hazard Communications, and other OSHA training as required.
- Completion of Adult CPR/AED/First Aid Training every two years.
- Completion of MWRA Supervisory Training Program

**TOOLS AND EQUIPMENT USED:**

Motor vehicle including forklift, power and hand tools, mobile radio, telephone, and beeper.

**PHYSICAL DEMANDS:**

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

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

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

The employee regularly works near moving mechanical parts. The employee occasionally works in precarious places and is regularly exposed to fumes or airborne particles.

The noise level in the work environment is moderately loud at work locations.

**October 2021**

**MWRA  
POSITION DESCRIPTION**



**POSITION:** Senior Staff Engineer, Electrical

**DIVISION:** Operations

**DEPARTMENT:** Engineering & Construction

**BASIC PURPOSE:**

Provides electrical engineering assistance in the review and design of projects related to the rehabilitation and capital improvement of waterworks and wastewater facilities and infrastructure from conceptual planning through construction. Assists Operations to resolve emergency problems arising from equipment failure or malfunction.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Program Manager Electrical, Engineering and Construction.

**SUPERVISION EXERCISED:**

Provides direction to designers and drafters on assigned projects, and provides support to medium voltage technicians, and electrical staff as needed.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Assists in the in-house planning and design of various water and wastewater repair, improvement and replacement projects, and in the investigation and resolution of construction and operations problems.
- Provides electrical engineering support to the operating departments for the operations and maintenance programs of MWRA facilities.
- Participates in the design of in-house projects including development of project plans, specifications, cost estimates, schedules, proposals for bid and review of shop drawings.
- Establishes design criteria and applicable code requirements and performs analytical calculations for assigned work.
- Develops procedures to ensure safe and efficient operations, maintenance and testing

practices.

- Provides technical review of consultant-prepared reports and design projects and contractor shop drawings.
- Participates in the preparation of standard specifications.
- Participates in field investigations in order to verify and obtain information on existing facilities, structures, systems and equipment.
- Prepares equipment and material quantity takeoffs for cost estimates.
- Develops and maintains records, drawings and maintenance listings as required.

**SECONDARY DUTIES:**

- Performs other related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Knowledge of principles of and practices of electrical engineering as normally attained through a four (4) year college program in engineering or a related field; and
- (B) Demonstrated knowledge of electrical transmission and distribution equipment design as acquired through three (3) to five (5) years of experience; or
- (C) Any equivalent education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Working knowledge of variable frequency drives and programmable logic controllers required.
- (B) Clear understanding of the National Electric Code and Life Safety Code.
- (C) Proficiency with personal computers and knowledge of word processing, spreadsheets and engineering applications software required.
- (D) Understanding of and experience with CADD systems required.



(E) Excellent interpersonal, oral and written communication skills are required.

**SPECIAL REQUIREMENTS:**

Engineer-in-Training certificate preferred.

A valid Massachusetts Driver's License required.

**TOOLS AND EQUIPMENT USED:**

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

**PHYSICAL DEMANDS:**

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

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

The employee may occasionally be required to lift and/or move up to ten pounds. Specific vision abilities required by this job include close vision, distance vision, depth perception, peripheral vision and the ability to adjust focus.

**WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those employee encounters while performing the essential functions of this job. There are no specific environmental conditions noted.

The noise level in the work environment is usually loud in a field setting and moderately quiet in an office setting.

**October 2018**

**MWRA  
POSITION DESCRIPTION**

**NEW**

**POSITION:** Program Manager, Electrical

**DIVISION:** Operations

**DEPARTMENT:** Engineering - Chelsea

**BASIC PURPOSE:**

Provides electrical engineering support to operation and maintenance departments. Supervises project teams in the department to oversee professional engineering and design projects related to the rehabilitation and capital improvement of waterworks and wastewater facilities and infrastructure from conceptual planning through design and construction. Additionally, manages engineering and design projects related to the rehabilitation and capital improvement of water and wastewater facilities and infrastructure.

**SUPERVISION RECEIVED:**

Works under the general supervision of a Senior Program Manager.

**SUPERVISION EXERCISED:**

Supervises Senior Staff Engineer Electrical. Supervises electrical engineering staff, Medium Voltage Electrical Specialists, and electrical distribution staff as needed.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Performs design, engineering and construction support of in-house projects involving repair/replace/modification activities, layout changes for shops, laboratories, offices and warehouses, lighting systems, and power distribution, including substation & power generation equipment.
- Develops preliminary designs and detailed designs and prepares plans and specifications for proposed electrical modifications/replacement and construction projects.
- Oversees installation, operation, maintenance and repair of complex electrical equipment including generation, transmissions, and distribution systems.
- Oversees the preparation of plans and specifications for vendor contracts for proposed electrical modifications.

- Oversees reviews of and modifications to all operations and maintenance documentation with respect to electrical design changes.
- Assists the Operations staff with engineering resolution and recommendations to electrical engineering problems, which arise during normal operations.
- Assists the maintenance staff with complex work orders and with the development of contract maintenance contracts.
- Provides on-site engineering inspection of construction projects generated by the in-house engineering staff and outside consultants.
- Develops and maintains files and familiarity with all codes, code addends, code cases, and industry standards applicable to the electrical field and ensure that facility specifications comply.
- Performs periodic inspections to ensure facility-wide compliance with local and national electrical codes and other rules of safe electrical practice are enforced.
- Reviews electrical and related portions of design plans by outside firms who have been hired to design improvements or additions to facilities and infrastructure.
- Develops scope of services, assists with procurement, and manages the services of engineering consultants as required.
- Supervises the updating of electrical engineering drawings and records, and the subsequent coordination (in accordance with established procedures) to ensure facility and equipment records are current.
- Provides oral and written reports to management detailing results of problem investigations, proposed resolution, and economic justification for the proposed changes.
- Evaluates assigned employees performance according to MWRA procedures.

**SECONDARY DUTIES:**

- Performs related duties as required.

## **MINIMUM QUALIFICATIONS:**

### Education and Experience:

- (A) Knowledge of general and specific engineering and design principles and practices as attained through an accredited bachelor's degree in electrical engineering or related field; and
- (B) Experience in design, installation and maintenance of a wide variety of electrical power and control equipment as normally acquired through seven (7) to nine (9) years of related electrical engineering experience including at least three (3) years supervisory or project management experience; and
- (C) Experience with a complex processing facility and water or wastewater treatment operations and utility systems are desirable; or
- (D) Any equivalent combination of education and experience.

### Necessary Knowledge, Skills and Abilities:

- (A) Knowledge of Microsoft Office Suite, project management and GDS, CADD and AutoCAD desired.
- (B) Knowledge of Massachusetts bidding laws, including M.G.L Chapter 30, Chapter 149, and Chapter 25A construction bidding regulations.
- (C) Clear understanding of the National Electric Code and Life Safety Code.
- (D) Excellent interpersonal, written and oral communication skills.

## **SPECIAL REQUIREMENTS:**

A valid Massachusetts Class D Driver's License required.

Massachusetts license as a Registered Professional Engineer (P.E.) is preferred.

## **TOOLS AND EQUIPMENT USED:**

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

### **PHYSICAL DEMANDS:**

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

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

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

### **WORK ENVIRONMENT:**

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

While performing the duties of this job, the employee 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 noise level in the work environment is usually loud in field settings and moderately quiet in an office setting.

**February 2021**

**MWRA  
POSITION DESCRIPTION**

**OLD**

**POSITION:** Water Quality Technician

**DIVISION:** Operations

**DEPARTMENT:** Quality Assurance

**BASIC PURPOSE:**

Sets up and collects water samples following Standard Operation Procedures at specified locations. Performs field and laboratory tests as required including alkalinity, free ammonia, monochloramine, fluoride, UV, free and total chlorine, pH, turbidity, etc., following SOPs. Verifies lab instrumentation functions properly by performing required QA/QC. Notifies supervisor of discrepancies or issues.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Laboratory Supervisor

**SUPERVISION EXERCISED:**

None.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Organizes sample bottles for the day's sample run. Ensures proper labeling of sample bottles and documentation of Chain of Custody (COC) paperwork.
- Prepares and calibrates field instrumentation following SOPs
- Collects water samples in the field for laboratory testing, using proper handling and preservation techniques, including aseptic procedures. Maintain chain of custody over samples.
- Conducts field measurements of chlorine residual, pH, temperature, monochloramine, odor, and conductivity and documents results on COC.
- Returns to Southboro with samples. Following instruction from supervisor, determines where samples need to go next (for testing in Southboro, or prepare for delivery to DLS/Deer Island, or shipment to contract lab, etc).

- Performs required laboratory analyses.
- Reports results on COC and QA database.
- Checks laboratory equipment for proper operation. Performs necessary QA/QC.
- Maintains laboratory areas.
- Reports any problems or discrepancies to supervisor.
- Preps for next day, including but not limited to, ensuring kit is in order, organizing sample bottles for next day and checking vehicle for next day's use.
- Conducts reservoir field sampling and field measurements. Processes and analyzes freshwater algae samples in the laboratory using microscopy and particle imaging software.

**SECONDARY DUTIES:**

- Cleans and maintains assigned work area and follows procedures to ensure safety and avoid accidents and injuries.
- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) An associate degree or equivalent in chemistry, biology, limnology or a related scientific/laboratory field, with related mathematics courses including algebra; and
- (B) Two (2) years experience of related environmental laboratory experience; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Familiarity with basic laboratory testing procedures, the operations, calibration and maintenance of basic laboratory equipment and instrumentation.
- (B) Knowledge of techniques used for the accurate handling of data.

(C) Skill in the use of special application software.

**SPECIAL REQUIREMENTS:**

A valid Massachusetts Class D Motor Vehicle Operators License.

**TOOLS AND EQUIPMENT USED:**

Laboratory equipment and instruments, telephone, personal computer including word processing and other software, copy and fax machines.

**PHYSICAL DEMANDS:**

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

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

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

**WORK ENVIRONMENT:**

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

While performing the duties of this job, the employee regularly works in a laboratory environment. The employee regularly works near moving mechanical parts, is frequently exposed to outdoor weather conditions, and occasionally works in high, precarious places and is exposed to fumes and airborne particles, toxic or caustic chemicals and the risk of electric shock.

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

**May 2018**



**MWRA  
POSITION DESCRIPTION**

**NEW**

**POSITION:** Chemist I

**DIVISION:** Operations

**DEPARTMENT:** Laboratory Services, Quality Assurance

**BASIC PURPOSE:**

Performs a variety of moderately complex chemical analyses on water, wastewater and air, using prescribed procedures.

**SUPERVISION RECEIVED:**

Works under the general supervision of a Laboratory Supervisor, WQCHM, I, II, III.

**SUPERVISION EXERCISED:**

None.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Performs a wide range of moderately complex chemical analyses and tests and operates all related equipment, assuring adherence to Standard Operating Procedures (SOPs).
- Assists in research studies and in the investigations of alternative procedures and equipment by performing analyses and tests, and the appropriate preparation data.
- Provides technical direction to technicians and laboratory support personnel by reviewing and confirming the results of routine tests, and providing instruction to assure conformity to SOPs.
- Performs minor troubleshooting, maintenance and calibration duties on a variety of standard instrumentation and instructs or oversees technicians in their performance of routine equipment maintenance duties.
- Maintains current knowledge of analytical procedures and equipment.
- Follows SOPs to maintain accurate reliable data, and to affect the efficient transfer of the data to the LIMS and or other data management systems.

- Utilizes standard applications software and prepares accurate statistical and graphics displays, as instructed.
- Prepares purchase requisitions to reorder standard supplies and materials, and may lead or perform duties to take inventory of supplies and equipment parts.
- Provides instruction to technicians in laboratory safety, assures that safety procedures are followed, and maintains clean and safe work areas.

**SECONDARY DUTIES:**

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) A Bachelor's degree in chemistry or a related field is required; and
- (B) One (1) year of experience in chemical analysis, quality control and statistical techniques;  
or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Thorough knowledge of state of the art modern chemical laboratory methods, procedures, materials and equipment.
- (B) Thorough knowledge and experience in proper sampling techniques and analytical procedures.
- (C) Skill in the operation of the listed tools and equipment.

**SPECIAL REQUIREMENTS:**

- A valid Massachusetts Class D Motor Vehicle Operators License.

**TOOLS AND EQUIPMENT USED:**

Laboratory equipment and instruments, telephone, personal computer including word processing and other software, copy and fax machines.

### **PHYSICAL DEMANDS:**

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

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

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

### **WORK ENVIRONMENT:**


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

While performing the duties of this job, the employee regularly works in a laboratory environment. The employee regularly works near moving mechanical parts, is frequently exposed to outdoor weather conditions, and occasionally works in high, precarious places and is exposed to fumes and airborne particles, toxic or caustic chemicals and the risk of electric shock.

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

**December 2022**

**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** April 12, 2023  
**SUBJECT:** Approval of New Member of the Wastewater Advisory Committee

**COMMITTEE:** Wastewater Policy & Oversight

         INFORMATION  
  X   VOTE

Wendy Leo, Senior Program Manager  
Preparer/Title

Sean Navin   
Director, Intergovernmental Affairs

**RECOMMENDATION:**

To approve the addition of one new member, Alfredo Vargas, to the Wastewater Advisory Committee.

**DISCUSSION:**

In addition to the critical oversight functions of the Advisory Board, many of MWRA's policy decisions are made with advice and support from two standing citizens' advisory committees, the Water Supply Citizens Advisory Committee (WSCAC) and the Wastewater Advisory Committee (WAC).

WAC was created in 1990 to offer independent recommendations on wastewater programs and policies; it is a successor to the Facilities Planning Citizen Advisory Committee, which was established during the planning of the new Deer Island Treatment Plant. WAC's members include citizen advocates, representatives from the Metropolitan Area Planning Council, watershed associations, the engineering and business communities, environmental law, and the science and education fields. The Advisory Board has historically appointed a member as well.

WAC contract provides that WAC shall have a maximum of 20 members approved by MWRA's Board of Directors; the contract prohibits alternates or designees. WAC elects its chair and employs an Executive Director (selected by WAC's membership with the concurrence and approval of MWRA's Public Affairs Department). WAC's current chair is Wayne Chouinard and WAC's current Executive Director is Andreae Downs.

The proposed new member, Alfredo Vargas, is currently Engineering Design Manager at the City of Newton. Mr. Vargas's experience in designing infrastructure projects in the public and private sectors will enhance the expertise of the committee.

The current thirteen members on WAC are: George Atallah, Triumvirate Environmental; Craig Allen, Commonwealth Research Group, Inc.; Philip Ashcroft, Business and Executive Coach; Adriana Cillo, Boston Water and Sewer Commission; Wayne Chouinard, Town of Arlington Department of Public Works (Chair); Jim Ferrara, National Grid; Stephen Greene, Howland-Greene Consultants; James Guiod, MWRA Advisory Board; Taber Keally, Neponset River

Watershed Association; Karen Lachmayr, Harvard University; Martin Pillsbury, Metropolitan Area Planning Council; Kannan Vembu, AquaEnviroBio Solutions LLC; and Dan Winograd, Woodard & Curran.

In accordance with the current agreement, WAC unanimously nominated Mr. Vargas for membership at its March 2023 meeting.

# ALFREDO J. VARGAS, PE, ENV SP

## Summary of Qualifications

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- Civil engineer with 18 years of experience in the in the public and private sectors
- Commonwealth of Massachusetts Registered Professional Engineer (License No. 50881)
- Envision Sustainability Professional (Certificate No. 26648)
- Task oriented and reliable team player who applies technical knowledge and critical thinking to solve problems
- Excellent written and communication skills
- Careful listener and effective presenter of technical material in a way that is easy to understand
- Lead engineer in all facets of design and municipal project management

## Skills

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**Civil Engineering:** design, construction, and operation of complex infrastructure projects, including multi-modal transportation projects, ADA compliance, Complete Streets, sewer and stormwater infrastructure

**Project Management:** project planning, coordination, and collaboration, mentoring, recruitment, budgeting, networking, industry knowledge, stakeholder engagement, public speaking

**Leadership:** excellent communication and interpersonal skills, ability to share a clear vision, positive attitude and enthusiasm, intellectual curiosity, flexible and adaptive, action and detail oriented, team builder, commitment to the highest ethical standards and personal integrity, careful listener, problem solver

**Software:** AutoCAD Civil 3D, HydroCAD, StormCAD, Microsoft Office, Bluebeam

**Languages:** Native proficiency in English and Spanish

## Professional Experience

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### **Engineering Design Manager at City of Newton, Newton, MA, March 2017 – Present**

- Leads team of staff overseeing the planning and design of a wide array of projects designed by the Engineering Division
- Lead engineer in all facets of municipal projects, including planning, programming, design, cost estimates, bidding, and technical support during construction
- Mentors and assigns work to design and other office staff
- Reviews designs prepared by consultants
- Routinely meets and collaborates with colleagues, city departments, elected officials, committees, consultants, contractors, and stakeholders
- Maintains financial accounting documents for procurement and budgeting

### **Project Engineer at VHB, Watertown, MA, April 2014 – March 2017**

- Used advanced design skills to perform engineering designs of roadway and land development projects from preliminary to final design
- Developed plans, specifications, cost estimates, reports, and prepared final bid packages
- Assisted management with project decisions regarding technical approach, cost, and scheduling
- Oversaw and mentored engineering staff on project assignments
- Performed project QA/QC
- Participated in business development

### **Engineer at FST, Burlington, MA, April 2005 – March 2014**

- Developed roadway designs for MassDOT and municipal clients
- Designed drainage and stormwater management for roadway and land development projects
- Produced contract documents, including plans, specifications, and estimates
- Performed construction administration and oversight
- Prepared documentation for environmental assessments, reports, and permits

### **Civil Engineer Intern at Kirebe, San Jose, Costa Rica, August 2003 - August 2004**

- Assisted Resident Engineer during construction of vertical and horizontal residential developments

## Key Projects

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- Parking lot design and construction, Pearl Street Parking Lot Reconstruction, Newton, MA, 2019 to present
- Intersection design and construction, Crafts St and Walnut St Intersection Improvements, Newton, MA, 2019 to 2022
- Roadway and drainage design and construction, Upland Ave Reconstruction, Newton, MA, 2018 to 2019
- New road and stormwater management design and construction, Carr School Bus Loop, Newton, MA, 2018 to 2019
- Intersection design and construction, Chestnut St at Ellis St Intersection Improvements, Newton, MA, 2018 to 2019
- Park and stormwater management design and construction, McGrath Tennis Courts Reconstruction, Newton, MA, 2017 to 2018
- Road and sidewalk design and construction, Adams Street Roadway Improvements, Newton, MA, 2017 to 2018
- Design of new underground utilities and roadways, Hamilton Canal District, City of Lowell, MA, 2015 to 2016
- Alternatives analysis and conceptual design, Yankee Doodle Bike Path, Town of Billerica, MA, 2015 to 2016
- Highway and bridge design for MassDOT, Woods Memorial Bridge Reconstruction, Everett and Medford, MA, 2012 to 2013
- New roadway design, East Boston to Chelsea Bypass Road, MassPORT, East Boston, MA, 2010 to 2012
- Drainage and stormwater management design, Route 134 Safety Improvements, Dennis, MA, 2009 to 2012
- New synthetic athletic field, roads, and parking lots design and construction, Pine Banks Park, Melrose, MA, 2005 to 2008
- Construction oversight of roads, sidewalks and underground utilities, City of Boston, MA, 2005

## Activities

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- Sustainability Committee Member, Town of Natick, September 2018 – present
- Youth Soccer Coach, Natick Soccer Club, April 2016 – present
- Vice Chair of the Transportation & Development Institute, BSCES, Boston, MA, July 2016 – June 2017
- ASCE and BSCES active member, 2004 – present

## Education

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### **Universidad Autonoma de Centro America (UACA), San Jose, Costa Rica**

Bachelor of Science in Civil Engineering, August 2004

### **Universidad Nacional, Heredia, Costa Rica**

General Studies, 1998

## Professional Development

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Routinely attends technical, management, and leadership continuing education opportunities offered by the following resources:

- American Society of Civil Engineers (ASCE) and Boston Society of Civil Engineers Section (BSCES)
- Massachusetts Water Resources Authority (MWRA)
- Mass Rural Water Association (MassRWA)
- Federal Highway Administration (FHWA)
- US Access Board
- MassDOT
- University of Massachusetts Transportation Center Baystate Roads
- Institute for Sustainable Infrastructure (ISI)
- American Public Works Association (APWA)
- Occupational Safety and Health Administration (OSHA)
- Northeast Transportation Training and Certification Program (NETTCP)

**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** April 12, 2023  
**SUBJECT:** 2023 Change Order and Amendment Report



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**COMMITTEE:** Administration, Finance and Audit

X  INFORMATION  
  VOTE

  
Michele S. Gillen

Director, Administration

John P. Colbert, P.E., Chief Engineer  
Martin E. McGowan, Director, Construction  
Preparer/Title

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

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**RECOMMENDATION:**

For information only. In January 2022, staff provided an update to the Board on construction project change orders and professional services amendment percentages in context with other contracts. This staff summary provides a further update.

**DISCUSSION:**

Professional engineering services design contracts and construction contracts are awarded to consultants and contractors as part of the overall Capital Improvement Program to support MWRA’s mission and operations.

MWRA has a long-established internal review process for handling both construction change orders and professional services contract amendments. Construction changes are governed by the policies set forth in ADM.03 – Change Order Process. This policy lays out the permitted basis for change orders, and the process for initiating, negotiating and documenting all changes in price and duration of a construction contract. The policy includes eight allowable reasons for a change order: (i) differing subsurface or latent site conditions; (ii) Authority-ordered suspension or delay in the work; (iii) changed site conditions; (iv) unforeseen conditions or circumstances; (v) design changes; (vi) scope reduction; (vii) overruns or underruns in quantities; and (viii) schedule changes. Professional services contract amendments are governed by ADM.25 - Contract Amendments - Professional Services, which describes the process for developing, approving and executing a contract amendment, including for time extensions, changes in services and changes in contract sums. These polices ensure that both change orders and amendments are thoroughly vetted by multiple departments and at multiple levels before either is executed or recommended to the Board for approval.



## Construction Contract Change Order Analysis

A review of all change orders issued in the past ten years (March 1, 2013 through March 1, 2023) was completed to determine the Chapter 30 (horizontal construction, such as pipeline projects) and Chapter 149 (vertical construction, such as new buildings or facility rehabilitations) change order percentages of the overall construction contract values.

### **Overall Change Order Percentages**

	<b>Total Contracts</b>	<b>Chapter 30</b>	<b>Chapter 149</b>
Number of Contracts	141	59	82
Contracts w/change orders	85	31	54
Original Contract Value	\$776,213,073	\$322,760,043	\$453,453,030
Change Order Amount	\$43,096,382	\$15,251,592	\$27,844,790
% Change Order	5.55%	4.73%	6.14%

Of the 141 construction contracts, 116 had a change order percentage of less than 10% and of those, 56 did not have any change orders at all. The contracts with the ten highest change order amounts account for \$29,611,356 or 69% of total change order cost. The change order percentage is higher for Chapter 149 projects. See attached Figure 5.

The overall percentage of change orders has decreased since January 2022 from 5.92% to 5.55%, Chapter 30 change orders have decreased from 5.58% to 4.73% and the Chapter 149 change order percentage is essentially unchanged for the ten-year review period. The decrease in Chapter 30 change orders is attributed to older projects, such as Lynnfield/Saugus Pipeline Construction and NIH Stoneham-Reading Connection, no longer being within the ten year period.

A major challenge in MWRA construction contracts is the necessity to maintain continuity of service while building or rehabilitating water and sewer facilities. Renovations can be difficult and project requirements can be complex. Some facilities are old and code requirements may have changed over time. Change orders can arise from unforeseen conditions that cannot be identified during design. Some examples of unforeseen conditions include additional rock or hazardous soils found during a pipeline installation, utilities interfering with installations that were not shown on record drawings, and poor facility construction hidden behind facility walls. Due to recent material supply chain delays, change orders have resulted in additional time being added to contracts at no additional cost.



*Interferences*



*Figure 2 - Headworks Siding Removed*

Change orders can also be associated with designer errors and omissions identified during construction that require correction or changes by the contractor. All error and omission change orders and costs are tracked by MWRA staff. The MWRA Consultant Performance Review Committee meets after project substantial completion to review consultant errors and omissions to determine whether cost recovery should be pursued.

Professional Engineering Services Design Contract Amendment Analysis

A review of all design contract amendments for contracts awarded with start dates in the past ten years was completed. The analysis included Chapter 30 horizontal construction, and Chapter 149 vertical facility professional services design contract amendments as percentages of the overall design contract values.

**Overall Amendment Percentages**

	<b>Total Contracts</b>	<b>Chapter 30</b>	<b>Chapter 149</b>
Number of Contracts	62	32	30
Contracts w/amendments	18	8	10
Original Contract Value	\$200,722,599	\$84,702,882	\$116,019,717
Amendments Amount	\$11,720,441	\$4,860,422	\$6,860,019
% Amendments	5.84%	5.74%	5.91%

Of the 62 professional engineering services design contracts, 44 did not have any amendments. The contracts with the 10 highest design contract amendment amounts account for \$11,343,109 or 97% of the total amendment cost. See attached Figure 6.

The percentage of amendments has decreased since January 2022. The total percentage of change orders reduced from 9.05% to 5.84%, Chapter 30 contracts increased from 3.17 to 5.74%, and Chapter 149 contracts reduced from 13.4% to 5.91%. This large Chapter 149 reduction is attributed to older projects, such as the Chelsea Creek Headworks Project, Wachusett Aqueduct Pumping Station, Northern Intermediate High Pipeline, and Alewife Brook Pump Stations, no longer being within the ten-year period. This highlights how a handful of contracts can have a large influence on the overall amendment percentage and that many contracts have few to no amendments, or low percentage.

Design contracts generally account for between 15%-25% of the construction contract value, depending on the complexity of the project. Facility rehabilitation projects (Chapter 149) for operational facilities are more complex to design and to replace equipment, while keeping the facilities operational with minimal redundancy. It can be difficult at the project concept stage to determine the extent of all of the constraints necessary to keep the facility operational while under construction. During construction, issues invariably arise that require addressing. This can translate into higher costs for additional design services.

Professional engineering services design contract amendments are approved for various reasons. MWRA may request additional design services after the contract is awarded. These include incorporation of MWRA programmatic changes, such as climate change improvements, the implementation of high performance SCADA graphics, and energy improvements. Examples include the addition of high performance SCADA graphics at the Nut Island Headworks Odor Control, flood protection at Chelsea Creek Headworks and Alewife Pump Station and Zero Net

Energy at the Wachusett Aqueduct Pumping Station. In addition, scope may be added during preliminary design as a result of condition assessment activities, permitting, code reviews, testing for hazardous materials, and community meetings changes. One recent example is the additional out-of-scope environmental MEPA permitting for the Section 56 Saugus River crossing. Each change is reviewed and a decision is made to determine if additions to the contract, using the existing consultant, are the best or most efficient method to add work.



*Figure 3 – Wachusett Aqueduct Pumping Station Zero Net Energy*



*Figure 4 - Headworks Flood Barrier*

Design contract amendments can also arise from project delays or time extensions, which have many causes. Schedule delays may result from additional time required to obtain permits from regulatory agencies or communities. Construction projects can extend beyond the projected substantial completion date due to a variety of causes, including material delivery supply chain issues. During design, resolution of facility constraints in construction bid documents can extend the amount of time to construct the project beyond the assumptions made at the concept stage before the designer was hired. These factors can lead to additional costs for resident engineering and inspection, engineering services during construction and salary escalation.

Recently, the number of requests for information has increased from construction contractors. Consequently, additional engineering design time is required for consultants to review and respond to these requests.

As discussed above for change orders, unforeseen site conditions may require engineering design consultants to provide new or revised designs to the contractor to resolve unexpected field or facility conditions.

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

The cost of change orders and amendments as identified are included in the Capital Improvement Program spending plan.

#### **ATTACHMENTS:**

Figure 5 - Total % Change Orders for Construction Contracts

Figure 6 - Total % Amendments for Professional Design Contracts

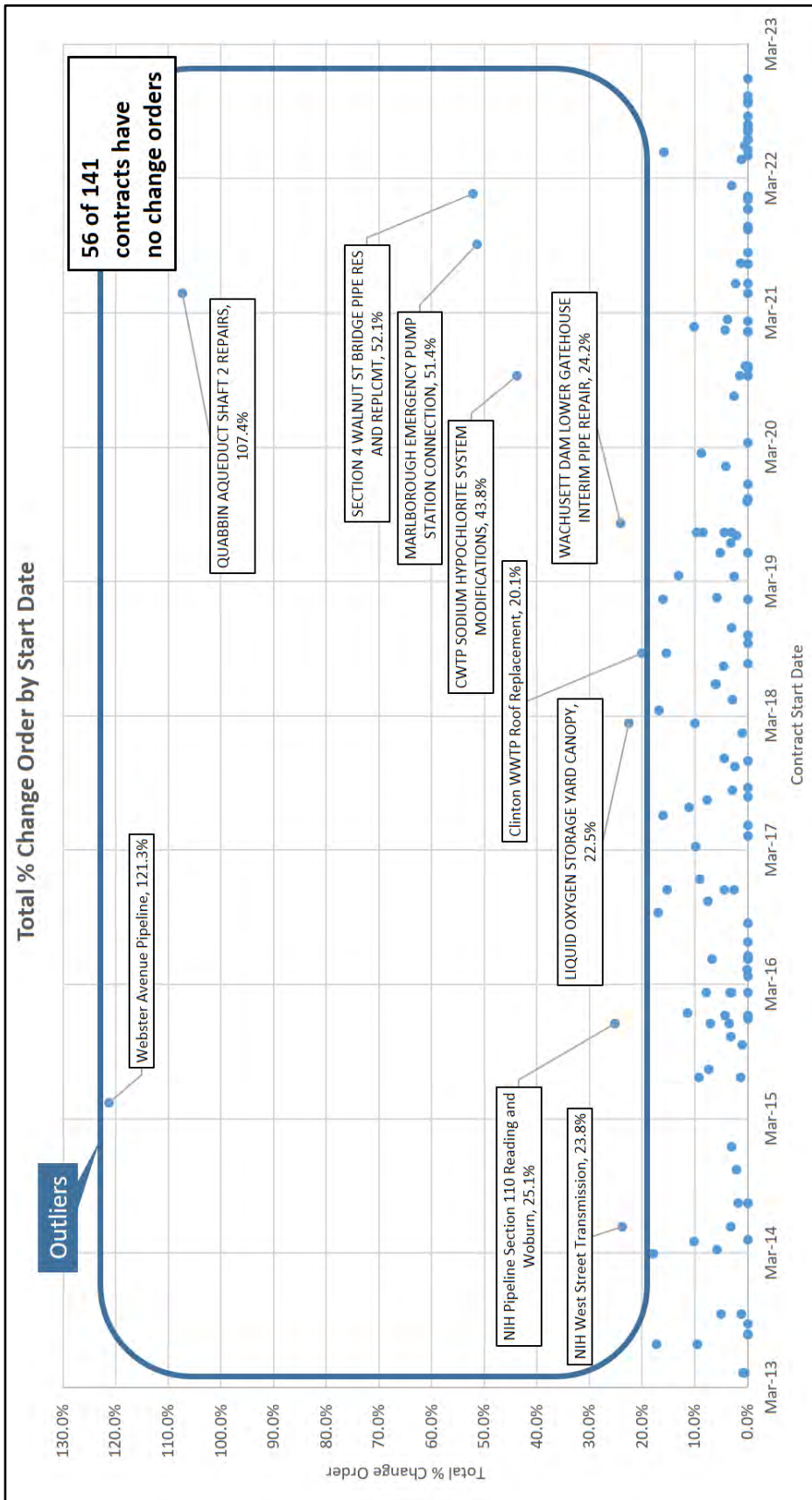


Figure 5

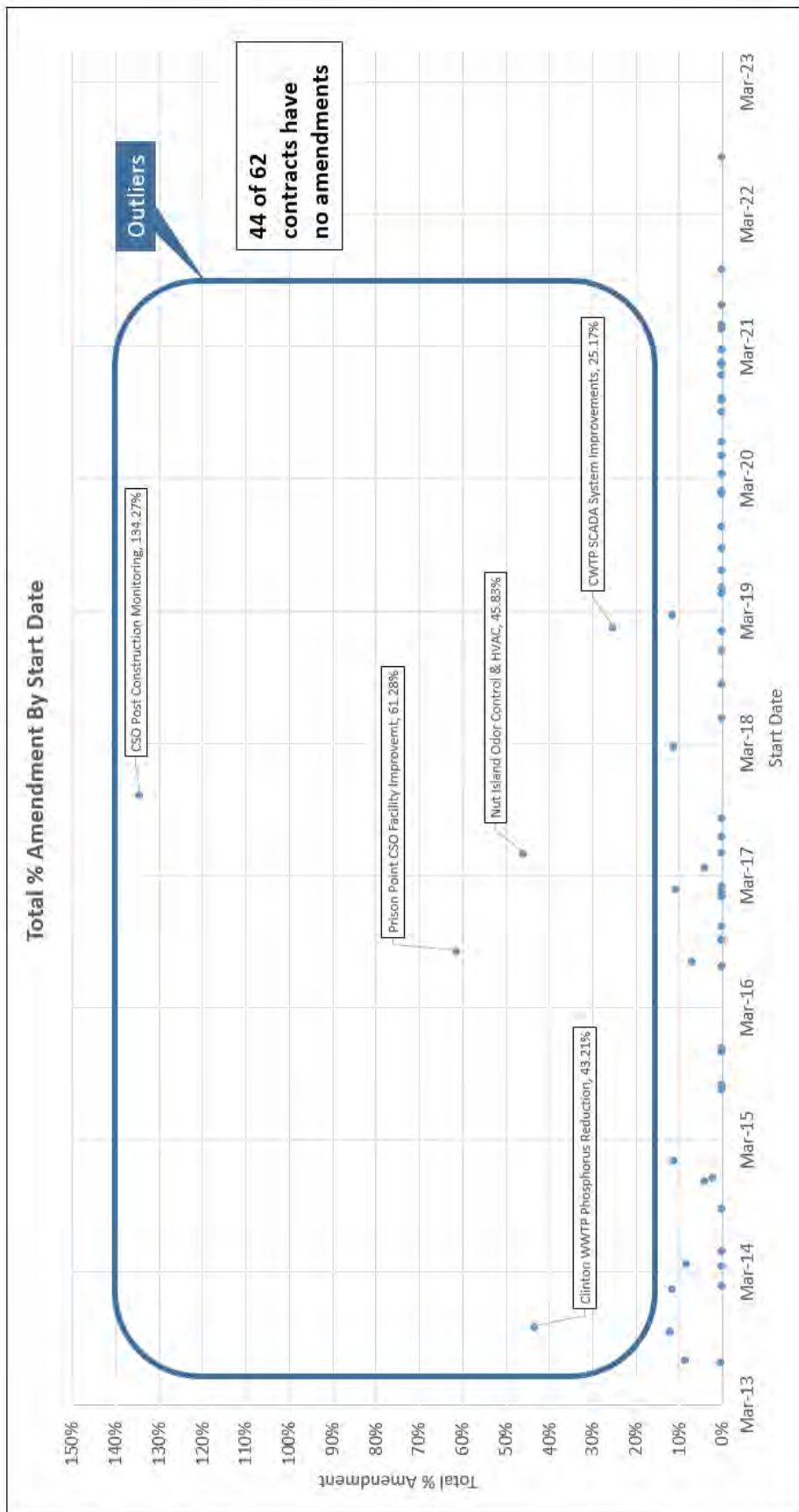


Figure 6

### STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** April 12, 2023  
**SUBJECT:** Update on MWRA's Maintenance Program




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**COMMITTEE:** Administration, Finance and Audit

INFORMATION  
 VOTE

Eben Nash, Director of Western Operations and Maintenance  
Ted Regan, Deputy Director of Deer Island Maintenance  
Charles B. Ryan, Director of WW Operations and Maintenance  
Preparer/Title



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

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### RECOMMENDATION:

For information only. This staff summary presents an overview of MWRA's maintenance program.

### DISCUSSION:

The focus of the MWRA's overall asset maintenance strategy is to: utilize industry best practices to extend equipment and facility life; ensure MWRA's ability to continuously provide safe drinking water and environmentally appropriate wastewater transport and treatment; and to protect the ratepayers' investment in those assets. Staff will provide an overview presentation of key aspects of the program.

MWRA has developed and implemented a well-structured, robust maintenance and asset protection program that includes predictive, preventive, and corrective maintenance, condition monitoring and assessments, as well as capital and current expense rehabilitation and replacement. The program is guided by rigorous planning processes, including the Master Plan, Capital Improvement Program, and the Current Expense Budget. These processes, together with continuous staff updates, such as the Orange Notebook Performance Measures, provide the Board of Directors opportunities to review and direct staff efforts related to maintenance and asset management.

MWRA assets are located in an area of more than 800 square miles, spanning from the Chicopee Valley to Boston Harbor. MWRA owns and maintains approximately 135,964 individual pieces of equipment.

MWRA's water system has more than 200 separate facilities. The water transmission system has 105 miles of active tunnels and aqueducts (mostly 10 to 14 feet in diameter), 39 miles of standby aqueducts, and 36 tunnel shafts structures and associated valve chambers.



*John J. Carroll Water Treatment Plant*

MWRA's wastewater system has 65 facilities, including two treatment plants: the Deer Island Wastewater Treatment Plant; and the Clinton Advanced Wastewater Treatment Plant. The system includes the 9.5-mile-long Deer Island outfall tunnel and emergency outfalls at both Deer Island and Nut Island, 23 miles of tunnels, 61 siphons with a total of over seven miles of piping, and 240 miles of interceptors and appurtenant facilities. There are 13 pumping stations, a screen house and four remote headworks, four Combined Sewer Overflow (CSO) facilities, and two CSO storage facilities.



*Deer Island Wastewater Treatment Plant*

The Chelsea Administration and Maintenance Buildings, the Southborough Operations and Maintenance Facilities, and the Barre Maintenance Facility are also maintained by MWRA staff. MWRA also manages a fleet of 655 vehicles that includes excavators, cranes, vactor trucks, bucket machines, portable generators, pumps, dump trucks, front-end loaders, backhoes, heavy-duty trucks, and passenger vehicles.

Within each water and wastewater facility are multitudes of individual components that must be tracked and managed. For example, a pumping station has multiple individual pumps, each with a motor, gearbox, shafts and the pump itself. Electrical equipment at the facility includes

transformers, motor controls, variable frequency drive equipment, monitoring instrumentation, both local and SCADA controls, communication equipment, lighting, and HVAC equipment.

### **Facility Asset Management Program**

Since 1985, when MWRA was created to assume responsibility for the water and wastewater systems from the then MDC, MWRA has developed systems, added resources, trained staff, and established an agency culture to place a high priority on maintaining pre-existing and new assets to prevent the system from falling back into disrepair. MWRA's formalized asset management program is based upon industry best practices. MWRA adopted a new maintenance approach called Reliability Centered Maintenance (RCM), which became a major component of the agency's maintenance approach. This component, in turn, is supported by other program features, such as an expanded condition-monitoring program (vibration, temperature, oil analysis, etc.) and an enhanced use of a computer maintenance management system, Maximo. MWRA also established planning and scheduling positions to assist in efficient maintenance activities. The MWRA program identified and implemented industry best practices for maintenance. Benchmarking of public, private, and industrial organizations was also completed.

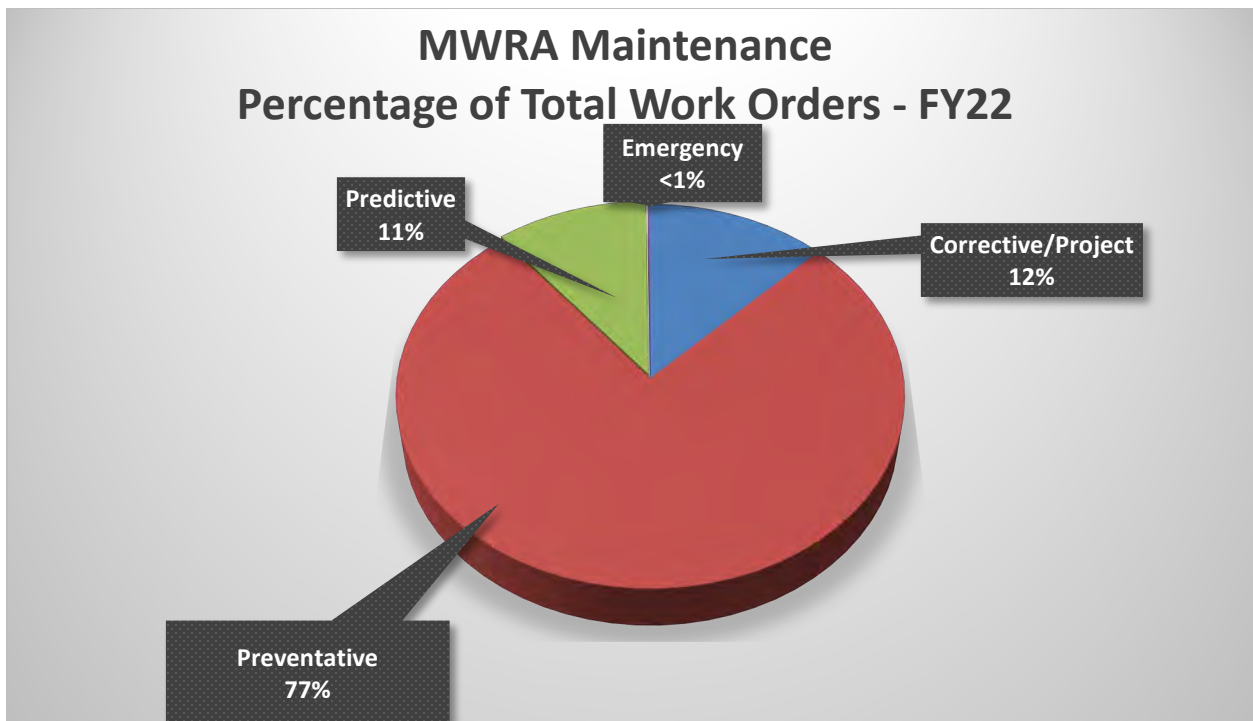
### **Maintenance Approach**

The use of Reliability Centered Maintenance methods at MWRA provide the backbone for the maintenance program. The RCM approach is to review the preventive maintenance program for all assets to ensure that the correct maintenance activities are completed and to identify assets where condition monitoring may be beneficial. The use of condition monitoring techniques, such as vibration, acoustic ultrasonic, infrared thermography, leak detection, and TV inspection, are used to identify potential failures, thereby providing staff with sufficient time to plan to correct these issues prior to failure.

Proper planning and scheduling of work is needed to execute:

- preventive maintenance work orders;
- predictive maintenance work orders; and
- corrective and project work orders.





To complete daily maintenance activities, the correct and adequate inventory of spare parts needs to be available, correct work activities need to be planned, and work needs to be scheduled to balance the workload at appropriate maintenance intervals. The Lawson-Maximo interface allows staff to query spare parts availability and kit spare parts for upcoming jobs to alleviate waiting for parts at the stockroom window. MWRA completes more than 85,000 work orders per year.

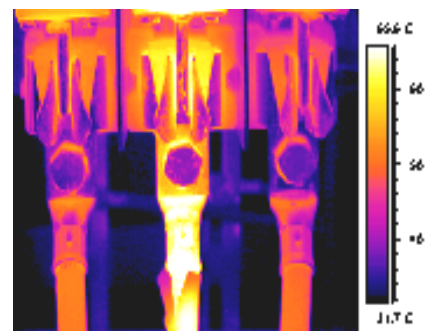
### **Condition Monitoring**

The likelihood of failure of a key piece of equipment is not just based on age, calendar time, or run time, but on specific measurable condition characteristics. Condition Monitoring focuses resources on monitoring the condition of key assets with specialized techniques, not just spending time and money on preventive maintenance based on a schedule tied to time alone, or waiting until a failure has occurred.

MWRA staff use a variety of condition assessment tools and techniques to determine how well pieces of equipment are operating, and to determine what and when maintenance activities should occur. The techniques are also used as part of the process to determine when replacement is more cost effective than continued repair efforts. All the information collected as part of condition assessments is captured and stored within Maximo, GIS or other specialized databases.

For equipment and materials, these techniques can include:

- electrical testing;
- thermal imaging;
- vibration analysis;
- acoustical ultrasound;
- oil analysis;
- ultrasonic thickness testing; and
- laser alignment



For water and wastewater pipes, these techniques can include:

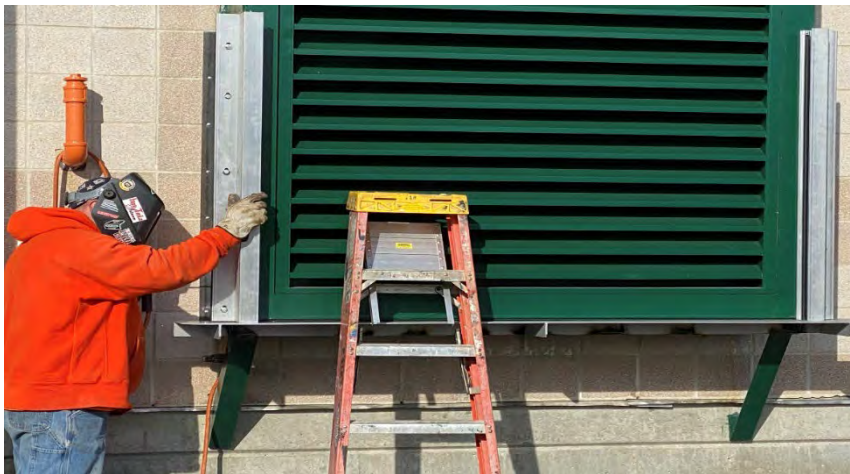
- TV inspection of pipe interiors for wastewater interceptors; and
- acoustical or correlation leak detection for water pipes.

## **Staffing**

As part of MWRA’s maintenance optimization efforts, Operations and Maintenance staff were cross-trained, and multi-disciplinary teams were developed to increase efficiency, breakdown trade silos to improve teamwork, and to speed up work completion. The team format increases efficiency by reducing downtime waiting for specific trades to support a multi-discipline work order. In addition, light maintenance, such as HVAC filter changes, light bulb replacements, and lubrication, are now assigned to a maintenance team and/or Operations, not to a specific trade. This allows flexibility to assign these tasks to any one of a number of staff based upon availability, and the priorities of the week or day.

Operators performing “light maintenance” allows for more “wrench time” by the skilled trades and cross-functional training and responsibilities have been implemented. Light maintenance work orders performed by Operations staff have increased from less than 2% in FY02, to approximately 10% in FY22, Authority-wide. Operations staff completing preventive maintenance has allowed trade maintenance staff more work time to resolve critical maintenance issues. Monthly status on this metric is tracked in the Yellow Notebook and long-term progress is presented at the end of each fiscal year.

One of the challenges is hiring skilled trade staff. MWRA has a number of vacant positions posted, but has adapted strategies to assist in carrying out important maintenance tasks. These include, moving and reassigning staff to better meet needs, assigning light maintenance tasks, utilizing acting positions, and overtime. MWRA has a number of recruitment and retention initiatives to increase our staff numbers, develop skills and competencies, and encourage obtaining licenses in order to provide for a robust, skilled workforce.



In-house staff complete the majority of maintenance of MWRA assets. More than 40% of all MWRA employees or 464 total positions work to support maintenance. Staff dedicated to maintenance include Maintenance Managers, Planners and Schedulers, Condition Monitoring staff, Electricians, M & O Specialists, Instrumentation Specialists, SCADA staff,

Plumbers, Facility Specialists, Building and Grounds staff, Water and Wastewater Pipeline Maintenance, Valve Inspection, Meter Maintenance, Machinists, Welders, Laborers, vehicle repair staff, and warehouse support.

Where specialized training, experience, and tools are required, or if the need for services is one time or intermittent, or where the maintenance services are outside of MWRA's core business activities, MWRA has relied on contractors to support maintenance. Some of the contractor services include elevators, cranes, overhead doors, trash removal, hydraulic equipment, centrifuges, stream turbine generators, boilers, cryogenic oxygen generation, ozone generators, and combustion turbine generators.



### **Maintenance Metrics**

An important element of a successful maintenance program is the creation and use of key performance indicators to track compliance and progress with program goals. MWRA has had an aggressive system of transparently reporting on high-level performance measures for many years in the monthly and quarterly *Key Indicators of MWRA Performance* reports (Yellow and Orange Notebooks). The monthly (Yellow) report is posted on MWRA's internal intranet site for use by staff and management, and the quarterly report (Orange) is provided to the Board and posted on MWRA's website. Approximately three dozen key indicators related specifically to maintenance are reported on each month. These include indicators of equipment availability, predictive and preventative maintenance task orders, and backlog. Inspection and maintenance of interceptors and water mains, valves, and meters are reported with targets set each fiscal year.

At the end of each year, staff review progress toward longer-term goals with multi-year reviews of key performance indicators and establish targets for the next fiscal year. MWRA also provides an extensive report each fall to EPA on the prior fiscal year's wastewater system maintenance activities as required by MWRA's NPDES permit.

The following are examples of the type of year-end statistics that are reported on maintenance:

- 99.5% of all preventative maintenance work orders were completed in FY22;
- 8,975 predictive maintenance work orders were completed in FY22. Predictive Maintenance work includes vibration, acoustic ultrasonic, ultrasonic thickness, and oil analysis, and is proactive maintenance work to extend equipment useful life by monitoring and trending equipment characteristics. Predictive maintenance work orders have increased from 2% of all work orders in FY04 to 11% of all work orders in FY22; and
- emergency maintenance is less than 1% of all work orders completed in FY22.

Maintenance backlog remains above the industry average. The backlog began to increase when 50% of staff were required to stay home during the pandemic. Staff prioritized work on critical equipment, which was needed to treat wastewater or provide clean water. Despite staff shortages, through effective management, staff have been able to reduce backlog hours by 7,000 hours as of April 1, 2023. Although the backlog is still above the industry average, the critical equipment and


availability to meet all permit regulations remains available and reliable. By focusing on critical equipment, some non-critical work on assets such as unit heaters, sump pumps, redundant equipment, and heat exchangers has not been completed or has been delayed.

More importantly, MWRA has historically maintained a high level of equipment availability for operations. At each major facility, regular feedback from facility operators is used to supplement the schedule work orders generated by the maintenance system. For example, an equipment availability report is generated to detail the critical equipment. Higher maintenance priority is assigned to equipment that drops below the number required, and work orders are rescheduled to return to 100%. During FY22, critical equipment availability averaged 98%.

**BUDGET/FISCAL IMPACTS:**

The Operations Division's FY23 Current Expense Budget includes \$26.5 million for Maintenance. During the most recent five fiscal years (FY18-22), Maintenance spending on average has been \$24.7 million per year.

## STAFF SUMMARY


**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** April 12, 2023  
**SUBJECT:** 2022 Annual Update on New Connections to the MWRA System

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**COMMITTEE:** Administration, Finance and Audit

INFORMATION  
 VOTE

Rebecca Weidman, Director, Environmental & Regulatory Affairs  
Katie Ronan, Project Manager, Environmental Permitting  
Preparer/Title

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

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*MWRA's system expansion policies require an annual update to the Board of Directors on the status of new connections to the MWRA water and sewer systems. This 2022 Annual Update on New Connections to the MWRA System has been prepared pursuant to these requirements. This staff summary also includes an update on MWRA's system expansion efforts in 2022 and potential future connections.*

### RECOMMENDATION:

For information only.

### DISCUSSION:

MWRA's system expansion policies require an annual update on the status of any new connections (connection approved within the preceding five years) to MWRA from outside the water and sewer service areas. Calendar year 2002 was the first year that MWRA system expansion policies prescribed this annual update requirement. In an effort to maintain a single document that includes all new connections, the 2002 Annual Update discusses all post-2002 connections to MWRA. A summary of each connection's compliance in 2022 with requirements as stipulated in its water supply or sewer use agreement is provided. For water connections, requirements include compliance with water withdrawal limits and entrance payments due to MWRA. For wastewater connections, requirements address inflow removal, ongoing stipulations regarding management of wet weather flows, compliance with discharge limits, and entrance payments due to MWRA.

Reduced demand on MWRA's water supply over the last several decades has positioned MWRA as a source of reliable water supply for existing and interested new communities. In 2022, despite drought conditions and MWRA fully supplying the City of Cambridge for three months, MWRA continued to have plenty of available water for new communities seeking admission to MWRA. This report includes a discussion of inquiries from potential applicants for admission in calendar year 2022 and other related system expansion activities, including the Board of Directors' approval in September 2022 of a five-year waiver of MWRA's water system entrance fee under certain conditions. This waiver extends through December 31, 2027.

The MWRA operating policies listed below govern system expansion. A more detailed summary of each policy is provided in Attachment A.

- *OP.04, Sewer Connections Serving Property Partially Located in a Non-MWRA Community (the “Sewer Straddle” policy);*
- *OP.05, Emergency Water Supply Withdrawals;*
- *OP.09, Water Connections Serving Property Partially Located in a Non-MWRA community (the “Water Straddle” policy);*
- *OP.10, Admission of New Community to MWRA Water System; and*
- *OP.11, Admission of New Community to MWRA Sewer System and Other Requests for Sewer Service to Locations Outside MWRA Sewer Service Area.*

## **Summary of Approved Connections to the MWRA System**

### **Water**

In 2022, the Executive Office of Energy and Environmental Affairs and its agencies, through the Massachusetts Drought Management Task Force, continued to assess hydrologic conditions throughout the Commonwealth. MWRA maintains a separate Drought Management Plan specifically tailored to the capacity of our reservoirs. In 2022, Quabbin Reservoir levels remained well within the normal operating band, spilling 14.1 billion gallons into the Swift River over 141 days. According to monthly DCR Hydrologic Conditions Reports, 2022 began with generally high temperatures and below normal snowfall. Below normal rainfall continued as the year progressed and *Level 1 – Mild Drought* and *Level 2 – Significant Drought* conditions developed throughout most of the state. Several regions across the Commonwealth reached *Level 3 - Critical Drought* declarations between July and August. Conditions gradually improved during the fall and all regions returned to normal by the beginning of 2023.

Since 2002, Stoughton, Reading, the Dedham-Westwood Water District, Wilmington, Ashland and Burlington have become MWRA water communities. (Bedford was admitted into the MWRA system prior to 2002, before firm water withdrawal limits were established for new communities.) There have also been two “straddle connections” since 2002: Avalon in Peabody/Danvers (now called 14 North) and the YMCA in Marblehead/Salem. The connections are shown on the map in Figure 1 and information pertaining to these connections is provided in Table 1.

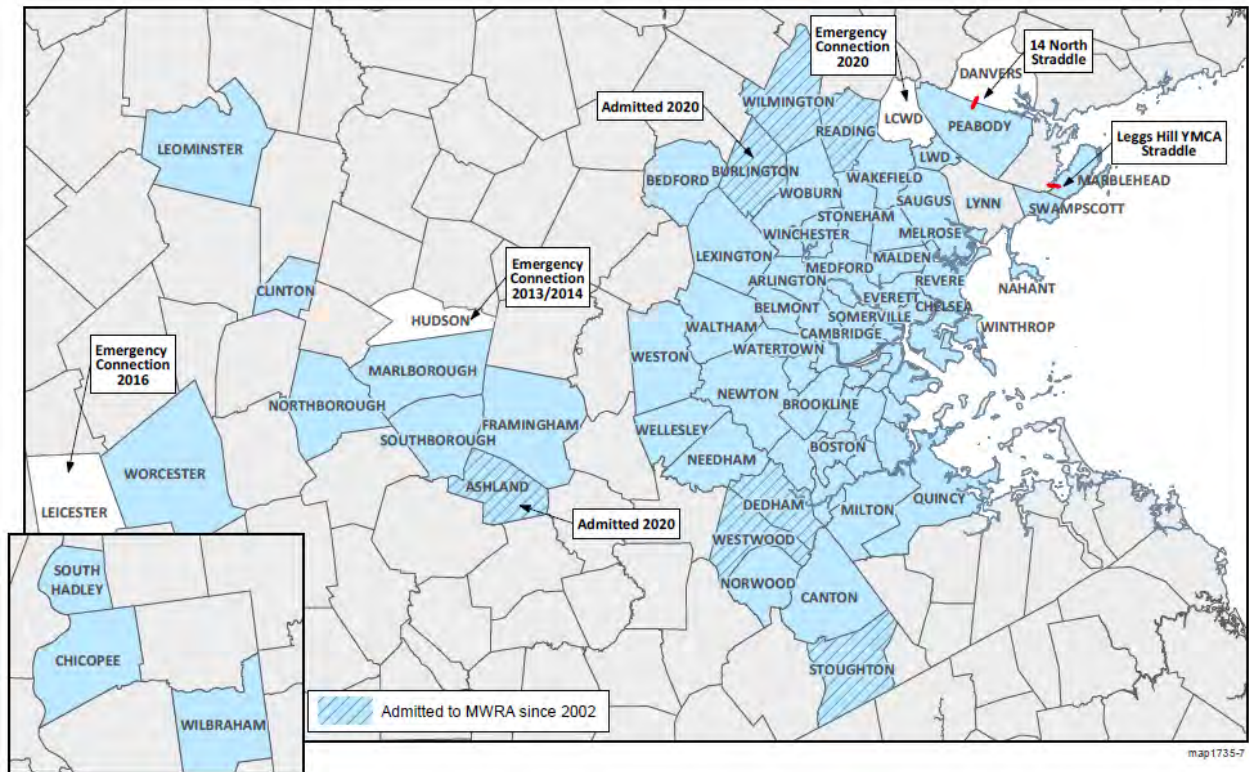


Figure 1: New Water Connections Since 2002

Table 1 - Approved Connections to MWRA Water System Since 2002					
Applicant	Applicable MWRA Policy	Approval Date or Emergency Period (month/year)	Entrance Fee or Payment of Charges Under the Emergency Policy	MWRA Approved Withdrawal	2022 MWRA Withdrawal
Ashland	OP.10, New	12/20 (admitted)	Entrance fee of \$388,336.34, w/ 20-year payment schedule to begin 2023.	32.8 mg/yr (0.09 mgd average, 0.648 mgd max)	0
Burlington	OP.10, New	12/20 (admitted)	Entrance fee of \$4,407,986.46, w/ 20-year payment schedule to begin 2023.	324 mg/yr (0.886 mgd average, 1.5 mgd max)	367.7 mg/yr
Wilmington (partial supply)	OP.10, New	5/09 (admitted) 10/20 (approved for temporary exceedance) 9/22 (approved for temporary exceedance)	Entrance fee of \$2,809,320 w/ 20-year payment schedule. On-time payments.	219 mg/yr (0.6 mgd average, 1.2 mgd max)	252.5 mg/yr
Dedham Westwood W.D. (partial supply)	OP.10, New	12/05(admitted) 12/14(amended) 10/18 (approved temporary increase)	Entrance fee of \$548,748 (first 0.1 mgd) and \$566,727 (additional 0.1 mgd) paid in full.	73 mg/yr (2 mgd max)	147.9 mg/yr

<b>Table 1 - Approved Connections to MWRA Water System Since 2002</b>					
<b>Applicant</b>	<b>Applicable MWRA Policy</b>	<b>Approval Date or Emergency Period (month/year)</b>	<b>Entrance Fee or Payment of Charges Under the Emergency Policy</b>	<b>MWRA Approved Withdrawal</b>	<b>2022 MWRA Withdrawal</b>
		2/22 (approved temporary increase)			
Hudson	OP.05 Emergency	6/13 (emergency) 12/13 (emergency) 6/14 (emergency) 1/16 (emergency)	MWRA has received a total of \$1,033,787 for emergency withdrawals.	N/A	0
Reading	OP.10, New	11/05 (admitted) 10/07 (amended)	Entrance fee of \$3,285,242 (first 0.6 mgd) & \$7,799,606 (additional 1.5 mgd) paid in full.	766.5 mg/yr (3.8 mgd max)	623.1 mg/yr
YMCA Salem/ Marblehead	OP.09, Straddle	11/06 (admitted)	Entrance fee of \$70,823 paid in full.	0.0127 mgd	0.005503 mgd
14 North Danvers/ Peabody	OP.09 Straddle	05/03 (admitted)	Entrance fee of \$64,063 paid in full.	0.012 mgd	0.006537 mgd
Stoughton (partial supply)	OP.10, New	6/02 (admitted)	Entrance fee of \$5,657,117 paid in full.	419.75 mg/yr (2.5 mgd max)	25.7 mg/yr

*mg/yr = million gallons per year; mgd = million gallons per day*

The highlights of Table 1 are summarized below.

- The Town of Burlington was approved by the Board of Directors for admission to the MWRA water system on December 16, 2020. Burlington intends to connect to MWRA in a two-phased approach. A Water Supply Agreement was executed in 2021, in alignment with the first phase of Burlington’s connection, which allows the Town to obtain up to 324 mg/year and 0.886 mgd on average from MWRA via a connection to the Town of Lexington’s local water system. In 2022, Burlington withdrew a total of 367.7 million gallons, exceeding its Water Supply Agreement withdrawal limit. Phase 2 of Burlington’s connection involves construction of a pipeline, which will allow Burlington to obtain up to 6.5 mgd from MWRA. Construction of the Phase 2 pipeline is expected to be complete by July 2023. Burlington will be seeking Board approval in the coming months to amend its Water Supply Agreement accordingly.
- The Town of Wilmington requested temporary approval to exceed its Water Supply Agreement limit of 219 mg/yr in 2022. Wilmington, which is partially supplied by MWRA, requested this temporary approval because declining groundwater levels caused a substantial drop in the production capabilities of local groundwater wells. The Town’s Water Supply Agreement includes a provision allowing for a temporary increase in water volume in excess of the withdrawal limit without revision to the Agreement in emergency situations. In total, the Town withdrew 252.5 mg/yr in 2022 under this temporary approval. Wilmington’s ten-year Water Supply Agreement is up for renewal in 2024. MWRA staff will work with Wilmington in 2023 to determine the Town’s actual water needs going forward and update the Water Supply Agreement accordingly, if necessary.



- The Dedham-Westwood Water District requested temporary approval to exceed its Water Supply Agreement limit of 73 mg/year in 2022. The District, which is partially supplied by MWRA, requested this temporary approval to increase blending of MWRA water with local supplies while in the process of taking measures to permanently reduce Total Trihalomethanes (TTHMs) in local finished water, in compliance with MassDEP’s Maximum Contaminant Level (MCL). The District’s Water Supply Agreement includes a provision allowing for a temporary increase in water volume in excess of the withdrawal limit without revision to the Agreement in emergency situations. In total, the District withdrew 147.9 million gallons from MWRA in 2022 under this temporary approval. The District indicated that they may request an increase to their Water Supply Agreement withdrawal limits. MWRA staff are working with the District to determine their water needs and if any additional approvals to the Water Supply Agreement are required.
- For permanent connections made prior to 2020, all entrance fees have been paid pursuant to agreed-upon schedules of payments included in Water Supply Agreements. Burlington and Ashland will begin entrance fee payments in 2023.

***Emergency Supplies to MWRA Member Communities***

From August 30 to mid-November 2022, Cambridge activated its emergency connection to MWRA’s water system. MWRA fully supplied Cambridge with drinking water while upgrades were being made to the Cambridge Water Treatment Plant treatment system for per- and polyfluoroalkyl substances (PFAS) removal.

Additionally, throughout the second half of 2022 into 2023, MWRA provided water to Winchester via Spot Pond in accordance with an Agreement between the Town and MWRA. Winchester requested approval to withdraw water from Spot Pond while the Town works on its North Reservoir Dam and while MWRA rehabilitates its Section 89 pipeline, which serves a portion of Winchester.

MWRA worked with the Lynn Water and Sewer Commission (LWSC) to test three emergency interconnections between the City and MWRA in late 2022. These efforts were in response to significant drought conditions, resulting in LWSC’s reservoir system falling below 40 percent capacity. Local precipitation events in late 2022 resulted in reservoir levels rebounding to the extent that an emergency connection to MWRA’s water system was unnecessary.

**Sewer**

In 2022, there were no new formal applications for admission under OP.11 or OP.4, the “Sewer Straddle” policy. Since 2002, ten entities have been approved to discharge into the MWRA wastewater system. Most recently, Crescent Ridge Dairy was approved in 2019 pursuant to OP.11, and The Rivers School was approved in 2020 pursuant to OP.04, the “Sewer Straddle” policy. Figure 2 shows, and Table 2 summarizes, connections to the MWRA sewer system since 2002, when annual reporting requirements were established.

Figure 2: New or Increased Volume Sewer Connections Since 2002

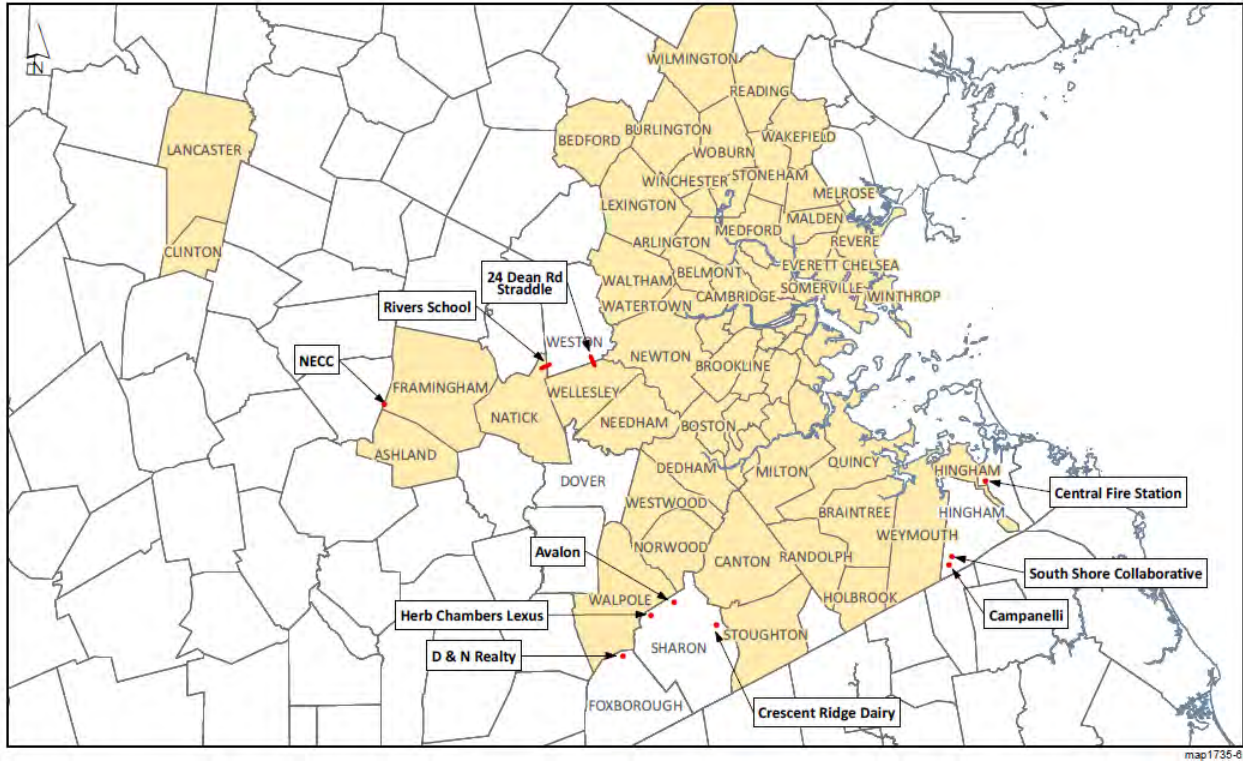


Table 2 - Approved Connections to MWRRA Sewer System Since 2002

Applicant	MWRA Policy	Approval Date	Entrance Fee Payment	Status of Inflow Removal/Other Contract Requirements	MWRA Approved Discharge	Estimated Discharge to MWRRA in 2022*
Rivers School, Weston	OP.04, Straddle	6/20	\$42,086 paid in full	Payment of \$141,600 to Natick to complete inflow removal.	3,000 gpd (average) 12,000 gpd (max)	4,097 gpd
Crescent Ridge Dairy, Sharon	OP.11	5/19	\$33,642 paid in full	Payment of \$200,000 made to Stoughton to complete inflow removal.	10,000 gpd	4,056 gpd
New England Center for Children, Southborough	OP.11	7/15	\$51,898 Paid in full	Inflow removal completed.	12,500 gpd	7,267gpd
FoxRock Realty, South Shore Collaborative, Hingham	OP.11	4/12	21,883 paid in full	Inflow removal completed.	5,336 gpd	1,953 gpd
24 Dean Road, Weston/Wellesley	OP.04 Straddle	3/11	\$18,033 paid in full	Inflow removal completed.	575 gpd	387 gpd
Family Funway, D&N Realty, Foxborough	OP.11	6/07	\$168,391 paid in full	Inflow removal completed.	13,000 gpd (average) 22,750 gpd (max)	**
Avalon Bay, Sharon	OP.11	6/07	\$105,586 paid in full	Inflow removal completed.	16,120 gpd	15,899 gpd

<b>Table 2 - Approved Connections to MWRA Sewer System Since 2002</b>						
<b>Applicant</b>	<b>MWRA Policy</b>	<b>Approval Date</b>	<b>Entrance Fee Payment</b>	<b>Status of Inflow Removal/Other Contract Requirements</b>	<b>MWRA Approved Discharge</b>	<b>Estimated Discharge to MWRA in 2022*</b>
Herb Chambers Lexus, Sharon	OP.11	5/07	\$40,750 paid in full.	Inflow removal completed.	6,400 gpd (average)  10,500 gpd (max)	4,071 gpd***
Hingham Fire Station, Hingham	OP.11	4/07	\$8,429 paid in full	Inflow removal completed.	782 gpd	197.51 gpd
Campanelli (now Gill Research Drive, LLC), Hingham	OP.11	2/04	\$11,162, paid in full	Inflow removal completed.	2,475 gpd	No reporting requirement
<p>* Wastewater discharges are estimated based on water meter readings.  ** Family Funway permanently closed several years ago. MWRA staff are still awaiting discharge information from the owner, but estimate that it will be well below the approved discharge volume and similar to the 2021 discharge volume of 3,213 gpd.  ***Water consumption figures are adjusted downward by 5% to account for a certain percentage of water that is used by the facility and not returned as wastewater (such as landscaping, water consumed).  <i>gpd = gallons per day</i></p>						

The key findings of Table 2 are noted below.

- Most wastewater discharges in 2022 were below the approved agreement limits, and entities reported compliance with obligations related to sewer system operations.
- Rivers School was over its approved estimated discharge limit of 3,000 gpd, with an average daily flow at 4,097 gpd. Staff are working with the school to determine if adjustment of the 2020 Sewer Connection Agreement is necessary. The Rivers School notes that actual discharges may be less, due to water used to create ice and maintain such for its ice hockey rink.
- Family Funway in Foxborough was a small amusement park that permanently closed in 2022. Ownership of the site has not changed. MWRA staff will work to ensure that any future owners are aware of annual estimated discharge reporting requirements.

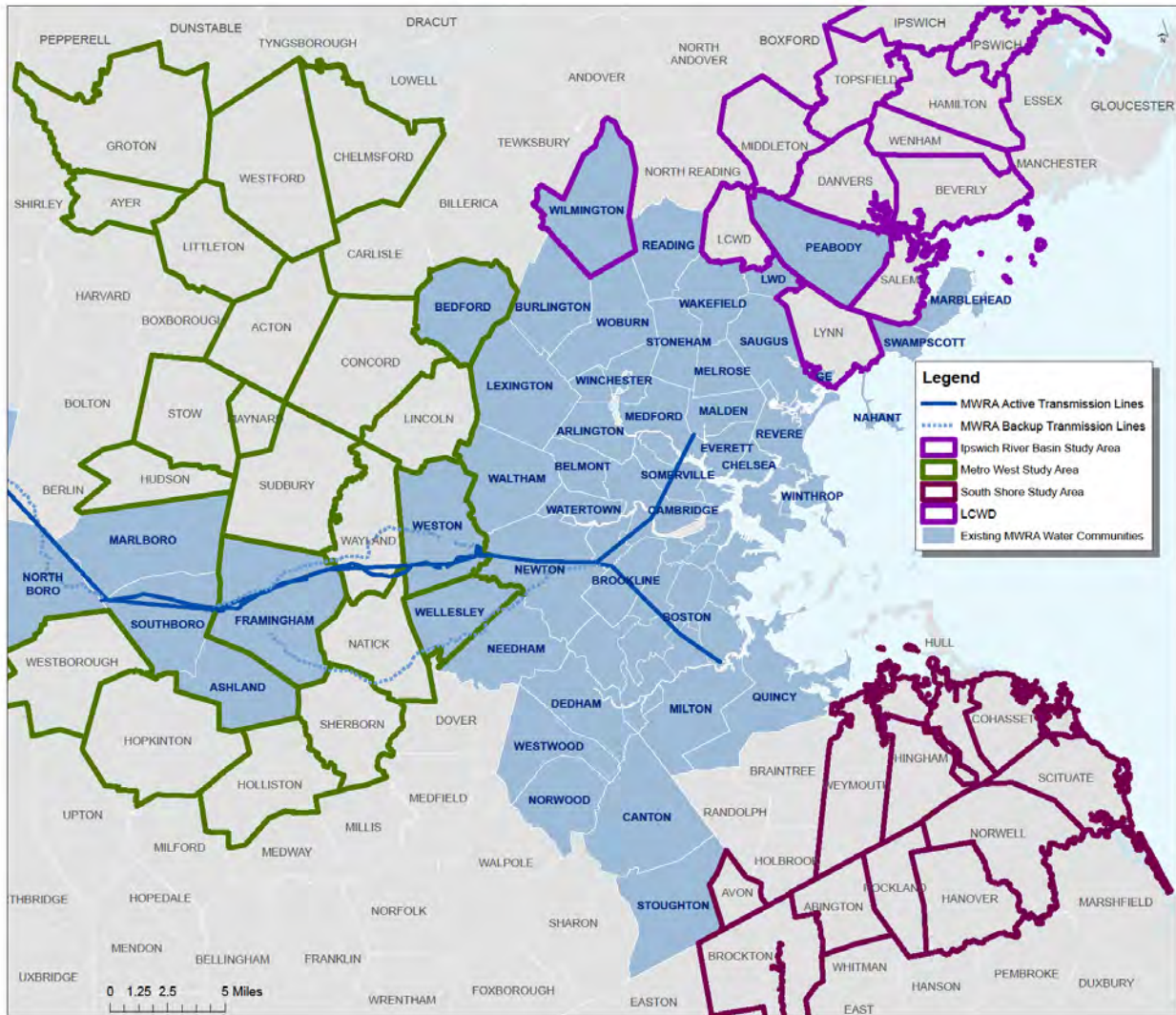
### **System Expansion and Potential Future Connections**

In the fall of 2022, MWRA completed two feasibility studies for expanding MWRA’s water system to the Ipswich River Basin (Beverly, Danvers, Hamilton, Ipswich, Middleton, Lynn, Lynnfield Center Water District, Peabody, Salem, Topsfield, Wenham, Wilmington) and to the South Shore (Abington, Avon, Brockton, Cohasset, Hanover, Hingham, Norwell, Scituate, Rockland, Weymouth, and the Former Naval Air Station). These studies were initiated at the request of the Baker-Polito Administration and in a direct legislative appropriation, respectively. The South Shore feasibility study also looked at expanding MWRA’s wastewater system to the South Shore. Both of these studies are available on [www.mwra.com](http://www.mwra.com).

A third, ongoing study is examining the feasibility of expanding MWRA’s water system to communities in the Metro West area. The Metro West Feasibility Study includes the communities

of Acton, Ayer, Bedford, Chelmsford, Concord, Groton, Holliston, Hopkinton, Hudson, Lincoln, Littleton, Maynard, Natick, Sherborn, Stow, Sudbury, Wayland, Wellesley, Westborough, Westford and Weston. This study was requested by the participating communities, many of which are experiencing significant water quantity and quality issues. This study is in progress and will identify conceptual alternatives to supply water to the communities in the study area from MWRA’s tunnel system. It is anticipated that this study will be completed in June 2023.

Figure 3. Map of MWRA System Expansion Study Areas



In September 2022, the Board of Directors voted to adopt the MWRA Advisory Board’s recommendation to temporarily waive the entrance fee. Historically, new communities and entities seeking admission to the MWRA water system were charged an entrance fee, based on the value of the existing water system at the time of admission. The entrance fee has been identified as a barrier for new communities in need of water. Analysis has shown that selling additional water will benefit both new and existing water communities; for existing water communities, the additional sale of water could significantly reduce future annual water assessments. The waiver will extend through 2027 for new communities seeking admission for up to a combined total 20 mgd. To qualify for the entrance fee waiver, communities must demonstrate that local sources are impacted by water quality issues, local sources are located in a stressed basin or that local economic development is significantly constrained by existing local sources.

MWRA staff anticipate that the three feasibility studies will generate some additional interest in connecting to MWRA's water system. Below is a summary of communities that have expressed intentions or significant interest in pursuing admission to the MWRA water system in 2022.

### *Communities*

**Hopkinton:** The Town of Hopkinton has expressed intentions to pursue admission to the MWRA water system, pursuant to OP.10, for supplement water supply and is working with a consultant to evaluate infrastructure connection options. Staff have been in contact with Hopkinton and have provided information regarding the admission process and requirements as well as logistical considerations related to infrastructure and water quality.

**Lynnfield Center Water District:** Lynnfield Center is pursuing admission to the MWRA water system, pursuant to OP.10. This connection will remedy local contamination issues and increased difficulty meeting local demand. Lynnfield Center is working with the Town of Wakefield to construct a new water main that will allow it to connect to MWRA via the local Wakefield water distribution system. This scenario will also remedy water quality issues (due to two dead end pipes) in the Wakefield water distribution system. MWRA staff have been in close contact with Lynnfield Center and its consultants throughout 2022, as it begins the admission process and applicable regulatory approvals. Lynnfield Center expects to begin the Massachusetts Environmental Policy Act (MEPA) and Interbasin Transfer Act (ITA) review processes in the coming months.

**Walpole:** The Town of Walpole has informed the Authority that it is currently investigating alternative supplemental water supply sources and that the Town intends to pursue admission to the MWRA water system. In December, MWRA staff met with the Town and provided detailed information regarding the admission process and requirements, pursuant to OP.10.

**Wayland:** The Town of Wayland intends to pursue admission to the MWRA water system pursuant to OP.10. Throughout 2022, staff have worked closely with the community and its consultants, as it evaluates infrastructure connection options. Several coordination meetings and site visits have been held. Staff have also provided detailed information regarding the admission process and requirements, as well as detailed logistical considerations related to infrastructure and water quality.

**Wellesley:** The Town of Wellesley is currently a partially supplied MWRA water community and has expressed interest in obtaining additional water from MWRA. Staff have met with Wellesley on numerous occasions and conceptual new infrastructure connection options have been identified. Staff will continue to coordinate closely with the Town.

**Weymouth:** The Town of Weymouth has expressed intentions to pursue admission to the MWRA water system, pursuant to OP.10, to obtain supply for both the Town and the Union Point Development located in South Weymouth. Staff have met with Weymouth and the developers throughout 2022 to discuss the admission process and requirements. MWRA's South Shore Feasibility Studies identified two conceptual infrastructure connections that could supply Weymouth and the development.

*Non-Communities:*

**Former South Weymouth Naval Air Station:** This development is a 1,400 acre community located within Abington, Rockland, and Weymouth. The site is partially developed, with additional development pending. The current development team has been in discussions with MWRA regarding a water connection.

**ATTACHMENT:**

Attachment A: Policies for Admission to the MWRA

## ATTACHMENT A

### Policies for Admission to the MWRA

- **OP.04. Sewer Connections Serving Property Partially Located in a Non-MWRA Community.** This policy applies to persons seeking sewer services for buildings/structures that are located partially within a MWRA sewer community and partially outside a MWRA sewer community. (The actual structures, not just the parcel of land on which the structure is located, must straddle the municipal boundary.) It is also known as the “Sewer Straddle” policy.
- **OP.05. Emergency Water Supply Withdrawals.** This policy applies to communities outside MWRA’s Water Service Area that are seeking MWRA water on an emergency basis. MWRA may approve emergency withdrawals for no more than six months at a time, and typically, the emergency withdrawal period coincides with a DEP Declaration of Emergency for the Community.
- **OP.09. Water Connections Serving Property Partially Located in a Non-MWRA community.** This policy applies to persons seeking to obtain water for a location, building, or structure located on a parcel of land, under single ownership, and which is subject to an integrated plan for use of development that is located partially within a MWRA water community and partially outside a MWRA water community. It is also known as the “Water Straddle” policy.
- **OP.10. Admission of New Community to MWRA Water System.** This policy applies to communities seeking admission to the MWRA water system. OP.10 also applies to any local body, institution, agency or facility of the Commonwealth or federal government seeking MWRA water for a location outside MWRA’s Water Service area. Connections and withdrawals by private entities outside the water service area are prohibited, except for those that are eligible under either the water straddle policy (OP.9), or that are located contiguous to, or in the vicinity of local community-owned water supply pipelines that extend from the MWRA’s Chicopee Valley Aqueduct (CVA), and that receive the appropriate approvals from the CVA, host communities and applicable regulatory bodies.
- **OP.11. Admission of New Community to MWRA Sewer System and Other Requests for Sewer Service to Locations Outside MWRA Sewer Service Area.** This policy applies to communities seeking admission to the MWRA sewer system and to all parties seeking sewer service for locations outside the MWRA service area that are not eligible under the Sewer Straddle Policy.

MWRA must approve all extension of service to entities outside the service area pursuant to the applicable policy noted above, with the exception of connections to local community-owned water supply pipelines that extend from the Chicopee Valley Aqueduct. This is the case even when an entity outside the service area is not directly connected to the MWRA, but instead to a local community system that is part of the MWRA service area.

**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** March 12, 2023  
**SUBJECT:** Delegated Authority Report – March 2023





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**COMMITTEE:** Administration, Finance & Audit

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 March 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.

This staff summary also includes the results of a review of the delegated authority reports from March 2022 to February 2023, to identify the items that were approved under the increased Procurement Delegated Authority thresholds of the Executive Director adopted during the February 16, 2022 Board meeting.

**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.

Since the adoption of the amendments to the Management Polices of the Board of Directors in February 2022, which increased the Procurement Delegated Authority thresholds for the Executive Director to reflect inflationary increases, and established a separate delegated authority for routine chemical purchases, the Executive Director has approved 42 items, with a value of approximately \$42,965,835, that would have previously required Board approval. The following is brief summary of these items:

<b>Category</b>	<b>Amount</b>	<b>Value</b>
Purchasing Total	13	\$21,128,385
- Fuel and Chemical Purchases <sup>1</sup>	6	\$17,407,971
Construction Contract Awards	6	\$13,255,628
Professional Services Awards	8	\$4,156,090
Non-Professional Services Awards	1	\$384,600
Change Orders and Amendments	14	\$4,041,132

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<sup>1</sup> Of the 13 purchases, 6 of them were for fuel and chemicals

The increases to the delegated authority dollar amounts, and the creation of the purchasing delegation to address routine, recurring chemical purchases, have enabled the MWRA to efficiently handle routine matters, while continuing to bring larger awards before the Board of approval.

**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 MARCH 1 - 31, 2023

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	03/02/23	<b>JOHN J. CARROLL WATER TREATMENT PLANT SCADA SYSTEM IMPROVEMENTS</b> FURNISH AND INSTALL CONTROL SYSTEM NETWORK ETHERNET MANAGED COMMUNICATION SWITCHES; FURNISH AND INSTALL CIRCUIT BREAKERS, CONDUIT, JUNCTION BOXES AND WIRES IN THE OZONE ELECTRICAL SUBSTATION ROOM; FURNISH AND INSTALL AUTOMATIC TRANSFER SWITCHES, CONDUIT AND WIRE.	7582	5	LeVANGIE ELECTRIC COMPANY, INC.	\$91,534.68
C-2.	03/02/23	<b>MISCELLANEOUS FENCING INSTALLATIONS AND REPAIRS</b> AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR MISCELLANEOUS FENCING INSTALLATIONS AND REPAIRS FOR A TERM OF 1,095 CALENDAR DAYS.	6760AA	AWARD	R.A.D. CORP.	\$489,500.00
C-3.	03/13/23	<b>DEER ISLAND OXYGEN GENERATION FACILITY SERVICES</b> INCREASE CONTRACT AMOUNT AND EXTEND CONTRACT TERM BY 12 MONTHS TO PROVIDE CONTINUED MAINTENANCE SERVICES FOR THE OXYGEN FACILITY ON DEER ISLAND. THE ADDITIONAL TIME ALLOWS STAFF TO RETHINK THE APPROACH TO THE MAINTENANCE. OPERATION AND INFRASTRUCTURE OF THE FACILITY BASED ON THE NOTIFICATION THAT THE INCUMBENT FIRM IS TRANSITIONING INTO RETIREMENT, AND THIS FIRM HAS BEEN THE SOLE BIDDER SUCH SERVICES FOR THE PAST SEVERAL YEARS DUE TO THE HIGHLY SPECIALIZED NATURE OF SERVICING PURE OXYGEN GENERATION EQUIPMENT.	5587	1	SOLUTIONWERKS, INC.	\$500,000.00
C-4.	02/13/23	<b>NUT ISLAND HEADWORKS ODOR CONTROL AND HVAC IMPROVEMENTS</b> FURNISH AND INSTALL NEW POWER AND CONTROL CONDUITS, WIRES AND SUPPORTS FOR DAMPER; FURNISH AND INSTALL ADDITIONAL SHEET METAL AND FIBERGLASS REINFORCED PLASTIC DUCT, FITTINGS AND SUPPORTS IN THE GRIT AND SCREEN ROOMS; ADDITIONAL WORK TO ADDRESS H-PILE OBSTRUCTIONS DURING THE REPLACEMENT UNDERGROUND FUEL OIL STORAGE TANKS; FURNISH AND INSTALL CONDUIT, WIRE AND SUPPORTS TO PROVIDE 120-VOLT POWER FOR CONVENIENCE RECEPTACLES AND LIGHTING SUPPLIED WITH ALL 15 AIR HANDLING UNITS; FURNISH AND INSTALL CONDUIT, WIRE AND SUPPORTS FROM LIGHTING PANEL IN THE ODOR CONTROL ROOM.	7548	14	WALSH CONSTRUCTION COMPANY II, LLC	\$524,892.66
C-5.	03/28/23	<b>SECURITY EQUIPMENT MAINTENANCE AND REPAIR SERVICES</b> INCREASE CONTRACT AMOUNT AND EXTEND CONTRACT TERM BY 180 CALENDAR DAYS TO PROVIDE CONTINUED MAINTENANCE AND REPAIR SERVICES	EXE-043	1	VISCOM SYSTEMS, INC.	\$372,122.30

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

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	COMPANY	
P-1	03/02/23	<b>MAINTENANCE SERVICE AGREEMENT FOR THE MULTISTACK CHILLED WATER SYSTEM</b> AWARD OF A ONE YEAR PURCHASE ORDER FOR MAINTENANCE SERVICE AGREEMENT TO THE LOWEST RESPONSIVE BIDDER FOR ANNUAL MAINTENANCE AND AND AS NEEDED TECHNICAL SUPPORT FOR THE MULTISTACK CHILLED WATER SYSTEM AT THE DEER ISLAND TREATMENT PLANT	WRA-5245Q	MECS, INC.	\$27,400.00
P-2	03/03/23	<b>SUPPLY AND DELIVERY OF SODIUM HYDROXIDE</b> AWARD OF A ONE YEAR PURCHASE ORDER CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF SODIUM HYDROXIDE TC CONTROL ODORS AS HEADWORKS FACILITIES.	WRA-5238	BORDEN & REMINGTON CORPORATION	\$98,480.10
P-3	03/13/23	<b>SURVEY SERVICES TECHNICAL ASSISTANCE</b> AWARD OF A THREE YEAR PURCHASE ORDER UNDER MASS STATE CONTRACT PRF69 TO THE LOWEST RESPONSIVE BIDDER FOR AS NEEDED SURVEY SERVICES TO ASSIST MWRA STAFF ON SMALL UNANTICIPATED AND URGENT PROJECTS.	WRA-5247Q	JAMES PETERSON DBA ALPHA SURVEY GROUP LLC	\$90,804.93
P-4	03/13/23	<b>SUPPLY AND DELIVERY OF SODIUM BISULFITE</b> AWARD OF A ONE YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF SODIUM BISULFITE TO DEER ISLAND TREATMENT DEER ISLAND TREATMENT PLANT. SODIUM BISULFITE IS A CHEMICAL ADDED TO DEER ISLAND'S EFFLUENT TO REDUCE AND CONTROL TOTAL RESIDUAL CHLORINE LEVELS.	WRA-5239	HOLLAND COMPANY, INC.	\$285,250.00
P-5	03/14/23	<b>DELIVERY OF ULTRA LOW SULFUR DIESEL FUEL</b> AWARD OF PURCHASE ORDER UNDER MASS STATE CONTRACT ENE47 FOR THE DELIVERY OF ULTRA LOW SULFUR DIESEL FUEL FOR THE WARD STREET HEADWORKS ON FEBRUARY 9, 2023.		DENNIS K. BURKE INC.	\$25,326.64
P-6	03/14/23	<b>DELIVERY OF ULTRA LOW SULFUR DIESEL FUEL</b> AWARD OF PURCHASE ORDER UNDER MASS STATE CONTRACT ENE47 FOR THE DELIVERY OF ULTRA LOW SULFUR DIESEL FUEL FOR THE COLUMBUS PARK HEADWORKS.		DENNIS K. BURKE INC.	\$25,498.63
P-7	03/14/23	<b>PURCHASE OF EIGHT DRUMS OF DIGESTER MIXER GREASE</b> AWARD OF A SOLE SOURCE PURCHASE ORDER FOR EIGHT DRUMS OF DIGESTER MIXER GREASE FOR DEER ISLAND. THIS BIODEGRADABLE MIXER GREASE CONTAINS ADDITIVES FOR THE IMPROVEMENT OF RUST AND OXIDATION PROTECTION, ADHESIVE POWER AND PRESSURE ABSORBING CAPACITY OF THE LUBRICATING FILM.		AQUA SOLUTIONS, INC.	\$33,560.00
P-8	03/14/23	<b>MAINTENANCE AND SUPPORT RENEWAL OF COMMVAULT BACKUP AND RECOVERY LICENSES</b> AWARD OF A THREE YEAR PURCHASE ORDER UNDER STATE CONTRACT ITS75 TO THE LOWEST RESPONSIVE BIDDER FOR MAINTENANCE AND SUPPORT OF THE COMMVAULT LICENSES.	WRA-5262Q	INSIGHT PUBLIC SECTOR	\$76,467.66
P-9	03/15/23	<b>PURCHASE OF ONE NEW LATHE MACHINE</b> AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR ONE NEW LATHE MACHINE AND ACCESSORIES FOR SOUTHBORO FACILITY	WRA-5240	MSC INDUSTRIAL DIRECT COMPANY, INC.	\$40,581.07
P-10	03/16/23	<b>EMERGENCY LEAK REPAIR AT THE SOUTH BOSTON CSO PUMP STATION</b> AWARD OF THE EMERGENCY CONTRACT TO REPAIR A LEAK AT THE SOUTH BOSTON PUMP STATION FOR TERM OF 45 DAYS. DUE TO THE EMERGENCY NATURE OF THE EVENT, THE MWRA WAS GRANTED AN EMERGENCY WAIVER OF THE ADVERTISING REQUIREMENTS UNDER M.G.L. CHAPTER 149 FOR THIS WORK.		ALBANESE D&S, INC.	\$450,000.00
P-11	03/17/23	<b>PURCHASE OF GLASS-LINED VICTAULIC FITTINGS</b> AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR GLASS LINED VICTAULIC FITTINGS FOR THE PRIMARY AND SECONDARY TREATMENT AREAS OF THE DEER ISLAND TREATMENT PLANT.	WRA-5242	BILLERICA WINWATER WORKS COMPANY	\$130,760.00
P-12	03/17/23	<b>SUPPLY AND DELIVERY OF LIQUID OXYGEN</b> AWARD OF A TWO YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF LIQUID OXYGEN FOR PRIMARY DISINFECTION AT THE JOHN J. CARROLL WATER TREATMENT PLANT.	WRA-5248	AIRGAS, INC.	\$1,748,180.00
P-13	03/22/23	<b>PURCHASE OF 46 BUTTERFLY VALVES</b> AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR 46 BUTTERFLY VALVES FOR DEER ISLAND TREATMENT PLANT.	WRA-5253	FW WEBB COMPANY	\$56,011.46
P-14	03/27/23	<b>REPAIR OF TWO WATER PUMP MOTORS</b> AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR TWO WATER PUMP MOTORS FOR JOHN J. CARROLL WATER TREATMENT PLANT.	WRA-5256Q	FIRST ELECTRIC MOTOR SERVICE, INC.	\$39,998.00
P-15	03/30/23	<b>CONSULTANT SERVICES TO SETUP NEW HEALTH CARE AND FLEXIBLE SPENDING ACCOUNT BENEFIT PLANS</b> AWARD OF A SOLE SOURCE PURCHASE ORDER TO SETUP NEW HEALTH CARE AND FLEXIBLE SPENDING ACCOUNT PLANS IN THE INFOR LAWSON ERP APPLICATION PRIOR TO THE IMPLEMENTATION OF THE NEW PLANS ON JUNE 1, 2023.		INFOR, LLC	\$57,990.00
P-16	03/31/23	<b>SENIOR BUSINESS ANALYST CONSULTANT</b> AWARD OF A PURCHASE ORDER UNDER STATE CONTRACT ITS77 TO THE LOWEST RESPONSIVE BIDDER FOR A SENIOR BUSINESS ANALYST CONSULTANT. THIS CONSULTANT, AT AN HOURLY RATE OF \$84/HOUR, WILL ASSIST THE MIS ENTERPRISE RESOURCE PLANNING TEAM THAT SUPPORTS INFOR LAWSON AND ASSOCIATED INTEGRATED SYSTEMS.	WRA-5258Q	ACRO SERVICE	\$163,800.00
P-17	03/31/23	<b>SUPPLY AND DELIVERY OF HYDROGEN SULFIDE CONTROL CHEMICALS</b> AWARD OF A ONE YEAR PURCHASE ORDER CONTRACT WITH TWO ADDITIONAL OPTIONAL YEARS TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF HYDROGEN SULFIDE CONTROL CHEMICALS FOR THE FRAMINGHAM EXTENSION SEWER AND FRAMINGHAM EXTENSION RELIEF SEWER.	WRA-5249	EVOQUA WATER TECHNOLOGIES, LLC	\$221,200.00

### STAFF SUMMARY


**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** April 12, 2023  
**SUBJECT:** FY23 Financial Update and Summary through March 2023

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**COMMITTEE:** Administration, Finance & Audit

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

INFORMATION  
 VOTE

  
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 March 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 March the year-to-date debt related savings of \$8.1 million was transferred to the Defeasance Account. This variance is primarily due to lower than budgeted senior debt spending, variable interest expense, and SRF spending.

The total Year-to-Date variance for the FY23 Current Expense Budget (CEB) is \$23.7 million, due to lower direct expenses of \$6.8 million and indirect expenses of \$2.0 million, as well as higher revenue of \$14.9 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 March 2023 by major budget category were:

- Lower Direct Expenses of \$6.8 million or 3.4% under budget. Spending was lower for Wages & Salaries, Other Services, Fringe Benefits, Workers Compensation, Overtime, Professional Services, Training & Meetings, and Other Materials. Spending was higher than budget for Chemicals, Utilities, and Maintenance.
- Lower Indirect Expenses of \$2.0 million or 4.4% under budget due primarily to lower Watershed Reimbursements and PILOT payment.
- Debt Service expenses were right on budget after the transfer to the defeasance account, driven by lower senior debt spending as a result of the refunding and new money transactions, lower than budgeted variable interest expense and SRF transactions.
- Revenue was \$14.9 million or 2.4% greater than estimate driven by Investment Income of \$9.1 million due to higher than anticipated interest rates, Other User Charges of \$4.7 million for water usage by the City of Cambridge and Other Revenue of \$1.2 million.

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

	<b>FY23 Budget</b>	<b>FY23 Actual</b>	<b>\$ Variance</b>	<b>% Variance</b>
Direct Expenses	\$199.0	\$192.2	-\$6.8	-3.4%
Indirect Expenses	\$46.4	\$44.3	-\$2.0	-4.4%
Capital Financing	\$350.0	\$350.0	\$0.0	0.0%
<b>Total</b>	<b>\$595.3</b>	<b>\$586.5</b>	<b>-\$8.9</b>	<b>-1.5%</b>

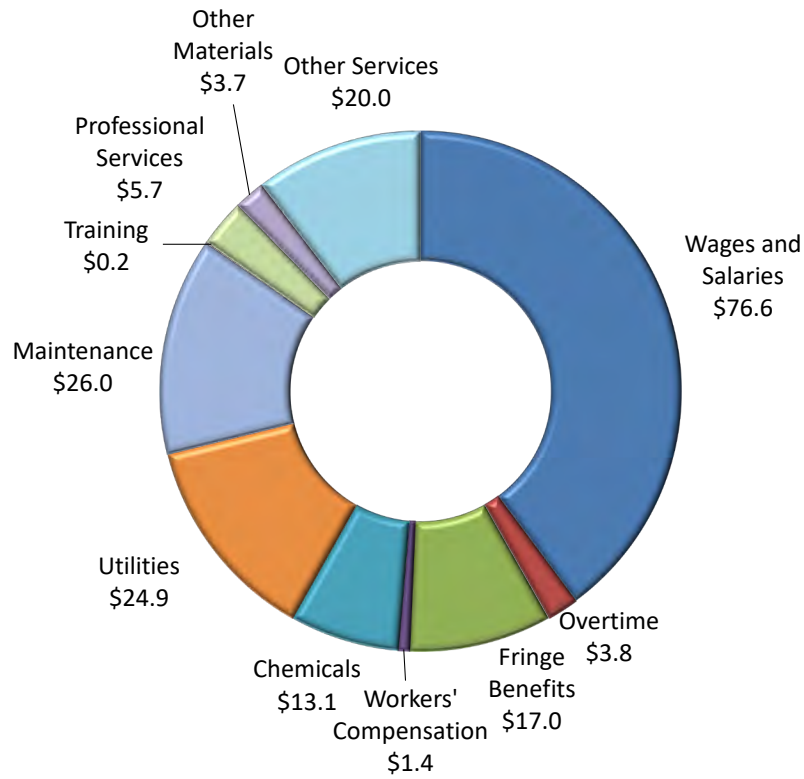
*Totals may not add due to rounding*

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

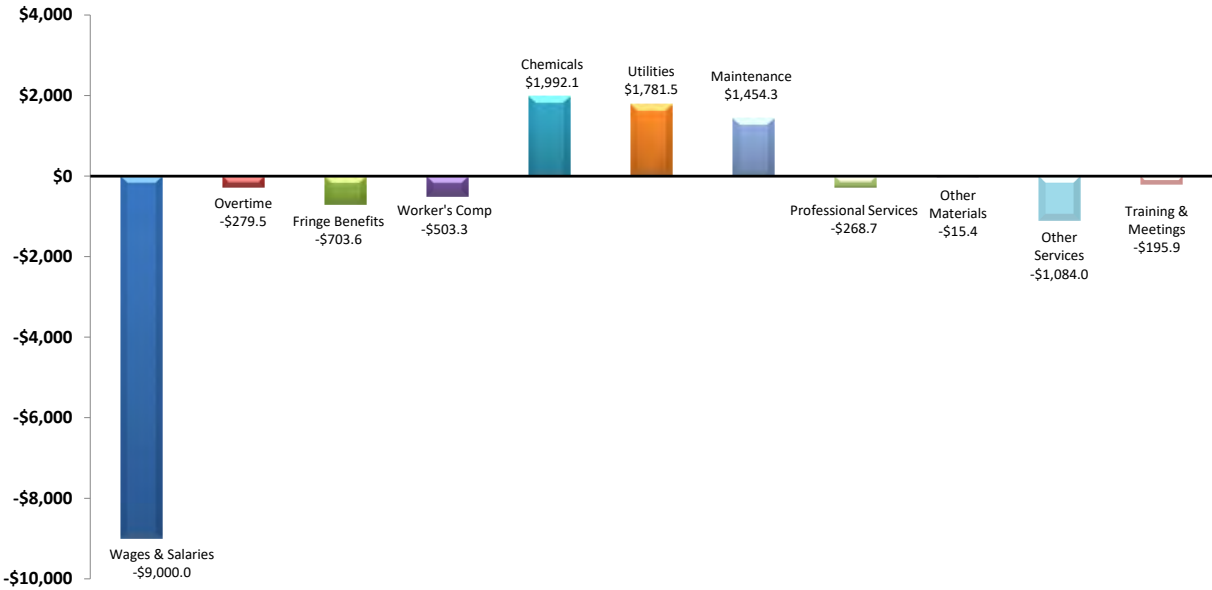
**Direct Expenses**

FY23 direct expenses through March totaled \$192.2 million, which was \$6.8 million or 3.4% less than budgeted.

**FY23 Direct Expenses  
(in millions)**

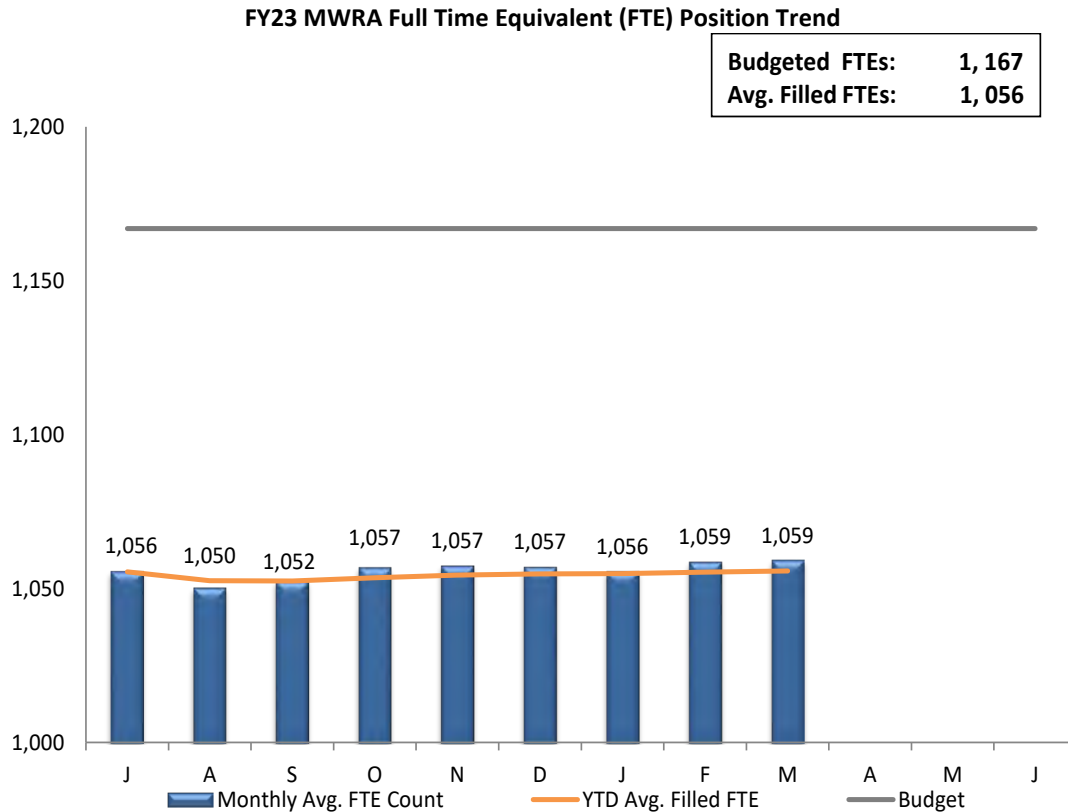


**FY23 Direct Expense Variance  
(in thousands)**



## Wages and Salaries

Wages and Salaries was under budget by \$9.0 million or 10.5%. Through March, there were 111 fewer average FTEs (1,056 versus 1,167 budget) or 9.5% and lower average salaries for new hires versus retirees. The timing of backfilling vacant positions also contributed to Regular Pay being under budget.



## Chemicals

Chemicals were greater than budget by 2.0 million or 18.0%. Higher than budget spending on Sodium Hypochlorite of \$1.1 million driven by Deer Island of \$916,000 due to additional usage for disinfection and odor control due to lower flows and higher pricing, \$108,000 in Wastewater Operations primarily at Nut Island Headworks, and \$23,000 in Water Operations mostly due to higher contract price. Ferric Chloride of \$646,000 driven by Deer Island to keep the orthophosphate levels in the digesters at the desired target level and higher pricing, Hydrogen Peroxide of \$173,000 driven by Deer Island to reduce elevated Hydrogen Sulfide (H<sub>2</sub>S) levels for pretreatment and odor control and provide maintenance safely, Carbon Dioxide of \$159,000 primarily due to increased contract price, and Activated Carbon of \$106,000 driven by Wastewater Operations of \$59,000 and Deer Island of \$43,000 due to timing of replacements. Deer Island flows are 7.6% lower than the budget and Carroll preliminary flows are 4.5% greater than the budget through March. 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.



## **Utilities**

Utilities were greater than budget by \$1.8 million or 7.7%. Overspending in Electricity of \$1.8 million primarily at Deer Island of \$1.4 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 \$446,000 due to T&D and Generation costs were greater than budget.

## **Maintenance**

Maintenance was greater than budget by \$1.5 million or 5.9%, largely driven by the timing of projects. Maintenance Materials are over budget by \$1.0 million driven by higher Warehouse Inventory of \$778,000 due to the need for spare parts as well as purchasing of materials early due to supply chain issues, higher HVAC Materials of \$233,000 and Computer Materials of \$179,000, both due to timing. Maintenance Services is over budget by \$454,000 due to higher Plant & Machinery Services of 1.9 million due to timing of some service contracts, the Norumbega Tank Cleaning award being greater than budgeted, and cleaning of surfaces and equipment at the Cottage Farm CSO facility that was unbudgeted, Computer Software Licenses of \$205,000 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 \$807,000 due to timing and includes the Eastern Ave Traffic Light and Shaft 8 Retaining Wall work and lower Computer Services of \$509,000 and Electrical Services of \$277,000 also due to timing.

## **Other Services**

Other Services were lower than budget by \$1.1 million or 5.1% driven by Telecommunications of \$549,000 due to less than anticipated costs, Space/Lease Rentals of \$211,000 primarily due to timing for rock core storage and shelving and furniture, and Grit and Screenings Removal \$108,000 due to lower quantities.

## **Fringe Benefits**

Fringe Benefit spending was lower than budget by \$704,000 or 4.0%. Lower than budget in Health Insurance of \$492,000, 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 \$73,000, Tuition Reimbursement of \$44,000, and Unemployment Insurance of \$40,000.

## **Worker's Compensation**

Worker's Compensation expenses were lower than budget by \$503,000 or 26.6%. The lower expenses were due to favorable variances in Compensation Payments of \$431,000, Medical Payments of \$42,000, and Administrative Expenses of \$30,000. Due to uncertainties of when spending will happen, the budget is spread evenly throughout the year.

## **Overtime**

Overtime expenses were less than budget by \$280,000 or 6.9%. Lower spending mainly in Field Operations of \$429,000 primarily for planned overtime (due to vacancies), emergency overtime being under budget and minimal bad weather conditions, and Engineering & Construction of \$74,000, are partially offset by higher spending at Deer Island of \$260,000 for shift coverage due to vacancies for Deer Island Operations positions.

## **Professional Services**

Professional Services were less than budget by \$269,000 or 4.5% driven by lower Engineering Services of \$200,000, Lab & Testing and Analysis of \$118,000, Other Services of \$106,000 all primarily due to timing, partially offset by Computer Systems Consultant of \$215,000 also primarily due to timing and updated costs.

## **Training and Meetings**

Training and Meetings expenses were lower than budget by \$196,000 or 52.2% driven by the timing of spending.

## **Other Materials**

Other Materials was less than budget by \$15,000 or 0.4% driven by Vehicle Expense of \$253,000 primarily due to delay in installation of electrical vehicle chargers, Equipment/Furniture of \$160,000 and Computer Software of \$92,000 due to timing. This underspending is partially offset by Vehicle Purchase/Replacements of \$466,000 due to timing of purchases and Computer Hardware of \$168,000 also due to timing for additional hardware purchases.

## **Indirect Expenses**

Indirect Expenses totaled \$44.3 million, which is \$2.0 million or 4.4% lower than budget. The variance is driven by lower Watershed reimbursements and PILOT payment.

Based on FY23 operating activity only, Watershed Reimbursement is \$2.1 million or 15.2% under budget. Lower spending on Wages and Salaries, Fringe Benefits and Equipment 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 \$1.9 million or 13.3% below budget through March 2023. The PILOT payment in the amount of \$8.5 million was paid in February, and was \$424,000 under budget.

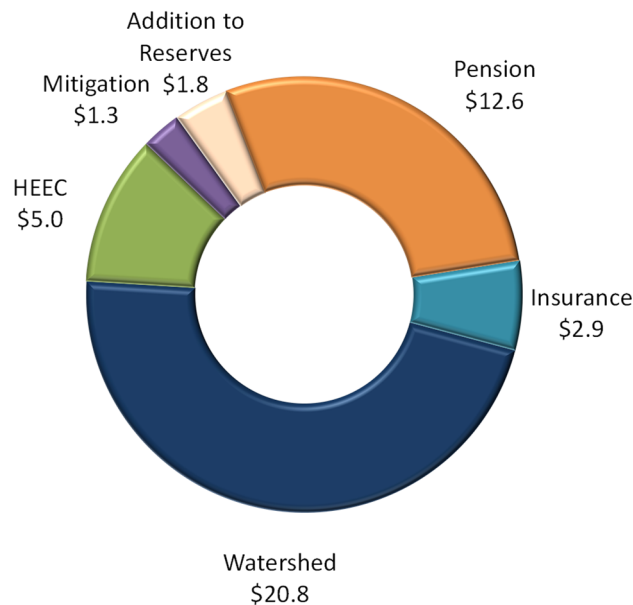
**FY23 Watershed Protection Variance**

\$ in millions	YTD Budget	YTD Actual	YTD \$ Variance	YTD % Variance
Operating Expenses	14.9	13.4	1.5	10.1%
Operating Revenues Offset	0.7	1.4	0.6	89.5%
<b>FY23 Operating Totals</b>	<b>14.2</b>	<b>12.0</b>	<b>-2.1</b>	<b>-15.2%</b>
DCR Balance Forward (FY22 year end accrual true up)	0.0	0.3	0.3	
<b>FY23 Adjusted Operating Totals</b>	<b>14.2</b>	<b>12.3</b>	<b>-1.9</b>	<b>-13.3%</b>
PILOT	8.9	8.5	0.4	4.8%
<b>Total Watershed Reimbursement</b>	<b>23.1</b>	<b>20.8</b>	<b>-2.3</b>	<b>-10.0%</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 March was 140 (and 141.0 on a year-to-date basis) vs. a budget of 150.

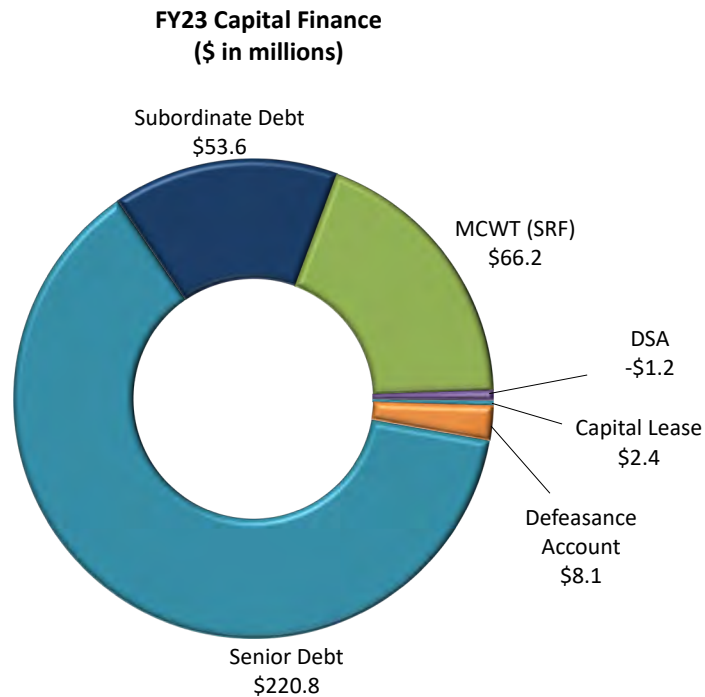
**FY23 Indirect Expenses  
(in millions)**



## **Capital Financing**

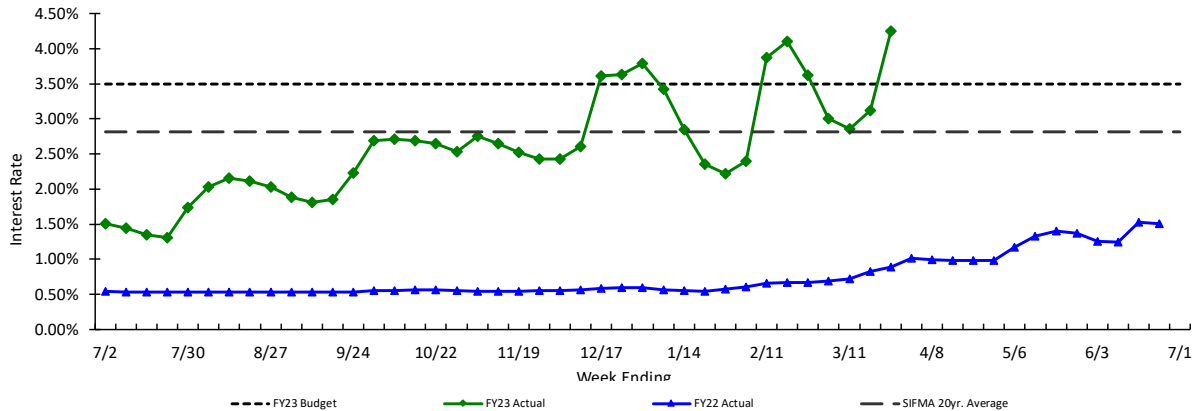
Capital Financing expenses include the principal and interest payments for fixed senior debt, the variable subordinate debt, the Massachusetts Clean Water Trust (SRF) obligation, the commercial paper program for the local water pipeline projects, current revenue for capital, Optional Debt Prepayment,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

Capital Financing expenses for FY23 through March totaled \$350.0 million which matches the budget after the transfer of \$8.1 million to the Defeasance account. The positive year-to-date variance of \$8.1 million is driven by lower Senior Debt spending of \$3.7 million as a result of timing of the new money transaction and lower than budgeted variable interest expense of \$2.9 million and lower SRF spending of \$1.5 million based on timing.



The following graph 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)**



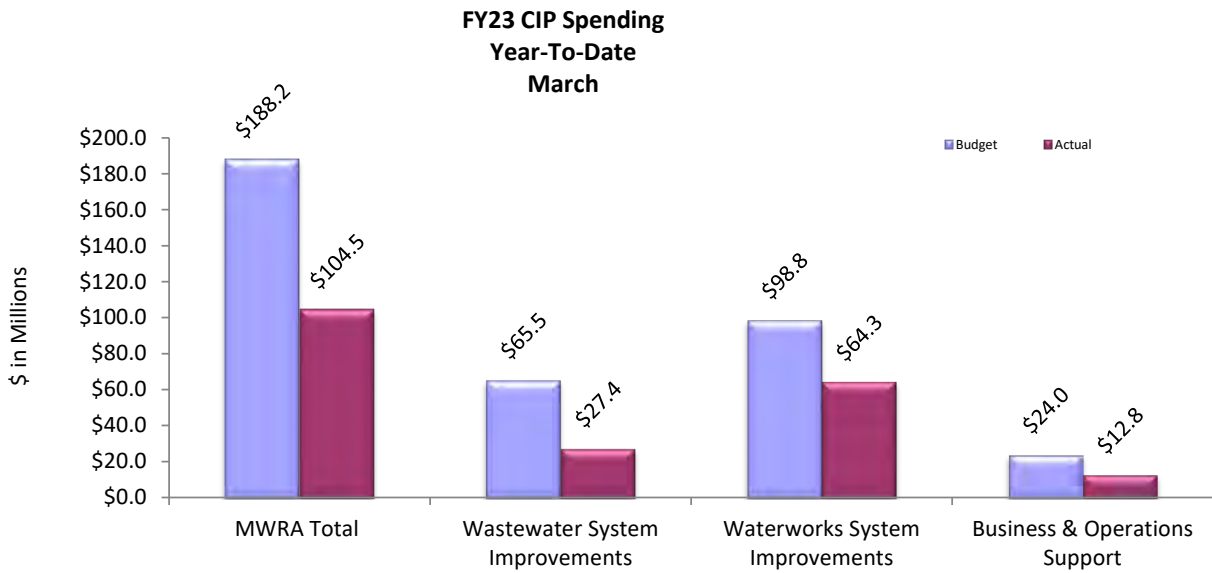
## **Revenue & Income**

Revenues of \$645.3 million were \$14.9 million or 2.4% greater than estimate. Investment Income was \$9.1 million greater than estimate due to higher than anticipated interest. Other User Charges were \$4.7 million higher primarily due to water usage by the City of Cambridge. Other Revenue was \$1.2 million or 22.7% greater than estimate due to Miscellaneous Revenue of \$361,000, Energy Revenue of \$342,000, and Operating Grants of \$168,000, all primarily due to timing.

## **FY23 Capital Improvement Program**

Capital expenditures in Fiscal Year 2023 through March total \$104.5 million, \$83.7 million or 44.5% 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 \$91.4 million, \$59.0 million or 39.2% under planned spending.



Overall, CIP spending reflects the underspending in Wastewater Improvements (\$38.1 million), Waterworks (\$34.5 million) and Business and Operations Support (\$11.2 million). Major variances in Wastewater are primarily due to timing of community grants and loans for the I/I Local Financial Assistance Program, schedule changes for the Deer Island Clarifier Rehab Phase 2, 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 changes for Deer Island Roofing Replacement and South System Pump Station Variable Frequency Drive (VFD) Replacement Design/ESDC, and longer than anticipated delivery of equipment for the Clinton Screw Pumps Replacement.

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 Weston Aqueduct Supply Mains (WASM)/Spot Pond Supply Mains (SPSM) West PRV, schedule changes for Quabbin Maintenance Garage/Wash Bay/Storage Building - Construction and CP-2 Shaft 5 Construction, longer than anticipated equipment lead time and updated Notice to Proceed for Wachusett Lower Gatehouse Pipe & Boiler Replacement - Construction and timing of purchases for Watershed Land. This was partially offset by contractor progress for Section 89/29 Replacement and CP-1 Norther Extra High (NEH) Improvements, and timing of consultants work for Tunnel Redundancy Preliminary Design and Massachusetts Environmental Policy Act (MEPA) Review, Section 53 and 99 Improvements - Design/CA and NEH Improvements Design – ESDC.

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

\$ in Millions	Budget	Actuals	\$ Var.	% Var.
<b>Wastewater System Improvements</b>				
Interception & Pumping	28.4	17.6	(10.9)	-38.2%
Treatment	15.9	1.3	(14.6)	-92.1%
Residuals	0.0	0.0	0.0	0.0%
CSO	1.8	1.5	(0.2)	-14.2%
Other	19.4	7.0	(12.4)	-63.7%
<b>Total Wastewater System Improvements</b>	<b>\$65.5</b>	<b>\$27.4</b>	<b>(\$38.1)</b>	<b>-58.2%</b>
<b>Waterworks System Improvements</b>				
Drinking Water Quality Improvements	3.3	1.5	(1.8)	-54.4%
Transmission	42.8	24.5	(18.3)	-42.7%
Distribution & Pumping	25.9	26.0	0.1	0.4%
Other	26.7	12.3	(14.5)	-54.1%
<b>Total Waterworks System Improvements</b>	<b>\$98.8</b>	<b>\$64.3</b>	<b>(\$34.5)</b>	<b>-34.9%</b>
<b>Business &amp; Operations Support</b>	<b>\$24.0</b>	<b>\$12.8</b>	<b>(\$11.2)</b>	<b>-46.7%</b>
<b>Total MWRA</b>	<b>\$188.2</b>	<b>\$104.5</b>	<b>(\$83.7)</b>	<b>-44.5%</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 \$18.3 million

- \$10.8 million for Waltham Water Pipeline due to long lead time for piping material.
- \$1.8 million for WASM/Spot Pond Supply Main Pressure Reducing Valves Improvements due to timing of contractor work.
- \$1.5 million for Maintenance Garage/Wash Bay/Storage Building - Construction due to schedule change.
- \$1.5 million for Wachusett Lower Gatehouse Pipe and Boiler Replacement - Construction due to longer than anticipated equipment lead time and updated Notice to Proceed.
- \$1.4 million for CP-2 Shaft 5 Construction due to updated schedule.
- \$0.7 million for Watershed Land due to timing of purchases.
- \$0.5 million for Wachusett Lower Gatehouse Windows and Doors due to long lead time for windows.
- This underspending was partially offset by overspending of \$1.1 million for Tunnel Redundancy Preliminary Design & MEPA Review due to timing of consultant work.

**Wastewater Treatment:** Net underspending of \$14.6 million

- \$6.9 million for Clarifier Rehab Phase 2 Construction and REI due to schedule change.
- \$1.6 million for South System Pump Station VFD Design/ESDC due to updated construction schedule.
- \$1.5 million for Deer Island Roofing Replacement and \$1.0 million for Dystor Membrane Replacement due to schedule changes.
- \$0.9 million for Screw Pumps Replacement Phase 1 – Construction due to (longer than anticipated delivery of pumps)

- \$0.8 million for As-needed Design due to lower than projected task order work.

**Other Waterworks:** Net underspending of \$14.5 million

- \$13.1 million for Local Financial Assistance due to timing of community loan distributions.
- \$1.3 million for the Carroll Water Treatment Plant Supervisory Control and Data Acquisition (SCADA) Upgrades construction due to timing of work and long lead time for materials.
- \$0.4 million for Electrical Distribution Upgrades at Southborough due to timing of work.
- This underspending was partially offset by overspending of \$0.6 million for New Roofs at Water Pump Stations – Construction due to timing of work.

**Other Wastewater:** Net underspending of \$12.4 million

- \$12.4 million for Community I/I due to timing of community distributions of grants and loans.

**Business and Operations Support:** Net underspending of \$11.2 million

- \$1.3 million for FY19-23 Vehicle Purchases due to timing of purchases and supply chain issues.
- \$3.3 million for Cabling, \$0.8 million for Oracle Database Appliance, and \$0.6 million for MAXIMO Interface Enhancements due to timing of work.
- \$1.0 million for Security Equipment & Installation due to timing of security initiatives.

**Interception and Pumping:** Net underspending of \$10.9 million

- \$3.6 million for Nut Island Odor Control & HVAC Improvements Phase 2 – Construction due to contractor behind schedule.
- \$2.8 million for Ward Street & Columbus Park Headworks Upgrades - Design/CA due to completion of some design and inspection tasks later than anticipated.
- \$0.5 million for Siphon Structure Rehab Construction due to updated schedule.

**Drinking Water Quality Improvements:** Net underspending of \$1.8 million

- \$1.1 million for Carroll Chemical Feed System Improvements – Construction due to timing of work.
- \$0.5 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 \$0.1 million

- \$2.3 million for Section 89/29 Replacement – Construction due to contractor progress.
- \$0.8 million for CP-1 NEH Improvements due to contractor progress.
- \$0.6 million for Section 53 and 99 Improvements - Design/CA due to timing of consultant work.
- \$0.5 million NEH Improvements Design – ESDC due to timing of consultant work.
- This overspending was partially offset by underspending of \$1.5 million for CP3-Sections 23, 24, 47 Rehabilitation due to timing of work, \$0.9 million for Cathodic Protection Shafts N & W due to scope changes, and \$0.7 million for Section 56 Replacement/Saugus River - Design/CA due to permitting delays.



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

- \$0.9 million for Chelsea 008 Pipe Replacement due to schedule change and long lead time for materials, partially offset by \$0.8 million for unplanned Fort Point Channel Sewer Separation work.

**Construction Fund Balance**

The construction fund balance was \$130.8 million as of the end of March. Commercial Paper/Revolving Loan available capacity was \$110 million.

**ATTACHMENTS:**

Attachment 1 – Variance Summary March 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

	Mar 2023 Year-to-Date				
	Period 9 YTD Budget	Period 9 YTD Actual	Period 9 YTD Variance	%	FY23 Approved
	<b><u>EXPENSES</u></b>				
WAGES AND SALARIES	\$ 85,629,444	\$ 76,629,478	\$ (8,999,966)	-10.5%	\$ 118,980,689
OVERTIME	4,047,244	3,767,717	(279,527)	-6.9%	5,337,896
FRINGE BENEFITS	17,654,591	16,950,995	(703,596)	-4.0%	23,961,641
WORKERS' COMPENSATION	1,889,813	1,386,517	(503,296)	-26.6%	2,519,751
CHEMICALS	11,060,927	13,053,003	1,992,076	18.0%	14,994,036
ENERGY AND UTILITIES	23,157,081	24,938,595	1,781,514	7.7%	30,896,365
MAINTENANCE	24,501,632	25,955,957	1,454,325	5.9%	33,241,023
TRAINING AND MEETINGS	375,373	179,518	(195,855)	-52.2%	492,197
PROFESSIONAL SERVICES	5,935,651	5,666,956	(268,695)	-4.5%	8,197,575
OTHER MATERIALS	3,674,598	3,659,155	(15,443)	-0.4%	6,728,862
OTHER SERVICES	21,096,812	20,012,782	(1,084,030)	-5.1%	28,372,237
<b>TOTAL DIRECT EXPENSES</b>	<b>\$ 199,023,166</b>	<b>\$ 192,200,673</b>	<b>\$ (6,822,493)</b>	<b>-3.4%</b>	<b>\$ 273,722,272</b>
INSURANCE	\$ 2,937,002	\$ 2,945,563	\$ 8,561	0.3%	\$ 3,916,002
WATERSHED/PILOT	23,056,591	20,757,074	(2,299,517)	-10.0%	28,890,762
HEEC PAYMENT	4,695,810	4,958,573	262,763	5.6%	6,225,566
MITIGATION	1,301,771	1,301,771	-	0.0%	1,735,694
ADDITIONS TO RESERVES	1,813,840	1,813,840	-	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>\$ 46,360,217</b>	<b>\$ 44,332,024</b>	<b>\$ (2,028,193)</b>	<b>-4.4%</b>	<b>\$ 60,495,741</b>
STATE REVOLVING FUND	\$ 67,749,415	\$ 66,206,913	\$ (1,542,502)	-2.3%	\$ 96,342,495
SENIOR DEBT	224,473,289	220,806,619	(3,666,670)	-1.6%	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	56,504,181	56,504,181	-	0.0%	75,491,975
LOCAL WATER PIPELINE CP	-	-	-	---	6,233,882
CAPITAL LEASE	2,412,795	2,412,795	-	0.0%	3,217,060
VARIABLE DEBT	-	(2,924,368)	(2,924,368)	---	-
DEFERRED ACCOUNT	-	8,133,540	8,133,540	---	-
DEBT PREPAYMENT	-	-	-	---	5,500,000
<b>TOTAL CAPITAL FINANCE EXPENSE</b>	<b>\$ 349,957,185</b>	<b>\$ 349,957,185</b>	<b>\$ -</b>	<b>0.0%</b>	<b>\$ 505,972,858</b>
<b>TOTAL EXPENSES</b>	<b>\$ 595,340,568</b>	<b>\$ 586,489,881</b>	<b>\$ (8,850,687)</b>	<b>-1.5%</b>	<b>\$ 840,190,871</b>
<b><u>REVENUE &amp; INCOME</u></b>					
RATE REVENUE	\$ 610,986,000	\$ 610,986,000	\$ -	0.0%	\$ 814,648,000
OTHER USER CHARGES	7,246,717	11,903,415	4,656,698	64.3%	9,836,507
OTHER REVENUE	5,219,486	6,405,630	1,186,144	22.7%	6,139,104
RATE STABILIZATION	735,000	735,000	-	0.0%	980,000
INVESTMENT INCOME	6,187,270	15,266,847	9,079,577	146.7%	8,587,260
<b>TOTAL REVENUE &amp; INCOME</b>	<b>\$ 630,374,473</b>	<b>\$ 645,296,892</b>	<b>\$ 14,922,418</b>	<b>2.4%</b>	<b>\$ 840,190,871</b>

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

Total MWRA	FY23 Budget YTD March	FY23 Actuals March	FY23 YTD Actual vs. FY23 Budget		Explanations
			\$	%	
<b>Direct Expenses</b>					
Wages & Salaries	85,629,444	76,629,478	(8,999,966)	-10.5%	Wages and Salaries are under budget by \$9.0 million. Year to date, there have been 111 fewer average FTEs (1,056 versus 1,167 budget), lower average new hire salaries versus retirees, the timing of backfilling vacant positions.
Overtime	4,047,244	3,767,717	(279,527)	-6.9%	Overtime expenses were less than budget by \$280,000 or 6.9%. Lower spending mainly in Field Operations of \$429,000 primarily for planned overtime (due to vacancies), emergency overtime being under budget and minimal bad weather conditions, and Engineering & Construction of \$74,000, are partially offset by higher spending at Deer Island of \$260,000 for shift coverage due to vacancies for DITP Operations positions.
Fringe Benefits	17,654,591	16,950,995	(703,596)	-4.0%	Fringe Benefit spending was lower than budget by \$704,000 or 4.0%. Lower than budget in <b>Health Insurance</b> of \$492,000, 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 \$73,000, <b>Tuition Reimbursement</b> of \$44,000, and <b>Unemployment Insurance</b> of \$40,000 were less than budget.
Worker's Compensation	1,889,813	1,386,517	(503,296)	-26.6%	Worker's Compensation expenses were lower than budget by \$503,000 or 26.6%. The lower expenses were due to favorable variances in <b>Compensation Payments</b> of \$431,000, <b>Medical Payments</b> of \$42,000, and <b>Administrative Expenses</b> of \$30,000. Due to uncertainties of when spending will happen, the budget is spread evenly throughout the year.
Chemicals	11,060,927	13,053,003	1,992,076	18.0%	Chemicals were greater than budget by 2.0 million or 18.0%. Higher than budget spending on <b>Sodium Hypochlorite</b> of \$1.1 million driven by DITP of \$916,000 due to additional usage for disinfection and odor control due to lower flows and higher pricing, \$108,000 in Wastewater Operations primarily at Nut Island Headworks, and \$23,000 in Water Operations mostly due to higher contract price. <b>Ferric Chloride</b> of \$646,000 driven by DITP to keep the orthophosphate levels in the digesters at the desired target level and higher pricing, <b>Hydrogen Peroxide</b> of \$173,000 driven by DITP to reduce elevated Hydrogen Sulfide (H2S) levels for pretreatment and odor control and provide maintenance safely, <b>Carbon Dioxide</b> of \$159,000 primarily due to increased contract price, <b>Activated Carbon</b> of \$106,000 driven by Wastewater Operations of \$59,000 and DITP of \$43,000 due to timing of replacements, partially offset by <b>Sodium Bisulfite</b> of \$87,000 primarily in Wastewater Operations. DITP flows are 7.6% lower than the budget and CWTP preliminary flows are 4.5% greater than the budget through March. 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 March	FY23 Actuals March	FY23 YTD Actual vs. FY23 Budget		Explanations
			\$	%	
Utilities	23,157,081	24,938,595	1,781,514	7.7%	Utilities were greater than budget by \$1.8 million or 7.7%. Overspending in <b>Electricity</b> of \$1.8 million primarily at DITP of \$1.4 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 \$446,000 due to T&D and Generation costs were greater than budget. Additionally, Field Operations had a Natural Gas increase of \$104,000, primarily due to price, which was offset by decrease of \$106,000 in Diesel, primarily due to use.
Maintenance	24,501,632	25,955,957	1,454,325	5.9%	Maintenance was greater than budget by \$1.5 million or 5.9%, largely driven by the timing of projects. Maintenance Materials are over budget by \$1.0 million driven by <b>Warehouse Inventory</b> of \$778,000, higher <b>Computer Materials</b> of \$179,000, timing for <b>Special Equipment Materials</b> of \$108,000 and <b>HVAC Materials</b> of \$233,000, partially offset by <b>Pipeline Materials</b> of \$165,000 and <b>Electrical Materials</b> of \$99,000 also due to timing. <i>Maintenance Services</i> are over budget by \$454,000 million due to higher <b>Plant &amp; Machinery Services</b> of 1.9 million due to timing of some service contracts, the Norumbega Tank Cleaning award being greater than budgeted, and cleaning of surfaces and equipment at the Cottage Farm CSO facility that was unbudgeted, <b>Computer Software Licenses</b> of \$205,000 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 \$807,000 due to timing and includes the Eastern Ave Traffic Light and Shaft 8 Retaining Wall work and lower <b>Computer Services</b> of \$509,000 and <b>Electrical Services</b> of \$277,000 also due to timing.
Training & Meetings	375,373	179,518	(195,855)	-52.2%	Training & Meetings was lower than budget by \$196,000 or 52.2% is primarily due to timing driven by MIS (\$134,000), DITP (\$22,000), Water Redundancy (\$14,000), Engineering & Construction (\$11,000), and Procurement (\$9,000), partially offset by higher spending in Field Operations \$25,000.
Professional Services	5,935,651	5,666,956	(268,695)	-4.5%	Professional Services were less than budget by \$269,000 or 4.5% driven by lower <b>Engineering Services</b> of \$200,000, <b>Lab &amp; Testing and Analysis</b> of \$109,000, <b>Other Services</b> of \$106,000 primarily due to timing, partially offset by <b>Computer Systems Consultant</b> of \$215,000 also primarily due to timing and updated costs.
Other Materials	3,674,598	3,659,155	(15,443)	-0.4%	Other Materials were less than budget by \$15,000 or 0.4% driven by <b>Vehicle Expense</b> of \$253,000 primarily due to delay in installation of electrical vehicle chargers, <b>Equipment Furniture</b> of \$160,000 and <b>Computer Software</b> of \$92,000 due to timing. This underspending is partially offset by <b>Vehicle Purchase/Replacements</b> of \$466,000 due to timing of purchases and <b>Computer Hardware</b> of \$168,000 also due to timing for additional hardware purchases.
Other Services	21,096,812	20,012,782	(1,084,030)	-5.1%	Other Services were lower than budget by \$1.1 million or 51% driven by <b>Telecommunications</b> of \$549,000 due to less than anticipated costs, <b>Space/Lease Rentals</b> \$211,000 primarily for Rock Core Storage and shelving & furniture due to timing, <b>Grit &amp; Screenings Removal</b> \$108,000 due to lower quantities, <b>Memberships/Dues/Subscriptions</b> of \$35,000 primarily due to timing, and lower <b>Police Details</b> of \$22,000 due to less than anticipated as-needed details.
<b>Total Direct Expenses</b>	<b>199,023,166</b>	<b>192,200,673</b>	<b>(6,822,493)</b>	<b>-3.4%</b>	

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

Total MWRA	FY23 Budget YTD March	FY23 Actuals March	FY23 YTD Actual vs. FY23 Budget		Explanations
			\$	%	
<b>Indirect Expenses</b>					
Insurance	2,937,002	2,945,563	8,561	0.3%	Higher Premiums of \$32,000 than budgeted and lower Payments/Claims of \$23,000 than budgeted.
Watershed/PILOT	23,056,591	20,757,074	(2,299,517)	-10.0%	Lower Watershed Reimbursement of \$2.3 million favorable variance to budget driven by lower spending on Wages & Salaries, Fringe Benefits and Equipment, partially offset by higher spending on Maintenance and Equipment due to timing, and Utilities and Fuel.
HEEC Payment	4,695,810	4,958,573	262,763	5.6%	HEEC Revenue Requirement of \$161,000, HEEC True Up of \$93,000, and O&M Charge of \$9,000.
Mitigation	1,301,771	1,301,770	(1)	0.0%	
Addition to Reserves	1,813,840	1,813,840	-	0.0%	
Pension Expense	12,555,203	12,555,203	-	0.0%	
Post Employee Benefits	-	-	-		
<b>Total Indirect Expenses</b>	<b>46,360,217</b>	<b>44,332,023</b>	<b>(2,028,194)</b>	<b>-4.4%</b>	
<b>Debt Service</b>					
Debt Service	349,957,185	351,139,680	1,182,495	0.3%	Debt Service matches the budget after the transfer of 8.1 million to the Defeasance account, driven by lower Senior Debt spending of \$3.7 million as a result of the refunding and new money transactions, lower than budgeted variable interest expense of \$2.9 million, and lower SRF spending of \$1.5 million due to timing.
Debt Service Assistance	-	(1,182,494)	(1,182,494)		
<b>Total Debt Service Expenses</b>	<b>349,957,185</b>	<b>349,957,186</b>	<b>1</b>	<b>0.0%</b>	
<b>Total Expenses</b>	<b>595,340,568</b>	<b>586,489,882</b>	<b>(8,850,685)</b>	<b>-1.5%</b>	

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

Total MWRA	FY23 Budget YTD March	FY23 Actuals March	FY23 YTD Actual vs. FY23 Budget		Explanations
			\$	%	
<b>Revenue &amp; Income</b>					
Rate Revenue	610,986,000	610,986,000	-	0.0%	
Other User Charges	7,246,718	11,903,416	4,656,698	64.3%	Water usage by the City of Cambridge.
Other Revenue	5,219,486	6,405,630	1,186,144	22.7%	Other Revenue was \$1.2 or 22.7% over budget due to <b>Miscellaneous Revenue</b> of \$361,000, <b>Energy Revenue</b> of \$342,000, <b>Permit Fees</b> of \$319,000, and <b>Energy Rebates</b> of \$59,000 primarily due to timing. Also, <b>Operating Grant</b> of \$167,000 for COVID-19 from FEMA.
Rate Stabilization	735,000	735,000	-	0.0%	HEEC Reserve.
Investment Income	6,187,270	15,266,847	9,079,577	146.7%	Investment Income is over budget due to higher than budgeted interest rates.
<b>Total Revenue</b>	<b>630,374,474</b>	<b>645,296,893</b>	<b>14,922,419</b>	<b>2.4%</b>	
<b>Net Revenue in Excess of Expenses</b>	<b>35,033,906</b>	<b>58,807,011</b>	<b>23,773,104</b>		

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

	FY23 Budget YTD March	FY23 Actuals YTD March	YTD Actuals vs. Budget		Explanations
			\$	%	
<b>Wastewater</b>					
Interception & Pumping (I&P)	\$28,437	\$17,580	(\$10,857)	-38.2%	<u>Underspending</u> Nut Island Odor Control & HVAC Improvements Phase 2 - Construction and CA/REI: \$3.6M (contractor behind schedule) Ward Street & Columbus Park Headworks Upgrades - Design/CA: \$2.8M (completed some design and inspection tasks later than anticipated) Siphon Structure Rehabilitation Construction: \$500k (updated schedule) Fuel Oil Tank Replacement - Construction Phase 2: \$477k, and Chelsea Creek Headworks Radio Equipment: \$350k (timing of equipment deliveries) <del>Wastewater Motor System Equipment Replacement: \$224k (timing of final work)</del>
Treatment	\$15,853	\$1,259	(\$14,594)	-92.1%	<u>Underspending</u> Primary & Secondary Clarifier Rehab Phase 2 Construction and REI: \$6.9M, DITP Roofing Replacement: \$1.5M, Deer Island Dystor Membrane Replacements: \$1.0M, Clinton Digester Cover Replacement: \$500k, and Digester & DITP Storage Tank Rehabilitation Design/ESDC: \$300k (updated schedules) South System Pump Station VFD Replacement Design/ESDC: \$1.6M (construction schedule change) As-Needed Design: \$822k (lower than projected task order work) Screw Pumps Replacement Phase 1 - Construction: \$913k (longer than anticipated delivery of pumps) <u>Offset Overspending</u> Radio Repeater System Upgrade 2: \$567k (timing of work)
Residuals	\$0	\$0			
CSO	\$1,756	\$1,507	(\$249)	-14.2%	<u>Underspending</u> Chelsea 008 Pipe Replacement: \$875k (updated schedule and long lead time for materials) <u>Overspending</u> Fort Point Channel Sewer Separation: \$750k (unplanned community managed work)
Other Wastewater	\$19,426	\$7,049	(\$12,377)	-63.7%	<u>Underspending</u> I/I Local Financial Assistance: \$12.4M (timing of community distributions of grants and loans)
<b>Total Wastewater</b>	<b>\$65,473</b>	<b>\$27,396</b>	<b>(\$38,077)</b>	<b>-58.2%</b>	

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

	FY23 Budget YTD March	FY23 Actuals YTD March	YTD Actuals vs. Budget		Explanations
			\$	%	
<b>Waterworks</b>					
Drinking Water Quality Improvements	\$3,293	\$1,500	(\$1,793)	-54.4%	<u>Underspending</u> CWTP Chemical Feed System Improvements - Construction: \$1.1M, and Marlboro Pump Station Construction: \$273k (timing of work) CWTP Technical Assistance: \$522k (lower than projected task order work)
Transmission	\$42,843	\$24,540	(\$18,304)	-42.7%	<u>Underspending</u> Waltham Water Pipeline - Construction and REI: \$10.8M (long lead time for piping material) WASM/SPSM West Pressure Reducing Valves - Construction: \$1.8M (timing of contractor's work) Quabbin Maintenance Garage/Wash Bay/Storage Building - Construction: \$1.5M, and CP-2 Shaft 5 Construction: \$1.4M (schedule changes) Wachusett Lower Gatehouse Pipe & Boiler Replacement - Construction: \$1.5M (longer than anticipated equipment lead time and updated Notice to Proceed) Watershed Land: \$734k (timing of purchases) Wachusett Lower Gatehouse Windows & Doors: \$482k (long lead time for windows) <u>Offset Overspending</u> Tunnel Redundancy Preliminary Design & MEPA Review: \$1.1M (timing of consultant work)
Distribution & Pumping	\$25,920	\$26,016	\$96	0.4%	<u>Overspending</u> Section 89/29 Replacement - Construction: \$2.3M and CP-1 NEH Improvements: \$783k (contractors progress) Section 53 and 99 Improvements - Design/CA: \$573k, NEH Improvements Design - ESDC: \$506k, and Sections 25, 75, 24, 47, 59 & 60 - Design/CA: \$333k (timing of consultants work) <u>Offset Underspending</u> CP3-Sections 23, 24, 47 Rehabilitation: \$1.5M (timing of work) Cathodic Protection Shafts N & W: \$900k (scope changes) Section 56 Replacement/Saugus River - Design/CA: \$720k (permitting delays)
Other Waterworks	\$26,723	\$12,263	(\$14,460)	-54.1%	<u>Underspending</u> Local Water Pipeline Financial Assistance Program: \$13.1M (timing of community distributions) CWTP SCADA Upgrades: \$1.3M (timing of work and long lead time for materials) Electrical Distribution Upgrades at Southborough: 444k (timing of work) <u>Offset Overspending</u> New Roofs at Water Pump Stations - Construction: \$596k (timing of work)



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

	FY23 Budget YTD March	FY23 Actuals YTD March	YTD Actuals vs. Budget		Explanations
			\$	%	
<b>Total Waterworks</b>	\$98,779	\$64,319	(\$34,460)	-34.9%	

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

	FY23 Budget YTD March	FY23 Actuals YTD March	YTD Actuals vs. Budget		Explanations
			\$	%	
<b>Business &amp; Operations Support</b>					
<b>Total Business &amp; Operations Support</b>	<b>\$23,981</b>	<b>\$12,791</b>	<b>(\$11,191)</b>	<b>-46.7%</b>	<u>Underspending</u> Cabling: \$3.3M, Oracle Database Appliance: \$775k, and MAXIMO Interface Enhancements: \$605k (timing of work) FY19-23 Vehicle Purchases: \$1.3M (timing of purchases and supply chain issues) MSSP/SIEM: \$940k (scope reduction) Security Equipment & Installation: \$1.0M (timing of security initiatives)
<b>Total MWRA</b>	<b>\$188,234</b>	<b>\$104,505</b>	<b>(\$83,728)</b>	<b>-44.5%</b>	

**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)**



**WATER SUPPLY CITIZENS  
ADVISORY COMMITTEE**  
to the Mass. Water Resources Authority

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Belchertown MA 01007  
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April 7, 2023

MWRA Board of Directors  
100 First Ave.  
Charlestown Navy Yard  
Boston, MA 02129

Subject: DCR-DWSP Forest Management Review

Dear Secretary Tepper and Board of Directors,

After reviewing the March 15, 2023 MWRA Staff Summary on DCR Watershed Forestry Review, WSCAC has the following comments:

1. The Staff Summary provides inaccurate historical information that understates the complexity of the watershed forest. It failed to mention that DWSP lands were the first public watershed lands to receive national Green Certification, a process that provided valuable oversight. Also not mentioned is how the STAC report was challenged by DWSP's response, a report titled, *From Here Forward* submitted in August 2013. DCR's report has continued forest practices that fail to regenerate diverse long lived species, and ignores the impact on watershed soils from heavy logging machines. There is a lack of information on the present challenges affecting forest management in the watersheds which include:
  - Increased species mortality from climate change, diseases and insects.
  - Standard silvicultural practices for regenerating mixed species stands requires advance regeneration be in place prior to removing overstory.
  - Control of invasive species that inhibit native species.
  - The challenge of extractive forestry practices while maintaining productive watershed soils without snow and frozen ground. Lighter and smaller logging equipment should be used to minimize soil compaction and other impacts.

Recently viewed sites in New Salem that were harvested several years ago all failed to meet diversity requirements despite 1-3 acre openings. Advanced regeneration of long lived species was absent. Deep logging ruts were easily found on all lots.

2. The five recommendations in the conclusion of the STAC report are clear regarding how DCR watersheds should be managed. However, DCR has incorporated only a portion of these. For harvesting, the emphasis is on adopting shelterwood type cutting to encourage regeneration of long lived species. Tellingly, there is no external oversight to determine if these recommendations are being implemented.
3. It is noted in the MWRA Staff Summary that DCR's Land Management Plan satisfies MWRA's interest in assuring that current forest management is meeting the goals of water quality and resilience

in the short and long term. Though MWRA staff may be familiar with DCR's Land Management Plan, they rely exclusively upon DCR's Watershed Division staff to manage and oversee the proposed harvesting operations. There is no independent verification that such operations conform to the Land Management Plan.

Forest health throughout the state and beyond is increasingly affected by drought, disease, insect damage and species decline. Science-based management practices should be adapted to meet the goals of a diverse, resilient and multiage watershed forest and to address changing climate conditions affecting forest health.

4. WSCAC considers third-party oversight to be necessary and valuable. Without it, we cannot endorse DCR's forestry program. The committee has previously outlined the benefits of transparency, accountability and oversight to DCR and the public as well as to the MWRA Board of Directors and the Water Supply Protection Trust.

Recertifying watershed lands with the Sustainable Forest Initiative (SFI) or Forest Stewardship Council (FSC) would be a step in the right direction to ensure that DCR's forest management practices are meeting the forestry objectives written in the STAC report and in the Land Management Plan. Certification provides transparency and accountability to the public.

All MWRA programs and projects are subject to oversight and fiscal accountability, WSCAC recommends that this oversight be extended to DCR programs paid for by MWRA ratepayers.

We appreciate the opportunity to review the Staff Summary and request that the Board of Directors discuss the prospect of supporting a more transparent, accountable and collaborative DCR forest management program at its next meeting.

Thank you for your consideration of this request.

Gerald Eves, Chair

Whitney Beals, Executive Committee

Lexi Dewey, Executive Director

Cc: Fred Laskey, Executive Director, MWRA

Joe Favaloro, Executive Director, MWRA Advisory Board

**New Salem logging sites – impact of heavy equipment, lack of advanced regeneration before logging, lack of species diversity in regeneration.**

