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MASSACHUSETTS WATER RESOURCES AUTHORITY
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BOARD OF DIRECTORS' MEETING

Date: Wednesday, September 13, 2023

Time: 1:00pm

Location: Deer Island Reception/Training Building, 1st Floor
33 Tafts Avenue – Favaloro Meeting Room
Boston, MA 02128

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

Webex Meeting Link (Registration Required):

https://mwra.webex.com/weblink/register/r269cce48a4c2ad629a7db36156d9c3bd

Event Number: 2349 027 4514 Password: 91323

AGENDA

I. APPROVAL OF MINUTES

II. REPORT OF THE CHAIR

III. REPORT OF THE EXECUTIVE DIRECTOR

IV. EXECUTIVE SESSION

i. Approval of July 19, 2023 Executive Session Minutes

A. Real Estate

1. Watershed Land Acquisition

B. Litigation

1. In re *Aqueous Film-Forming Foam Products Liability Litigation*, MDL No. 2:18-mn-02873-RMG, U.S. District Court for the District of South Carolina: PFAS Class Action Settlements

V. WASTEWATER POLICY & OVERSIGHT

A. Information

1. Storm Impacts on MWRA's Wastewater System and Receiving Waters

V. WASTEWATER POLICY & OVERSIGHT (Continued)

B. Contract Amendments/Change Orders

- Nut Island Headworks Odor Control and HVAC Improvements, Inspections, Evaluations, Design, Construction Administration and Resident Engineering Services, Hazen and Sawyer, P.C., Contract 7517, Amendment 5

VI. WATER POLICY & OVERSIGHT

A. Information

- Update John J. Carroll Water Treatment Plant Corrosion Control Optimization Efforts

B. Approvals

- Memorandum of Agreement between the U.S Army Corps of Engineers, the Massachusetts Historical Commission and MWRA relative to the removal of the Quinapoxet Dam

C. Contract Amendments/Change Orders

- Quinapoxet Dam Removal, Design and ESDC: SLR Corporation, Contract 7437, Amendment 2

VII. PERSONNEL & COMPENSATION

A. Approvals

- PCR Amendments – September 2023
- Appointment of Katherine M. Ronan, Chief of Staff
- Appointment of Colleen C. Rizzi, Director, Environmental and Regulatory Affairs

VIII. ADMINISTRATION, FINANCE & AUDIT

A. Information

- Delegated Authority Report – July and August 2023
- FY2023 Year-End Orange Notebook
- FY2023 Year-End Financial Update and Summary
- FY2023 Year-End Capital Project Spending Report

B. Approvals

- Surplus Sewer Easement of the Abandoned Upper Neponset Valley Sewer

C. Contract Amendments and Change Orders

- Security Equipment Maintenance and Repair Services: Viscom Systems, Inc., Contract EXE-043, Change Order 2

IX. CORRESPONDENCE TO THE BOARD

X. OTHER BUSINESS

XI. ADJOURNMENT

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Board of Directors

July 19, 2023

A meeting of the Massachusetts Water Resources Authority ("MWRA") Board of Directors was held on July 19, 2023 at MWRA's headquarters at Deer Island in Boston, and also via remote participation.

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

MWRA Executive Director Frederick Laskey; General Counsel Carolyn Francisco Murphy; Chief Operating Officer David Coppes; Deputy Chief Operating Officer Rebecca Weidman; Director of Finance Thomas Durkin; Director of Administration Michele Gillen; Special Assistant for Affirmative Action Patterson Riley; ENQUAL Director Betsy Reilley; Deputy Director of Finance/Treasurer Matthew Horan; Energy Manager Kristen Patneaude; Director of Security Gary Cacase; Deer Island Treatment Plant Director David Duest; MWRA Manager, Engineering Services Richard Adams; Director of Construction Marty McGowan; Human Resources Director Wendy Chu; Director of Procurement Doug Rice; and Assistant Secretaries Ria Convery and Kristin MacDougall participated at MWRA headquarters. Matthew Romero and James Guiod, MWRA Advisory Board, also participated from MWRA headquarters.

MWRA Program Manager, Energy and Environment Denise Breiteneicher participated remotely.

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

ROLL CALL

MWRA General Counsel Francisco Murphy took roll call of Board Members in attendance and announced that Board Members Pappastergion, Vitale and Patrick Walsh were participating remotely. Vice Chair Pappastergion announced that the Board will defer the Executive Session and agenda item A.2 to later in the meeting so that the Secretary could participate if available. The Vice Chair announced that the meeting was being held at MWRA headquarters at Deer Island and virtually, via a link posted on MWRA's website. He added that the meeting would be recorded, and that the agenda and meeting materials were available on MWRA's website. He also announced that individual roll call votes would be conducted after each motion was made and given an opportunity for discussion.

APPROVAL OF JUNE 21, 2023 MINUTES

A motion was duly made and seconded to approve the minutes of the Board of Directors' meeting of June 21, 2023.

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

Yes	No	Abstain
Foti		
Pappastergion		
Peña		
Taverna		
Vitale		
J. Walsh		
P. Walsh		

(ref. I)

REPORT OF THE EXECUTIVE DIRECTOR

Fred Laskey, MWRA Executive Director, advised that staff were monitoring the Wachusett Reservoir, which was very close to cresting at less than 1.5 feet to the spillway, and presented a photo of a controlled release of water from the Wachusett into the South Nashua River. He noted that the Wachusett's water level had risen approximately 2.5 feet since July 1, 2023. Mr. Laskey further noted that the Wachusett had received 8.78 inches of rain since July 1, in addition to 6 inches of rainfall in June, 2023. He then explained the drinking water quality benefits of transferring water from the Wachusett to the Quabbin Reservoir during periods of high elevation. Finally, Mr. Laskey described the transfer process and reported that ongoing transfer operations have been running smoothly. David Coppes, MWRA Chief Operating Officer, added that staff were working diligently to manage the releases and transfers, which prevent the Wachusett Reservoir from spilling uncontrollably.

Board Member Taverna requested more information about how high water levels and heavy rainfall were impacting waters downstream. Mr. Coppes explained that the Sudbury system was holding steady. Mr. Taverna asked if the Sudbury Reservoir was overflowing. Mr. Coppes reported that the Sudbury system was operating normally, and added that Eastern Massachusetts had received less rain that the Wachusett watershed. He then advised that the Quabbin Reservoir is approximately 6 inches away from spilling over, and that all MWRA reservoirs are relatively full for this time of year.

Next, Mr. Laskey reported that area beach closings had made local and national news recently, and invited Betsy Reilley, MWRA ENQUAL Director, to provide an update.

Ms. Reilley presented an overview of the Harbor Beaches Monitoring Program. She explained that MWRA has been assisting the Massachusetts Department of Conservation and Recreation (DCR) and Department of Public Health (DPH) to monitor beach water quality since 1996. She further explained that under the program, DPH is responsible for setting beach water quality standards, and that DCR is responsible for managing the beaches, sample collection and testing, and the posting of any required notices. Ms. Reilley described testing limits that trigger beach closings, including a single sample over the bacterial limit, or a five sample geomean. She added that heavy rains can also prompt precautionary beach closings, and explained that Boston-area beaches are the only beaches with a rainfall threshold requirement for posting, which varies from 0.25-2.00 inches per day, depending on location.
Next, Ms. Reilley presented the locations of ten, local DCR-managed marine beaches in the MWRA area.

She noted that most are sampled daily, with the exception of some South Boston beaches, which are measured weekly due to their exceptional water quality, partly attributable to MWRA's South Boston Storage Tunnel. She further noted that storm water outfalls are located near Wollaston, Tenean, Malibu and Constitution Beaches, and advised that in the past year storm water discharges had occurred near all of those beaches except for Malibu. She then explained that King's Beach in Lynn/Swampscott has been posted for over 50% of the season, partly due to a brook that runs through it. She briefly noted that a non-MWRA CSO is located near King's beach, but it had not activated this season.

Board Member Foti requested confirmation that there had been no water quality issues at Carson Beach this season. Ms. Reilley confirmed that there were no water quality issues at beaches from Pleasure Bay to Carson Beach, noting that there had been one posting at Carson Beach during a dry period in June, possibly due to bird activity.

Ms. Reilley then presented preliminary Boston Harbor beach data for 2023 through July 17. She advised that this summer has been unusually wet, particularly in July, when the Boston area received approximately 4.5 inches of rainfall; however, the rain resulted in only one, single-day posting, at Carson Beach. She explained that many beach postings are due to storm water and stressed that with the exception of King's Beach, which is not under MWRA's jurisdiction, no harbor beaches are near Combined Sewer Overflows (CSOs.)

Next, Ms. Reilley presented Save the Harbor/Save the Bay (STH/B) annual report card data for area beaches from 2017 through 2022. She noted that with the exception of King's and Tenean, Metro Boston's beaches were consistently ranked among the highest in the area in terms of water quality.

Ms. Reilley then discussed recent media coverage about beach closings due to rain-related bacteria exceedances near the July 4, 2023 holiday. She noted that these media reports unfairly characterized the bacterial sources as "sewage" and "CSOs." She advised that the bacteria was caused mostly by storm water. She further advised that MWRA's Boston Harbor Project, the MWRA/community CSO Control Program and similar efforts had effectively eliminated CSO discharges to the harbor beaches.

Next, Ms. Reilley presented a summary of Massachusetts Sewage Notification Requirements, which mandate public reporting of all CSO and SSO discharges since July 2022. She explained that there had been 636 sewage releases discharges reported statewide since May 29, 2023, only 42 or which were issued by MWRA and its CSO communities. Ms. Reilley suggested that a combination of factors, including a large number of sewage notifications due to high rainfall; new, required Board of Public Health signage; and related media coverage may be contributing to the public's conflation of CSOs with storm water and beach postings. Finally, Ms. Reilley briefly noted that a Select Board meeting would be held in Swampscott on July 19, 2023 to discuss the water quality at King's Beach.

Mr. Laskey noted that MWRA's CSO Storage Tunnel in South Boston has proven to be a worthwhile investment for Boston beach water quality. There was brief, general discussion about the beach water quality testing process and the five-day geomean. Mr. Laskey briefly described the scope and water

quality benefits of the CSO Control Program's sewer separation projects.

Board Member White-Hammond asked if MWRA could engage in public messaging when posted beaches receive the all clear. Ms. Reilley explained that MWRA is not the beach manager, although MWRA does track and post beach data on its website. She further explained that STH/B has been working aggressively with DCR and DPH on communications with the public about beach water quality matters, and that DPH is developing a more accessible web page. Rev. White-Hammond suggested that holding press conferences when beaches are given the all clear would provide an opportunity to educate the public about the true reasons for Harbor beach closings, and to clarify that CSOs are not the cause. There was discussion about potential communications strategies, including push notifications that include the reasons for beach closings.

Finally, Mr. Laskey announced that the August 16, 2023 MWRA Board of Directors meeting would be cancelled, and invited Board Members to participate in the MWRA Advisory Board's annual tour, at Quabbin Reservoir on August 17. He noted that a Board meeting may be held in the MWRA watershed area in the coming months.

(Board Member Vitale briefly left and returned to the meeting, and Rev. Member White-Hammond joined the meeting during the report.) (ref. III)

ADMINISTRATION, FINANCE AND AUDIT
Information
Delegated Authority Report – June 2023
Michele Gillen, MWRA Director of Administration, invited Board Members' questions on the report.

Board Member Jack Walsh asked for more information about report item C-6: *Section 101 Waltham Extension*. Mr. Coppes explained that staff would present more details in agenda item VII A.1. Mr. Walsh requested details about the scope of item P-17: *Purchase for SCADA Software Maintenance*. Mr. Coppes explained that the scope included software updates, maintenance and technical support. There was general discussion about subscription software, and the cost of maintenance. Board Member Peña requested context for item C5: *Revenue Bond Consulting Engineer Services*. Matthew Horan, MWRA Deputy Finance Director/Treasurer, explained that the General Bond Resolution requires MWRA to engage with a Consultant Engineer to review MWRA's facilities, budgets, Capital Improvement Program and rates projections every three years, to keep bondholders informed.

(Chair Tepper joined the meeting, and Mr. Foti temporarily left the meeting during the discussion.)

Hearing no further questions or discussion, Chair Tepper moved to the next Information item. (ref. V A.1)

MWRA Energy and Sustainability Overview
Kristen Patneaude, MWRA Energy Manager, presented an overview of MWRA's Energy and

Sustainability Program ("Energy Program"). She explained that a longtime goal of the Energy Program is to reduce the energy demand required to provide safe, reliable water and sewer services for customer communities. Next, she summarized some drivers for the MWRA Energy Program, including benchmarking against the Commonwealth's Executive Orders and climate goals.

Ms. Patneaude then presented a summary of MWRA's energy use for FY22, noting that approximately 84% of the total energy used was for wastewater transport and treatment; 13% for water treatment and transmission; and, 3% for administration and support. She further noted that DITP represents 66% of MWRA's total electricity consumption and 67% of fuel oil use, and that utilities expenses comprise over 12% of MWRA's total operating costs.

Next, Ms. Patneaude presented a graph of MWRA's FY22 energy consumption by fuel type, including electricity (76%), non-vehicle diesel (23%), natural gas (9%), propane (1%), and others such as fuel oil, gasoline and diesel fuel. She noted that together, the DITP and the CWTP account for 75% of MWRA's electricity use.

Ms. Patneaude then presented the wastewater flow impacts on MWRA's energy demand for FY06 through FY22. She explained that because DITP accounts for over 66% of MWRA's total demand, electricity demand tends to vary with its flows and is affected by on-site energy availability, wet weather events, demand management operations, and maintenance activities.

Next, Ms. Patneaude presented an overview of the energy demands for drinking water treatment. She noted that the CWTP's most energy-intensive operations were related to water treatment, including ozonation. She further noted that while over 75% of MWRA's drinking water is transported by gravity, some pumping is required for higher service areas. She presented a graph of MWRA's decreasing water system demand from 1980 to 2022.

Ms. Patneaude then presented an overview of MWRA's total renewable energy production vs. total energy usage for FY22. She noted that in FY22, MWRA consumed approximately 67% of the renewable energy it had generated, and exported the remainder to the grid. Next, she discussed MWRA's renewable energy production by source. She noted that electricity generated by DITP methane gas digestion, which heats DITP's Thermal Plant, is MWRA's largest source of renewable energy. She added that hydropower is also a significant portion of MWRA's energy production (42%), and all of MWRA generation assets save approximately $8 million in electricity costs per year. She presented a brief summary of MWRA's hydroelectric power sites, with a total capacity of 8 megawatts (MW).

Next, Ms. Patneaude discussed MWRA's wind power facilities at DITP and the Delauri Pump Station, which generate approximately 5% of total MWRA's renewable energy. She advised that opportunities for additional, large-scale wind turbine power at MWRA facilities were limited due to such factors as development high density, height restrictions and lower wind resources. She provided a brief update on the status of the DITP's existing wind turbines, including that both are currently offline with repairs to wind turbine 2 and inspections for wind turbine 1 which experienced the recent failure. Ms. Patneaude

then presented an overview of MWRA's solar power facilities, with a total capacity of over 1.3 MW. She noted that additional solar sites are in the planning stage, and that staff will assess the economics and benefits of energy storage for all future solar facilities. She further noted that any new buildings or major rehabilitation projects will be designed as solar-ready, and briefly advised that ongoing parts and labor shortages has increased the amount of time that solar facilities remain offline for repair.

Next, Ms. Patneaude discussed MWRA's strategies for energy efficiency. She reported that measures such as implementing recommendations from energy audits has saved over 25 million kilowatt hours (kWh) per year (approximately $2.5 million). She noted that some of MWRA's greatest energy savings (over 10 million kWh per year) have been achieved through process changes, and that energy efficiency measures have been incorporated into MWRA's internal Standard Operating Procedures.

Ms. Patneaude then described MWRA's efforts to achieve Net Zero, in alignment with the Commonwealth's directives. She advised that staff were developing a roadmap to plan and implement a number of cost-effective and equitable energy strategies, including building electrification; clean transportation; combined heat and power optimization; greenhouse gas emissions tracking and reduction goals; and, innovation and resiliency. She provided examples of strategies that have been implemented to date, including the installation of a geothermal heat pump system at the Wachusett Aqueduct Pump Station, and water sourced heat pumps at Spot Pond. She added that MWRA is proceeding with the design of air-sourced heat pump systems for two pump stations and a dam gate house, and that analysis for heat pump applications is included for every new construction, rehabilitation, and HVAC replacement/upgrade. Ms. Patneaude then discussed MWRA's clean transportation strategies, including the transition to electric vehicles (EVs). She briefly described the environmental and economic benefits of EVs.

Mr. Foti requested more information about MWRA's goals for transitioning to EVs. Ms. Patneaude explained that the current goal is to replace ten vehicles per year, adding MWRA could increase the replacement rate as more vehicles that are suitable for operational needs become available. There was general discussion about the challenge of transitioning fleets to EVs, including supply chain issues; up-front costs; and, battery limitations. There was also general discussion about strategies for navigating these challenges, and the performance of EV fleets at other agencies. Rev. White-Hammond suggested that state and municipal agencies coordinate efforts for installing and maintaining EV charging infrastructure, noting that in her experience, the lack of available charging stations is the biggest challenge for EV fleets.

Chair Tepper noted that the EV charging commission was meeting on a regular basis, part of last year's legislation, with a focus on charging and planning charging. She noted that in addition the state has plans for coordinated procurements with agencies. Lastly, she noted that there will be significant federal money for electric vehicles, that the state has its own rebate program which will be revamped soon and that the federal government will be providing significant funds for charging.
Ms. Patneaude added that MWRA has 15 EV chargers available at three sites where the majority of fleet and staff are headquartered, and that plans are underway install 35 additional charging stations. Rev.

White-Hammond asked for more information about the levels of MWRA's existing chargers. Ms. Patneaude explained that MWRA's chargers were Level 2.

Next, Ms. Patneaude discussed MWRA's ongoing project to design and construct a new Combined Heat and Power Plant (CHP) at Deer Island to replace the existing system. She noted that simulations predict that the new CHP would more than double the electricity generated by the existing plant, and consume less fuel. She noted that a design contract for the CHP was expected to be advertised for bid later in FY23. Mr. Laskey added that in his view, the CHP is MWRA's single most important project with respect to energy efficiency.

Ms. Patneaude then presented an overview of MWRA's strategies for greenhouse gas emissions. She noted that treating and transporting water and wastewater emit greenhouse gasses, including carbon dioxide and methane, adding that raw sewage is a contributor of nitrous oxide. She further noted that electricity is MWRA's largest source of emissions (approximately 50%). She then reported that MWRA's emissions have decreased by 38% since 2006, ahead of the Commonwealth's goal of a 33% reduction by 2025. Ms. Patneaude explained that MWRA's emissions reduction was driven in part by a 50% decrease in emissions from purchased electricity due to energy efficiency measures, renewable energy and a cleaner regional electrical grid. She added that staff are developing a strategic greenhouse gas management plan.

Next, Ms. Patneaude discussed MWRA's efforts for improved resiliency and innovation with respect to climate change, and described ongoing and planned initiatives for battery storage and sewer heat recovery.

Ms. Patneaude then presented a summary of funding sources for Energy Program capital investments, such as grants, rebates and other incentives. She also briefly described other sources of non-rate revenue, such as power sales.

Finally, Ms. Patneaude described MWRA's next steps toward emission reduction goals, including the development of an action plan that lays out a clear vision with pathways and milestones, and pilot studies. She noted that the recommended measures resulting from these efforts could be costly, and that some technologies may not be available at the required scale. Lastly, Ms. Patneaude advised that Environmental Justice would be considered in all decisions.

Board Member Vitale thanked Ms. Patneaude for her assistance to the Boston Water and Sewer Commission (BWSC) on energy matters, and requested more information about MWRA's EV Policy. Ms. Patneaude explained that MWRA's EV Policy includes the purchase 10 electric vehicles annually, until more EVs that are suitable for MWRA's operations become available. Mr. Vitale requested a copy of MWRA's EV Policy. Mr. Vitale then asked for more information about how much funding MWRA had received from the Eversource Make Ready Program. Ms. Patneaude explained that MWRA had received approximately $50,000 from the Massachusetts Electric Vehicle Incentive Program (MassEVIP). Denise Breiteneicher, MWRA Program Manager, Energy and Environment, added that MWRA is expected to

receive approximately $215,000 in funding from the Make Ready Program, for EV infrastructure at the Chelsea facility.

Mr. Vitale requested more information about the amount of federal and state funding MWRA has received for EVs. Ms. Patneaude explained that MWRA has received reimbursement for five EVs from MassEVIP ($37,500 total); that staff will apply to the MassEVIP program again this Fiscal Year; and, that staff are monitoring the availability of potential federal tax incentives. Mr. Vitale asked if MWRA provided training to its EV drivers and vehicle maintenance staff. Ms. Patneaude explained that MWRA's Fleet Manager provides training to staff, and that instructional videos may be developed as the EV fleet expands. Mr. Vitale asked how MWRA distributes its EVs to staff. Ms. Gillen explained that MWRA's Vehicle Committee considers a number of factors to determine the most effective uses of the EV fleet.

Mr. Vitale asked if MWRA's EV Policy includes requirements for garaging the vehicles, or if there are any safety concerns. Ms. Patneaude explained that MWRA's EVs are generally parked outdoors and there haven't been any concerns to date. There was brief discussion about BWSC's EV fleet and chargers, and supply chain issues. Mr. Vitale noted that BWSC has a contract with SparkCharge, a mobile EV charging service. He further noted Mayor Wu's initiative on electrifying the fleet and the close work with the Mayor's office, and complimented MWRA staff on their presentation.

Mr. Jack Walsh requested more information about the overall cost efficiency of EVs vs. gas/diesel powered vehicles. Ms. Patneaude referred Mr. Walsh to online EV cost comparison calculators that provide cost data for specified vehicles by state. There was brief, general discussion about the efficiency of EVs. Ms. Patneaude noted that National Grid had performed an assessment of MWRA's fleet, and that Eversource would also perform a fleet assessment in the near future. She explained that fleet assessments provide metrics on the cost of vehicle ownership.

Rev. White-Hammond noted that in her experience at the Boston Parks Department, EVs require less maintenance and are more reliable than gas/diesel powered vehicles.

Chair Tepper requested a future meeting with MWRA staff to further discuss MWRA's energy program. She then discussed the benefit from optimizing MWRA's its heat and power systems through such means as controlling electricity production or storage, and the timing of using electricity and providing it to the grid. She advised that MWRA could also benefit from additional demand response, and noted that the virtual power plant is becoming prevalent, and welcomed further discussion at a later date.

There was brief discussion regarding prior consideration on the topic and the potential benefit to the MWRA to sell its ability to control its power into the grid.
Chair Tepper complimented staff on an informative and well-prepared presentation.

(Mr. Foti returned to the meeting during the presentation.)

Chair Tepper asked if there was further discussion or questions from the Board. Hearing none, she

moved to Contract Amendments/Change Orders. (ref. V A.2)

Contract Amendments/Change Orders
Security Equipment Maintenance and Repair Services: Viscom Systems, Inc., Contract EXE-043, Change Order 2

A motion was duly made and seconded to authorize the Executive Director, on behalf of the Authority, to approve Change Order 2 to Contract EXE-043, Security Equipment Maintenance and Repair Services, with Viscom Systems, Inc. for an amount not to exceed $372,122.30, increasing the contract amount from $2,570,803.30 to $2,942,925.60, and extending the contract term by 180 calendar days from September 28, 2023 to March 26, 2024.

Gary Cacase, MWRA Director of Security, summarized the contract scope of work, and the reasons and costs of a proposed change order for a not to exceed amount of $372,122.30 and 180-day time extension. There were questions and answers regarding the proposed change order and potential options. After discussion, the item was postponed. (ref. V B.1)

WASTEWATER POLICY AND OVERSIGHT
Contract Awards
Deer Island Treatment Plant Residuals Facility Rehabilitation Design, Bidding and Engineering Services During Construction CDM Smith Inc. Contract 7052

A motion was duly made and seconded to approve the recommendation of the Consultant Selection Committee to award Contract 7052, Deer Island Treatment Plant Residuals Facility Rehabilitation – Design, Bidding and Engineering Services During Construction, to CDM Smith Inc. and to authorize the Executive Director, on behalf of the Authority, to execute said contract in an amount not to exceed $9,985,050, for a contract term of 99 months from the Notice to Proceed.

David Duest, MWRA Deer Island Treatment Plant Director, presented the scope of the proposed contract for design, bidding and engineering services during construction (ESDC) for the DITP Residuals Facility. He noted that portions of the DITP sludge digester complex are 25-28 years old, and that a number of its systems have not been updated since startup. Next, Mr. Duest summarized the reasons why the rehabilitation project is needed, including corroded heat exchangers that require intensive maintenance, and corroded pipes and valves that do not provide isolation. He added that the proposed contract would also include design, bidding and ESDC for pump replacement and digester internal inspection and repair. Finally, Mr. Duest presented a brief summary of the contractor procurement process, and advised that CDM Smith Inc. (CDM) was the selected vendor. Finally, he noted that the total number of hours proposed by CDM was less than that of other bidders, attributable to fewer proposed hours for clerical support.

Mr. Taverna requested clarification on the financial terms of the proposed contract. Richard Adams, MWRA Manager, Engineering Services, advised that it was a lump sum, not-to-exceed contract. Mr. Taverna asked if the scope and deliverables were clearly defined. MWRA General Counsel Francisco Murphy noted that design work is typically performed on a fixed fee basis, while construction

administration work is typically performed on a cost plus fee basis. There was brief, general discussion about the proposed contract's defined tasks, and design/ESDC contracts.

Mr. Foti asked why the proposed contract was over the Engineer's Estimate. Mr. Duest explained that MWRA staff had underestimated the scope of work, particularly with regards to digester inspection. Mr. Adams described some factors that were not incorporated into the Engineer's Estimate, including the complexities of digester inspection. He then briefly summarized the digester inspection process and discussed the challenge of estimating the level of effort required to inspect the conditions of over 1,000 existing pipe supports to determine their possible reuse. Mr. Jack Walsh expressed concern about the length of the contract. Mr. Duest explained that the proposed contract included oversight of the project's construction phase, and summarized the contract's key phases. There was brief, general discussion about the contract's scope and duration.

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

Yes	No	Abstain
Tepper		
Foti		
Pappastergion		
Peña		
Taverna		
Vitale		
J. Walsh		
P. Walsh		
White-Hammond		

(ref. VI A.1)

Contract Amendments/Change Orders
Nut Island Headworks Odor Control and HVAC Improvements Walsh Construction Company II, LLC
Contract 7548, Change Order 15

A motion was duly made and seconded to authorize the Executive Director, on behalf of the Authority, to approve Change Order 15 to Contract 7548, Nut Island Headworks Odor Control and HVAC Improvements, with Walsh Construction Company II, LLC, extending the contract term by 90 calendar days from June 10, 2023 to September 8, 2023, with no increase in contract amount.

Further, a motion was duly made and seconded to authorize the Executive Director to approve additional change orders as may be needed to Contract 7548 in an amount not to exceed the aggregate of $1,000,000 and 180 days in accordance with the Management Policies and Procedures of the Board of Directors.

Marty McGowan, MWRA Director of Construction, presented the reasons for the proposed Change Order for a Nut Island Headworks Odor Control and HVAC Improvements contract. He explained that

supply chain issues had delayed delivery of fiberglass reinforced plastic (FRP), which is used for the Headworks' duct work and carbon adsorbers. He further explained that staff requested an additional 90-day contract extension to accommodate the expected FRP delivery. He then presented an overview of contract progress to date. Finally, Mr. McGowan noted that staff were also requesting full Delegated Authority for future change orders currently in negotiations. He provided examples of the reasons for the change orders in negotiations, including roofing system modifications due to unforeseen conditions; roof drainage improvements; and, the resolution of general conflicts in the odor control room and code issues at the emergency eyewash shower stations.

Mr. Jack Walsh asked if all work would be complete by September 8, 2023. Mr. McGowan advised that staff expect the project to be substantially complete by that time, with the exception of plantings, which would take place during the growing season. Mr. Walsh expressed concern about the potential impacts of earth moving activities on the Nut Island public access area. Mr. McGowan explained that MWRA's contractors had a plan in place to safely move the earth that includes flaggers and the minimal truck use. Mr. Walsh requested more information about the schedule for testing the Nut Island Headworks' upgraded systems. Mr. McGowan explained that testing is underway, with startup expected within approximately one week. There was brief, general discussion about the schedule for starting up the carbon adsorbers, and worksite safety during construction.

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:

Yes	No	Abstain
Tepper		
Foti		
Pappastergion		
Peña		
Taverna		
Vitale		
J. Walsh		
P. Walsh		
White-Hammond		

(ref. VI B.1)

WATER POLICY AND OVERSIGHT

Information

Update on Section 101 Extension in Waltham Contract 7457

Mr. McGowan presented an update on the Section 101 Extension project in Waltham. He noted that staff had encountered some working constraints for the project. He then provided a brief overview of the project's budget and scope, which will be completed in two phases to support the construction of a new high school. Next, Mr. McGowan presented the location of the southern portion of the project (Lexington Street between Totten Pond Road and Lincoln Street). He noted that this area presents

numerous challenges for project construction, such as busy traffic, an ongoing City of Waltham project to realign the intersection, and a recent gas line relocation project. Mr. McGowan advised that public outreach and work coordination activities were underway to mitigate impacts to residents. Next, he presented a schematic of Section 101 work to be performed at Lexington Street and Totten Road, including the installation of a 36-inch MWRA water main, which requires the relocation a City of Waltham-owned 12-inch water main, 12-inch sewer and 15-inch storm drain. He described the sequencing plan to complete this work while also keeping the roadway open.

Mr. McGowan then discussed work constraints, including a later start of work hours on Lexington Street (a reduction of work hours), and the performance of work at night in the area of Totten Pond and Lincoln street , at the request of the City of Waltham, to limit disruption. He noted that the change in work hours constituted a change because the project was bid with the hours in the contract, which was handled with the Authority executing a change order in the amount not to exceed $500,000 under Delegated Authority to compensate the contractor for the additional costs related to revising the work hours. Next, Mr. McGowan presented a photo depicting challenging conditions on Lexington Street during night work hours, and noted complaints the community received from residents and the City of Waltham's recent request to return to day work given the disruption of night work in a residential area. Rev. White-Hammond noted that discontinuing night work could reduce the project's cost. Mr. McGowan agreed, and explained that staff continue to work with the City of Waltham and its residents to address any concerns. Finally, Mr. McGowan advised that staff could potentially request an additional change order to cover any future work constraint revisions, noting that MWRA had spent approximately half of the $500,000 of the change order to date.

Mr. Taverna asked if there was a detour plan for the project. Mr. McGowan advised that a detour plan was in development and that MWRA would perform appropriate community outreach when the plan is complete. Mr. Jack Walsh asked if the City of Waltham present a traffic study for the project work area. Mr. McGowan explained that he was unaware of a City traffic study.

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

PERSONNEL AND COMPENATION

Approval

PCR Amendments – July 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.

Wendy Chu, MWRA Human Resources Director, described six proposed PCR amendments, including four title and/or grade changes, a salary adjustment to address a Bargaining Unit salary collision issue, and the creation of a new Deputy Director of Procurement position.

Rev. White-Hammond asked if staff anticipated additional salary adjustments in relation to the collective

bargaining in the future. Ms. Chu responded that there may be such adjustments in the future. Mr. Foti requested more information about potential PCR amendments to address salary collision. Mr. Chu explained that non-union manager salary collision issues were resolved at the July 19, 2023 Board of Directors meeting, and that these are adjustments for positions in bargaining units.

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:

Yes	No	Abstain
Tepper		
Foti		
Pappastergion		
Peña		
Taverna		
Vitale		
J. Walsh		
P. Walsh		
White-Hammond		

(ref. VIII A.1)

Appointment of Rita Mercado, Deputy Director of Procurement

A motion was duly made and seconded to approve the appointment of Ms. Rita Mercado to the position of Deputy Director of Procurement (Non-Union, Grade 15) in the Administration Division, at the annual salary of $155,500 commencing on a date to be determined by the Executive Director.

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

Mr. Jack Walsh asked if Ms. Mercado would support the Metropolitan Water Tunnel Project (MWTP). Ms. Chu explained that if the appointment were approved, Ms. Mercado would work closely with MWTP staff, and also serve as Deputy Director of the Procurement department. Rev. White-Hammond asked if this position would work on restructuring MWRA's procurement processes in order to attract more potential bidders. Doug Rice, MWRA Director of Procurement, responded in the affirmative and noted that Ms. Mercado brings extensive experience with the Massachusetts Division of Capital Asset Management and Maintenance (DCAMM).

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

Yes	No	Abstain
Tepper		
Foti		
Pappastergion		
Peña		

Yes	No	Abstain
Taverna		
Vitale		
J. Walsh		
P. Walsh		
White-Hammond		

(ref. VIII A.2)

(Vice Chair Pappastergion left the meeting, and Mr. Taverna temporarily left the meeting after the Roll Call Vote.)

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 topic of discussion in Executive Session was a Chapter 21E notice from Massachusetts Natural Fertilizer Co., Inc., Otter Farm and The Newark Group. She announced that the Board would return to Open Session after the conclusion of Executive Session, for the purpose of adjournment.

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

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

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

Yes	No	Abstain
Tepper		
Foti		
Peña		
Vitale		
J. Walsh		
P. Walsh		
White-Hammond		

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 3:03pm and adjourned at 3:20pm.

(Mr. Taverna returned to the meeting during Executive Session.)

*** CONTINUATION OF OPEN SESSION ***

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:

Yes	No	Abstain
Tepper		
Foti		
Peña		
Taverna		
Vitale		
J. Walsh		
P. Walsh		
White-Hammond		

The meeting adjourned at 3:21pm.

Approved: September 13, 2023

Attest: _____

Brian Peña, Secretary

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: September 13, 2023
SUBJECT: Storm Impacts on MWRA's Wastewater System and Receiving Waters

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COMMITTEE: Wastewater Policy & Oversight

_X_ INFORMATION
___ VOTE

Betsy Reilley, Ph.D., Director, Environmental Quality
Lisa Bina, P.E., Deputy Director, Waterworks
Preparer/Title

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

This summer has brought historically high levels of precipitation to the service area with back-to-back and high intensity storms. These rain events have resulted in high levels of Combined Sewer Overflow discharges and blended flows at Deer Island Wastewater Treatment Plant. These events also have impacts on drinking water quality in our reservoirs.

RECOMMENDATION:

For information only

DISCUSSION:

The Boston area has experienced a number of high intensity unpredictable wet weather storm events this summer resulting in this July being the second wettest on record (pushing July of 2021 into third place). Current cumulative rainfall amounts to date are only four inches below the wettest year on record, which occurred in 1954. As shown on Figure 1, monthly cumulative totals during the summers of 2021 and 2023 are similar and trend only slightly below levels in 1954. Although current rainfall amounts are similar to that of 1954, the type of storms that the Boston area has experienced this summer is very different from the 1954 storm events; 1954 was a year with three Category 3 hurricanes crossing through the Boston area, severely impacting the coastline with heavy rainfall. In contrast, there have been no hurricanes to date this summer, mainly thunderstorms with concentrated areas of downpours. Cumulative totals for 2022 are also shown on Figure 1 to highlight the drastic year-to-year variation. In 2022, the Boston area recorded one of the driest summers in 138 years.

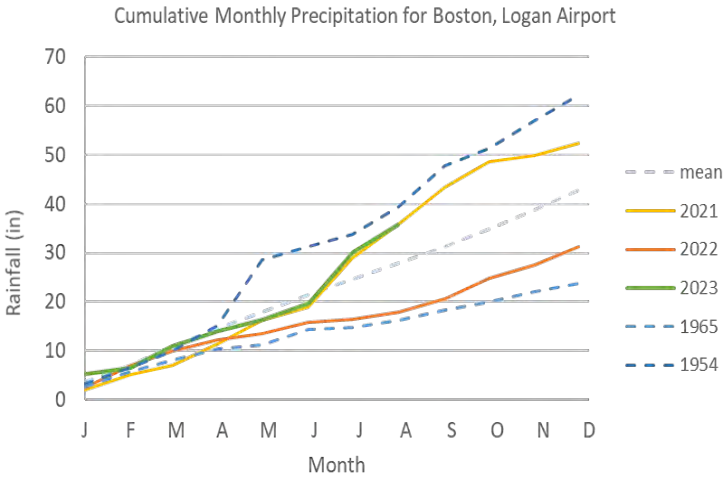

Figure 1: Monthly Cumulative Average Logan Airport

The average yearly rainfall in the metropolitan Boston area is approximately 43 inches, which is typically well distributed throughout the year and is consistent throughout the service area. The year to date total at Logan Airport is 36 inches. However, this total varies dramatically throughout the service area. This year has brought high intensity storms that are not well distributed with unpredictable travel paths. Even within MWRA's service area, rainfall totals have varied as much as three inches, from one end of the service area to another, for a single storm event. This is clearly shown on Figure 2 from the National Weather Service, which shows the rainfall totals for August 8. As thunderstorms like this approach the service area, the path of the heavy band of rainfall can be variable and can also decrease or increase in size.

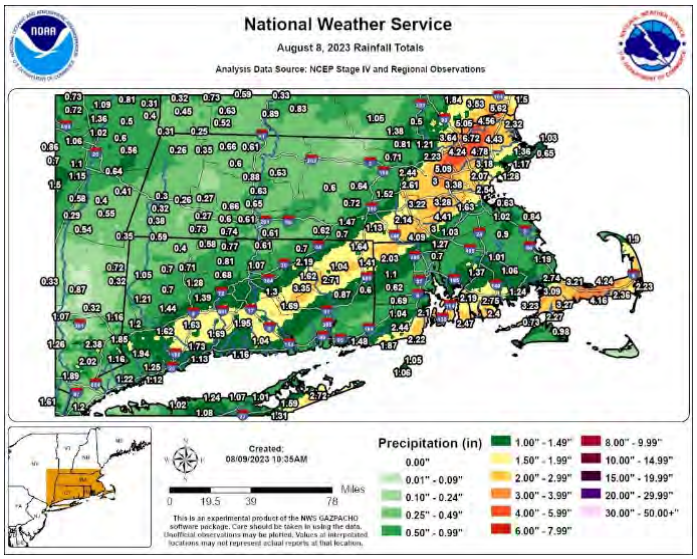

Figure 2: NWS August 8, 2023 Rainfall Totals

In addition to the variation in coverage, rainfall intensities have been well above average, resulting in shortened system response times. During the July 21 rain event, all three north system headworks facilities were choking, with all MWRA and MWRA/BWSC Combined Sewer Overflow (CSO) treatment facilities activated within two hours of the onset of rain. A similar response was seen during the rain event of August 8, within 45 minutes of the heavy rain entering the service area, system levels rapidly increased to the point where both Somerville Marginal and Prison Point CSO needed to be activated, along with the BOS019 Storage facility.

MWRA operations and maintenance staff have performed admirably during this difficult summer staffing the many facilities to assure reliable operations and providing appropriate public and regulatory notifications as required.

Combined Sewer Overflows

As a result of the number, volume and intensity of rain events this summer, there have been numerous combined sewer overflow discharges. While the majority of CSO discharges receive partial treatment (disinfection and dechlorination) as the system becomes surcharged, untreated CSO discharges will also occur. This summer, there has been an estimated total of 361 mg of CSO discharges from MWRA and community systems; 81% of these discharges received treatment.

CSO Discharges by Basin July 1 - August 25, 2023

Basin	Volume, MG	% Treated
Alewife Brook	19.70	0% treated
Upper Mystic River	6.29	100% treated
Mystic/Chelsea Confluence	59.32	97% treated
Upper Charles	2.27	0% treated
Lower Charles	43.23	91% treated
Back Bay Fens	4.41	0% treated

Upper Inner Harbor	177.37	95% treated
Lower Inner Harbor	3.05	0% treated
Fort Point Channel	51.75	49% treated
Reserved Channel	0.88	0% treated
TOTAL	**360.89**	**81% treated**

MWRA, BWSC, Cambridge, Somerville, and/or Chelsea CSOs
Blue text = MWRA, Cambridge, and/or Somerville (variance waters)
** This flow, which includes both CSO and stormwater flow through MWR205A, is not included in the total as the CSO portion is already captured in the Mystic/Chelsea Confluence total.*
Volume estimates for non-MWRA CSOs in August are approximate.

The South Boston Storage Tunnel captured 67.5 MG (through August 29) of combined flow and stormwater this summer, protecting the beaches. While there were numerous postings at local beaches, the South Boston beaches from M Street to Pleasure Bay met all testing standards and were open to swimming every day.

Public Notification, Beaches, and Water Quality

Public notification of CSO and other sewage discharges has been required by MWRA, Somerville and Cambridge since 2020 under the Water Quality Standards Variances for the Charles River basin and Alewife Brook/Upper Mystic River. In 2022, additional public notification requirements applicable throughout Massachusetts were required by the Massachusetts Department of Environmental Protection. These new requirements also specified notification by local Boards of Health when discharges exceed a two-hour duration. Since 2022 was a dry year, there were very few notifications required by the local Boards of Health; during July and August 2022, there were 16 discharges exceeding two hours. However, during July and August 2023 to date, there have already been 44 discharges exceeding two hours (through August 25). The events that exceed two hours are frequently picked up by local news reporting.

In the Boston area, there are no beaches impacted by combined sewer overflows. However, stormwater has affected a number of beaches this year, resulting in red flag water quality postings by the Department of Public Health. Beaches that are impacted by stormwater include Constitution, Malibu, Tenean, and Wollaston beaches. This summer, the combination of beach postings, together with the high number of CSO discharges reported by the press, have resulted in incorrect assumptions that sewage discharges are impacting beach water quality in our area.

While sewage discharges are understandably of concern to the public, we know from modeling and water quality sampling that CSO has short-term impacts on water quality, given that CSO overflows only occur during the larger storms. CSO has elevated bacterial levels; but stormwater discharges also contain high levels of bacteria (though lower than untreated CSO discharges.) Because there is a much larger amount of stormwater compared to CSO discharges, stormwater contributes the highest loadings of bacteria into water bodies around Boston. Furthermore, the majority of CSO discharges receive disinfection treatment, which significantly reduces bacteria levels in those discharges below the levels in stormwater

The requirements of the Combined Sewer Overflow Program are documented in the Long-Term Control Plan and the Water Quality Standards Variances issued for the Charles River, Alewife Brook and Mystic River. Specifically, as part of the variances, there was a requirement to perform

receiving water quality modeling. These models for the rivers demonstrated that under "Typical Year" conditions:

- If CSOs were the only source of bacterial contamination to the rivers, the rivers would be in compliance with state water quality standards 97.9 to 99.9% of the time
- Even if CSOs were eliminated, water quality would still be impacted by stormwater. If stormwater were the only source of bacterial contamination, the rivers would be in compliance with state water quality standards only 48 to 64% of the time
- For the Charles River, the incoming flows over the Watertown Dam also contribute significantly to water quality impairments. (If upstream flows were the only source of bacterial contamination, the river would be in compliance only 59% of the time)
- Stormwater loadings account for 61 to 93% of bacteria in the rivers
- Stormwater is present in every storm (on average 90 rain events per year). CSOs are only present in the larger/more intense storms

Climate Change

Changes to the pattern of rainfall will have impacts on the wastewater system; current climate forecasts predict longer periods of drought and periods of rain of increased intensity and volume. The higher the intensity of the rainfall, the more likely it is that more CSOs will discharge during the storm. Future planning for CSO control in the rivers will incorporate climate change projections.

Drinking Water Quality

The anticipated patterns of precipitation will also affect drinking water systems. In the summer, MWRA uses the Quabbin Aqueduct to transfer water from Quabbin to Wachusett Reservoir for elevation control and for water quality purposes. The transfers usually start in May, as the Wachusett Reservoir begins to develop thermal stratification. If reservoir elevation control allows, higher transfer rates of 300 million gallons per day are ideal and are maintained through November. During the transfers, a Quabbin interflow develops within the water column, as it is colder and denser than the warmer surface water of Wachusett. This interflow will establish itself, travel across the reservoir to the Cosgrove Intake, and eventually to the John J. Carroll Water Treatment Plant, providing water quality benefits that include lower UV254 (a measure of reactive natural organic matter) than Wachusett water alone.

Since July, the summer precipitation events have reduced the ability to maintain higher Quabbin transfer flow rates. Additionally, system water demands have been lower this summer than in past years, resulting in a slower response with reservoir elevation control. Rain events increase the local tributary flows into Wachusett (with higher levels of organic matter), and this combined with less Quabbin flows, has resulted in a decrease in the water quality benefits from Quabbin Reservoir at the treatment plant.

In general, UV254 levels less than 0.06 absorbance per centimeter (Abs/cm) represent high quality water, and UV254 levels above this have impacts on treatment, including increased ozone demand, and chlorine demand and decay. Even with increases in chlorine dose, the decay of chlorine residuals can be significant as water travels through the community distribution systems. Going into the fall, we can anticipate increased coliform bacteria detections in our member community

systems as water demand decreases and water age increases before temperatures cool down for the winter.

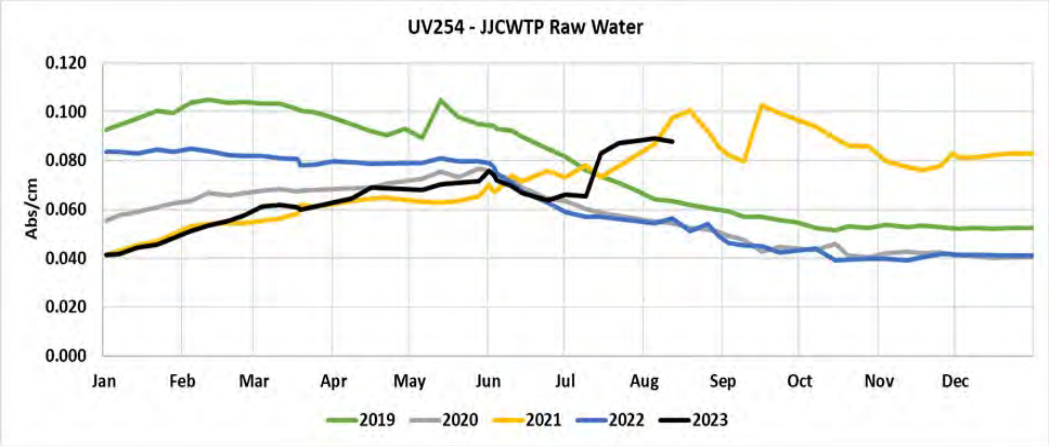

Figure 4: UV254 at Carroll Plant Raw Water Tap

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: September 13, 2023
SUBJECT: Nut Island Headworks Odor Control and HVAC Improvements
Inspections, Evaluations, Design, Construction Administration and Resident Engineering Services
Hazen and Sawyer, P.C.
Contract 7517, Amendment 5

COMMITTEE: Wastewater Policy & Oversight

____ INFORMATION
_X_ VOTE

Brian L. Kubaska, P.E., Chief Engineer
David K. Pottle, P.E., Sr. Program Manager
Preparer/Title

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

At the July 2023 Board meeting, Change Order 15 to construction Contract 7548 - Nut Island Headworks Odor Control and HVAC Improvements was authorized extending the term of Contract 7548 by 90 days, from June 10, 2023 to September 8, 2023. To date, Substantial Completion of Contract 7548 has not been achieved. This proposed Amendment 5 to Contract 7517 adds time and construction phase engineering services to provide continued oversight of Contract 7548 through projected completion of construction by January 2024.

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Amendment 5 to Contract 7517, Nut Island Headworks Odor Control and HVAC Improvements Inspections, Evaluations, Design, Construction Administration and Resident Engineering Services, with Hazen and Sawyer, P.C., increasing the contract amount by $433,117.34, from $8,730,751.51 to $9,163,868.85, and extending the contract term by 215 days, from June 30, 2024 to January 31, 2025.

DISCUSSION:

The Nut Island Headworks, located in the Houghs Neck section of Quincy, was placed into operation in 1998. The facility provides screening and grit removal, flow metering, and flow control for the Deer Island South System Pump Station. The facility receives flow from almost the entire MWRA southern wastewater collection system. The Nut Island Headworks serves 22 communities and has a peak hydraulic capacity of 400 million gallons per day.

Contract 7517 was awarded to Hazen and Sawyer, P.C. in March 2017 to provide inspections, evaluations, preliminary and final design, construction administration and resident inspection services for long-term improvements to the odor control and HVAC systems and other equipment of the facility, some of which was damaged by the January 2016 fire.

January 2016 Fire in Odor Control Room

Removal of Subsurface Roof Required to Access Odor Control Room during January 2016 Fire

The project consists of improvements to the odor control system, including replacement of the carbon adsorbers, fans, ductwork, dampers, and the odor control SCADA system including the programmable logic controller and instrumentation, installation of ductwork to allow bypassing of the wet scrubbers, rehabilitation of the wet scrubbers system, including replacement of chemical tanks, pumps, piping, media and mist eliminators, and installation of roof hatches and a new stairway to improve access into the odor control room. The project also includes improvements to the HVAC system, including replacement of the air handling units, unit heaters, boilers and energy management system, and installation of equipment to provide ventilation setbacks and recirculation, as allowed by code. Additional project improvements include replacement of the underground fuel oil storage tanks serving the standby generator and boilers, replacement of the dewatering system pumps serving

the bottom level, and replacement of the emergency spillway isolation sluice gates.

Construction of the facility improvements began in February 2020 under construction Contract 7548 - Nut Island Headworks Odor Control and HVAC Improvements. Contract 7548 is approximately 96% complete. Continued adjustments in the construction schedule have been primarily driven by a global shortages and supply chain interruptions of raw materials used in fabrication of the fiberglass reinforced plastic (FRP) used for the odor control duct and the ten new carbon vessels. Installation of FRP components was completed in July 2023, which now permit successor activities including floor coating in the odor control room, roof and site restoration above the odor control room to proceed. However, the delays have been compounded given some successor activities, such as site restoration, which includes plantings that can only be performed during March - May and October - December. This further pushes out final completion of contract work.

Roof of Odor Control Room Prior to Replacement of Soils

Odor Control Room Showing Platforms and Ductwork above Carbon Adsorbers

Despite the significant amount of contractor work completed, much work still remains. This includes final testing and adjustment of the HVAC energy management system and odor control SCADA system, removing residual chemicals, cleaning, performing verification testing and placing the wet scrubbers system in standby, painting the bottom level floors, removing temporary construction trailers, equipment and electrical service, repaving and restriping the truck bays driveway and parking area, restoring landscaped and grassed areas to original grades, replacing the irrigation system, planting and seeding landscaped and grassed areas, removing temporary sediment controls, security barriers and fencing. Hazen and Sawyer's presence on this project, including overseeing remaining construction activities and testing, continues to be required. Engineering and construction staff have been working together, despite the uncertainty in the contractor's schedule, to monitor budget and staffing requirements. In addition to construction oversight, Hazen and Sawyer remains responsible for completing operator training, performing final equipment checkouts, completing as-built drawings, and ultimately overseeing completion of punch list items, after substantial completion is declared.

Amendment 1 increased the consultant contract amount by $1,542,925.00 and extended the term by 700 days. The additional time was for completion of design and a longer construction period. The additional costs were for an additional resident engineer for the construction period to support this large complex project, additional onsite technical inspections and project administration, Orion e-construction services, and high performance SCADA HMI graphics services.

Amendment 2 increased the consultant contract amount by $249,817.74 with no increase in contract term. The added costs were for additional contractor submittal review services.

Amendment 3 increased the consultant contract amount by $836,304.00 with no increase in contract term. The added costs were for additional contractor submittal review services, additional contractor request for information review services, and additional SCADA coordination services.

Amendment 4 increased the consultant contract amount by $364,804.00 and extended the term by 215 days. The additional time was to extend the contract duration to align with extension of construction Contract 7548, projected at the time to have a final completion of June 2023. The added costs were for additional engineering services during construction including additional resident engineering and inspection services for the extended term.

This Amendment

Amendment 5 will increase the contract amount by $433,117.34, from $8,730,751.51 to $9,163,868.85, and increase the contract term by 215 days, from June 30, 2024 to January 31, 2025 for the following items:

Additional Time for Engineering and Inspection Services 7 Months

Contract 7517 provides Engineering Services During Construction and Resident Engineering and Inspection Services for Contract 7548 - Nut Island Headworks Odor Control and HVAC Improvements. This contract expires in June 2024. Through Change Order 15, Contract 7548 was to be substantially complete by September 8, 2023. Contract 7548 is behind schedule and substantial completion is now projected to be achieved by October 24, 2023, and final completion

by January 2024. Proposed Amendment 5 adds 7 months to Contract 7517 to allow continued project oversight. The increase in the cost of services associated with this additional time is described below.

Additional Resident Engineering (RE) and Resident Inspection (RI) Services $319,953.48

Additional level of effort is required to cover Resident Engineering services. At the time of Change Order 15, staff believed that reallocating unused budget from other tasks would be sufficient to assure coverage through September 2023. After further discussion with Hazen & Sawyer, and considering the demonstrated uncertainty in completing project work, staff recommend increasing budget to fully staff RE and partially staff RI services through January 2024.

Additional Engineering Services During Construction (ESDC) $113,163.86

Additional level of effort is recommended in the amount of $113,163.86 for providing engineering services during construction including project administration and documentation, startup services, SCADA integration and testing services, and e-construction (Orion) services. At the time Change Order 15 was presented to the Board, staff had anticipated a substantial completion in September. With reallocation of available contract budgets, it was projected that additional ESDC budget would not be needed. However, with further construction delays and greater than originally projected ESDC needs not identified at that time, staff now project the requested amendment amount to ensure the project will be completed with needed oversite, startup support, thorough testing, and complete documents and records.

CONTRACT SUMMARY:

	AMOUNT	TIME	DATED
Contract Amount:	$5,736,900.77	1,736 Days	02/15/17
Amendment 1	$1,542,925.00	700 Days	01/15/20
Amendment 2*	$ 249,817.74	0 Days	02/11/21
Amendment 3	$ 836,304.00	0 Days	06/23/21
Amendment 4*	$ 364,804.00	215 Days	07/19/23
Amendment 5	$ 433,117.34	215 Days	Pending
Adjusted Contract:	$9,163,868.85	2,866 Days	

*Approved under delegated authority

Amendments one through five increase the total contract amount by 59.7%. This large increase over the awarded contract amount is for additional construction phase services. No additional monies were required for design and bidding services. The increased cost is predominantly due to the actual duration of construction significantly exceeding the duration of the construction phase services stipulated in Contract 7517, and the required field staffing exceeding the originally scoped field staffing, which were both established prior to design of the project.

The Nut Island Headworks must operate continuously. Extensive work sequencing has been required to maintain operations during construction. In final design, the construction work elements were identified, durations estimated, and their required order of implementation determined. At that time, critical path analysis of the sequenced work showed 34 months would

be required to perform the construction, 10 months beyond the 24 months of ESDC services provided in Contract 7517. Also, evaluation of the timing and locations of the numerous components of work to be spread across this large facility showed that two full-time field staff would be required to oversee the construction, rather than the one full-time resident engineer originally scoped in Contract 7517.

Based on these schedule and staffing analyses, Amendment 1 added 10 months of ESDC services and an additional resident engineer. Amendment four subsequently added seven months of ESDC services to align with the extended construction duration as projected earlier this year. Including the proposed seven months of ESDC services of pending Amendment five, the extended duration of ESDC services and additional field staffing constitute 60% of the cost increase to Contract 7517.

Amendments two and three added services for which predetermined levels of effort established prior to design of this project had been exceeded, amounting to 31% of the cost increase.

Amendments one and three also added services identified as being required after completion of design (Orion program management information services and high performance SCADA graphics), and during construction (SCADA coordination services). These services constitute the remaining 9% of the cost increase.

BUDGET/FISCAL IMPACT:

The FY24 CIP includes $8,730,752 for Contract 7517. Including this amendment for $433,117.34, the adjusted sub-phase total will be $9,163,868.85, or $433,116.85 over the CIP amount. This amount will be absorbed within the five-year CIP spending cap.

MBE/WBE PARTICIPATION:

The contractual MBE and WBE participation requirements of 7.18% and 5.77%, respectively, remain unchanged by this amendment.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: September 13, 2023
SUBJECT: Update on the John J. Carroll Water Treatment Plant Corrosion Control Optimization Study

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COMMITTEE: Water Policy and Oversight

X INFORMATION
_____ VOTE

Stephen Estes-Smargiassi, Director, Planning & Sustainability
Patricia Mallett, P.E., Senior Program Manager
Anna Hayden, P.E., Project Manager
Preparer/Title

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

RECOMMENDATION:

For information only. This staff summary provides an update on Lead and Copper Rule Revisions, MWRA's proactive approach to compliance over the past several years, and changes since staff last briefed the Board on this topic on November 16, 2022.

DISCUSSION:

MWRA currently provides corrosion control treatment by adjusting the pH and alkalinity of the water, which has resulted in an approximately 90 percent reduction in lead levels since treatment was initiated in the mid-1990s. Changes in the public's expectations and in EPA's regulations suggest that additional actions to reduce lead levels at the tap may be needed. These include the ongoing removal of lead service lines, and could include changes in corrosion control treatment. EPA promulgated the Lead and Copper Rule Revisions on December 16, 2021, with compliance required by October 16, 2024. The Lead and Copper Rule Revisions added a new lead trigger level of ten parts per billion (ppb), compared to the current action level of 15 ppb. If this level is exceeded, additional actions to control corrosion are required. Recent lead sampling within the distribution system has not exceeded the new ten ppb trigger level, however, changes in the sampling protocol in the Lead and Copper Rule Revisions or additional changes that EPA is considering (as described below) could require the re-optimization of the Authority's corrosion chemical treatment to minimize lead in the water distribution system.

John J. Carroll Water Treatment Plant

Lead Pipe Rig Experiment

As discussed in previous updates, in anticipation of the Lead and Copper Rule Revisions and the potential need to evaluate corrosion control treatment options, staff designed and built six lead pipe rigs made with lead service lines harvested from Boston homes. Construction of the lead pipe rigs was completed in September 2021. 'Harvesting' of lead service lines disturbs the scale inside the pipes, so an acclimation period is required to restore protective scale, which ensures that any changes in lead concentrations are due to the new corrosion control strategy and not the restoration of disrupted scales. The acclimation period ran from October 2021 through July 2023. Once the pipes were acclimated to Carroll Water Treatment Plant finished water, the chemical addition began in August 2023. The ability to run an extended acclimation period, thereby improving the experimental results, was one reason for beginning the work prior to any imposed regulatory requirements or deadlines.

During construction of the lead pipe rigs and the acclimation phase, MWRA staff convened a Stakeholder Panel comprised of industry experts in lead and copper corrosion control and water distribution systems. The panel conducted three workshops that were attended by staff from the MWRA Advisory Board, EPA, MassDEP, and MWRA member communities. The purpose of the Stakeholder Panel process was to provide recommendations for conducting the pipe rig study, including development of the study protocol and guidance on the formulation of the MWRA's future corrosion control strategy.

To assist MWRA staff in conducting the corrosion control study, staff procured the services of CDM Smith in January 2023 to develop the Experimental Plan for a Corrosion Control Study, analysis of the study data and preparation of a Corrosion Control Study Report and a Conceptual Design Report for the selected treatment alternative (if changes are recommended). CDM Smith conducted a statistical analysis of the data collected through July 2023 to assess the condition of the lead pipe rigs. The data was analyzed using four criteria to determine if the pipes had acclimatized and were ready to begin the experiment. Based on the statistical evaluation performed, along with the review of an Expert Panel, it was determined that four of the pipe rigs were sufficiently acclimatized to begin the experimental phase as shown in the figure below.

Data	Parameter	Rig 1				Rig 2				Rig 3				Rig 4				Rig 5				Rig 6			
		a	b	c	d	a	b	c	d	a	b	c	d	a	b	c	d	a	b	c	d	a	b	c	d
12/15/2022 - 06/08/2023	Visual with stable trendline	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Number of spikes (≤1)	Y	N	N	Y	Y	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Correlation coefficient ≤0.5	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N
	Zero in 95% CI of slope	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Highlight pipe that met the criteria		Y			Y	Y				Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Rig Ready For Next Phase		NO				NO				**YES**				**YES**				**YES**				**YES**			

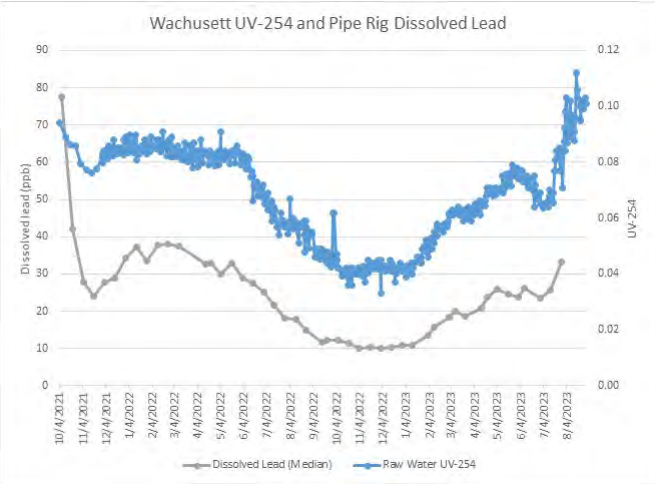
Lead Pipe Rig Readiness to Begin Experiment. Each rig has four pipes (a-d) that should meet 4 criteria (Parameters). It was decided that the rig is ready for the next phase if three of the four pipes met all four criteria.

CDM Smith assembled an Expert Panel to obtain their input on evaluation of the experiment data and a recommendation for a final corrosion control strategy. The Expert Panel includes five industry experts in lead and copper corrosion control and water distribution systems. Two members participated in the prior Stakeholder process.

The experiment will be conducted with three test conditions (phosphate doses of 1 mg/l, 2 mg/l and 3 mg/l) and one control (current treatment). One of the two remaining rigs will duplicate the lowest phosphate dose, 1 mg/l, and scale analysis will be performed on the pipes in the last rig based on input from the Expert Panel. MWRA staff began the addition of phosphate to the lead pipe rigs on August 7, 2023. Staff anticipate that the experimental phase will last approximately one and a quarter years (five seasons) with detailed data analysis to follow and recommendations in late 2024 or early 2025.

The corrosion control study includes an analysis of the potential impacts of phosphate addition on the distribution system and receiving waters, including the impact of phosphate addition on the distribution system biofilm, delivered water quality, changes in taste or appearance, local wastewater treatment plants, MWRA emergency open reservoirs, and partially-served communities. While the Lead and Copper Rule Revisions do not factor these impacts into the selection of the optimal corrosion control treatment alternative, the project team believes these factors must be considered in the ultimate decision making process.

During the acclimation phase of the study, staff have been collecting water quality data from the lead pipe rigs every two weeks. This data indicates a correlation between the raw water organic material as measured by UV-254 (a measure of reactive natural organic matter) and dissolved lead levels as shown in the graph. This summer, Massachusetts has experienced multiple extreme wet weather events as detailed in the Recent Storm Impacts on MWRA's Wastewater System and Receiving Waters staff summary to be presented at this Board meeting. In a typical summer, Quabbin Reservoir transfers to Wachusett Reservoir are required to meet the



Finished Water Dissolved Lead & Raw Water UV-254

summer water demand. These transfers result in improved water quality, because Quabbin water has lower organic material than Wachusett water, as measured by UV-254. This year, due to all the rain, the Quabbin transfers have been reduced, resulting in higher UV-254 measurements for raw Carroll Water Treatment Plant water. Therefore, one potential consequence of the extreme wet weather events is higher lead levels in finished water, which could result in exceedances of the LCR Action or Trigger Levels for some of our member communities.

Lead Service Line Replacement:

It is clear from the data collected during the annual Lead and Copper Rule sampling that homes with lead service lines have substantially higher reported lead levels than those with copper pipes and lead solder. In parallel with the corrosion control study, MWRA staff continue to work with member communities to encourage and fund replacement of existing lead service lines. In March 2016, the Board authorized $100 million in ten-year interest-free loans to be available to communities solely for efforts to fully replace lead service lines. Through September 2023, MWRA has distributed a total of $40 million in Lead Service Line Replacement Program funding to 16 communities.

As part of the Lead and Copper Rule Revisions, by October 2024 communities are required to produce inventories of all their service lines to identify those locations with service lines made of lead or other lead bearing materials and to develop plans to safely and completely replace them. Staff will be conducting another lead forum for communities on September 26, 2023, to help prepare communities for those requirements. The training will focus on both those activities that must be completed by October 2024, as well as additional changes that will begin after that date.

As community data from the inventories becomes available, staff will update the Board on the status of community service line programs.

Potential Additional Changes to EPA's Lead and Copper Rule:

In 2021, as it was finalizing the Lead and Copper Rule Revisions, EPA indicated that it would be issuing additional changes to the rule. It is anticipated that EPA will issue the Lead and Copper Rule Improvements (as they will be titled) in draft form this fall, possibly in October, with the final rule changes expected by October 2024. Based on EPA's and the White House's public pronouncements, staff expect that the changes could include additional changes to the sampling protocol that will have the effect of increasing reported lead levels, potentially a reduction of the Action Level from 15 parts per billion to ten or five, and perhaps a mandate for the replacement of all lead service lines within ten years. The regulatory changes will likely result in more communities exceeding the Action Level and being required to issue public notification within 24 hours, the potential for MWRA to be mandated to complete a corrosion control study, and efforts to replace lead service lines faster.

Staff expect to update the Board with more specifics on the rule changes when they are released, possibly in November, along with the results of the regular annual lead testing that is now underway.

BUDGET/FISCAL IMPACTS:

MWRA began modern effective corrosion control treatment to reduce lead and copper levels at the tap in 1997. MWRA's corrosion control treatment involves raising the pH and alkalinity in the water to make it stable and non-corrosive, reducing the potential for both lead and copper to leach from customers' home plumbing. The average annual cost for corrosion control is approximately $3.6 million. The results of the Corrosion Control Optimization study may recommend changing MWRA's corrosion control treatment, which would require the construction of a capital project to implement the recommended treatment alternative.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: September 13, 2023
SUBJECT: Memorandum of Agreement with the U.S. Army Corps of Engineers and the Massachusetts Historical Commission to Facilitate Federal Permitting for the Removal of the Quinapoxet River Dam

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COMMITTEE: Administration, Finance and Audit

____ INFORMATION
__X__ VOTE

Rebecca Weidman, Deputy Chief Operating Officer
Katherine Ronan, Project Manager, Environmental Permitting
Preparer/Title

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

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to execute a Memorandum of Agreement with the U.S. Army Corps of Engineers and the Massachusetts Historical Commission, substantially in the form attached hereto, in order for the Army Corps to proceed with an anticipated Clean Water Act Section 404 Permit required for the removal of the Quinapoxet Dam at MWRA's Oakdale Power Station facility in West Boylston.

DISCUSSION:

The Quinapoxet Dam is located on River Road along the Quinapoxet River in West Boylston. The dam is adjacent to MWRA's Quabbin Aqueduct Shaft 1/Oakdale Power Station and the Quabbin Aqueduct Service Building. Water transferred from the Quabbin Reservoir enters the Wachusett Reservoir at this location. The dam is located upstream of two basins serving the Wachusett Reservoir, the Quinapoxet Basin and Thomas Basin.

The Quinapoxet Dam is a 250-foot-long, 18-foot-high earthen embankment and stone masonry structure. The dam features a 135-foot-long, nine-foot high stone masonry and concrete arched spillway, as well as an 86-foot-long, four-foot-wide concrete weir fish ladder along the northern river bank. The dam was constructed below the pre-existing grade of the riverbed and material downstream of the dam was dredged to create a drop in elevation as the Quinapoxet River reaches it confluence with the Wachusett Reservoir.

To the right in this photo, the Quinapoxet Dam spans the Quinapoxet River. To the left, MWRA's Quabbin Aqueduct Shaft 1 Oakdale Power Station and Quabbin Aqueduct Service Building

MWRA, together with the Massachusetts Department of Conservation and Recreation Division of Water Supply Protection, and

Massachusetts Division of Ecological Restoration, propose to remove the dam and restore this reach of the Quinapoxet River to its natural conditions. This interagency project aims to achieve considerable environmental goals, such as restoration of in-stream habitat, enabling fish and wildlife passage, maintaining public river access, maintaining flood control, protecting water quality by restoring the natural function of the river and preventing the potential for any sediment slugs traveling to the reservoir should a dam failure occur, ensuring climate change resiliency, and reducing long term maintenance costs. Specifically, the project involves removal of the dam, river channel restoration, management of in-stream sediment to prevent impacts to the reservoir, construction of an earthen berm to separate the main channel of the river from the aqueduct outlet, and construction of an impoundment and accessible pedestrian path to the river's edge. Because of the dam's unique design, removal will not involve the magnitude of sediment management that occurs with many dam removal projects. Native substrate from behind the dam will be used for river channel restoration.

The Quinapoxet Dam concrete arched spillway

Built in 1905, the Quinapoxet Dam is located within the Quabbin Aqueduct Historic Area, which also includes the Quabbin Aqueduct Shaft 1 Building and the Quabbin Aqueduct Outlet Service Building; they are all also eligible for listing on the National Register of Historic Places. Due to the historic status of the dam and surrounding area, MWRA has been in close coordination with the Massachusetts Historical Commission (MHC), the Massachusetts Board of Underwater Archeological Resources, various tribal organizations, and the West Boylston Historical Commission regarding the project. At the request of MHC, MWRA and its consultant completed an Intensive (Locational) Archeological Survey for the project area, which involved desktop research, field observations, hand core soil bores, and shovel test pits. The survey did not identify any potentially significant archaeological sites and concluded that no further archeological survey was required for the project as proposed. At the request of MHC, MWRA and its consultant submitted updated MHC historic property inventory forms, which are used to document and record information on historic resources in the Commonwealth. These inventory forms included narratives, as well as historical and contemporary photographs and drawings.

An Army Corps Clean Water Act Section 404 permit is required for the discharge of dredged fill material into all waters of the United States. The Quinapoxet River is considered a water of the United States and the discharge of fill materials to the river is anticipated for the dam removal and channel reconstruction work. Temporary dewatering during construction associated with removal of the dam will also be required. Due to this Army Corps federal permitting requirement, the project is also subject to review under Section 106 of the National Historic Preservation Act, which requires that federal agencies take into account the effects of their undertakings on historic properties listed in, or eligible for inclusion on, the National Register of Historic Places. The Army Corps and MHC have determined that removal of the dam will have an "adverse effect" on the dam, the Quabbin Aqueduct Historic Area which are properties eligible for listing on the National Register of Historic Places. Therefore, prior to issuance of a Section 404 Permit, a Memorandum of Agreement must be executed between the Army Corps, MHC, and MWRA outlining mitigation measures to be performed by MWRA. Mitigation measures include updated historic property inventory forms, which have already been submitted by MWRA and accepted by MHC. The MOA

also includes stipulations regarding notification of unanticipated discoveries of historic properties during construction. The MOA has a term of three years from the date of execution, as well as provisions related to dispute resolution, amendments, and termination. The MOA was signed by MHC on August 7, 2023, and would be executed by the Army Corps after signature by MWRA.

ATTACHMENT:

Attachment A: MOA Between the Army Corps, MHC and MWRA Regarding the Removal of the Quinapoxet River Circular Control Dam in West Boylston, Massachusetts

MEMORANDUM OF AGREEMENT
BETWEEN THE U.S. ARMY CORPS OF ENGINEERS, THE MASSACHUSETTS STATE HISTORIC PRESERVATION OFFICER, AND THE MASSACHUSETTS WATER RESOURCES AUTHORITY REGARDING THE REMOVAL OF THE QUINAPOXET RIVER CIRCULAR CONTROL DAM IN WEST BOYLSTON, MASSACHUSETTS

WHEREAS the U.S. Army Corps of Engineers (Corps) plans to issue a Department of the Army Permit to the Massachusetts Water Resources Authority (MWRA) for the Quinapoxet Dam removal project in West Boylston, Massachusetts ("the undertaking") pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344);

WHEREAS, the undertaking consists of the complete removal of the 1905 Quinapoxet River Circular Control Dam and restoration of the riverbed to a more natural state; and

WHEREAS, the Corps has defined the scope of the undertaking to include the permit area, consisting of the entire footprint of in-river work plus areas of immediately adjacent uplands required for access to complete the work;

WHEREAS, the Corps issuance of a Section 404 permit is subject to review under Section 106 of the National Historic Preservation Act (NHPA), as amended (54 U.S.C. 306108), which requires federal agencies to take into account the effects of their undertakings on historic properties listed in or eligible for inclusion in the National Register of Historic Places and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment; and

WHEREAS, the Corps has determined that the undertaking shall have an adverse effect on the Quinapoxet River Circular Control Dam and the Quabbin Aqueduct Historic Area, properties eligible for listing on the National Register of Historic Places, and has consulted with the State Historic Preservation Officer (SHPO) pursuant to Section 106 of the NHPA, as amended, and all applicable regulations; Adverse effects will result from the complete removal of the existing dam structure; and

WHEREAS, the Corps has consulted with the MWRA regarding the effects of the undertaking on historic properties and has invited them to sign this Memorandum of Agreement (MOA) as invited signatories pursuant to 36 CFR 800.6(c)(2); and

WHEREAS, in accordance with 36 CFR § 800.6(a)(l), the Corps has notified the ACHP by letter dated March 17, 2023, of its adverse effect determination with specified documentation, and the ACHP has chosen *not* to participate in the consultation pursuant to 36 CFR §800.6(a)(l)(iii); and

NOW, THEREFORE, the Corps, the SHPO, and MWRA agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties. The Corps will incorporate the following stipulations as conditions to any Section 404 permit issued to MWRA for this project.

STIPULATIONS

The Corps shall ensure that the following measures are carried out in consultation with the SHPO, and MWRA shall provide proof of compliance with such measures to the Corps and the SHPO:

I. DOCUMENTATION

A. Updated Massachusetts Historical Commission (MHC) inventory forms have been provided for the Quinapoxet River Circular Control Dam (Form F, Structure), Quabbin Aqueduct Outlet Chamber (Form F), West Boylston Portion of the Quabbin Aqueduct (Form A, Area), and Quabbin Aqueduct Outlet Works (Form A).

II. UNANTICIPATED DISCOVERIES

If previously unidentified historic properties are discovered during Project construction that may be affected by the undertaking, the MWRA shall notify the signatories of the discovery and cease all work at that location until the requirements of 54 U.S.C. § 306108, and all applicable regulations, have been satisfied.

III. DURATION

This MOA shall be null and void if its terms are not carried out within three (3) years from the date of its execution. Prior to such time, USACE may consult with the other signatories to reconsider the terms of the MOA and amend it in accordance with Stipulation V, below.

IV. DISPUTE RESOLUTION

At any time during the implementation of the measures stipulated in this MOA, should an objection to any such measure or its manner of implementation be raised by a signatory, the Corps will notify all signatories to the agreement, take the objection into account, and work as needed to resolve the objection. The disputing signatory Parties will first strive to resolve matters informally. If the signatories cannot agree regarding the dispute, the Corps shall then initiate appropriate actions in accordance with the applicable provisions of 36 CFR 800.

V. AMENDMENTS

This MOA may be amended when such an amendment is agreed to in writing by all signatories. The amendment shall be effective on the date a copy signed by all of the signatories is filed with the ACHP.

VI. TERMINATION

If any signatory or invited signatory to this MOA determines that its terms shall not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per Stipulation V, above. If within thirty (30) days an amendment cannot be reached, any signatory or invited signatory may terminate the MOA upon written notification to the other signatories and invited signatories.

Once the MOA is terminated, and prior to work continuing on the undertaking, the Corps must either (a) execute an MOA pursuant to 36 CFR § 800.6 or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. The Corps shall notify the signatories as to the course of action it shall pursue.

Execution of this MOA by the Corps, SHPO, and MWRA, and implementation of its terms evidence that the Corps has taken into account the effects of this undertaking on historic properties and satisfied its obligations under Section 106 of the NHPA.

SIGNATORY:

_____ _____

Tammy Turley
Chief, Regulatory Division
New England District
U.S. Army Corps of Engineers

Date

Note: Signatures continued next page

SIGNATORY:

Brona Simon

Brona Simon
Executive Director
State Historic Preservation Officer
Massachusetts Historical Commission

August 7, 2023

Date

Note: Signatures continued next page

INVITED SIGNATORY:

_____ _____

Frederick Laskey
Executive Director
Massachusetts Water Resources Authority

Date

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: September 13, 2023
SUBJECT: Quinapoxet Dam Removal Design, Permitting and Engineering Services During Construction
SLR International Corporation
Contract 7347, Amendment 2

COMMITTEE: Water Policy & Oversight

_____INFORMATION
_X__VOTE

Valerie Moran, P.E., Director, Waterworks
John J. Gregoire, Program Manager, Reservoir Operations
Preparer/Title

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

RECOMMENDATION:

To approve Amendment 2 to Contract 7347, Quinapoxet Dam Removal, Design and Engineering Services During Construction, with SLR International Corporation to increase the contract amount by $194,986.60, from $425,442.07 to $620,428.67and increase the contract term by 24 months from April 1, 2024 to April 1, 2026.

DISCUSSION:

The Quinapoxet Dam is located on the Quinapoxet River, immediately upstream of Wachusett Reservoir and directly adjacent to Quabbin Aqueduct's Shaft 1 Oakdale Power Station. The Quinapoxet Dam has been deemed obsolete and is planned for removal. Construction Contract 7348, for the removal of the Dam and restoration of the Quinapoxet River was advertised on August 12, 2023. A prebid site visit was held on August 24, 2023. Bids are due on September 15, 2023.

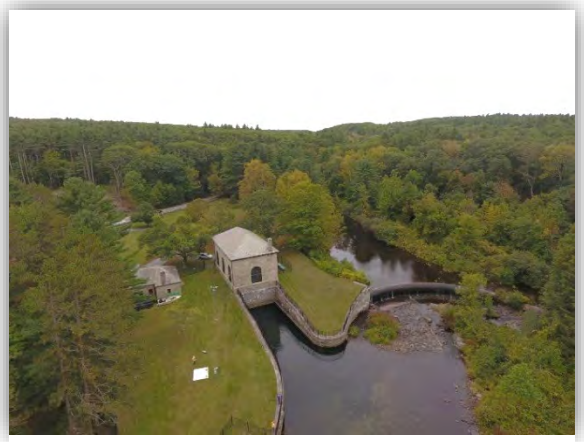


Figure 1: Oakdale/Shaft 1 (L) and Quinapoxet Dam (R)

On September 18, 2019, the Board approved the award of Contract 7347 to Milone & MacBroom Inc. (later assumed by SLR International Corporation under an acquisition and merger), for design, permitting and engineering services during construction for the dam removal and restoration of riverine conditions.

Amendment 1 to Contract 7437 was approved by the Board in April 2022 and extended the contract term by 24 months but did not increase the contract amount. This contract extension was due to the COVID- 19 pandemic and permit delays making the original schedule unachievable.

This Amendment

Additional Time 24 months

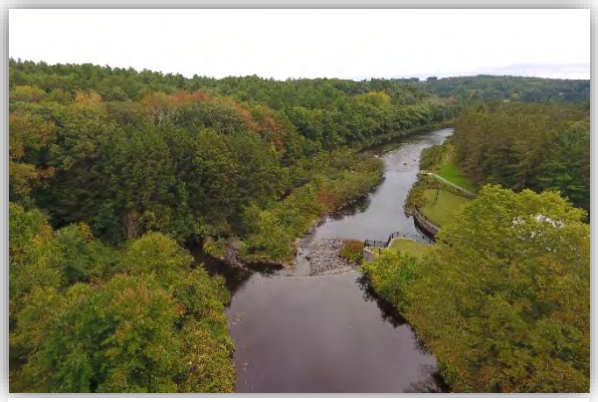


Figure 2: Quinapoxet Dam view from upstream

As described in the Amendment 1 staff summary, additional permitting work was required which delayed the project in 2022. Staff needed to follow the DCR Green Docket Process; a new permit screening process deployed in 2022, which was not included in the original design contract. DCR's Green Docket Process requires that any permit or approval for work on DCR land and facilities (in this case Quinapoxet Dam) be reviewed by DCR staff prior to finalizing and submitting permit applications and checklists. Consequently, MWRA had to submit all the permits[1] to DCR for review and approval, resulting in additional work such as responding to comments and documenting responses to each regulatory permit reviewer. At the time, the full extent of consultant effort necessary for the additional Green Docket permitting was unknown due to the brand new process.

The Army Corps of Engineers 404 Clean Water Act General Permit for Massachusetts expired on April 5, 2023, prior to the Army Corps acting on MWRA's permit application. Delay in issuance of the General Permit further delayed the permitting process for this project. Revisions were also required by MassDEP to the Chapter 91 Waterways License drawings for unique drawing standards with line weight, shading, and hatching to meet their requirements. The MassDEP Chapter 91 license and Army Corps 404 Permit are still pending. The Chapter 91 license is currently in internal review and it is anticipated that it will be issued soon. Staff anticipate that the Army Corps permit will be issued following execution of the Memorandum of Agreement with the Massachusetts Historical Commission, as presented separately at this Board of Director's meeting. There is an important discrete construction window for this project, which can only occur between October and April when the seasonal Quabbin transfer is normally off. Since bids are due on September 15, 2023, staff are requesting a 24-month extension to the consultant contract to

- [1] Massachusetts Executive Office of Energy and Environmental Affairs, Massachusetts Environmental Policy Act, Expanded Environmental Notification Form waiver granted from requirement to prepare Environmental Impact Report.
- Massachusetts Department of Environmental Protection, Bureau of Resource Protection – Wetlands, WPA Form 3 – Notice of Intent, Ecological Restoration Project, Order of Conditions.
- Massachusetts Department of Environmental Protection, Combined Permit/401 Water Quality Certification, Application for BRP WW 07 & 10, 401 Water Quality Certification for Dredging and Fill/Excavation.
- Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Waterways Regulation Program, BRP WW 01 – Water-Dependent License/Permit Application.
- U.S. Army Corps of Engineers, Application for Department of the Army Permit, General Permit 23, Preconstruction Notification.
- Massachusetts Department of Conservation and Recreation Office of Dam Safety Chapter 253 Permit Waiver

account for the delays due to the additional permitting requirements and to include next year's construction window.

Additional Permitting Requirements $45,464.07

As discussed, Amendment 1 increased contract time for staff to work through the DCR permit process and subsequent permitting. No increase in contract amount was requested at that time, as the full extent of the consultant effort required at that time was not identified. Amendment 2 accounts for additional level of effort required to follow the DCR process into permit application development. Additional permitting level of effort was necessary to meet Army Corps requirements that required revisions to drawings submittals to meet unique sizing requirements and for additional MassDEP drawing requirements.

Design Changes to Modify Testing Requirements $6,646.29

The initial design approach envisioned MWRA procuring a separate testing contractor for turbidity monitoring during construction and post construction, and for structural monitoring of the Oakdale Facility during dam demolition. During final design staff determined that responsibility for arranging testing should be assigned to the construction contractor via sub consultants, in order to assure better coordination and scheduling of work. Consequently, the final plans and specifications required changes to reflect this.

Increase in Submittals $45,464.07

During final design as the range and scope of the requirements for the contractor were being developed, it became apparent that the original contract assumption of 30 contractor submittals was insufficient. With the final design completed, staff estimate that review of 96 contractor submittals will be necessary.

On-site Meetings $45,738.66

Given the sensitive nature of this project, staff believe increased project oversight including additional onsite meetings will be required to assure proper protection of Wachusett Reservoir water quality. The original contract required ten meetings; staff recommend increasing this to 24.

Change Order Review $6,954.24

Once final design was completed, based on the complexity of the project staff recommend an increase in scope for review of proposed change orders and final change orders from five each to ten each.

Contract administration $11,027.20

Additional level of effort is required for administrative contract support, invoicing, progress reports and daily project management in proportion to the increase in contract duration.

Allowance $34,000.00

Staff recommend creation of a technical assistance allowance of $34,000 to account for unanticipated services necessary for successful completion of the project. Funds for this task would only be expended following MWRA's task order approval process.

CONTRACT SUMMARY:

	AMOUNT	TIME	DATED
Original Contract:	$425,442.07	24 Months	2/20/2020
Amendment 1:	$0	24 Months	4/1/2024
Amendment 2:	$194.986.60	24 Months	Pending
Adjusted Contract:	$620,428.67	72 Months	

BUDGET/FISCAL IMPACTS:

Amendment 2 is for a time extension, additional tasks and additional funding of $194,986.60. The FY24 Capital Improvement Plan includes $425,442. The overage of $194,986.60 can be absorbed within the five-year CIP spending cap. Staff will continue to pursue Federal and State grants for construction.

MBE/WBE PARTICIPATION:

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

STAFF SUMMARY

TO: Board of Director
FROM: Frederick A Laskey, Executive Director
DATE: September 13, 2023
SUBJECT: PCR Amendments - September 2023

COMMITTEE: Personnel and Compensation

____ INFORMATION
__X__ VOTE

Wendy Chu, Director of Human Resources
Preparer/Title

Michele S. Gillen
Director, Administration

RECOMMENDATION:

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

DISCUSSION:

The Position Control Register (PCR) 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.

September 2023 PCR Amendments

There are six PCR Amendments this month.

There are three PCR amendments related to the upcoming retirement of the Special Assistant to the Executive Director. The duties of the Special Assistant will be spread among three positions: The first is to change that title and grade to Chief of Staff, NU 14 to better reflect the duties assigned to that position (as described in a separate staff summary). The second is to change the title and salary of the Director, Intergovernmental Affairs to Director, Public Affairs to reflect the increased responsibilities, including six direct reports and management of media relations. The third is a grade change to the Assistant to the Executive Director to reflect the increased responsibilities of this position.

Organizational Changes:

1. Title and grade change to one filled position in the Executive Division from Special Assistant to the Executive Director Non-Union Grade 15 to Chief of Staff Non-Union Grade 14 due to new responsibilities as part of a reorganization.

2. Title change and salary adjustment to one filled position in the Executive Division, Public Affairs Department from Director, Intergovernmental Affairs Non-Union Grade 15 to Director, Public Affairs Non-Union Grade 15 due to increase in scope of responsibilities and staff supervised as part of a reorganization.
3. Grade change and salary adjustment to one filled position in the Executive Division from Assistant to the Executive Director, Confidential Unit 6 Grade 9 to Assistant to the Executive Director, Confidential Unit 6 Grade 11 due to new responsibilities as part of a reorganization.
4. Title and grade change to one vacant position in the Operations Division, Metro Operations Department from Heavy Equipment Operator I Unit 3 Grade 17 to Heavy Equipment Operator II Unit 3 Grade 19 to better meet staffing needs.
5. Title and grade change to one vacant position in the Operations Division, Waterworks Department from Heavy Equipment Operator Unit 3 Grade 15 to Heavy Equipment Operator II Unit 3 Grade 19 to better meet staffing needs.
6. Creation of a new position in the Operations Division, Deer Island Thermal Power Plant Department for a Third Class Engineer, Unit 3 Grade 20 to better meet staffing needs.

BUDGET/FISCAL IMPACT:

The annualized budget impact of these PCR amendments will be a maximum cost of $128,357. Staff will ensure that the cost associated with these PCR amendments will not result in spending over the approved FY24 Wages and Salaries budget.

ATTACHMENTS:

Job Descriptions

MASSACHUSETTS WATER RESOURCES AUTHORITY
POSITION CONTROL REGISTER AMENDMENTS
FISCAL YEAR 2024

PCR AMENDMENTS REQUIRING BOARD APPROVAL - September 13, 2023

Number	Current PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Current/Budget Salary	Estimated New Salary			Estimated Annual $ Impact			Reason For Amendment
B43	Executive Exec Office 1210011	F	T,G	Special Assistant to the Executive Director	NU	15	Chief of Staff	NU	14	$150,197	$125,000	-	$125,000	-$25,197	-	-$25,197	Position is being regraded due to new responsibilities as part of a reorganization.
B44	Executive Public Affairs 8250020	F	T,S	Director, Intergovernmental Affairs	NU	15	Director, Public Affairs	NU	15	$150,197	$165,216	-	$165,216	$15,019	-	$15,019	Title change and salary adjustment due to increase in scope of responsibilities and staff supervised as part of a reorganization.
B45	Executive Exec Office 1210011	N/A	N/A	Assistant to the Executive Director	C6	9	Assistant to the Executive Director	C6	11	$97,638	$108,236	-	$108,236	$10,598	-	$10,598	Position is being regraded due to new responsibilities as part of a reorganization.
B46	Operations Metro Operations 3383026	V	T,G	Heavy Equipment Operator I	3	17	Heavy Equipment Operator II	3	19	$88,716	$67,825	-	$97,478	-$20,891	-	$8,762	To better meet staffing needs.
B47	Operations Waterworks 3383029	V	T,G	Heavy Equipment Operator	3	15	Heavy Equipment Operator II	3	19	$80,046	$67,825	-	$97,478	-$12,221	-	$17,432	To better meet staffing needs.
B48	Operations DI Thermal Plant TBD	N/A	N/A	N/A	N/A	N/A	Third Class Engineer	3	20	$0	$71,091	-	$101,743	$71,091	-	$101,743	To better meet staffing needs.
				BOARD TOTAL=	6						**TOTAL:**			$38,399	-	$128,357	

MWRA
POSITION DESCRIPTION

OLD

POSITION: Special Assistant to Executive Director

DIVISION: Executive

DEPARTMENT: Office of Executive Director

BASIC PURPOSE:

Acts on behalf of the Executive Office to disseminate information, communicate ideas and monitor situations across the agency. Develops, executes and supervises basic MWRA communication programs, including media and public information activities, school education activities and a wide range of print and electronic publications. Works in coordination with all areas of the MWRA to ensure that activities are connected to its communications programs.

SUPERVISION RECEIVED:

Works under the general supervision of the Executive Director.

SUPERVISION EXERCISED:

Exercises supervision of design, multi-media and school education staff. Supervises the activities of external vendors and contractors within these areas. Additionally, has responsibility for the supervision of the Assistant to the Board of Directors.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Handles complex situations and multiple responsibilities simultaneously mixing long-term projects with the urgency of immediate demands, collaborating with staff at all levels of the organization.

- Deals with confidential information and acts as a liaison between the Executive Director and other constituencies, both internal and external.

- Serves as MWRA's principal point-of-contact with print and electronic news media. This includes outreach to the media as well as response to inquiries, and involves designating, coordinating and preparing the other MWRA employees who may appropriately speak for the MWRA on specific topics, as well as serving as an MWRA spokesperson in his/her own right. Also includes responsibility for preparation of news releases as well as monitoring the press for issues of importance to MWRA.

- Assists and supports MWRA senior managers and the Board of Directors in developing and executing overall communications strategies and programs for the MWRA.

- Coordinates and participates in the preparation of agendas and the assembly of information and data to be presented to the MWRA Board of Directors.

- Coordinates, reviews and revises staff summaries presented for the approval of the Executive Director.

- Supervises maintenance, updating and administration of MWRA's internal and external websites.

- Directs the publication of annual reports, fact sheets, newsletters, brochures and other MWRA publications for media or public distribution, in close coordination with others at MWRA. Also assists in the preparation of communications materials for distribution to communities and other customer constituencies, as well as school education programs.

- Manages the preparation of public presentations, speeches for the Executive Director and senior MWRA managers.

- Edits and approves documents for internal and external distribution.

- Organizes special events and oversees the school education program.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Writing, analytical and other communications skills as normally attained through a four (4) year college program in communications, public policy, or a professional discipline directly related to MWRA's programs. An advanced degree preferred; and

(B) Professional experience in communications, policy development or administration as acquired through eight (8) to ten (10) years of related experience with at least five (5) years in a management or supervisory position. Substantive experience with technical areas of MWRA's water supply and/or wastewater missions is strongly preferred; or

(C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Skills in public speaking, public presentation and media presentation.

(B) Writing and editing skills including the preparation and presentation skills in common computer formats such as Power Point. Also basic website skills.

(C) Ability to provide leadership and support to subordinate employees in the areas under supervision as well as colleagues elsewhere in the agency.

(D) Ability to inspire trust and confidence in journalists, other customers of MWRA's communications efforts and the general public

SPECIAL REQUIREMENTS:

A valid Massachusetts Class D Motor Vehicle Operators License.

TOOLS AND EQUIPMENT USED:

Office equipment as normally associated with the use of telephone, page-net and two-way radio equipment and other standard executive office equipment such as a personal computer including word processing and applicable software, fax and copy machines. An automobile must be used for local travel. Personal safety equipment must be used on construction and operations sites**.**

PHYSICAL DEMANDS:

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

While performing the duties of this job, the employee is regularly required to sit, stand, walk, read, listen and talk. Attendance and presentations at meeting and public forums is regularly required. The employee is regularly required to use the hands to manipulate or operate office equipment and other tools and equipment (including personal safety equipment) described above. The employee requires regular travel throughout the MWRA service area and occasionally

elsewhere within or outside the Commonwealth of Massachusetts.

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

Agency activities for which the employee is responsible are performed 24 hours a day, 365 days per year and may require the employee's attention and attendance at any time and in emergencies, for extended periods.

WORK ENVIRONMENT:

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

While performing the duties of this job**,** the employee regularly works in an office environment, in public meeting spaces and in field and plant environments in, around and ancillary to the facilities operated by and/or under construction by the agency.

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

February 2012

MWRA
POSITION DESCRIPTION

NEW

POSITION: Chief of Staff

DIVISION: Executive

DEPARTMENT: Office of the Executive Director

BASIC PURPOSE:

Acts on behalf of the Executive Office to disseminate information, communicate ideas and monitor situations across the agency. Partners with senior managers to conduct and implement strategic planning.

SUPERVISION RECEIVED:

Works under the general supervision of the Executive Director.

SUPERVISION EXERCISED:

May provide functional supervision to Special Assistant to Executive Director on special projects.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Handles complex situations and multiple responsibilities simultaneously mixing long-term projects with the urgency of immediate demands, collaborating with staff at all levels of the organization.

- Deals with confidential information and acts as a liaison between the Executive Director and other constituencies, both internal and external.

- Assists and communicates with senior managers in decision-making, program management, and initiative implementation.

- Assists and supports MWRA senior managers and the Board of Directors in developing and executing overall communications strategies and programs for the MWRA.

- Coordinates and participates in the preparation of agendas and the assembly of information and data to be presented to the MWRA Board of Directors.

- Coordinates, reviews, and revises staff summaries presented for the approval of the Executive Director.

- Assists with the publication of annual reports, fact sheets, newsletters, brochures and other MWRA publications for media or public distribution, in close coordination with others at MWRA. Drafts communications materials for distribution to communities and other customer constituencies.

- Manages the preparation of public presentations and speeches for the Executive Director and senior MWRA managers.

- Edits and approves documents for internal and external distribution.

- Organizes special events.

SECONDARY DUTIES:

- Regular travel throughout the MWRA service area and occasionally elsewhere within or outside the Commonwealth of Massachusetts.

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) A Bachelor's degree in communications, public policy, engineering, or science directly related to MWRA's programs. An advanced degree preferred; and

(B) At least seven (7) years of related professional experience in communications, policy development or administration with at least three (3) years in a management or supervisory position; or

(C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Substantive experience with technical areas of MWRA's water supply and wastewater missions is strongly preferred.

(B) Skills in public speaking, public presentation, and media presentation.

(C) Writing and editing skills including the preparation and presentation skills in common computer formats such as Power Point.

(D) Strong analytical skills and strategic planning skills.

(E) Ability to provide leadership and support to subordinate employees in the areas under supervision as well as colleagues elsewhere in the agency.

(F) Ability to inspire trust and confidence in senior managers, other agencies, constituents and the general public.

SPECIAL REQUIREMENTS:

- A valid Massachusetts Class D Motor Vehicle Operators License.
- Ability to work evenings or weekends for urgent business issues or respond to business calls on MWRA assigned phone after hours.
- Agency activities for which the employee is responsible are performed 24 hours a day, 365 days per year and may require the employee's attention and attendance at any time and in emergencies, for extended periods.

TOOLS AND EQUIPMENT USED:

Office equipment as normally associated with the use of telephone, page-net and two-way radio equipment and other standard executive office equipment such as a personal computer including word processing and applicable software, fax and copy machines. An automobile must be used for local travel. Personal safety equipment must be used on construction and operations sites**.**

PHYSICAL DEMANDS:

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

While performing the duties of this job, the employee is regularly required to sit, stand, walk, read, listen and talk. Attendance and presentations at meeting and public forums is regularly required. The employee is regularly required to use the hands to manipulate or operate office equipment and other tools and equipment (including personal safety equipment) described above.

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

WORK ENVIRONMENT:

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

While performing the duties of this job**,** the employee regularly works in an office environment, in public meeting spaces and in field and plant environments in, around and ancillary to the facilities operated by and/or under construction by the agency.

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

September 2023

MWRA
POSITION DESCRIPTION

OLD

POSITION: Director, Intergovernmental Affairs

DIVISION: Executive

DEPARTMENT: Public Affairs

BASIC PURPOSE:

Manages intergovernmental, community and media relations to ensure effective and accurate understanding of the goals, programs and activities of the Authority and to build support for such among its various constituencies.

SUPERVISION RECEIVED:

Works under the general supervision of the Executive Director.

SUPERVISION EXERCISED:

Exercises supervision of Community Relations Coordinators, Senior Program Manager, Environmental Review and Compliance and administrative support staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Develops strategy and supervises staff regarding public participation programs, liaison with municipalities within the Authority's district and liaison with state and federal legislative bodies.

- Develops, prepares and administers a legislative program for the Authority.

- Establishes effective contact with government agencies, legislative leader and public officials in order to provide the Authority with accurate and timely information concerning activities which may affect the Authority's operations.

- Counsels the Executive Director with regard to the intergovernmental implications of the Authority's policies, practices and actions.

- Devises strategies for clarifying and dealing with issues of interest to the Authority's various constituencies.

- Answers inquiries from elected/appointed officials and the general public.

- Represents the Authority in all aspects of public, community and governmental relations.

- Recommends action to be taken by Authority management to develop and maintain good intergovernmental relations.

SECONDARY DUTIES:

- Performs other related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Analytical and communication skills as normally attained through a four (4) year college program in public policy, public administration, communications or a related field; and

(B) Understanding of public policy, public administration and legislative issues as acquired by ten (8) to ten (10) years of related experience of which five (5) years must be in a managerial capacity; or

(C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

(A) Excellent writing, communication, interpersonal and public speaking skills are required.

SPECIAL REQUIREMENTS:

None

TOOLS AND EQUIPMENT USED:

Office machines 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 the job. Reasonable accommodation may be made to enable individuals with disabilities to perform the essential functions.

While performing the essential functions 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 regularly is required to stand or talk or hear. The employee is occasionally required to walk, sit, climb or balance, stoop, kneel, crouch, or crawl.

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

WORK ENVIRONMENT:

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

While performing the duties of this job, the employee occasionally works in outside weather conditions. The employee works near moving mechanical parts is occasionally exposed to wet and/or humid conditions. The employee is occasionally exposed to fumes and airborne particles, toxic or caustic chemicals, and risk of electric shock.

The noise level in the work environment is moderately quiet.

February 2012

MWRA
POSITION DESCRIPTION

NEW

POSITION: Director, Public Affairs

DIVISION: Executive

DEPARTMENT: Public Affairs

BASIC PURPOSE:

Manages intergovernmental, community and media relations to ensure effective and accurate understanding of the goals, programs and activities of the Authority and to build support for such among its various constituencies. Develops, executes and supervises basic MWRA communication programs, including media and public information activities, school education activities and a wide range of print and electronic publications.

SUPERVISION RECEIVED:

Works under the general supervision of the Executive Director.

SUPERVISION EXERCISED:

Exercises supervision of community relations, design, multi-media and school education staff. Supervises the activities of external vendors and contractors within these areas.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Develops strategy and supervises staff regarding public participation programs, serves as a liaison with municipalities within the Authority's district and as a liaison with state and federal legislative bodies.

- Serves as MWRA's principal point-of-contact with print and electronic news media. Performs outreach to the media as well as response to inquiries, and involves designating, coordinating and preparing the other MWRA employees who may appropriately speak for the MWRA on specific topics. Serves as an MWRA spokesperson. Prepares news releases and monitors the press for issues of importance to MWRA.

- Develops, prepares, and administers a legislative program for the Authority.

- Establishes effective communication and builds relationships with government agencies, legislative leaders and public officials in order to provide the Authority with accurate and timely information concerning activities which may affect the Authority's operations.

- Counsels the Executive Director with regard to the intergovernmental implications of the Authority's policies, practices and actions.

- Devises strategies for clarifying and dealing with issues of interest to the Authority's various constituencies.

- Supervises maintenance, updating and administration of MWRA's internal and external websites.

- Answers inquiries from elected/appointed officials and the general public.

- Represents the Authority in all aspects of public, community, and governmental relations.

- Recommends action to be taken by Authority management to develop and maintain good intergovernmental relations.

- Manages the Department in a manner that is consistent with MWRA's goals of Diversity, Equity, and Inclusion.

SECONDARY DUTIES:

- Performs other related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Analytical and communication skills as normally attained through a Bachelor's degree in public policy, public administration, communications or a related field. Graduate degree preferred; and

(B) Understanding of public policy, public administration and legislative issues as acquired by ten (8) to ten (10) years of related professional experience, of which five (5) years must be in a managerial capacity; or

(C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

(A) Excellent writing, communication, interpersonal and public speaking skills.

(B) Ability to provide leadership and support to subordinate employees in the areas under supervision as well as colleagues elsewhere in the agency.

(C) Ability to inspire trust and confidence in journalists, other customers of MWRA's communications efforts and the general public.

(D) Ability to establish strong working relationships and to exercise tact and diplomacy with constituencies.

SPECIAL REQUIREMENTS:

- A valid Massachusetts Class D Motor Vehicle Operators License.

- Ability to work evenings or weekends for urgent business issues or respond to business calls on MWRA assigned phone after hours.

TOOLS AND EQUIPMENT USED:

Office machines 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 the job. Reasonable accommodation may be made to enable individuals with disabilities to perform the essential functions.

While performing the essential functions 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 regularly is required to stand or talk or hear. The employee is occasionally required to walk, sit, climb or balance, stoop, kneel, crouch, or crawl.

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

WORK ENVIRONMENT:

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

While performing the duties of this job, the employee occasionally works in outside weather conditions. The employee works near moving mechanical parts is occasionally exposed to wet and/or humid conditions. The employee is occasionally exposed to fumes and airborne particles, toxic or caustic chemicals, and risk of electric shock.

The noise level in the work environment is moderately quiet.

September 2023

MWRA
POSITION DESCRIPTION

OLD

POSITION: Assistant to the Executive Director (confidential position)

DIVISION: Executive

DEPARTMENT: Executive Director's Office

BASIC PURPOSE:

Assists the Executive Director in planning and implementing agency-wide programs and objectives.

SUPERVISION RECEIVED:

Reports to the Executive Director.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Assists the Executive Director in the day-to-day activities of the Authority.
- Maintains the Executive Director's schedule and coordinates schedule with other Senior Managers.
- Receives inquiries for the Executive Director, refers for response, and/or investigates and makes recommendations for action.
- Receives various documents for the Executive Director's signature, reviews for accuracy and maintains accurate logs as to their disposition.
- Coordinates projects and other activities between divisions and assists in reporting progress towards established goals and objectives.
- Participates in the preparation and assembly of information and data to be presented to the Executive Director and MWRA Board of Directors.
- Assists the Executive Director in communication and outreach with State and Federal agencies, communities served and other interested groups concerning activities of the Authority.

- Handles inquiries and correspondence on behalf of the Executive Director, investigates and uses independent judgment and initiative in coordinating appropriate replies.

- Assists the Executive Director in coordination and development of special outreach programs, including tours.

- Maintains digital and hard copy files in accordance with public records laws.

- Serves as Department Records Manager for the Executive Office.

- Prepares documents for internal and external distribution.

- Provides administrative support to the Special Assistant to the Executive Director.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Administrative and analytical skills as normally attained through a Bachelor's degree in business administration, public administration, engineering management or related field; and

(B) Knowledge of the principles and practices of administration and management of organizations as acquired through four (4) to six (6) years of related experience supporting executives or senior managers; or

(C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Ability to maintain confidentiality. Awareness and sensitivity to financial, political, legal constraints and issues faced by public sector organizations is preferred.

(B) Proficiency with Microsoft Office applications, including Word, Excel, PowerPoint and Outlook, and familiarity with virtual meeting software packages.

(C) Good working knowledge of scanning equipment.

(D) Demonstrated excellent written, organizational, interpersonal, planning, analytical and negotiation skills.

(E) Ability to work with every level of management. A strong service ethic is required.

SPECIAL REQUIREMENTS:

- A valid Massachusetts Class D Motor Vehicle Operators License.

TOOLS AND EQUIPMENT USED:

Office machines as normally associated, with the use of telephone**,** computer including word processing and other software, copiers and scanners**.**

PHYSICAL DEMANDS:

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

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

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

WORK ENVIRONMENT:

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

September 2021

MWRA
POSITION DESCRIPTION

NEW

POSITION: Assistant to the Executive Director (confidential position)

DIVISION: Executive

DEPARTMENT: Executive Director's Office

BASIC PURPOSE:

Assists the Executive Director in planning and implementing agency-wide programs and objectives.

SUPERVISION RECEIVED:

Reports to the Executive Director. May support Chief of Staff on special projects.

SUPERVISION EXERCISED:

. May supervise intern(s).

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Assists the Executive Director in the day-to-day activities of the Authority.
- Coordinates projects and other activities between departments and with other divisions and assists in reporting progress towards established goals and objectives.
- Conducts research, procedural and administrative studies, and proposes and/or recommends courses of action.
- Reviews all hiring packages prior to Executive Director's approval for completeness and accuracy.
- Reviews all out-of-state travel requests prior to Executive Director's approval. Reviews post-travel expenses for completeness and accuracy.
- Reviews all IT requests requiring Executive Director approval.
- Assists with the preparation and tracking of the Executive Division's budget.
- Tracks completion of performance evaluations for managers and staff reporting to the Executive Director.

- Receives inquiries for the Executive Director, refers for response, and/or investigates and makes recommendations for action.

- Coordinates and participates in the preparation and assembly of information and data to be presented to the Executive Director and MWRA Board of Directors.

- Assists the Executive Director in communication and outreach with State and Federal agencies, communities served and other interested groups concerning activities of the Authority.

- Handles inquiries and correspondence on behalf of the Executive Director, investigates and uses independent judgment and initiative in developing appropriate replies.

- Assists the Executive Director in coordination and development of special outreach programs, including tours.

- Routes documents for approval and signature of the Executive Director.

- Prepares documents for internal and external distribution.

SECONDARY DUTIES:

- Assists Chief of Staff with special projects.

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Administrative and analytical skills as normally attained through a Bachelor's degree in business administration, public administration, engineering management or related field; and

(B) Knowledge of the principles and practices of administration and management of organizations as acquired through at least six (6) years of related experience; or

(C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Familiarity with computer applications, including Microsoft Office.

(B) Demonstrated excellent written, organizational, interpersonal, planning, analytical, and negotiation skills.

(C) Ability to work with every level of management. Strong service ethic is required.

(D) Awareness and sensitivity to financial, political, a legal constraints and issues faced by public sector organizations is preferred.

(E) Ability to maintain confidentiality and exercise tact and diplomacy.

SPECIAL REQUIREMENTS:

A valid Massachusetts Class D Operators driver's license.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

WORK ENVIRONMENT:

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

September 2023

MWRA
POSITION DESCRIPTION

OLD

POSITION: Heavy Equipment Operator I

PCR#: **3383026, 3383028, 3383029, 3383030, 3383031**

DIVISION: Operations

DEPARTMENT: Field Operations

BASIC PURPOSE:

Operates heavy equipment and vehicles.

SUPERVISION RECEIVED:

Works under the general supervision of the departmental Manager or Supervisor.

SUPERVISION EXERCISED:

Exercises close supervision of skilled laborers and laborers as assigned.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Operates a variety of heavy equipment such as, but not limited to, backhoe, front-end loader, cranes, tractor cab and trailers, excavators, pumps, generators, and pneumatic tools.
- Operates equipment for excavations for valve replacement, pipeline installation, leak repair, and other miscellaneous excavations.
- Installs trench boxes, mechanical shoring systems, and other support systems for the safety of excavations.
- Assists mechanics in the maintenance and repair of heavy vehicles and equipment as needed.

SECONDARY DUTIES:

- Promotes and participates in the cross-functional work practices.
- Trains peers and subordinates as requested.
- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Basic reading, writing, mathematical, scientific and oral communication skills normally attained through a high school education or the equivalent: and

(B) Considerable knowledge of the methods and techniques used in the maintenance and safe operation of a wide variety of heavy and/or specialized maintenance and construction equipment and vehicles as acquired through a minimum of five (5) years' experience; and

(C) Experience in urban utility excavation, construction, and installation; or

(D) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

(A) Ability to follow oral and written instructions.

(B) Skill in the operation of listed tools and equipment.

(C) Ability to operate heavy equipment for extended periods in a variety of climatic conditions.

SPECIAL REQUIREMENTS:

Valid Massachusetts Class A Commercial Driver's License.

Department of Public Safety Hoisting Engineer's Licenses as follows:

a. 1B Hoisting License (Telescoping Boom with Cables Crane and 2A Hoisting License (Front End Loaders, Backhoes & Excavators) required at time of hire.

b. 3A Hoisting License (Overhead Cranes and Air or Electric Powered Cranes), 4E Hoisting License (Catch Basin Cleaners), and 4G Hoisting License (Specialty Lawn Mowers) to be obtained within six months of date of hire.

Must demonstrate proficiency for operating heavy equipment including but not limited to:

- 50 ton LinkBelt crane or equivalent
- Volvo tracked excavator or equivalent
- Tractor cab and lowboy trailer
- 10 wheel dumps with tagalong trailer
- Various types of backhoes (JCB, Caterpillar, John Deere)
- Front End Loader
- Truck Mounted crane

Complete productivity improvement competency-based training program related to **ESSENTIAL DUTIES AND RESPONSIBILITIES** as outlined above and successfully demonstrates required competencies.

TOOLS AND EQUIPMENT USED:

Motor vehicle, specialized maintenance and construction equipment, hand tools, hoist, mobile radio.

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 the 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 object, tools or controls and reach with hands and arms. The employee is frequently required to stoop, kneel, crouch or crawl. The employee is frequently required to stand, walk, talk, hear, sit, climb or balance.

The employee must regularly lift and/or move up to 60 pounds, frequently lift and/or move up to 100 pounds. Specific vision abilities required by this job include close, distance and peripheral vision, depth perception and the ability to adjust focus.

WORK ENVIRONMENT:

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

While performing the duties of this job, the employee regularly works near moving mechanical parts, is frequently exposed to wet and/or humid conditions and is occasionally exposed to fumes and airborne particles, toxic or caustic chemicals and risk of electric shock, and vibration.

The noise level in the work environment is usually very loud in field settings and loud at other work locations.

August 2023

MWRA
POSITION DESCRIPTION

NEW

POSITION: Heavy Equipment Operator II

DIVISION: Operations

DEPARTMENT: Metro Operations, Western Operations, Deer Island (based on assignment)

LOCATION Southboro/Barre, Chelsea, Deer Island (based on assignment)

BASIC PURPOSE:

Manages the heavy equipment of Western Maintenance, Metro Operations and Deer Island based on assignment. Oversees the daily checks and other routine safety requirements related to the program's heavy equipment. Manages the inventory, purchase and supply of equipment including slings, shackles, hoists, turnbuckles, and other equipment and materials. Operates heavy equipment and vehicles.

SUPERVISION RECEIVED:

Works under the general supervision of the Southborough Supervisor of Facility Maintenance, WDS General Foreman, or Deer Island Unit Supervisor (based on assignment).

SUPERVISION EXERCISED:

Oversees assignment of work in conjunction with other supervisory staff. May review and approve timesheets and leave requests of assigned staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Operates a variety of heavy equipment such as, but not limited to, backhoe, front-end loader, cranes, tractor cab, trailers, excavators, slope masters, pumps, generators, and pneumatic tools.
- Operates equipment for excavations for a variety of maintenance activities.
- Installs trench boxes, mechanical shoring systems, and other support systems for the safety of excavations.
- Assists mechanics in the maintenance and repair of heavy vehicles and equipment as needed.

- Coordinates with the Planning/Scheduling Coordinator to ensure that all hours of the Heavy Equipment Operator's (HEO) labor, materials, and equipment are entered into Maximo. Maximo utilization for the Unit's HEOs is to be no less than 90%. Use of the Maximo system, including data input, is required.

- Monitors, tracks, and logs required maintenance of heavy equipment. Tracks and documents all certifications for the operation of the various pieces of heavy equipment.

- Ensures that HEO and HEO Is use heavy equipment in the safest and most efficient manner, and that the proper equipment, including support equipment (i.e. slings, etc) is used for lifting and excavation work in general.

- Inspects various equipment and coordinates the purchase of replacement parts when needed.

- Coordinates maintenance and repair of heavy equipment with the vehicle maintenance staff assigned to the program.

- Researches and recommends the safest, most efficient, legally accepted route for the transporting of heavy equipment.

- Assists in the management, deployment, and use of all assigned heavy equipment

- Promotes and participates in the MWRA Safety Program and follows MWRA safety, operating and emergency response procedures and policies.

- Assists other trades in the performance of their work, as required.

SECONDARY DUTIES:

- Promotes and participates in the cross-functional work practices.

- Trains peers and subordinates as requested.

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Basic reading, writing, mathematical, scientific and oral communication skills normally attained through a high school education or the equivalent: and

(B) Considerable knowledge of the methods and techniques used in the maintenance and safe operation of a wide variety of heavy and/or specialized maintenance and construction equipment and vehicles as acquired through a minimum of seven (7) years experience; and

(C) Experience in utility excavation, construction, and installation; or

(D) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

(A) Working knowledge of the occupational hazards and safety practices common to heavy equipment and the satisfactory completion of MWRA safety training.

(B) Ability to troubleshoot problem areas relative to complex work assignments.

(C) Ability to advise staff effectively and to establish and maintain effective working relationships.

(D) Ability to utilize personal computers, data terminals and specialized MAXIMO/Lawson software application packages to perform related duties.

SPECIAL REQUIREMENTS:

Valid Massachusetts Class A Commercial Driver's License.

Department of Public Safety Hoisting Engineer's License as follows: 1A Hoisting License, 2A Hoisting License (Front End Loaders, Backhoes & Excavators), 3A Hoisting License (Overhead Cranes and Air or Electric Powered Cranes), 4E Hoisting License (Catch Basin Cleaners), and 4G Hoisting License (Specialty Lawn Mowers) required at time of hire.

Successful completion of the next available MWRA Supervisor Training Program after hire or promotion.

Must demonstrate proficiency for operating heavy equipment including but not limited to:

- 50 ton Linkbelt crane or equivalent
- Volvo tracked excavator or equivalent
- Tractor cab and lowboy trailer
- 10 wheel dumps with tagalong trailer
- Various types of backhoes (JCB, Caterpillar, John Deere)
- Front End Loader
- Truck Mounted crane

Complete productivity improvement competency-based training program related to **ESSENTIAL DUTIES AND RESPONSIBILITIES** as outlined above and successfully demonstrates required competencies.

TOOLS AND EQUIPMENT USED:

Motor vehicle, specialized maintenance and construction equipment, hand tools, hoist, mobile radio, 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 the 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 object, tools or controls and reach with hands and arms. The employee is frequently required to stoop, kneel, crouch or crawl. The employee is frequently required to stand, walk, talk, hear, sit, climb or balance.

The employee must regularly lift and/or move up to 60 pounds, frequently lift and/or move up to 100 pounds. Specific vision abilities required by this job include close, distance and peripheral vision, depth perception and the ability to adjust focus.

WORK ENVIRONMENT:

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

While performing the duties of this job, the employee regularly works near moving mechanical parts, is frequently exposed to wet and/or humid conditions and is occasionally exposed to fumes and airborne particles, toxic or caustic chemicals and risk of electric shock, and vibration.

The noise level in the work environment is usually very loud in field settings and loud at other work locations**.**

August 2023

MWRA
POSITION DESCRIPTION

OLD

POSITION: Heavy Equipment Operator

DIVISION: Operations

DEPARTMENT: Field Operations

BASIC PURPOSE:

Operates heavy equipment and vehicles.

SUPERVISION RECEIVED:

Works under the general supervision of the departmental Manager or Supervisor.

SUPERVISION EXERCISED:

Exercises close supervision of skilled laborers and laborers as assigned.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Operates a variety of heavy equipment such as, but not limited to, backhoe, front-end loader, pumps, generators, and pneumatic tools.
- Assists mechanics in the maintenance and repair of heavy vehicles and equipment as needed.
- 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 a work area for access.

- Opens hatches.
- Installs safety rails.
- Conducts routine testing, lockout/tagout, operation (startup/shutdown) and adjustment of process equipment.
- Removes snow from immediate work area.

SECONDARY DUTIES:

- Promotes and participates in the cross-functional work practices.
- Trains peers and subordinates as requested.
- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Basic reading, writing, mathematical, scientific and oral communication skills normally attained through a high school education or the equivalent: and

(B) Considerable knowledge of the methods and techniques used in the maintenance and safe operation of a wide variety of heavy and/or specialized maintenance and construction equipment and vehicles as acquired through a minimum of two (2) years' experience; or

(C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

(A) Ability to follow oral and written instructions.

(B) Skill in the operation of listed tools and equipment.

(C) Ability to operate heavy equipment for extended periods in a variety of climatic conditions.

SPECIAL REQUIREMENTS:

Valid Massachusetts Class B Commercial Driver's License.

Department of Public Safety Hoisting Engineer's Licenses as noted below:

a. Western Operations-2A Hoisting License (Front End Loaders, Backhoes & Excavators) required at time of hire. 3A Hoisting License (Overhead Cranes and Air or Electric Powered Cranes) and 4G Hoisting License (Specialty Side Boom Mowers) to be obtained within six months of date of hire.

b. Wastewater Operations Chelsea-1B (Telescoping Boom with Cables Cranes) and 2A Hoisting License (Front End Loaders, Backhoes & Excavators) required at time of hire. 3A Hoisting License (Overhead Cranes and Air or Electric Powered Cranes) and 4E Hoisting License (Catch Basin Cleaners) to be obtained within six months of date of hire.

c. Water Operations Chelsea-2A Hoisting License (Front End Loaders, Backhoes & Excavators) required at time of hire. 3A Hoisting License (Overhead Cranes and Air or Electric Powered Cranes) to be obtained within six months of date of hire.

d. Deer Island Treatment Plant-1B Hoisting License (Telescoping Boom with Cables Cranes) and 2B Hoisting License (Backhoes & Front-End Loaders) required at time of hire. 3A Hoisting License (Overhead Cranes and Air or Electric Powered Cranes) to be obtained within six months of date of hire.

e. Chelsea Maintenance-2B Hoisting License (Backhoes & Front-End Loaders,) required at time of hire. 3A Hoisting License (Overhead Cranes and Air or Electric Powered Cranes) and 4G Hoisting License (Specialty Side Boom Mowers) to be obtained within six months of date of hire.

Complete productivity improvement competency-based training program related to **ESSENTIAL DUTIES AND RESPONSIBILITIES** as outlined above and successfully demonstrates required competencies.

TOOLS AND EQUIPMENT USED:

Motor vehicle, specialized maintenance and construction equipment, hand tools, hoist, mobile radio.

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 the 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 object, tools or controls and reach with hands and arms. The employee is frequently required to stoop, kneel, crouch or crawl. The employee is frequently required to stand, walk, talk, hear, sit, climb or balance.

The employee must regularly lift and/or move up to 60 pounds, frequently lift and/or move up to 100 pounds. Specific vision abilities required by this job include close, distance and peripheral vision, depth perception and the ability to adjust focus.

WORK ENVIRONMENT:

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

While performing the duties of this job, the employee regularly works near moving mechanical parts, is frequently exposed to wet and/or humid conditions and is occasionally exposed to fumes and airborne particles, toxic or caustic chemicals and risk of electric shock, and vibration.

The noise level in the work environment is usually very loud in field settings, and loud at other work locations.

August 2023

MWRA
POSITION DESCRIPTION

POSITION: Third Class Engineer (Thermal/Power Plant)

DIVISION: Operations

DEPARTMENT: Thermal

BASIC PURPOSE:

Under the direction of the Second Class Engineer (Thermal/Power Plant), operates, adjusts and maintains complex Thermal Power equipment, critical to maintain required supply of heat and electrical power.

SUPERVISION RECEIVED:

Works under the general supervision of the Second Class Engineer (Thermal/Power Plant). May receive some direction from Manager, Power Generation.

SUPERVISION EXERCISED:

None. Provides oversight to interns. Works closely with and provides general direction to outside contractors.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Performs 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, diesel generators, pumps, blowers, compressors, water treatment cooling and heating systems, electrical distribution, instrumentation systems, hydroturbines, and burner management systems.

- Performs standard operating procedures (SOPs) for the Thermal/Power Plant and the electrical distribution system.

- Performs casualty control training as required.

- Inspects engineering plant machinery and operation to determine efficiency and need for maintenance requirements.

- Lubricates equipment and machinery.

- Communicates with other Thermal/Plant personnel on the Thermal/Power Plant Operations.

- Understands and complies with Lockout/Tagout procedures for equipment in the

Thermal/Power Plant.

- Works with contractors and vendors to support plant maintenance as required.
- Attends all Toolbox Talks to ensure safety.
- Maintains operating logs and records properly.
- Contributes to a safe working environment and follows safety policies.
- Monitors gauges, meters and recording devices and makes adjustments to maintain specified pressures and temperature, flows, amperage, voltage and power.
- Makes routine repairs such as replacing gaskets, re-packing pumps, cleaning, scraping and washing out water boxes. Assists in making minor repairs to auxiliary equipment.
- Monitors steam, combustion, and hydro turbines, boilers, feed and circulating pumps, diesel engines, compressors, digester gas systems, digital control systems, etc., controls steam water/oil flows as required.
- Collects water, steam, oil, and gas samples and tests to determine quality. Records results and reports abnormalities to Second Class Engineer.
- Performs as directed, scheduled Preventive Maintenance and minor Corrective Maintenance, including all shift, daily, weekly and monthly checks.
- Maintains a clean and orderly work area.
- Directs all chemical and fuel deliveries/ordering as required.
- Prepares injury and illness reports, safety work orders and maintenance work order requests as necessary.
- Performs light maintenance independently or as part of a team. Light maintenance shall include but not limited to:
    - Operation of forklift or other light equipment that does not require a special license.
    - Generates inspection lists and maintenance reporting through the Computerized Maintenance Management System.
    - 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, ventilation and other equipment necessary to support and accomplish assigned tasks.

- Greases and lubricates, replaces oil reserves, minor packing adjustments and opens hatches.

- Installs safety rails, changes light bulbs and replaces HVAC filters.

- Conducts routine testing, lockout/tagout, operation (startup/shutdown) and adjustment of process equipment.

- Removes snow from immediate work area in order to perform tasks.

- Performs necessary cleanup and housekeeping for work area and other light maintenance tasks.

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 or vocational training preferred; and

(B) Three (3) to five (5) years of experience in the operation of Thermal/Power Plant equipment, high pressure boilers, topping turbines and related auxiliary equipment; or

(C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

(A) Knowledge of operation of generating equipment, plant heating, large diesel-fuel engines and electrical distribution systems.

(B) Ability to plan, organize and perform assigned duties independently.

(C) Ability to understand responsibility and work with minimal supervision.

(D) Extensive knowledge of safety practices and application in Steam Engineering and Wastewater Facilities.

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

SPECIAL REQUIREMENTS:

- Required to respond to emergencies and provide overtime shift coverage as required.
- A valid Massachusetts Third Class Engineer's License.
- Annual completion of the following training: Right to Know, Confined Space Entry Refresher, 8-hour OSHA training, Hazard Communications, and other OSHA training as needed.
- Completion of Adult CPR/AED/First Aid Training every two years.
- Complete productivity improvement competency-based training program related to **ESSENTIAL DUTIES AND RESPONSIBILITIES** as outlined above and successfully demonstrates required competencies.

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.

While performing the duties of this job, the employee regularly works in an office environment. The employee occasionally works in outside weather conditions. The employee regularly 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 regularly 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 office settings.

October 2021

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: September 13, 2023
SUBJECT: Appointment of Katherine M. Ronan, Chief of Staff

COMMITTEE: Personnel and Compensation

_____ INFORMATION
__X__ VOTE

There are three PCR amendments related to the upcoming retirement of the Special Assistant to the Executive Director. The duties of the Special Assistant will be spread among three positions: The first is to change that title and grade to Chief of Staff, NU 14 to better reflect the duties assigned to that position (as described in this staff summary). The second is to change the title and salary of the Director, Intergovernmental Affairs to Director, Public Affairs to reflect the increased responsibilities, including six direct reports and management of media relations. The third is a grade change to the Assistant to the Executive Director to reflect the increased responsibilities of this position.

RECOMMENDATION:

To approve the appointment of Ms. Katherine M. Ronan to the position of Chief of Staff, Executive Division (Non-Union Grade 14) at an annual salary of $125,000, commencing on a date to be determined by the Executive Director.

DISCUSSION:

In October, the Special Assistant to the Executive Director will be retiring. The Chief of Staff is a new position, which will maintain many of the core duties currently performed by the Special Assistant. Other duties will be handled by two other staff members as described in the PCR Amendment staff summary also being presented at this meeting.

The Chief of Staff will be responsible for a wide range of issues and assist the Executive Director in the day-to-day running of the Authority. This includes the management of materials being presented to the Board of Directors, and review and approval of all documents submitted for internal and external distribution. The Chief of Staff will regularly handle confidential information and act as a liaison between the Executive Director and senior managers, as well as external constituencies. This position will also work closely with the Public Affairs Department on communications and community relations issues.

This position requires the ability to handle complex situations and multiple responsibilities simultaneously, mixing long-term projects with the urgency of immediate demands, and collaborating with staff at all levels of the organization.

Ms. Katherine “Katie” Ronan has been selected to fill the position of Chief of Staff. Ms. Ronan started with MWRA as an intern in 2013, and became a full-time employee in the Planning Department in 2015. During her tenure, she has continued to quickly rise through the ranks from

an Administrative Systems Coordinator in the Public Affairs Department to the Project Manager, Environmental Permitting in the Environmental and Regulatory Affairs Department.

Ms. Ronan has a keen understanding of MWRA's mission. In her environmental permitting role, she has dealt with nearly every department in the Authority and is known to all senior managers as a consummate professional, a quick learner and enthusiastic member of the MWRA team. She has led the development and implementation of MWRA's Environmental Justice Strategic Plan through participation in MWRA's Environmental Justice Task Force and is an active and contributing member of MWRA's Diversity, Equity and Inclusion Working Group.

Ms. Ronan holds a Masters of Public Administration from the UMass McCormack Graduate School of Policy and Global Studies. In addition, she also holds a Bachelor of Arts in Geography from UMass Amherst.

BUDGET/FISCAL IMPACTS:

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

ATTACHMENTS:

Resume of Katherine M. Ronan
Position Description
Executive Office Organization Chart

Katherine M. Ronan

An enthusiastic, effective, and driven environmental professional with ten years of experience in the water and wastewater industry. Extensive knowledge and measureable accomplishments related to environmental policy, infrastructure permitting and public relations. An influential leader with vision and a passion for public service.

Professional Experience

Massachusetts Water Resources Authority, Boston, Massachusetts,

Project Manager, Environmental Permitting, Environmental and Regulatory Affairs May 2022 - Present

Manages compliance with local, state, and federal environmental regulations and permitting requirements for MWRA construction projects and system operations. Implements MWRA water and wastewater system expansion policies.

- Manages environmental review of MWRA construction projects. Evaluates projects for environmental impacts and Massachusetts Environmental Policy Act (MEPA) thresholds. Identifies applicable environmental permits and requirements, prepares applications and environmental documents, and coordinates with regulatory entities during review. Ensures compliance with issued permits and approvals. Works closely and collaboratively with MWRA engineering staff, construction project managers and consultants.
- Serves as MWRA liaison to various environmental regulatory agencies including the Massachusetts Environmental Policy Act (MEPA), The Massachusetts Historical Commission (MHC), The Massachusetts Water Resources Commission (WRC), Massachusetts Natural Heritage Endangered Species Program (NHESP), and more.
- Manages Water System expansion initiatives and requests for connection from communities and other entities outside the existing MWRA water and wastewater system. Assists in interpreting and evaluating applicable MWRA operating policies and other regulatory requirements, including MEPA and Interbasin Transfer Act (ITA) review.
- Supports communities and other entities pursuing admission to the MWRA water or wastewater system through the admission process, pursuant to MWRA operating policies and other regulatory regulations, including MEPA and ITA review. Provides technical assistance regarding regulatory, administrative, and operational considerations.
- Manages MWRA Water Supply Agreements and Sewer Use Discharge Agreements with MWRA communities and other entities. Coordinates with communities and various internal departments to develop new agreements and renew existing agreements, as necessary. Tracks compliance with agreements and addresses exceedances.
- Leads development and implementation of MWRA's Environmental Justice Strategic Plan through participation in MWRA's Environmental Justice Task Force. Has become MWRA's expert on EJ principles and best practices.
- Active and contributing member of MWRA's Diversity, Equity and Inclusion (DEI) Working Group.
- Envisioned and executes MWRA's new monthly Lunchtime Speaker Series, which features interesting presentations from experts on relevant topics with EJ and DEI themes.
- Manages MWRA's Water Fountain Program, which provides free drinking water at public events in MWRA communities. Schedules events, coordinates details with organizers, and recruits staff to attend events. Has expanded the program significantly over the past several years, with over 150 events scheduled in 2023. Supervises a Public Outreach and Engagement Intern, who represents MWRA at water fountain events.
- Coordinates additional MWRA outreach and engagement at various public events in MWRA communities.

Massachusetts Water Resources Authority, Boston, Massachusetts

Environmental Analyst 2018 - May 2022

Ensured compliance with local, state, and federal environmental regulations and permitting requirements for MWRA construction projects. Implemented MWRA water and wastewater system expansion policies.

- Evaluated MWRA construction projects for environmental impacts and Massachusetts Environmental Policy Act (MEPA) thresholds. Identified necessary environmental permits and requirements, prepares applications, and coordinates with regulatory entities. Worked collaboratively with MWRA construction project managers, engineering staff, and consultants.
- Ensured MWRA compliance with all historic preservation regulations and permitting requirements. Evaluated MWRA construction projects and operations for historical impacts, prepares submissions, and coordinated with

the Massachusetts Historical Commission (MHC), Tribal Historic Preservation Officers, and local historic commissions.
- Implemented MWRA's Programmatic Memorandum of Agreement (PMOA) with the MHC and served as the Authority's designated liaison. Designed and maintained the required database of MWRA historic properties, prepared submissions, and coordinated with MHC regarding the PMOA and MWRA projects.
- Managed MWRA compliance with the National Heritage Endangered Species Program (NHESP) and prepared MWRA's required annual Vegetation Management Plan. Coordinated with NHESP and MWRA operations.
- Liaison to MWRA's Water Supply Citizens Advisory Committee (WSCAC) and Wastewater Advisory Committee (WAC).
- Represented MWRA at monthly Massachusetts Water Resources Commission (WRC) meetings.
- Prepared minutes and complies materials for quarterly Water Supply Protection Trust (WSPT) Meetings.
- Provided technical Geographic Information Systems (GIS) support on a variety of departmental matters.
- Performed research on environmental regulations and permitting. Prepared reports, presentations, and formal letters as required.

Massachusetts Water Resources Authority, Boston, Massachusetts
Administrative Coordinator, Public Affairs 2015-2018
Assisted the Director of Intergovernmental Affairs in overseeing MWRA legislative affairs, managing community and intergovernmental relations, and implementing environmental regulations and programs.
- Managed MWRA legislative review of Bills in the state legislature with relevance or potential impact to MWRA.
- Managed response to various questions, inquires, and concerns from the public, communities, and other agencies.
- Assisted with public outreach and engagement during planning, design, and implementation of MWRA construction projects.
- Supported MWRA Aqueducts Trails Program to permit MWRA emergency back-up aqueducts for public access. Worked with communities and provided planning, mapping, and technical support.
- Administered policies regarding departmental budget, payroll, personnel, and purchasing.
- Prepared a various letters, reports, presentations, and operational materials.
- Supervised clerical personnel.

Massachusetts Water Resources Authority, Boston, Massachusetts
Geographic Information Systems Contractor, Planning 2014-2015
- Collaborated with MWRA staff from various departments to develop custom maps for projects and reports.
- Updated and improved a variety of MWRA water and wastewater system GIS data.
- Completed various external requests for maps and data.

Massachusetts Water Resources Authority, Boston, Massachusetts
Geographic Information Systems Intern, Planning 2013-2014
- Updated and improved MWRA sewer data with community GIS data and created maps for operational use.
- Developed 47 MWRA Community Water Quality Sampling Site maps for routine & emergency use.

Education

Masters of Public Administration, 2018
University of Massachusetts Boston, McCormack Graduate School of Policy and Global Studies
- Cumulative GPA 4.0
- Richard H. Hogarty Award for Academic Excellence, Sole Recipient
- Pi Alpha Alpha International Honors Society of Public Affairs and Administration, Inductee
- Capstone Case Study entitled *Forest Filtered: How not filtering water has enabled the MWRA to take a holistic approach to water system management*

Bachelor of Arts in Geography, Jazz Studies Minor, 2013
University of Massachusetts Amherst, Collage of Natural Sciences

- National Society of Collegiate Scholars
- Dean's List

Skills and Expertise

Environmental Permitting; Regulatory Compliance; Environmental Justice; Public Speaking and Presenting; Public Outreach and Engagement; Professional Writing; Public Administration; Geographic Information System (GIS), Microsoft Office Suite including Word, Excel, Access, PowerPoint; ESRI ArcGIS Products including ArcMap and ArcCatalog; geospatial analysis and data visualization; Adobe; InstaTrac; Everbridge Communication System

Professional Affiliations & Training

Women's Environmental Network (WEN), Organizer
New England Water Works Association (NEWWA), Member
New England Water Environment Association (NEWEA), Member
MWRA Supervisory Development Course, completed 2021
Core Growth for Emerging Leaders: Building Water's Future Leader's, completed 2021
MWRA/Core Growth Mentorship Program, completed 2023
Environmental Training Institute, Intro to Environmental Compliance Course, completed 2021
Environmental Training Institute, Intro to Environmental Law Course, completed 2021

MWRA
POSITION DESCRIPTION

POSITION: Chief of Staff

DIVISION: Executive

DEPARTMENT: Office of the Executive Director

BASIC PURPOSE:

Acts on behalf of the Executive Office to disseminate information, communicate ideas and monitor situations across the agency. Partners with senior managers to conduct and implement strategic planning.

SUPERVISION RECEIVED:

Works under the general supervision of the Executive Director.

SUPERVISION EXERCISED:

May provide functional supervision to Special Assistant to Executive Director on special projects.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Handles complex situations and multiple responsibilities simultaneously mixing long-term projects with the urgency of immediate demands, collaborating with staff at all levels of the organization.

- Deals with confidential information and acts as a liaison between the Executive Director and other constituencies, both internal and external.

- Assists and communicates with senior managers in decision-making, program management, and initiative implementation.

- Assists and supports MWRA senior managers and the Board of Directors in developing and executing overall communications strategies and programs for the MWRA.

- Coordinates and participates in the preparation of agendas and the assembly of information and data to be presented to the MWRA Board of Directors.

- Coordinates, reviews, and revises staff summaries presented for the approval of the Executive Director.

- Assists with the publication of annual reports, fact sheets, newsletters, brochures and other MWRA publications for media or public distribution, in close coordination with others at MWRA. Drafts communications materials for distribution to communities and other customer constituencies.

- Manages the preparation of public presentations and speeches for the Executive Director and senior MWRA managers.

- Edits and approves documents for internal and external distribution.

- Organizes special events.

SECONDARY DUTIES:

- Regular travel throughout the MWRA service area and occasionally elsewhere within or outside the Commonwealth of Massachusetts.

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) A Bachelor's degree in communications, public policy, engineering, or science directly related to MWRA's programs. An advanced degree preferred; and

(B) At least seven (7) years of related professional experience in communications, policy development or administration with at least three (3) years in a management or supervisory position; or

(C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Substantive experience with technical areas of MWRA's water supply and wastewater missions is strongly preferred.

(B) Skills in public speaking, public presentation, and media presentation.

(C) Writing and editing skills including the preparation and presentation skills in common computer formats such as Power Point.

(D) Strong analytical skills and strategic planning skills.

(E) Ability to provide leadership and support to subordinate employees in the areas under supervision as well as colleagues elsewhere in the agency.

(F) Ability to inspire trust and confidence in senior managers, other agencies, constituents and the general public.

SPECIAL REQUIREMENTS:

- A valid Massachusetts Class D Motor Vehicle Operators License.
- Ability to work evenings or weekends for urgent business issues or respond to business calls on MWRA assigned phone after hours.
- Agency activities for which the employee is responsible are performed 24 hours a day, 365 days per year and may require the employee's attention and attendance at any time and in emergencies, for extended periods.

TOOLS AND EQUIPMENT USED:

Office equipment as normally associated with the use of telephone, page-net and two-way radio equipment and other standard executive office equipment such as a personal computer including word processing and applicable software, fax and copy machines. An automobile must be used for local travel. Personal safety equipment must be used on construction and operations sites**.**

PHYSICAL DEMANDS:

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

While performing the duties of this job, the employee is regularly required to sit, stand, walk, read, listen and talk. Attendance and presentations at meeting and public forums is regularly required. The employee is regularly required to use the hands to manipulate or operate office equipment and other tools and equipment (including personal safety equipment) described above.

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

WORK ENVIRONMENT:

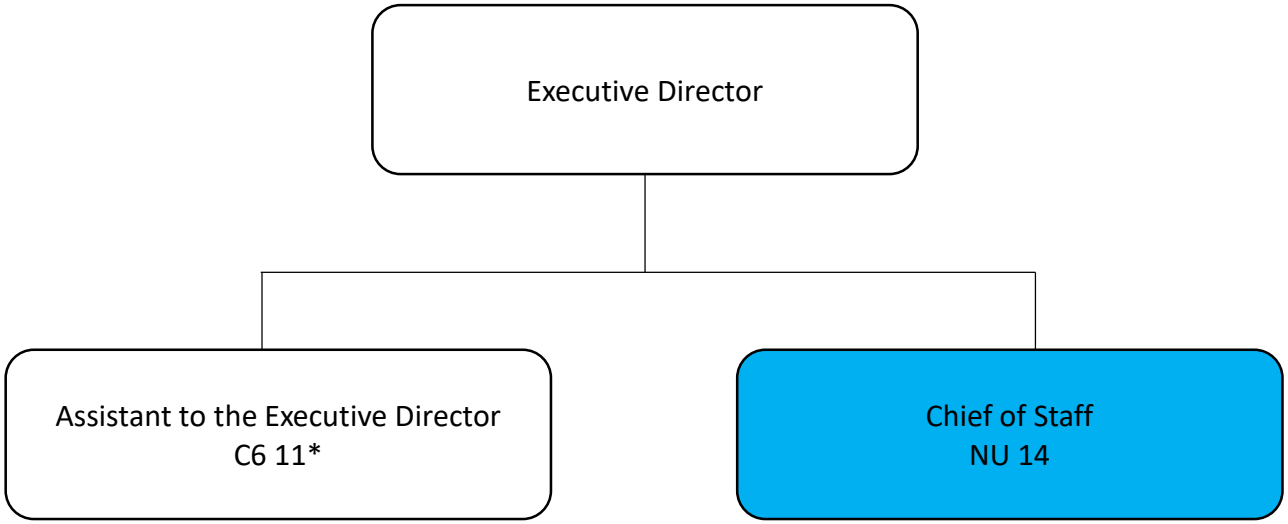
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job**,** the employee regularly works in an office environment, in public meeting spaces and in field and plant environments in, around and ancillary to the facilities operated by and/or under construction by the agency.

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

September 2023

Office of the Executive Director
September 2023



*proposed

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: September 13, 2023
SUBJECT: Appointment of Director, Environmental and Regulatory Affairs Operations Division

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COMMITTEE: Personnel and Compensation

_____ INFORMATION
__X__ VOTE

Wendy Chu, Director, Human Resources
Rebecca Weidman, Deputy Chief Operating Officer
Preparer/Title

David W. Coppes
Chief Operating Officer

RECOMMENDATION:

To approve the appointment of Ms. Colleen Rizzi to the position of Director, Environmental and Regulatory Affairs, Operations Division (Non-Union Grade 16) at an annual salary of $167,000, commencing on a date to be determined by the Executive Director.

DISCUSSION:

The Director, Environmental and Regulatory Affairs reports to the Deputy Chief Operating Officer in the Operations Division. The position is responsible for developing and overseeing environmental policy as well as environmental permitting under state, local and federal laws and regulations for all MWRA projects. The position works closely with the regulatory agencies, including the United States Environmental Protection Agency and the Massachusetts Department of Environmental Protection on behalf of the Authority. The Director will represent MWRA in various regional and national "clean water" organizations, such as the New England Water Environment Association and the National Association of Clean Water Agencies. The responsibilities of the position require high level management and policy analysis skills as well as excellent interpersonal, oral and written communication skills.

SELECTION PROCESS:

The position of Director, Environmental and Regulatory Affairs was posted internally and externally. A total of 13 candidates applied for the position, including five internal applicants. Three internal candidates were determined to be qualified and were referred for an interview. The Deputy Chief Operating Officer, Director of Waterworks, and Special Assistant for Affirmative Action interviewed the candidates. Upon completion of the interviews, Ms. Rizzi was determined to be the best qualified candidate to fill the position based on a combination of experience, abilities, knowledge, skills, and education.

Ms. Rizzi has more than 23 years of experience designing and permitting in progressively complicated water utility projects. Since 2019, Ms. Rizzi has worked in MWRA's Tunnel Redundancy Program as the Manager of Design. In this capacity, she is responsible for managing

all design and permitting components of the Metropolitan Water Tunnel Program. She has overseen the preparation of the Massachusetts Environmental Policy Act filings (Environmental Notification Form, Draft Environmental Impact Report, and Supplemental Draft Environmental Impact Report) and coordinated with regulatory agencies and stakeholders to garner input on the project design. Prior to joining MWRA, she was a Project Manager at Vanasse Hangen Brustlin, Inc. from 2000 to 2012 and again from 2017 to 2019. As a Project Manager, she was responsible for the design, permitting, and construction administration for a variety of clients. Her clients included the Boston Water and Sewer Commission and she was responsible for conducting inspections of BWSC water, sewer and stormwater facilities under construction to ensure compliance with all regulatory requirements.

Ms. Rizzi left VHB for five years to work for the Loudon County Sanitation Authority; while there she was promoted to Manager of Capital Design. During her time there, among other responsibilities, she worked closely with stakeholders and regulatory agencies to design and permit five miles of new large diameter sewer line that crossed two counties and Dulles International Airport in Virginia. This project required significant permitting, on both the federal and state levels. She also worked with rural communities surrounding the Loudon County Sanitation Authority's service area to assess the potential of connecting to the service area or upgrades required of community systems to meet discharge limits.

Overall, Ms. Rizzi's understanding of complex water utility construction projects and federal, state, and local permitting as it applies to those projects makes her an excellent candidate for the Director of Environmental and Regulatory Affairs.

Ms. Rizzi holds a Bachelor of Science in Civil Engineering from Northeastern University and a Master of Science in Environmental Planning and Management from Johns Hopkins University. She is also a licensed Professional Engineer in Massachusetts.

BUDGET/FISCAL IMPACTS:

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

ATTACHMENTS:

Resume of Colleen Rizzi
Position Description
Director, Environmental and Regulatory Affairs Organization Chart

Colleen C. Rizzi, P.E.

Professional Summary

Management professional offering more than 23 years of progressive experience in design, permitting and project management in both the private and public sector, with an emphasis on stormwater management and source water protection, regulatory compliance, utility and infrastructure design, and construction administration. Responsible for quality assurance and quality control across all projects. Management experience adaptable to various organizational structures. Excellent communication and organizational skills.

Education and Professional Certifications

- Bachelor of Science in Civil Engineering, *Northeastern University*
- Master of Science in Environmental Planning and Management, *Johns Hopkins University*
- Licensed Professional Engineer, MA (2004)

Professional Experience

Massachusetts Water Resources Authority January 2019 - Present
Chelsea, MA

Manager of Design, Tunnel Redundancy
Responsible for managing the design and permitting aspects of the Metropolitan Water Tunnel Program, including contract administration with outside design consultants to develop and monitor scope, fee, and schedule. Responsible for coordinating closely with other departments within MWRA. Actively engaged with my team to guide junior and senior engineers along their career paths.

Key tasks and accomplishments include:

- Overseeing the preparation and filing of Massachusetts Environmental Protection Act (MEPA) documents, including the Environmental Notification Form (ENF), Draft Environmental Impact Report (DEIR) and Supplemental DEIR.
- Managing the Preliminary Design for the Tunnel Program, including technical reviews and project administration.
- Coordinating with internal and external stakeholders, including communities and environmental regulatory agencies.
- Developing and implementing Program policies, procedures and standards for the Tunnel Program, including the Quality Management Plan, among others.

Vanasse Hangen Brustlin (VHB), Inc. September 2017- January 2019
Watertown, MA

Project Manager
Responsible for the design, permitting and construction administration for higher education and Federal clients. Projects included six design and construction projects adjacent to each other for the same university, requiring detailed coordination on both design and logistics relating to permitting and construction.

Key tasks and accomplishments include:

- Performed Boston Water and Sewer Commission (BWSC) inspections on behalf of the Commission for water, sewer, and stormwater facilities during construction to ensure compliance.

- Served as Resident Engineer overseeing all aspects of linear construction and coordination on behalf of the Owner.
- Performed ongoing design and multidisciplinary coordination.
- Developed and implemented quality assurance processes.

Loudoun County Sanitation Authority d/b/a Loudoun Water July 2012 – June 2017
Ashburn, VA

***Manager of Capital Design,* October 2014-June 2017**
Responsible for leading a team of 5 engineers and, as head of my department, was responsible for 40-50 projects simultaneously, with an estimated contract value of $15M to $25M annually for design services. Also, responsible for contract administration with outside design consultants, including scope, fee, and schedule. My role required a programmatic approach to projects as many were related or could impact another initiative. Also, responsible for quality assurance on all projects and for developing standard operating procedures within the Planning and Engineering Department; represented the Planning and Engineering Department on multiple technical committees across the organization, including Physical Security and Cyber Security. Provided engineering and contract support across the organization requiring close coordination with Operations and Maintenance Staff, Procurement, and Legal Counsel. Actively engaged with my team, guiding junior and senior engineers along their career paths.

Key tasks and accomplishments include:

- Evaluation, planning and design for multiple connections of rural communities to the Central Service Area and/or upgrades to community systems to meet mandated discharge limits or water supply requirements.
- Development of a long-term groundwater monitoring program to assess the long-term viability of community system wells.
- Design, permitting, bidding and award of 5 miles of large diameter sewer collection system and tunnels across Federal land, requiring Federal and state permits.
- Significant contributor to the 10-year Capital Improvement Program, estimated at $900M for 2017-2026, and responsible for resource allocation and staffing associated with all design projects.

***Project Engineer,* July 2012-October 2014**
Responsible for facilitating project design, permitting, and construction. Through the design process obtained consensus from internal stakeholders, as well as actively engaged external stakeholders ranging from customers, impacted landowners, non-governmental organizations, and permitting officials.

Key tasks and accomplishments include:

- Managed the development of Loudoun Water's Pretreatment Program to comply with the NPDES Pretreatment Streamlining Rule, including drafting the Loudoun County Pretreatment Ordinance, development of technically based local limits, and development/distribution of the Industrial Waste Survey.
- Secured $10M SRF grant from Virginia Department of Environmental Quality for enhanced nitrogen removal upgrades at DC Water's Blue Plains Advanced Wastewater Treatment Facility.
- Managed wastewater treatment plant upgrades and expansion, potable water treatment plant rehabilitation and expansion, sewer collection system design, reclaimed water infrastructure, and drinking water supply distribution.
- Managed the $30M acquisition of 800 acres of land, two reservoirs and dams, and water treatment plant from neighboring jurisdiction. Responsible for:
    - due diligence studies including Phase 1/Phase 2 Environmental Site Assessments, and assisting legal counsel with review of contractual documents for technical components,

- oversight of planning, design, and construction of improvements (estimated $1M value) in a 6-month timeframe to ensure facility was online by peak demand season, and operational startup of facilities after acquisition.
- enrollment in Virginia's Voluntary Remediation Program to address existing contamination at the acquired properties.

Vanasse Hangen Brustlin (VHB), Inc. June 2000-July 2012
Watertown, MA; Vienna, VA

Project Manager
Began as a Staff Engineer in 2000, following co-ops from 1997 to 2000, and was promoted to Project Engineer in 2003, Senior Project Engineer in 2006, and Project Manager in 2008.

Key tasks and accomplishments include:

- NPDES Phase II Stormwater Program compliance for 10+ communities in Massachusetts, Rhode Island and New York, including preparation of 5-year plans, developing good housekeeping measures to ensure compliance, preparing construction and post-construction runoff control plans, and planning illicit discharge detection programs. Coordinated directly with EPA Region 1.
- Permitting, design, and construction administration for institutional, Federal, and commercial projects across multiple states.
- Stormwater management design and compliance with state stormwater management standards (multiple states), including best management practices design and monitoring, low impact design, hydrologic and hydraulic analysis, and preparation of Stormwater Pollution Prevention Plans.
- Taught Hydrology and Hydraulics in the accredited VHB Center for Education.

Committee Involvement

Virginia Stormwater BMP Clearinghouse Committee – 2010 to 2016
Member of the Virginia BMP Clearinghouse Committee (two terms), working collaboratively with representatives of government, public and private sector, academia, and vendors to review BMP designs and set state standards for compliance with revised stormwater management regulations, active reviewer of draft stormwater management regulations and Chesapeake Bay TMDL development.

American Water Works Association, Virginia Section, Work for Water Committee – 2014 to 2017
Member of Work for Water with the goal to attract more students to the water and wastewater sector. Key initiatives includes coordination with school districts throughout Virginia to participate in career education activities, provide representation at career fairs, and facilitate early exposure to the industry in elementary and middle schools.

MWRA
POSITION DESCRIPTION

POSITION: Director, Environmental and Regulatory Affairs

DIVISION: Operations

DEPARTMENT: Operations Administration

BASIC PURPOSE:

Develops and oversees implementation of environmental policy and attainment of environmental compliance on behalf of the Authority. Represents MWRA at meetings with environmental regulatory agencies and other constituencies to support MWRA programs and objectives. Oversees the Authority's Environmental Review and Permitting efforts.

SUPERVISION RECEIVED:

Works under the general supervision of the Chief Operating Officer and the Deputy Chief Operating Officer.

SUPERVISION EXERCISED:

Exercises direct supervision of MWRA environmental compliance staff including Environmental Manager, Project Managers of Environmental Permitting, and consultant staff as assigned.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Directs the environmental review stage of the Authority's major engineering and construction projects and continues to provide oversight and review of the environmental permitting compliance throughout design and construction stages.

- Oversees permitting support and policy guidance on matters of significant concern on projects of agency-wide significance due to their size, scale, sensitivity or complexity.

- Directs and oversees environmental permitting and makes recommendations on Authority permitting and operational decisions based on research of state and federal policy and trends in approaches.

- Serves as a liaison between the Authority and environmental regulatory agencies at the local, state, and federal level.

- Manages Water System expansion initiatives and water and sewer requests from outside the service area.

- Manages Water Supply Contracts and Contract Renewal Process for MWRA's Water Supply Contract Communities.

- Manages the development and implementation of special projects which require senior level policy involvement and interdepartmental coordination.

- Oversees work among the other Operations departments and other Authority divisions requiring staff coordination regarding inter-agency environmental, regulatory and permitting issues for significant MWRA projects.

- Provides analysis of the operational impacts of state and federal legislation and regulations.

- Analyzes a broad range of programmatic, resource and communications issues affecting MWRA projects, activities and constituencies and recommends Authority policy direction.

- Participates in and represents the MWRA at regional and national forums such as NEWEA and NACWA as appropriate.

- Represents the Authority at public meetings and, as appropriate, speaks publicly at workshops, conferences and events on Authority initiatives.

- Manages the Department in a manner that is consistent with MWRA's goals of Diversity, Equity, and Inclusion.

SECONDARY DUTIES:

- Participates in preparing for collective bargaining and hears Step One Grievances.

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Analytical and writing skills as normally attained through a Bachelor's degree in environmental science, public administration, science, engineering, or related field required. An advanced degree in public administration, law, environmental science, or related field preferred; and

(B) At least ten (10) years professional experience with state and federal environmental regulations development, compliance, and policy analysis of which at least five (5) years are in a managerial or supervisory capacity preferably in the public sector; and

(C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Familiarity with water and sewer infrastructure issues preferred.

(B) Excellent interpersonal, oral and written communication skills.

(C) Extensive knowledge of federal and state environmental regulations.

(D) Demonstrated ability to plan, organize, direct, train and assign duties to subordinates.

(E) Excellent analytical, negotiation, and strategic planning skills.

(F) Ability to successfully interact with high-level executives.
(G) Ability to maintain confidentiality and diplomacy.

SPECIAL REQUIREMENTS:

A valid Massachusetts Class D Motor Vehicle Operators License.

Ability to work evenings or weekends for urgent business issues or respond to business calls on MWRA assigned phone after hours.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

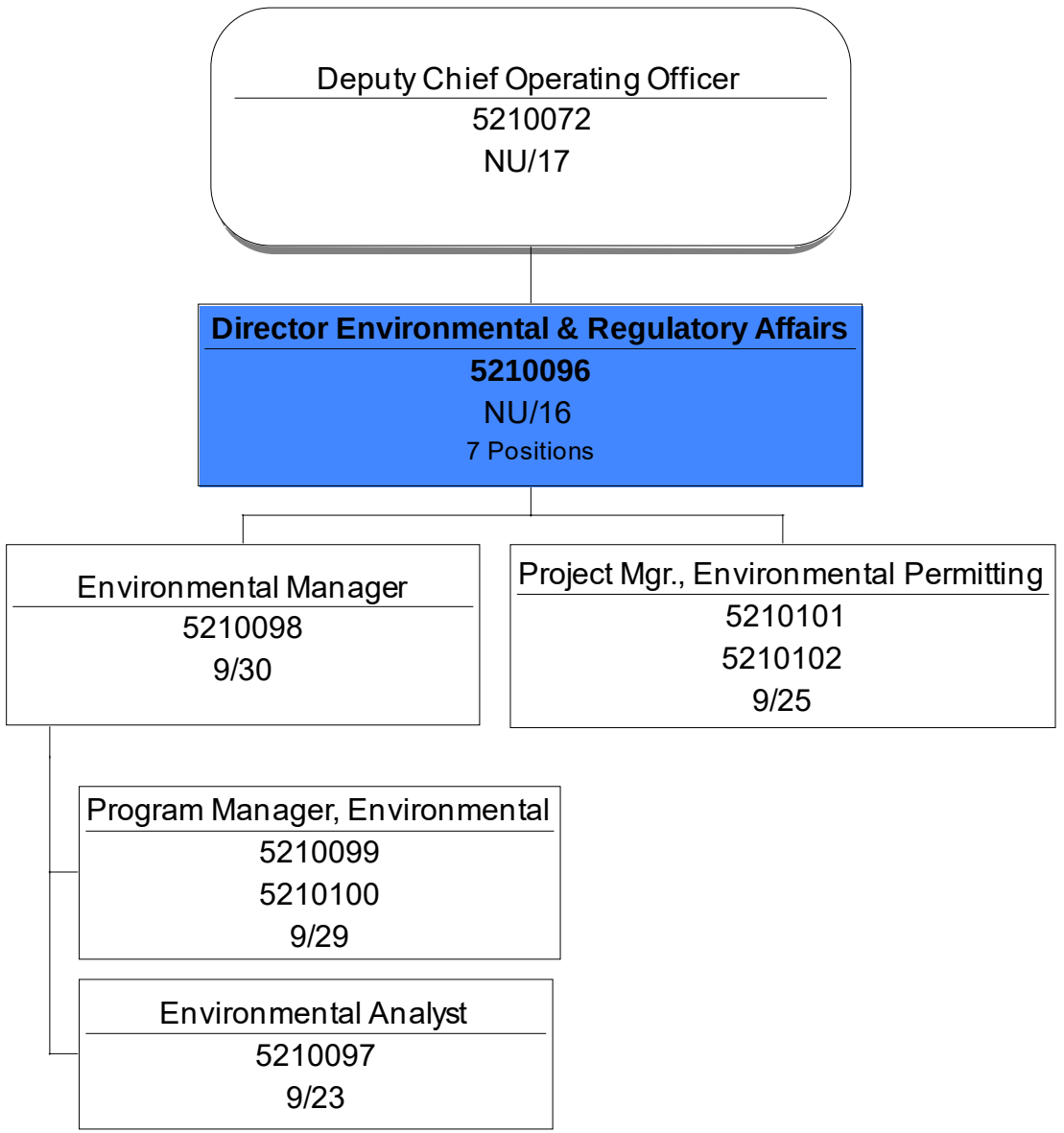
WORK ENVIRONMENT:

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

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

July 2023

Environmental & Regulatory Affairs
August 2023



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: September 13, 2023
SUBJECT: Delegated Authority Report – July and August 2023

COMMITTEE: Administration, Finance & Audit

X INFORMATION
___ VOTE

Michele S. Gillen
Director, Administration

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

Douglas J. Rice
Director of Procurement

RECOMMENDATION:

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

This report is broken down into three sections:

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

DISCUSSION:

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

Construction Contract Awards:

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

Change Orders:

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

Professional Service Contract Awards:

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

Non-Professional Service Contract Awards:

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

Purchase or Lease of Equipment, Materials or Supplies:

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

Amendments:

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

Amendments to the Position Control Register:

Amendments which result only in a change in cost center.

BUDGET/FISCAL IMPACT:

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

CONSTRUCTION/PROFESSIONAL SERVICES DELEGATED AUTHORITY ITEMS JULY 1 - 31, 2023

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	07/11/23	**NORUMBEGA COVERED STORAGE TANK CELL NO. 3 CLEANING** AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE NORUMBEGA COVERED STORAGE TANK CELL NO. 3 CLEANING FOR A TERM OF 365 CALENDAR DAYS.	OP-459	AWARD	R. ZOPPO CORP.	$2,883,500.00
C-2.	07/18/23	**LOW SERVICE PRESSURE REDUCING VALVE IMPROVEMENTS - BOSTON/MEDFORD** WORK PLATFORM REVISIONS AT PRESSURE REDUCING VALVE VAULTS: FURNISH AND INSTALL ANALOG OUTPUT MODULES IN THE VALVE CONTROL PANELS AND DIGITAL INDICATOR PANELS; FURNISH AND INSTALL AN INDUSTRIAL HEATER IN LIEU OF THE SPECIFIED RESIDENTIAL UNIT HEATER; EXTEND THE CONTRACT BY 120 CALENDAR DAYS FROM JULY 4, 2023 TO NOVEMBER 1, 2023.	7563	3	RJV CONSTRUCTION CORP.	$60,932.48
C-3.	07/18/23	**NORTHERN INTERMEDIATE HIGH SECTION 89 REPLACEMENT PIPELINE** INSTALL WATER SERVICES TO STONE ZOO ADMINISTRATION BUILDINGS; REPLACE SECTION 29 CAST IRON PIPE WITH DUCTILE IRON PIPE; INSTALL BEND IN PIPELINE TO AVOID UTILITY CONFLICT; EXCAVATE TEST PITS AROUND SECTION 89A PIPELINE; REVISED FITTINGS REQUIRED BETWEEN SECTION 89 AND 110 CONNECTION; REPAIR OF STONE ZOO FORCE MAIN; EXCAVATE, FURNISH AND INSTALL A TAP ON EXISTING BYPASS PIPING.	7117	2	P. GIOIOSO & SONS, INC.	$150,809.10
C-4.	07/18/23	**FIRE PROTECTION SPRINKLER SYSTEM SERVICE** AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR FIRE PROTECTION SPRINKLER SYSTEM SERVICE FOR A TERM OF 1,095 CALENDAR DAYS.	OP-460	AWARD	FIRE EQUIPMENT, INC.	$485,750.00
C-5.	07/26/23	**CRANE MAINTENANCE SERVICE** FINAL BALANCING CHANGE ORDER TO DECREASE THE FOLLOWING BID ITEMS: FREQUENT INSPECTIONS, LOAD TESTING INDIVIDUAL CRANES; NON-EMERGENCY AND EMERGENCY ON-CALL MAINTENANCE SERVICE, REPLACEMENT PARTS, COVID-19 PPE AND RENTAL EQUIPMENT.	OP-426	1	SAFEWAY OVERHEAD CRANE SERVICE, INC.	($32,811.98)
C-6.	07/26/23	**NORUMBEGA COVERED STORAGE TANK CELL NO 2. CLEANING** PROVIDE CRANE AND COMMERCIAL DIVE SERVICES AND TEMPORARY PUMPING SYSTEM.	W342	2	R. ZOPPO CORP.	$36,497.77
C-7.	07/28/23	**GROUNDSKEEPING SERVICES - DEER ISLAND TREATMENT PLANT** AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR GROUNDSKEEPING SERVICES AT DEER ISLAND TREATMENT PLANT FOR A TERM OF 1,095 CALENDAR DAYS.	S614	AWARD	LEAHY LANDSCAPING, INC.	$294,210.00

CONSTRUCTION/PROFESSIONAL SERVICES DELEGATED AUTHORITY ITEMS AUGUST 1 - 31, 2023

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	08/01/23	**OFFICE CONSOLIDATION BOSTON AND CHELSEA** FURNISH AND INSTALL WORKSTATIONS, CARPETS, CEILINGS, PAINT AND ELECTRICAL UPGRADES; INSTALL USB/POWER/DATA DOCKING STATIONS FOR NEW WORKSTATIONS; FURNISH AND INSTALL SUPPORTS FOR EXISTING METAL CLAD CONDUIT AND LOW-VOLTAGE CABLE IN CHELSEA; FURNISH AND INSTALL SUPPORTS FOR EXISTING METAL CLAD CONDUIT AND LOW-VOLTAGE CABLE AT DEER ISLAND TREATMENT PLANT; FURNISH AND INSTALL NEW SHELVES FOR MICROWAVE OVENS; FURNISH AND INSTALL A BREAKER AND CONDUIT IN LIEU OF THE SPECIFIED EQUIPMENT; FURNISH AND INSTALL ADDITIONAL DATA PORT.	7980	2	WES CONSTRUCTION CORP.	$174,140.76
C-2.	08/01/23	**NORUMBEGA COVERED STORAGE TANK CELL NO. 3 CLEANING (REVISED)** AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE NORUMBEGA COVERED STORAGE TANK CELL NO. 3 CLEANING FOR A TERM OF 365 CALENDAR DAYS. ***DUE TO A DISCREPANCY BETWEEN THE CONTRACT AMOUNT ENTERED INTO THE MWRA SUPPLIER PORTAL AND THE CONTRACT AMOUNT PRESENTED IN THE GENERAL BID FORM THIS STAFF SUMMARY SUPERSEDES THE PREVIOUSLY APPROVED VERSION APPROVED ON JULY 11, 2023).**	OP-459	AWARD	R. ZOPPO CORP.	$2,911,700.00
C-3.	08/03/23	**OVERHEAD DOOR MAINTENANCE SERVICES, VARIOUS MWRA FACILITIES** AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR OVERHEAD DOOR MAINTENANCE SERVICES AT VARIOUS MWRA FACILITIES FOR A TERM OF 730 CALENDAR DAYS.	OP-462	AWARD	SAFEWAY OVERHEAD CRANE SERVICE, INC.	$107,485.00
C-4.	08/14/23	**PERMANENT METERING SYSTEM REPLACEMENT EQUIPMENT PURCHASE AND INSTALLATION** FINAL BALANCING CHANGE ORDER TO DECREASE THE FOLLOWING BID ITEMS: POLICE DETAIL ALLOWANCE AND COVID-19 SAFETY ALLOWANCE.	7191	3	ADS, LLC	($209,227.06)
C-5.	08/24/23	**MISCELLANEOUS FENCING INSTALLATIONS AND REPAIRS** FINAL BALANCING CHANGE ORDER TO DECREASE THE FOLLOWING BID ITEMS: CREW FOREMAN WITH TRUCK AND TOOLS, LABORER, MATERIALS AND COVID-19 SAFETY ALLOWANCE.	6760Z	2	RAD CORP.	($218,318.58)
C-6.	08/24/23	**JOHN J. CARROLL WATER TREATMENT PLANT SODIUM HYPOCHLORITE SYSTEM MODIFICATIONS** DEGASSING VALVES AND PIPING FOR SODIUM HYPOCHLORITE SYSTEM; LINE RELOCATORS FOR SODIUM HYPOCHLORITE METERING PUMPS; MODIFY EXISTING CONTROL PANEL SUPPORTS FOR NEW AUXILIARY CONTROL PANELS; CONDUIT AND WIRE FOR METERING PUMP DISCHARGE PRESSURE SWITCHES; FURNISH AND INSTALL TWO STATIC MIXERS; FURNISH AND INSTALL TWO BALL VALES AT FLOW METERS.	7085H	8	HARDING & SMITH, LLC	$96,229.00
C-7.	08/25/23	**PRISON POINT CSO FACILITY IMPROVEMENTS DISCHARGE HEADER REHABILITATION** AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE PRISON POINT CSO FACILITY IMPROVEMENTS DISCHARGE HEADER REHABILITATION FOR A TERM OF 180 CALENDAR DAYS.	8013	AWARD	R. ZOPPO CORP.	$2,546,000.00

PURCHASING DELEGATED AUTHORITY ITEMS July 1 - 31, 2023

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	COMPANY	
P-1	07/11/23	**RENTAL OF ONE 100 TON CHILLER** AWARD OF A PURCHASE ORDER FOR A TWELVE-WEEK RENTAL OF ONE 100 TON AIR-COOLED CHILLER FOR THE DITP. THIS UNIT WILL SERVE AS EMERGENCY BACKUP TO THE EXISTING TWO UNITS DURING THE SUMMER MONTHS.	WRA-5332Q	UNITED RENTALS NORTH AMERICA, INC.	$30,600.00
P-2	07/11/23	**JANITORIAL SERVICES AT MWRA WESTERN FACILITIES** AWARD OF A THREE-YEAR PURCHASE ORDER UNDER MA STATE CONTRACT FAC114 TO THE LOWEST RESPONSIVE BIDDER FOR JANITORIAL SERVICES AT THE JOHN J. CARROLL WATER TREATMENT PLANT, THE SOUTHBOROUGH COMPLEX AND THE MARLBOROUGH MAINTENANCE FACILITY.	WRA-5296	FACILITIES MANAGEMENT AND MAINTANICE INC.	$443,409.72
P-3	07/11/23	**JANITORIAL SERVICES AT THE CHELSEA FACILITY** AWARD OF A THREE-YEAR PURCHASE ORDER UNDER MA STATE CONTRACT FAC114 TO THE LOWEST RESPONSIVE BIDDER FOR JANITORIAL SERVICES AT THE CHELSEA FACILITY.	WRA-5318	FACILITIES MANAGEMENT AND MAINTANICE INC.	$578,507.22
P-4	07/12/23	**UPGRADE PIMS APPLICATION AND RELATED COMPONENTS** AWARD OF A SOLE SOURCE PURCHAS ORDER CONTRACT TO UPGRADE THE PIMS APPLICATION AND RELATED COMPONENTS FROM 32 BIT TO 64 BIT ARCHITECTURE FOR A TERM OF 18 MONTHS. THE PIMS APPLICATION ALLOWS THE MWRA TO MEET THE EPA'S REQUIREMENTS FOR INDUSTRIAL PRETREATMENT PROGRAMS.		INFLECTION POINT SOLUTIONS LLC	$82,725.00
P-5	07/14/23	**SUPPLY AND DELIVERY OF SODIUM HYPOCHLORITE** AWARD OF A ONE-YEAR PURCHASE ORDER CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF SODIUM HYPOCHLORITE AT THE JOHN J. CARROLL WATER TREATMENT PLANT AND THE BRUTSCH FACILITY FOR THE PERIOD JULY 17, 20203 THROUGH JULY 16, 2024. THE NEW BID PRICES REPRESENT A $0.19 PER GALLON DECREASE AT THE CARROLL PLAND AND A $.559 PER GALLON DECREASE AT THE BRUTSCH FACILITY.	WRA-5306	UNIVAR SOLUTIONS USA, INC.	$3,270,269.00
P-6	07/18/23	**RENEWAL OF OKTA SUBSCRIPTIONS** AWARD OF A ONE-YEAR PURCHASE ORDER CONTRACT TO THE LOWEST RESPONSIVE BIDDER UNDER MA STATE CONTRACT ITS60 FOR RENEWAL AND SUPPORT OF 1,500 OKTA SUBSCRIPTIONS FOR PERIOD SEPTEMBER 1, 2023 THROUGH AUGUST 31, 2024. OKATA SINGLE SIGN-ON PROVIDES A SECURE MECHANISM FOR IDENTITY AND ACCESS MANAGEMENT AUTHENTICATION.	WRA-5315-Q	CARAHSOFT TECHNOLOGY CORPORATION	$179,849.96
P-7	07/18/23	**SUPPLY AND DELIVERY OF SODIUM BISILFITE** AWARD OF A ONE-YEAR PURCHASE ORDER CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPY AND DELIVERY OF SODIUM BISULFITE AT JOHN J. CARROLL WATER TREATMENT PLANT AND CLINTON WASTEWATER TREATMENT PLANT. COMPARED TO THE CURRENT CONTRACT PRICING, BID PRICES HAVE DECREASED BY $0.05 PER GALLON FOR CARROLL AND $0.25 PER GALLON FOR CLINTON.	WRA-5307	JCI JONES CHEMICALS, INC.	$191,060.00
P-8	07/20/23	**PUMP REPLACEMENT PARTS** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR PUMP REPLACEMENT PARTS FOR THE GRAVITY THICKENERS AT DEER ISLAND TREATMENT PLANT.	WRA-5582	LIBERTY PROCESS EQUIPMENT, INC.	$25,246.00
P-9	07/20/23	**PURCHASE OF FORTY LOCKING MANHOLE FRAMES AND COVERS** AWARD OF A SOLE SOUCE PURCHASE ORDER FOR FORTY LOCKING MANHOLE FRAMES AND COVERS FOR THE CHELSEA WAREHOUSE FACILITY.		EJ USA, INC.	$32,581.20
P-10	07/26/23	**SUPPLY AND DELIVERY OF AQUA AMONIA** AWARD OF A ONE-YEAR PURCHASE ORDER CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR SUPPLY AND DELIVERY OF AQUA AMMONIA AT THE JOHN J. CARROLL WATER TREATMENT PLANT. COMPARED TO THE EXISTING CONTRACT, THE COST PER GALLON HAS DECREASED BY 37.5% OR $0.8467 PER GALLON.	WRA-5321	UNIVAR SOLUTIONS USA, INC.	$284,618.00
P-11	07/26/23	**PROGRAMMABLE LOGIC CONTROLLER SYSTEM UPGRADE** AWARD OF A SOLE SOUCE PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER TO UPGRADE THE PROGRAMABLE LOGIC CONTROLLER (PLC) SYSTEM AT THE JOHN J. CARROLL WATER TREATMENT PLANT. THE PLC SYSTEM INTERFACES WITH THE SCADA SYSTEM AND CONTROLLS THE POWER GENERATION SYSTEM AND ASSOCIATED SWITCHGEAR.		ABB INC.	$367,407.00
P-12	07/26/23	**SUPPLY AND DELIVERY OF SODIUM HYPOCHLORITE** AWARD OF A ONE-YEAR PURCHASE ORDER CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR SUPPLY AND DELIVERY OF SODIUM HYPOCHLORITE AT THE CLINTON WASTE WATER TREATMENT PLANT, COTTAGE FARM, PRISON POINT, SOMERVILLE MARGINAL, WARD STREET COLUMBUS PARK, NUT ISLAND HEADWORKS CHELSEA CREEK HEADWORKS AND UNION PARK CSO. THE AVERAGE UNIT PROCE FOR THE 10 LOCATIONS WILL DECREASE TO $2.51 PER GALLON.	WRA-5305	BORDEN & REMINGTON CORPORATION	$478,374.50

P-13	**07/26/23**	**SUPPLY AND DELIVERY OF HYDROFLUOROSILICIC ACID** AWARD OF A ONE-YEAR PURCHASE ORDER CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR SUPPLY AND DELIVERY OF HYDROFLUOROSILICIC ACID. COMPARED TO THE EXISTING CONTRACT, THE COST PER DRY TON INCREASED BY 4% OR $87 PER DRY TON.	**WRA-5328**	**UNIVAR SOLUTIONS USA, INC.**	**$515,280.00**
P-14	**07/26/23**	**SUPPLY AND DELIVERY OF CARBON DIOXIDE** AWARD OF A ONE-YEAR PURCHASE ORDER CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR SUPPLY AND DELIVERY OF CARBON DIOXIDE AT THE JOHN J. CARROLL WATER TREATMENT PLANT. THIS PRICE REPRESENTS A $25 PER TON INCREASE.	**WRA-5322**	**LINDE INC.**	**$743,750.00**
P-15	**07/27/23**	**PURCHASE OF SEVEN BACKFLOW PREVENTERS** AWARD OF TWO SEPARATE PURCHASE ORDERS TO THE LOWEST RESPONSIVE BIDDERS FOR SEVEN BACKFLOW PREVETERS FOR DEER ISLAND TREATMENT PLANT.	**WRA-5324**	**HUJAYA SUPPLY AND METROPOLITAN PIPE & SUPPLY**	**$27,597 AND $20,736.41**
P-16	**07/27/23**	**ONE-YEAR OF SUPPORT FOR THE FLEET DATA SYSTEM** AWARD OF A ONE-YEAR SOLE SOUCE PURCHASE ORDER TO SUPPORT THE FLEET DATA SYSTEM FOR THE PERIOD AUGUST 1, 2023 THROUGH JULY 31, 2024. THE FLEET DATA SYSTEM PROVIDES INTERGRATED CENTRAL TRACKING, REPORTING AND CONTROL OF ALL FUEL USAGE FOR CHELSEA AND DEER ISLAND.		**FLEET DATA SYSTEMS, LLC**	**$35,130.00**

CONSTRUCTION/PROFESSIONAL SERVICES DELEGATED AUTHORITY ITEMS AUGUST 1 - 31, 2023

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	08/01/23	**OFFICE CONSOLIDATION BOSTON AND CHELSEA** FURNISH AND INSTALL WORKSTATIONS, CARPETS, CEILINGS, PAINT AND ELECTRICAL UPGRADES; INSTALL USB/POWER/DATA DOCKING STATIONS FOR NEW WORKSTATIONS; FURNISH AND INSTALL SUPPORTS FOR EXISTING METAL CLAD CONDUIT AND LOW-VOLTAGE CABLE IN CHELSEA; FURNISH AND INSTALL SUPPORTS FOR EXISTING METAL CLAD CONDUIT AND LOW-VOLTAGE CABLE AT DEER ISLAND TREATMENT PLANT; FURNISH AND INSTALL NEW SHELVES FOR MICROWAVE OVENS; FURNISH AND INSTALL A BREAKER AND CONDUIT IN LIEU OF THE SPECIFIED EQUIPMENT; FURNISH AND INSTALL ADDITIONAL DATA PORT.	7980	2	WES CONSTRUCTION CORP.	$174,140.76
C-2.	08/01/23	**NORUMBEGA COVERED STORAGE TANK CELL NO. 3 CLEANING (REVISED)** AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE NORUMBEGA COVERED STORAGE TANK CELL NO. 3 CLEANING FOR A TERM OF 365 CALENDAR DAYS. ***DUE TO A DISCREPANCY BETWEEN THE CONTRACT AMOUNT ENTERED INTO THE MWRA SUPPLIER PORTAL AND THE CONTRACT AMOUNT PRESENTED IN THE GENERAL BID FORM THIS STAFF SUMMARY SUPERSEDES THE PREVIOUSLY APPROVED VERSION APPROVED ON JULY 11, 2023).**	OP-459	AWARD	R. ZOPPO CORP.	$2,911,700.00
C-3.	08/03/23	**OVERHEAD DOOR MAINTENANCE SERVICES, VARIOUS MWRA FACILITIES** AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR OVERHEAD DOOR MAINTENANCE SERVICES AT VARIOUS MWRA FACILITIES FOR A TERM OF 730 CALENDAR DAYS.	OP-462	AWARD	SAFEWAY OVERHEAD CRANE SERVICE, INC.	$107,485.00
C-4.	08/14/23	**PERMANENT METERING SYSTEM REPLACEMENT EQUIPMENT PURCHASE AND INSTALLATION** FINAL BALANCING CHANGE ORDER TO DECREASE THE FOLLOWING BID ITEMS: POLICE DETAIL ALLOWANCE AND COVID-19 SAFETY ALLOWANCE.	7191	3	ADS, LLC	($209,227.06)
C-5.	08/24/23	**MISCELLANEOUS FENCING INSTALLATIONS AND REPAIRS** FINAL BALANCING CHANGE ORDER TO DECREASE THE FOLLOWING BID ITEMS: CREW FOREMAN WITH TRUCK AND TOOLS, LABORER, MATERIALS AND COVID-19 SAFETY ALLOWANCE.	6760Z	2	RAD CORP.	($218,318.58)
C-6.	08/24/23	**JOHN J. CARROLL WATER TREATMENT PLANT SODIUM HYPOCHLORITE SYSTEM MODIFICATIONS** DEGASSING VALVES AND PIPING FOR SODIUM HYPOCHLORITE SYSTEM; LINE RELOCATORS FOR SODIUM HYPOCHLORITE METERING PUMPS; MODIFY EXISTING CONTROL PANEL SUPPORTS FOR NEW AUXILIARY CONTROL PANELS; CONDUIT AND WIRE FOR METERING PUMP DISCHARGE PRESSURE SWITCHES; FURNISH AND INSTALL TWO STATIC MIXERS; FURNISH AND INSTALL TWO BALL VALES AT FLOW METERS.	7085H	8	HARDING & SMITH, LLC	$96,229.00
C-7.	08/25/23	**PRISON POINT CSO FACILITY IMPROVEMENTS DISCHARGE HEADER REHABILITATION** AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE PRISON POINT CSO FACILITY IMPROVEMENTS DISCHARGE HEADER REHABILITATION FOR A TERM OF 180 CALENDAR DAYS.	8013	AWARD	R. ZOPPO CORP.	$2,546,000.00

PURCHASING DELEGATED AUTHORITY ITEMS AUGUST 1 - 31, 2023

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	COMPANY	
P-1	08/02/23	**PURCHASE OF ONE WASH PRESS** AWARD A SOLE SOURCE PURCHASE ORDER FOR ONE WASH PRESS FOR THE DEER ISLAND TREATMENT PLANT. THE WASH PRESS IS A COMPONENT OF THE GRIT AND SCREENING PROCESS.		HUBER TECHNOLOGY, INC.	$62,221.45
P-2	08/02/23	**PURCHASE OF FOURTEEN ULTRAVIOLET REACTOR SATURATION CORES** AWARD A SOLE SOURCE PURCHASE ORDER FOR FOURTEEN ULTRAVIOLET REACTOR SATURATION CORES FOR THE JOHN J. CARROLL WATER TREATMENT PLANT. TRANSFORMER SATURATION CORES PROVIDE POWER TO THE INDIVIDUAL UV BULBS THAT MAKE UP THE UV REACTORS.		DE NORA WATER TECHNOLOGIES, LLC	$61,422.48
P-3	08/03/23	**SUBSCRIPTION RENEWAL OF THE INFOR LAWSON LEARNING MANAGEMENT SYSTEM** AWARD A SOLE SOURCE PURCHASE ORDER FOR A ONE-YEAR RENEWAL OF THE INFOR LAWSON LEARNING MANAGEMENT SYSTEM SUBSCRIPTION FOR THE PERIOD OF OCTOBER 30, 2023 THROUGH OCTOBER 29, 2024.		INFOR, INC.	$39,748.36
P-4	08/04/23	**DIGITIZATION AND CONSERVATION SERVICES** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR DIGITIZATION AND CONSERVATION SERVICES FOR 13 RECORD BOOKS WHICH PROVIDE AN INDEX TO HISTORIC WATER AND WASTEWATER INFRASTRUCTURE DRAWING AND PLANS DATING BACK TO 1889.	WRA-5343Q	NORTHEAST DOCUMENT CONSERVATION CENTER	$29,520.00
P-5	08/04/23	**UPGRADE OF AUDIOVISUAL EQUIPMENT AT THE CHELSEA FACILITY** AWARD OF A PURCHASE ORDER CONTRACT TO LOWEST RESPONSIVE BIDDER UNDER MA STATE CONTRACT OFF50 TO UPGRADE AUDIOVISUAL EQUIPMENT AT THE CHELSEA FACILITY ALONG WITH A ONE-YEAR SERVICE AGREEMENT.	WRA-5294Q	REn VISIONING TECHNOLOGY,LLC	$103,891.38
P-6	08/04/23	**PURCHASE FOR TWENTY-FOUR MICROSOFT SQL SERVER LICENSES** AWARD OF A PURCHASE ORDER CONTRACT TO LOWEST RESPONSIVE BIDDER UNDER MA STATE CONTRACT ITS75 FOR TWENTY-FOUR MICROSOFT SQL SERVER LICENSES WITH TWO YEARS OF SOFTWARE ASSURANCE AND ONE SQL STANDARD LICENSE AND FIVE SQL USER CALs. MICROSOFT SQL SERVER ENTERPRISE IS A DATABASE SYSTEM THAT MWRA USES TO SUPPORT NUMEROUS ADMINISTRATIVE, FINANCIAL AND OPERATIONAL APPLICATIONS.	WRA-5334Q	DELL MARKING, LP	$322,560.05
P-7	08/07/23	**PURCHASE OF FOUR FLAME SCANNERS** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR FOUR FLAME SCANNERS AND CABLES FOR THE DEER ISLAND TREATMENT PLANT. FLAME SCANNERS ARE PART OF THE SAFETY CONTROLS FOR THE WASTE GAS BURNERS.	WRA-5327Q	FW WEBB COMPANY	$38,498.20
P-8	08/14/23	**PURCHASE OF FOUR CISCO EDGE SWITCHES** AWARD OF A CRITICAL NEED PURCHASE ORDER OR REPLACEMENT OF FOUR CISCO EDGE SWITCHES UNDER MA STATE CONTRACT ITC73. ON JULY 16TH AN HVAC UNIT SERVICING A DATA CLOSET IN THE CHELSEA ADMIN BUILDING LEAKED CAUSING WATER TO SPILL ON SEVERAL NETWROK SWITCHES DAMAGNG THEM.		CDW, LLC.	$50,691.36
P-9	08/16/23	**ENVIRONMENTAL SERVICES FOR THE MIS DATA CENTER AND THE OPERATIONS CONTROL CENTER AT THE CHELSEA FACILITY** AWARD OF A THREE-YEAR PURCHASE ORDER CONTRACT TO THE LOWEST RESPONSIVE BIDDER TO PROVIDE ENVIRONMENTAL SERVCIES FOR THE MIS DATA CENTER AND THE OPERATIONS CONTROL CENTER AT THE CHELSEA FACILITY. THIS CONTRACT WILL PROVIDE PREVENTITIVE MAINTENANCE AND EMERGENCY RESPONSE SERVICES FOR TEH BATTERY POWERED UPS SYSTEMS, POWER DISTRIBUTION UNITS, INERGEN FIRE PROTECTION SYSTEM AND HVAC EQUIPMENT.	WRA-5346Q	BCM CONTROLS CORPORATION	$32,086.00
P-10	08/16/23	**PURCHASE OF ONE HEWLETT PACKARD TECH CAFÉ VENDING MACHINE AND SMART LOCKER** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER UNDER MA STATE CONTRACT ITC73 FOR ONE HEWLETT PACKARD TECH CAFÉ VENDING MACHINE AND SMART LOCKER FOR DEER ISLAND FACILITY.	WRA-5344-Q	HEWLETT PACKARD. INC.	$52,708.00
P-11	08/16/23	**CONSULTING SERVICES TO UPGRADE EXISTING CISCO CORE SWITCHES** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER UNDER MA STATE CONTRACT ITS74PROJSERV TO PROVIDE CONSULTING SERVICES TO UPGRADE EXISTING CISCO CORE SWITCHES. CISCO CORE SWITCHES ARE LOCATED IN THE DATA CENTERS AND ARE THE BACKBONE OF THE MWRA'S NETWORK.	WRA-5342Q	PRESIDIO NETWORKED SOLUTIONS, LLC	$64,812.95
P-12	08/23/23	**PURCHAS OF TWO DELL POWEREDGE SERVERS** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER UNDER MA STATE CONTRACT ITS74 FOR TWO DELL POWEREDGE SERVERS, VMWARE HORIZON VIRTUALIZATION LICENSES AND CONSULTING SERVICES. THIS PURCHASE PROVIDES THE HARDWARE AND SOFTWARE REQUIRED TO BUILD A SUPPORTED, VIRTUALIZED, NAMED USER LICENSED AUTOCAD ENVIRONMENT THAT STAFF CAN UTILIZE FOR THEIR AUTOCAD NEEDS.	WRA-5341Q	PRESIDIO NETWORKED SOLUTIONS, LLC	$192,454.43
P-13	08/23/23	**PURCHASE OF TWO ELECTIC PICKUP TRUCKS** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR TWO NEW CHEVROLET SILVERADO ELECTRIC PICKUP TRUCKS. THE MSRP FOR THE TWO ELECTRIC PICKUPS, PLUS THE DESTINATION FEE AND OUTFITTIG ACCESSORIES, INCLUDING LEVEL THREE DC CHARGING CAPABILITIES IS $198,380.	WRA-5308	LIBERTY CHEVROLET, INC.	$194,590.00

P-14	**08/23/23**	**PURCHASE OF ONE REVERSE-OSMOSIS/DEIONIZED WATER SYSTEM** AWARD OF A PURCHASE ORDER CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR FOR ONE REVERSE-OSMOSIS/DEIONIZED WATER SYSTEM FOR THE CENTRAL LABORATORY AT DEER ISLAND TREATMENT PLANT. THE EXISTING SYSTEM WAS INSTALLED IN 1993 AND IS OVERDUE FOR REPLACEMENT.	**WRA-5263**	**PURE PROCESS TECHNOLOGY, LLC**	**$294,182.63**
P-15	**08/23/23**	**SUPPLY AND DELIVERY OF SODIUM HYPOCHLORITE** AWARD OF A ONE-YEAR PURCHASE ORDER CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF SODIUM HYPOCHLORITE AT DEER ISLAND TREATMENT PLANT FOR THE PERIOD NOVEMBER 17, 2023 THROUGH NOVEMBER 16, 2024.	**WRA-5336**	**BORDEN & REMINGTON CORPORATION**	**$4,497,400.00**
P-16	**08/29/23**	**PURCHASE OF 24 VEHICLES INCLUDING 12 ELECTRIC SUV'S** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR SEVEN NEW CHEVROLET EQUINOX SPORT UTILITY VEHICLES, FIVE NEW ALL ELECTRIC CHEVROLET BOLT SPORT UTILITY VEHICLES, NINE VARIOUS NEW PICKUP TRUCKS, AND THREE NEW CARGO VANS. THE MSRP FOR THE 24 VEHICLES, PLUS THE DESTINATION FEE AND OUTFITTING ACCESSORIES, IS $1,193,996,45.	**WRA-5309**	**LIBERTY CHEVROLET, INC.**	**$1,155,808.00**

POSITION CONTROL REGISTER (PCR) LOCATION CHANGES July 2023

DATE OF CHANGE	POSITION TITLE	CURRENT PCR#	CURRENT COST CENTER	NEW PCR #	NEW COST CENTER	REASON FOR CHANGE
7/15/2023	Senior Training Specialist	4410016	Rates and Budget	8530010	Training	To meet staff needs of the Human Resources Department.

POSITION CONTROL REGISTER (PCR) LOCATION CHANGES August 2023

DATE OF CHANGE	POSITION TITLE	CURRENT PCR#	CURRENT COST CENTER	NEW PCR #	NEW COST CENTER	REASON FOR CHANGE
8/12/2023	Heavy Equipment Operator II	3394082	Western Operations and Maintenance	same	same	Title more appropriate for duties.
8/12/2023	Administrative Coordinator	5210004	Policy and Administration	3391025	Waterworks O&M	
8/19/2023	Project Manager, Mechanical	5525010	Engineering and Construction	same	same	Title more appropriate for duties.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: September 13, 2023
SUBJECT: FY2023 Fourth Quarter Orange Notebook

COMMITTEE: Administration, Finance & Audit

X INFORMATION
___ VOTE

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

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

RECOMMENDATION:

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

DISCUSSION:

The Orange Notebook presents performance indicators for operational, financial, workforce, and customer service parameters tracked by MWRA management each month. This staff summary includes highlights from the fourth quarter of fiscal year 2023.

Staffing Levels

Hiring continued to accelerate in FY23, with 224 hires or promotions compared to 203 in FY22 and 145 in 2021. Both the total and external hires compare favorably with the prior two fiscal years. MWRA had 64 and 65 external hires during FY21 and FY22, respectively, compared to 91 during FY23, an increase of 40 percent. Nonetheless, at the end of June, staffing stood at 1050.7 FTEs (full time equivalents), about 101 below the budget of 1151.4 FTEs. (See page 47.) There are also 70 current employees eligible for 75-80% of their pensions at this time.

Lower staffing levels continue to have impacts on operations: several water distribution and wastewater pipeline performance measures were under target due to staff vacancies and a focus on supporting more critical capital improvement projects and in-house construction work (see pages 9 and 10); several lab services metrics missed goals during the fourth quarter, (see page 17); maintenance backlog at Deer Island is still higher than preferable, but has reduced significantly during the year and is affecting areas that do not immediately impact critical operations or regulatory compliance. (See page 11.)

Increased Sodium Hypochlorite Usage

MWRA uses sodium hypochlorite to inactivate pathogens in plant effluent after primary and secondary treatment. Indicator bacteria such as Fecal Coliform, E. coli, and Enterococcus are used to measure the presence of potential pathogens.

On March 29, 2023, the disinfection basin effluent total residual chlorine target was increased from 0.30 mg/L to greater than or equal to 0.50 mg/L, resulting in higher sodium hypochlorite usage. The higher chlorine residual target was adjusted to develop and test operating strategies for the anticipated more stringent seasonal limits for the indicator bacteria contained in the draft National Pollution Discharge Elimination System (NPDES) permit, and prior to those limits coming into effect. Deer Island maintained an average disinfection chlorine residual of 0.55 mg/L in the fourth quarter with an average dosing rate of 2.20 mg/L as chlorine demand was 1.65 mg/L with the higher target.

As a result, in the fourth quarter of FY23, the disinfection dosing rate was 33% above target, and the actual sodium hypochlorite usage in pounds was 18.6% higher than expected. In FY23, the disinfection dosing rate of sodium hypochlorite was 15% higher than the budgetary estimate, which was originally based on meeting the bacteria limits in the current NPDES permit. Higher usage of sodium hypochlorite will continue if the limits in the draft NPDES permit are finalized. Once staff have finalized the operating strategy for compliance with the anticipated limits, disinfection dosing and chlorine residual targets will be returned to current permit conditions.

MASSACHUSETTS WATER RESOURCES AUTHORITY

Board of Directors Report

on

Key Indicators of MWRA Performance

Fourth Quarter FY2023

Q1	Q2	Q3	Q4

Frederick A. Laskey, Executive Director
David Coppes, Chief Operating Officer
September 13, 2023

Board of Directors Report on Key Indicators of MWRA Performance
Fourth Quarter FY23

Table of Contents

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

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

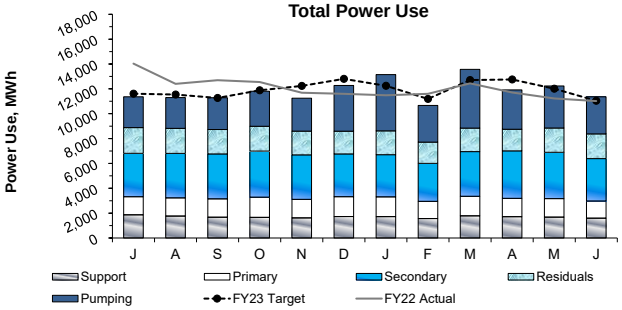
September 13, 2023

OPERATIONS AND MAINTENANCE

Deer Island Operations

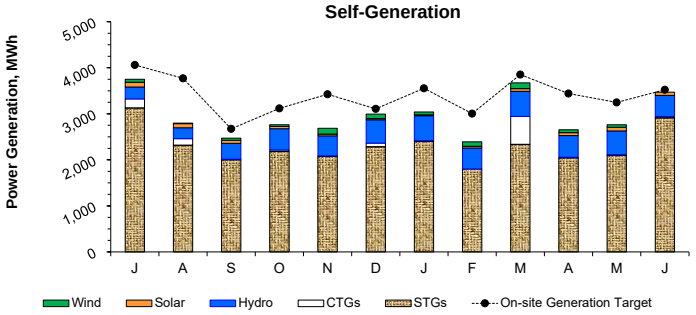
4th Quarter - FY23

Total Power Use



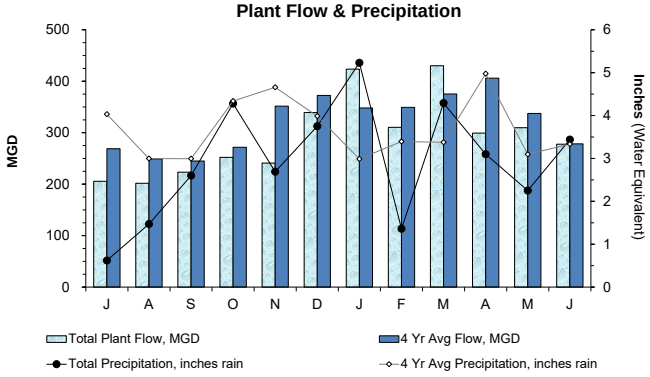
Total power usage in the 4th Quarter was on target (-0.8%) even though plant flow for this period was 13.2% below target with historical (4 year average) data used to generate the electricity model, as precipitation was 22.9% below target (11.41 inches expected vs. 8.79 inches actual). Power usage for most of the treatment processes was lower to or similar to target, including power used for raw wastewater pumping which was 9.8% below target as expected due to the lower plant flow. Power usage for secondary treatment cryogenic oxygen generation and for the residuals treatment processes was 18.7% and 6.1% higher than target, respectively, due to higher oxygen demand and higher secondary waste sludge production. **Overall, total power usage for FY23 was within 0.8% of target as total plant flow was 8.8% below the 4 year average plant flow target.**

Self-Generation



Power generated on-site during the 4th Quarter was 13.0% below the target. The CTGs operated on June 5 for an ISO-NE demand response summer audit and briefly throughout the quarter for maintenance/checkout purposes. STGs generation was 4.1% below target as digester gas production was 5.2% below target. Hydro Turbine generation was 7.7% below target due to lower plant flows. Solar Panel generation was 21.5% below target as the Residuals Odor Control Facility rooftop array continues to remain out of service pending replacement of the grid inverter which has been difficult to source. Wind Turbine generation was 73.9% below target as Turbine #1 remained out of service and Turbine #2 has been out of service since May 29. This turbine was taken out of service for precautionary reasons during the wind storm that led to catastrophic damage to the offline Turbine #1, and an inspection of Turbine #2 noted the inboard bearing on the generator shaft was in need of replacement. Repairs for Turbine #2 will proceed pending arrival of the replacement parts. **Overall, power generation was 13.1% below target for FY23.**

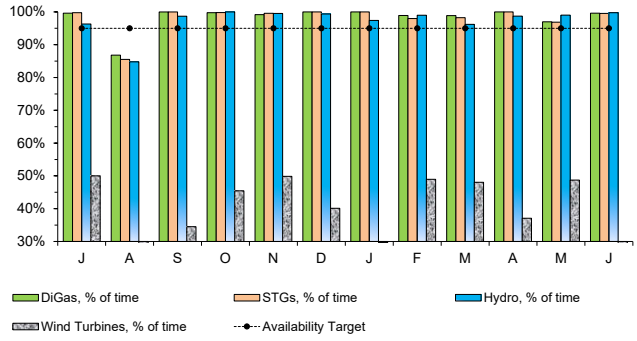
Plant Flow & Precipitation



Total Plant Flow for the 4th Quarter was 13.2% below target with the budgeted 4 year average plant flow (295.5 MGD actual vs 340.5 MGD expected) as precipitation was 22.9% below target (8.79 inches actual vs. 11.41 inches expected). **Total Plant Flow for FY23 was 8.8% below target as precipitation was 20.6% below target.**

Self-Generation Equipment On-Line

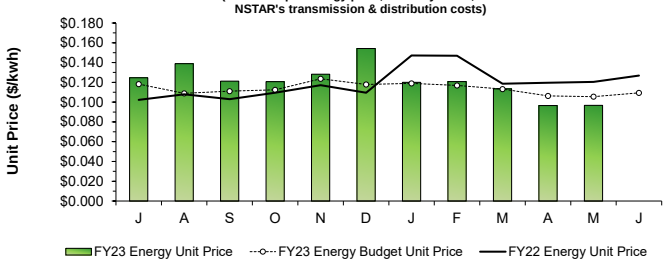
(% of Time in Operation)



The DiGas System, STGs, and Hydro Turbines availability exceeded the 95% availability target in the 4th Quarter. However, Wind Turbines availability fell to 28.6% due to several mechanical issues with Wind Turbine #2, which reduced its availability to 57.2% for the quarter, and Turbine #1 has been out of service since April 11, 2022. **Overall for FY23, Wind Turbines availability was only 36.9%, while availability for the other self-generating equipment exceeded the 95% availability target.**

Total Electricity Pricing

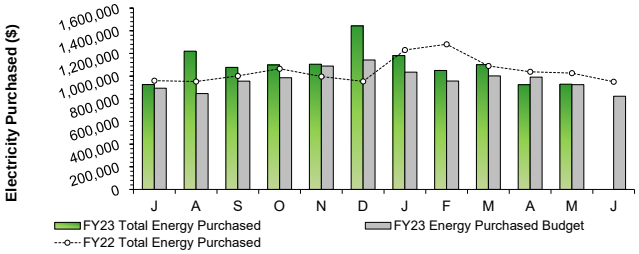
(includes spot energy price, ancillary costs, and NSTAR's transmission & distribution costs)



Under the current energy supply contract, a block portion of DI's energy is a fixed rate and the variable load above the block is purchased in real time. The actual Total Energy Unit Prices for June is not yet available as the complete invoice has not been received. The actual Total Energy Unit Price in April was 9.2% below target and in May, the most current available price, was 8.3% below target with the budgetary estimates. The Total Energy Unit Price includes a fixed block price, spot energy price, transmission & distribution charges, and ancillary charges. **Overall for FY23 through May, the Total Energy Unit Price was 6.3% higher than target due to much higher than expected prices during the first half of FY23.**

Note: Only the actual energy prices are reported. Therefore, the dataset lags by one (1) month due to the timing of invoice receipt and review.

Total Cost of Electricity

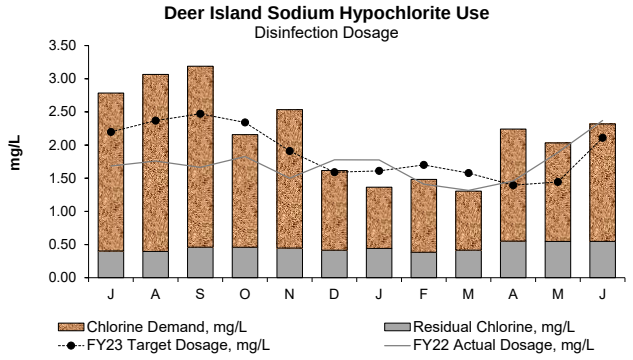


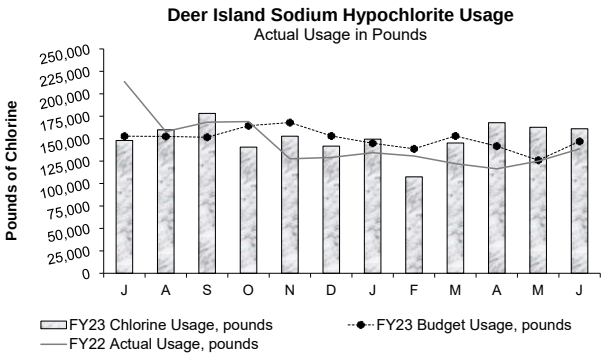
The Electricity cost data for Electricity Purchased in June is not yet available as the complete invoice has not been received. Year-to-date Total Cost of Electricity is $1,231,976 (11.4%) higher than budgeted through May, the most current available price, as the Total Energy Unit Price was 6.3% higher than target and the Total Electricity Purchased was 4.8% above target.

Note: Only months with complete Electricity Purchased data are reported. Therefore, the dataset lags by one (1) month due to the timing of invoice receipt and review

Deer Island Operations

4th Quarter - FY23





The disinfection dosing rate in the 4th Quarter was 33.0% above target with budgetary estimates. As a result, actual sodium hypochlorite usage in pounds of chlorine was similarly 18.6% higher-than-expected. The disinfection basin effluent total residual chlorine target was increased on March 29 from a lower target to a higher target that is greater than or equal to 0.50 mg/L, thus resulting in the higher sodium hypochlorite usage. The higher chlorine residual target was adopted in preparation for meeting the more stringent potential new NPDES permit effluent discharge limits for indicator bacteria. DITP maintained an average disinfection chlorine residual of 0.55 mg/L this quarter with an average dosing rate of 2.20 mg/L as chlorine demand was 1.65 mg/L with the higher target. **Overall in FY23, the disinfection dosing rate was 15% higher than the budgetary estimate which was based on meeting only the fecal coliform limits in the current NPDES permit.**

The overall disinfection dosing rate (target and actual) is dependent on plant flow, target effluent total chlorine residual levels, effluent quality and NPDES permit levels for fecal coliform.

Secondary Blending Events

Month	Count of Blending Events	Count of Blending Events Due to Rain	Count of Blending Events Due to Non-Rain-Related Events	Secondary, as a Percent of Total Plant Flow	Total Hours Blended During Month
July	0	0	0	100.0%	0.00
August	0	0	0	100.0%	0.00
September	0	0	0	100.0%	0.00
October	1	1	0	99.8%	2.43
November	1	1	0	99.9%	2.12
December	4	4	0	99.5%	17.95
January	3	3	0	98.7%	28.99
February	0	0	0	100.0%	0.00
March	2	2	0	96.8%	48.02
April	1	1	0	99.8%	3.56
May	1	1	0	99.6%	4.43
June	0	0	0	100.0%	0.00
Total	13	13	0	99.3%	108.50

99.8% of all flows were treated at full secondary during the 4th Quarter. There were two (2) secondary blending events due to high plant flows from heavy precipitation. These blending events resulted in 7.99 hours of blending and a total of 54.95 MGal of primary-only treated effluent blended with secondary effluent. The Maximum Secondary Capacity during the entire quarter was 700 MGD.

Overall in FY23, 99.3% of all flows received full secondary treatment, as there were 13 separate secondary blending events totaling 108.50 hours of blending and a total of 1,329.77 MGal of primary-only treated effluent blended with secondary effluent. These secondary blending events were due to high plant flows resulting from heavy precipitation, sometimes in combination with snow melt.

Secondary permit limits were met at all times through the entire FY23.

Deer Island Operations & Maintenance Report

Environmental/Pumping:
The plant achieved an instantaneous peak flow rate of 1,013.4 MGD during the early morning hours of May 21. This peak flow occurred during a storm event that brought 1.94 inches of precipitation to the metropolitan Boston area over the course of two (2) days. The Total Plant Flow in the 4th Quarter was 13.2% below the 4 year average plant flow target for the quarter.

Staff from several departments across the MWRA (PICS, I&C, and SCADA) along with Operations staff completed the final switchover of the headworks communications between Columbus Park and DITP from an old copper line system to a new Verizon digital lease line system. This switchover to a new digital lease line system was necessary as Verizon was no longer supporting the copper line system. This project was designated as priority and staff worked diligently to install this new system and conducted trial tests prior to performing the final successful cutover to the new system on May 4.

Secondary:
Annual turnaround maintenance was performed on Train #2 in the Cryogenic Oxygen Facility from May 15 to May 26. This two (2) week turnaround maintenance is performed on roughly half of the components and systems in the Cryogenic Oxygen Facility. During this turnaround maintenance, the contractor calibrated all the instrumentation on Cold Box unit #2 as well as, a number of other components of the oxygen plant. The same turnaround maintenance will be completed on Train #1 in the fall.

Disinfection:
The disinfection basin effluent total residual chlorine target was raised to greater than or equal to 0.50 mg/L starting on March 29. The higher chlorine residual target was adopted in preparation for meeting the more stringent potential new NPDES permit effluent discharge limits for indicator bacteria including lower fecal coliform limits and new limits for Enterococcus bacteria.

Deer Island Operations & Maintenance Report (continued)

Residuals:
Sludge feed to each of the Module #2 digesters (#1 through #4) was temporarily suspended, one at a time, for several days each, starting on May 15, to allow the contractor to perform routine scheduled maintenance on each of the digester's sludge overflow line. This maintenance is performed on only one (1) digester at a time and continued until this maintenance is completed for these four (4) operating digesters. This maintenance was not needed for the Module #3 digesters as these digesters were only recently placed into operation earlier this year. This routine preventative maintenance is typically performed annually.

Odor Control Treatment:
Carbon adsorber (CAD) units #1 and #2 in the East Odor Control (EOC) Facility and unit #5 in the Residuals Odor Control (OC) Facility were emptied and refilled with new regenerated activated carbon media this quarter as part of routine maintenance to replace spent activated carbon.

Energy and Thermal Power Plant:
Overall, total power generated on-site accounted for 25.0% of Deer Island's total power use for the 4th Quarter and was 24.9% for FY23. Renewable power generated on-site (by Solar, Wind, STGs, and Hydro Turbines) was 24.1% for FY23.

CTG-1A was operated for approximately 1.8 hours on June 5 for an ISO-New England declared Demand Response summer audit event. The performance on this audit determines DITP's demand response program payment for the next six (6) months.

Routine annual maintenance was performed for CTG 1A during the week of June 12. The scope of the work included routine preventative maintenance, instrument calibrations, and inspection of its generator bearing. CTG 1A was not available for operation during this maintenance. However, CTG 2B was available for operation in the event of an emergency and a single generator is able to provide sufficient power to the plant up to plant flows of 825 MGD. CTG 1A was successfully test operated at the end of the maintenance on Friday June 16 and the unit was returned to standby mode. Additionally, a required fire system inspection for CTG 1A was successfully completed on June 23. These inspections routinely take approximately four (4) hours to complete and the unit was returned to standby once the inspection was completed.

One half of the solar array on the rooftop of the Maintenance/Warehouse Building, MW #2, was returned to service on April 20 after the failed A/C contactor was replaced. This solar array had failed on March 21. The other half of the same solar array system, MW #1, unexpectedly failed on April 21 due to a pair of failed transistors in the grid inverter. The transistors were replaced and the array was returned to service on June 6. The rated capacity of the combined M/W solar array is 180 kW.

Wind Turbine #1 has been out of service since April 11, 2022 with a main shaft bearing failure. During the early morning of May 29, this turbine experienced a catastrophic structural failure when the hydraulic brake system failed, causing parts of two (2) blades to come apart while the unit spun out of control for several hours during a wind storm, until the winds decreased sufficiently enough to bring the blade assembly under control to be secured. For safety reasons, the public access area in the vicinity of the turbines and the South Parking Lot 3 were closed, and the nose cone and blade assembly for this turbine was removed and safely lowered to the ground on June 2. Additionally, Wind Turbine #2 was taken out of operation as a precautionary measure on May 29 and is awaiting replacement of a faulty inboard bearing on the generator shaft before attempting to return the unit to operation.

DITP took delivery of 320,000 gallons of #2 fuel oil, a total of 32 oil tanker trucks, without incident from May 22 through May 30. This fuel oil is used for CTG operation, for boiler startup operations, and for supplemental fuel for boiler operation during periods of low or unstable digester gas production.

Clinton Operations & Maintenance Report

Dewatering Building:
Maintenance and Facility Specialists made repairs on the Belt Filter Press conveyor. Maintenance staff also completed numerous monthly Preventative Maintenance (PM) work orders. Operation staff washed down and dewatered Gravity Thickener #1. They also washed down the weirs on Gravity Thickener # 2. A contractor checked the eyewash stations for connection to the Verbatim alarm system. A contractor also calibrated the Belt Filter Press flow meter.

Chemical Building:
Maintenance staff removed and replaced the #2 Waste Activated Sludge (WAS) pump with a new pump and pipe spool, and returned the unit to operation. Maintenance staff and Facility Specialists disassembled & cleaned the soda ash feed line and mixing tank. They also cleaned and resealed the soda ash inspection hatch. Staff install a new Hypochlorite storage tank with the assistance of a Chelsea crane crew. Staff also flushed the feed pumps and replaced the diaphragms on the #1 & #2 ferric pumps. The electrical contractor determined there was a faulty flow switch for the eyewash showers located in the lower level. Staff worked with contractor to install flow tubes and replaced the # 2 WAS flow meter. The contractor then calibrated the WAS and the Return Activated Sludge (RAS) flow meters.

Aeration Basins:
Operations staff cleaned the pH and dissolved oxygen probes. The contractor calibrated the pH and ORP probes.

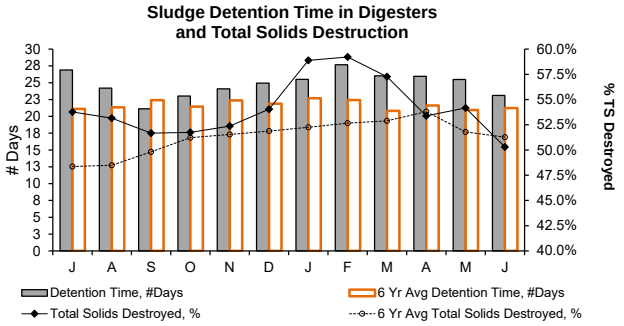
Phosphorus Building:
Maintenance staff acid washed all three (3) disk filters, cleaned the troughs, and inspected all the spray nozzles. Operation staff cleaned both online CL17 chlorine analyzers. Maintenance staff replaced the sump pump for the CL17 chlorine analyzer dosing system. The contractor charged and reinsulated the newly installed line for AC unit.

Headworks Building:
Maintenance staff cleaned the influent and mechanical bar racks and greased the upper and lower pin racks. The contractor tested the newly installed influent gates with water for the one (1) hour leak test. Operations staff drained the water out of the channel for the contractor. They removed the drain plug and the stop logs. The contractor disassembled screw pumps #1 and #3.

Digester Building:
Maintenance staff checked all equipment for proper operation and also greased the Ovivo mixer on the floating cover. Staff performed maintenance on the #2 waste gas flare to establish gas flow, however, the digester gas pipe continues to remain blocked.

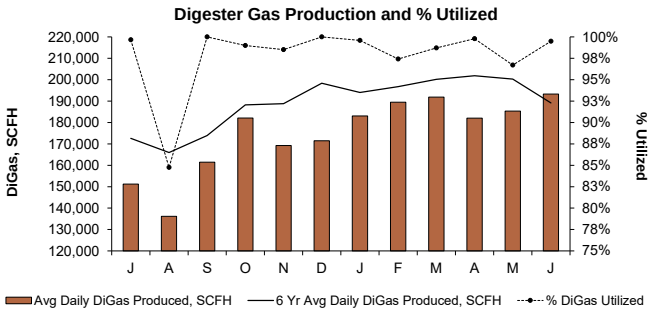
Deer Island Operations and Residuals

4th Quarter - FY23



Total solids (TS) destruction following anaerobic sludge digestion averaged 52.6% during the 4th Quarter, on target (+0.6%) with the 6 year average of 52.3%. Sludge detention time in the digesters was 24.8 days, 16.9% above the 21.3 days detention time target. 7.9 digesters were in operation, just under the projected target of 8.0 digesters. The higher sludge detention time is attributed to a 3.8% lower-than-expected volume of sludge feed going to the digesters. **Overall for FY23, TS destruction averaged 54.2%, 5.5% higher than the 51.3% target.**

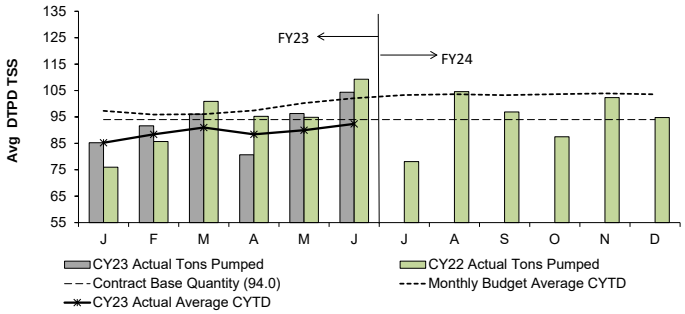
Total solids (TS) destruction is dependent on sludge detention time which is determined by primary and secondary solids production, plant flow, and the number of active digesters in operation. Solids destruction is also significantly impacted by changes in the number of digesters and the resulting shifting around of sludge.



The Avg Daily DiGas Production in the 4th Quarter was 5.2% below the 6 Year Avg Daily DiGas Production due mainly to 7.3% lower-than-expected primary sludge production as a result of 13.2% lower plant flows. 98.7% of the Digas produced was utilized at the Thermal Power Plant in the 4th Quarter. **Overall for FY23, DiGas Production was 7.6% lower-than-expected and 97.8% of the DiGas produced was utlized at the Thermal Power Plant.**

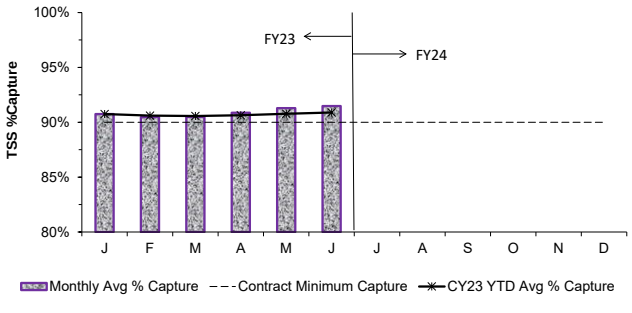
Residuals Pellet Plant

New England Fertilizer Company (NEFCO) operates the MWRA Biosolids Processing Facility (BPF) in Quincy under contract. MWRA pays a fixed monthly amount for the calendar year to process up to 94.0 DTPD/TSS as an annual average (for the extended contract period of January 1, 2021 through December 31, 2023). The monthly invoice is based on 94.0 DTPD/TSS (Dry Tons Per Day/Total Suspended Solids) times 365 days divided by 12 months. At the end of the year, the actual totals are calculated and additional payments are made on any quantity above the base amount. On average, MWRA processes more than 94.0 DTPD/TSS each year (FY23's budget is 103.3 DTPD/TSS and the preliminary FY24's budget is 103.2 DTPD/TSS).

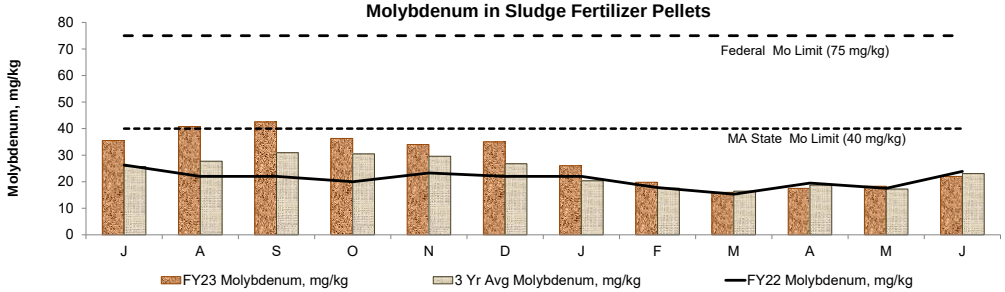


The average quantity of sludge sent to the Biosolids Processing Facility (BPF) in the 4th Quarter was 93.8 TSS Dry Tons Per Day (DTPD), 13.2% below target with the FY23 budget of 108.1 TSS DTPD for the same period. The lower amount of sludge sent to the BPF is partially attributed to a lower-than-expected volume of sludge being pumped to the BPF. Additionally, staff discovered a leaking flushing water valve that had inadvertently diluted the sludge in the DITP Digested Sludge Holding Tanks for several days, thus reducing the solids content of the sludge that was sent to the BPF from April 17 through the first two weeks of May.

The overall CY23-to-date average quantity of sludge pumped is 92.4 DTPD, 9.5% below target compared to the CY23-to-date average budget of 102.1 DTPD.



The contract requires NEFCO to capture at least 90.0% of the solids delivered to the Biosolids Processing Facility. The average capture for the 4th Quarter was 91.21% and the CY23-to-date average capture is 90.9%.



Copper, lead, and molybdenum (Mo) are metals of concern for MWRA as their concentrations in its biosolids have, at times, exceeded regulatory standards for unrestricted use as fertilizer. Molybdenum-based cooling tower water is a significant source of Mo in the sludge fertilizer pellets. The Federal standard for Mo is 75 mg/kg. The Massachusetts Type I biosolids standard for molybdenum was changed from 25 mg/kg to 40 mg/kg in 2016, allowing MWRA to sell its pellets in-state for land application whereas the previous limits forced several months' worth of pellets to be shipped out of state.

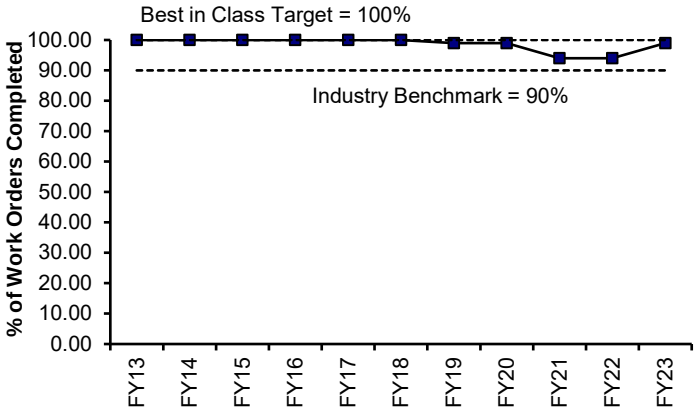
Overall, the levels have been below the DEP Type 1 limit for all three (3) metals. For Mo, the level in the MWRA sludge fertilizer pellets during the 4th Quarter averaged 19.3 mg/kg, 2% below the 3 year average, 52% below target with the MA State Limit, and 74% below the Federal Limit. **Overall for FY23, the Mo level in the pellets averaged 28.6 mg/kg, 28% below the MA State Limit, and 62% below the Federal Limit.**

Deer Island Yearly Maintenance Metrics

4th Quarter - FY23

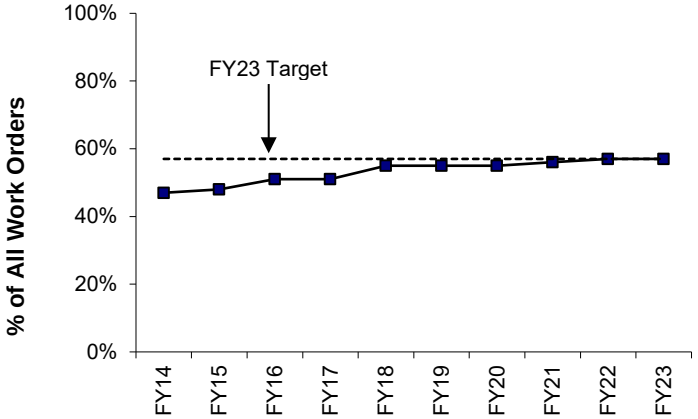
Proactive and Productivity Measures

Preventative Maintenance



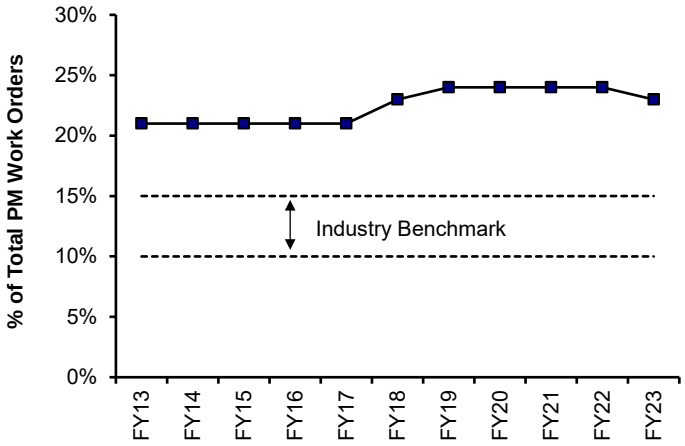
The industry benchmark is 90% for Preventative Maintenance (PM) completion. Upon reaching the 90% goal in FY05, the target goal was increased to the "Best in Class" Target of 100% PM completion. Reliability-Centered Maintenance (RCM) and PM optimization efforts have continued. PM completion rate was 99% in FY23 .

Maintenance Kitting



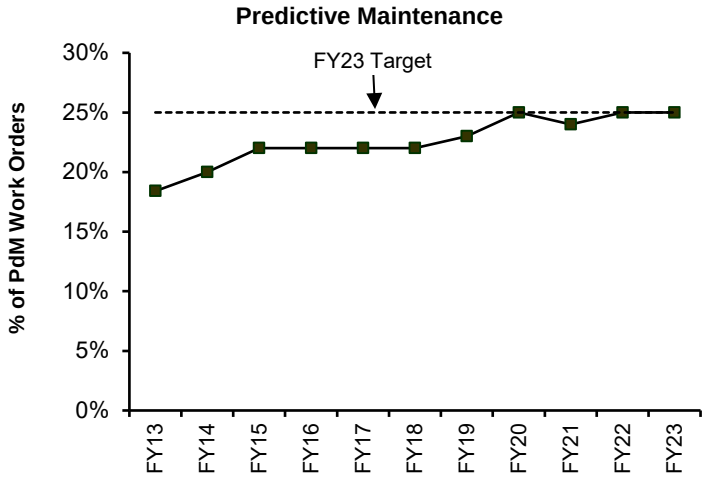
Preventive Maintenance (PM) inventory items were loaded into Maximo to assign spare parts for equipment to PM work orders. DITP reached the PM kitting goal of 100%. In FY12 a new graph was developed to track kitting of all maintenance work orders in an effort to increase wrench time. Staff continues to fine-tune the process to "kit" all maintenance work orders. Kitting is considered a best practice by maintenance and reliability professionals. It entails staging parts necessary to complete maintenance work. Kitting allows maintenance staff to spend more time "turning the wrench" and less time waiting for parts at the stockroom window. Kitting for FY23 was 57%, meeting DITP's goal of 57%.

Operations Light Maintenance PMs



The percentage of preventive maintenance work orders completed by Operations staff (non maintenance staff) increased from less than 1% in January 2002 to the current level of 23% in FY23. DITP reached the industry benchmark range of 15% and has exceeded the goal through FY23. The slight decrease of Operations PM work orders is due to adjusting frequencies during the year to meet plant needs.

Predictive Maintenance

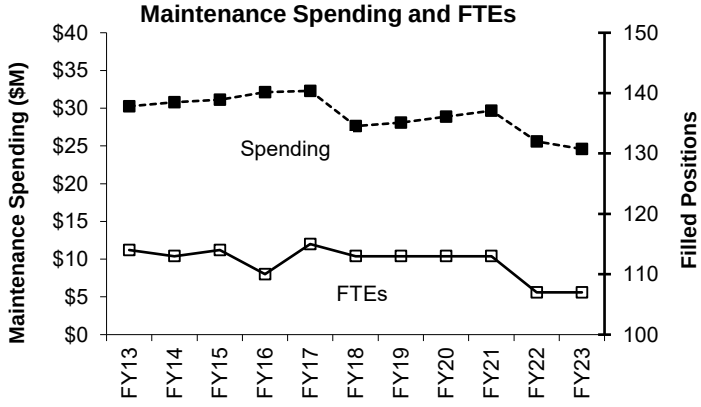


Predictive maintenance has steadily increased from 2% in FY03 to 25% in FY23, DITP met the FY25 goal of 25%. This percentage in predictive maintenance was achieved through the expanded use of lubrication, vibration, thermography, and acoustic ultrasonic testing techniques. The Condition Monitoring Group continually reviews and investigates new opportunities and initiatives to expand condition monitoring testing and analysis.

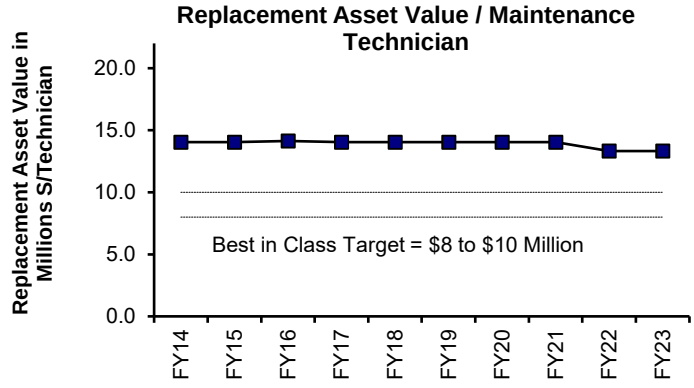
Deer Island Yearly Maintenance Metrics

4th Quarter - FY23

Overall Maintenance Program Measures

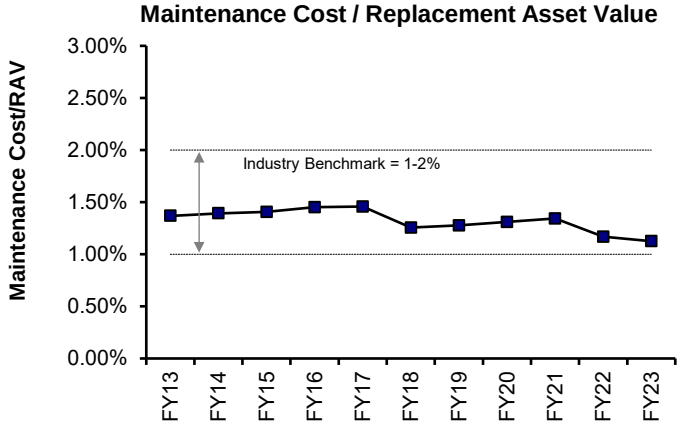


DITP's Maintenance staff is currently at 107 FTE's. Maintenance staff levels ended at 107 due to retirements and hiring challenges for trades personnel. Maintenance has worked to meet our goals though implementation of numerous maintenance efficiencies including: Operations performing light maintenance, cross-functional training and flexibility, and Reliability-Centered Maintenance. This year's overall Maintenance spending decreased slightly.

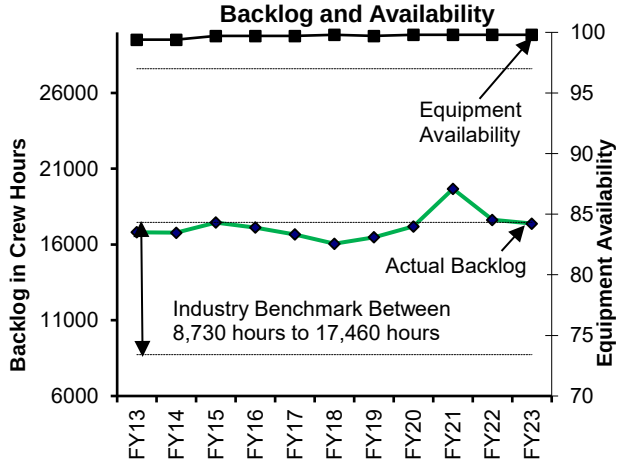


DITP adopted a "best in class" target of $8-$10 Million/Technician for maintenance staffing. DITP remains above this Best in Class. However, as the plant ages and additional equipment replacements are expected, DITP management will reassess staffing as needed.

The Maintenance Spending graph shows actual annual maintenance spending and CIP asset replacements (equipment costs only). Maintenance staff continues to evaluate plant assets and requirements for replacement of obsolete equipment to ensure the plant operates at maximum efficiency. In FY23, overall spending decreased slightly from FY22 due to a reduction in CIP Spending. Maintenance Projects in FY23; Replacement of Odor Control Dampers, Station Batteries replaced in Main Switchgear Building, Radio system upgrade, Replacement of four large valves on the hot water system, Installation of Gas Protection System panel in North Main Pump Station, Installation of LED Emergency Lights, and installation of LED lights for the Digester Complex.



The industry benchmark for annual maintenance spending is between 1% to 2% of replacement asset value, currently DITP is at 1.13%. The plant's replacement asset value is calculated at approximately $2.6 billion dollars. DITP's current maintenance spending is within the industry benchmark. Overall maintenance spending has decreased slightly from last year. DITP Maintenance CEB spending is $23.5 million. CIP spending was $1.1 million (equipment costs only). CIP/CEB Spending totaled $24.6 million in FY23.



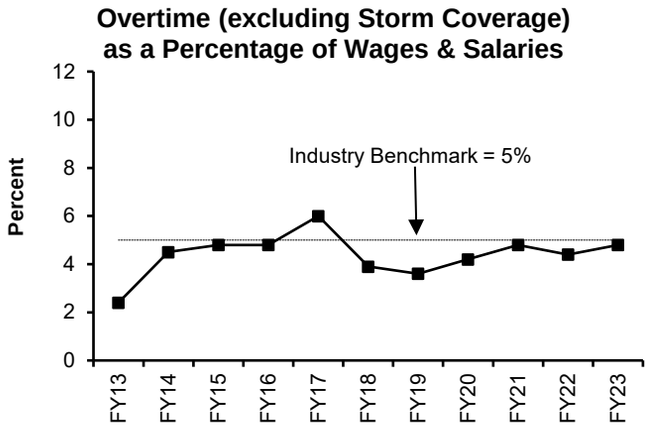
Industry benchmark for Equipment Availability is 97%. Deer Island has exceeded this benchmark over for the last ten years. In FY23 the availability was 99%. The high percentage in Equipment Availability during FY23 is due to redundancy of equipment and effective/efficient maintenance practices.

Industry Benchmark for Backlog is between 8,730 to 17,460 hours for maintenance based on current staffing, the total average backlog for FY23 was 17,373 hours, which is within the industry benchmark. DITP Maintenance has made significant progress over the last year to be within the Industry Benchmark, after being over the previous two years.

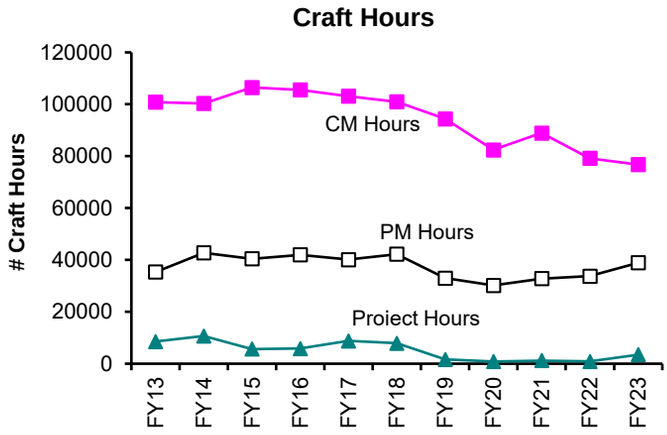
Deer Island Yearly Maintenance Metrics

4th Quarter - FY23

Overall Maintenance Program Measures (cont.)



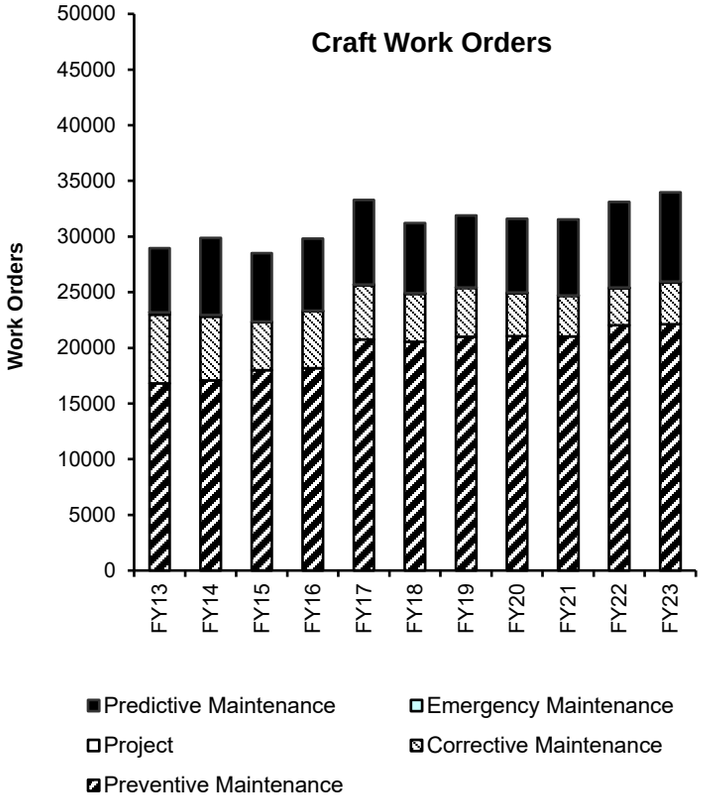
Management continues its effort to keep overtime below the industry benchmark. DITP maintenance overtime was 4.8% for FY23. Management has taken steps to reduce overtime spending by limiting overtime to repair critical equipment and systems only. DITP has been under the Industry Benchmark every year except FY17, due to the increase in overtime for the Eversource Cable Outage.



This year's slight decrease in Corrective Maintenance (CM) hours was due to staff working on projects which slipped during Covid to increase equipment performance and extend the useful life of the equipment.

This year's slight increase in Preventive Maintenance (PM) was due to completing additional PM work orders than previous year. Staff continued to work on optimization of the Preventive Maintenance (PM) program

This year slight increase in Project Work (PROJ) was due to catching up on critical project to enhance operations ability to operate the plant and increase equipment performance.



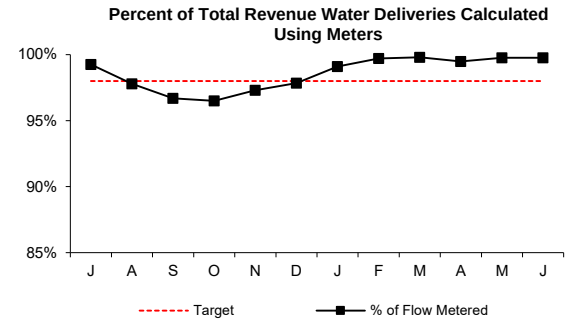
Maintenance did complete some significant maintenance work in FY23: Plumbers installed 400' of stainless steel pipe and replaced sixteen service valves which were corroding. This system allows service water to flush out grit classifier. This extend the life of the service system and increase performance of grit classifiers. Electricians supported the replacing one existing elevator controller in the Maintenance building. We replaced the existing controller with a new Galaxy controller. The Galaxy controller is a variable-frequency closed loop controller and code compliant features is a state of the art system. The existing controller was obsolete. HVAC staff replaced four large valves on the hot water loop. Mechanical staff changed out numerous in-line grinders due to the additional clogging due to wipes in the system.

During FY23, the overall number of work orders slightly increased from the previous year. The increase is due to equipment replacements, with increased preventative schedules.
The Work Coordination department is continuously modifying PM, PdM, and CM Job Plans to ensure maintenance is being performed efficiently and effectively, while ensuring reliability and availability of DITP's Assets.

Operations Division Metering & Reliability

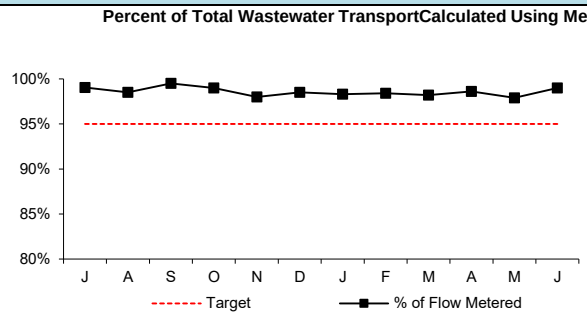
4th Quarter - FY23

WATER METERS



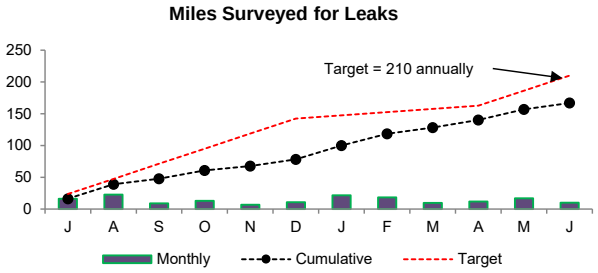
The target for revenue water deliveries calculated using meters is 98%. Estimates are generated for meters that are out of service. During Q4 FY23, 0.3% of the billed water flow was estimated. 99.7% was based on meter actuals. A total of 3.3% of the total flow was measured using annubar or inserted pitot rod meters. Approximately two thirds of this portion of the overall flow can be attributed to meter 181, which is using a previously unmetered connection to service increased demand for

WASTEWATER METERS



The Wastewater Meter Replacement Project is complete. The new meters were installed during the period from April 2021 through December 2021. As of calendar year 2022 rates are being calculated using the new meters. The target for revenue collection meters is a 95% data capture rate. During Q4 FY23, 98.5% billed data was metered with only 1.5% estimated. This metric for each month since the new wastewater meters have been online has been above the 95% target with the lowest month at 97.9%.

WATER DISTRIBUTION SYSTEM PIPELINES



During Quarter 4 of FY23, 38.72 miles of water mains were inspected. The total inspected for the fiscal year to date is 166.86.

Leak Backlog Summary													
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June	Totals
Leaks Detected	2	1	1	1	3	2	1	0	0	0	0	0	11
Leaks Repaired	2	1	1	1	3	0	2	0	0	0	0	0	10
Backlog	4	4	4	4	4	6	5	5	5	5	5	5	n/a

During Quarter 4 of FY23 no leaks were detected, and none were repaired. Refer to FY23 Leak Report below for details. Also, community service ranging from individual leak location to surveys were conducted for BWSC, Revere, Medford, Saugus and Wakefield.

Quarter 4 - FY23

Date Detected	Location of Leaks	Repaired
07/06/22	Felton St @ Water St., Waltham	07/15/22
07/18/22	Felton St @ Water St., Waltham	07/25/22
08/06/22	Duxbury Rd., @ RTE 128 Wellesley	08/06/22
09/22/22	Winthrop Ave. @ Upland Rd., Revere	09/22/22
10/03/22	Riverside Ave. @ Hall St., Medford	10/05/22
11/02/22	Linden St, @ Waverly Oaks Rd, Waltham	11/03/22
11/04/22	42 Waverly Oaks Rd., Waltham	11/07/22
11/07/22	46 Waverly Oaks Rd., Waltham	11/08/22
12/21/22	610 Lincoln Ave., Saugus	01/11/23
01/03/23	Revere Beach Pkwy. @ Pratt Place	01/19/23

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

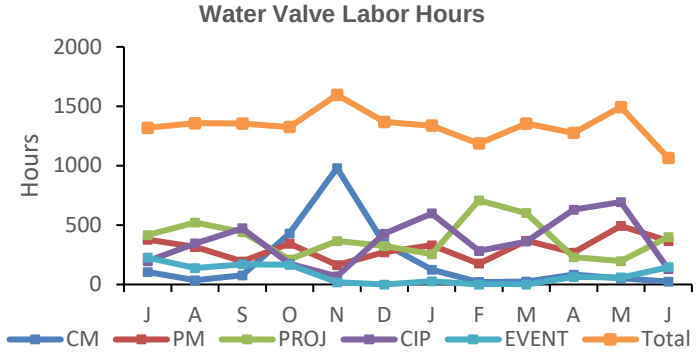
Water Distribution System Valves

4th Quarter - FY23

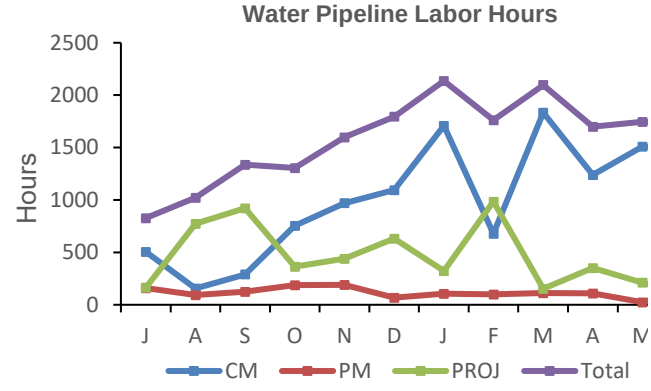
Background

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

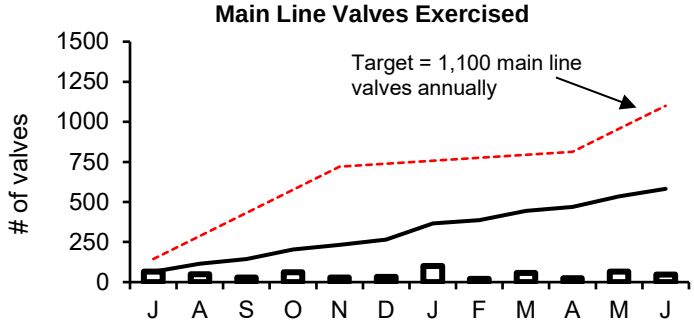
Type of Valve	Inventory #	Operable Percentage	
		FY23 to Date	FY23 Targets
Main Line Valves	2,159	96.9%	95%
Blow-Off Valves	1,682	98.8%	95%
Air Release Valves	1,519	96.2%	95%
Control Valves	49	100.0%	95%



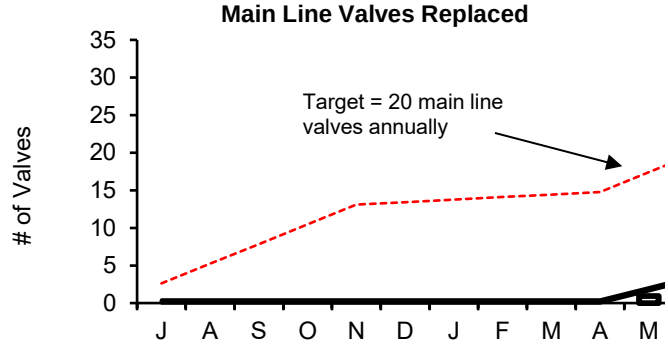
During Q4 of FY23 there was a total of 3836 hours worked. Percentage breakdown; Corrective Maintenance 4%, Preventative Maintenance 29%, Project 22%, Capital Improvement Project 38%, Event - Water Fountain 7%



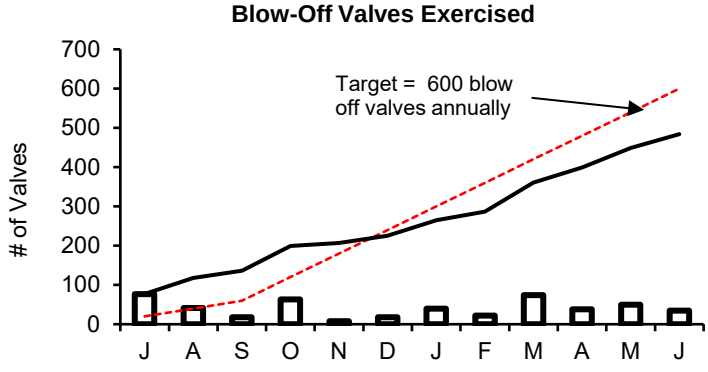
During Q4 of FY23 there was a total of 5160 hours worked. Percentage breakdown; Corrective Maintenance 82%, Preventative Maintenance 6%, Project 12%



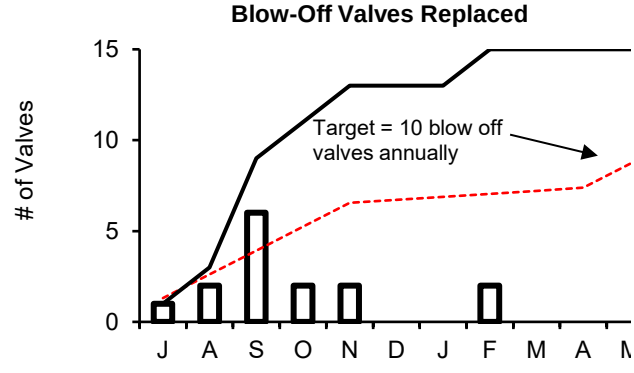
During Q4 of FY23, 138 main line valves were exercised. The total exercised for the fiscal year to date is 582. Below target due to necessary hours spent to support Capital Improvement Projects and in-house construction work.



During Q4 of FY23, there were 2 main line valves replaced. The total replaced for the fiscal year to date is 2. Below target due to staff vacancies.



During Q4 of FY23, 123 blow off valves were exercised. The total exercised for the fiscal year to date is 484.



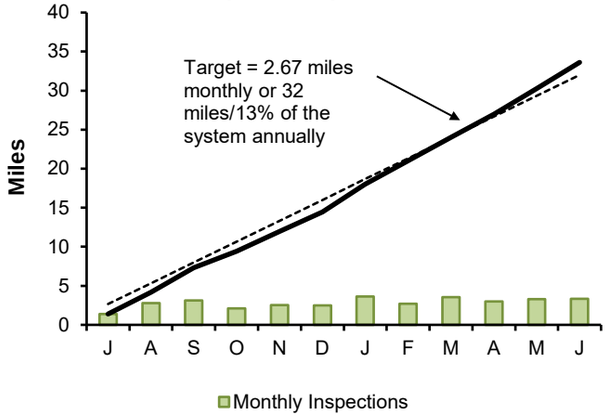
During Q4 of FY23, there were 0 blow off valves replaced. The total replaced for the fiscal year to date is 15.

Wastewater Pipeline and Structure Inspections and Maintenance

4th Quarter - FY23

Inspections

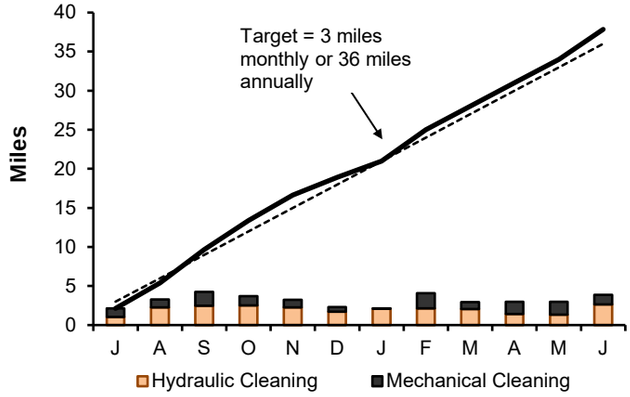
Pipeline Inspections



Staff internally inspected 9.62 miles of MWRA sewer pipe during this quarter.The year to date total is 33.62 miles. No Community Assistance was provided.

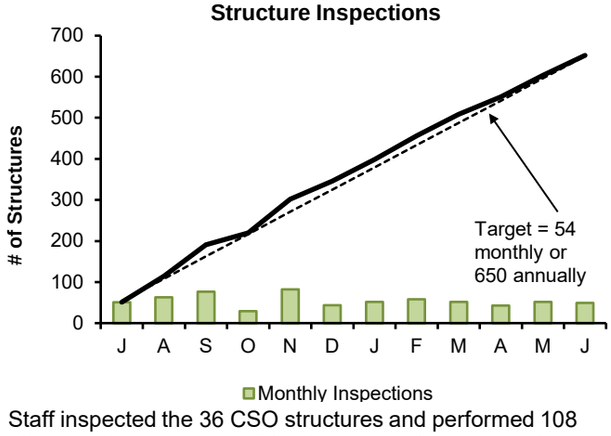
Maintenance

Pipeline Cleaning



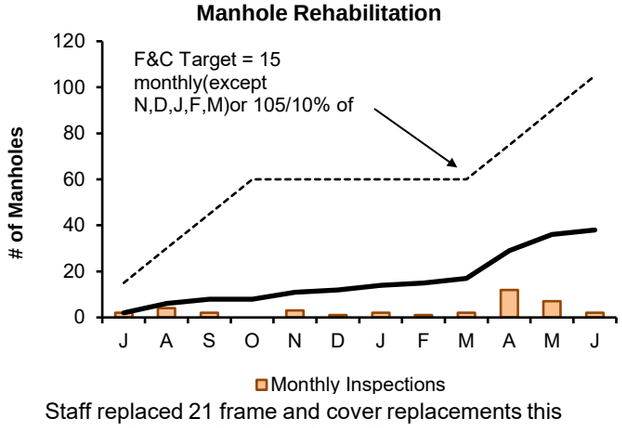
Staff cleaned 9.85 miles of MWRA sewer pipe, and removed 43 yards of grit. The year to date total is 37.85 miles. No Community Assistance was provided.

Structure Inspections



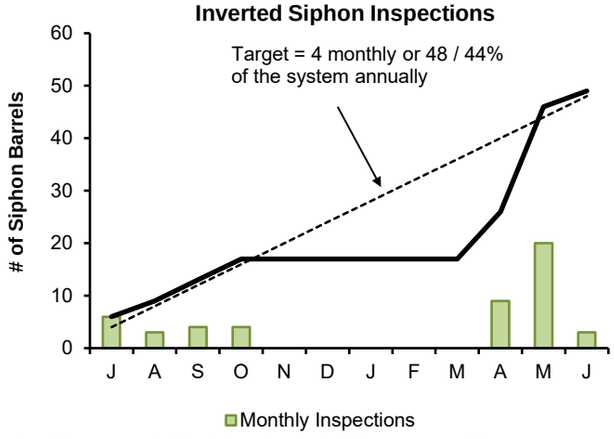
Staff inspected the 36 CSO structures and performed 108 other additional manhole/structure inspections during this quarter. The year to date total is 652 inspections.

Manhole Rehabilitation



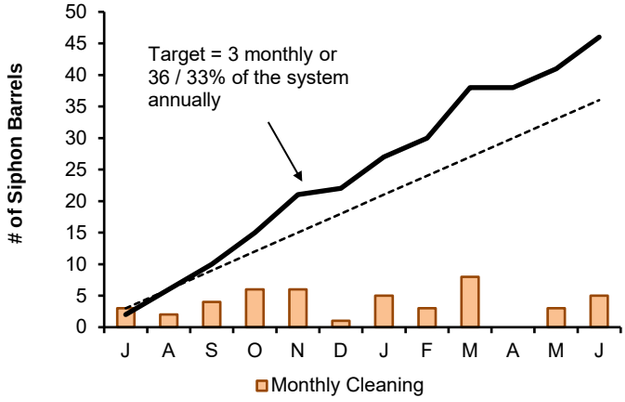
Staff replaced 21 frame and cover replacements this quarter.The year to date total is 38.

Inverted Siphon Inspections



Staff inspected 32 siphon barrels this quarter. The year total is 49 inspections.

Inverted Siphon Cleaning

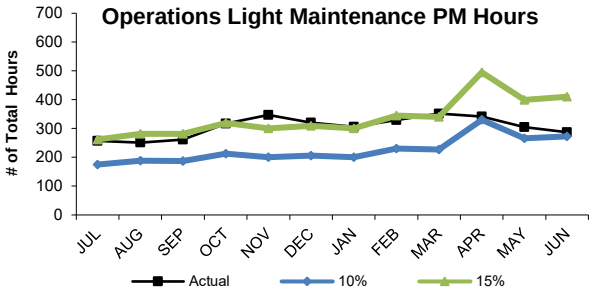


Staff cleaned 8 siphon barrels this quarter.

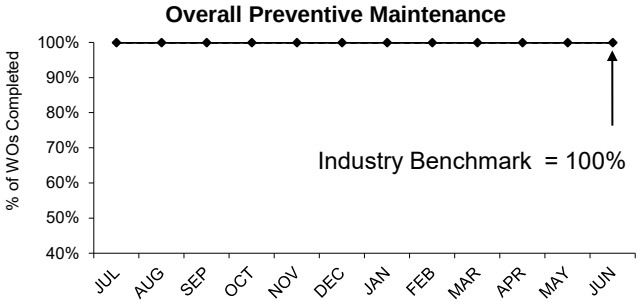
Field Operations' Metropolitan Equipment & Facility Maintenance

4th Quarter - FY23

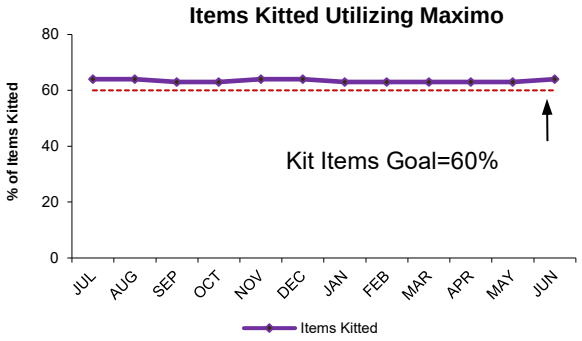
Several maintenance and productivity initiatives are in progress. The goal for the Overall PM completion and the Operator PM completion is 100%. The Operator PM and kitting initiatives frees up maintenance staff to perform corrective maintenance and project work, thus reducing maintenance spending. Backlog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



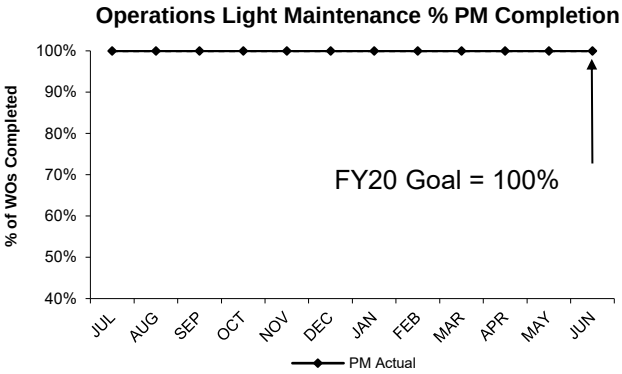
Operations staff averaged 311 hours per month of preventive maintenance during the 4th Quarter of FY23, an average of 11% of the total PM hours for the 4th Quarter, which is within the industry benchmark of 10% to 15%.



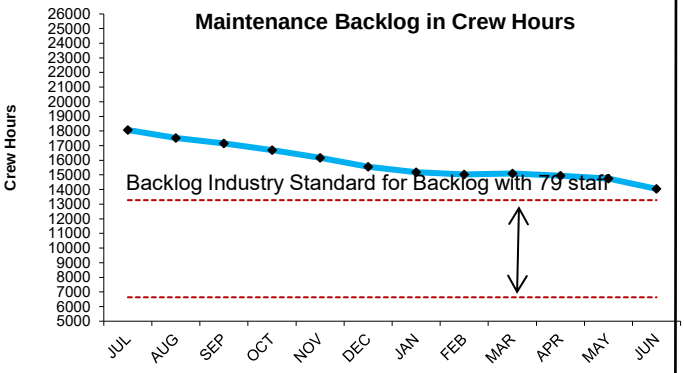
The Field Operations Department (FOD) preventive maintenance goal for FY23 is 100% of all PM work orders. Staff completed 100% of all PM work orders in the 4th Quarter of FY23.



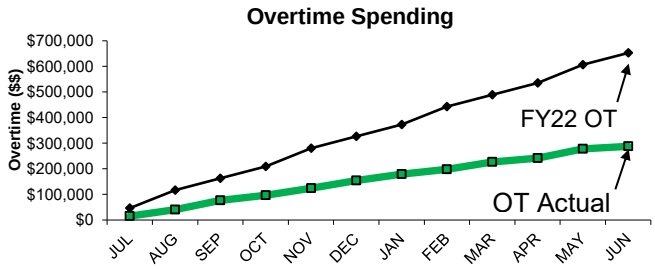
Operations' FY23 maintenance kitting goal has been set at 60% of all work orders to be kitted. Kitting is the staging of parts or material neccesary to complete maintenance work. In the 4th Quarter of FY23, 63% of all applicable work orders were kitted. This resulted in more wrench time and increased productivity.



Wastewater Operations complete light maintenance PM's which frees up maintenance staff to perform corrective maintenance. Operations' FY23 PM goal is completion of 100% of all PM work orders assigned. Operations completed 100% of PM work orders in the 4th Quarter of FY23.



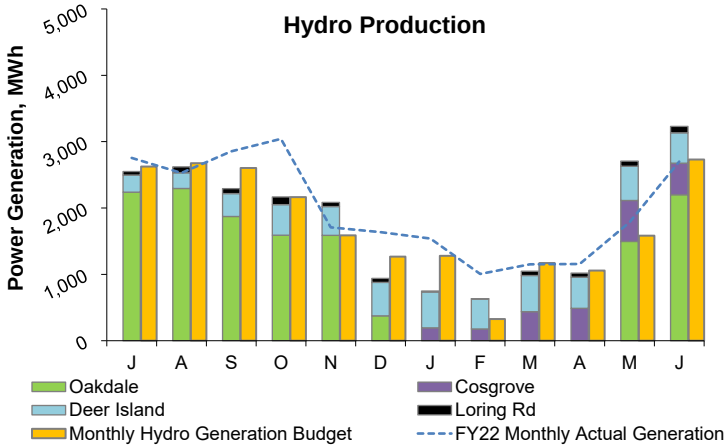
The 4th Quarter of FY23 backlog average is 14,585 hours. Management's goal is to continue to control overtime and try to get back within the industry benchmark of 6,636 to 13,275 hours. The increase is due to vacancies and several large maintenance projects.



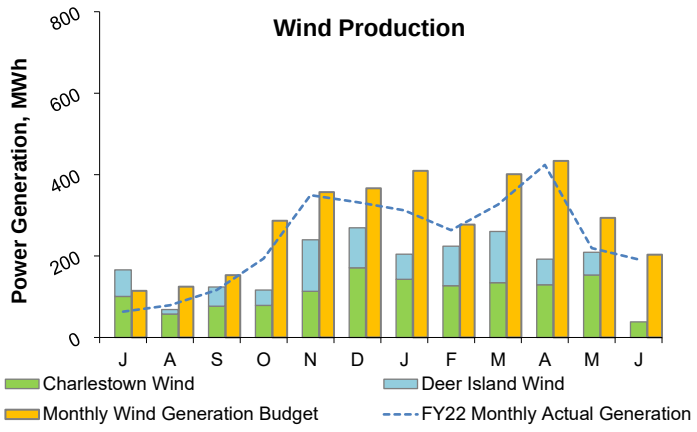
Maintenance overtime was $33,871 under budget on average, per month, for the 4th Quarter of FY23. Overtime is used for critical maintenance repairs and wet weather events. The overtime budget through the 4th Quarter of FY23 is $652,552. Overtime spending was $287,826 which is $364,726 under budget for the fiscal year.

Renewable Electricity Generation: Savings and Revenue

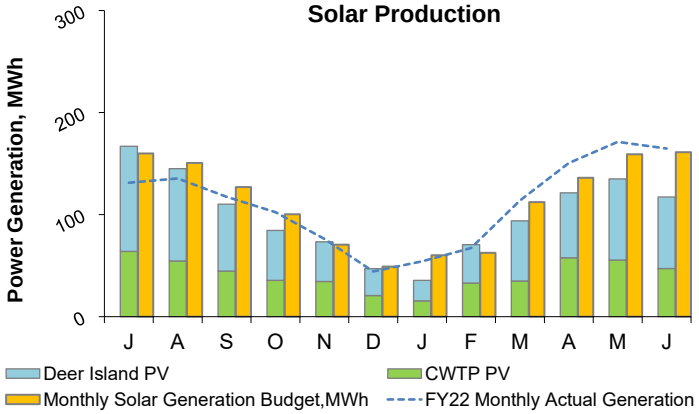
4th Quarter - FY23



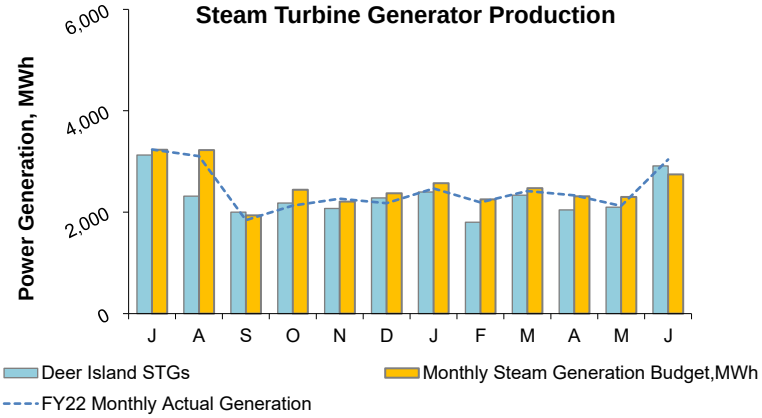
In Quarter 4, the renewable energy produced from all hydro turbines totaled 7,066 MWh; 32% above budget[1].



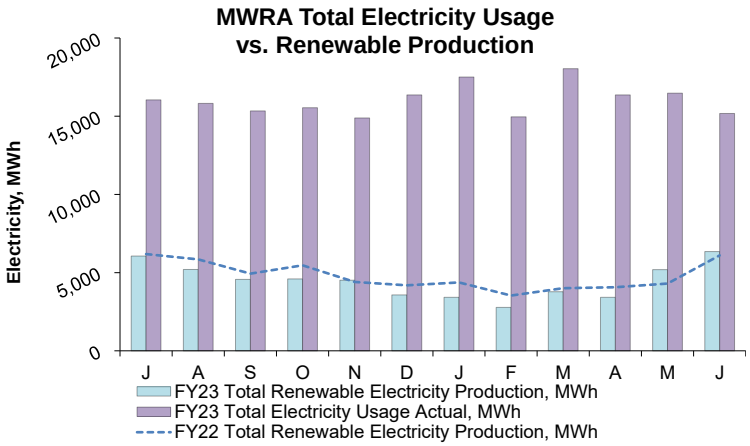
In Quarter 4, the renewable energy produced from all wind turbines totaled 440 MWh; 53% below budget[1]. This shortfall is in large part due to Turbine #2 at Deer Island Treatment Plant being taken offline following the failure of Turbine #1 (which had been out of service since April 2022) on May 29, 2023.

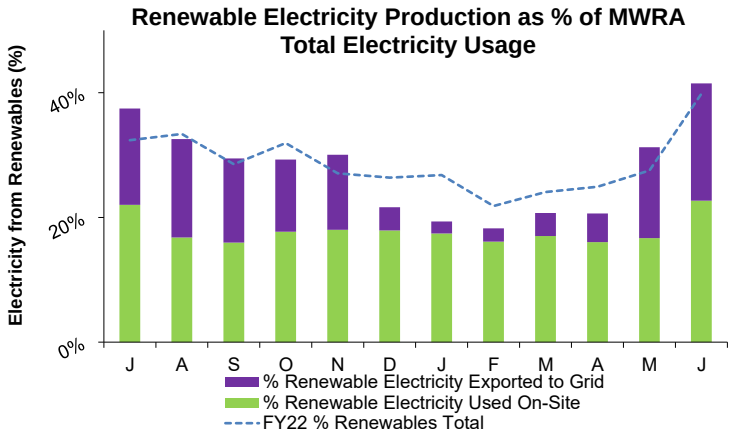


In Quarter 4, the renewable energy produced from all solar PV systems totaled 404 MWh; 12% below budget[1]. The Deer Island Residuals Odor Control roof mounted array has been offline since September 11, 2022 while awaiting replacement parts. The CWTP system was also offline for several days in June, adding to the shortfall in Quarter 4.



In Quarter 4, the renewable energy produced from all steam turbine generators totaled 7,057 MWh; 6% above budget[1].



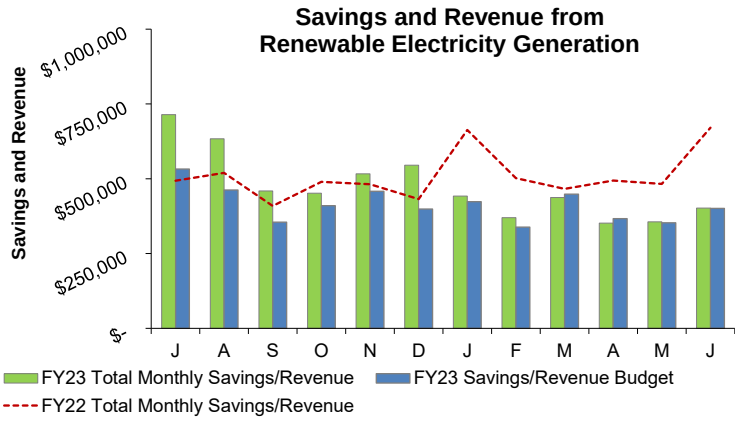


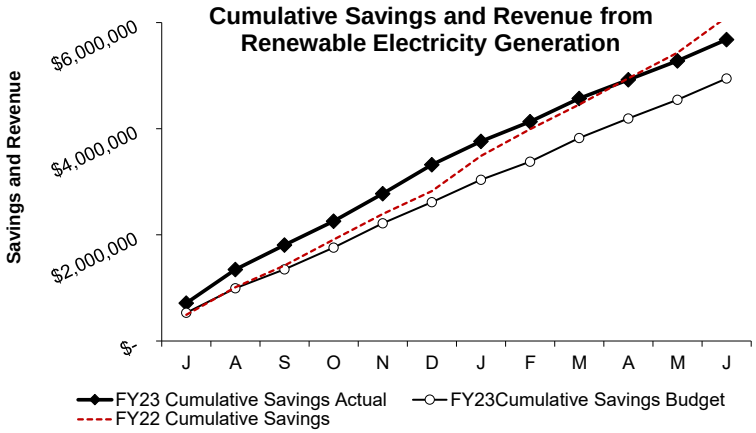
In Quarter 4, MWRA's electricity generation by renewable resources totaled 14,965 MWh, 6% above budget. MWRA's total electricity usage was approximately 48,021 MWh. Renewable resources were 31% of total usage. The MWRA total electricity usage is the sum of all electricity purchased for Deer Island and FOD plus electricity produced and used on-site at these facilities. Approximately 99% of FOD electrical accounts are accounted for by actual billing statements; minor accounts that are not tracked on a monthly basis such as meters and cathodic protection systems are estimated based on this year's budget.
All renewable electricity generated on DI is used on-site (this accounts for more than 50% of MWRA renewable generation). Almost all renewable electricity generated off-DI is exported to the grid.

Notes: 1. Budget values are based on historical averages for each facility and include operational impacts due to maintenance work.

Renewable Electricity Generation: Savings and Revenue

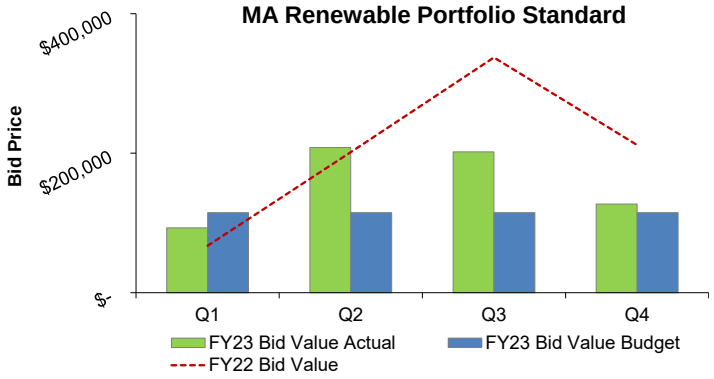
4th Quarter - FY23

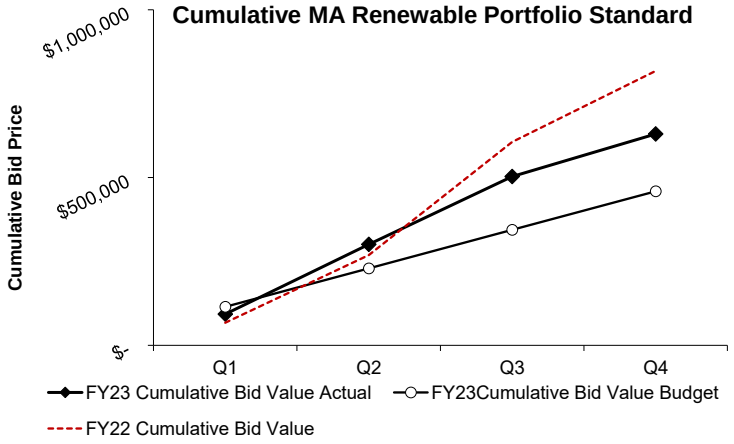




Savings and revenue invoices for Oakdale Hydro have not yet been received for May and June FY23.

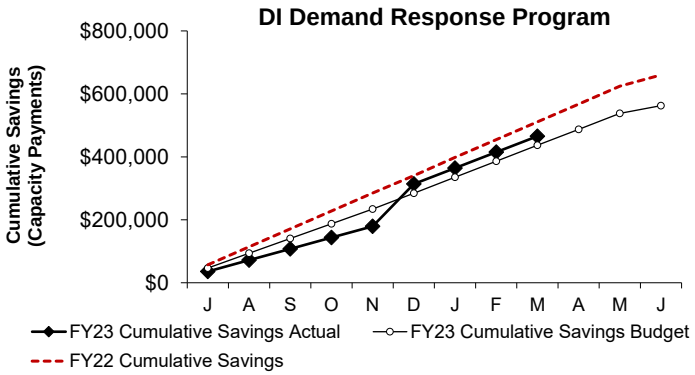
Savings and revenue[1] from all renewable energy sources include wind turbines, hydroelectric generators, solar panels, and steam turbines (DI). This includes savings and revenue due to electricity generation (does not include avoided fuel costs and RPS RECs).
The use of DITP digester gas as a fuel source provides the benefit of both electricity generation from the steam turbine generators, and provides thermal value for heating the plant, equivalent to approximately 5 million gallons of fuel oil per year (not included in charts above).

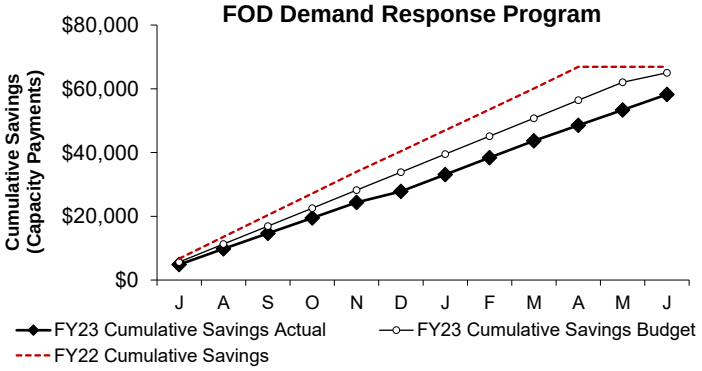




Bids were awarded during the 4th Quarter[2] from MWRA's renewable energy assets; 1,614 Q4 FY23 Class I Renewable Energy Certificates (RECs); and 2,277 Q4 FY23 Class 2 RECs were sold for a total value of $127,053 RPS revenue; which is 11% above budget[3] for the Quarter.
REC values reflect the bid value on the date that bids are accepted. Cumulative bid values reflects the total value of bids received to date.

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



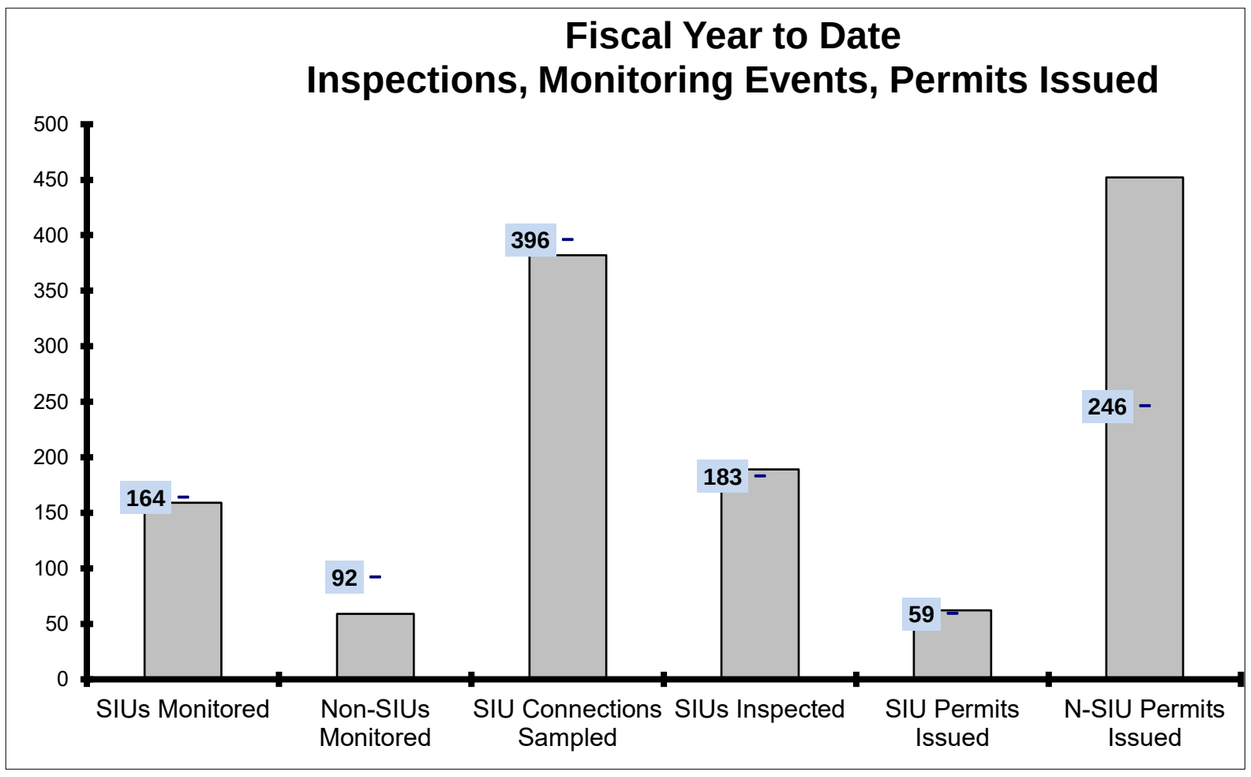


Currently Deer Island, JCWTP, Loring Rd, and Brutsch participate in the ISO-New England Demand Response Programs[4]. By agreeing to reduce demand and operate the facility generators to help reduce the ISO New England grid demand during periods of high energy demand, MWRA receives monthly Capacity Payments from ISO-NE. When MWRA operates the generators during an ISO-NE called event, MWRA also receives energy payments from ISO-NE. FY23 Cumulative savings (Capacity Payments only) through March[2] total $465,523 for DI and payments for FOD total $58,233 through June[2].

Notes:
1. Savings and Revenue: Savings refers to any/all renewable energy produced that is used on-site therefore saving the cost of purchasing that electricity, and revenue refers to any value of renewable energy produced that is sold to the grid.
2. Only the actual energy prices are being reported. Therefore, some of the data lags up to 3 months due to timing of invoice receipt.
3. Budget values are based on historical averages for each facility and include operational impacts due to maintenance work.
4. Chelsea Creek, Columbus Park, Ward St., and Nut Island participated in the ISO Demand Response Program through May 2016, until an emissions related EPA regulatory change resulted in the disqualification of these emergency generators beginning in June 2016.

Toxic Reduction and Control

4th Quarter - FY23



EPA Required SIU Monitoring Events
for FY23: 164
YTD : **159**

Required Non-SIU Monitoring Events
for FY23: 92
YTD : **59**

SIU Connections to be Sampled
For FY23: 396
YTD: **382**

EPA Required SIU Inspections
for FY23: 183
YTD: **189**

SIU Permits due to Expire
In FY23: 59
YTD: **62**

Non-SIU Permits due to Expire
for FY23: 246
YTD: **452**

Significant Industrial Users (SIUs) are MWRA's highest priority industries due to their flow, type of industry, and/or their potential to violate limits. SIUs are defined by EPA and require a greater amount of oversight. EPA requires that all SIUs *with flow* be monitored at least once during the fiscal year.

The “SIU Monitored” data above, reflects the number of industries monitored; however, many of these industries have more than one sampling point and the “SIU Connections Sampled” data reflect samples taken from multiple sampling locations at these industries.

EPA requires MWRA to issue or renew 90 percent of SIU permits within 120 days of receipt of the application or the permit expiration date - whichever is later. EPA also requires the remaining 10 percent of SIU permits to be issued within 180 days.

Number of Days to Issue a Permit

	0 to 120		121 to 180		181 or more		Permits Issued	
	SIU	Non-SIU	SIU	Non-SIU	SIU	Non-SIU	SIU	Non-SIU
Jul	1	9	0	3	0	8	1	20
Aug	1	38	1	8	1	18	3	64
Sep	5	14	0	5	0	25	5	44
Oct	5	12	0	3	0	12	5	27
Nov	2	31	0	13	0	16	2	60
Dec	4	31	1	7	1	31	6	69
Jan	18	25	1	5	0	10	19	40
Feb	0	2	0	0	0	15	0	17
Mar	10	30	0	4	0	4	10	38
Apr	2	30	0	0	0	5	2	35
May	5	19	0	0	1	6	6	25
Jun	3	9	0	1	0	3	3	13
% YTD	90%	55%	5%	11%	5%	34%	62	452

TRAC's annual monitoring and inspection goals are set at the beginning of each fiscal year but they can fluctuate due to the actual number of SIUs. *In FY23 there were 10 status changes of which 6 were changed from SIU to Non-SIU and 4 were changed to SIUs. There was 1 new SIU permit issued and 1 is now inactive.* In addition to the Annual SIU inspections required under TRAC’s EPA approved Industrial Pretreatment Program, 39 other inspections were completed, including for enforcement, permit renewal, follow up, temporary construction dewatering sites, group/combined permit audits, spot, sampling locations, visit only and out of business facility. Monitoring of SIUs and Non-SIUs is dynamic for several reasons, including: newly permitted facilities; sample site changes requiring a permit change; changes in operations necessitating a change in SIU designation; non-discharging industries; a partial sample event is counted as an event even though not enough sample was taken due to the discharge rate at the time; and sometimes increased/decreased inspections lead to permit category changes requiring additional monitoring

This is the end of the 4th quarter of the MWRA fiscal year, FY23.

In the 4th quarter, of the 84 permits issued, there were 11 SIUs. All but 1 of the SIUs were issued within the 120-day timeframe with 1 issued beyond the 120-day timeline.

At the end of the FY23 fiscal year, 514 permits have been issued, 62 were SIUs.
90% of the SIU permits were issued within the 120-day timeframe, with 5% issued beyond 180 days. This meets the EPA benchmark requirement.

There were 452 non-SIU permits issued, of which 202 were issued beyond the 120-day timeline.

Reasons for late issuances continued to include:
a) staffing due to turnover and vacancies
b) waiting for critical data needed for permit processing
c) delays relating to new start-up operations and
d) the late payment of the relevant permit charges.

In FY23, there were 226 completely new permits issued: 2 SIUs and 223 N-SIUs among which were 25 Cat 02s, 1 cat 01, 2 One-Time Discharge, 74 Low Flow Permits, 105 Dental, 2 Food Processing, 1-Septage and 14-Construction dewatering.

Field Operations Highlights
4th Quarter – FY23

Western Water Operations and Maintenance

- Carroll Water Treatment Plant – Staff installed duct insulation on the HVAC units in the PT building near the lead pipe rigs to prevent condensation. Plant operations staff continue support construction projects for chemical feed updates and SCADA controls upgrade.

- Brutsch Water Treatment Facility – Staff replaced actuator on the primary flow control sleeve valve for the Chicopee Valley Aqueduct as well as cleaned and inspected the internal parts of the sleeve valve while it was out of service. Chicopee Valley Aqueduct back pressure sustaining valves adjusted to normal summer flow conditions.

- Wachusett Dam and Bastion Building – Staff installed stop logs in the upper gatehouse bay 1 as well as dewatered the lower gate house cells 1, 2 and 3 to support the pipe replacement project. Staff participated in the final walk through for the Bastion rebuild project as well as operated Crest Gate and angle pattern release valve for flood control purposes.

- Reservoir Operations, Misc. - Reservoirs Terrestrial Spill Response Training held at Wachusett watershed on 06.07.23. New Wachusett Spill Response Trailer was fitted out by Western Carpenters and deployed to Reservoir. Staff responded to an SSO at Wachusett Reservoir on 06.28.23.

Operations Engineering

- Staff continued to provide technical support for Design and Construction Contracts including; Low System PRV Upgrades, Columbus Park and Ward St Headworks, Upgrades, Nut Island Odor Control Improvements, Hayes Pump Station Upgrades, NEH improvements, WASM3 CP1 and CP2, Section 101, Storage Tank Improvements, Section 23, 24 and 47 Rehabilitation, Shaft Improvements, IHS Improvement, Hydraulic Model upgrades, BWRPS Upgrades and Section 89 Replacement.
- Staff continued to monitor the wet scrubber system and continued supporting the development of the facility manual and training.
- Hydraulic Model Upgrades: Staff continued to provide an in-depth review of the draft model and review of calibrations.
- Staff continued to support Pipeline and Valve Programs with some of the following activities: Operation Shutdown Plans, Exercise Schedule Packages and Disinfection Plans and Permitting;
- Staff provided support for system expansion to the north and south and to the Metro communities.
- Staff have provided support to the city of Newton for the disinfection and reactivation of their covered storage tank.
- Provide daily facility flow data to support Biobot Study.
- Staff continued to support the lead loop study at CWTP
- Staff assisted in several wet weather storm events, compiled and finalized storm reports, monitored and reported on CSO activation durations and volumes and provided follow up on operational and SCADA issues.
- Staff performed a lead role in the fluoride tracer study.

SCADA

- Water System: Continued technical support for JCWTP PLC replacement project; configured and hardened SCADA Operating system; continued work on network management improvements in the JCWTP SCADA system; supported Brutsch sodium hypochlorite system project; supported fluoride controller installation.

- Wastewater system: Continued work on Ward/Columbus, Hayes P.S. Improvements, Braintree/Weymouth Pump Station Improvements Project, and Fuel Tank Replacement Project; continued work on new limit switch system for Chelsea Creek influent gates.

TRAC

Compliance and Enforcement

- TRAC issued 12 Notices of Noncompliance, 31 Notices of Violation, 2 Return to Permit Letters, 3

Extension Letters, and 1 Penalty Assessment Notice in the amount of $40,000.00

Inspections and Permitting

- TRAC issued a total of 74 MWRA 8(m) Permits allowing companies to work within an easement or other property interest held by the Authority. Permits issued this quarter were issued in an average of 65 days from the date the application for 8(m) permit was received by the MWRA.

- TRAC monitored the septage receiving sites a total of 30 times. Staff conducted inspection at 81 new construction gasoline/oil separators and 203 existing gasoline/oil separators.

- TRAC staff conducted 18 Annual SIU Inspections and 218 other inspections.

- 81 MWRA Sewer Use Discharge Permits (Permits) were issued and/or renewed to its sewer users. One permit was issued and/or renewed in the Clinton Service Area.

Environmental Quality-Water

- **Algae:** DCR and MWRA staff continued to collect algae samples at Wachusett and Quabbin Reservoirs. Low levels of nuisance algae were identified, but all were well below levels of concern.

Community & In-House Support

- Community Support: On April 7, staff provided coliform sampler training to 34 Operations and Enforcement staff at Boston Water and Sewer Commission.

- Sampling & Analysis: Throughout the quarter, staff conducted sampling at at six sites at WASM-4 in Newton and the new Quabbin Administration well and pipeline. The CWTP lead pipe-rig study sampling continued and samples were collected approximately every 2 weeks.

- Projects: Staff worked with CWTP, Operations Engineering, and E&C staff to plan and execute a fluoride tracer study on June 12. EnQual Water trained all field volunteers on portable fluoride meter use and the sampling plan. Field and laboratory fluoride testing performed and hydraulic model revised and updated based on system configuration and demands during the study.

Data Management: Staff continued to work with Planning to review all fully and partially-served community draft annual Consumer Confidence Reports.

Environmental Quality-Wastewater

- Ambient Monitoring: The spring and early summer water column surveys and the annual flounder monitoring survey were completed. A summary report of monitoring in Cape Cod Bay for 2020-2022 has been completed and posted on our webpage.

- Harbor/CSO Receiving Water Monitoring: Biweekly harbor monitoring continues, along with seasonal CSO receiving water sampling.

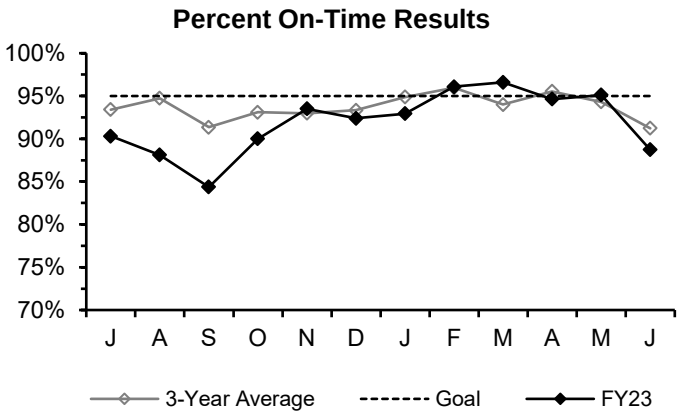
- Permitting and Compliance Reporting: Submitted monthly and quarterly discharge monitoring reports, annual Clinton collection system O&M report, and as-needed notifications of CSOs and blending. The new Clinton permit became effective April 1, 2023. Staff submitted comments to EPA on new requirements seen in draft permits, and began preparing comments on the draft permit for the Deer Island Treatment Plant, which was issued on May 31. Submitted revised final plan for CSO notifications as required by MassDEP, and installed signs at public access areas as required by that plan.

- Cooperation with other agencies: Continued follow up communication with metro Boston CSO permittees about the new sewage notification regulation, and printed and distributed signs for public access locations. Discussed new EPA permit requirements for climate-change planning with NACWA and with other MA wastewater utilities. Staff attended meetings and conferences, including the Massachusetts Bays Partnership, the Stellwagen Bank National Marine Sanctuary Advisory Council, and the Stone Living Lab conference on Nature-Based Coastal Resilience in Urban Settings.

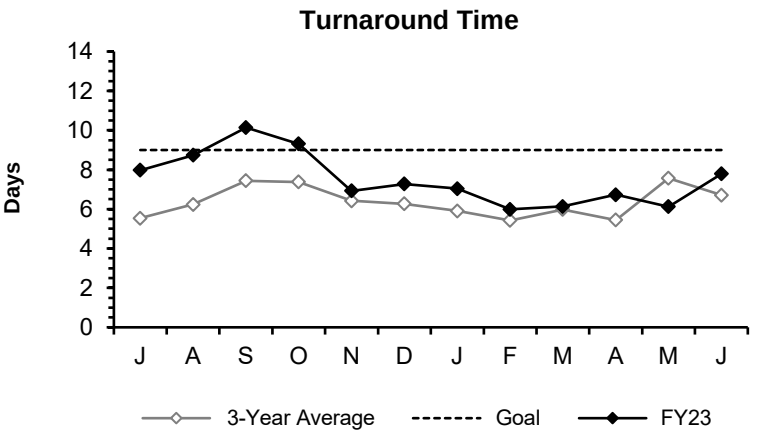
Laboratory Services

4th Quarter - FY23

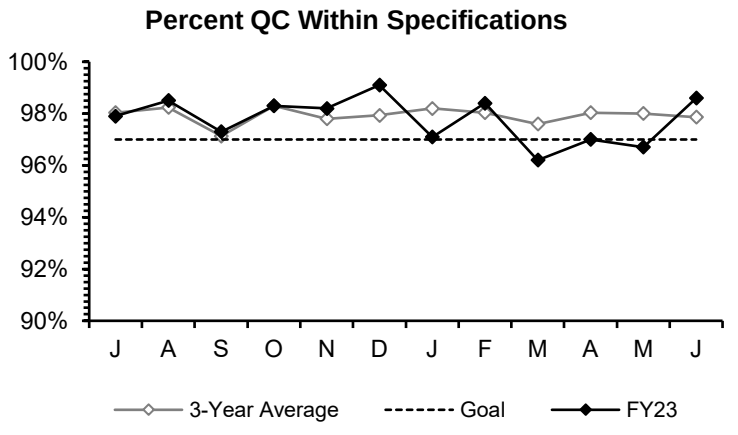
Laboratory Services supports the laboratory sampling, testing, and consulting needs of various client groups primarily in the Operations Division. This includes drinking water transmission and treatment, wastewater collection and treatment, wastewater residuals management, industrial-pretreatment monitoring,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



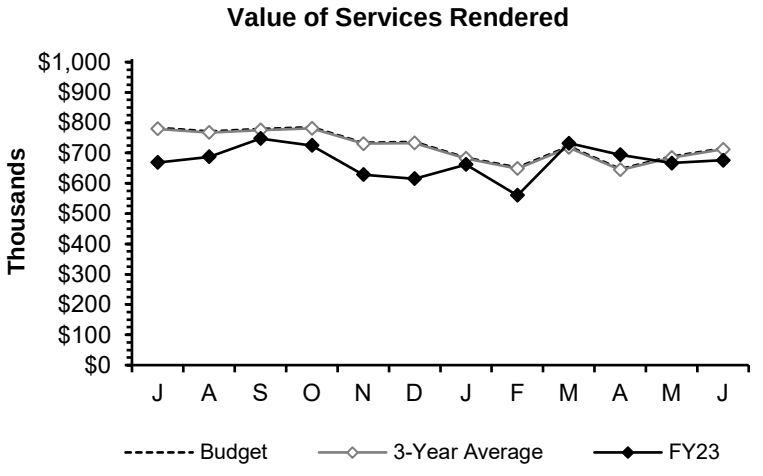
The Percent On-Time measurement assesses performance against internal client due dates. These due dates are shorter than the compliance reporting requirements to allow for internal review of the data.



Turnaround Time measures the average time from sample receipt to sample completion.



Percent QC Within Specifications measures the fraction of Quality Control tests that met required limits during the month.



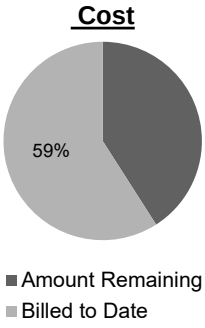
Value of Services Rendered models the true cost of the lab work performed, including fringe benefits that are not a part of the Laboratory Services budget.

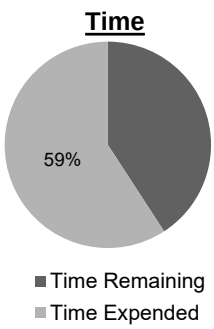
Performance Summary: Only the Turnaround Time goals were met for every month in the 4th quarter. The other measures missed their goals for one or two months during the 4th quarter. This was largely due to continued staffing vacancies.

School Lead Program: MWRA's lab completed 248 lead and copper tests from 66 schools and childcare facilities in 31 communities during FY23. Since 2016, MWRA's Laboratory has conducted over 40,000 tests from 560 schools and daycares in 44 communities. We have also completed 864 home lead tests under the DPH sampling program since 2017. Overall MWRA's lab completed 2629 drinking water lead and copper tests in FY23.

CONSTRUCTION PROGRAMS

Projects In Construction
4th Quarter – FY23



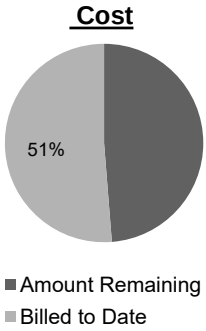


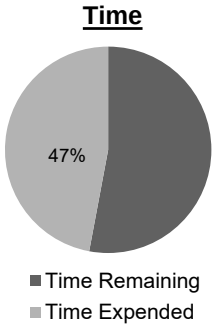
Carroll Water Treatment Plant SCADA Improvements

Project Summary: The current SCADA control equipment has reached the end of its useful life, and future vendor support for the installed PLC base is no longer guaranteed. This contract includes the supply and installation of replacement instrumentation panels, PLC's, UPS backup power, fiber-optic communication network, wiring between the existing panels, and new equipment and refurbishment of the operator control room. In addition, a new server room equipped with HVAC and fire suppression is being constructed to house redundant computer hardware supporting active and backup SCADA systems.

Contract Amount: $13,160,147.52 *Contract Duration:* 1,127 Days

Notice to Proceed: 1-Sep-21 *Contract Completion:* 2-Oct-24



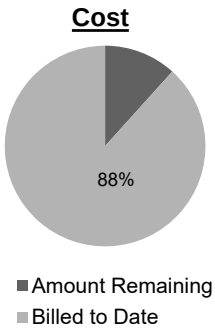


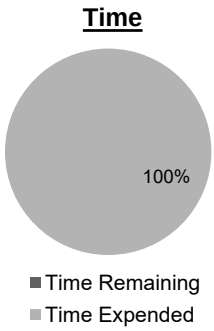
Section 89 Replacement Pipeline

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

Contract Amount: $32,869,000 *Contract Duration:* 1,475 Days

Notice to Proceed: 5-Aug-21 *Contract Completion:* 19-Aug-25



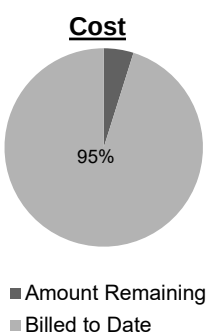


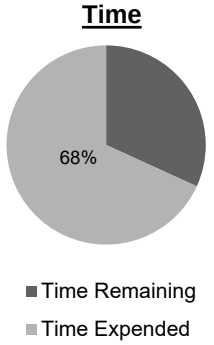
Low Service PRV Improvements

Project Summary: This project will demolish the existing Nonantum Road and Mystic Valley Parkway PRV vault structures, including four 24-inch PRVs and appurtenances, and construct new, larger cast-in-place vaults. At Mystic Valley Parkway, two 42-inch PRVs and at Nonantum Road two 30-inch PRVs, isolation valves, piping, and other appurtenances will be installed. Additionally, a new master meter will be constructed at the Mystic Valley Parkway pressure reducing valves and the existing master meter located near the Nonantum Road pressure reducing valves will be upgraded to accommodate the increased flow.

Contract Amount: $12,088,167.10 *Contract Duration:* 720 Days

Notice to Proceed: 14-Jul-21 *Contract Completion:* 4-Jul-23





Rehabilitation of WASM 3

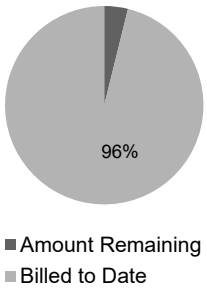
Project Summary: This construction contract includes rehabilitation of approximately 13,800 feet of 56-inch and 60-inch diameter water main in Arlington, Somerville and Medford. The rehabilitation consists of cleaning and internal cement mortar lining the pipe and adding valves for better operational flexibility. In addition, two old 36-inch valves are being removed to eliminate reduced sections of pipe..

Contract Amount: $20,175,619.6 *Contract* Duration: 1,383 Days

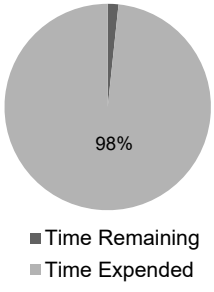
Notice to Proceed: 28-Oct-20 *Contract Completion:* 11-Aug-24

Projects In Construction
4th Quarter – FY23

Cost



Time



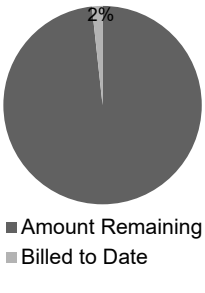
Nut Island Odor Control and HVAC

Project Summary: This project will provide upgrades to the odor control system, heating, ventilation and air conditioning system and other equipment. Most of the equipment is at or near the end of its useful life and replacement is required to ensure the continued reliability of this critical facility. This contract will also provide reconfiguration of ductwork serving the odor control system to expand the system's operational flexibility, and will improve surface access into the below-grade odor control room, the need for which was made evident during the January 2016 fire.

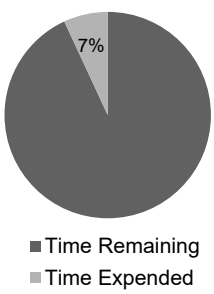
Contract Amount: $60,444,537.28 *Contract Duration:* 1,084 Days

Notice to Proceed: 12-Feb-20 *Contract Completion:* 10-Jun-23

Cost



Time



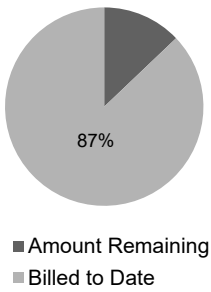
Clarifier Rehabilitation Phase 2

Project Summary: This project involves the replacement of the original remaining scum and sludge equipment, as follows: over 400 Primary Clarifier influent, effluent, and dewatering gates; 384 primary effluent cross channel gate actuators; approximately 450 secondary scum influent gates and actuators; wear strip rails,768 head shaft and idler sprockets; over 3000 linear feet of influent channel aerations piping systems; 360 head shafts collector drives and chains; return sludge line vent piping; approximately 400 concrete and aluminum hatches and associated electrical and control systems.

Contract Amount: $289,359,690 *Contract Duration:* 1620 Days

Notice to Proceed: 10-Mar-23 *Contract Completion:* 16-Aug-27

Cost



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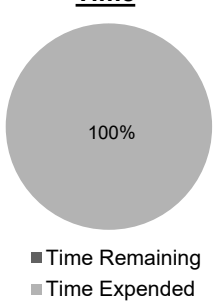


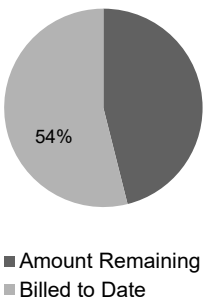
DITP Odor Control Damper Replacement

Project Summary: This project includes replacing three existing 30-inch diameter steel dampers with stainless steel dampers, surface preparation and coatings application on the existing 30-inch diameter ductile iron pipe. The damper and piping are part of the odor control system that serves the sludge wet wells in the centrifuge building at the Deer Island Treatment Plant.

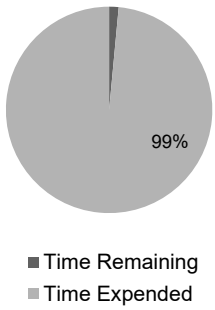
Contract Amount: $539,701 *Contract Duration:* 455 Days

Notice to Proceed: 3-Feb-22 *Contract Completion:* 4-May-23

Cost



Time



Clinton Screw Pump Replacement

Project Summary: This project involves demolishing and replacing the three screw pumps and motors, replacing three existing 72-inch by 60-inch pump isolation slide gates and associated electrical and controls; providing a temporary bypass pumping system to ensure the plant's pumping capacity is maintained during the construction phase; and providing concrete remediation in the pump channels.

Contract Amount: $3,452,985 *Contract Duration:* 540 Days

Notice to Proceed: 14-Jan-22 *Contract Completion:* 8-Jul-23

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CSO CONTROL PROGRAM

4th Quarter – FY23

Overview

In compliance with milestones in the Federal District Court Order, all 35 projects in the CSO Long-Term Control Plan (LTCP) were complete as of December 2015. Subsequently, MWRA completed a multi-year CSO post-construction monitoring program and performance assessment, filing the Final CSO Post Construction Monitoring Program and Performance Assessment Report with the Court and submitted copies to EPA and DEP in December 2021. April 2023 Annual report shows an 88% reduction in CSO in a typical year, from 3.3 billion gallons to 396 million gallons, with 72 of 86 outfalls meeting the LTCP goals for CSO activation frequency and volume. MWRA and its member CSO communities have already completed construction at BOS003, BOS004 and CHE008 and are moving forward with plans to bring an additional 7 CSOs in line with the LTCP goals. With respect to the remaining 6 challenging CSO outfalls, MWRA and its CSO Consultant (AECOM) continue to investigate alternative to move closer to LTCP goals.

MWRA CSO Performance Assessment

- In November 2017, MWRA signed a contract for CSO Post-Construction Monitoring and Performance Assessment with AECOM Technical Services, Inc. The contract includes CSO inspections, overflow metering, hydraulic modeling, system performance assessments and water quality impact assessments, culminating in the submission of a report to EPA and MassDEP in December 2021 verifying whether the LTCP goals are attained.

- AECOM continues to support efforts to advance project identified to meet performance goals at 8 of the 16 CSOs that didn't meet LTCP goals, evaluate alternatives for the remaining 6 challenging sites, and predict and report on annual CSO discharges. Two of those 16 outfalls are now meeting LTCP goals (BOS014 and BOS003) and the post construction performance of CHE008 is being evaluated.

Court Ordered Levels of CSO Control

Progress on the work to comply with the court ordered levels of CSO control is discussed with the EPA/MassDEP at progress meetings held quarterly. Most recent quarterly meeting was on **6/22/23** and the next meeting is scheduled for **9/28/23**

Ongoing Projects as of December 31, 2022

- *East Boston CSO Control*: As part of the East Boston CSO a FAA/MOU was executed in June 2021 for $2.1M, BWSC design and construction. Work at BOS014, BOS003 is complete and are now meeting LTCP goals. Sewer separations is expected to be completed in fall 2023. Plans for Phase 4 sewer separation with five new contracts starting in 2023 (through 2028) will result in most of East Boston being separated.
- *CHE008 Pipe Replacement – Enlarging the CHE008 regulator connection is now complete (July 2023).*
- *Somerville Marginal New Pipe Connection* came out of the variance optimization study that recommended adding a new pipe from the facility's CSO influent conduit to the interceptor with an added control gate. The $1.2M (est.) construction project is expected to be completed by December 2024.

- *Fort Point Channel and Mystic Confluence* - BOS062, BOS065, BOS070 DBC and BOS017: FAA/MOU established to design and construct improvement at these 4 CSOs. 90% design submitted August with an updated cost estimate of $7.2M including a 5% contingency. Anticipate completion of construction by December 2024.

CSO variances

As part of MWRA's CSO Control Program, MassDEP has issued a series of multi-year CSO variances that allow MWRA, Cambridge, and Somerville to continue to have limited CSO discharges to Alewife Brook and the Upper Mystic River, as well as the Charles River lower basin. The most recent variances, issued in 2019, require the development of Updated LTCPs for the CSO outfalls that each entity owns and operates that may discharge to the corresponding waterbody. The Updated LTCPs must include a description of the existing level of CSO control, an evaluation of the costs and the performance and water quality improvements achieved by additional CSO control alternatives, a public participation plan, and an affordability analysis.

- MassDEP and EPA conditionally approved MWRA's Updated CSO Control Plan Scope of Work on **5/11/2022**. The Authority is currently working closely with the CSO communities of Cambridge and Somerville to develop these plans over the upcoming years.
- A request to extend the deadline for completion of the Updated CSO Control Plan by 36 months was submitted on 9/22/22. In May 2023, MassDEP and EPA both approved this extension and instructed MWRA, Cambridge, and Somerville to proceed in accordance with the requested revised schedule.
- As identified in the variance the progress is reported at monthly meetings with EPA/MassDEP. The last meeting was on **8/9/23** and the next meeting is scheduled for **9/13/23**. Key elements of the Updated CSO Control Plan are discussed including the development of an Updated Typical year which includes climate change and the development of a Unified Hydraulic Model.
- The 2nd of 8 planned meetings was held on 12/15/22. **The next Public Meeting is scheduled for late fall of 2023.**
- Development and Submittal of Studies as required under variance included the following:
    - Alewife PS Optimization Evaluation was submitted on 4/27/2021
    - Somerville Marginal CSO Reduction, Study and Preliminary Design was submitted on 12/27/2021
    - Alewife Brook and Charles River System Optimization Evaluation was submitted on 12/28/2022
    - MWRA CSO Variances Additional System Optimization Measures Report was submitted on 1/31/2023.
- Bi-annual meeting with CLF/Watershed groups held on 7/12/2023 providing an update on the 16 sites not currently meeting the LTCP.

CIP Expenditures

4th Quarter – FY23

FY23 Capital Improvement Program Expenditure Variances through June by Program - ($ in thousands)				
Program	FY23 Budget Through June	FY23 Actual Through June	Variance Amount	Variance Percent
Wastewater	$109,752	$57,630	($52,122)	-47%
Waterworks	$133,079	$89,470	($43,609)	-32%
Business and Operations Support	$35,222	$24,079	($11,144)	-31%
Total	$278,053	$171,178	($106,875)	-38%

Wastewater:

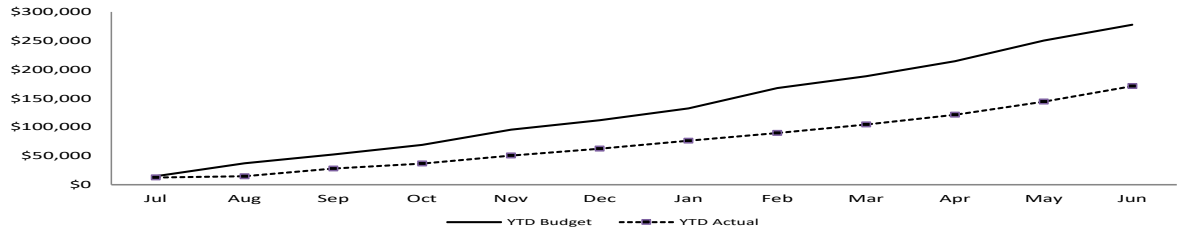
- Underspending due to timing of grant and loan distributions for the I/I Local Financial Assistance program
- Updated schedules for Primary & Secondary Clarifier Rehab Phase 2 Construction, DITP Roof Replacement, DITP Motor Control Center & Switchgear Replacement - Construction & Design/ESDC/REI, Dystor Membrane Replacements, Digester Cover Replacement, and Fire Alarm System Replacement – Construction
- Completion of some design and inspection tasks were later than anticipated for Ward Street and Columbus Park Headworks Upgrades Design/Construction Administration
- Contractor behind schedule for the Nut Island Odor Control and HVAC Improvements
- Timing of work for South System Pump Station VFD Replacement Design/ESDC/REI

Water:

- Underspending in Waterworks was due to timing of community distributions for the Water Loan program, as well as timing of work for Geotechnical Support Services
- Long lead time for piping materials and permit issues for Waltham Water Pipeline Construction and REI
- Long lead time for materials for Wachusett Lower Gatehouse Pipe & Boiler Replacement - Construction
- Updated schedules for Quabbin Maintenance Garage/Wash Bay/Storage Building, and CP-2 Shaft 5 Construction
- Scope changes for Cathodic Protection Shafts E, L, N & W
- This underspending was partially offset by contractor progress for NIH Section 89 & 29 Replacement, and CP-1 NEH Improvements, and timing of consultant work for Metropolitan Tunnel Redundancy Preliminary Design & Massachusetts Environmental Policy Act Review

Budget vs. Actual CIP Expenditures ($ in thousands)

Total FY23 CIP Budget of $278,053



Construction Fund Management

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

Cash Balance as of 6/30/23	$150.1 million
Unused capacity under the debt cap:	$2.1 billion
Estimated date for exhausting construction fund without new borrowing:	OCT-23
Estimated date for debt cap increase to support new borrowing:	Not anticipated at this time
Commercial paper/Revolving loan outstanding: Commercial paper capacity / Revolving Loan	$55 million $195 million
Budgeted FY23 Cash Flow Expectancy*:	$248 million

* Cash based spending is discounted for construction retainage.

DRINKING WATER QUALITY AND SUPPLY

Source Water – Microbial Results and UV Absorbance

4th Quarter – FY23

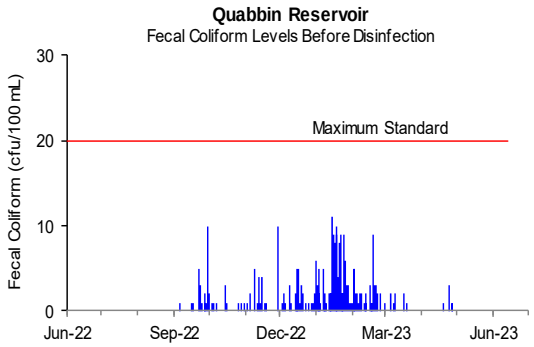
Source Water – Microbial Results

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

Sample Site: Quabbin Reservoir

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

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

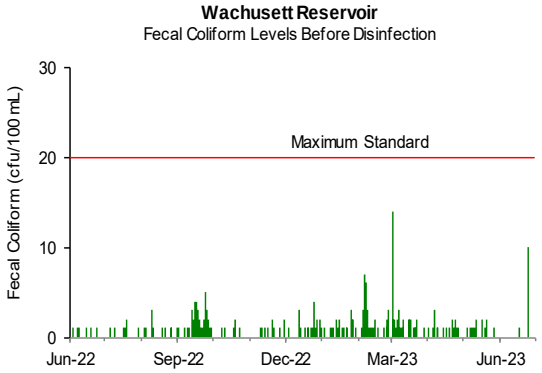


Sample Site: Wachusett Reservoir

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

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

All samples collected during the 4th Quarter were below 20 cfu/100mL. **For the current six-month period, 0.0% of the samples exceeded a count of 20 cfu/100mL.**

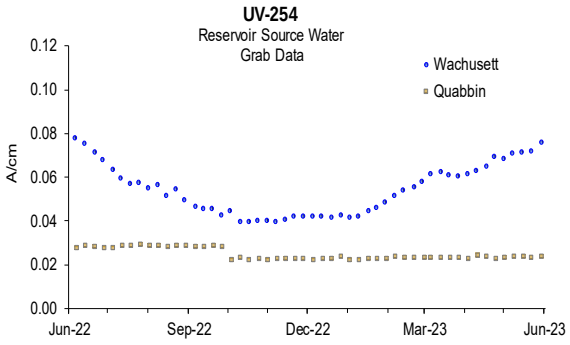


Source Water – UV Absorbance

UV Absorbance at 254nm wavelength (UV-254), is a measure of the amount and reactivity of natural organic material in source water. Higher UV-254 levels cause increased ozone and chlorine demand resulting in the need for higher ozone and chlorine doses, and can increase the level of disinfection by-products. UV-254 is impacted by tributary flows, water age, sunlight and other factors.

Quabbin Reservoir UV-254 levels averaged 0.023 A/cm for the quarter.

Wachusett Reservoir UV-254 levels averaged 0.069 A/cm for the quarter.



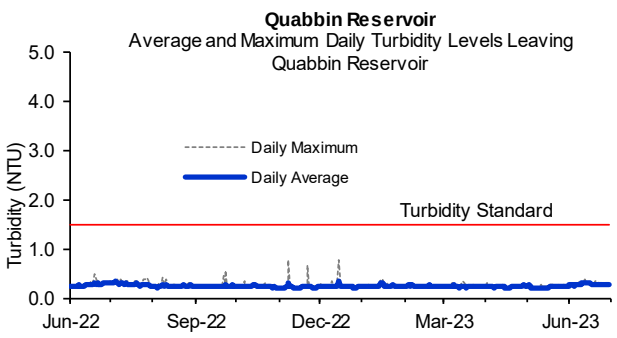
Source Water – Turbidity

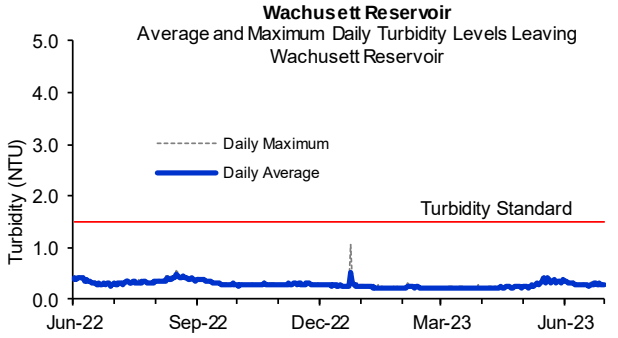
4th Quarter – FY23

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

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

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



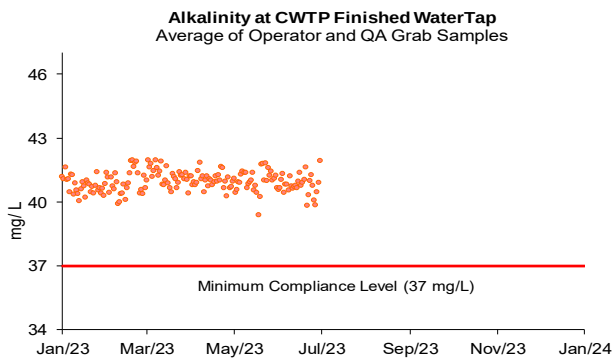


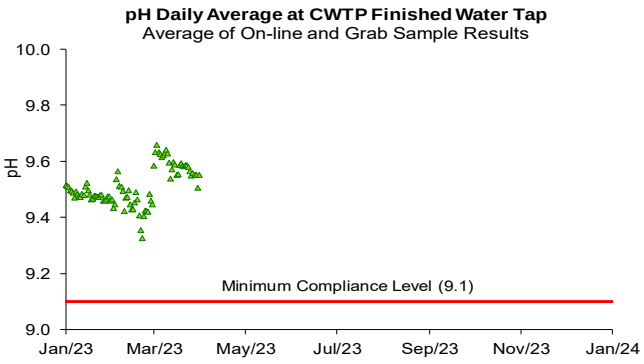
Treated Water – pH and Alkalinity Compliance

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

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

Quarterly distribution system samples were collected over a course of two weeks in June. Distribution system sample pH ranged from 9.4 to 9.8 and alkalinity ranged from 39 to 42 mg/L. No sample results were below DEP limits for this quarter.





Treated Water – Disinfection Effectiveness

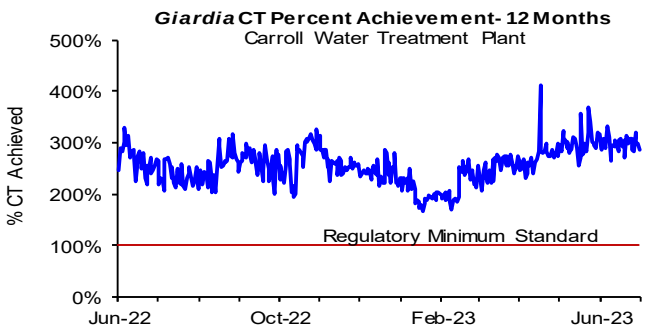
4th Quarter – FY23

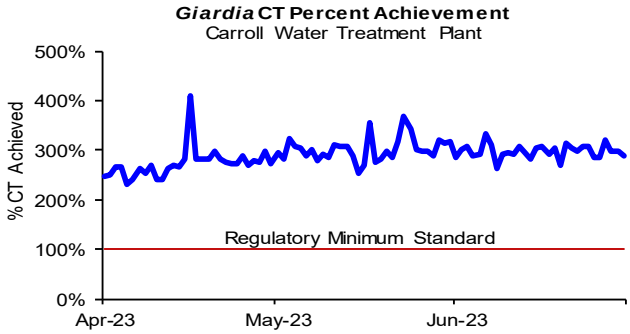
At the Carroll Water Treatment Plant (CWTP), MWRA meets the required 99.9% (3-log) inactivation of *Giardia* using ozone (reported as CT: concentration of disinfectant x contact time) and the required 99% (2-log) inactivation of *Cryptosporidium* using UV (reported as IT: intensity of UV x time). MWRA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

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

Wachusett Reservoir – MetroWest/Metro Boston Supply:

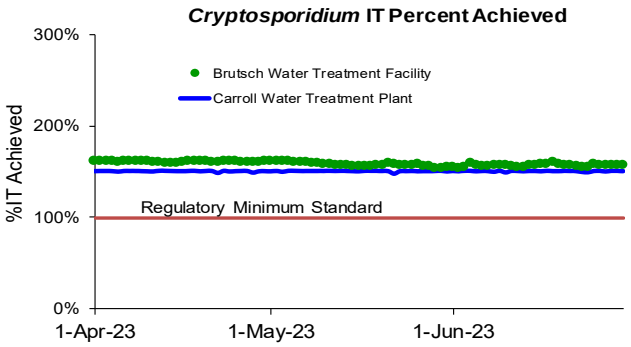
- The chlorine dose at the CWTP varied between 3.35 and 3.90 mg/L for the quarter.
- Ozone dose at the CWTP varied between 1.7 to 3.0 mg/L for the quarter.
- *Giardia* CT was maintained above 100% at all times the plant was providing water into the distribution system this quarter, as well as every day for the last fiscal year.
- *Cryptosporidium* IT was maintained above 100% for the quarter. Off-spec water was less than 5%.

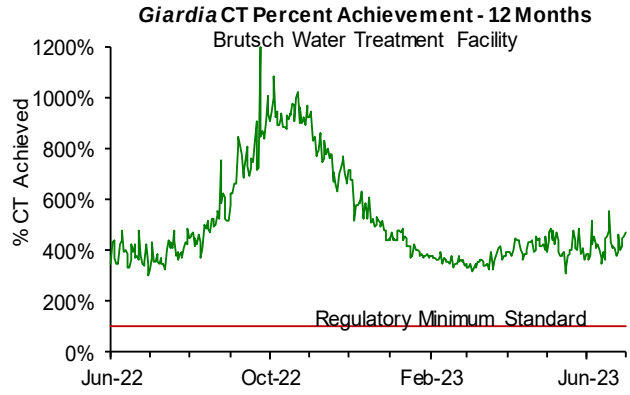


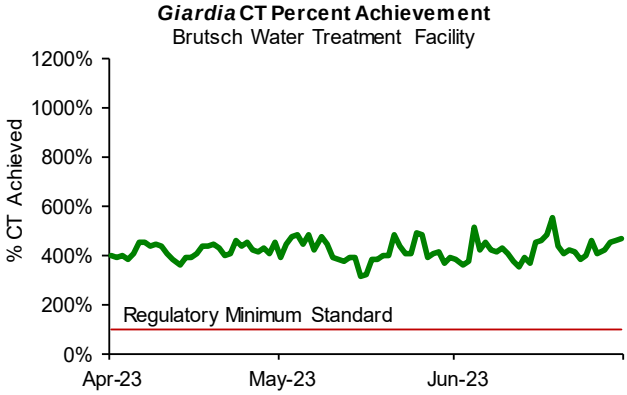


Quabbin Reservoir (CVA Supply) at: Brutsch Water Treatment Facility

- The chlorine dose at BWTF is adjusted in order to achieve MWRA's seasonal target of 0.75 - 0.85 mg/L (November 1 – May 31) and 0.85 - 1.05 mg/L (June 1 – October 31) at Ludlow Monitoring Station.
- The chlorine dose at BWTF varied between 1.30 to 1.55 mg/L for the quarter.
- *Giardia* CT was maintained above 100% at all times the plant was providing water into the distribution system for the quarter.
- *Cryptosporidium* IT was maintained above 100% for the quarter. Off-spec water was less than 5%.







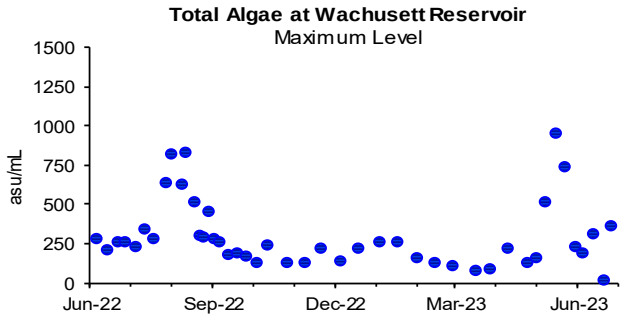
Source Water - Algae

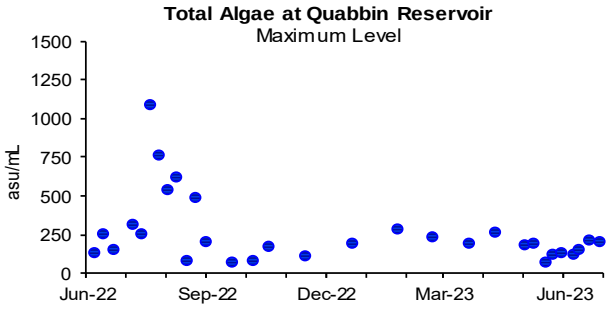
4th Quarter – FY23

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

Taste and odor complaints at the tap may be due to algae, which originate in source reservoirs, typically in trace amounts. Occasionally, a particular species grows rapidly, increasing its concentration in water. When *Synura*, *Anabaena*, or other nuisance algae bloom, MWRA may treat the reservoirs with copper sulfate, an algaecide. During the winter and spring, diatom numbers may increase. While not a taste and odor concern, consumers that use filters may notice a more frequent need to change their filters.

In the 4th quarter, there were no complaints which may be related to algae reported from the local water departments.



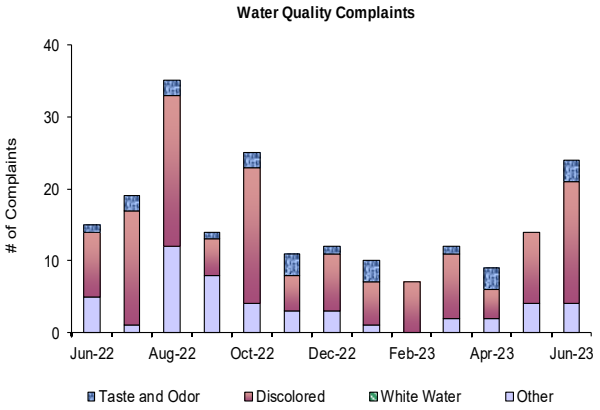


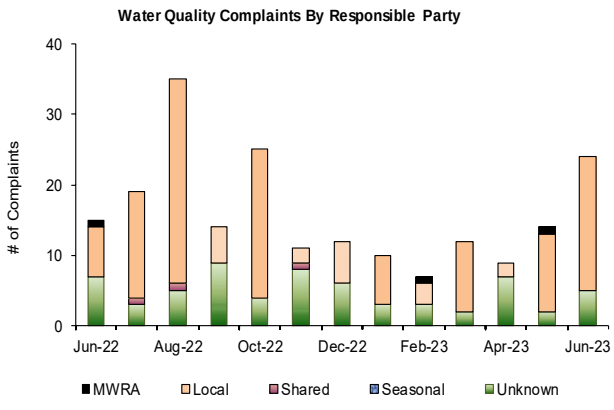
Drinking Water Quality Customer Complaints: Taste, Odor, or Appearance

MWRA collects information on water quality complaints that typically fall into four categories: 1) discoloration due to MWRA or local pipeline work; 2) taste and odor due to algae blooms in reservoirs or chlorine in the water; 3) white water caused by changes in pressure or temperature that traps air bubbles in the water; or 4) "other" complaints including no water, clogged filters or other issues.

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

Communities reported 47 complaints during the quarter compared to 42 complaints from 4th Quarter of FY22. Of these complaints, 31 were for "discolored water", 6 were for "taste and odor", and 10 were for "other". Of these complaints, 32 were local community issues, 1 was a shared local community and MWRA related issue, and 14 were unknown in origin. Twenty-four discolored water complaints were due hydrant flushing being performed in Somerville during May and June. Two discolored water complaints were due hydrant flushing being performed in Northborough during April and June.





Bacteria & Chlorine Residual Results for Communities in MWRA Testing Program

4th Quarter – FY23

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

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

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

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

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

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

Highlights

In the 4th Quarter, eight of the 6,276 samples (0.13% system-wide) submitted to MWRA labs for analysis tested positive. One of the 1899 Community/MWRA shared samples (0.05%) tested positive for total coliform. None of the 271 CVA/MWRA community samples tested positive for total coliform. No communities were required to perform a Level Assessment. No samples confirmed for *E.coli*. None of the Fully Served community samples had chlorine residuals lower than 0.2 mg/L for the quarter.

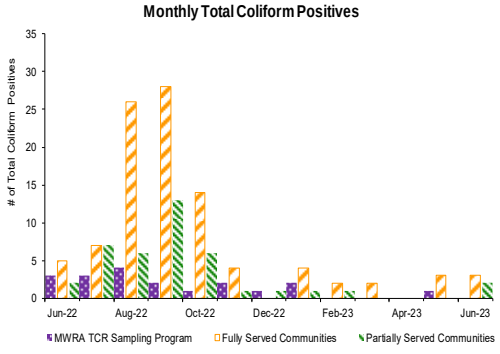
NOTES:

a) MWRA total coliform and chlorine residual results include data from community locations. In most cases these community results are indicative of MWRA water as it enters the community system; however, some are strongly influenced by local pipe conditions. Residuals in the MWRA system are typically between 1.0 and 2.8 mg/L.

b) The number of samples collected depends on the population served and the number of repeat samples required.

c) These communities are partially supplied, and may mix their chlorinated supply with MWRA chloraminated supply.

d) Part of the Chicopee Valley Aqueduct System. Free chlorine system.



			Total Coliform # Samples (b)	Total Coliform # (%) Positive	*E.coli* Positive	# Assessment Required
MWRA	a	MWRA Locations	398	0 (0%)	0	
	a	Shared Community/MWRA sites	1501	1 (0.07%)	0	
		Total: MWRA	1899	1 (0.05%)	0	No
Fully Served		ARLINGTON	169	0 (0%)	0	
		BELMONT	104	0 (0%)	0	
		BOSTON	797	6 (0.75%)	0	No
		BROOKLINE	237	0 (0%)	0	
		CHELSEA	169	0 (0%)	0	
		DEER ISLAND	52	0 (0%)	0	
		EVERETT	169	0 (0%)	0	
		FRAMINGHAM	237	0 (0%)	0	
		LEXINGTON	120	0 (0%)	0	
		LYNNFIELD	18	0 (0%)	0	
		MALDEN	234	0 (0%)	0	
		MARBLEHEAD	72	0 (0%)	0	
		MARLBOROUGH	126	0 (0%)	0	
		MEDFORD	192	0 (0%)	0	
		MELROSE	117	0 (0%)	0	
		MILTON	102	0 (0%)	0	
		NAHANT	30	0 (0%)	0	
		NEWTON	279	0 (0%)	0	
		NORTHBOROUGH	48	0 (0%)	0	
		NORWOOD	99	0 (0%)	0	
		QUINCY	324	0 (0%)	0	
		READING	130	0 (0%)	0	
		REVERE	195	0 (0%)	0	
		SAUGUS	104	0 (0%)	0	
		SOMERVILLE	252	0 (0%)	1	
		SOUTHBOROUGH	30	0 (0%)	0	
		STONEHAM	91	0 (0%)	0	
		SWAMPSCOTT	57	0 (0%)	0	
		WALTHAM	216	0 (0%)	0	
		WATERTOWN	143	0 (0%)	0	
		WESTON	45	0 (0%)	0	
		WINTHROP	66	0 (0%)	0	
		Total: Fully Served	5024	6 (0.12%)		
Partially Served	c	BEDFORD	54	0 (0%)	0	
	c	BURLINGTON	139	0 (0%)	0	
	c	CANTON	91	1 (1.10%)	0	No
	c	NEEDHAM	126	1 (0.79%)	0	No
	c	PEABODY	209	0 (0%)	0	
	c	WAKEFIELD	130	0 (0%)	0	
	c	WELLESLEY	114	0 (0%)	0	
	c	WILMINGTON	87	0 (0%)	0	
	c	WINCHESTER	94	0 (0%)	0	
	c	WOBURN	208	0 (0%)	0	
		Total: Partially Served	1252	2 (0.16%)		
		Total: Community Samples No CVA	6276	8 (0.13%)		
CVA	d	MWRA CVA Locations	104	0 (0%)	0	
	d	CHICOPEE	62	0 (0%)	0	
	d	SOUTH HADLEY FD1	60	0 (0%)	0	
	d	WILBRAHAM	45	0 (0%)	0	
		Total: CVA	271	0 (0%)		

Chlorine Residuals in Fully Served Communities

	2022							2023					
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
% <0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% <0.2	0.0	0.1	0.3	0.4	0.5	0.8	0.2	0.1	0.1	0.1	0.0	0.0	0.0
% <0.5	0.5	1.4	1.6	1.8	2.1	2.4	1.5	1.2	0.7	0.5	0.3	0.3	1.0
% <1.0	2.6	4.0	5.7	6.5	5.8	5.7	3.9	2.4	1.8	1.3	1.4	1.9	3.4
% ≥1.0	97.4	96.0	94.3	93.5	94.2	94.4	96.2	97.7	98.2	98.7	98.6	98.1	96.6

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

4th Quarter – FY23

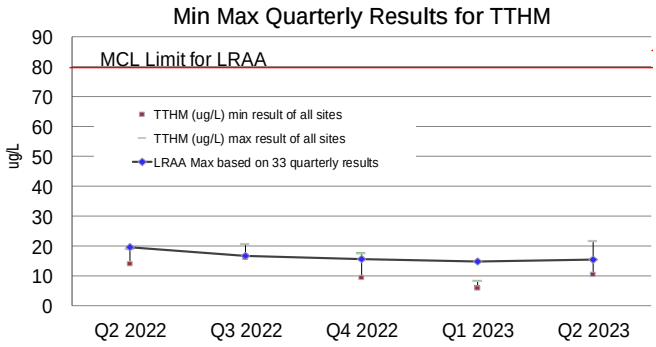
Total Trihalomethanes (TTHMs) and Haloacetic Acids (HAA5s) are by-products of disinfection treatment with chlorine. They are of concern due to their potential adverse health effects at high levels. EPA's locational running annual average (LRAA) standard, using the most recent four quarterly results, is 80 µg/L for TTHMs and 60 µg/L for HAA5s. The locational running annual average at each individual sampling location must be below the standard.

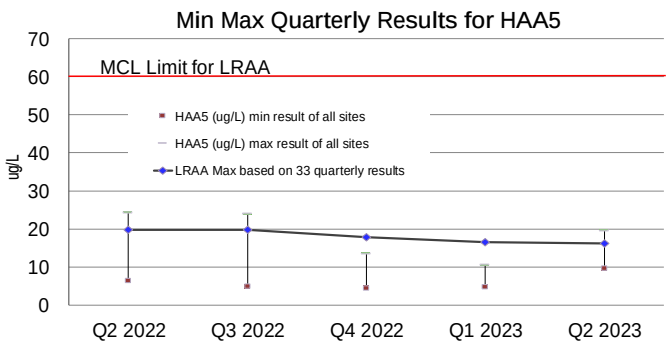
Bromate is tested monthly as required for water systems, like CWTP, that treat with ozone. EPA's RAA Maximum Contaminant Level (MCL) standard for bromate is 10 µg/L. The current RAA for Bromate at the CWTP finished water tap is 0.0 µg/L.

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

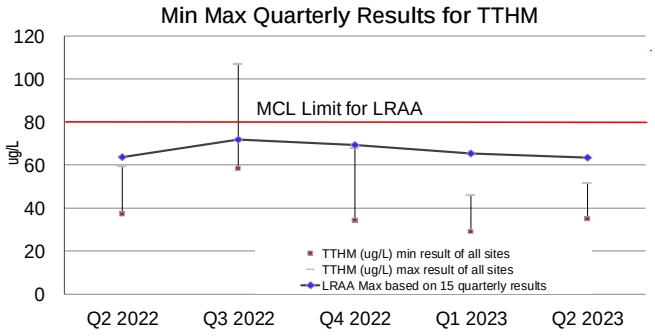
The LRAA for TTHMs and HAA5s for MWRA's Compliance Program (represented as the line in the top two graphs below) remains below current standards. The Max LRAA in the quarter for TTHMs = 15.5 µg/L; HAA5s = 16.3 µg/L. No LRAA exceedances or violations occurred this quarter for MetroBoston and for any of the CVA communities.

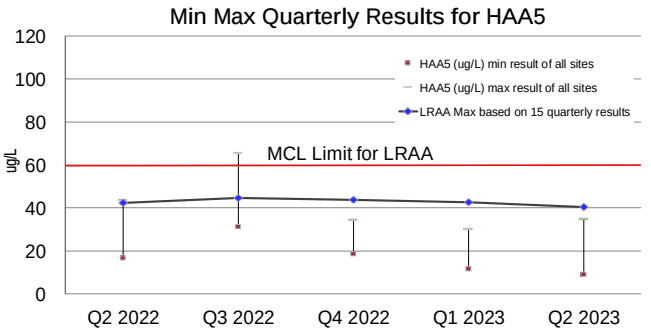
MetroBoston Disinfection By-Products





CVA Disinfection By-Products (Combined Results Chicopee, Wilbraham, & South Hadley FD1)





Water Supply and Source Water Management

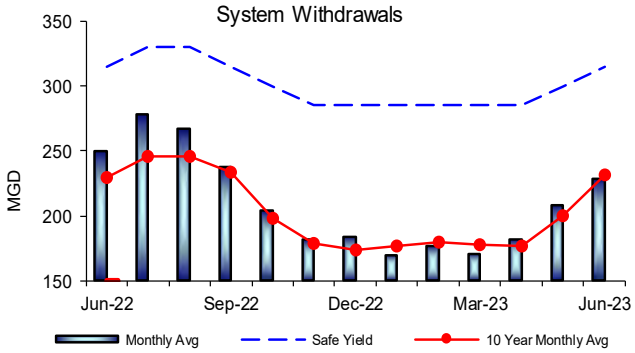
4th Quarter – FY23

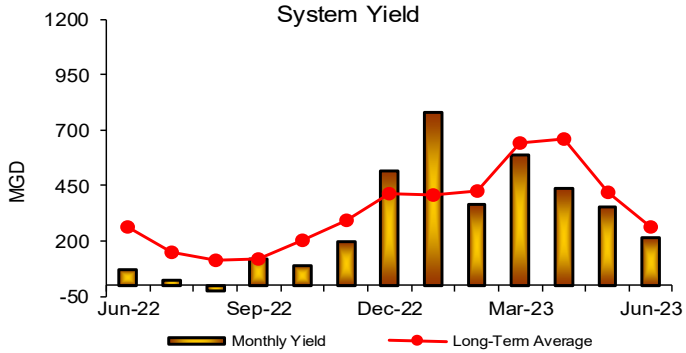
Background

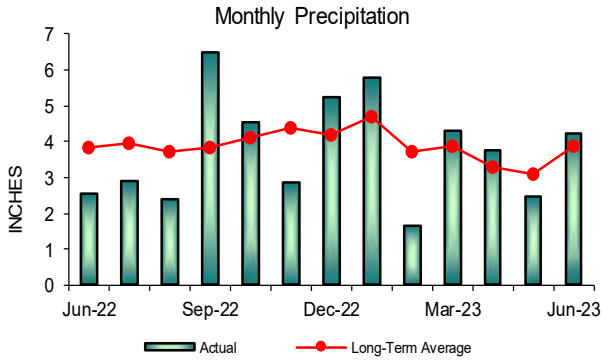
A reliable supply of water in MWRA's reservoirs depends on adequate precipitation during the year and seasonal hydrologic inputs from watersheds that surround the reservoirs. Demand for water typically increases with higher summer temperatures and then decreases as temperatures decline. Quabbin Reservoir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

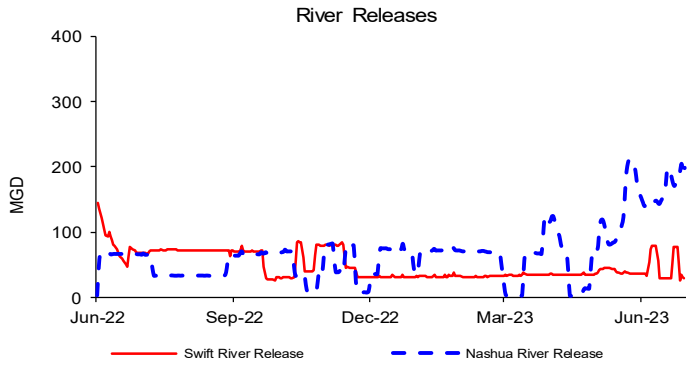
Outcome

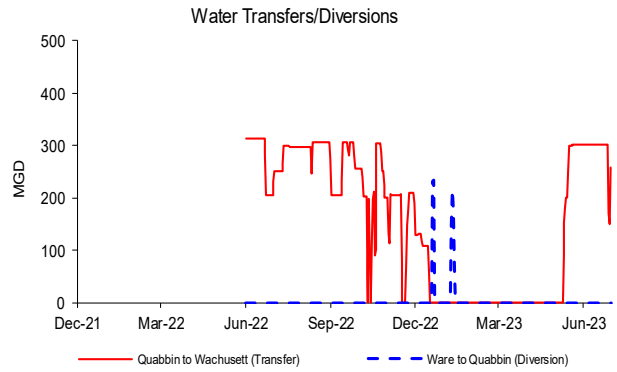
The volume of the Quabbin Reservoir was at 94.2% as of June 30, 2023; a 1.6 % increase for the quarter, which represents a gain of more than 6.7 billion gallons of storage and an increase in elevation of 0.90'. System withdrawal was below its long term quarterly average. Precipitation and Yield quarterly average were below their long term quarterly averages. Quabbin is in Normal Operating Range for this time of year.

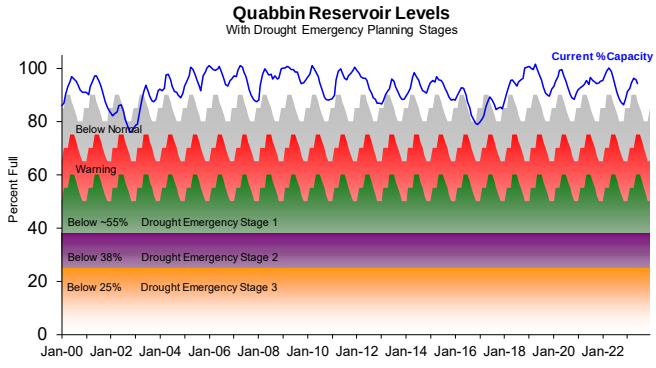












WASTEWATER QUALITY

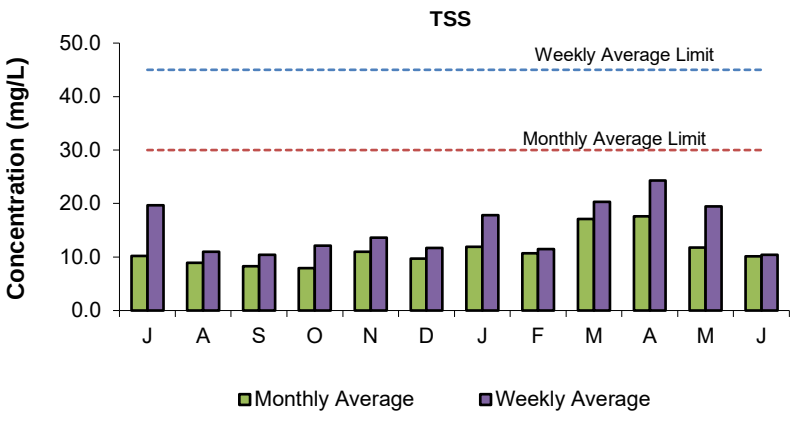
NPDES Permit Compliance: Deer Island Treatment Plant

4th Quarter - FY23

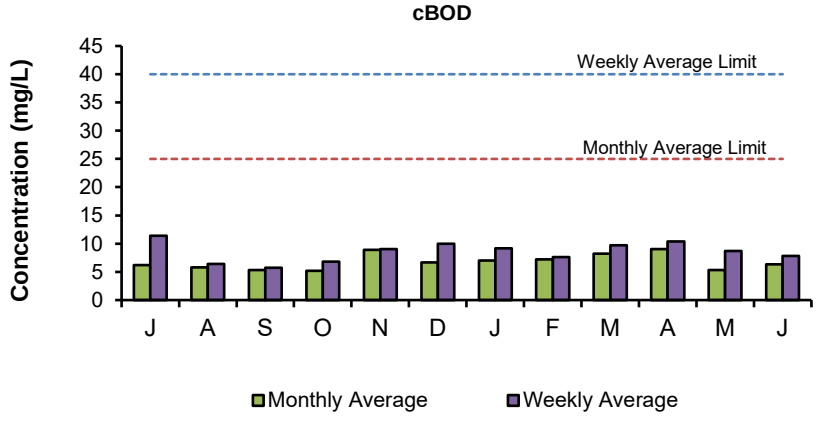
NPDES Permit Limits

Effluent Characteristics		*Units*	*Limits*	*April*	*May*	*June*	*4th Quarter Violations*	*FY23 YTD Violations*
Dry Day Flow (365 Day Average):		mgd	436	250.4	254.5	257.7	0	0
cBOD:	Monthly Average	mg/L	25	9.0	5.3	6.3	0	0
	Weekly Average	mg/L	40	10.4	8.7	7.8	0	0
TSS:	Monthly Average	mg/L	30	17.6	11.8	10.1	0	0
	Weekly Average	mg/L	45	24.3	19.5	10.4	0	0
TCR:	Monthly Average	ug/L	456	0.0	0.0	0.0	0	0
	Daily Maximum	ug/L	631	0.0	0.0	0.0	0	0
Fecal Coliform:	Daily Geometric Mean	col/100mL	14000	9	11	22	0	0
	Weekly Geometric Mean	col/100mL	14000	9	6	7	0	0
	% of Samples >14000	%	10	0	0	0	0	0
	Consecutive Samples >14000	#	3	0	0	0	0	0
pH:		SU	6.0-9.0	6.5-6.8	6.4-6.9	6.5-6.9	0	0
PCB, Aroclors:	Monthly Average	ug/L	0.000045	UNDETECTED			0	0
Acute Toxicity:	Inland Silverside	%	≥50	>100	>100	>100	0	0
	Mysid Shrimp	%	≥50	>100	>100	>100	0	0
Chronic Toxicity:	Inland Silverside	%	≥1.5	50	50	50	0	0
	Sea Urchin	%	≥1.5	100	100	100	0	0

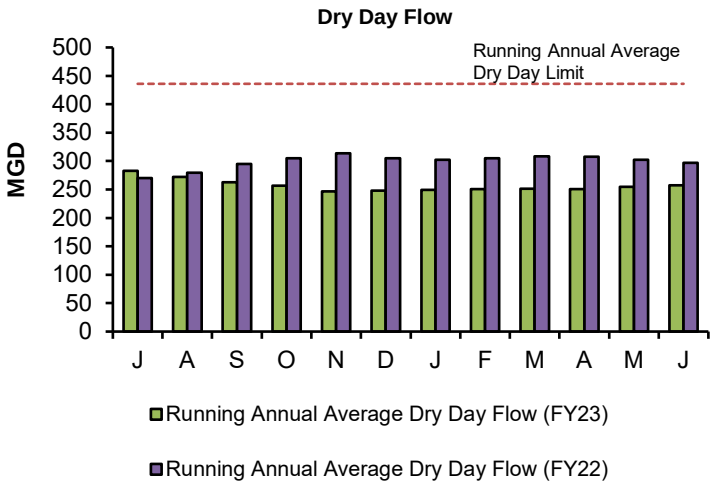
There have been no permit violations in FY23 to date at the Deer Island Treatment Plant (DITP).



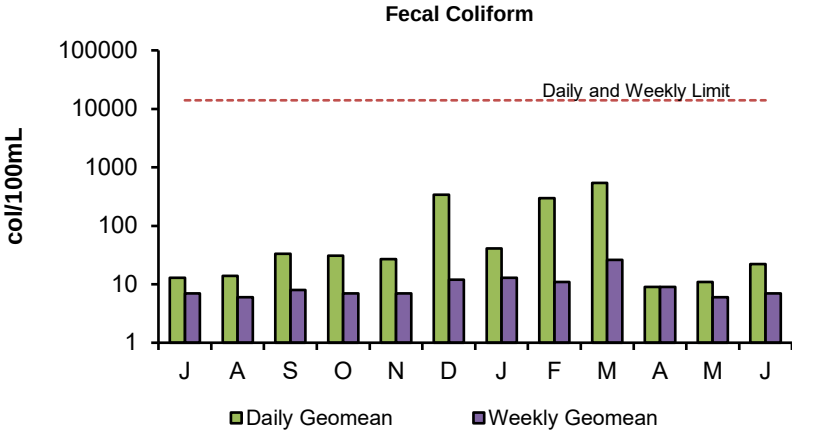
Total Suspended Solids (TSS) in the effluent is a measure of the amount of solids that remain suspended after treatment. All TSS measurements for the 4th Quarter were within permit limits.



Carbonaceous Biochemical Oxygen Demand (cBOD) is a measure of the amount of dissolved oxygen required for the decomposition of organic materials in the environment. All cBOD measurements for the 4th Quarter were within permit limits.



Running Annual Average Dry Day Flow is the average of all dry weather influent flows over the previous 365 days. The Dry Day Flow for the 4th Quarter was well below the permit limit of 436 MGD.



Fecal Coliform is an indicator for the possible presence of pathogens. The levels of these bacteria after disinfection show how effectively the plant is inactivating many forms of disease-causing microorganisms. In the 4th Quarter, all permit conditions for fecal coliform were met.

NPDES Permit Compliance: Clinton Wastewater Treatment Plant

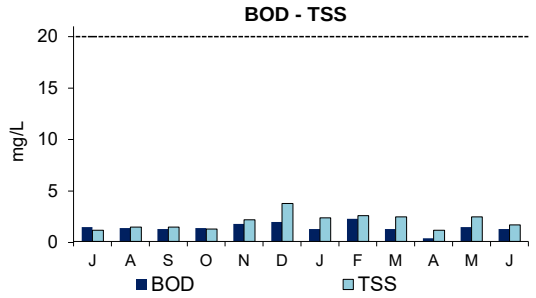
4th Quarter - FY23

NPDES Permit Limits

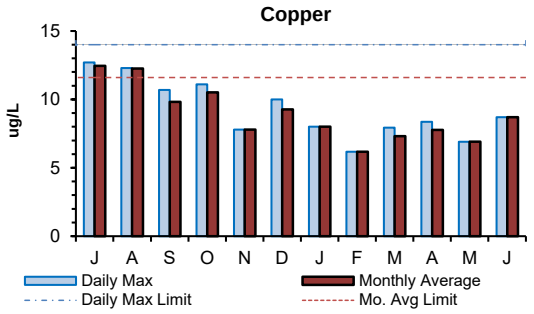
Effluent Characteristics		*Units*	*Limits*	*April*	*May*	*June*	*4th Quarter Violations*	*FY23 YTD Violations*
Flow:	12-month Rolling Average:	mgd	3.01	2.35	2.43	2.49	0	1
BOD:	Monthly Average:	mg/L	20	0.4	1.5	1.3	0	0
	Weekly Average:	mg/L	20	1.8	2.3	2.3	0	0
TSS:	Monthly Average:	mg/L	20	1.2	2.5	1.7	0	0
	Weekly Average:	mg/L	20	1.8	1.6	6.8	0	0
pH:		SU	6.5-8.3	7.4-7.8	6.5-7.6	7.3-7.7	0	0
Dissolved Oxygen:	Daily Average Minimum:	mg/L	6	9.5	9.3	7.8	0	0
E. Coli:	Monthly Geometric Mean:	cfu/100mL	126	5	5	6	0	0
	Daily Geometric Mean:	cfu/100mL	409	7	5	11	0	0
TCR:	Monthly Average:	ug/L	20	<20	<20	<20	0	0
	Daily Maximum:	ug/L	30.4	<20	<20	<20	0	0
Copper:	Monthly Average:	ug/L	11.6	7.77	6.91	8.70	0	2
	Daily Maximum:	ug/L	14.0	8.36	6.91	8.70	0	0
Total Ammonia Nitrogen:	Monthly Average:	mg/L	2.0	0.02	<0.1	<0.1	0	0
June 1st - October 31st	Daily Maximum:	mg/L	3.0	0.07	<0.1	<0.1	0	0
Total Phosphorus:	Monthly Average:	ug/L	0.15	0.04	0.04	0.08	0	0
April 1st - October 31st	Daily Maximum:	ug/L	RPT	0.1	0.1	0.2	0	0
Acute Toxicity+:	Daily Minimum:	%	≥100	>100	N/A	N/A	0	0
Chronic Toxicity+:	Daily Minimum:	%	≥62.5	100.0	N/A	N/A	0	1

There have been four permit violations in FY23 at the Clinton Treatment Plant.
1st Quarter: There were four permit violations in the first quarter. In July, plant flows exceeded the 12-month rolling average. July and August copper monthly averages exceeded the permit limit of 11.6 ug/L. The quarterly chronic toxicity result of 12.5% was below the minimum permit limit of 62.5%.
2nd Quarter: There were no permit violations in the second quarter.
3rd Quarter: There were no permit violations in the third quarter.
4th Quarter: There were no permit violations in the fourth quarter.

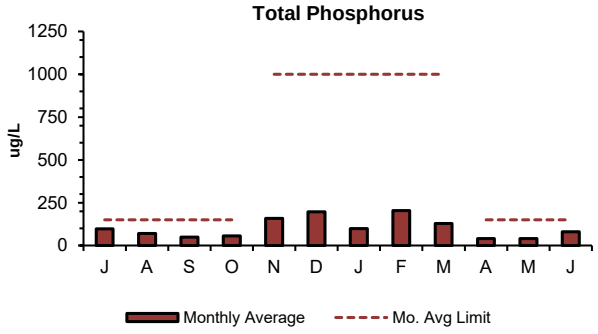
+ Toxicity testing at the Clinton Treatment Plant is conducted on a quarterly basis.



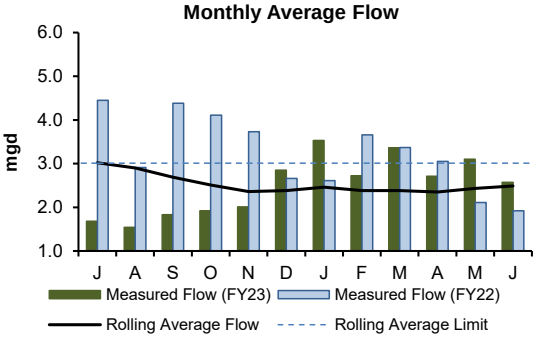
The 4th Quarter's monthly average and daily maximum concentrations of ammonia were below the permit limits. The monthly average and daily maximum limits for the 4th Quarter are variable. The permit limits are most stringent from June to October when warm weather conditions are most conducive to potential eutrophication.



Daily maximum and monthly average concentrations of copper were below permit limits in the 4th Quarter. Permit daily and monthly limits are 14.0 ug/L and 11.6 ug/L respectively.



Total phosphorus limits are most stringent during the growing season from April to October. The 4th Quarter's monthly average concentrations for total phosphorus were below permit limits.

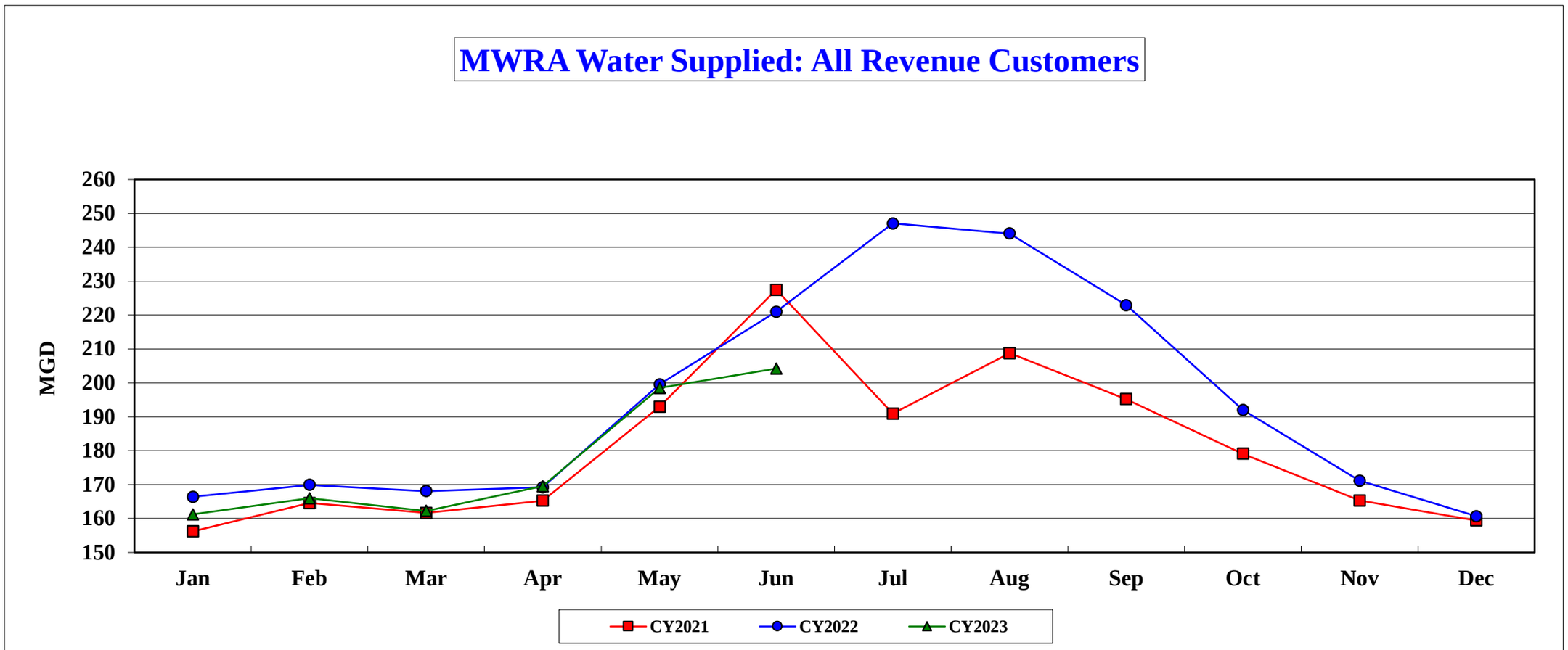


The graph depicts the rolling annual average monthly flow, measured in million gallons per day, exiting the plant.
The 12-month rolling average flows during the 4th Quarter were below the permit limit.

COMMUNITY FLOWS AND PROGRAMS

Customer Water Use

4th Quarter - FY23



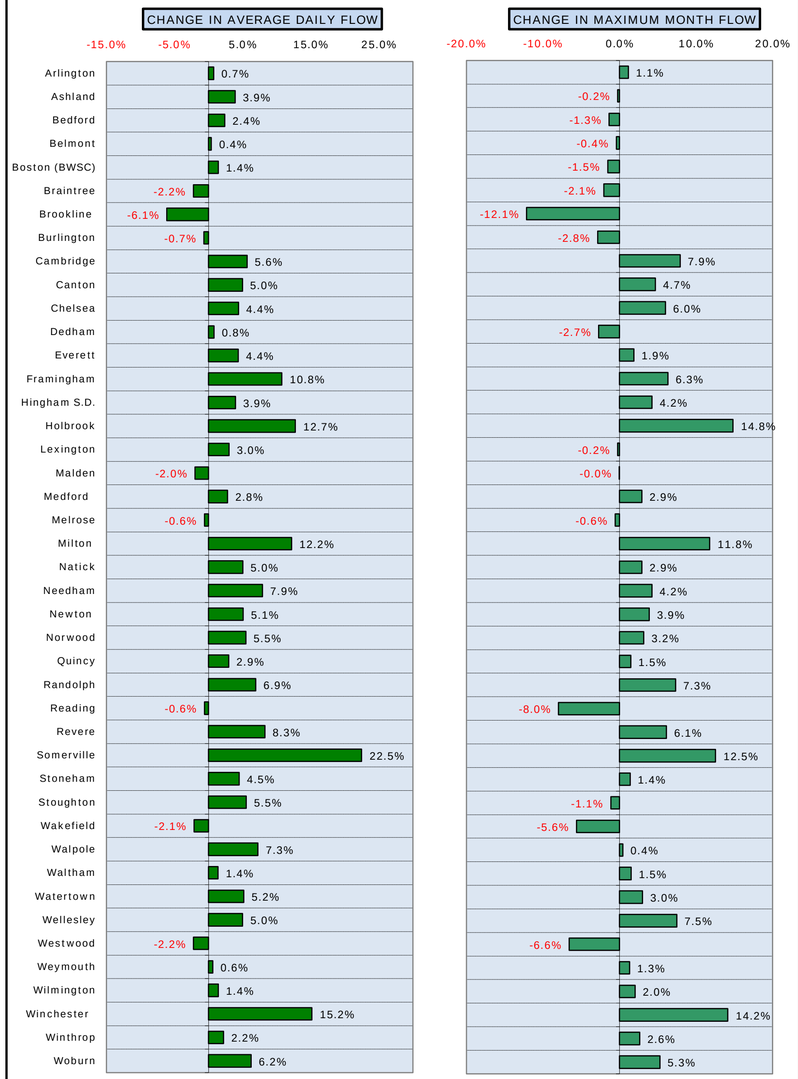
	Water Use (million gallons per day)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD Average	Annual Average
CY2021	156.213	164.567	161.697	165.284	192.998	227.522	190.945	208.810	195.229	179.116	165.302	159.442	178.067	180.641
CY2022	166.445	169.923	168.101	169.253	199.626	221.002	247.075	244.069	222.906	192.000	171.170	160.697	182.457	194.537
CY2023	161.248	165.963	162.266	169.566	198.489	204.245	-	-	-	-	-	-	177.035	177.035

The June 2023 Community Water Use Report was recently distributed to communities and customers served by the MWRA's Metropolitan and Chicopee Valley waterworks systems. Each community's annual water use relative to the system as a whole is the primary factor in allocating the annual water rate revenue requirement to MWRA water communities. Calendar year 2023 water use will be used to allocate the FY2025 water utility rate revenue requirement.

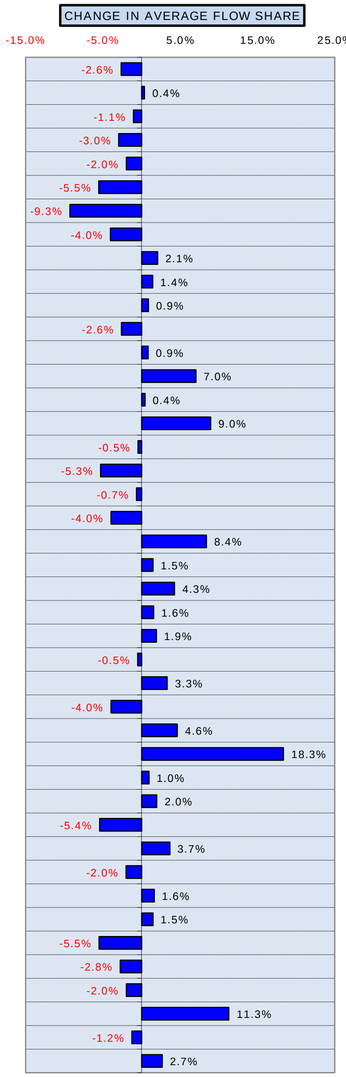
MWRA customers used an average of 196.7 mgd in the 4th quarter (Apr-Jun 2023) of FY2023. This is a decrease of 5.8 mgd or 3.0% compared to the 4th quarter of FY2022.

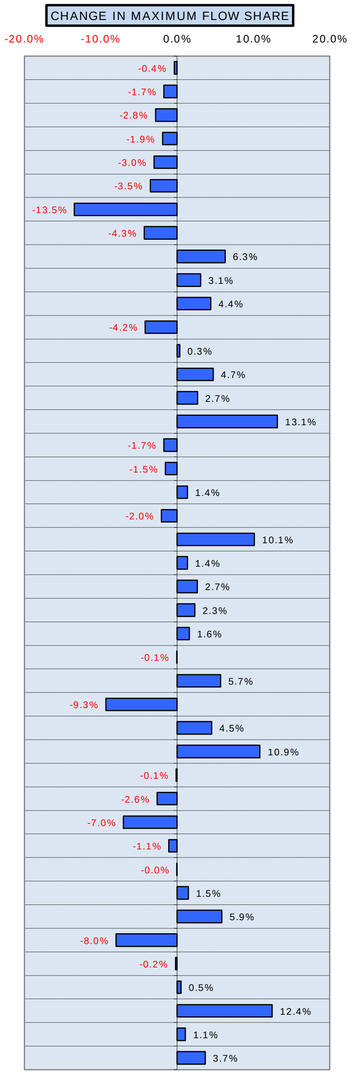
How CY2021-23 Community Wastewater Flows Could Effect FY2025 Sewer Assessments [1,2,3]

The flow components of FY2025 sewer assessments will be calculated using a 3-year average of CY2021 to CY2023 wastewater flows compared to FY2024 assessments that will use a 3-year average of CY2020 to CY2022 wastewater flows.

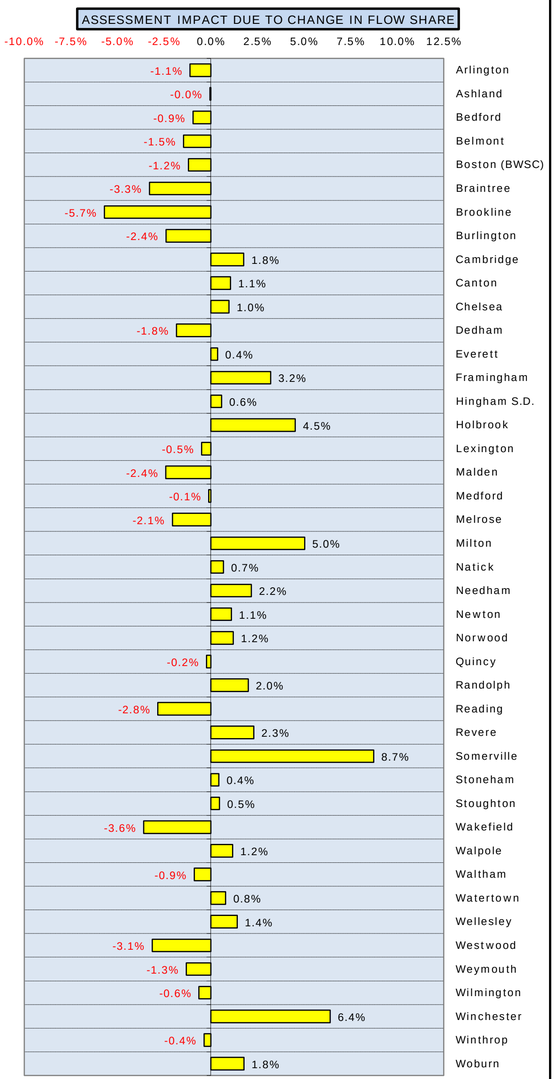


But as MWRA's sewer assessments are a ZERO-SUM calculation, a community's assessment is strongly influenced by the RELATIVE change in CY2021 to CY2023 flow share compared to CY2020 to CY2022 flow share, compared to all other communities in the system.





The chart below illustrates the change in the TOTAL BASE assessment due to FLOW SHARE CHANGES. [4]



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

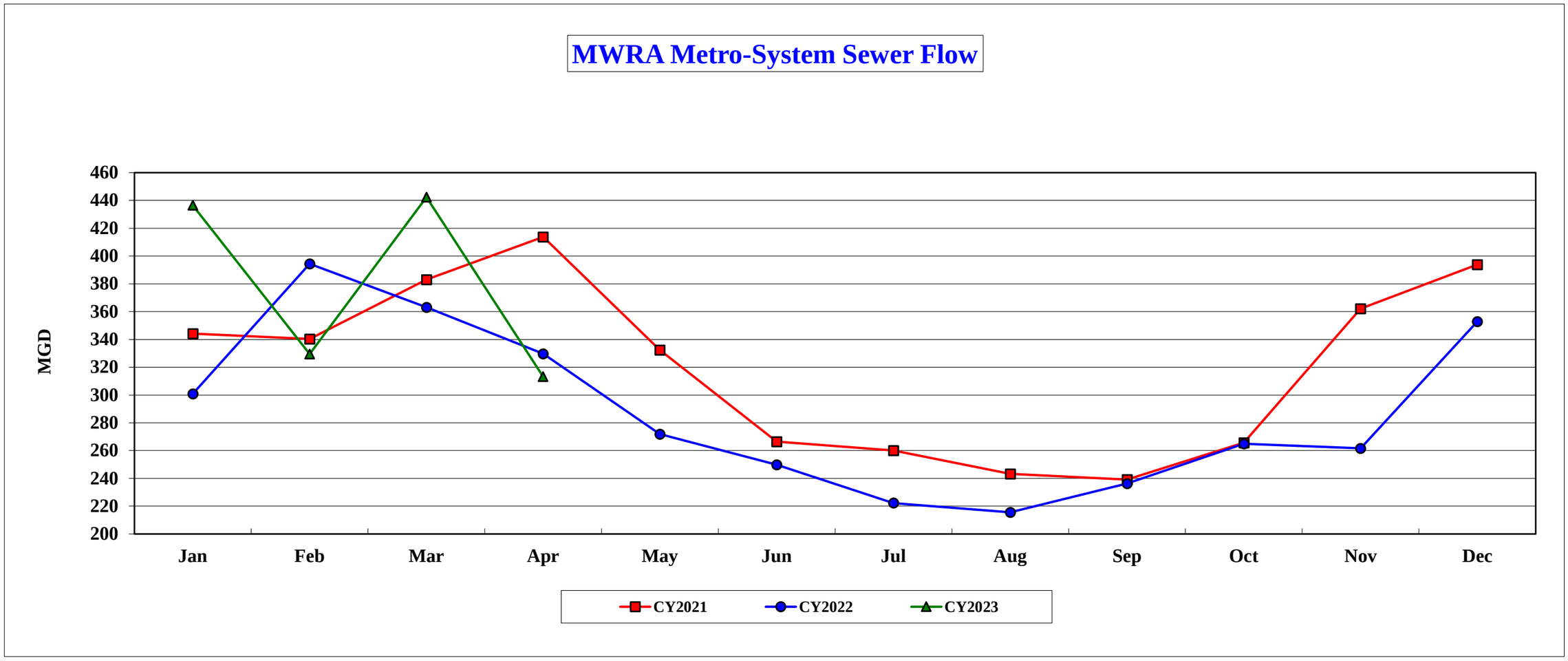
[2] Based on actual flows for 2022 and 2023 (through April), and January to March, and June to December 2020. April & May 2020 based on the average of 3 prior years, adjusted for 2020 water use. January to December 2021 estimated based on the average of the 3 prior years.

[3] Flow data is preliminary and subject to change pending additional MWRA and community review.

[4] Represents ONLY the impact on the total BASE assessment resulting from the changes in average and maximum wastewater FLOW SHARES.

Community Sewer Flow

YTD - FY23



	Sewer Flow (million gallons per day)													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD Average	Annual Average
CY2021	344.203	340.320	383.107	413.769	332.385	266.443	260.030	243.310	239.147	265.670	362.143	393.833	370.739	320.199
CY2022	300.930	394.400	363.110	329.710	271.890	249.840	222.280	215.600	236.380	264.960	261.560	352.870	345.998	287.969
CY2023	436.480	329.510	442.340	313.210	-	-	-	-	-	-	-	-	382.217	308.729

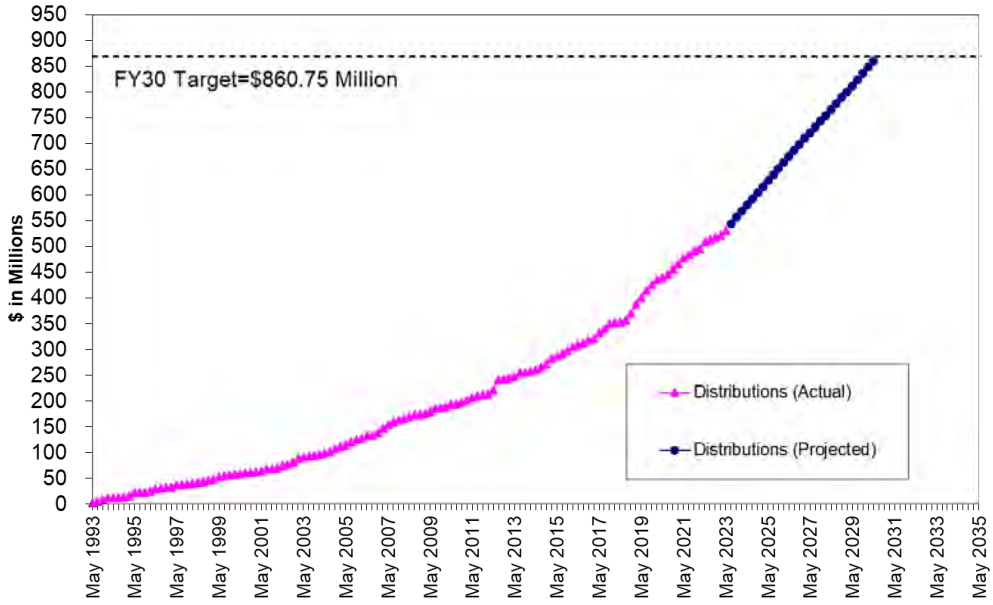
The 2023 4-Month Community Sewer Flow Report was recently distributed to the 43 communities served by the MWRA's Metropolitan sewer system. Each community's share of sewer flow relative to the system as a whole is used to allocate the annual sewer rate revenue requirement to MWRA sewer communities. The average of calendar year 2021-2023 sewer flow will be used to allocate the FY2025 sewer utility rate revenue requirement.

MWRA customer sewer flow averaged 382.2 mgd in the first four months of CY2023. This is an increase of 36.2 mgd or 10.5% compared to the first four months of CY2022.

Infiltration/Inflow Local Financial Assistance Program

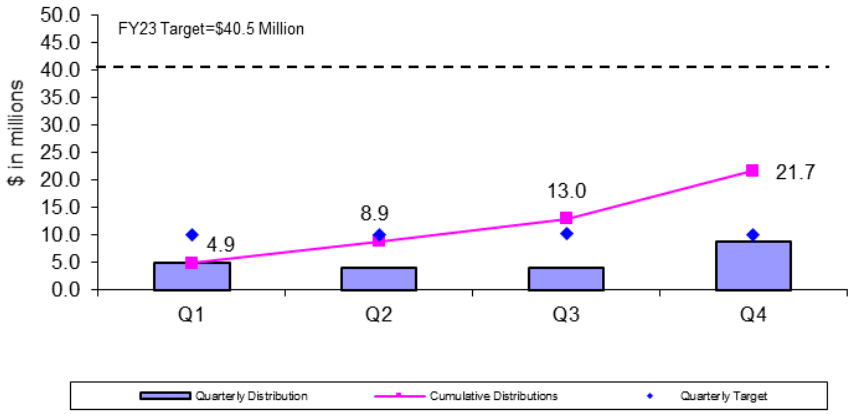
MWRA's Infiltration/Inflow (I/I) Local Financial Assistance Program provides $860.75 million in grants and interest-free loans (average of about $22 million per year from FY93 through FY30) to member sewer communities to perform I/I reduction and sewer system rehabilitation projects within their locally-owned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

I/I Local Financial Assistance Program Distribution FY93-FY30



During the 4th Quarter of FY23, $8.7 million in financial assistance (grants and interest-free loans) was distributed to fund local sewer rehabilitation projects in Boston, Burlington, Melrose, Newton and Quincy. Total grant/loan distribution to date for FY23 is $22 million. From FY93 through 4th Quarter of FY23, all 43 member sewer communities have participated in the program and $532 million has been distributed to fund 664 local I/I reduction and sewer system rehabilitation projects. Distribution of the remaining funds has been approved through FY30 and community loan repayments will be made through FY40. All scheduled community loan repayments have been made.

FY23 Quarterly Distributions of Sewer Grant/Loans

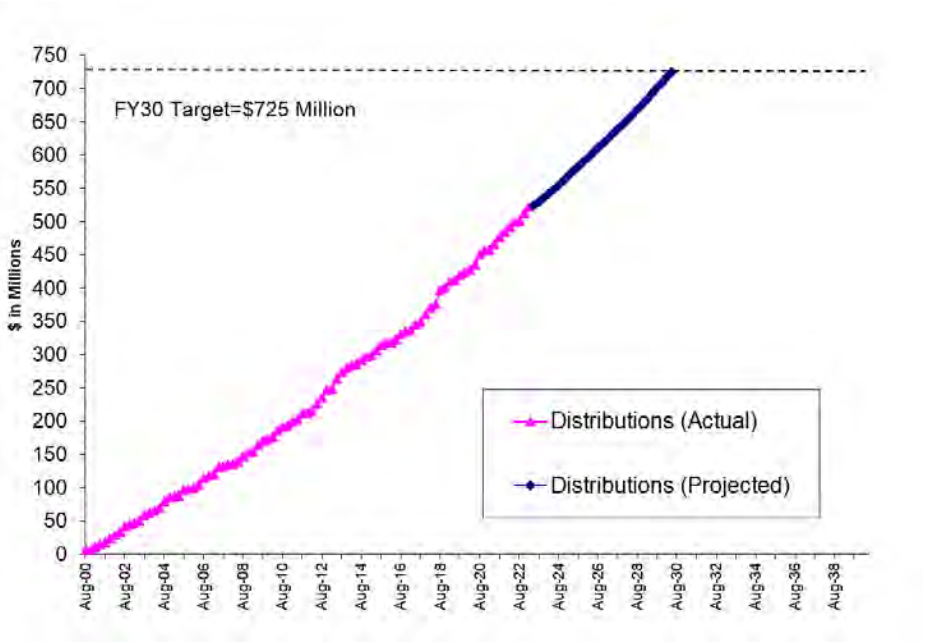


Community Support Programs
4th Quarter – FY23

Local Water System Assistance Program

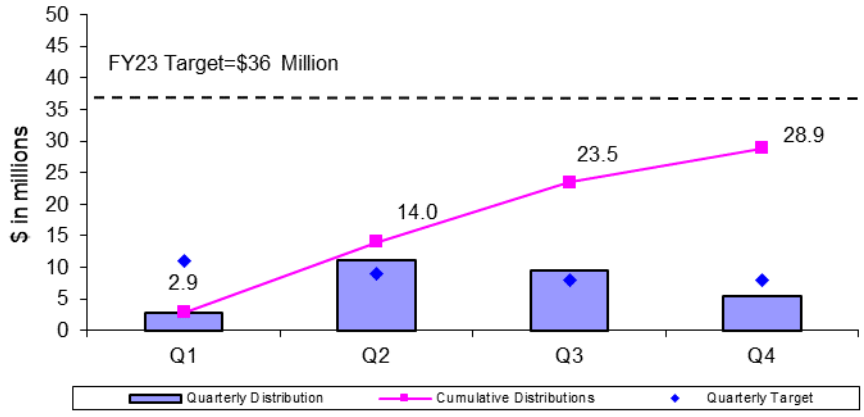
MWRA's Local Water System Assistance Programs (LWSAP) provides $725 million in interest-free loans (an average of about $24 million per year from FY01 through FY30) to member water communities to perform water main rehabilitation projects within their locally-owned water distribution systems. There have been three (3) funding phases: Phase 1 at $222 Million, Phase 2 at $210 Million, and Phase 3 at $293 Million. Eligible project costs include: water main cleaning/lining, replacement of unlined water mains, lead service replacements, valve, hydrant, water meter, tank work, engineering design, engineering services during construction, etc. MWRA partially-supplied communities receive pro-rated funding allocations based on their percentage use of MWRA water. Interest-free loans are repaid to MWRA over a ten-year period beginning one year after distribution of the funds. The Phase 1 water loan program concluded in FY13 with $222 million in loan distributions. The Phase 2 - LWSAP continues distributions through FY25. The Phase 3 Water Loan Program is authorized for distributions from FY18 through FY30.

Local Water System Assistance Program Distribution FY01-FY30



During the 4th Quarter of FY23, $5.4 million in interest-free loans was distributed to fund local water projects in Everett, Melrose, Newton, Nahant and Swampscott. Total loan distribution to date for FY23 is $28.9 million. From FY01 through the 4th Quarter of FY23, $527 million has been distributed to fund 519 local water system rehabilitation projects in 43 MWRA member water communities. Distribution of the remaining funds has been approved through FY30 and community loan repayments will be made through FY40. All scheduled community loan repayments have been made.

FY23 Quarterly Distributions of Water Loans



Community Support Programs
4th Quarter – FY23

Lead Service Line Replacement Loan Program

By its vote on March 16, 2016, the Board approved an enhancement to the Local Water System Assistance Program to provide up to $100 million in 10-year zero-interest loans to communities solely for efforts to fully replace lead service lines. The Lead Service Line Replacement Loan Program is also referenced as the Lead Loan Program or LLP. Each community can develop its own program, tailored to their local circumstances. MWRA's goal in providing financial assistance to member communities is to improve local water systems so that the high quality water MWRA delivers can make it all the way to the consumer's tap. The presence of a lead service line connecting a home to the main in the street can lead to elevated lead levels in tap water, especially if that water sits stagnant for an extended period. MWRA's stable water quality and effective corrosion control treatment reduce the risk that a lead service line will cause elevated lead levels, and measured lead levels in high risk homes have decreased by 90 percent since corrosion control was brought on-line in 1996. However, the risk of elevated levels remains as long as lead service lines are in use. To date, $35.5 million dollars have been distributed to 14 communities.

FY17 was the first year of the Lead Service Line Replacement Loan Program - MWRA made three Lead Loans.

FY18 was the second year of the Lead Loan Program - MWRA made five Lead Loans.

FY19 was the third year of the Lead Loan Program - MWRA made four Lead Loans.

FY20 was the fourth year of the Lead Loan Program - MWRA made eight Lead Loans.

FY21 is the fifth year of the Lead Loan Program - MWRA made seven Lead Loans.

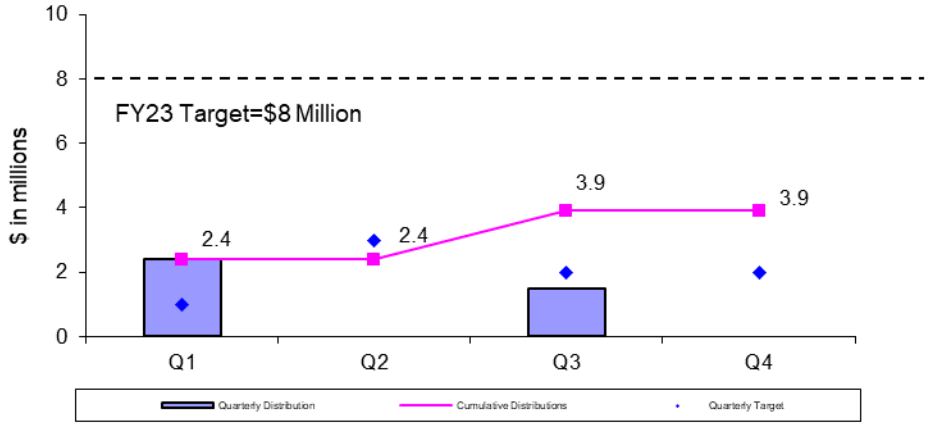
FY22 is the sixth year of the Lead Loan Program - MWRA made six Lead Loans.

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

Summary of Lead Loans:

Chelsea in FY23	$0.5 Million
Watertown in FY23	$0.3 Million
Winthrop in FY23	$0.7 Million
Reading in FY23	$1.5 Million
Watertown in FY23	$0.3 Million
Winchester in FY23	$0.6 Million
Everett in FY22	$1.5 Million
Boston in FY22	$0.9 Million
Winthrop in FY22	$0.8 Million
Somerville in FY22	$1.6 Million
Revere in FY22	$1.3 Million
Chelsea in FY22	$0.3 Million
Watertown in FY21	$0.6 Million
Marlborough in FY21	$2.0 Million
Everett in FY21	$1.5 Million
Boston in FY21	$2.6 Million
Winthrop in FY21	$0.8 Million
Chelsea in FY21	$0.3 Million
Winchester in FY21	$0.6 Million
Everett in FY20	$0.5 Million
Marlborough in FY20	$1.0 Million
Winchester in FY20	$0.6 Million
Winthrop in FY20	$0.7 Million
Weston in FY20	$0.2 Million
Everett in FY20	$1.0 Million
Somerville in FY20	$0.9 Million
Chelsea in FY20	$0.3 Million
Marlborough in FY19	$1.0 Million
Winthrop in FY19	$0.5 Million
Chelsea in FY19	$0.1 Million
Everett in FY19	$1.0 Million
Needham in FY18	$1.0 Million
Winchester in FY18	$0.5 Million
Revere in FY18	$0.2 Million
Winthrop in FY18	$0.3 Million
Marlborough in FY18	$1.0 Million
Newton in FY17	$4.0 Million
Quincy in FY17	$1.5 Million
Winchester in FY17	$0.5 Million
TOTAL	$35.5 Million

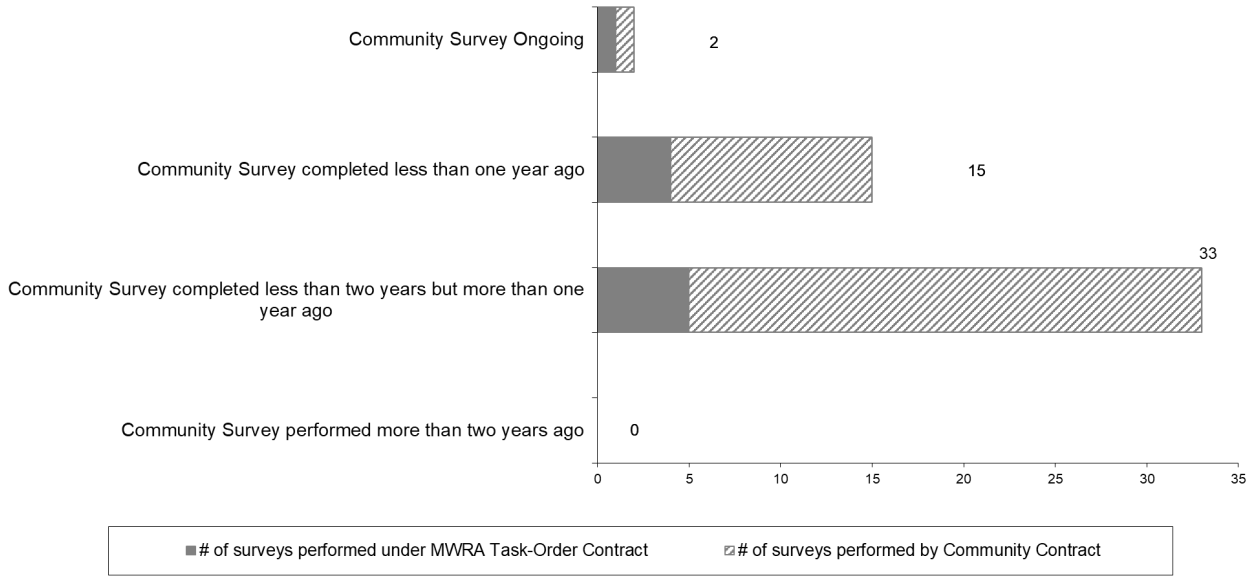
FY23 Quarterly Distributions of Lead Service Line Replacement Loans



Community Support Programs
4th Quarter – FY23

Community Water System Leak Detection

To ensure member water communities identify and repair leaks in locally-owned distribution systems, MWRA developed leak detection regulations that went into effect in July 1991. Communities purchasing water from MWRA are required to complete a leak detection survey of their entire distribution system at least once every two years. Communities can accomplish the survey using their own contractors or municipal crews; or alternatively, using MWRA's task order leak detection contract. MWRA's task order contract provides leak detection services at a reasonable cost that has been competitively procured (3-year, low-bid contract) taking advantage of the large volume of work anticipated throughout the regional system. Leak detection services performed under the task order contract are paid for by MWRA and the costs are billed to the community the following year. During the 4th Quarter of FY23, all member water communities were in compliance with MWRA's Leak Detection Regulation.



Community Water Conservation Outreach

MWRA's Community Water Conservation Program helps to maintain average water demand below the regional water system's safe yield of 300 mgd. Current 5-year average water demand is less than 200 mgd. The local Water Conservation Program includes distribution of water conservation education brochures (indoor - outdoor bill-stuffers) and low-flow water fixtures and related materials (shower heads, faucet aerators, and toilet leak detection dye tabs), all at no cost to member communities or individual customers. The Program's annual budget is $25,000 for printing and purchase of materials. Annual distribution targets and totals are provided in the table below. Distributions of water conservation materials are made based on requests from member communities and individual customers.

	Annual Target	Q1	Q2	Q3	Q4	Annual Total
Educational Brochures	100,000	17,985	418	15,304	7,462	41,169
Low-Flow Fixtures (showerheads and faucet aerators)	10,000	2,302	62	467	586	3,417
Toilet Leak Detection Dye Tablets	_____	3,151	28	3,258	370	6,807

BUSINESS SERVICES

Procurement: Purchasing and Contracts

4th Quarter - FY23

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

Highlights: Processed 92% of purchase orders within target; Average Processing Time was 5.23 days vs. 5.39 days in Qtr 4 of FY22. Processed 100% (2 of 2) of contracts within target timeframes; Average Processing Time was 138 days vs. 98 days in Qtr 4 of FY22.

Purchasing

	No.	TARGET	PERCENT IN TARGET
$0 - $500	521	3 DAYS	82.5%
$500 - $2K	551	7 DAYS	94.5%
$2K - $5K	358	10 DAYS	96.9%
$5K - $10K	153	25 DAYS	99.3%
$10K - $25K	72	30 DAYS	93.0%
$25K - $50K	28	60 DAYS	100.0%
Over $50K	41	90 DAYS	95.1%

The Purchasing Unit processed 1,724 purchase orders, 43 more than the 1,657 processed in Qtr 4 of FY22 for a total value of $14,927,509 versus a dollar value of $15,684,353 in Qtr 4 of FY22.

The purchase order processing target was not met for the $0K - $500 category due to item sourcing and price confirmations.

Contracts, Change Orders and Amendments

Procurement executed two contracts with a value of $5,339,839 and three amendments with a value of $552,449.

Staff reviewed 50 proposed change orders and 23 draft change orders.
Twenty change orders were executed during the period. The dollar value of all non-credit change orders during Q4 FY23 was $1,911,085 and the value of credit change orders was ($175,414).

Note: A credit change order is a change order that results in a decrease in contract value.

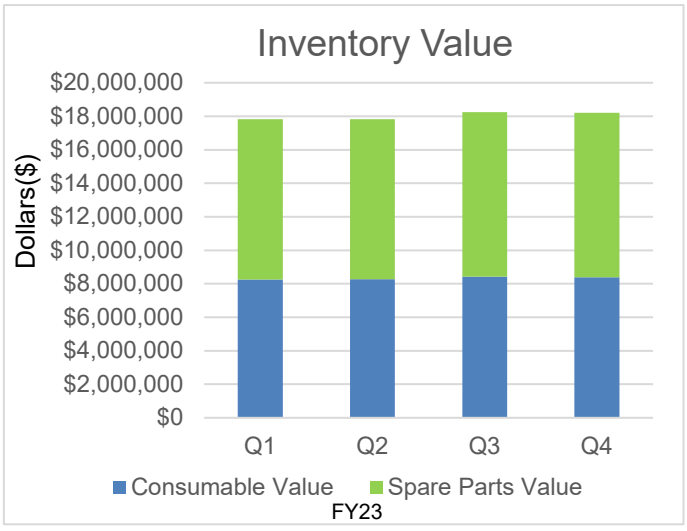
Materials Management

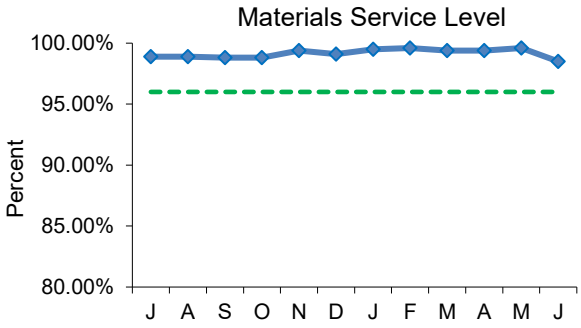
4th Quarter - FY23

The Materials Management department manages the three regional warehouses (Chelsea, Deer Island and Southboro). This includes the replenishment and receipt of both consumable and spare parts items to meet the needs of the MWRA. Additionally, MWRA tools and equipment are safeguarded through the Property Pass unit within the Materials Management department.

Inventory goals focus on:

- Maintaining optimum levels of consumables inventory (office supplies, electrical, safety, etc.) and spare parts inventory (critical items such as actuators, motors, muffin monsters, etc.) necessary to support MWRA Operations and Maintenance. Typically spare parts carry longer lead times.
- Adding new items to inventory to meet changing business needs.
- Reviewing consumables and spare parts for obsolescence.
- Managing and controlling valuable equipment and tools via the Property Pass Program.

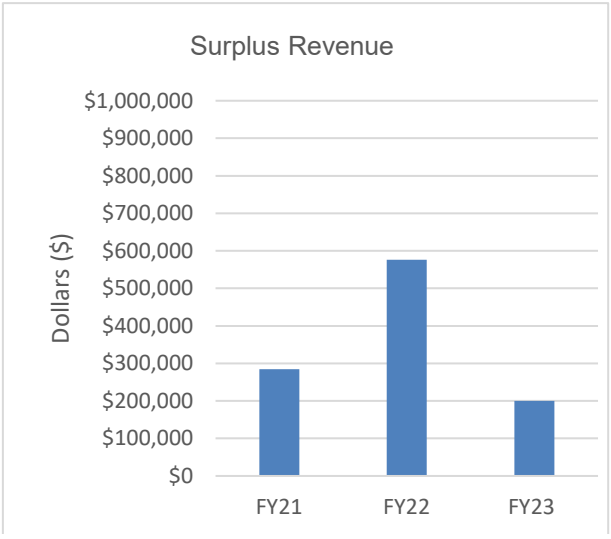


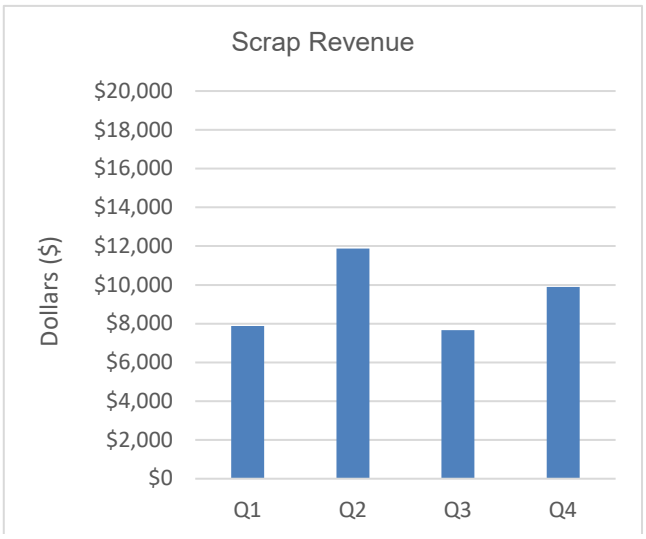


The service level is the percentage of stock requests filled. The goal is to maintain a service level of 96%. Staff issued 2,714 (98.5%) of the 2,756 items requested in Q4 from the inventory locations for a total dollar value of $643,171.

Property Pass Program:

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

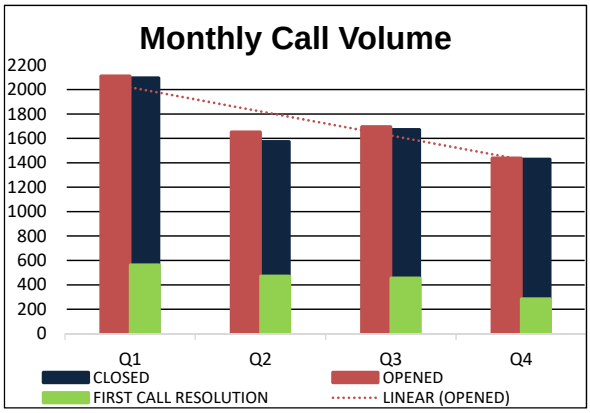




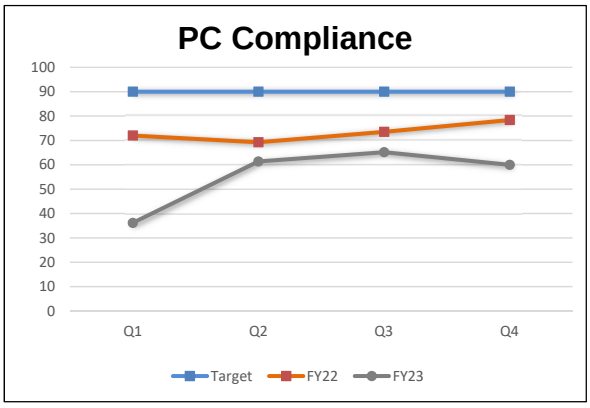
MIS Program

4th Quarter – FY23

Numbers & Statistics



Summary of calls managed by the Helpline. The trend line indicates the number of new tickets has decreased since peaking in Q1.



Percentage of user endpoints that are in compliance with system updates. These numbers are a direct reflection of accessibility to these systems. Daytime patching began in January for mobile devices.

Project Updates

Infrastructure & Security

Office Space Planning: All phases of the construction are completed with the exception of phase 2 in Deer Island, which is estimated to complete in July.

Network Enhancement/Upgrades: Tunnel Redundancy Core Storage facility brought online. Cellphone Distributed Antenna System upgraded in Chelsea, Deer Island installation to be scheduled. Edge switched replacement 60% completed, expected completion in October. Scope being developed for balance of copper cabling on DITP. Design of Software Defined Wide Area Network (SD-WAN) infrastructure to improve network resiliency completed. Phase 1 (Chelsea) implementation completed, remote sites to begin in July.
VMWare Workspace ONE: This solution will replace Citrix Workspace, XenMobile, Absolute, and Ivanti and will manage remote access, mobile devices, device tracking, software deployment, and asset management. MIS Desktop Team visited Chelsea, DI and Southborough to assist user's with migration on smartphones to the new email tool called Boxer, this effort is 82% complete

Conference Room Media Upgrades: Moving all conference rooms to new MWRA meeting standard. 8 of 16 conference rooms have been upgraded across the Authority. The remaining rooms are awaiting procurement of additional media kits.

Telephone System Upgrade: Phase 1 of phone system cutover completed on DITP. Next phase pending copper cabling upgrade.

Library, Record Center, & Training

Library: Undertook 20 research requests, supplied 28 books for circulation, provided 12 new books and 8 new standards (aside from subscription). Supported 450 end user searches, including: specifications for seawall repair, change orders for construction contracts-industry average, historic photos of wasm 3 construction, and gauging station images-Framingham.

Record Center (RC): 43 new boxes added to RC (1,052 YTD), handled 1,095 total boxes, and shredded 15, 65 gallon bins of confidential documentation this quarter. The scanning initiative continues with over 360 boxes of physical records since starting in Q1. Performed searches for various departments on topics such as seawall construction at Deer Island, historic photos of wasm 3 construction, Dudley Rd pump station, section 75 pipe laying, Deer Island wind turbine.

MIS Training: In Q4, 2 online IT lessons were taken by 78 employees (208 YTD).

Applications

ECM/Electronic Document Management: Made significant progress on Phase 2 of the project, which includes a large migration of electronic CAD drawings into a newly built Master Repository. Successfully migrated approximately 70% of DITP's approximately 10,000 drawings into the development environment. Started the development of two custom forms for RFI's and Submittals, and began preparations to begin User Acceptance Testing with E&C. Executed a change order to correct multiple data issues with the physical records data migration.

MWRA Website Refresh: Kick off meeting and initial requirements gathering meeting held. Worked with vendor to answer multiple technical questions from MIS and ENQUAL. Provided feedback on proposed site map. Demo of initial design to occur in early July.

Infor Upgrade/Migration: Received board approval, Notice to Proceed is expected in August.

Maximo/Lawson Interface: The contractor is finalizing development on the Maximo/Lawson interface touchpoints and staff are reviewing the documentation to be used for user acceptance testing. Production implementation is planned for late September.

Lawson: Implemented new Health Insurance and Flexible Spending Account (FSA) plans for the new plan year starting June 1st and July 1st respectively. Employees were transferred to the new plans based on their enrollment preferences. Worked with Payroll to complete salary chart setup, training and documentation for all new Union charts. Retroactive salary payments for Unit 2 employees has been created.

Discoverer to Business Objects Enterprise (BOE) Migration: Current Discoverer application that is used to create reports is being discontinued and being replaced with BOE. All required reports have been migrated to new application and are in the process of being verified. Training classes for MWRA staff are in development.

Telog Infrastructure Upgrade: Application upgrade to latest Telog Enterprise version 6.96 has been completed.

Maximo Version Upgrade: MIS continues with upgrade activities. The Development environment is complete and currently working to upgrade the Test environment with Production to follow.

Legal Matters
4th Quarter FY23

PROJECT ASSISTANCE

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

- **8(m) Permits, License Agreements, and Other Permits:** Reviewed **82 eighty-two** 8(m) permits, including any related MEPA Section 61 findings. Reviewed and finalized a wastewater direct connection permit. Drafted four licenses.

- **Real Property**: Reviewed and authorized seven watershed real property acquisition projects by the Department of Conservation and Recreation. Revised form of license agreement for temporary use of land at various locations and drafted thirteen notices of offer for acquisition of permanent and temporary easements to support MWRA's Siphon Juncture Rehabilitation Project. Researched property rights for Metropolitan Water Tunnel Program and prepared license and access letters for survey and boring work to support the Program.

- **Energy:** Provided ongoing counsel and support for energy team and other MWRA divisions regarding energy related issues.

- **Environmental/NPDES:** Provided ongoing counsel and support to ENQUAL and other MWRA divisions regarding NPDES and other environmental related issues.

- **Miscellaneous:** Reviewed various proposed legislation for potential impacts to MWRA. Reviewed various construction contracts and prepared correspondence. Finalized MWRA policies for Information Technology, Security and Human Resources. Assisted operations with preparation of draft amendments to two water supply agreements. Assisted with preparation of a list of regulatory changes anticipated to be undertake/promulgated in the next twelve months, pursuant to the requirements of M.G.L. c. 30A. Researched applicable laws regarding removal of public shade trees, and finalized public tree hearing notice for MWRA Contract 6543 WASM 3. Assisted staff with resolution of certain construction claims and contract close out. Negotiated terms of license for software subscription service.

- **Public Records Requests:** MWRA received and responded to one hundred forty-nine public records requests. Provided counsel and support to various MWRA divisions and records access officers regarding the Public Records Law and Massachusetts Statewide Records Retention Schedule. Reviewed documents for submission to Records Conservation Board for disposition.

New Matters

- An employee filed a second charge of discrimination and retaliation against MWRA at the Massachusetts Commission Against Discrimination, based upon sex, gender identity and disability.

- A union filed a grievance and request for arbitration alleging MWRA violated the collective bargaining agreement when it failed to pay an employee 3.5 hours of compensatory time.

- A union filed a charge of prohibited practice at the Department of Labor Relations, alleging that MWRA violated the state labor relations law M.G.L. c. 150E, in connection with an arbitrator's decision concerning posting of a position at Grade 19 rather than Grade 21.

- A union filed a request for arbitration alleging that the MWRA unilaterally changed employees' compensatory time limits in violation of Article 6, Sections 1 and 2 of the Collective Bargaining Agreement.

- A union filed a request for arbitration, alleging that an employee was forced to violate an MWRA policy requiring accurate recording of time worked, was forced to keep track of his own overtime compensation and was not paid for overtime hours worked in violation of Article 6 of the Collective Bargaining Agreement.

- A union filed a request for arbitration, asserting that the MWRA forced an employee to use benefit time instead of allowing the accrual of overtime compensation, in violation of Article 6 of the Collective Bargaining Agreement.

- A union filed a request for arbitration asserting that MWRA forced employees to violate an alleged MWRA policy to accurately report time worked by having to keep track of their own overtime compensation, in violation of Article 6 of the Collective Bargaining Agreement. The union also alleged that, for the purpose of avoiding payment of overtime compensation, the MWRA forced employee to use benefit time instead of allowing the accrual of overtime compensation, in violation of Article 6 of the Collective Bargaining Agreement.

- A union filed a request for arbitration alleging that an employee was denied 3 hours of compensatory time on an unspecified date in violation of Article 6 of the Collective Bargaining Agreement.

- A union filed a request for arbitration asserting that an employee's leave balance does not accurately reflect compensatory time earned as a result of working 4 extra hours on 9/25/22.

- A union filed a request for arbitration, alleging that the MWRA violated the collective bargaining agreement when it suspended the Grievant.

Significant Developments

- The MWRA filed a complaint in the Chelsea District Court, appealing the decision of the Department of Unemployment Assistance's Board of Review affirming the Department's earlier decision granting unemployment benefits to a former employee. MWRA filed a Motion for Judgment on the Pleadings.

Matters Concluded

- Settled a grievance in which the union alleged that MWRA violated a collective bargaining agreement by unilaterally changing employees' compensatory time limits in violation of Article 6, Sections 1 and 2 of the Collective Bargaining Agreement. As a result of the settlement, the union withdrew its demand for arbitration.

- Settled a grievance in which the union alleged that an employee was forced to violate an MWRA policy requiring accurate recording of time worked, was forced to keep track of his own overtime compensation and was not paid for overtime hours worked in violation of Article 6 of the Collective Bargaining Agreement. As a result of the settlement, the union withdrew its demand for arbitration.

- Settled a grievance in which the union alleged that the MWRA forced an employee to use benefit time instead of allowing the accrual of overtime compensation, in violation of Article 6 of the Collective Bargaining Agreement.

- Settled a grievance in which the union alleged that the MWRA forced employees to violate an alleged MWRA policy to accurately report time worked by having to keep track of their own overtime compensation, and forced employee to use benefit time instead of allowing the accrual of overtime compensation to avoid payment of overtime compensation, in violation of Article 6 of the Collective Bargaining Agreement.

- Settled a grievance in which the union asserted that the MWRA denied an employee 3 hours of compensatory time on an unspecified date in violation of Article 6 of the Collective Bargaining Agreement. As a result of the settlement, the union withdrew its demand for arbitration.

- Settled a grievance in which the union asserted that the MWRA violated the Collective Bargaining Agreement because an employee's leave balance did not accurately reflect compensatory time earned as a result of working 4 extra hours on 9/25/22. As a result of the settlement, the union withdrew its demand for arbitration.

- Settled a grievance in which the union alleged that MWRA violated the collective bargaining agreement when it failed to pay an employee 3.5 hours of compensatory time. As a result of the settlement, the union withdrew its demand for arbitration.

LITIGATION/CLAIMS

New Lawsuits

Unified Contracting, Inc. v. MWRA, Suffolk Superior Court, 2384CV00927. This action, filed on April 18, 2023, arises out of MWRA Contract No. 7198, Quabbin Aqueduct Shaft 2 Repairs. The Plaintiff alleges it is entitled to payment for additional time and materials furnished for the project. The Plaintiff alleges damages of over $1.3 million.

MWRA v. Department of Unemployment Assistance and (Former Employee), Chelsea District Court, 2314CV180. Law Division filed a complaint for judicial review of a decision of the DUA allowing unemployment compensation.

New Claims:

There are no new claims to report.

Significant Developments:

Jon Eldridge, et al. v City of Framingham, MWRA and RJV Construction Corporation, Middlesex Superior Court, 2281CV03049. MWRA's Motion to Dismiss allowed by Court on May 5, 2023. Claims remain pending against other parties so final judgment for MWRA has not yet entered.

(Current employee) v. MWRA, et al., Suffolk Superior Court C.A. No. 284CV01434. Court allowed Joint Motion to Extend Tracking Order deadlines on May 26, 2023 to allow time for mediation. Assisted in the preparation of MWRA's submission in advance of mediation scheduled for July 11, 2023.

MWRA v. NAGE, Suffolk Superior Court CA No. 2284CV02453. MWRA served NAGE with a Motion for Judgment on the Pleadings.

Closed Lawsuits:

United States of America and Massachusetts Port Authority v. NSTAR Electric Company d/b/a Eversource ("Eversource"), Harbor Electric Energy Company ("HEEC") and Massachusetts Water Resources Authority, US District Court No. 1:16-cv-11470-RGS (Cross Harbor Cable Case): The Authority was a defendant, along with NSTAR Electric Company d/b/a Eversource ("Eversource") and Harbor Electric Energy Company ("HEEC"), in a civil action brought in July 2016 by the United States of America, at the request of the United States Army Corps of Engineers. The action sought injunctive relief and civil penalties and alleged violation of a permit issued to the defendants in September 1989 for the installation of a submarine cable that provides electric power to the Deer Island Treatment Plant. The federal action alleged that the power cable was not installed at required depths. The federal action was stayed by the District Court in 2017 as a result of an agreement between MWRA and HEEC pursuant to which HEEC was to undertake the design and installation of a suitable replacement power cable for MWRA's exclusive use (the "2017 Agreement"). Under the 2017 Agreement, the Authority is required to pay the cost of the project, subject to a $17.5 million credit for the early decommissioning of the old cable and a $9.0 million cap on MWRA's share of the cost of decommissioning the old cable. HEEC completed the installation and energizing of the replacement power cable and the old cable was removed. Eversource, HEEC and MWRA executed a Settlement Agreement & Release and on February 9, 2023, the parties filed a Stipulation of Dismissal of the federal action with prejudice. DPU Proceedings 17-136 and 21-147: The 2017 Agreement also provided that HEEC would propose a final tariff addendum to the Department of Public Utilities ("DPU") to incorporate the final project costs. In December 2021, the Authority and HEEC reached an agreement as to the terms of the final tariff addendum which included agreed project costs through August 31, 2021 of $116.5 million (representing 98% completion of the project) and provisions to permit HEEC to supplement the final tariff addendum to request recovery of certain remaining project costs to bring the project to final completion. On December 14, 2021, the DPU approved the final tariff addendum. At the time of the filing of the final tariff addendum HEEC was near, but not fully complete with the cable project. Applying the $9.0 million decommissioning cap, HEEC has estimated total project costs to the Authority of approximately $120 million. Any additional project costs incurred by HEEC are subject to review and audit by the Authority, and submission to the DPU for approval to supplement the final tariff addendum.

Re: Seaport Diagnostics Inc. (including its affiliate Telemere Diagnostic), Commencement of Creditors Trust. On February 1, 2023, a Notice of Commencement of Creditor's Trust was received on behalf of Seaport Diagnostics,

Inc., and its affiliate Telomere Diagnostic (f/k/n Orig3n). The Authority filed no claim as the TRAC permit issued to Orig3n was revoked as of September 30, 2022.

Citibank (South Dakota), N.A. v. (Current Employee)
This wage garnishment matter is closed.

Closed Claims:

Edgar Marques. This personal injury claim arose out of motor vehicle accident involving MWRA employee. The claim settled for $50,000. This claim is now closed.

Subpoenas:

There are no new subpoenas received and no subpoenas that closed in 4th Quarter FY 2023.

Wage Garnishments

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

SUMMARY OF PENDING LITIGATION MATTERS

TYPE OF CASE/MATTER	As of June 2023
Construction/Contract/Bid Protest	1
Tort/Labor/Employment	4
Environmental/Regulatory/Other	1
Eminent Domain/Real Estate	0
TOTAL	**6**
Other Litigation matters (restraining orders, etc.) - Class Action suit	1
TOTAL – all pending lawsuits	**7**
Claims not in suit	2
Bankruptcy	2
Wage Garnishment	1
TRAC/Adjudicatory Appeals	3
Subpoenas	0
TOTAL – ALL LITIGATION MATTERS	**15**

INTERNAL AUDIT AND CONTRACT AUDIT ACTIVITIES
4th Quarter - FY23

Internal Audit evaluates the effectiveness of internal controls and procedures and monitors the quality, efficiency and integrity of the Authority's operating and capital programs. Through our audits and reviews, we assess whether internal controls are functioning as intended and that only reasonable, allowable and allocable costs are paid to consultants, contractors and vendors.

Highlights

During the 4th quarter FY23, Internal Audit (IA) completed a fleet physical inventory of all plated vehicles and equipment in coordination with management. An audit of Accounts Payable Process controls and procedures and the Payroll Process controls and procedures is progressing. An internal review of MIS assets is progressing.

In addition, IA completed a true-up of 2022 operating expenses for the HEEC cable, reviewed the Fore River Railroad 2022 tax return, and completed 2 labor burden reviews. There are 4 preliminary reviews of professional service contracts, 4 incurred cost audits and 3 labor burden reviews in process. IA also issued 48 indirect cost rate letters to consultants following a review of their consultant disclosure statements.

Status of Recommendations

During FY23, 5 recommendations were closed.

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

Report Title (issue date)	Audit Recommendations		
	Open	Closed	Total
Fleet Services Non-Plated Equipment Inspections (3/30/20)	1	14	15
Compliance Status of Employees' Mandatory Confined Space Entry Training (2/24/23)	1	3	4
Water and Wastewater Licenses and Certifications (3/31/23)	2	*1*	*3*
Total Recommendations	*4*	*18*	*22*

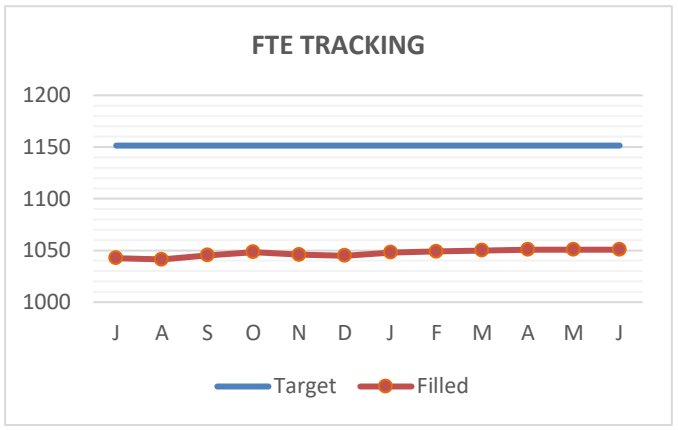
Cost Savings

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

Cost Savings	FY19	FY20	FY21	FY22	FY23	TOTALS
Consultants	$262,384	$643,845	$563,525	$39,938	$223,609	$1,733,301
Contractors & Vendors	$3,152,884	$2,097,729	$1,547,223	$1,714,614	$1,912,548	$10,424,998
Internal Audits	$210,063	$212,517	$214,458	$222,554	$225,684	$1,085,276
Total	**$3,625,331**	**$2,954,091**	**$2,325,206**	**$1,977,106**	**$2,361,841**	**$13,243,575**

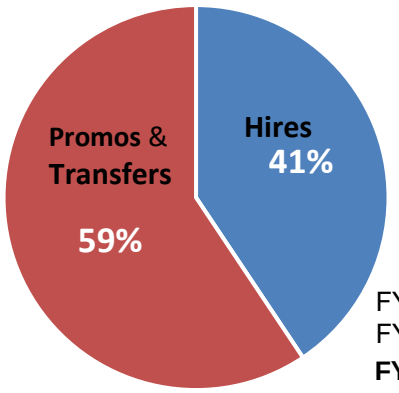
OTHER MANAGEMENT

Workforce Management
4th Quarter - FY23



FY23 Budget for FTEs = 1151.4
FTEs as of June 2023= 1050.7
Tunnel Redundancy as of June 2023 = 9

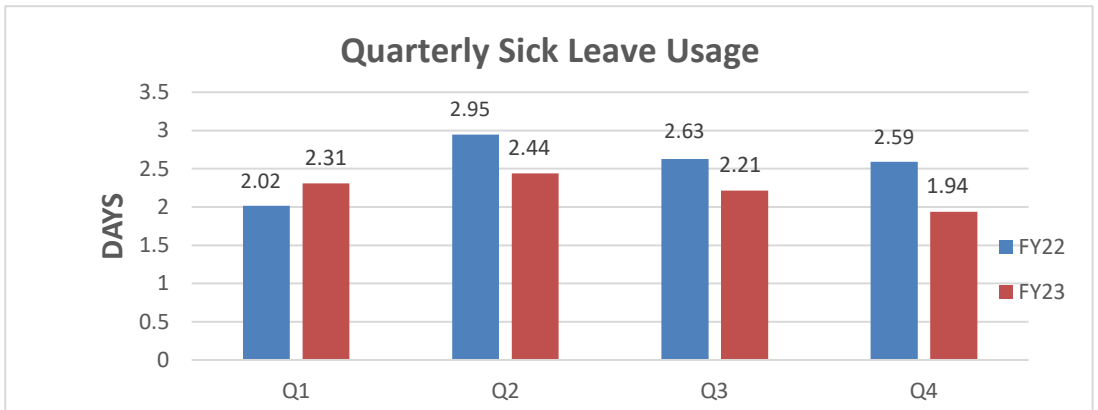
Position Filled by Hires/Promos & Transfer for YTD



	Pr/Trns	Hires	Total
FY21	81 (56%)	64 (44%)	145
FY22	138 (68%)	65 (32%)	203
FY23	133 (59%)	91(41%)	224

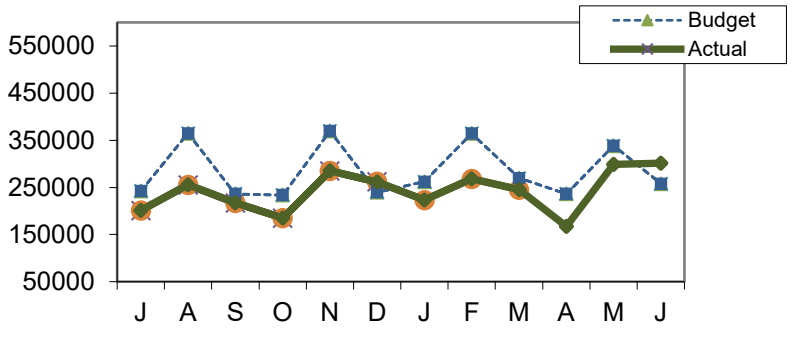
POSITION CHANGE by FY

FY	HIRES	PROMOS	TRANSFER	RETIRE	RESIGN	DISMISS	DECEASED
FY19	76	87	25	40	32	9	4
FY20	58	70	14	38	23	2	1
FY21	64	66	15	58	15	2	2
FY22	65	108	30	82	45	2	3
FY23	91	118	15	46	31	5	5



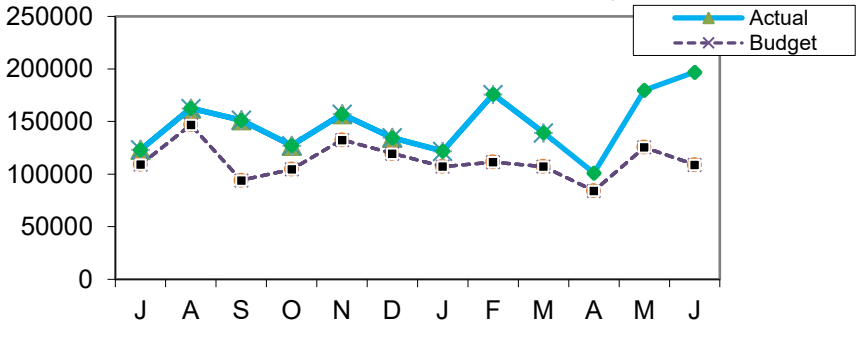
Average quarterly sick leave for the 4th Quarter of FY23 has decreased as compared to the 4th Quarter of FY22. (1.94 from 2.59).

Field Operations
4th Quarter FY23 Overtime $



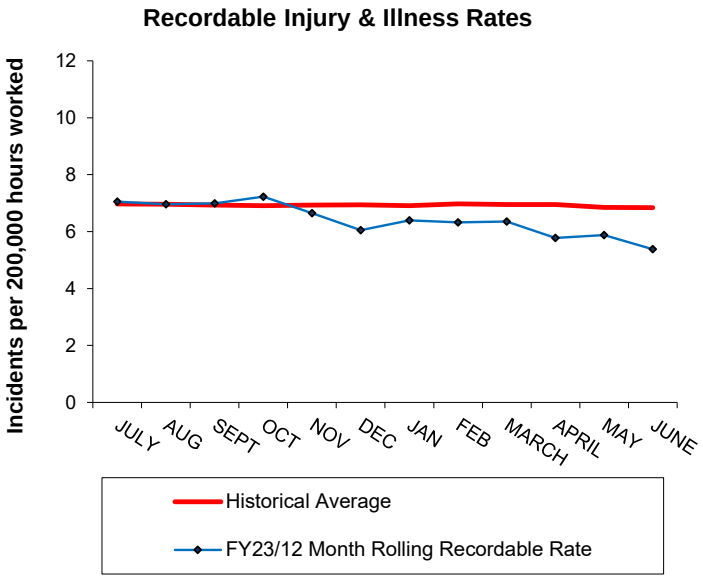
Total Overtime for Field Operations for fourth quarter was $768k, which is $64k or 8% under budget. Emergency overtime was $244k, which is $175k under budget or 42%, primarily due to fewer wet weather events. Coverage overtime totaling $222k which is $85k over budget or 48%, primarily due to vacant shifts going unfilled. Planned overtime was $238k or $14k or 6% over budget, with a combination spending of $46k for scheduled maintenance; and $126k for various coverage shifts.

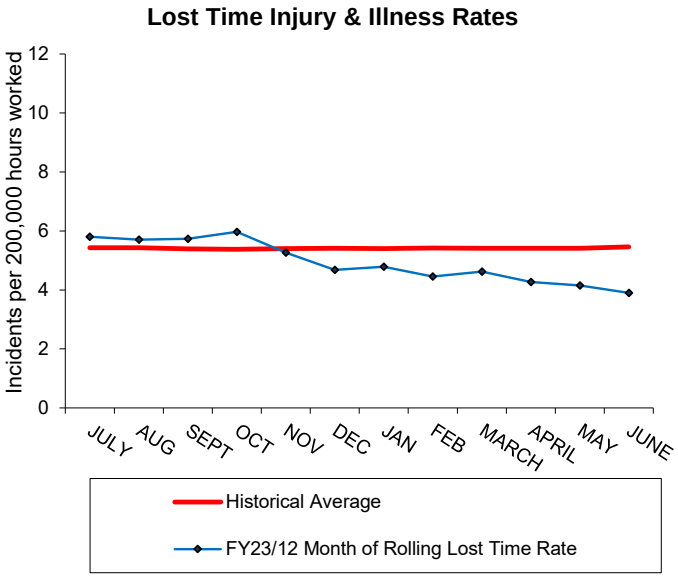
Deer Island Treatment Plant
4th Quarter FY23 Overtime $



Deer Island's total overtime expenditure fourth quarter was $478K, which is $159K or 50.0% over budget due to higher than anticipated shift coverage of $145K and planned/unplanned overtime of $49K. This is offset by lower spending for storm coverage of ($34K). YTD Deer Island's overtime spending is $922K, which is $420K or 31.0% over budget due to higher than anticipated shift coverage of $524K and planned/unplanned overtime of $48K. This is offset by lower than anticipated storm coverage of $152k.

Workplace Safety
4th Quarter - FY23





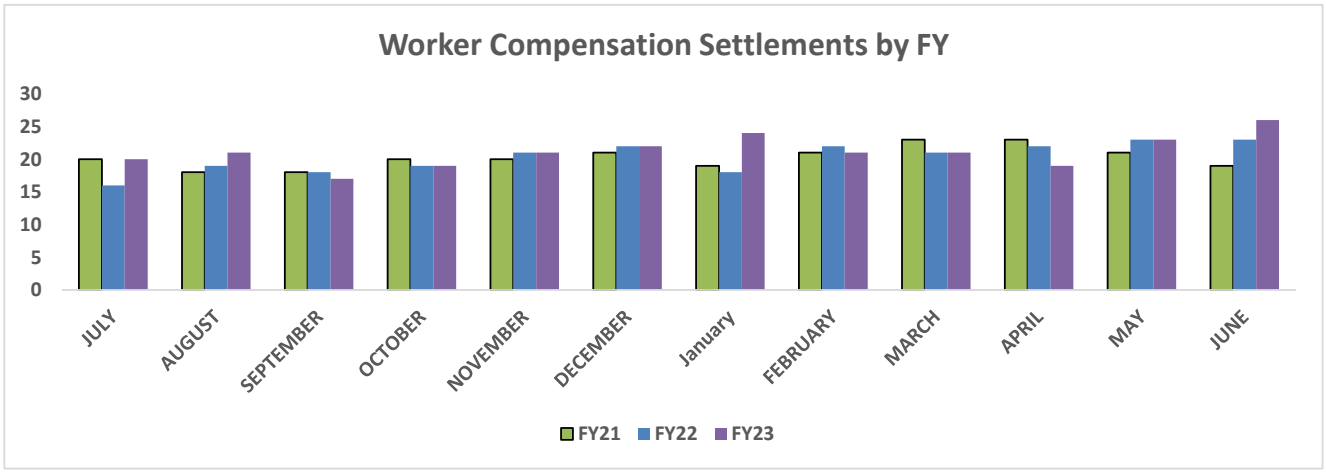
1 “Recordable" incidents are all work-related injuries and illnesses which result in death, loss of consciousness, restriction of work or motion, transfer to another job, or require medical treatment beyond first aid. Each month this rate is calculated using the previous 12 months of injury data.

2 "Lost-time" incidents, a subset of the recordable incidents, are only those incidents resulting in any days away from work, days of restricted work activity or both - beyond the first day of injury or onset of illness. Each month this rate is calculated using the previous 12 months of injury data.

3 The “Historical Average” is computed using the actual MWRA monthly incident rates for FY99 through FY22.

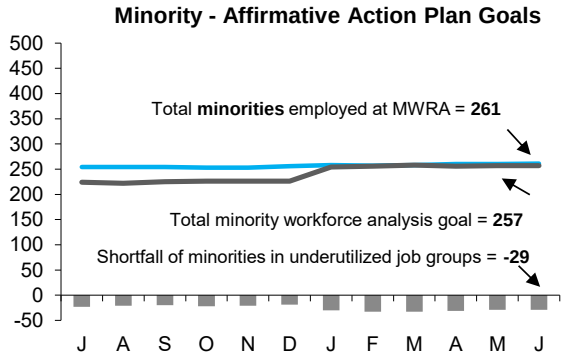
WORKERS COMPENSATION HIGHLIGHTS

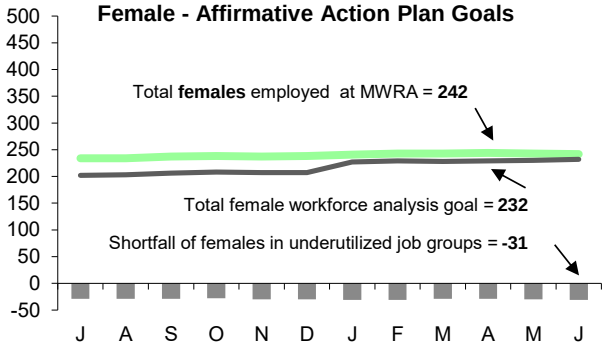
	4th Quarter Information		
	New	Closed	Open Claims
Lost Time	3	14	35
Medical Only	12	13	111
Report Only	15	17	
	QYTD		FYTD
Regular Duty Returns	7		19
Light Duty Returns	0		2
Indemnity payments as of June 2023 included in open claims listed			26



MWRA Job Group Representation

4th Quarter - FY23





Highlights:

At the end of Q4 FY23, 6 job groups or a total of 29 positions are underutilized by minorities as compared to 5 job groups for a total of 21 positions at the end of Q4 FY22; for females 8 job groups or a total of 31 positions are underutilized by females as compared to 8 job groups or a total of 30 positions at the end of Q4 FY22. During Q4, 7 minorities and 5 females were hired. During this same period 3 minorities and 4 females were terminated.

Underutilized Job Groups - Workforce Representation

Job Group	Employees as of 6/30/2023	Minorities as of 6/30/2023	Achievement Level	Minority Over or Underutilized	Females As of 6/30/2023	Achievement Level	Female Over or Underutilized
Administrator A	26	4	2	2	11	6	5
Administrator B	24	2	5	-3	6	7	-1
Clerical A	24	8	5	3	20	18	2
Clerical B	23	7	6	1	3	12	-9
Engineer A	80	18	21	-3	22	21	1
Engineer B	55	19	16	3	14	13	1
Craft A	110	17	25	-8	0	6	-6
Craft B	122	26	26	0	1	5	-4
Laborer	57	15	16	-1	3	3	0
Management A	90	20	22	-2	33	25	8
Management B	39	11	11	0	6	9	-3
Operator A	64	4	16	-12	3	7	-4
Operator B	58	18	9	9	3	2	1
Professional A	30	8	8	0	16	14	2
Professional B	155	47	45	2	70	50	20
Para Professional	48	17	11	6	24	23	1
Technical A	54	17	12	5	7	10	-3
Technical B	5	3	1	2	0	1	-1
Total	**1064**	**261**	**257**	**33/-29**	**242**	**232**	**41/-31**

AACU Candidate Referrals for Underutilized Positions

Job Group	Job Title	# of Vacancies	Requisition Internal/ External	Promotions/ Transfers	AACU Referral External	Position Status New Hire/Promotion
Administrative B	Asst Director, Internal Audit	1	Int.	1	0	PROMO = AM
Administrative B	Deputy Dir, Procurement	1	Int.	1	1	PROMO = AF
Craft B	Inventory Control Specialist	1	Int.	1	0	PROMO = HM
Engineer A	Sr Program Manager	1	Int.	1	0	PROMO = WM
Engineer A	Manager, Western Maintenance	1	Int./Ext.	1	0	PROMO = WM
Engineer A	Principal Civil Engineer	1	Int.	1	0	PROMO = WM
Engineer A	Project Engineer CADD - DISC	1	Ext.	0	0	NH = WM
Craft A	Unit Supervisor - Mech Cert	1	Int.	1	0	PROMO = WM
Craft A	M & O Specialist	1	Ext.	0	0	NH= WM
Craft B	Instrument Technician	1	Int./Ext.	1	0	PROMO = BM
Craft B	Med Volt Electrical Specialist	1	Int.	1	0	PROMO = WM
Craft B	Toolmaker	1	Int.	1	0	PROMO = WM
Craft B	Construction Pipelayer	1	Int.	1	0	PROMO = HM
Craft B	Electrician	1	Ext.	0	0	NH = WM
Laborer	OMC Laborer	2	Ext.	0	0	NH=1WM, 1BM
Laborer	Supervisor, Equipment Maint	1	Int.	1	0	PROMO= WM
Laborer	Building/Grounds Worker	2	Int./Ext.	1	0	PROMO=BM, NH=TM
Management A	Construction Coordinator	1	Ext.	0	0	NH = WM
Management B	Assistant Contracts Manager	1	Ext.	0	0	NH = WM
Technical A	Transmission & Treatment Opera	1	Int.	1	0	PROMO = WF
Technical A	Field Sup WW Pipe Inspection	49 2	Int.	2	0	PROMO = 2WM

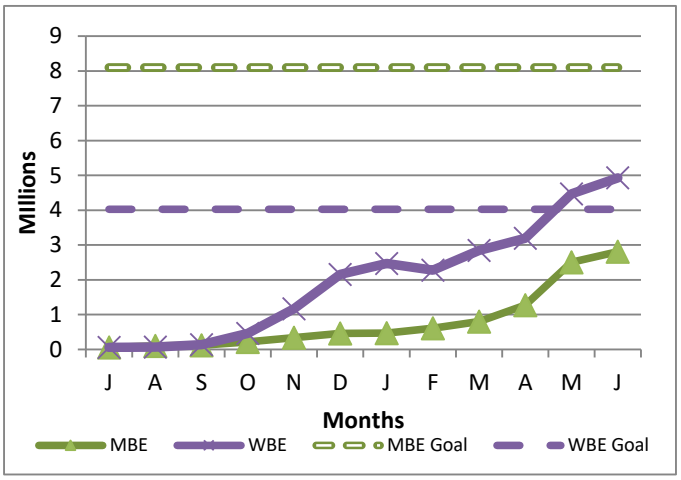
MBE/WBE Expenditures

4th Quarter - FY23

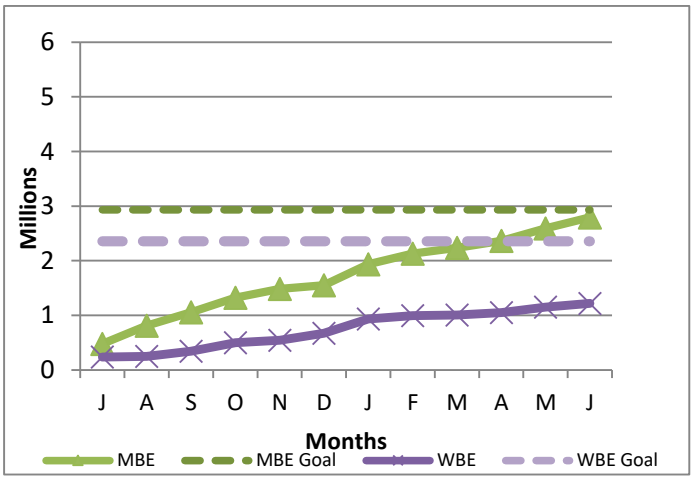
MBE/WBE targets are determined based on annual MWRA expenditure forecasts in the procurement categories noted below. The spending goals for FY23 are based on 85% of the total construction and 75% of the total professional projected spending for the year. Certain projects that do not meet the established monetary thresholds and/or have limited opportunities for subcontracting have been excluded from the goals as they have no MBE/WBE spending goals. The spending goals for FY23 for Goods and Services are based on the average spending of MBE/WBE dollars for the previous 5 years.

MBE/WBE percentages are the results from a 2002 Availability Analysis, and MassDEP's Availability Analysis. As a result of the Availability Analyses, the category of Non-Professional Services is included in Goods/Services. Consistent with contractor reporting requirements, MBE/WBE expenditure data is available through June.

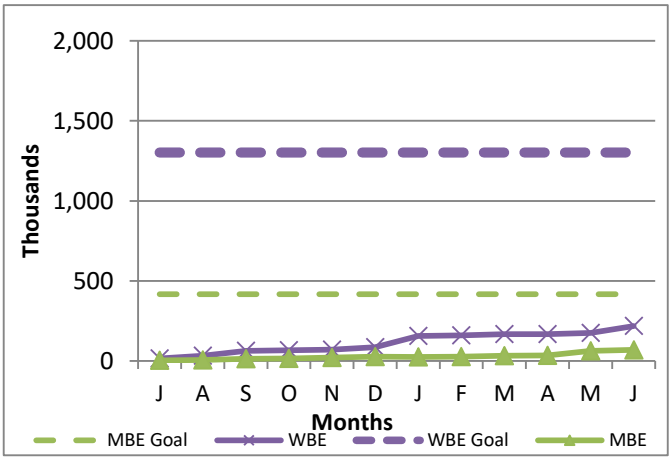
Construction



Professional Services



Goods/Services



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

MBE					WBE			
FY23 YTD		FY22			FY23 YTD		FY22	
Amount	Percent	Amount	Percent		Amount	Percent	Amount	Percent
2,808,124	34.7%	3,102,188	56.2%	Construction	4,927,964	95.3%	1,276,049	46.5%
2,794,126	95.3%	3,156,867	147.1%	Prof Svcs	1,220,172	51.8%	1,737,850	100.8%
69,250	16.6%	387,120	102.7%	Goods/Svcs	174,521	13.4%	365,393	27.6%
5,671,500	49.6%	6,646,175	82.6%	**Totals**	6,322,657	82.3%	3,379,292	58.3%

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

MWRA FY23 CEB Expenses through 4th Quarter 2023

As of June 2023, total expenses are $823.2 million, $17.0 million or 2.0% lower than budget, and total revenue is $864.7 million, $24.5 million or 2.8% over the estimate, for a net variance of $41.5 million.

Expenses –

Direct Expenses are $261.3 million, $12.4 million or 4.5% under budget.

- **Wages & Salaries** are $12.5 million under budget or 10.5%. Regular pay is $12.9 million under budget, due to lower head count, and timing of backfilling positions. YTD through June, the average Full Time Equivalent (FTE) positions was 1,057, 110 below the 1,167 FTE's budgeted.
- **Chemicals** are $3.0 million over budget or 20.3% due to higher spending for Sodium Hypochlorite of $1.8 million over budget due to greater usage at DITP due to lower flows and greater need for odor control and higher contract price and Wastewater Operations, primarily at the Nut Island Headworks. In addition, spending for Ferric Chloride and Carbon Dioxide were over budget by $1.0 million and $227k, respectively.
- **Utilities** expenses are over budget by $1.6 million or 5.2%. This reflects higher spending on Electricity of $2.0 million, 8.6% over budget. Spending at Deer Island Treatment Plant (DITP) was $1.2 million above budget due to higher real time pricing as well as higher usage, and peak demand charges. Higher usage reflects a 14.2% drop in on-site generation which drove a 4.0% rise in purchased power. This offset lower power requirements due to flows being 9.5% under budget. Similarly, Electricity in Field Operations was greater than budget by $792k due to T&D and Generation costs being greater than budget. Lower spending on diesel, $396k, due to better pricing on May's top-off.
- **Other Materials** are $1.9 million under budget or 28.1%, due to underspending on Vehicle Purchases, $862k under budget, reflecting timing and supply chain issues, $317k in furniture expense, and $279k in vehicle expense primarily due to delay in installation of electrical vehicle chargers.
- **Other Services** are $1.4 million under budget or 4.8%, due to lower than anticipated Telecommunication costs of $694k, Other Services $184k under budget, lower Space/Lease Rentals of $265k due to Rock Shed Lease and shelving due to timing, and lower Grit Screening Removal of $116k due to lower quantities.

Indirect Expenses are $58.1 million, $2.4 million or 3.9% under budget due primarily to lower Watershed Reimbursement (including PILOT) of $2.7 million.

Capital Finance Expenses totaled $503.7 million, $2.2 million under budget or 0.4%. Surplus was a result of lower than budget variable interest expense of $3.0 million due to lower interest rates combined with lower SRF spending of $8.0 million due to bond issue timing, and lower Water Pipeline CP of $2.4 million, partially offset by higher Senior Debt of $11.2 million, as a result of defeasance expenditures of $21.8 million.

Revenue and Income –

Total Revenue and Income is $864.7 million, $24.5 million or 2.8% over the estimate. The favorable variance was driven by Investment Income of $17.0 million over the budget due to higher than budget interest rates, Other User Charges which were $4.6 million over the estimate reflecting water purchases from the City of Cambridge during facility maintenance, and Other Revenue of $2.9 million primarily due to receipt of Debt Service Assistance from Commonwealth of $1.2 million, Energy Revenue of $510k, Miscellaneous Revenue of $495k, Permit Fees of $347k, and operating grants of $495k primarily for COVID-19 from FEMA.

	Jun 2023 Year-to-Date			
	Period 12 YTD Budget	Period 12 YTD Actual	Period 12 YTD Variance	%
EXPENSES				
WAGES AND SALARIES	$ 118,980,689	$ 106,433,845	$ (12,546,844)	-10.5%
OVERTIME	5,337,896	5,172,629	(165,267)	-3.1%
FRINGE BENEFITS	23,961,641	23,122,023	(839,618)	-3.5%
WORKERS' COMPENSATION	2,519,751	2,076,732	(443,019)	-17.6%
CHEMICALS	14,994,036	18,038,588	3,044,552	20.3%
ENERGY AND UTILITIES	30,896,365	32,514,216	1,617,851	5.2%
MAINTENANCE	33,241,023	34,317,838	1,076,815	3.2%
TRAINING AND MEETINGS	492,197	258,753	(233,444)	-47.4%
PROFESSIONAL SERVICES	8,197,575	7,546,594	(650,981)	-7.9%
OTHER MATERIALS	6,728,862	4,837,988	(1,890,874)	-28.1%
OTHER SERVICES	28,372,237	27,017,485	(1,354,752)	-4.8%
TOTAL DIRECT EXPENSES	**$ 273,722,272**	**$ 261,336,691**	**$ (12,385,581)**	**-4.5%**
INSURANCE	$ 3,916,002	$ 3,849,201	$ (66,801)	-1.7%
WATERSHED/PILOT	28,890,762	26,150,961	(2,739,801)	-9.5%
HEEC PAYMENT	6,225,566	6,658,205	432,639	6.9%
MITIGATION	1,735,694	1,735,694	-	0.0%
ADDITIONS TO RESERVES	2,418,453	2,418,453	-	0.0%
RETIREMENT FUND	12,555,203	12,555,203	-	0.0%
POST EMPLOYEE BENEFITS	4,754,061	4,754,061	-	0.0%
TOTAL INDIRECT EXPENSES	**$ 60,495,741**	**$ 58,121,777**	**$ (2,373,964)**	**-3.9%**
STATE REVOLVING FUND	$ 96,342,495	$ 88,298,785	$ (8,043,710)	-8.3%
SENIOR DEBT	302,169,940	313,377,111	11,207,171	3.7%
DEBT SERVICE ASSISTANCE	(1,182,494)	(1,182,494)	-	0.0%
CURRENT REVENUE/CAPITAL	18,200,000	18,200,000	-	0.0%
SUBORDINATE MWRA DEBT	75,491,975	75,491,975	-	0.0%
LOCAL WATER PIPELINE CP	6,233,882	3,832,560	(2,401,322)	-38.5%
CAPITAL LEASE	3,217,060	3,217,060	-	0.0%
VARIABLE DEBT	-	(2,985,881)	(2,985,881)	---
DEFEASANCE ACCOUNT	-	-	-	---
DEBT PREPAYMENT	5,500,000	5,500,000	-	0.0%
TOTAL CAPITAL FINANCE EXPENSE	**$ 505,972,858**	**$ 503,749,116**	**$ (2,223,742)**	**-0.4%**
TOTAL EXPENSES	**$ 840,190,871**	**$ 823,207,584**	**$ (16,983,287)**	**-2.0%**
REVENUE & INCOME				
RATE REVENUE	$ 814,648,000	$ 814,648,000	$ -	0.0%
OTHER USER CHARGES	9,836,507	14,456,977	4,620,470	47.0%
OTHER REVENUE	6,139,104	9,037,235	2,898,131	47.2%
RATE STABILIZATION	980,000	980,000	-	0.0%
INVESTMENT INCOME	8,587,260	25,614,246	17,026,986	198.3%
TOTAL REVENUE & INCOME	**$ 840,190,871**	**$ 864,736,458**	**$ 24,545,587**	**2.9%**

Cost of Debt
4th Quarter – FY23

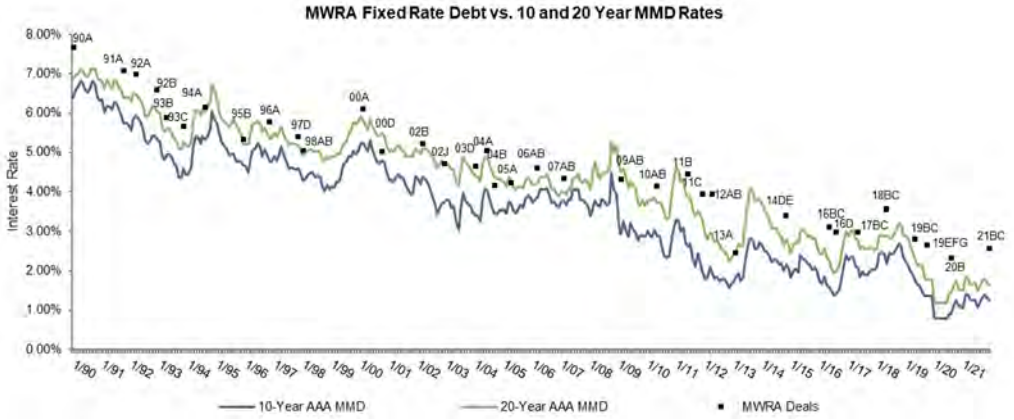
MWRA borrowing costs are a function of the fixed and variable tax exempt interest rate environment, the level of MWRA's variable interest rate exposure and the perceived creditworthiness of MWRA. Each of these factors has contributed to decreased MWRA borrowing costs since 1990.

Average Cost of MWRA Debt FYTD

Fixed Debt ($3.28 billion)	3.32%
Variable Debt ($269.23million)	2.76%
SRF Debt ($808.83 million)	1.70%
Weighted Average Debt Cost ($4.24 billion)	2.97%

Most Recent Senior Fixed Debt Issue
April 2023

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

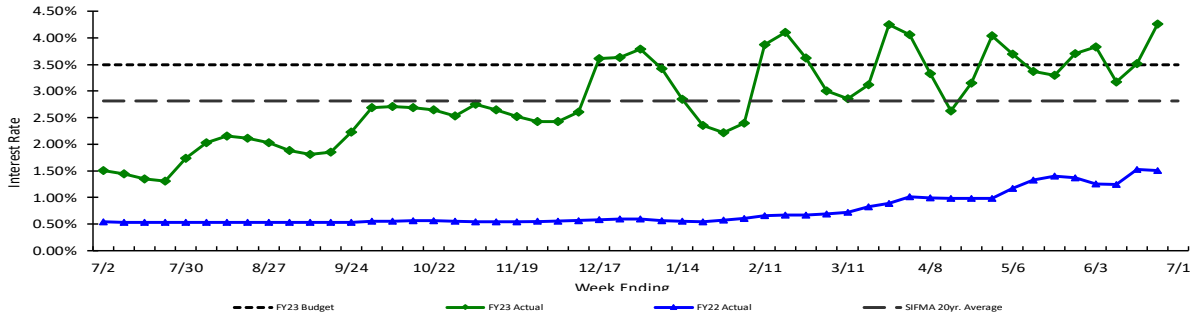


Bond Deal	1997D	1998AB	2000A	2000D	2002B	2002J	2003D	2004A	2004B	2005A	2006AB	2007AB	2009AB	2010AB
Rate	5.40%	5.04%	6.11%	5.03%	5.23%	4.71%	4.64%	5.05%	4.17%	4.22%	4.61%	4.34%	4.32%	4.14%
Avg Life	21.6 yrs	24.4 yrs	26.3 yrs	9.8 yrs	19.9 yrs	19.6 yrs	18.4 yrs	19.6 yrs	13.5 yrs	18.4 yrs	25.9 yrs	24.4 yrs	15.4 yrs	16.4 yrs

Bond Deal	2011B	2011C	2012AB	2013A	2014D-	2016BC	2016D	2017BC	2018BC	2019BC	2019EFG	2020B	2021BC	2023BC
Rate	4.45%	3.95%	3.93%	2.45%	3.41%	3.12%	2.99%	2.98%	3.56%	2.82%	2.66%	2.33%	2.56%	3.35%
Avg Life	18.8 yrs	16.5 yrs	17.9 yrs	9.9 yrs	15.1 yrs	17.4 yrs	18.8yrs	11.2 yrs	11.7yrs	11.9yrs	9.73 yrs.	15.6 yrs	12.2 yrs	10.45 yrs

Weekly Average Variable Interest Rates vs. Budget

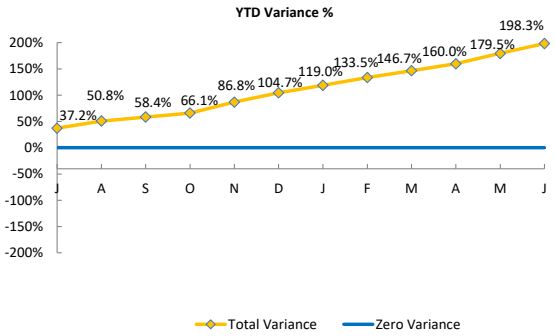
MWRA currently has eight variable rate debt issues with $435.6 million outstanding, excluding commercial paper. Of the eight outstanding series, three have portions which have been swapped to fixed rate. Variable rate debt has been less expensive than fixed rate debt in recent years as short-term rates have remained lower than long-term rates on MWRA debt issues. In June, the Securities Industry and Financial Markets Association rate ranged from a high of 4.18% to a low of 2.84% for the month. MWRA's issuance of variable rate debt, although consistently less expensive in recent years, results in exposure to additional interest rate rise as compared to fixed rate debt.



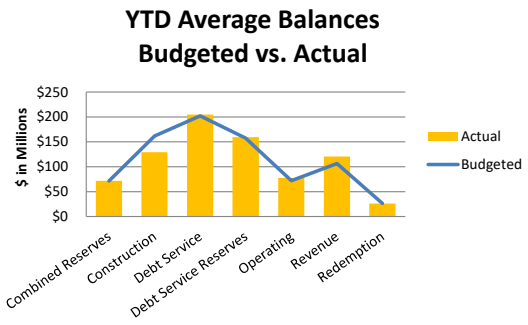
Investment Income
4th Quarter – FY23

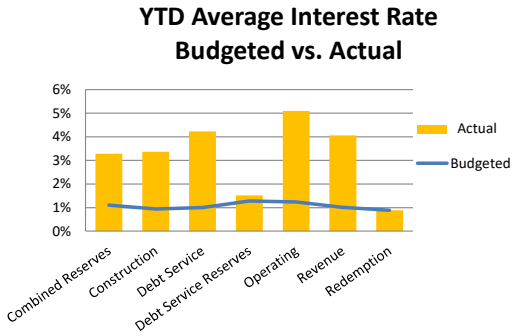
Year To Date

- YTD variance is 198%, or $17 million, over budget due to higher than budgeted interest rates. The Federal Reserve Open Market Committee increased interest rates by 3.5% during FY23.

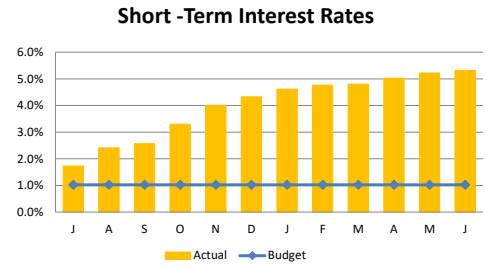


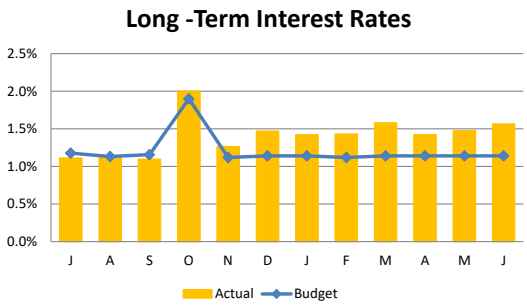
	YTD BUDGET VARIANCE			
	($000)			
	BALANCES IMPACT	RATES IMPACT	TOTAL	%
Combined Reserve	$6	$1,566	$1,572	198.9%
Construction	-$411	$2,809	$2,399	153.1%
Debt Service	$26	$6,593	$6,619	327.5%
Debt Service Reser	$28	$370	$398	19.8%
Operating	$71	$2,138	$2,209	248.0%
Revenue	$143	$3,687	$3,830	356.6%
Redemption	$0	$0	$0	0.1%
Total Variance	-$137	$17,164	$17,027	198.3%

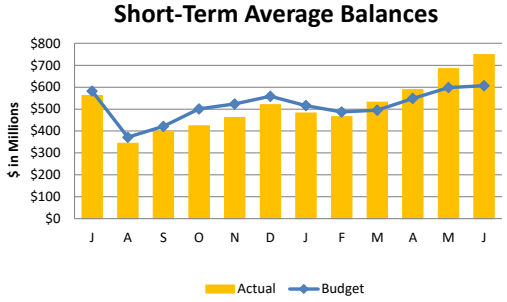


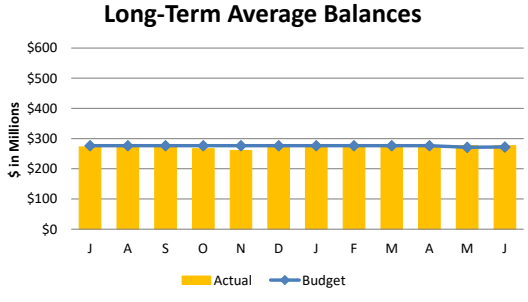


Monthly









STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: September 13, 2023
SUBJECT: FY23 Year-End Financial Update and Summary

COMMITTEE: Administration, Finance & Audit

X INFORMATION
___ VOTE

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

Thomas J. Durkin
Director, Finance

RECOMMENDATION:

For information only. This staff summary provides the financial results and variance highlights for Fiscal Year 2023.

DISCUSSION:

The total FY23 year-end variance is $41.5 million (after $21.8 million defeasance), due to lower direct expenses of $12.4 million, indirect expenses of $2.4 million, and debt service costs of $2.2 million, as well as higher revenue of $24.5 million.

The largest variances in comparison with the budget are highlighted below:

Direct expenses were $12.4 million below budget, driven by lower spending for Wages & Salaries, Other Materials, Other Services, Fringe Benefits, Professional Services, Worker's Compensation, Training & Meetings, and Overtime, partially offset by higher spending on Chemicals, Utilities, and Maintenance.

Indirect expenses were $2.4 million below budget due to lower spending on Watershed Reimbursement of $2.7 million associated with lower costs for wages & salaries, fringe benefits and equipment. This is partially offset by higher HEEC payments of $0.4 million.

Debt Service expenses were $2.2 million below budget driven by lower than anticipated interest rates, lower than anticipated SRF spending due to bond issuance timing, and lower Local Water Pipeline CP, partially offset by higher than anticipated senior debt, as a result of defeasance expenditures.

Revenue was $24.5 million greater than budget, driven by Investment Income of $17.0 million, Other User Charges of $4.6 million, Other Revenue of $1.7 million, and the receipt of Debt Service Assistance of $1.2 million from the Commonwealth of Massachusetts.

Of the $41.5 million favorable budget variance, $1.2 million in Debt Service Assistance, as in prior years, was applied against the FY24 budget.

Staff are reviewing options for the utilization of the remaining FY23 favorable budget variance to reduce debt service in future years. Staff anticipate presenting a recommendation to the Board at the October meeting.

FY23 Current Expense Budget

The CEB expense variances for FY23 by major budget category were:

- Lower Direct Expenses of $12.4 million or 4.5% under budget. Spending was lower for Wages & Salaries, Other Materials, Other Services, Fringe Benefits, Professional Services, Worker's Compensation, Training & Meetings, and Overtime. Spending was higher than budget for Chemicals, Utilities, and Maintenance.

- Lower Indirect Expenses of $2.4 million or 3.9% under budget due primarily to lower Watershed Reimbursements and PILOT payment.

- Lower Debt Service expenses of $2.2 million was a result of lower than budget variable interest expense, lower SRF spending, and lower Water Pipeline CP, partially offset by higher Senior Debt, as a result of defeasance expenditures.

- Revenue was $24.5 million or 2.8% greater than estimate driven by Investment Income, Other User Charges, and the receipt of Debt Service Assistance from the Commonwealth.

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

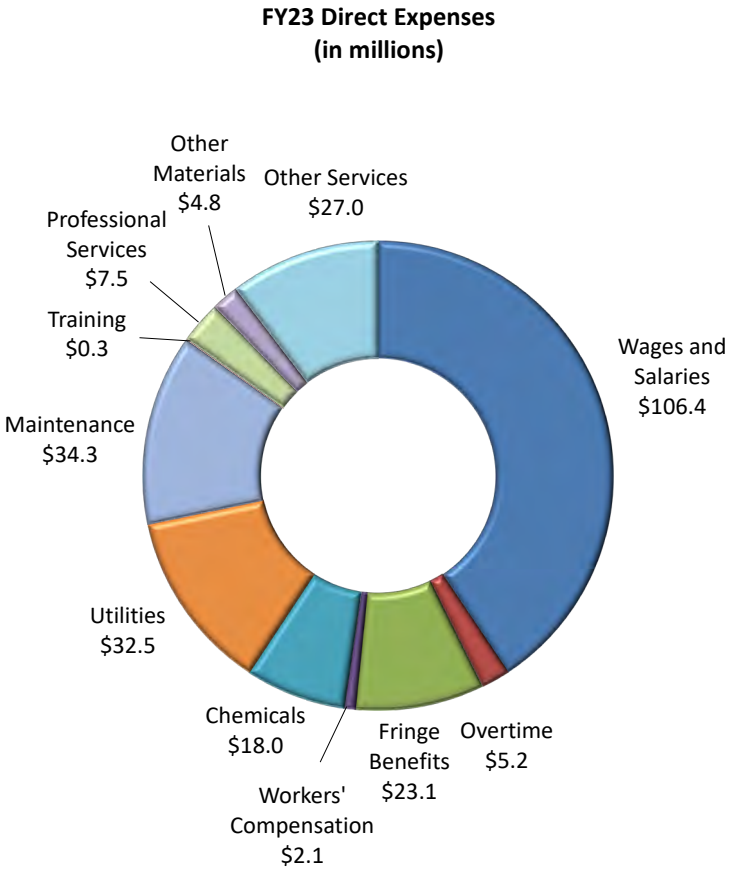
	FY23 Budget	FY23 Actual	$ Variance	% Variance
Direct Expenses	$273.7	$261.3	-$12.4	-4.5%
Indirect Expenses	$60.5	$58.1	-$2.4	-3.9%
Capital Financing	$506.0	$503.7	-$2.2	-0.4%
Total	**$840.2**	**$823.2**	**-$17.0**	**-2.0%**

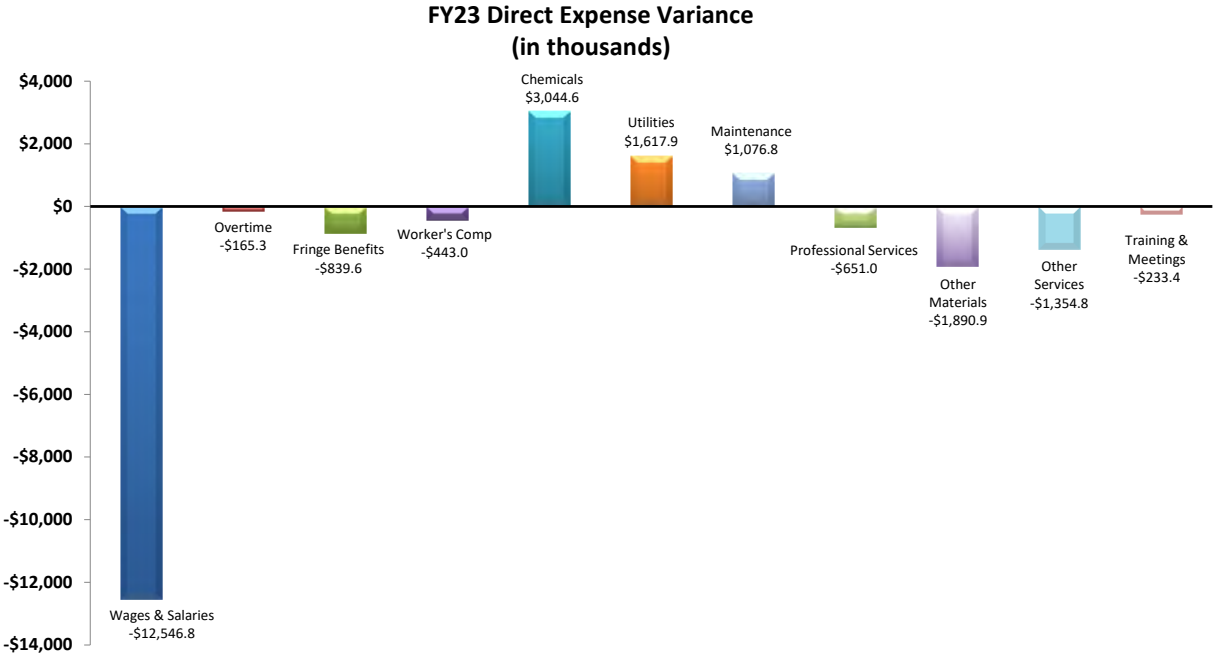
Totals may not add due to rounding

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

Direct Expenses

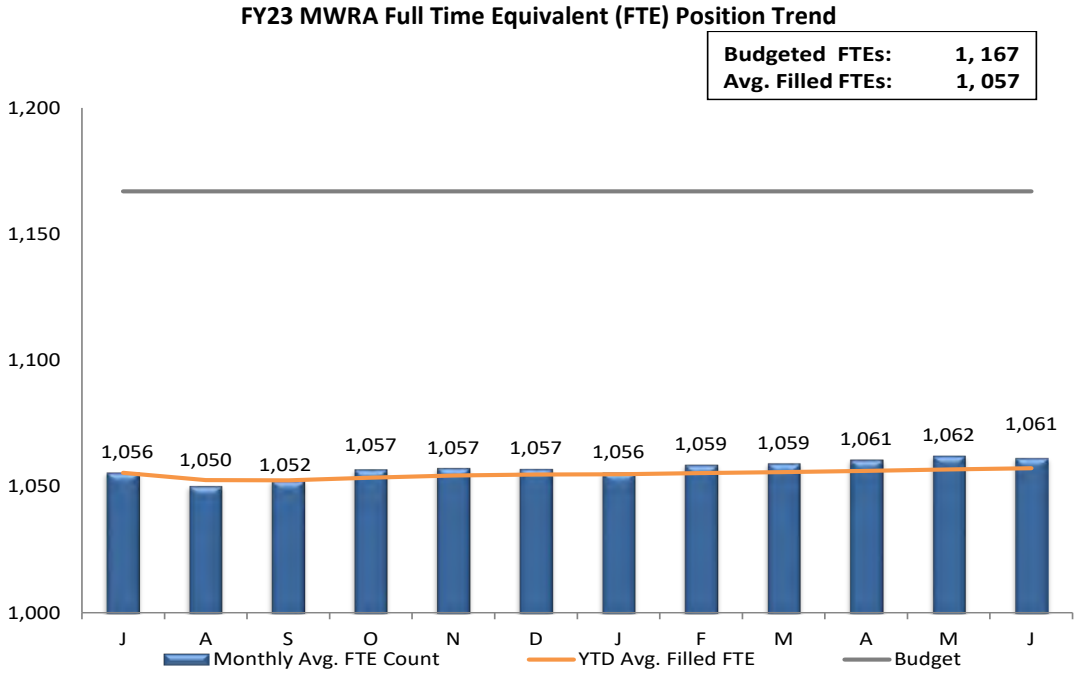
FY23 direct expenses totaled $261.3 million, which was $12.4 million or 4.5% less than budgeted.





Wages and Salaries

Wages and Salaries was under budget by $12.5 million or 10.5%. In FY23 there were 110 fewer average FTEs (1,057 versus 1,167 budget) or 9.4% 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 $3.0 million or 20.3%. Higher than budget spending on Sodium Hypochlorite of $1.8 million driven by Deer Island Treatment Plant due to higher pricing and additional usage for disinfection and odor control due to lower flows. Ferric Chloride of $1.0 million driven by Deer Island due to higher pricing and to keep the orthophosphate levels in the digesters at the desired target level. Deer Island flows were 8.8% lower than the budget and Carroll Plant flows were 3.4% greater than the budget in FY23. 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.

Other Materials

Other Materials were less than budget by $1.9 million or 28.1% driven by lower Vehicle Purchases/Replacements of $862,000 due to timing and supply chain issues, Equipment Furniture of $317,000, Vehicle Expense of $279,000 primarily due to the delay in the installation of electrical vehicle chargers, and Computer Hardware of $148,000 and Computer Software of $133,000 both due to timing.

Utilities

Utilities were greater than budget by $1.6 million or 5.2%. Overspending in Electricity of $1.9 million primarily at Deer Island of $1.2 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 $792,000 due to higher Transmission and Distribution (T&D) and Generation costs. This was offset by lower spending on Diesel Fuel of $396,000 primarily due to lower price. The final Deer Island delivery for FY23 was completed at the end of May.

Other Services

Other Services were lower than budget by $1.4 million or 4.8% driven by lower Telecommunications of $694,000 due to less than anticipated costs, Space/Lease Rentals of $265,000 primarily due to the timing of the Rock Core Storage and shelving/furniture for Tunnel Redundancy, Other Services of $184,000 due to timing, and Grit & Screenings Removal $116,000 due to lower quantities.

Maintenance

Maintenance was greater than budget by $1.1 million or 3.2%, largely driven by the timing of projects. Maintenance Materials are over budget by $1.8 million driven by higher Warehouse Inventory of $939,000 due to the need for spare parts as well as purchasing of materials early due to supply chain issues, Special Equipment Materials of $635,000 for additional SCADA materials needed, and Plant & Machinery Materials of $566,000 and HVAC Materials of $174,000 both due to timing. These are partially offset by lower Computer Materials of $277,000, Electrical Materials of $268,00 and Pipeline Materials of $191,000 also due to timing. Maintenance Services are under budget by $741,000 due to lower Building & Grounds Services of $964,000 due to timing and includes the Eastern Ave Traffic Light and Shaft 8 Retaining Wall work and lower Computer Services of $500,000, Electrical Services of $418,000, Special Equipment Services of $413,000, and Software Licenses of $332,000 also due to timing. This underspending was partially offset by higher Plant & Machinery Services of $1.8 million due to timing of some service contracts and the Norumbega Tank Cleaning award being greater than budgeted, the Deer Island boiler, Thermal and Hydro contract was greater than budget due to corrective maintenance on the thermal and hydro systems, and cleaning of surfaces and equipment at the Cottage Farm CSO facility that was unbudgeted.

Fringe Benefits

Fringe Benefit spending was lower than budget by $840,000 or 3.5%. This is primarily driven by lower Health Insurance costs of $566,000 due to fewer than budgeted participants in health insurance plans, increased contribution by 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 $91,000, Unemployment Insurance of $91,000, and Tuition Reimbursement of $54,000.

Professional Services

Professional Services were less than budget by $651,000 or 7.9% driven by lower Engineering Services of $286,000, Other Services of $233,000, and Lab & Testing and Analysis of $199,000 primarily due to timing, partially offset by higher Computer Systems Consultant of $132,000 also primarily due to timing and updated costs.

Worker's Compensation

Worker's Compensation expenses were lower than budget by $443,000 or 17.6%. The lower expenses were due to favorable variances in Compensation Payments of $424,000.

Training & Meetings

Training & Meetings expenses were lower than budget by $233,000 or 47.4% due to less than anticipated spending.

Overtime

Overtime expenses were less than budget by $165,000 or 3.1%. Lower spending mainly in Field Operations of $494,000 primarily for planned overtime (due to vacancies), emergency overtime being under budget due to minimal bad weather conditions, and Engineering & Construction of $79,000, are partially offset by higher spending at Deer Island of $420,000 for shift coverage due to vacancies for Deer Island Operations positions.

Indirect Expenses

Indirect Expenses totaled $58.1 million, which is $2.4 million or 3.9% lower than budget. The variance is driven by lower Watershed reimbursements and PILOT payment.

Based on FY23 operating activity only, Watershed Reimbursement is $2.6 million or 13.0% under budget. Lower spending on Wages and Salaries, Fringe Benefits and Equipment due to timing are slightly offset by higher spending on Utilities/Fuel. When factoring in the FY22 balance forward of $273,000 which was paid during Q1 of FY23, Watershed Reimbursement is $2.3 million or 11.6% below budget in FY23. The PILOT payment in the amount of $8.5 million was paid in February, and was $424,000 under budget.

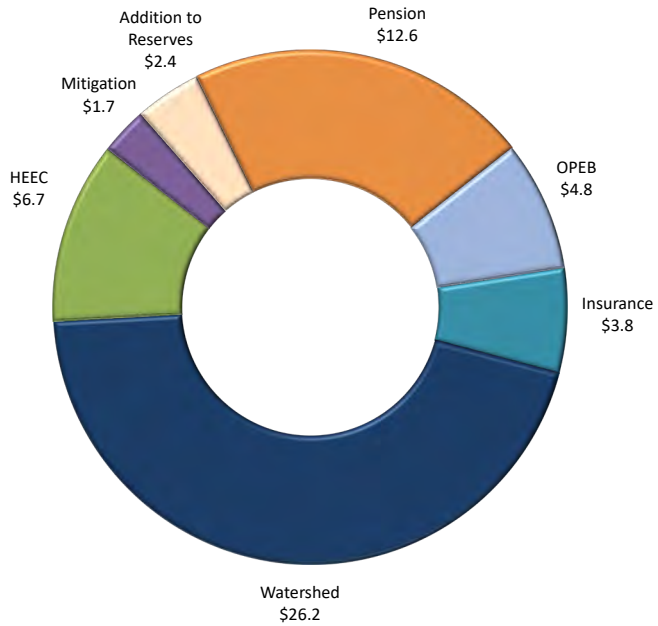
FY23 Watershed Protection Variance

$ in millions	YTD Budget	YTD Actual	YTD $ Variance	YTD % Variance
Operating Expenses	21.0	18.9	-2.1	-9.9%
Operating Revenues - Offset	1.0	1.5	0.5	50.4%
FY23 Operating Totals	**20.0**	**17.4**	**-2.6**	**-13.0%**
DCR Balance Forward (FY22 year-end accrual true-up)	0.0	0.3	0.3	
FY23 Adjusted Operating Totals	**20.0**	**17.7**	**-2.3**	**-11.6%**
PILOT	8.9	8.5	-0.4	-4.8%
Total Watershed Reimbursement	**28.9**	**26.2**	**-2.7**	**-9.5%**

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 arears. 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 June was 138 (and 140.7 on a year-to-date basis) vs. a budget of 150.

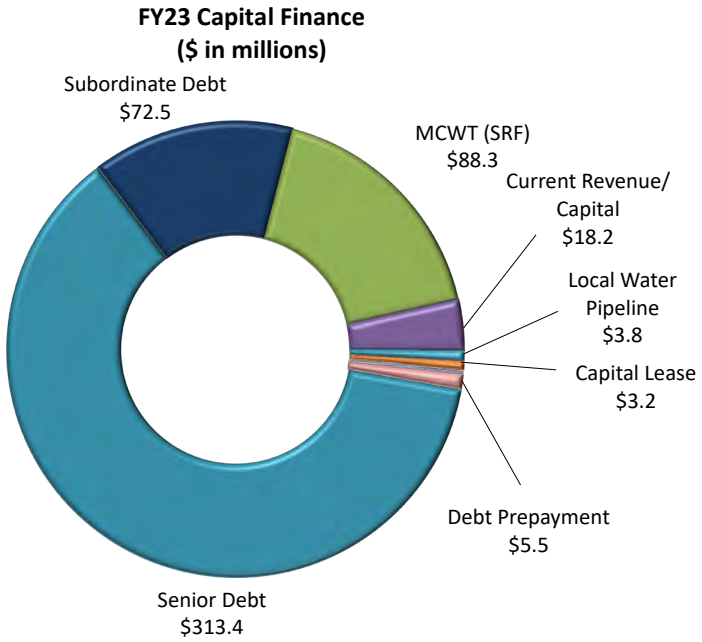
FY23 Indirect Expenses
(in millions)



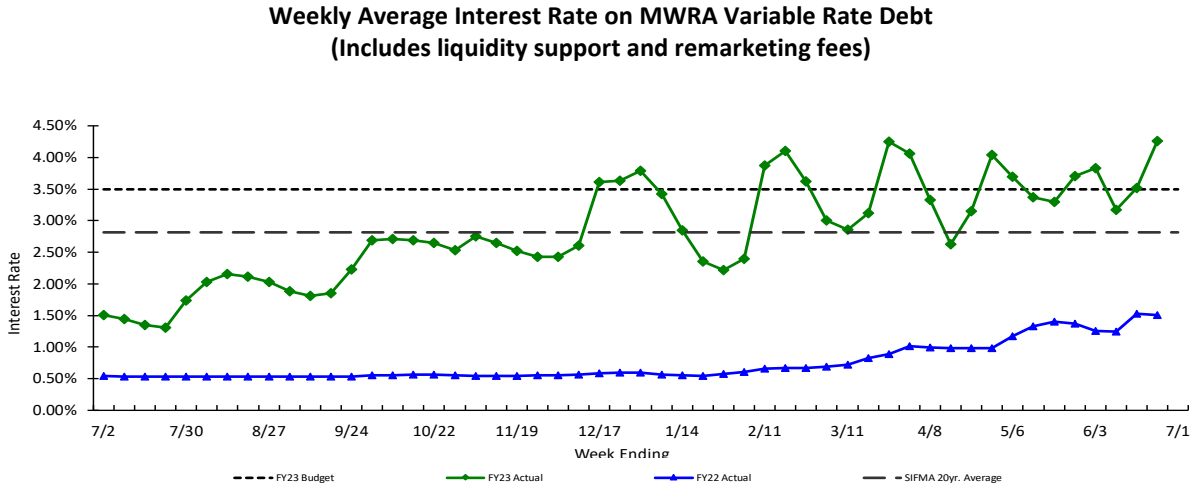
Capital Financing

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, Debt Prepayment, and the Chelsea Facility lease payment.

Capital Finance totaled $503.7 million and was $2.2 million or 0.04% below budget after the impact of the spring defeasance. The lower spending was a result of lower than budgeted SRF spending of $8.0 million based on timing and structure, lower than budgeted variable interest expenses of $3.0 million and lower Water Pipeline spending of $2.4 million due to lower than budgeted interest rates, offset by higher Senior Debt of $11.2 million as a result of defeasance expenditures of $22.1 million.



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



Revenue & Income

Revenues of $864.7 million were $24.5 million or 2.8% greater than estimate. Investment Income was $17.0 million greater than estimate due to higher than anticipated interest rates. Other User Charges were $4.6 million higher primarily due to water usage by the City of Cambridge. Other Revenue was $2.9 million greater than estimate due to the receipt of $1.2 million from the Commonwealth for Debt Service Assistance, Energy Revenue of $510,000, Miscellaneous Revenue of $495,000, and Operating Grants of $495,000 primarily for COVID-19 reimbursement from FEMA.

ATTACHMENTS:

Attachment 1 – FY23 Variance Summary
Attachment 2 – Current Expense Variance Explanations
Attachment 3 – FY23 Actual vs. FY23 Projection

ATTACHMENT 1

FY23 Actuals vs. FY23 Budget

	FY23				
	FY23 Budget	FY23 Actual	FY23 Variance	%	FY23 Approved
EXPENSES					
WAGES AND SALARIES	$ 118,980,689	$ 106,433,845	$ (12,546,844)	-10.5%	$ 118,980,689
OVERTIME	5,337,896	5,172,629	(165,267)	-3.1%	5,337,896
FRINGE BENEFITS	23,961,641	23,122,023	(839,618)	-3.5%	23,961,641
WORKERS' COMPENSATION	2,519,751	2,076,732	(443,019)	-17.6%	2,519,751
CHEMICALS	14,994,036	18,038,588	3,044,552	20.3%	14,994,036
ENERGY AND UTILITIES	30,896,365	32,514,216	1,617,851	5.2%	30,896,365
MAINTENANCE	33,241,023	34,317,838	1,076,815	3.2%	33,241,023
TRAINING AND MEETINGS	492,197	258,753	(233,444)	-47.4%	492,197
PROFESSIONAL SERVICES	8,197,575	7,546,594	(650,981)	-7.9%	8,197,575
OTHER MATERIALS	6,728,862	4,837,988	(1,890,874)	-28.1%	6,728,862
OTHER SERVICES	28,372,237	27,017,485	(1,354,752)	-4.8%	28,372,237
TOTAL DIRECT EXPENSES	**$ 273,722,272**	**$ 261,336,691**	**$ (12,385,581)**	**-4.5%**	**$ 273,722,272**
INSURANCE	$ 3,916,002	$ 3,849,201	$ (66,801)	-1.7%	$ 3,916,002
WATERSHED/PILOT	28,890,762	26,150,961	(2,739,801)	-9.5%	28,890,762
HEEC PAYMENT	6,225,566	6,658,205	432,639	6.9%	6,225,566
MITIGATION	1,735,694	1,735,694	-	0.0%	1,735,694
ADDITIONS TO RESERVES	2,418,453	2,418,453	-	0.0%	2,418,453
RETIREMENT FUND	12,555,203	12,555,203	-	0.0%	12,555,203
POST EMPLOYEE BENEFITS	4,754,061	4,754,061	-	0.0%	4,754,061
TOTAL INDIRECT EXPENSES	**$ 60,495,741**	**$ 58,121,777**	**$ (2,373,964)**	**-3.9%**	**$ 60,495,741**
STATE REVOLVING FUND	$ 96,342,495	$ 88,298,785	$ (8,043,710)	-8.3%	$ 96,342,495
SENIOR DEBT	302,169,940	313,377,111	11,207,171	3.7%	302,169,940
DEBT SERVICE ASSISTANCE	(1,182,494)	(1,182,494)	-	0.0%	(1,182,494)
CURRENT REVENUE/CAPITAL	18,200,000	18,200,000	-	0.0%	18,200,000
SUBORDINATE MWRA DEBT	75,491,975	75,491,975	-	0.0%	75,491,975
LOCAL WATER PIPELINE CP	6,233,882	3,832,560	(2,401,322)	-38.5%	6,233,882
CAPITAL LEASE	3,217,060	3,217,060	-	0.0%	3,217,060
VARIABLE DEBT	-	(2,985,881)	(2,985,881)	---	-
DEFEASANCE ACCOUNT	-	-	-	---	-
DEBT PREPAYMENT	5,500,000	5,500,000	-	0.0%	5,500,000
TOTAL CAPITAL FINANCE EXPENSE	**$ 505,972,858**	**$ 503,749,116**	**$ (2,223,742)**	**-0.4%**	**$ 505,972,858**
TOTAL EXPENSES	**$ 840,190,871**	**$ 823,207,584**	**$ (16,983,287)**	**-2.0%**	**$ 840,190,871**
REVENUE & INCOME					
RATE REVENUE	$ 814,648,000	$ 814,648,000	$ -	0.0%	$ 814,648,000
OTHER USER CHARGES	9,836,507	14,456,977	4,620,470	47.0%	9,836,507
OTHER REVENUE	6,139,104	9,037,235	2,898,131	47.2%	6,139,104
RATE STABILIZATION	980,000	980,000	-	0.0%	980,000
INVESTMENT INCOME	8,587,260	25,614,246	17,026,986	198.3%	8,587,260
TOTAL REVENUE & INCOME	**$ 840,190,871**	**$ 864,736,458**	**$ 24,545,587**	**2.9%**	**$ 840,190,871**

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY23 Budget	FY23 Actuals	FY23 Actual vs. FY23 Budget		Explanations
			$	%	
Direct Expenses					
Wages & Salaries	118,980,689	106,433,845	(12,546,844)	-10.5%	Wages and Salaries are under budget by $12.5 million or 10.5%. Year to date, there have been 110 fewer average FTEs (1,057 versus 1,167 budget), lower average new hire salaries versus retirees, the timing of backfilling vacant positions.
Overtime	5,337,896	5,172,629	(165,267)	-3.1%	Overtime expenses were less than budget by $165,000 or 3.1%. Lower spending mainly in Field Operations of $494,000 primarily for planned overtime (due to vacancies), emergency overtime being under budget and minimal bad weather conditions, and Engineering & Construction of $79,000, are partially offset by higher spending at Deer Island of $420,000 for shift coverage due to vacancies for DITP Operations positions.
Fringe Benefits	23,961,641	23,122,023	(839,618)	-3.5%	Fringe Benefit spending was lower than budget by $840,000 or 3.5%. Lower than budget in **Health Insurance** of $566,000, 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 $91,000, **Unemployment Insurance** of $91,000, and **Tuition Reimbursement** of $54,000.
Worker's Compensation	2,519,751	2,076,732	(443,019)	-17.6%	Worker's Compensation expenses were lower than budget by $443,000 or 17.6%. The lower expenses were due to favorable variances in **Compensation Payments** of $424,000, and **Administrative Expenses** of $48,000. Due to uncertainties of when spending will happen, the budget is spread evenly throughout the year.
Chemicals	14,994,036	18,038,588	3,044,552	20.3%	Chemicals were greater than budget by 3.0 million or 20.3%. Higher than budget spending on **Sodium Hypochlorite** of $1.8 million driven by DITP of $1.5 million due to additional usage for disinfection and odor control due to lower flows and higher pricing, and $167,000 in Wastewater Operations primarily at Nut Island Headworks. **Ferric Chloride** of $1.0 million driven by DITP to keep the orthophosphate levels in the digesters at the desired target level and higher pricing, **Carbon Dioxide** of $227,000 primarily due to increased contract price, **Hydrogen Peroxide** of $92,000 driven by DITP to reduce elevated Hydrogen Sulfide (H2S) levels for pretreatment and odor control and provide maintenance safely, **Activated Carbon** of $76,000 driven by DITP of $36,000 due to timing of replacements and wastewater operations of $36,000 due to lower price/unbudgeted purchases, partially offset by **Hydrofluosilicic Acid** of $85,000 due to chemical feeder project in the Spring and **Sodium Bisulfite** of $115,000 primarily in Wastewater and Water Operations. DITP flows are 8.8% lower than the budget and CWTP flows are 3.4% greater than the budget through June. 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	FY23 Actuals	FY23 Actual vs. FY23 Budget		Explanations
			$	%	
Utilities	30,896,365	32,514,216	1,617,851	5.2%	Utilities were greater than budget by $1.6 million or 5.2%. Overspending in **Electricity** of $1.9 million primarily at DITP of $1.2 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 $792,000 due to T&D and Generation costs were greater than budget. Also, higher than budgeted spending on Natural Gas of $145,000 driven by Field Operations primarily due to price, which was offset by decrease of $396,000 in Diesel primarily due to lower price. The final DITP delivery for FY23 was completed at the end of May.
Maintenance	33,241,023	34,317,838	1,076,815	3.2%	Maintenance was greater than budget by $1.1 million or 3.2%, largely driven by the timing of projects. Maintenance Materials are over budget by $1.8 million driven by **Warehouse Inventory** of $939,000 due to need for spare parts as well as purchasing of materials early due to supply chain issues, **Special Equipment Materials** of $635,000 for additional SCADA materials needed, **Plant & Machinery Materials** of $566,000 and **HVAC Materials** of $174,000 due to timing, partially offset by **Computer Materials** of $277,000, **Electrical Materials** of $268,00 and **Pipeline Materials** of $191,000 also due to timing. *Maintenance Services* are under budget by $741,000 million due to lower **Building & Grounds Services** of $964,000 due to timing and includes the Eastern Ave Traffic Light and Shaft 8 Retaining Wall work and lower **Computer Services** of $500,000, **Electrical Services** of $418,000, **Special Equipment Services** of $413,000, and **Software Licenses** of $332,000 also due to timing. This underspending was partially offset by higher **Plant & Machinery Services** of 1.8 million due to timing of some service contracts, the Norumbega Tank Cleaning award being greater than budgeted, DITP boiler, thermal and hydro contract was greater than budget due to corrective maintenance on the thermal and hydro systems, and cleaning of surfaces and equipment at the Cottage Farm CSO facility that was unbudgeted.
Training & Meetings	492,197	258,753	(233,444)	-47.4%	Training & Meetings was lower than budget by $233,000 or 47.4% is primarily due to timing driven by MIS ($126,000), DITP ($27,000), Water Redundancy ($18,000), Engineering & Construction ($13,000), and Procurement ($10,000), partially offset by higher spending in Field Operations $15,000.
Professional Services	8,197,575	7,546,594	(650,981)	-7.9%	Professional Services were less than budget by $651,000 or 7.9% driven by lower **Engineering Services** of $286,000, **Other Services** of $233,000, **Lab & Testing and Analysis** of $199,000, primarily due to timing, partially offset by **Computer Systems Consultant** of $132,000 also primarily due to timing and updated costs.
Other Materials	6,728,862	4,837,988	(1,890,874)	-28.1%	Other Materials were less than budget by $1.9 million or 28.1% driven by **Vehicle Purchases/Replacements** of $862,000 due to timing and supply chain issues, **Vehicle Expense** of $279,000 primarily due to delay in installation of electrical vehicle chargers, **Equipment Furniture** of $317,000, **Computer Hardware** of $148,000 and **Computer Software** of $133,000 due to timing.

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY23 Budget	FY23 Actuals	FY23 Actual vs. FY23 Budget		Explanations
			$	%	
Other Services	28,372,237	27,017,485	(1,354,752)	-4.8%	Other Services were lower than budget by $1.4 million or 4.8% driven by **Telecommunications** of $694,000 due to less than anticipated costs, **Other Services** of $184,000 due to timing, **Space/Lease Rentals** $265,000 primarily for Rock Core Storage and shelving & furniture due to timing, and **Grit & Screenings Removal** $116,000 due to lower quantities.
Total Direct Expenses	**273,722,272**	**261,336,691**	**(12,385,581)**	**-4.5%**	
Indirect Expenses					
Insurance	3,916,002	3,849,201	(66,801)	-1.7%	Lower Payments/Claims of $83,000 and higher Premiums of $16,000 than budgeted
Watershed/PILOT	28,890,762	26,150,961	(2,739,801)	-9.5%	Lower Watershed Reimbursement of $2.7 million favorable variance to budget driven by lower spending on Wages & Salaries, Fringe Benefits and Equipment, partially offset by higher spending on Utilities and Fuel.
HEEC Payment	6,225,566	6,658,205	432,639	6.9%	HEEC Revenue Requirement of $322,000, HEEC True Up of $93,000, and O&M Charge of $18,000.
Mitigation	1,735,694	1,735,693	(1)	0.0%	
Addition to Reserves	2,418,453	2,418,453	-	0.0%	
Pension Expense	12,555,203	12,555,203	-	0.0%	
Post Employee Benefits	4,754,061	4,754,061	-	0.0%	
Total Indirect Expenses	**60,495,741**	**58,121,777**	**(2,373,964)**	**-3.9%**	
Debt Service					
Debt Service	507,155,352	504,931,610	(2,223,742)	-0.4%	Lower than budget debt service was a result of lower than budget variable interest expense of $3.0 million due to lower interest rates combined with lower SRF spending of $8.0 million due to bond issue timing, and lower Water Pipeline CP of $2.4 million, partially offset by higher Senior Debt of $11.2 million, as a result of defeasance expenditures of $31.9 million.
Debt Service Assistance	(1,182,494)	(1,182,494)	-	0.0%	
Total Debt Service Expenses	**505,972,858**	**503,749,116**	**(2,223,742)**	**-0.4%**	
Total Expenses	**840,190,871**	**823,207,584**	**(16,983,287)**	**-2.0%**	

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY23 Budget	FY23 Actuals	FY23 Actual vs. FY23 Budget		Explanations
			$	%	
Revenue & Income					
Rate Revenue	814,648,000	814,648,000	-	0.0%	
Other User Charges	9,836,507	14,456,977	4,620,470	47.0%	Water usage by the City of Cambridge.
Other Revenue	6,139,104	9,037,235	2,898,131	47.2%	Other Revenue was $2.9 million or 27.9% over budget due to **Payments from the Commonwealth for debt service assistance** of $1.2 million, **Energy Revenue** of $510,00, **Miscellaneous Revenue** of $495,000, and **Permit Fees** of $347,000, Also, **Operating Grant** of $495,000 primarily for COVID-19 grant from FEMA.
Rate Stabilization	980,000	980,000	-	0.0%	HEEC Reserve.
Investment Income	8,587,260	25,614,246	17,026,986	198.3%	Investment Income is over budget due to higher than budgeted interest rates.
Total Revenue	**840,190,871**	**864,736,458**	**24,545,587**	**2.9%**	
Net Revenue in Excess of Expenses	**-**	**41,528,874**	**41,528,874**		

Attachment 3
FY23 Actual vs. FY23 Projection

TOTAL MWRA	FY23 Projection	FY23 Actual	Change FY23 Actual vs FY23 Projection	
			$	%
EXPENSES				
WAGES AND SALARIES	$ 107,177,992	$ 106,433,845	$ (744,147)	-0.7%
OVERTIME	5,177,759	5,172,629	(5,130)	-0.1%
FRINGE BENEFITS	23,242,792	23,122,023	(120,769)	-0.5%
WORKERS' COMPENSATION	2,141,788	2,076,732	(65,056)	-3.0%
CHEMICALS	18,142,784	18,038,588	(104,196)	-0.6%
ENERGY AND UTILITIES	32,750,147	32,514,216	(235,931)	-0.7%
MAINTENANCE	35,352,692	34,317,838	(1,034,854)	-2.9%
TRAINING AND MEETINGS	344,538	258,753	(85,785)	-24.9%
PROFESSIONAL SERVICES	7,910,660	7,546,594	(364,066)	-4.6%
OTHER MATERIALS	6,459,708	4,837,988	(1,621,720)	-25.1%
OTHER SERVICES	27,662,931	27,017,485	(645,446)	-2.3%
TOTAL DIRECT EXPENSES	**$ 266,363,790**	**$ 261,336,691**	**$ (5,027,099)**	**-1.9%**
INSURANCE	$ 3,955,162	$ 3,849,201	$ (105,961)	-2.7%
WATERSHED/PILOT	27,267,547	26,150,961	(1,116,586)	-4.1%
HEEC PAYMENT	6,798,522	6,658,205	(140,317)	-2.1%
MITIGATION	1,735,694	1,735,693	-	0.0%
ADDITIONS TO RESERVES	2,418,452	2,418,453	-	0.0%
RETIREMENT FUND	12,555,203	12,555,203	-	0.0%
POSTEMPLOYMENT BENEFITS	4,754,061	4,754,061	-	0.0%
TOTAL INDIRECT EXPENSES	**$ 59,484,641**	**$ 58,121,777**	**$ (1,362,864)**	**-2.3%**
STATE REVOLVING FUND	$ 88,499,360	$ 88,298,785	$ (200,575)	-0.2%
SENIOR DEBT	291,597,013	313,377,111	21,780,098	7.5%
SUBORDINATE DEBT	72,645,188	72,506,094	(139,094)	-0.2%
LOCAL WATER PIPELINE CP	5,384,397	3,832,560	(1,551,837)	-28.8%
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%
TOTAL DEBT SERVICE	**$ 483,860,524**	**$ 503,749,116**	**$ 19,888,592**	**4.1%**
TOTAL EXPENSES	**$ 809,708,956**	**$ 823,207,584**	**$ 13,498,628**	**1.7%**
REVENUE & INCOME				
RATE REVENUE	$ 814,648,000	$ 814,648,000	$ -	0.00%
OTHER USER CHARGES	14,548,590	14,456,977	(91,613)	-0.6%
OTHER REVENUE	6,983,303	9,037,235	2,053,932	29.4%
RATE STABILIZATION	980,000	980,000	-	0.0%
INVESTMENT INCOME	24,591,573	25,614,246	1,022,673	4.2%
TOTAL REVENUE & INCOME	**$ 861,751,466**	**$ 864,736,458**	**$ 2,984,992**	**0.3%**
VARIANCE:		**$ (41,528,874)**	**$ 10,513,636**	**1.2%**

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: September 13, 2023
SUBJECT: Fiscal Year 2023 Year-End Capital Improvement Program Spending Report

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COMMITTEE: Administration, Finance & Audit

____VOTE
_X_INFORMATION

David W. Coppes
Chief Operating Officer

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

Thomas J. Durkin
Director, Finance

At the end of each fiscal year, staff present the Board with a recap of the Capital Improvement Program. FY23 was the fifth year of MWRA's five-year spending cap for FY19-23 established at $984.8 million. The FY23 capital plan was $278.1 million. The FY23 capital spending totaled $171.2 million, $106.9 million or 38.4% lower than planned.

In FY23, the Authority reached substantial completion of the Carroll Water Treatment Plant Sodiium Hypochlorite System Modifications, Marlborough Emergency Pump Station Connection, Wachusett Dam Bastion Improvements, Quabbin Water Supply Construction, Deer Island Replacement of Odor Control Dampers, MWRA Office Space Modifications, Telephone System Upgrade, SANS Storage, and Servers Upgrades were all substantially completed.

The Authority made significant progress on several major projects including Nut Island Odor Control and HVAC Improvements, Section 23, 24, and 47 Rehab, Weston Aqueduct Supply Mains CP-1, Weston Aqueduct Pressure Reducing Valves Improvements, Northern Extra High Improvements CP-1, Carroll SCADA Improvements, and NIH Section 89 Replacement Construction.

In FY23, MWRA managed 102 design and construction contracts and awarded 27 contracts valued at $401.7 million.

RECOMMENDATION:

For information only. The Fiscal Year 2023 Year-End Capital Program Spending Report highlights MWRA's major capital program accomplishments during FY23 and provides explanations for spending variances.

Please see Attachment A for the full Report.

DISCUSSION:

Projects that were completed or reached substantial completion in FY23 included:

- Office Space Modifications - $19.6 million
- Wachusett Dam Bastion Improvements - $4.1 million
- Deer Island As-Needed Design 9-1 and 9-2 - $3.2 million
- Carroll Water Treatment Plant Sodium Hypochlorite System Modifications - $2.1 million
- Storage Area Network System - $1.8 million
- Marlborough Emergency Pump Station Connection - $1.4 million
- Cosgrove Storage Facility - $1.4 million
- Server Upgrades - $1.0 million
- Telephone System Upgrade - $0.9 million
- Modeling Mass Bay Water Quality - $0.7 million
- New Roofs at Belmont, Spring Street and Lexington Street Pumping Stations- $0.6 million
- Deer Island Replacement of Odor Control Dampers - $0.5 million
- Quabbin Water Supply Construction - $0.5 million

MWRA made significant progress on a number of water and wastewater projects, including:

- Nut Island Headworks Odor Control and HVAC Improvements Construction - 95% complete
- Weston Aqueduct Supply Mains (WASM) 3 Rehab CP-1 - 94% complete
- Northern Extra High Improvements Construction - 94% complete
- WASM/Spot Pond Supply Mains Pressure Reducing Valves Improvements - 88% complete
- Tunnel Redundancy Preliminary Design & MEPA Review – 79% complete
- Carroll Chemical Feed System Improvements – 68% complete
- Carroll Water Treatment Plant SCADA Upgrades - 66% complete
- Rehab of Sections 23,24,47 Rehab - 61% complete
- Northern Intermediate High (NIH) Section 89/29 Replacement - 52% complete
- Braintree-Weymouth Improvements Construction - 23% complete

MWRA pipelines rehabilitated or constructed in FY23 totaled 5.3 miles for water and wastewater projects.

Please see Attachment D for a detailed breakdown of the linear footage of pipeline rehabilitated or constructed by project for FY23.

Major contracts awarded by MWRA in FY23 with the following Award dates include:

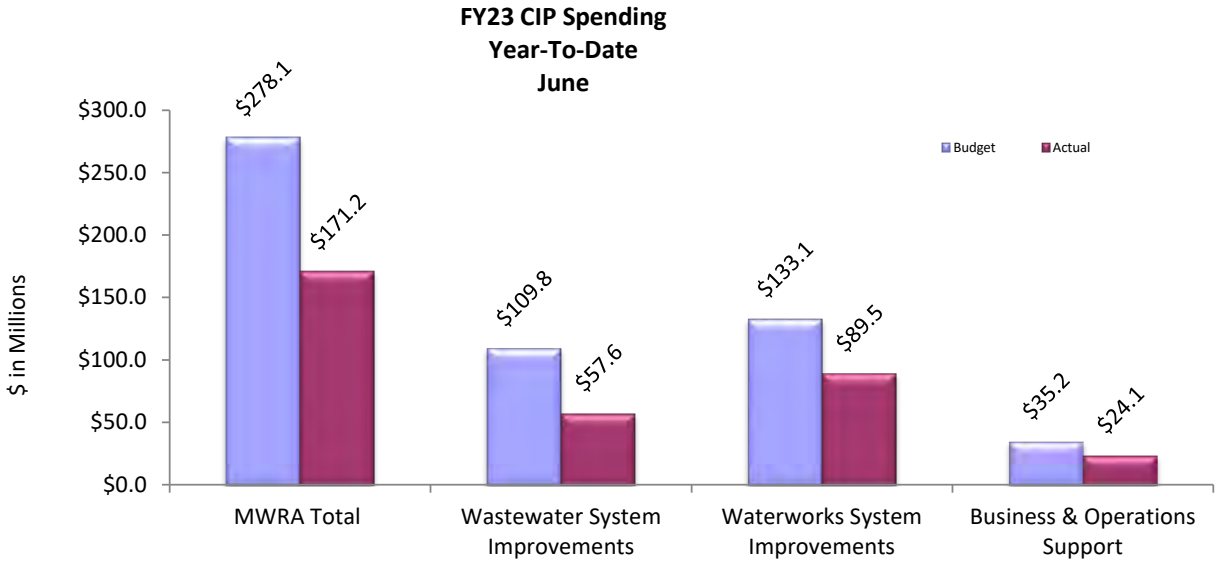
- Clarifier Rehab Phase 2 – Construction – February 2023 - $289.4 million
- Office Space Modifications – July 2022 - $19.6 million
- Wachusett Lower Gatehouse Pipe & Boiler Replacement Construction – November 2022 - $19.3 million

- Section 25 & 24 – Construction CP-2 – May 2023 - $18.7 million
- B/W Improvements – Construction – July 2022 - $13.5 million
- Geotechnical Support Services – December 2022 - $12.8 million
- As-Needed-Design Contracts 20 & 21 - November 2022 - $3.0 million each
- Waltham Water Pipeline REI – July 2022 - $2.9 million
- Electrical Distribution Upgrades at Southborough – July 2022 - $2.6 million
- Deer Island Treatment Plant Radio Repeater System Upgrade – August 2022 - $2.5 million
- Technical Assistance 13 & 14 – November 2022 - $2.0 million each
- Section 24,25, 47, 75, 59, & 60 REI – May 2023 - $1.9 million
- Fuel Oil Tank Replacement Construction Phase 2 – July 2022 - $1.8 million
- Chelsea 008 Pipe Replacement – November 2022 - $1.6 million
- Corrosion Control Pipe Loop Study – January 2023 - $0.9 million
- Wachusett Lower Gatehouse Pipe Replacement and Southborough Electrical Upgrade REI – December 2022 - $0.9 million
- B/W Improvements – REI – September 2022 - $0.9 million
- Security Equipment & Installation – March 2023 - $0.5 million
- Core Switches – April 2023 - $0.4 million
- MSSP/SIEM Hardware – September 2022 - $0.4 million
- Future Workspace – July 2022 – 0.4 million
- IPS Transformer Replacement – February 2023 - $0.3 million
- Chelsea Creek Headworks Radio Equipment – August 2022 - $0.3 million
- Netscalers – February 2023 - $0.1 million
- Archiving & Data Management – August 2022 - $0.1 million

Please see Attachment C for FY23 Planned versus Actual/Revised CIP Notices to Proceed for a complete list of contracts awarded.

FY23 also included overall spending of $15.5 million for the community financial assistance programs on both the water and wastewater sides. Inflow and Infiltration (I/I) spending consisted of $13.2 million in grants and $8.5 million in loans offset by $7.7 million in prior period loan repayments for net spending of $14.1 million. The Local Water System Assistance Program spending was $32.8 million in loans, including CVA communities, offset by $31.4 million in prior period loan repayments for net spending of $1.5 million that includes Lead Service Line Replacement loans of $4.0 million.

Major Variances to FY23 Plan



For FY23, total Capital Improvement Program spending was projected at $278.1 million. Total spending was $171.2 million, which was $106.9 million or 38.4% below plan. Underspending was reported in Wastewater of $52.1 million, $43.6 million in Waterworks Improvements, and $11.1 million in Business and Operations Support.

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 $154.9 million, $74.7 million or 32.5% under planned spending.

The table below reports the FY23 spending and variances by major program:

$ in Millions	Budget	Actuals	$ Var.	% Var.
Wastewater System Improvements				
Interception & Pumping	38.9	24.4	(14.5)	-37.4%
Treatment	43.1	16.1	(27.0)	-62.6%
Residuals	0.0	0.0	0.0	0.0%
CSO	2.7	3.0	0.4	14.0%
Other	25.1	14.1	(11.0)	-43.8%
Total Wastewater System Improvements	**$109.8**	**$57.6**	**($52.1)**	**-47.5%**
Waterworks System Improvements				
Drinking Water Quality Improvements	4.1	2.5	(1.5)	-37.3%
Transmission	58.9	35.2	(23.6)	-40.2%
Distribution & Pumping	35.1	40.0	4.9	13.9%
Other	35.1	11.7	(23.3)	-66.5%
Total Waterworks System Improvements	**$133.1**	**$89.5**	**($43.6)**	**-32.8%**
Business & Operations Support	**$35.2**	**$24.1**	**($11.1)**	**-31.6%**
Total MWRA	**$278.1**	**$171.2**	**($106.9)**	**-38.4%**

The $106.9 million variance is the net of $118.7 million in less than planned spending on 36 projects offset by $11.8 million in more than planned spending on 8 projects. The main reasons for the project spending variances in order of magnitude are:

Wastewater Treatment: Net underspending of $27.0 million

- $4.0 million for Clarifier Rehab Phase 2 Construction and REI, $3.4 million for Deer Island Motor Control Center & Switchgear Replacement - Construction & Design/ESDC/REI, $3.0 million for Deer Island Roofing Replacement, $2.5 million for Dystor Membrane Replacement, $2.1 million for Clinton Digester Cover Replacement, and $2.0 million for Fire Alarm System Replacement – Construction due to schedule changes.
- $2.8 million for South System Pump Station VFD Design/ESDC due to updated construction schedule.
- $1.8 million for Deer Island As-needed Design due to lower than projected task order work.

Waterworks Transmission: Net underspending of $23.6 million

- $12.5 million for Waltham Water Pipeline due to long lead time for piping material and permitting delays.
- $3.2 million for Wachusett Lower Gatehouse Pipe & Boiler Replacement - Construction due to longer than anticipated equipment lead time and updated Notice to Proceed.
- $2.9 million for Maintenance Garage/Wash Bay/Storage Building - Construction due to schedule change.
- $2.5 million for Geotechnical Support Services due to timing of services.
- $2.2 million for CP-2 Shaft 5 Construction due to updated schedule.
- $0.8 million for WASM/Spot Pond Supply Mains Pressure Reducing Valves due to timing of work.
- This underspending was partially offset by overspending of $1.6 million for Tunnel Redundancy Preliminary Design & MEPA Review due to timing of consultant work and $0.8 million for WASM 3 CP-1 due to contractor progress.

Other Waterworks: Net underspending of $23.3 million

- $21.9 million for Local Financial Assistance due to timing of community loan distributions.

Interception & Pumping: Net underspending of $14.5 million

- $4.0 million for Ward Street & Columbus Park Headworks Upgrades - Design/CA due to completion of some design and inspection tasks later than anticipated.
- $2.8 million for Nut Island Odor Control & HVAC Improvements Phase 2 – Construction and CA/REI due to contractor behind schedule.
- $2.0 million for Siphon Structure Rehab Construction and $1.6 million for Interceptor Renewal 7 Malden/Melrose Construction due to updated schedules.
- $1.3 million for Prison Point Design/CA/RI due to cancellation of construction contract.

Business & Operations Support: Net underspending of $11.1 million

- $3.9 million for Cabling, $1.8 million for Lawson Upgrade, $1.0 million for MAXIMO Interface Enhancements, and $0.8 million for Oracle Database Appliance due to timing and scheduling of work.

- $1.7 million for FY19-23 Vehicle Purchases due to timing of purchases and supply chain issues.
- $1.4 million for Security Equipment & Installation due to timing of security initiatives.
- This underspending was partially offset by overspending of $3.0 million for the Office Space Modifications project due to contract award being greater than plan.

Other Wastewater: Net underspending of $11.0 million
- $11.0 million for Community I/I due to timing of community distributions of grants and loans.

Water Distribution and Pumping: Net overspending of $4.9 million
- $5.7 million for Section 89/29 Replacement – Construction and $1.6 million for CP-1 NEH Improvements due to contractor progress.
- $0.8 million for Section 53 and 99 Improvements - Design/CA, and $0.6 million for NEH Improvements Design - ESDC due to timing of consultants work.
- This overspending was partially offset by underspending of $2.0 million for Cathodic Protection Shafts E, L, N & W due to scope changes, $1.0 million for Section 56 Replacement/Saugus River - Design/CA due to permitting delays, and $0.5 million for CP3-Sections 23, 24, 47 Rehabilitation due to timing of work.

Drinking Water Quality Improvements: Net underspending of $1.5 million
- $0.7 million for Carroll Chemical Feed System Improvements – Construction due to timing of work.
- $0.7 million for Carroll Technical Assistance for lower than projected task order work.
- $0.3 million for Marlborough Pumping Station Connection for work anticipated in FY23 that was completed in FY22.

Combined Sewer Overflow: Net overspending of $0.4 million
- Primarily due to $0.8 million for unplanned Fort Point Channel Sewer Separation work, partially offset by $0.2 million for CSO Performance Assessment due to timing of consultant work.

Please see Attachment B for detailed FY23 CIP variance explanations of all FY23 projects.

FY24 Outlook

Looking ahead to FY24, the projected capital spending is $302.6 million. Projects with the largest planned spending in FY24 include Deer Island Asset Protection of $52.0 million, Infiltration/Inflow Local Financial Assistance of $42.9 million, Metropolitan Redundancy Interim Improvements of $28.7 million, New Connecting Mains – Shaft 7 to WASM 3 of $26.6 million, Quabbin Transmission System of $15.0 million, Metropolitan Tunnel Redundancy of $14.4 million, Local Water System Assistance Program of $14.1 million, NIH Redundancy & Storage of $13.1 million, and Facility Asset Protection of $12.8 million.

In FY24, 77 contracts or phases of projects with total projected spending of $371.2 million are expected to be awarded. Staff will be completing the design and progressing to the bid and award stage on several major projects such as the Deer Island Fire Alarm System Construction, Deer Island Motor Control Center and Switchgear Replacement Construction, Deer Island HVAC Control System Replacement, Combined Heat & Power Design/ESDC/REI, NEH

Improvements CP-2, Section 75 Extension CP-1, WASM 3 Rehab CP-2, and Hayes Pump Station Rehabilitation.

Please see Attachment E for FY24 Planned Contract Awards.

ATTACHMENTS:

A. Fiscal Year 2023 Year-End Capital Program Spending Report
B. FY23 CIP Year-End Variance Report
C. FY23 Planned versus Actual/Revised Contract Awards
D. Linear Footage of Rehabilitated or New Pipelines in FY23
E. FY24 Planned Capital Contract Awards

MASSACHUSETTS **W**ATER **R**ESOURCES **A**UTHORITY

Capital Program Spending Report

for

Fiscal Year 2023

September 13, 2023

Fiscal Year 2023 Year-End Capital Program Spending Report

Table of Contents –

Introduction

Since its inception in 1986, MWRA has expended $9.1 billion on capital initiatives. Of this spending 70% has supported improvements to Wastewater treatment, interception, pumping and combined sewer overflow (CSO) systems, 27% has supported Waterworks treatment, transmission, distribution and water protection improvements, and 2% has supported Business and Operations Support initiatives. Through FY23, nearly 70% of the capital spending has been for court mandated projects. The long-term strategy for capital work is identified in the Authority's Master Plan which was first published in 2006, updated in 2013 and 2019, and serves as a road map for inclusion of projects in the Capital Improvement Program (CIP) in every budget cycle. Going forward, MWRA expects to spend $4.0 billion on system improvements between FY24-FY33 with main emphasis on Asset Protection and Water System Redundancy initiatives including the Metropolitan Tunnels Long-Term Redundancy Project.

MWRA Capital Spending FY1986 - FY2033 (in millions)				
	Expenditures FY86 - FY23		Planned Expenditures FY24 - FY33	
Program	Amount	% of Total	Amount	% of Total
Wastewater	$6,370	70%	$2,307	57%
Waterworks	$2,586	27%	$1,648	41%
Business & Operations Support	$185	2%	$68	2%
Total MWRA	**$9,141**	**100%**	**$4,023**	**100%**

**Totals may not add up due to rounding*

To date, MWRA has spent $915.0 million on the Wastewater CSO program and plans to spend an additional $18.3 million through FY33.

To date, MWRA has distributed $287.5 million in grants and $243.9 million in no-interest loans to fund 664 separate projects in 43 communities under the I/I Local Financial Assistance Program. Additionally, $562.8 million in Local Water Pipeline Assistance Program loans has been distributed to member communities.

FY23 Spending

Total CIP spending in FY23 was $171.2 million which was $106.9 million or 38.4% less than the $278.1 million budgeted.

Spending by program in FY23 was:

Program	FY23 Budget (in millions)	FY23 Actuals (in millions)	Variance	% Variance
Wastewater	$109.8	$57.6	($52.1)	-47.5%
Waterworks	$133.1	$89.5	($43.6)	-32.8%
Business & Operations Support	$35.2	$24.1	($11.1)	-31.6%
Total	**$278.1**	**$171.2**	**($106.9)**	**-38.4%**

FY23 included spending of $16.3 million not directly under MWRA's control, most notably the Inflow and Infiltration (I/I) program, the Local Water Pipeline programs, and CSO Community Managed projects. The community assistance programs are either loan or grant programs to support the MWRA's member communities' local water and sewer infrastructure. In FY23, MWRA expended $41.4 million in water and I/I loans and $13.2 million in I/I grants offset by $39.0 million in prior period loan repayments for net spending of $15.5 million. An additional $0.8 million was expended on the CSO Community Managed projects. After accounting for these programs which are not directly under MWRA's control, the FY23 CIP underspending is $74.7 million or 32.5%.

FY23 Capital Program Highlights

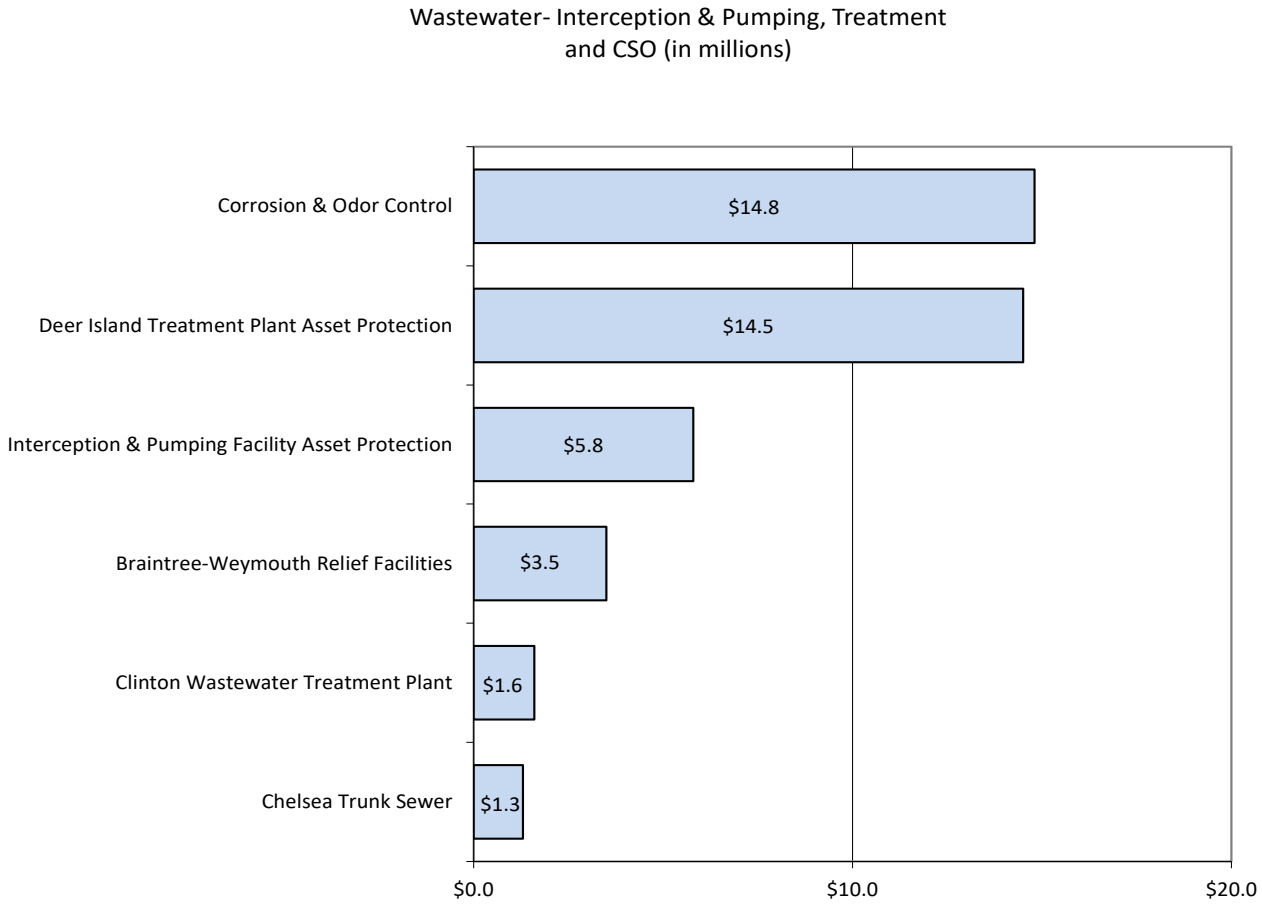
This section highlights the spending and key accomplishments by major program categories and projects.

Wastewater System

During FY23, the MWRA spent $57.6 million on Wastewater system projects: $24.4 million for Interception & Pumping projects, $16.1 million for Treatment projects, $3.0 million for CSO projects, and $14.1 million for Other Wastewater projects.

Wastewater Interception & Pumping, Treatment, and CSO Projects

Total FY23 spending for Interception & Pumping was $24.4 million, Treatment was $16.1 million, and CSO was $3.0 million. The largest spending occurred on the following:



Key Accomplishments in Wastewater - Interception and Pumping:

- Fuel Oil Tank Replacement Phase 2
    - NTP issued in August 2022

- Braintree-Weymouth Improvements Construction
    - NTP issued in September 2022

- Chelsea Creek Radio Equipment
    - NTP issued in September 2022 and substantially complete in May 2023

- IPS Transformer Replacement
    - NTP issued in March 2023

- Braintree-Weymouth Improvements Resident Engineering Inspection Services
    - NTP issued in October 2022

- Modeling Mass Bay Water Quality
    - Substantially completed in November 2022

***Key Accomplishments in Wastewater – Treatment*:**

- As-Needed Design 9-1 and 9-2
    - Substantially completed in August 2022

- Radio Repeater Upgrade 2
    - NTP issued in October 2022

- Deer Island Replacement of Odor Control Dampers
    - Substantially completed in January 2023

- Clarifier Rehab Phase 2 Construction
    - NTP issued in March 2023

Wastewater System – Combined Sewer Overflow (CSO) Projects

Total FY23 spending for CSO projects was $3.0 million which was primarily for the Chelsea 008 Pipe Replacement, CSO Performance Assessment, and Fort Point Channel & Mystic work.

Key Accomplishments in CSO:

- Fort Point Channel and Mystic CSO work began in November 2022, Chelsea 008 Pipe Replacement and East Boston Sewer Separation CSO Control – BOS014 improvements were completed by June 2023.

Wastewater - Other

This category includes spending only for the community managed Infiltration/Inflow (I/I) Local Financial Assistance Program.

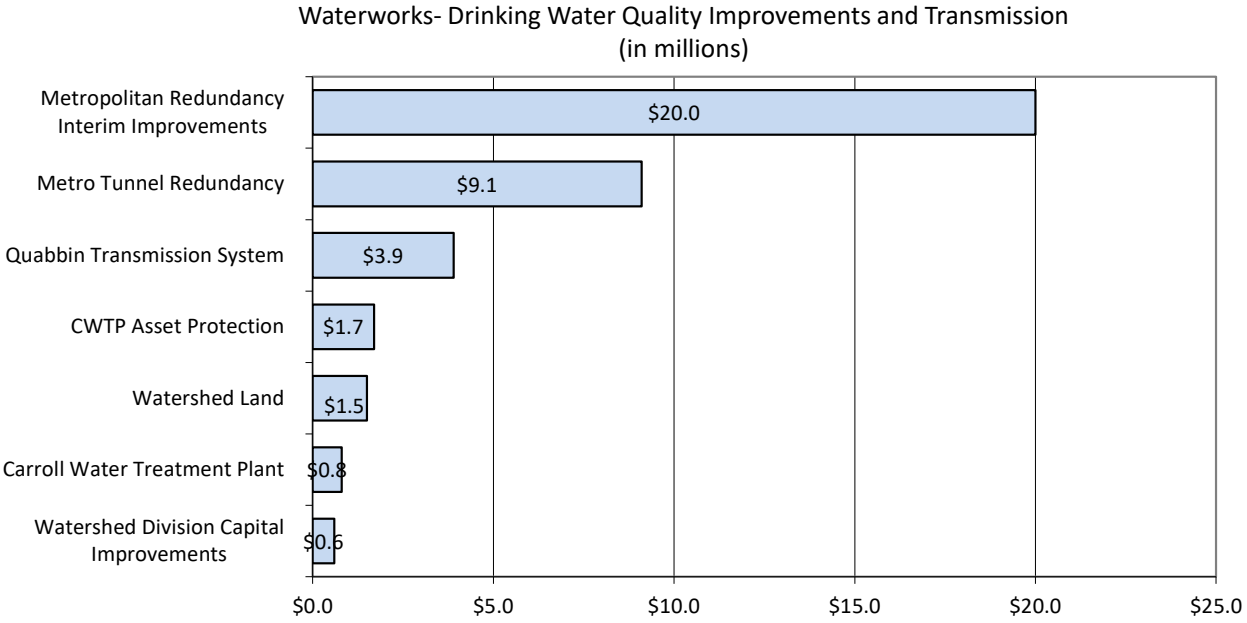
In FY23, MWRA distributed $13.2 million in grants and $8.5 million in no-interest loans which is offset by repayment of prior-period loans of $7.6 million resulting in net spending of $14.1 million.

Waterworks System

During FY23, the MWRA spent $89.5 million on Waterworks system projects: $2.5 million for Drinking Water Quality Improvement projects, $35.2 million for Transmission projects, $40.0 million for Distribution and Pumping projects, and $11.7 million for Other Waterworks projects.

Waterworks System – Drinking Water Quality Improvements and Transmission

Total FY23 spending for Drinking Water Quality Improvements and Transmission projects was $2.5 million and $35.2, respectively. Projects with the largest spending are listed below:



Key Accomplishments in Drinking Water Quality Improvements:

- Carroll Water Treatment Plant Sodium Hypochlorite System Modifications
    - Substantially completed in August 2022
- Marlborough Emergency Pump Station Connection
    - Substantially completed in September 2022
- Cosgrove Storage Facility
    - Substantially completed in October 2022
- Corrosion Control Pipe Loop Study
    - NTP issued in February 2023
- Carroll Water Treatment Plant Technical Assistance 13 and 14
    - NTP issued in March 2023

Key Accomplishments in Transmission:

- Waltham Water Pipeline Resident Engineering Inspection Services
    - NTP issued in October 2022

- Geotechnical Support Services
    - NTP issued in January 2023

- Wachusett Lower Gate House Pipe And Boiler Replacement Construction
    - NTP issued in February 2023

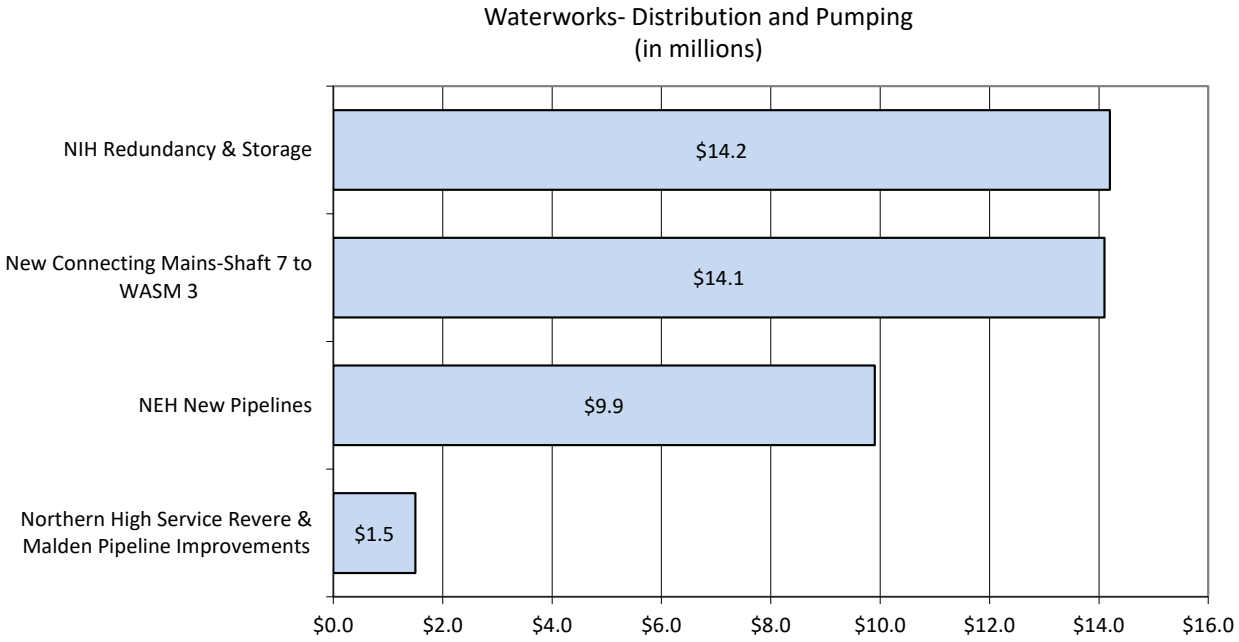
- Wachusett Lower Gate House Pipe Replacement and Southborough Electrical Upgrade REI
    - NTP issued in February 2023

- Quabbin Water Supply Construction
    - Substantially completed in February 2023

- Wachusett Dam Bastion Improvements
    - Substantially completed in April 2023

Waterworks System - Distribution and Pumping

Total FY23 spending for Distribution and Pumping projects totaled $40.0 million. Projects with the largest spending are listed below:



Key Accomplishments in Distribution and Pumping:

- Sect 25 & 24 - Construction CP-2
    - Contract awarded in May 2023

- Sect 25 & 24 - REI CP-2

- Contract awarded in May 2023

Waterworks – Other

Total FY23 spending for Waterworks Other totaled $11.7 million.

This category includes the community assistance program for the local water pipelines and other MWRA Waterworks projects.

In FY23, MWRA distributed $32.8 million in Local Water Pipeline Assistance Program loans to member communities offset by repayment of prior-period loans of $31.3 million which resulted in total net receipts of $1.5 million.

- Electrical Distribution Upgrades at Southborough - $2.6 million
    - NTP issued in July 2022

- New Roofs at Belmont, Spring Street, and Lexington Street Pumping Stations
    - Substantially completed in January 2023

Business & Operations Support

Total FY23 spending for Business and Operations Support totaled $24.1 million.

Key Accomplishments in Business & Operations Support:

- Telephone System Upgrade
    - Substantially completed in July 2022

- Future Workplace
    - Awarded in July 2022

- Office Space Modifications
    - NTP in July 2022 and Substantially completed in June 2023

- Netscalers
    - Awarded in February 2023

- As-Needed Design Contract 20 and Contract 21
    - Awarded in November 2022

- MSSP
  Substantially completed in December 2022

- Sans Storage
    - Substantially completed in March 2023

- Servers
    - Substantially completed in March 2023

- Core Switches
    - Awarded in April 2023

- Fencing Contract (6760AA)
    - NTP issued in May 2023

- Fencing Contract (6760Z)
    - Substantially completed in May 2023

- MSSP/SIEM Firewall Equipment
    - Substantially completed in June 2023

Total New or Rehabilitated Pipeline

In addition to measuring spending on CIP projects, MWRA tracks the mileage of pipeline that is rehabilitated or added to its infrastructure. During FY23, the MWRA rehabilitated or constructed 5.3 miles of water and wastewater pipeline. These numbers do not include the rehabilitated or replaced pipelines of our member communities which are funded through our Inflow/Infiltration (I/I) and Water Loan programs as referenced above.

Refer to Attachment D for the specific linear footage of rehabilitated or new pipelines by project in FY23.

FY23 Spending Variances

Total FY23 capital spending was $171.2 million which was $106.9 million or 38.4% less than the $278.1 million budget. The variance is primarily due to underspending for the Deer Island Treatment Plant Asset Protection, Local Water System Assistance Program, Metropolitan Redundancy Interim Improvements, Infiltration/Inflow Assistance Program, Interception & Pumping Facility Asset Protection, and IT Infrastructure Program.

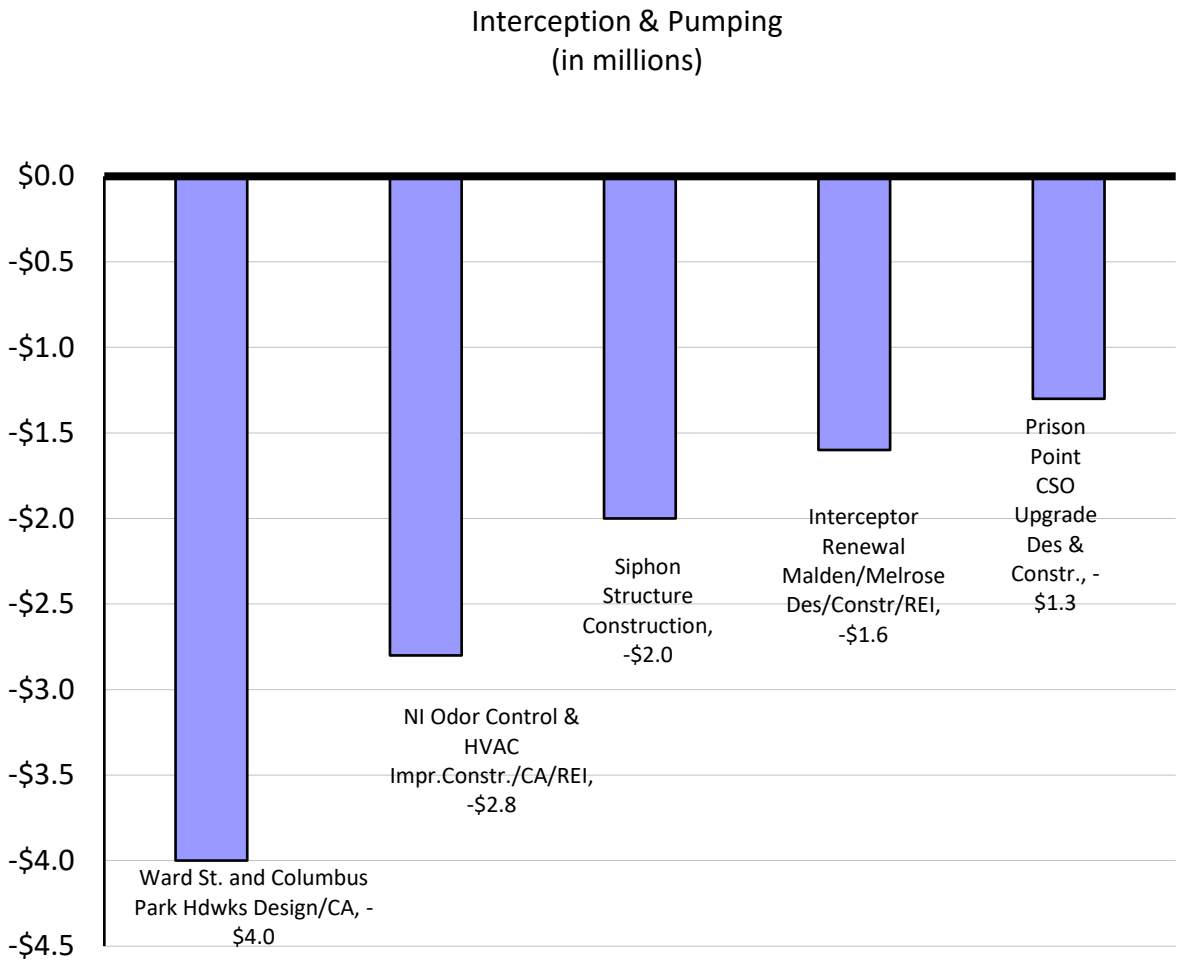
FY23 Spending Variances ($000s)

Program	Budgeted Spending	Actual Spending	Variance to Budget		% Actual Spending to Total Spending
			$	%	
Total Wastewater System	**$109,752,177**	**$57,629,707**	**($52,122,470)**	**-47.5%**	**34%**
Interception & Pumping	$38,928,014	$24,385,218	($14,542,796)	-37.4%	14%
Treatment	$43,106,525	$16,126,017	($26,980,508)	-62.6%	9%
Residuals	$0	$0	$0	#DIV/0!	0%
Combined Sewer Overflow	$2,663,004	$3,037,105	$374,101	14.0%	2%
Other Wastewater Programs	$25,054,634	$14,081,364	($10,973,270)	-43.8%	8%
Total Waterworks System	**$133,078,713**	**$89,469,887**	**($43,608,826)**	**-32.8%**	**52%**
Drinking Water Quality Improvements	$4,059,948	$2,547,175	($1,512,773)	-37.3%	1%
Transmission	$58,883,051	$35,239,243	($23,643,808)	-40.2%	21%
Distribution and Pumping	$35,074,105	$39,953,015	$4,878,910	13.9%	23%
Other Waterworks Programs	$35,061,609	$11,730,454	($23,331,155)	-66.5%	7%
Business & Operations Support	**$35,222,248**	**$24,078,747**	**($11,143,501)**	**-31.6%**	**14%**
Total MWRA	**$278,053,138**	**$171,178,344**	**($106,874,793)**	**-38.4%**	**100%**

FY23 Variances for Major Projects

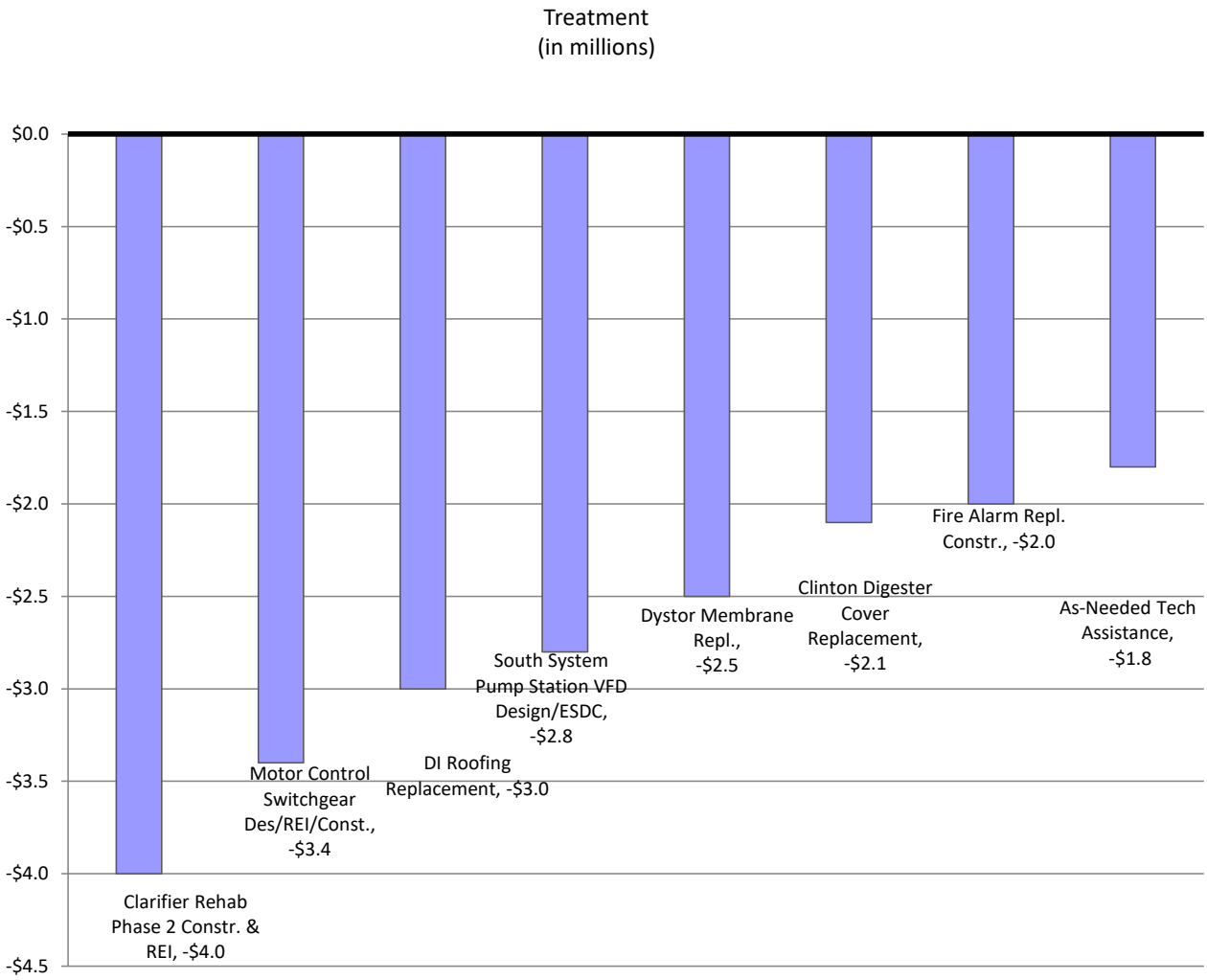
Please see Attachment B for the full FY23 CIP variance explanations by project.

Wastewater - Interception & Pumping



- Total FY23 Budget: $38.9 million
- Total FY23 Expended: $24.4 million
- $14.5 million less than budgeted spending
  - Underspending on various projects, including
    - $4.0 million for Ward Street & Columbus Park Headworks Upgrades - Design/CA due to completion of some design and inspection tasks later than anticipated.
    - $2.8 million for Nut Island Odor Control & HVAC Improvements Phase 2 – Construction and CA/REI due to contractor behind schedule.
    - $2.0 million for Siphon Structure Rehab Construction and $1.6 million for Interceptor Renewal 7 Malden/Melrose Construction due to updated schedules.
    - $1.3 million for Prison Point Design/CA/RI due to cancellation of construction contract.

Wastewater – Treatment and CSO



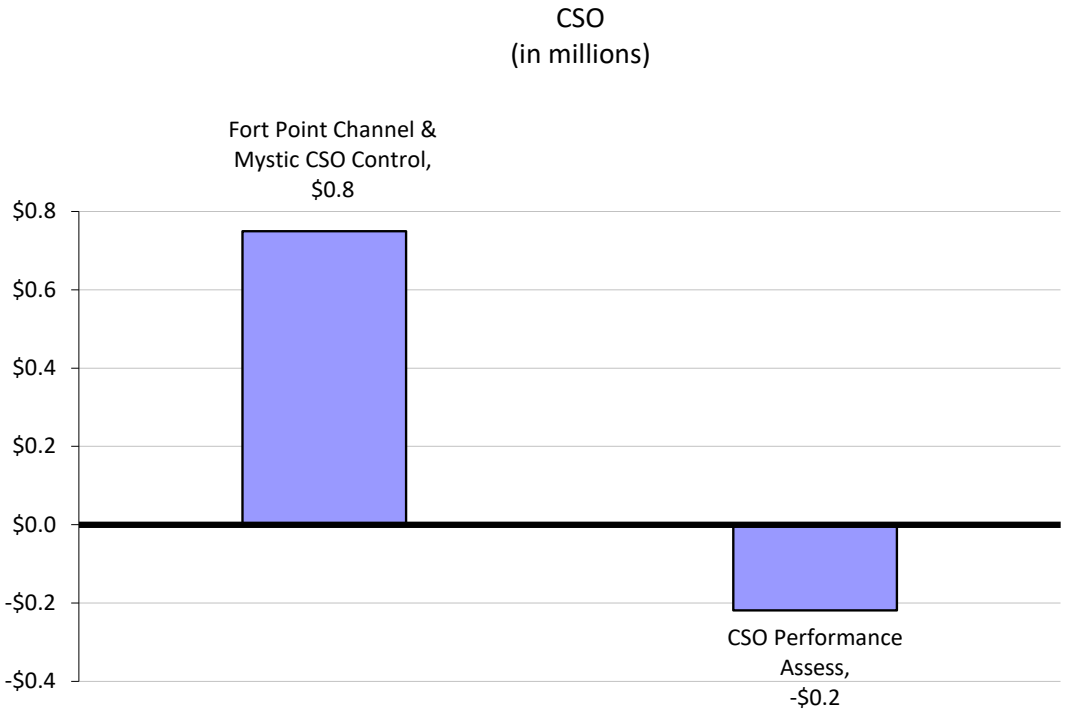
Deer Island Treatment Plant Asset Protection:

- Total FY23 Budget: $38.1 million
- Total FY23 Expended: $14.5 million
- $23.6 million less than budgeted spending
  - Underspending on various projects, including
    - $4.0 million for Clarifier Rehab Phase 2 Construction and REI, $3.4 million for Deer Island Motor Control Center & Switchgear Replacement - Construction & Design/ESDC/REI, $3.0 million for Deer Island Roofing Replacement, $2.5 million for Dystor Membrane Replacement, and $2.0 million for Fire Alarm System Replacement – Construction due to schedule changes.
    - $2.8 million for South System Pump Station VFD Design/ESDC due to updated construction schedule.
    - $1.8 million for Deer Island As-needed Design due to lower than projected task order work.

Clinton Wastewater Treatment Plant:

- Total FY23 Budget: $5.0 million
- Total FY23 Expended: $1.6 million
    - Less than budgeted spending primarily due to $2.1 million for Clinton Digester Cover Replacement due to schedule changes and $0.7 million for Clinton Screw Pump Replacements due to due to timing of work.

Wastewater - Combined Sewer Overflows (CSO's)

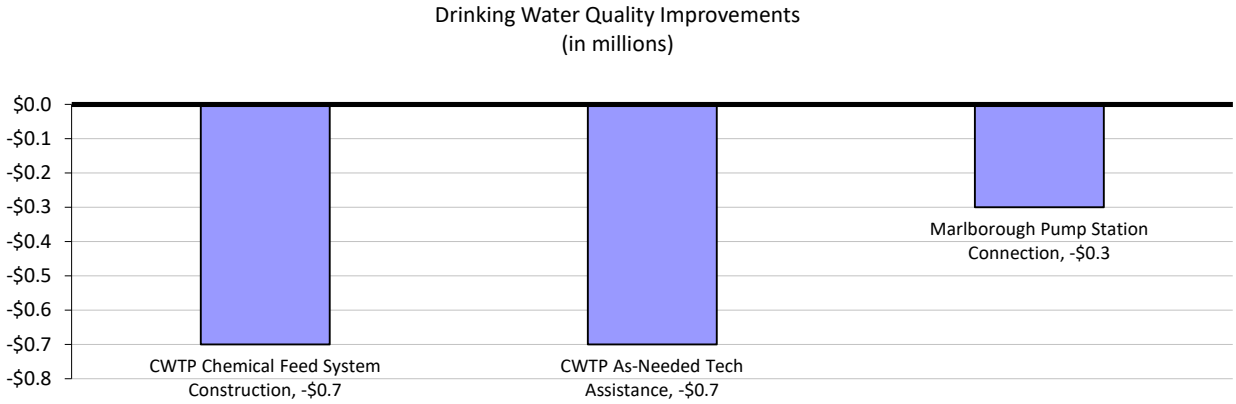


- Total FY23 Budget: $2.7 million
- Total FY23 Expended: $3.0 million
    - Greater than budgeted spending of $0.4 million primarily for $0.8 million of unplanned Fort Point Channel Sewer Separation work, partially offset by $0.2 million for CSO Performance Assessment due to timing of consultant work.

Wastewater - Other

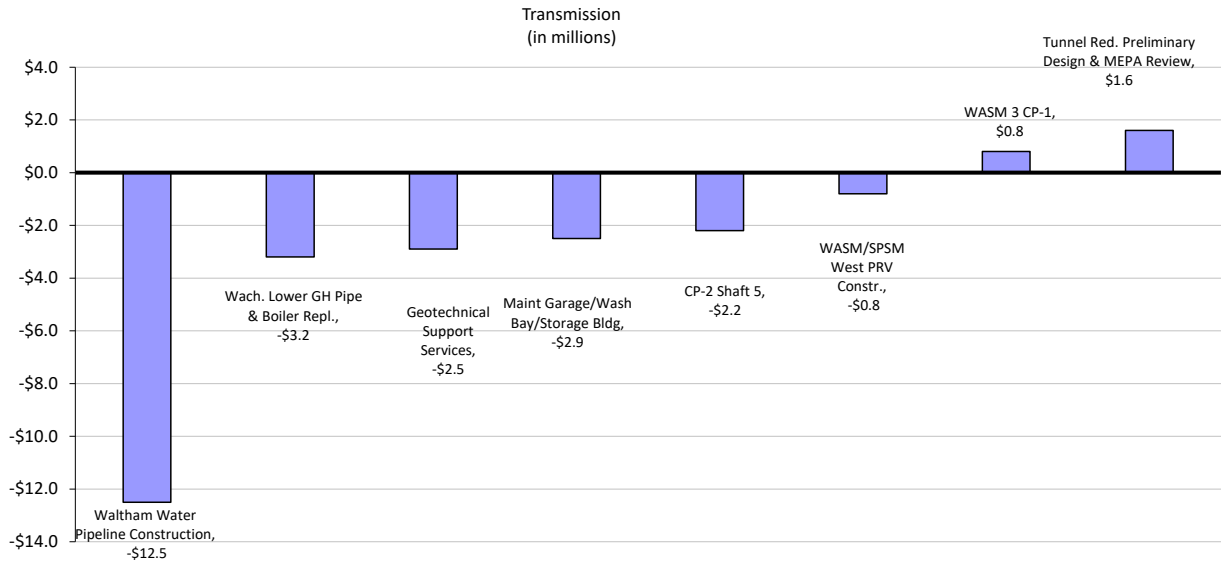
- $11.0 million less than budgeted spending for Community I/I due to timing of community distributions of grants and loans.

Waterworks - Drinking Water Quality Improvements



- Total FY23 Budget: $4.1 million
- Total FY23 Expended: $2.5 million
- $1.5 million less than budgeted spending
  - $0.7 million for CWTP Chemical Feed System Improvements – Construction due to timing of work.
  - $0.7 million for CWTP Technical Assistance for lower than projected task order work.
  - $0.3 million for Marlborough Pumping Station Connection for work anticipated in FY23 that was completed in FY22.

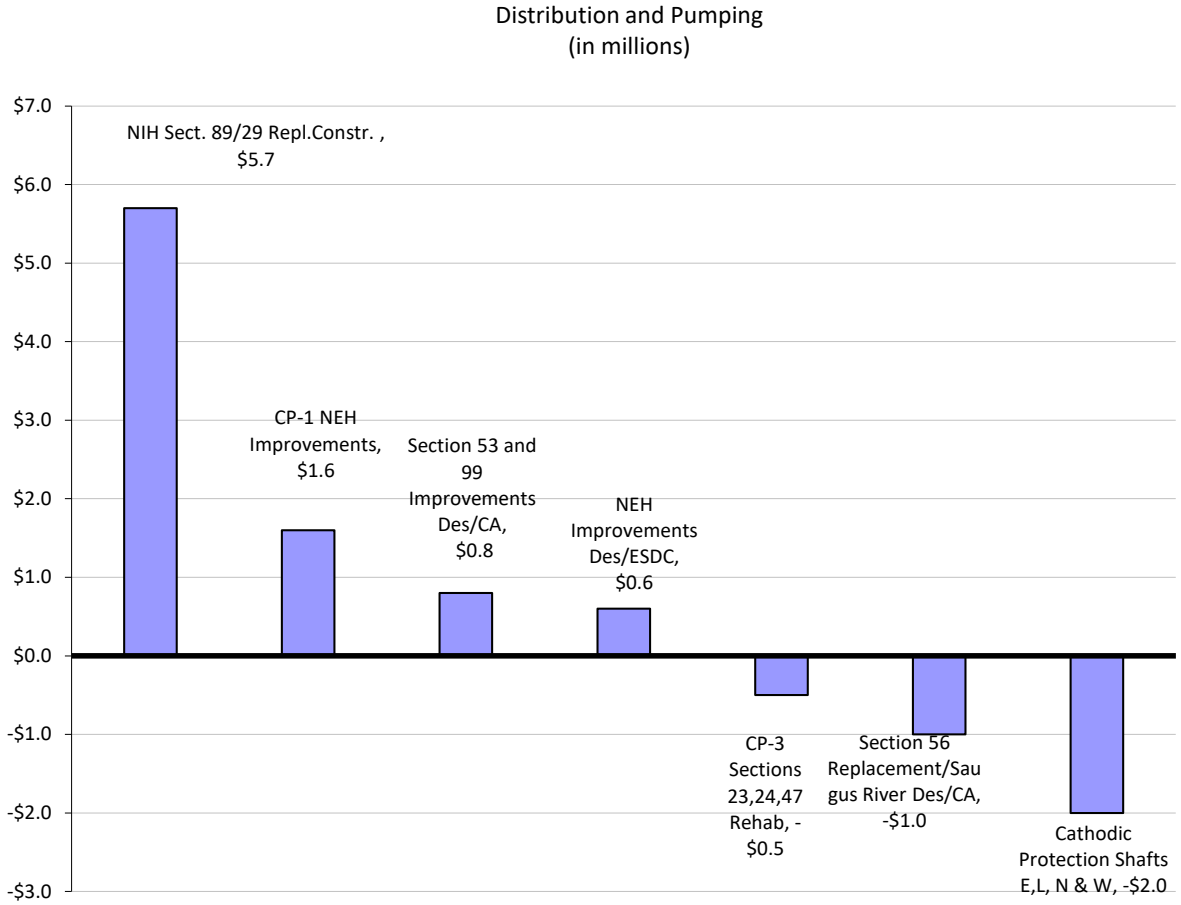
Waterworks – Transmission



- Total FY23 Budget: $58.9 million
- Total FY23 Expended: $35.2 million
- $23.6 million less than budgeted spending

- Underspending on various projects, including
  - $12.5 million for Waltham Water Pipeline due to long lead time for piping material and permitting delays.
  - $3.2 million for Wachusett Lower Gatehouse Pipe & Boiler Replacement - Construction due to longer than anticipated equipment lead time and updated Notice to Proceed.
  - $2.9 million for Maintenance Garage/Wash Bay/Storage Building - Construction due to schedule change.
  - $2.5 million for Geotechnical Support Services due to timing of services.
  - $2.2 million for CP-2 Shaft 5 Construction due to updated schedule.
  - $0.8 million for WASM/Spot Pond Supply Mains Pressure Reducing Valves due to timing of work.
  - This underspending was partially offset by overspending of $1.6 million for Tunnel Redundancy Preliminary Design & MEPA Review due to timing of consultant work and $0.8 million for WASM 3 CP-1 due to contractor progress.

Waterworks - Distribution and Pumping



- Total FY23 Budget: $35.1 million
- Total FY23 Expended: $40.0 million
- $4.9 million greater than budgeted spending
  - Overspending on various projects, including
    - $5.7 million for Section 89/29 Replacement – Construction and $1.6 million for CP-1 NEH Improvements due to contractor progress.
    - $0.8 million for Section 53 and 99 Improvements - Design/CA, and $0.6 million for NEH Improvements Design - ESDC due to timing of consultants work.
    - This overspending was partially offset by underspending of $2.0 million for Cathodic Protection Shafts E, L, N & W due to scope changes, $1.0 million for Section 56 Replacement/Saugus River - Design/CA due to permitting delays, and $0.5 million for CP3-Sections 23, 24, 47 Rehabilitation due to timing of work.

Waterworks - Other

- Total FY23 Budget: $35.1 million
- Total FY23 Expended: $11.7 million
- $23.3 million less than budgeted spending
  - $21.9 million for Local Financial Assistance due to timing of community loan distributions.

Business & Operations Support

- Total FY23 Budget: $35.2 million
- Total FY23 Expended: $24.1 million
- $11.1 million less than budgeted spending
    - $1.7 million for FY19-23 Vehicle Purchases due to timing of purchases and supply chain issues.
    - $3.9 million for Cabling, $1.8 million for Lawson Upgrade, $1.0 million for MAXIMO Interface Enhancements, and $0.8 million for Oracle Database Appliance due to timing and scheduling of work.
    - $1.4 million for Security Equipment & Installation due to timing of security initiatives.
    - This underspending was partially offset by overspending of $3.0 million for the Office Space Modifications project due to contract award being greater than budget.

FY23 CIP Contract Awards

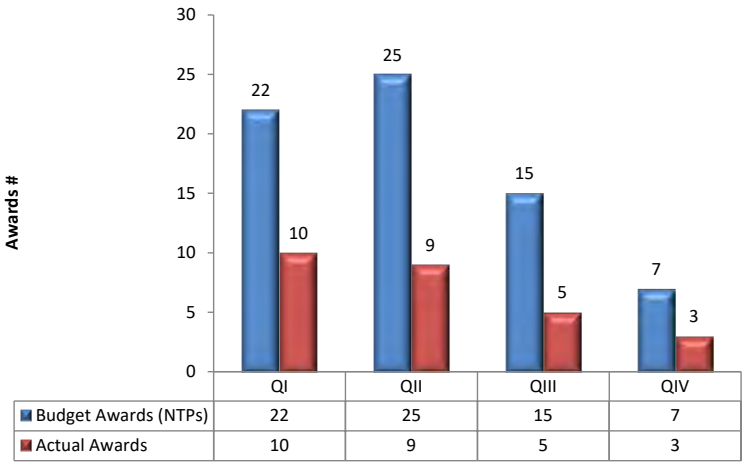
The FY23 CIP planned the award of 69 contracts with a value of $503.6 million. During FY23, the MWRA awarded 27 contracts valued at $401.7 million, representing 39% of contracts and 80% of contract funding. Of the 69 planned awards, 27 contracts were awarded, 37 are expected to be

awarded in FY24, 6 have been rescheduled beyond FY23, and 2 are being done in-house, were deleted, renamed, or scope moved to another contract. Of the 37 contracts that shifted to FY24: 2 were due to permitting issues, 14 due to scope changes, 15 due to changes in priorities, and 6 due to bidder issues/outside consultant/contractor delays/additional specification review.

A comparison of the FY23 budgeted contracts and the FY23 actual contract awards are detailed below:

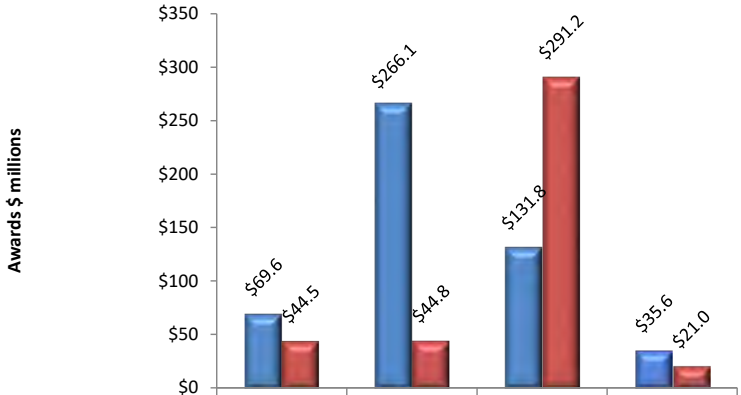
FY23 Contracts ($ in Millions)				
Program	Budget		Actuals	
	#	$	#	$
Total MWRA	69	503.6	27	401.7
Wastewater	33	345.9	8	310.1
Waterworks	24	127.6	10	64.0
Business Operations Support	12	30.0	9	27.6

FY23 Budget and Actual Awards (#)



	QI	QII	QIII	QIV
Budget Awards (NTPs)	22	25	15	7
Actual Awards	10	9	5	3

FY23 Budget and Actual Awards ($)



	QI	QII	QIII	QIV
Budget Awards (NTPs)	$69.6	$266.1	$131.8	$35.6
Actual Awards	$44.5	$44.8	$291.2	$21.0

Please refer to Attachment C for a full listing of contracts planned to be awarded in FY23 and actual awards.

Change Orders Review

Management of change orders remains a top priority. Total change orders for MWRA-managed active capital projects were 1.4% of award value through June 2023. This percentage is within the target of 10% for change orders as a percentage of awards.

Master Plan and the FY23 CIP Process

To arrive at the FY23 Final CIP, the Authority identified the needs of the programs taking into account the recommendations of the Master Plan. The long-term strategy for capital work is identified in the Authority's Master Plan which was published in 2006 and updated in 2013, 2019, and is expected to be updated *in 2023.* The Master Plan serves as a road map for inclusion of projects in the CIP in every budget cycle.

The updated Master Plans focused on capital needs over the next 40-years and are intended to be the principal framework for annual capital planning. The Plans focus on projects that require capital spending during the next two 5-year CIP cap cycles: FY24-28 and FY29-33. Potential capital needs during the next 10-year (FY34-43) and 20-year (FY44-63) planning periods will also be identified.

FY19-23 Spending Cap

MWRA spending during the FY19-23 timeframe is planned to be $672.6 million, with additional net spending of $160.3 million for the community I/I (Infiltration and Inflow) loan and grant program and $68.4 million for the community water pipeline loan program. Annual cash flows for the Cap period are shown below in millions:

		FY19	FY20	FY21	FY22	FY23	Total FY19-23
FY23 Final	Projected Expenditures	$142.9	$150.4	$148.4	$164.4	$278.5	$884.5
	I/I Program	(39.6)	(33.7)	(31.3)	(30.6)	(25.1)	(160.3)
	Water Loan Program	(13.8)	(4.3)	(14.9)	(12.0)	(23.4)	(68.4)
	MWRA Spending	**$89.4**	**$112.3**	**$102.2**	**$121.8**	**$230.0**	**$655.8**
	Contingency	0.0	0.0	0.0	0.0	14.6	14.6
	Inflation on Unawarded Construction	0.0	0.0	0.0	0.0	2.2	2.2
	Chicopee Valley Aqueduct Projects	(0.0)	0.0	0.0	0.0	0.0	(0.0)
	FY23 Proposed FY19-23 Spending	**$89.4**	**$112.3**	**$102.2**	**$121.8**	**$246.8**	**$672.6**

The format of the Cap table had changed from prior cap periods to account separately for MWRA spending, which excludes the local I/I grant and loan program and the local water pipeline loan spending which are both outside of MWRA's control. As in past Caps, contingency for each fiscal year is incorporated into the CIP to fund the uncertainties inherent to construction. The contingency budget is calculated as a percentage of budgeted expenditure outlays. Specifically, contingency is 7% for non-tunnel projects and 15% for tunnel projects. Inflation is added for unawarded construction contracts. Finally, the Cap excludes Chicopee Valley Aqueduct system projects.

FY24 Outlook Based on FY24 CIP

Looking ahead to FY24, the projected capital spending is $302.6 million. Projects with the largest budgeted spending in FY24 include Deer Island Asset Protection of $52.0 million, Infiltration/Inflow Local Financial Assistance of $42.9 million, Metropolitan Redundancy Interim Improvements of

$28.7 million, New Connecting Mains – Shaft 7 to WASM 3 of $26.6 million, Quabbin Transmission System of $15.0 million, Metropolitan Tunnel Redundancy of $14.4 million, Local Water System Assistance Program of $14.1 million, NIH Redundancy & Storage of $13.1 million, and Facility Asset Protection of $12.8 million.

In FY24, 77 contracts or phases of projects with a total budget of $371.2 million are expected to be awarded. Staff will be completing the design and progressing to the bid and award stage on several major projects such as the Deer Island Fire Alarm System Construction, Deer Island Motor Control Center and Switchgear Replacement Construction, HVAC Control System Replacement, Combined Heat & Power Design/ESDC/REI, NEH Improvements CP-2, Section 75 Extension CP-1, WASM 3 Rehab CP-2, and Hayes Pump Station Rehabilitation.

Please see Attachment E for FY24 Planned Contract Awards.

ATTACHMENT B

FY23 CIP Variance Report ($000s)

	FY23 Budget	FY23 Actuals	Actuals vs. Budget		Explanations
			$	%	
Wastewater					
Interception & Pumping (I&P)	$38,928	$24,385	($14,543)	-37.4%	Underspending Ward Street & Columbus Park Headworks Upgrades - Design/CA: $4.0M (completed some design and inspection tasks later than anticipated) Nut Island Odor Control & HVAC Improvements Phase 2 - Construction and CA/REI: $2.8M (contractor behind schedule) Siphon Structure Rehabilitation Construction: $2.0M, and Interceptor Renewal 7-Malden & Melrose - Construction, CA and REI: $1.6M (updated schedules) Prison Point Rehabilitation - Design/CA/RI: $1.3M (CA/RI services lower than budgeted due to cancellation of construction contract) Wastewater Meter System Equipment Replacement: $324k (timing of final work)
Treatment	$43,107	$16,126	($26,981)	-62.6%	Underspending Primary & Secondary Clarifier Rehab Phase 2 Construction and REI: $4.0M, DI Motor Control Center & Switchgear Replacement - Construction & Design/ESDC/REI: $3.4M, DITP Roofing Replacement: $3.0M, Deer Island Dystor Membrane Replacements: $2.5M, Clinton Digester Cover Replacement: $2.1M, Fire Alarm System Replacement - Construction: $2.0M, Cryo Plant Equipment Replacement Design/ESDC/REI: $881k, Combined Heat and Power - Design/ESDC/REI: $800k, and Digester & Storage Tank Rehabilitation Design/ESDC: $610k (updated schedules) South System Pump Station VFD Replacement Design/ESDC: $2.8M (construction schedule change) As-Needed Design: $1.8M (lower than projected task order work) Clinton Screw Pumps Replacement Phase 1 - Construction: $780k (longer than anticipated delivery of pumps) Landfill Cell #1 Closure: $500k (schedule change)
Residuals	$0	$0			
CSO	$2,663	$3,037	$374	14.0%	Overspending Primarily due to Fort Point Channel Sewer Separation: $750k (unplanned community managed work) Underspending CSO Condition Assessment: $0.2 M due to timing of consultant work.

ATTACHMENT B
FY23 CIP Variance Report ($000s)

	FY23 Budget	FY23 Actuals	Actuals vs. Budget		Explanations
			$	%	
Other Wastewater	$25,055	$14,081	($10,973)	-43.8%	Underspending I/I Local Financial Assistance: $11.0M (timing of community distributions of grants and loans)
Total Wastewater	**$109,752**	**$57,630**	**($52,122)**	**-47.5%**	
Waterworks					
Drinking Water Quality Improvements	$4,060	$2,547	($1,513)	-37.3%	Underspending CWTP Chemical Feed System Improvements - Construction: $707k, and Marlboro Pump Station Connection Construction: $273k (timing of work) CWTP Technical Assistance: $671k (lower than projected task order work)
Transmission	$58,883	$35,239	($23,644)	-40.2%	Underspending Waltham Water Pipeline - Construction and REI: $12.5M (long lead time for piping material and permitting delay) Wachusett Lower Gatehouse Pipe & Boiler Replacement - Construction: $3.2M (longer than anticipated equipment lead time and updated Notice to Proceed) Quabbin Maintenance Garage/Wash Bay/Storage Building - Construction: $2.9M, and CP-2 Shaft 5 Construction: $2.2M (schedule changes) Geotechnical Support Services: $2.5M (timing of support services) WASM/Spot Pond Supply Mains West (SPSM) Pressure Reducing Valves (PRV) - Construction: $751k (timing of work) Wachusett Lower Gatehouse Windows & Doors: $388k (long lead time for windows) Offset Overspending Tunnel Redundancy Preliminary Design & MEPA Review: $1.6M (timing of consultant work) WASM 3 Rehab CP-1: $751k (contractor progress)

ATTACHMENT B
FY23 CIP Variance Report ($000s)

	FY23 Budget	FY23 Actuals	Actuals vs. Budget		Explanations
			$	%	
Distribution & Pumping	$35,074	$39,953	$4,879	13.9%	Overspending Section 89/29 Replacement - Construction: $5.7M, and CP-1 NEH Improvements: $1.6M (contractors progress) Section 53 and 99 Connection - Design/CA: $792k, NEH Improvements Design - ESDC: $610k (timing of consultant work) Offset Underspending Cathodic Protection Shafts E, L, N & W Construction: $2.0M (scope changes) Section 56 Replacement/Saugus River - Design/CA: $968k (permitting delays) CP3-Sections 23, 24, 47 Rehabilitation and Final Design/CA/RI: $467k (timing of work)
Other Waterworks	$35,062	$11,730	($23,331)	-66.5%	Underspending Local Water Pipeline Financial Assistance Program: $21.9M (timing of community distributions) Electrical Distribution Upgrades at Southborough: 512k (timing of work)
Total Waterworks	**$133,079**	**$89,470**	**($43,609)**	**-32.8%**	
Business & Operations Support					
Total Business & Operations Support	**$35,222**	**$24,079**	**($11,144)**	**-31.6%**	Underspending Cabling: $3.9M, Lawson Upgrade: $1.8M, MAXIMO Interface Enhancements: $951k, and Oracle Database Appliance: $775k (timing of work) FY19-23 Vehicle Purchases: $1.7M (timing of purchases and supply chain issues) Security Equipment & Installation: $1.4M (timing of security initiatives) MSSP/SIEM: $914k (scope reduction) Offset Overspending Office Space Modifications: $3.0M (contract award was greater than budget)
Total MWRA	**$278,053**	**$171,178**	**($106,875)**	**-38.4%**	

ATTACHMENT C
FY23 CIP Planned Awards

*** Reason Codes:**

1. NTP issued in FY23
2. Project/Phase eliminated or being performed in-house; combined with another project, or phase completed but on hold.
3. NTP expected in FY24
4. Schedule change due to permitting.
5. Scope changes.
6. Changes in priorities.
7. Bidder Issue/Outside Design Delay/Contractor issue/Additional specifications review

ATTACHMENT C
FY23 CIP Planned Awards

Project	Contract No.	Subphase	FY23 Notice to Proceed	Total Contract Amount ($ in millions)	Award Amount ($ in millions)	Vendor	Schedule Change Reason Code *	Secondary Codes*
IT Infrastructure Program	**7802**	**Future Workplace**	**Jul-22**	**$0.5**	**$0.4**	**Multiple Purchases**	**1**	
Braintree-Weymouth Relief	**7995**	**IPS Transformer Replacement**	**Jul-22**	**$0.3**	**$0.3**	**Dagle Electrical Construction**	**1**	
Facility Asset Protection	**7555**	**Fuel Oil Tank Repl Constr Ph 2**	**Jul-22**	**$1.5**	**$1.8**	**MECO Environmental Services**	**1**	
Facility Asset Protection	**7785**	**Chelsea Creek Hdwks Radio Equipment**	**Jul-22**	**$0.4**	**$0.3**	**Green Mountain Communications**	**1**	
Waterworks Facility Asset	**7425**	**Electrical Distrib. Upgrades at Southborough**	**Jul-22**	**$2.6**	**$2.6**	**Dagle Electrical Construction**	**1**	
Waterworks Facility Asset	7711	Masonry/Struct Repairs Design/ESDC	Jul-22	$1.6			3	5
MWRA Facilities Management	**7980**	**Office Space Mods**	**Aug-22**	**$15.3**	**$19.6**	**WES Construction**	**1**	
Chelsea Trunk Sewer	**7915**	**CHE008 Pipe Replacement**	**Aug-22**	**$1.4**	**$1.6**	**D'Allessandro Corp.**	**1**	
Braintree-Weymouth Relief	**7366**	**B/W Improvements - Construction**	**Aug-22**	**$10.0**	**$13.5**	**Walsh Construction**	**1**	
Braintree-Weymouth Relief	**7683**	**B/W Improvements - REI**	**Aug-22**	**$0.8**	**$0.9**	**CDM Smith**	**1**	
DI Treatment Plant Asset Protection	7135	DI Distor Membrane Replacements	Aug-22	$4.0	$0.0		3	7
Clinton Wastewater Treatment Plant	7648	Digester Cover Replacement	Aug-22	$2.1	$0.0		3	7
Cathodic Protection Of Distribution Mains	6439	Cathodic Protection Shaft E, L, N & W	Aug-22	$0.8	$0.0		3	5
Carroll Water Treatment Plant	**7973**	**Technical Assistance 13**	**Aug-22**	**$1.2**	**$2.0**	**Hazen & Sawyer**	**1**	
Carroll Water Treatment Plant	**7974**	**Technical Assistance 14**	**Aug-22**	**$1.2**	**$2.0**	**Stantec**	**1**	
Applicat Improv Program	7656	Archiving & Data Mgmt	Sep-22	**$0.5**	**$0.1**	**Hub Technical Services**	**1**	
Siphon Structure Rehabilitation	6225	Construction	Sep-22	$8.3	$0.0		3	4
Siphon Structure Rehabilitation	7996	Siphon Structure Phase 1 REI	Sep-22	$0.2	$0.0		3	4
Facility Asset Protection	7508	Cottage Farm Chem Bld & Diesel Engine Des	Sep-22	$1.8	$0.0		2	
DI Treatment Plant Asset Protection	**7134**	**Radio Rptr Syst Upgr 2**	**Sep-22**	**$3.0**	**$2.5**	**Fischbach & Moore Electric Group**	**1**	
DI Treatment Plant Asset Protection	7139	Cryogenics Plant Equipment Repl Des-ESDC-REI	Sep-22	$6.3	$0.0		3	6
DI Treatment Plant Asset Protection	7734	DITP Roofing Replacement	Sep-22	$6.0	$0.0		3	6
IT Infrastructure Program	**7654**	**NetScalers**	**Oct-22**	**$0.1**	**$0.1**	**Eplus**	**1**	
Facility Asset Protection	7827	Hingham Pump Station Rehab Design	Oct-22	$1.9	$0.0		3	6
DI Treatment Plant Asset Protection	7052	Digester & Storage Tank Rehab Design/ESDC	Oct-22	$6.0	$0.0		3	6
DI Treatment Plant Asset Protection	7110	HVAC Design/ESDC	Oct-22	$2.4	$0.0		3	5
DI Treatment Plant Asset Protection	**7395**	**Clarifier Rehab Phase 2 - Construction**	**Oct-22**	**$180.0**	**$289.4**	**Walsh Construction**	**1**	
DI Treatment Plant Asset Protection	7420	Motor Control Center & Switchgear Replace Const	Oct-22	$19.5	$0.0		3	7
Clinton Wastewater Treatment Plant	7754	Landfill Cell #1 Closure	Oct-22	$1.0	$0.0		2	

ATTACHMENT C
FY23 CIP Planned Awards

Project	Contract No.	Subphase	FY23 Notice to Proceed	Total Contract Amount ($ in millions)	Award Amount ($ in millions)	Vendor	Schedule Change Reason Code *	Secondary Codes*
Waterworks Facility Asset	7729	Beacon St Line Des/ESDC	Oct-22	$1.2	$0.0		3	5
Quabbin Transmission Syst.	**7380**	**Wach LGH Pipe & Boiler Rpl Const**	**Oct-22**	**$5.1**	**$19.3**	**JF White Contracting Company**	**1**	
Quabbin Transmission Syst.	**7717**	**Wach LGH Pipe Repl and Southborough Electrical Upgrade REI**	**Oct-22**	**$0.6**	**$0.9**	**Hazen & Sawyer**	**1**	
Metro Redundancy Interim Improvements	7671	CP2 Shafts 5	Oct-22	**$2.5**	**$0.0**		**3**	7
Capital Maintenance Planni	**7990**	**As-Needed Design Contract 20**	**Nov-22**	**$2.0**	**$3.0**	**Hazen & Sawyer**	**1**	
Facility Asset Protection	7689	Somerville-Marginal CSO Facility Rehab Des/CA	Nov-22	**$2.4**	**$0.0**		**3**	5
Facility Asset Protection	7989	Belle Isle Rehab Des/ESDC/REI	Nov-22	**$1.0**	**$0.0**		**3**	5
Watershed Division Capital Improvements	7577	Maint Gar/Wash Bay/Stor Bldg Constr	Nov-22	**$3.9**	**$0.0**		**3**	6
Capital Maintenance Planning	**7991**	**As-Needed Design Contract 21**	**Dec-22**	**$2.0**	**$3.0**	**Kleinfelder**	**1**	
Applications Improvements Program	7286	Lawson Upgrade	Dec-22	**$7.6**	**$0.0**		**3**	5
IT Infrastructure Program	7664	Instrumentation & Controls IT	Dec-22	**$0.3**	**$0.0**		**3**	5
DI Treatment Plant Asset Protection	7397	Clarifier Rehab Phase 2 - REI	Dec-22	**$7.3**	**$0.0**		**3**	7
DI Treatment Plant Asset Protection	8018	As-Needed Design 10-1	Dec-22	**$1.8**	**$0.0**		**3**	6
DI Treatment Plant Asset Protection	7981	As-Needed Design 10-2	Dec-22	**$1.8**	**$0.0**		**3**	6
DI Treatment Plant Asset Protection	7982	As-Needed Design 10-3	Dec-22	**$1.8**	**$0.0**		**3**	6
Metro Tunnel Redundancy	**7557**	**Geotechnical Support Services**	**Dec-22**	**$13.5**	**$12.8**	**GEI-McMillen Jacobs JV**	**1**	
Metro Redundancy Interim Improvements	7702	CP2 Tops of Shafts REI	Dec-22	**$0.3**	**$0.0**		**3**	7
Watershed Div Cap Impr	7569	QAB Concept Des Report	Dec-22	**$0.3**	**$0.0**		**3**	5
Applicat Improvement Program	7666	PI (OSI)	Jan-23	**$0.3**	**$0.0**		**3**	6
Facility Asset Protection	7217	Inter Ren 7-Malden & Melrose-Const	Jan-23	**$8.1**	**$0.0**		**4**	
Facility Asset Protection	7751	Intercept Renewal 7 REI	Jan-23	**$1.3**	**$0.0**		**4**	
DI Treatment Plant Asset Protection	6730	CHP Des/ESDC/REI	Jan-23	**$14.5**	**$0.0**		**3**	5
Metro Redundancy Interim Improvements	6543	WASM 3 Rehab CP-2	Jan-23	**$49.8**	**$0.0**		**3**	5
New Connect Mains-Shaft 7 to WASM 3	**7680**	**Sect 24, 25, 47, 75, 59, & 60 REI**	**Feb-23**	**$4.3**	**$1.9**	**CDM Smith**	**1**	0
Application Improvements Program	7652	Hyperion	Mar-23	**$0.4**	**$0.0**		**6**	0
IT Infrastructure Program	**7661**	**Core Switches**	**Mar-23**	**$0.5**	**$0.4**	**Presidio Network Solutions**	**1**	0
DI Treatment Plant Asset Prot	7051	Fire Alarm System Replacement - Construc	Mar-23	**$31.0**	**$0.0**		**3**	5
DI Treatment Plant Asset Protection	7088	Odor Control Rehab - Design/ESDC	Mar-23	**$8.5**	**$0.0**		**3**	6
DI Treatment Plant Asset Protection	7094	HVAC Equip Replac REI	Mar-23	**$6.2**	**$0.0**		**3**	6

ATTACHMENT C
FY23 CIP Planned Awards

Project	Contract No.	Subphase	FY23 Notice to Proceed	Total Contract Amount ($ in millions)	Award Amount ($ in millions)	Vendor	Schedule Change Reason Code *	Secondary Codes*
DI Treatment Plant Asset Protection	7426	Fire System Replacement - REI	Mar-23	**$3.5**	**$0.0**		**3**	5
South Spine Distrib Mains	7120	Section 22 - Design/ESDC	Mar-23	**$2.7**	**$0.0**		**3**	6
CWTP Asset Protection	**7737**	**Corrosion Control Pipe Loop Study**	**Mar-23**	**$0.5**	**$0.9**	**CDM Smith**	**1**	0
Quabbin Transmission Syst.	6940	Oakdale High Line Repl. Constr	Mar-23	**$0.5**	**$0.0**		**6**	0
New Connect Mains-Shaft 7 to WASM 3	**6956**	**Sect 25 & 24 - Const CP-2**	**Apr-23**	**$14.2**	**$18.7**	**Albanese D&S**	**1**	0
Waterworks Facility Asset	7676	Steel Tanks Impr REI	Apr-23	**$1.1**	**$0.0**		**3**	6
New Connect Mains-Shaft 7 to WASM 3	7484	Section 75 Extension - Const CP-1	May-23	**$12.1**	**$0.0**		**3**	6
Rehab of Other Pump Stns	7526	PS Rehab-Des/CA	May-23	**$4.0**	**$0.0**		**6**	0
Spot Pond Supply Mains Rehab	7787	Walnut St Bridge Truss Repair	May-23	**$0.8**	**$0.0**		**6**	0
Metro Redundancy Interim Improvements	7600	Shaft 5 Bldg Impr. Constr.	May-23	**$3.0**	**$0.0**		**3**	5
Applicat Improvements Program	7650	MAXIMO Upgrade	Jun-23	**$0.6**	**$0.0**		**3**	6
69 Total Planned Contracts				**$503.6**				
24 Planned Awards Achieved					**$397.9**			
Unplanned Awards								
628 Metropolital Resundancy Interim Improvements	**7672**	**Waltham Water Pipeline REI**	**Jun-22**	**$2.9**	**$2.9**	**CDM Smith**	**1**	
942 Info Security Program ISP	**7658**	**MSSP/SIEM**	**Jun-22**	**$5.2**	**$0.4**	**NWN Corporation**	**1**	
881 Equipment Purchase	**6760**	**Security Equipment & Installation**			**$0.5**	**R.A.D. Corp.**	**1**	
3 Unplanned Awards Achieved					**$3.8**			
27 Total Awards in FY23					**$401.7**			

ATTACHMENT D

Linear Footage of Rehabilitated or New Pipelines

FY23 (July 2022 - June 2023)

	Contract #	Type	Linear Feet
WASTEWATER PROJECTS			
Chelsea 008 Pipe Replacement	7548	New	38
Braintree-Weymouth Pump Station Improvements	7366	New	50
WATERWORKS PROJECTS			
WASM 3 CP-1	7067	Rehab	4,670
Northern Extra High CP-1	6522	New	4,702
NIH Sections 89 & 29 Replacement	7117	New	4,156
CP-3 Sections 23,24,47 Rehab	6392	New	7,636
		Rehab	4,550
WASM PRV Improvements	7563	New	443
Quabbin Water Supply	7753	New	1,748

TOTAL PIPELINE REHABILITATED OR CONSTRUCTED IN FY23

	Linear Feet	Miles
Wastewater Projects	88	0.02
Water Projects	27,905	5.3
Total	**27,993**	**5.3**

ATTACHMENT E
FY24 Planned Contract Awards

Project	Contract No.	Subphase	Notice to Proceed	FY24 Budget
IT Infrastructure Program	7663	Disaster Recovery	Jul-23	$1.0
IT Infrastructure Program	7664	Instrumentation & Controls IT	Jul-23	$0.3
Facility Asset Protection	7392	Cottage Farm PCB Abatement - Design/CA	Jul-23	$1.8
Clinton Wastewater Treatment Plant	8071	Influent Sampler Enclosure	Jul-23	$0.2
Central Monitoring System	7583	Other Design and Prgmg Srvcs	Jul-23	$2.9
Facility Asset Protection	7989	Belle Isle Rehab Des/ESDC/REI	Aug-23	$1.9
DI Treatment Plant Asset Protection	7734	DITP Roofing Replacement	Aug-23	$9.0
Clinton Wastewater Treatment Plant	7735	Clinton Clariflocculator Valve Repl	Aug-23	$1.1
DI Treatment Plant Asset Protection	6730	Combined Heat Poweer Design/ESDC/REI	Sep-23	$14.5
DI Treatment Plant Asset Protection	8018	As-Needed Design 10-1	Sep-23	$2.4
DI Treatment Plant Asset Protection	7981	As-Needed Design 10-2	Sep-23	$2.4
DI Treatment Plant Asset Protection	7982	As-Needed Design 10-3	Sep-23	$2.4
Waterworks Facility Asset Protection	7676	Steel Tanks Impr Resident Engineering Inspection	Sep-23	$1.1
Waterworks Facility Asset Protection	7493	Steel Tank/Impr Constr	Sep-23	$11.5
Info Security Program ISP	7440	Information Security Assessments	Oct-23	$0.4
Hydraulic Relief Projects	7985	Somm Marginal New Pipe Connect	Oct-23	$1.7
Hydraulic Relief Projects	8070	Som.-Marg.New Pipe Conn. REI	Oct-23	$0.5
Siphon Structure Rehabilitation	6225	Construction	Oct-23	$8.3
Siphon Structure Rehabilitation	7996	Siphon Structure Phase 1 REI	Oct-23	$1.0
Facility Asset Protection	7689	Somerville-Marginal CSO Facility Rehab Design/Construction Administration	Oct-23	$3.0
Facility Asset Protection	8013	Prison Point Const. 2 Discharge Piping Rehab	Oct-23	$0.8
DI Treatment Plant Asset Protection	7110	HVAC Design/ESDC	Oct-23	$3.0
Clinton Wastewatr Treatment Plant	7648	Digester Cover Replac	Oct-23	$2.1
New Connect Mains-Shaft 7 to WASM 3	7484	Section 75 Extension - Const CP-1	Oct-23	$14.0
New Connect Mains-Shaft 7 to WASM 3	8067	Sect 75 Ext REI CP-1	Oct-23	$1.2
CWTP Asset Protection	7755	CWTP Parapet Wall Repairs	Oct-23	$0.8
Dam Projects	7615	Sudbury/Foss Dam Construction	Oct-23	$3.2
Metro Redundancy Interim Impr.	7600	Shaft 5 Building Impr.Impr. Constr.	Oct-23	$3.0
Metro Redundancy Interim Impr.	7670	CP3 Shafts 7, 7B, 7C, 7D	Oct-23	$8.6
Metro Redundancy Interim Impr.	7673	Shaft 5 Impr REI	Oct-23	$0.3
Metro Redundancy Interim Impr.	7703	CP3 Tops of Shafts REI	Oct-23	$0.3
Facility Asset Protection	7637	Fuel Oil Tank Replacement Constr Ph 3	Nov-23	$3.8
DI Treatment Plant Asset Protection	6852	Chemical Pipe Replacement - Construction	Nov-23	$7.0

ATTACHMENT E
FY24 Planned Contract Awards

Project	Contract No.	Subphase	Notice to Proceed	FY24 Budget
DI Treatment Plant Asset Protection	7052	Digester & Storage Tank Rehab Design/ESDC	Nov-23	$6.0
DI Treatment Plant Asset Protection	7135	DI Distor Membrane Replacements	Nov-23	$5.0
Waterworks Facility Asset Protection	8021	Brutsch Treatment.Plant Sodium Hypo Upgr.	Nov-23	$0.7
Quabbin Transmission Syst.	8061	Heat Pumps WLGH/N.Nep/Newt PS	Nov-23	$1.1
Dam Projects	7348	Quinapoxet Dam Removal - Construction	Nov-23	$2.0
Dam Projects	7690	Quinapoxet Rem Dam REI	Nov-23	$0.1
Metro Redundancy Interim Impr.	7671	CP2 Shafts 5	Nov-23	$4.9
Metro Redundancy Interim Impr.	7702	CP2 Tops of Shafts REI	Nov-23	$0.5
Application Improvement Program	**7286**	**Lawson Upgrade**	**Dec-23**	**$7.6**
Facility Asset Protection	7375	Hayes Pump Station Rehab Const	Dec-23	$19.5
Facility Asset Protection	7668	Hayes Pump St Rehab REI	Dec-23	$1.0
Facility Asset Protection	7827	Hingham Pump Station Rehab Des	Dec-23	$1.9
DI Treatment Plant Asset Protection	7051	Fire Alarm System Replacement - Construction	Dec-23	$35.0
DI Treatment Plant Asset Protection	7088	Odor Control Rehab - Design/ESDC	Dec-23	$8.5
DI Treatment Plant Asset Protection	7169	Gas Protect System Replac Ph 2	Dec-23	$5.5
DI Treatment Plant Asset Protection	7397	Clarifier Rehab Phase 2 - REI	Dec-23	$7.3
DI Treatment Plant Asset Protection	7420	Motor Control Center & Switchgear Replace Construction	Dec-23	$23.5
DI Treatment Plant Asset Protection	7426	Fire System Replacement - REI	Dec-23	$4.8
Northern Extra High Serv New Pipeline	7725	CP-2 NEH Improvements	Dec-23	$20.7
Northern Extra High Serv New Pipeline	8004	REI CP-2	Dec-23	$1.5
Central Monitoring System	7585	Other Equipment/Hardware	Dec-23	$0.8
Watershed Divsion Capital Improvements	7569	Quabbin Admin Building Concept Design Report	Dec-23	$0.3
Watershed Divsion Capital Improvements	7577	Maintenance Garage/Wash Bay/Storage Bldg Construction	Dec-23	$4.8
Application Improvement Program	7666	PI (OSI)	Jan-24	$0.3
Info Security Program ISP	7657	ITSM Access Management	Jan-24	$0.3
West Roxbury Tunnel	6898	Tunnel Inspection	Jan-24	$0.7
Facility Asset Protection	7421	Sections 4, 5, 6, 186 - Design CA/RI	Jan-24	$2.0
Cathodic Protection Of Distribution Mains	6439	Cathodic Protection Shafts E,L, N&W Construction	Jan-24	$5.1
Cathodic Protection Of Distribution Mains	7610	Cath Pro Shafts E,L,N&W REI	Jan-24	$1.0
NIH Redundancy & Storage	7311	NIH Storage - Design	Jan-24	$6.7
Waterworks Facility Asset Protection	7711	Masonry/Structural Repair Condition Assessment/Evaluation	Jan-24	$1.1
Dam Projects	8058	Foss Reservoir 3 Sluice Gates-Repoint Constr.	Jan-24	$1.2
Waterworks Facility Asset Protection	7729	Beacon St Line Des/ESDC	Feb-24	$4.9

ATTACHMENT E
FY24 Planned Contract Awards

Project	Contract No.	Subphase	Notice to Proceed	FY24 Budget
Application Improvement Program	7650	MAXIMO Upgrade	Mar-24	$1.6
DI Treatment Plant Asset Protection	7139	Cryo Plant Equipment Repl Design-ESDC-REI	Mar-24	$6.3
Clinton Wastewater Treatment Plant	7591	Screw Pump Replacement Ph 2 Construction	Mar-24	$3.5
South Spine Distribution Mains	7120	Section 22 - Design/ESDC	Mar-24	$2.7
Waterworks Facility Asset Protection	7727	Steel Tank Improv Constr Ph2	Mar-24	$7.1
Waterworks Facility Asset Protection	7728	Steel Tank Improv REI Ph2	Mar-24	$0.8
Metropolitan Redundancy Interim Improvements	6543	WASM 3 Rehab CP-2	Mar-24	$13.7
Facility Asset Protection	7410	CB1 Sect 23, 24, 25, 26 Des/ESDC	Apr-24	$2.0
DI Treatment Plant Asset Protection	6725	Barge Berth Design/ESDC/REI	Apr-24	$4.0
DI Treatment Plant Asset Protection	7094	HVAC Equip Replac REI	Jun-24	$6.2
DI Treatment Plant Asset Protection	7745	HVAC Control System Replacement	Jun-24	$22.0

77 Total Planned Contracts **$371.2**

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: September 13, 2023
SUBJECT: Surplus Sewer Easement of the Abandoned Upper Neponset Valley Sewer

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COMMITTEE: Administration, Finance & Audit

____ INFORMATION
__X__ VOTE

Michele S. Gillen
Director, Administration

Colleen Guida, Project Manager, Real Property
Preparer/Title

David W. Coppes, PE
Chief Operating Officer

RECOMMENDATION:

To declare as surplus to the Authority's sewer system construction, maintenance, or operation needs and purposes a certain portion of an existing Commonwealth of Massachusetts sewer easement under the care, custody and control of the Authority and located on a parcel of land with an address of 49 Charles Park Road, Boston, as shown on the attached plan (Attachment A), and to return it to the control of the Massachusetts Division of Capital Asset Management and Maintenance (DCAMM) in accordance with Section 9(c) of Chapter 372 of the Acts of 1984 (Enabling Act), as amended.

DISCUSSION:

Section 9(c) of MWRA's Enabling Act sets forth the procedures by which the Authority may relinquish its jurisdiction and control over Commonwealth-owned water and sewer facilities that are under MWRA's care, control, and jurisdiction and MWRA finds to be surplus to its water and sewer system needs. MWRA's policy for Disposition of Real Property requires that, for property acquired through the enabling legislation, prior to declaring a site as surplus, the responsible division must first declare it surplus, confirm that it is surplus Authority-wide, obtain Board approval of this surplus designation, and finally, dispose of it by notifying DCAMM.

In 1897, the Commonwealth of Massachusetts Board of Sewerage Commissioners acquired sewer easements in the City of Boston and the Towns of Dedham and Milton for the construction of the Neponset River Valley Sewer System, including the Upper Neponset Valley Sewer. The Upper Neponset Valley Sewer, which was constructed between 1896 and 1902, extended approximately four miles through West Roxbury and Newton. The system received wastewater from the communities of West Roxbury, Newton, Brookline and a small portion of Dedham. Over time, it was determined that this system did not have the hydraulic capacity to efficiently transport the volume of wastewater flows during wet weather.

In order to address this inadequacy, beginning in 2005, MWRA replaced approximately 2.3 miles of sewer pipe, which included the construction of the Upper Neponset Valley Replacement Sewer on VFW Parkway, Boston. Portions of the Upper Neponset Valley Sewer were filled, capped and abandoned in place, including the sewer pipe crossing the parcel of land located at 49 Charles Park Road in the City of Boston.

NORA LLC owns the property located at 45 and 49 Charles Park Road, Boston and 206 Gardner Street, Boston. In order to redevelop this property, NORA requested that MWRA release a portion of the approximately 20-foot-wide sewer easement crossing the parcel at 49 Charles Park Road. The Upper Neponset Valley Replacement Sewer is fully operational and MWRA has no future need for this portion of the old sewer easement. Therefore, David W. Coppes, MWRA's Chief Operating Officer, declared this portion of the sewer easement as surplus to the construction, maintenance, or operational needs of MWRA and determined that such disposition will not impair the maintenance and operation of the sewer or waterworks systems. Accordingly, staff recommend that the portion of the 20-foot-wide sewer easement crossing the parcel at 49 Charles Park Road, Boston, as shown in Attachment A, be declared surplus to MWRA's needs.

BUDGET/FISCAL IMPACTS:

There is no fiscal impact from this transaction.

ATTACHMENT:

Map of Proposed Surplus Sewer Easement

Attachment A

Proposed Surplus Sewer Easement

49 Charles Park Road, Boston

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: September 13, 2023
SUBJECT: Security Equipment Maintenance and Repair Services
Viscom Systems, Inc.
Contract EXE-043, Change Order 2

COMMITTEE: Administration, Finance & Audit

____ INFORMATION
__X__ VOTE

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

Gary S. Cacace
Director of Security

Staff originally sought approval for this proposed change order at the July 2023 Board of Directors meeting. Following a presentation, several Board members had questions regarding Viscom Systems, Inc.'s DCAMM certification status as it relates to both this contract and the requested time extension that is part of this proposed change order. Since the July Board meeting, staff have gathered additional information on how other state agencies procure these services. Staff have also spent time re-evaluating how the Security Equipment Maintenance and Repair Services contract is structured. At this time, staff are recommending that going forward, this work would be broken into two contracts: the maintenance and repair component of the scope will be bid as one contract while the integration and programming services will be bid as a separate contract. Existing state blanket contracts covering these two categories have been identified. Using this approach will allow the Authority to tap into a larger pool of qualified vendors, which will allow the opportunity for increased competition. As a result, staff are returning to the Board this month seeking a shorter time extension to allow for these new procurements to take place without a lapse in receiving these important services.

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Change Order 2 to Contract EXE-043, Security Equipment Maintenance and Repair Services, with Viscom Systems, Inc. for an amount not to exceed $186,061.15, increasing the contract amount from $2,570,803.30 to $2,756,864.45, and extending the contract term by 90 calendar days from September 28, 2023, to December 27, 2023.

DISCUSSION:

Contract EXE-043 provides preventive and scheduled maintenance, and as-needed repair services for all components of MWRA's extensive security system. Provisions for software integration and response to unforeseen emergencies are also included in the contract. This contract was originally awarded in March 2020 with an initial end date of April 1, 2023. In March 2023, the duration of Contract EXE-043 was extended by 180 days with Change Order 1 under delegated authority. This additional time was used to address outstanding maintenance work and facilitate the security

needs associated with the Authority's move out of Charlestown and consolidation into its Chelsea and Deer Island locations. The contract is currently set to expire on September 28, 2023.

Historically, MWRA has bid this contract as a Chapter 149 project, given that new installations (such as cameras and card readers at a new location) often involve construction activities. Bidding the contract in this manner has meant that any potential bidder must have a DCAMM certification in one of three related categories (Alarm Systems / Electrical / Electronic Security Systems) at the time they submit a bid. Since the scope of this contract has also included security equipment integration and programming services (necessary to properly integrate equipment into the system), the Authority has typically seen very limited competition. This is likely due to the fact that there are not many companies that both install security equipment and have the ability to also provide programming and integration services.

The reprocurement of the security services contract began in June when a notice of the bidding opportunity was advertised. The prior two procurements of this three-year contract have seen limited competition, with the incumbent, Viscom Systems, Inc., being the sole bidder each time. Soon after the reprocurement process had commenced, the Authority was informed by Viscom that its certification renewal application had been denied by DCAMM. With the current contract set to expire in September, and knowing that historically MWRA received only one bid, staff sought an additional extension of the contract term and increase in the contract amount at the July 2023 Board meeting.

Since the July Board meeting, staff conducted outreach to other state agencies and re-evaluated the scope of the existing contract. Moving forward the scope of the next contract will be divided into two separate parts. The maintenance and repair components of the scope will be bid as one contract while the integration and programming components will be bid as a separate contract. Two existing state blanket contracts, ITC71 - Security Surveillance, Monitoring and Access Control System and ITT72 - Network Services, Communications Services and Related Equipment, will be utilized for these procurements. The preexisting pools of pre-qualified vendors available through these contracts will provide an opportunity for more competition.

This Change Order

Change Order 2 consists of the following two items:

Extend the Contract Time by 90 Calendar Days $0.00

Staff are seeking a 90-day time extension to allow for the further review of the current contract scope and the subsequent procurement of successor contracts. As noted above, it is anticipated that repackaging this scope will allow MWRA to utilize existing state blanket contracts and provide the opportunity for increased competition. This additional time will also allow MWRA Security Department to review and align best practices, contract standards and control access management amongst peer organizations within similar industries while maintaining the function of the security system on a daily basis in order to ensure proper protection for MWRA's assets.

Increases in Unit Price Items and Allowances $186,061.15

MWRA's security network contains over 1,000 alarm points, CCTV cameras and access control devices. The size of this system has historically required a vendor to mitigate events and restore functionality on a daily basis. This item is comprised of seven increases in the estimated quantities

of individual bid items and one increase in an allowance item. The additional funds will be utilized for routine preventative maintenance, non-emergency and emergency repair work required on a day-to-day basis. The extension will not be used to initiate any new equipment installations or projects that may require a DCAMM certification under the terms of the existing contract. The unit prices for the line items remain unchanged from Change Order 1 and include preventative maintenance.

Based on the above, staff recommend the Board's approval of an increase in the contract sum of an amount not to exceed $186,061.15, from $2,570,803.30 to $2,756,864.45, and an extension of the contract term by 90 calendar days from September 28, 2023, to December 27, 2023.

Contract Summary:

	Amount	**Time**	**Dated**
Original Contract	$2,198,681.00	1,095 Days	4/01/20
Change Orders:			
Change Order 1*	$372,122.30	180 Days	03/31/23
Change Order 2	$186,061.15	90 Days	Pending
Total Change Orders:	$558,183.45	270 Days	
Adjusted Contract:	$2,756,864.45	1,365 Days	

**Approved under delegated authority*

If Change Order 2 is approved, the cumulative total value of all change orders to this contract will be $558,183.45 or 25.38% of the original contract amount.

BUDGET/FISCAL IMPACT:

The FY2024 Current Expense Budget includes sufficient funds for this change order.

MBE/WBE PARTICIPATION:

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

ATTACHMENT:

Table of Adjustments in Unit Price Items and an Allowance

Contract EXE-043, Change Order 2

Table of Adjustments in Unit Price Items, Allowances and Change Order Item

	Bid Item	Original Quantity	Unit Price/ Allowance Amount	Previous Quantity Adjustments	Increase This Change Order	New Rate	Total Increase Change Order	Reason for Increase
1	Scheduled Preventive Maintenance Services	5,235 hours	$89.95	700 hours	350 hours	$95.35	$33,372.50	Preventive maintenance is required because there were delays performing maintenance during the original contract term and that work will continue through this extension.
2	Non-Emergency On-Call Maintenance Services	6,790 hours	$89.95	1,000 hours	500 hours	$95.35	$47,675.00	Additional time is necessary based on reasonable assumptions and the history of the contract to complete this work during the time extension.
3	Emergency On-Call Services	740 hours	$131.45	50 hours	25 hours	$139.92	$3,498.00	Additional time is necessary based on reasonable assumptions and the history of contract to complete this work during the time extension.
4	Integration and Programming Services	3,735 hours	$99.45	250 hours	125 hours	$105.41	$13,176.25	Telecommunications upgrade work will be required to continue through this time extension.

	Bid Item	Original Quantity	Unit Price/ Allowance Amount	Previous Quantity Adjustments	Increase This Change Order	New Rate	Total Increase Change Order	Reason for Increase
5	Scheduled Information Technology System	856 hours	$99.45	50 hours	25 hours	$105.41	$2,635.25	Additional time is necessary to conduct anticipated support work needed for integrations and service projects that will occur during the time extension.
6	Non-Emergency On-Call Technology System Operation, Maintenance	1,231 hours	$99.45	150 hours	75 hours	$105.41	$7,905.75	Additional time is necessary based on reasonable assumptions and the history of contract to complete this work during the time extension.
7	Emergency On-Call Technology System Operation, Maintenance	215 hours	$131.45	40 hours	20 hours	$139.92	$2,798.40	Additional time is necessary based on reasonable assumptions and the history of the contract to complete this work during the time extension.
8	Spare Parts and Replacement Parts	$412,500	Allowance	$150,000.00	$75,000.00	N/A	$75,000.00	The anticipated maintenance required during this extension of time will require increased and additional purchases of materials, including but not limited to cable, cameras, card readers and alarm points.
Total Amount							**$186,061.15**	