



MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director
Chair: K. Theoharides
Vice-Chair: J. Carroll
Secretary: A. Pappastergion
Board Members:
C. Cook
P. Flanagan
J. Foti
B. Peña
H. Vitale
J. Walsh
P. Walsh
J. Wolowicz

BOARD OF DIRECTORS' MEETING

To be Held on Wednesday, February 16, 2022

Time: 1:00pm

To be Held Virtually

Pursuant to An Act Relative to Extending Certain COVID-19
Measures Adopted During the State of Emergency.

WebEx Meeting Link for Board Members and Panelists

<https://mwra.webex.com/mwra/onstage/g.php?MTID=ec1b5b8d3a045c9b65f3afc6f1e76e500>

There is no password for Board Members or Panelists

AGENDA

I. APPROVAL OF MINUTES

II. REPORT OF THE CHAIR

III. REPORT OF THE EXECUTIVE DIRECTOR

IV. EXECUTIVE SESSION

i. Approval of January 19, 2022 Executive Session Minutes

A. Real Estate

1. Watershed Land Acquisition

B. Litigation

1. Prison Point Update (verbal)

2. Authorization to Increase Budget and Extend Term for Outside Counsel in DPU Matters: Foley Hoag LLP

3. U.S. and Massachusetts Port Authority v. NSTAR Electric Company d/b/a, Eversource, Harbor Electric Energy Co., and Massachusetts Water Resources Authority, USDC No. 16-11470-RGS (Cross-Harbor Cable Litigation), Authorization to Extend Term for Outside Counsel: Foley Hoag LLP

4. Annual Litigation and Claims Summary

Telephone: (617) 242-6000
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V. WATER POLICY AND OVERSIGHT

A. Information

1. Report on 2021 Water Use Trends and Reservoir Status
2. Metropolitan Redundancy Interim Improvements Projects Update

B. Contract Awards

1. Northern Extra Pipeline Improvements Section 63 (Lexington): Albanese D&S Inc., Contract 6522

C. Contract Amendments/Change Orders

1. John J. Carroll Water Treatment Plant Sodium Hypochlorite System Modifications: Harding and Smith, LLC Contract 7085H, Change Order 5

VI. PERSONNEL & COMPENSATION

A. Information

1. Update on Diversity, Equity and Inclusion Initiatives

B. Approvals

1. Approval of the 2022 Affirmative Action Plan
2. PCR Amendments – February 2022

VII. ADMINISTRATION, FINANCE & AUDIT

A. Information

1. FY2022 Second Quarter Orange Notebook
2. Delegated Authority Report – January 2022
3. FY2022 Mid-Year Capital Project Spending Report
4. FY2022 Financial Update and Summary as of January 2022
5. Preliminary FY2023 Water and Sewer Assessments

B. Approvals

1. Transmittal of FY2023 Proposed Current Expense Budget
2. Proposed Amendments to the Management Policies of the Board of Directors

VII. ADMINISTRATION, FINANCE & AUDIT (Continued)

C. Contract Awards

1. Groundskeeping Services, Metropolitan Boston: C&W Services, Contract OP-439
2. New Next Generation Firewall System: ePlus Technology, Inc., WRA-5073Q, State Contract ITS74

VIII. WASTEWATER POLICY & OVERSIGHT

A. Contact Amendments/Change Orders

1. CSO Post-Construction Monitoring and Performance Assessment: AECOM Technical Services, Inc., Contract 7572, Amendment 3
2. Nut Island Headworks Odor Control and HVAC System Improvements: Walsh Construction Co. II, LLC, Contract 7548, Change Order 9

IX. CORRESPONDENCE TO THE BOARD

- A. Water Supply Citizens Advisory Committee (WSCAC) Letter Regarding CSXT Settlement Agreement

X. OTHER BUSINESS

XI. ADJOURNMENT

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Board of Directors

January 19, 2022

A meeting of the Massachusetts Water Resources Authority (“MWRA”) Board of Directors was held on January 19, 2022. The meeting was conducted virtually, pursuant to Chapter 20 of the Acts of 2021, An Act Relative to Extending Certain COVID-19 Measures Adopted During the State of Emergency. Chair Theoharides presided remotely. Also participating remotely from the Board were Messrs. Cook, Flanagan, Foti, Pappastergion, Peña, Vitale, J. Walsh, and P. Walsh, and Ms. Wolowicz. Mr. Carroll was absent.

MWRA staff in attendance virtually included Frederick Laskey, Executive Director; Carolyn Francisco Murphy, General Counsel; David Coppes, Chief Operating Officer; Carolyn Fiore, Deputy Chief Operating Officer; Thomas Durkin, Director of Finance; Michele Gillen, Director of Administration; Kathy Murtagh, Director, Tunnel Redundancy; Charles Ryan, Director, Wastewater Operations and Maintenance; David Duest, Director, Deer Island Treatment Plant; John Colbert, Chief Engineer; Matthew Horan, Deputy Director of Finance/Treasurer; Stephen Estes-Smargiassi, Director, Planning and Sustainability; Lisa Hamilton, Assistant Director, Engineering; Andrea Murphy, Director, Human Resources; Rebecca Weidman, Director, Environmental and Regulatory Affairs; Cori Barrett, Director, Construction; Michael Cole, Director, Budget; Paula Weadick, Director, MIS; Douglas Rice, Director, Procurement; and Assistant Secretaries Ria Convery and Kristin MacDougall. Vandana Rao, Executive Office of Environmental Affairs (EEA), and Joseph Favaloro, MWRA Advisory Board, were also in attendance virtually.

Chair Theoharides called the meeting to order at 12:34pm. MWRA General Counsel Francisco Murphy took roll call of Board Members in attendance. The Chair announced that except for Executive Session, the meeting was open to the public virtually, via a link posted on MWRA’s website (www.mwra.com). She added that the meeting would be recorded, and that the agenda and meeting materials were available on MWRA’s website.

All motions were individually made and presented for discussion and deliberation. MWRA General Counsel Francisco Murphy explained that all motions would be individually presented and given an opportunity for discussion and deliberation; further, that after discussion and deliberation, any Board member could request an individual roll call vote on that motion, where Board Members could vote affirmatively or in the negative, or abstain from voting. She also said that if no request for an individual vote were made or concerns raised, the motion would advance for an omnibus roll call vote at the conclusion of all the presentations.

APPROVAL OF DECEMBER 15, 2021 MINUTES

A motion was duly made and seconded to approve the minutes of the Board of Directors’ meeting of December 15, 2021. Chair Theoharides called for any questions, discussion, or objections. Hearing none, she referred the motion to an omnibus roll call vote. (ref. I)

REPORT OF THE CHAIR

Chair Theoharides announced that EEA had unveiled its online Massachusetts Drought Dashboard, to provide regularly updated information for the indices outlined in the Massachusetts Drought Management Plan. She described the dashboard's detail pages and noted that the dashboard features products from federal agencies, such as monthly and seasonal drought outlooks, temperature, and snow departure maps. The Chair added that the tool would support the projection of 21st century climate and hydrologic characteristics in Massachusetts using a weather generator. She said that the dashboard was a collaborative effort with the US Geological Survey, Cornell University, Tufts University, the EEA climate team, and Resilient MA. Finally, Chair Theoharides thanked Vandana Rao, the dashboard team and the MWRA staff who participated in the Task Force for their contributions to the project. (ref. II)

REPORT OF THE EXECUTIVE DIRECTOR

MWRA Executive Director Fred Laskey updated Board members on MWRA staff Covid-related absences, which to date had dropped to 27 from a peak of 100. He explained the latest MWRA Biobot wastewater coronavirus tracking results and history of the Biobot program's development. Mr. Laskey thanked Steve Rhode, MWRA's Director of Lab Services and MWRA lab staff for their instrumental contributions to the Biobot program. Mr. Laskey also thanked Secretary Theoharides and Board members for their continued support. Mr. Laskey then noted that an important driver for MWRA staff's decision to go forward with the Biobot program was the potential to save lives.

Board Member Wolowicz commended MWRA staff for their work on the Biobot program, adding that it was a useful tool for predicting Covid surges in Massachusetts communities.

Next, Mr. Laskey reminded Board members that the MWRA Advisory Board was assembling a working group to lobby for federal Infrastructure Act funding and to prioritize eligible projects. He encouraged Board members to join the work group and invited MWRA Advisory Board Executive Director Joseph Favaloro to provide an update.

Mr. Favaloro noted that the Infrastructure Act offered MWRA and its service communities a once in a generation opportunity to package regional and local water and sewer projects to maximize funding. He reported that preliminary meetings were underway and invited Board members to participate in the working group and offer suggestions.

Chair Theoharides thanked MWRA staff for the innovation and boldness of the nation leading Biobot program. (ref. III)

ANNUAL MEETING OF THE MWRA BOARD OF DIRECTORS

Chair Theoharides moved to designate the January 19, 2022 meeting as the Annual meeting which, as provided in the Authority's By-Laws, would be deemed a special meeting of the Board for the purpose of election of officers. She also moved to elect John Carroll as Vice Chairman of the Board; to appoint Andrew Pappastergion as Secretary of the Board and Rose Marie Convery and Kristin MacDougall as Assistant Secretaries; to appoint Matthew Horan as Treasurer, Thomas Durkin as Retirement Board Member; Robert Belkin and Michael Cole as Assistant

Treasurers; and, to ratify the appointments of Board members to standing Committees, as set forth in the January 19, 2022 Staff Summary and presented and filed with the records of the meeting. Chair Theoharides noted that these appointments would take effect at the next Board Meeting.

The motion was seconded.

Chair Theoharides asked if there was any discussion or objections. Hearing none, she advanced the motion to an omnibus roll call vote. (ref. II A)

WASTEWATER POLICY AND OVERSIGHT

Approvals

Memorandum of Agreement with Boston Water and Sewer Commission for the Union Park Detention/Treatment Facility Amendment No. 3

A motion was duly made and seconded to authorize the Executive Director, on behalf of the Authority, to approve Amendment No. 3 to the Memorandum of Agreement between the Boston Water and Sewer Commission and the Massachusetts Water Resources Authority governing the design, construction, operation, maintenance and costs of the Union Park Detention/Treatment Facility and associated equipment, substantially in the form attached to the January 19, 2022 Staff Summary and filed with the records of the meeting.

MWRA Chief Operating Officer David Coppes gave a presentation that included an overview of the Union Park CSO Facility, and the history of the MOA between MWRA and the Boston Water and Sewer Commission. He explained that the MOA sets out the ownership and financial responsibilities for the joint operations of the facility, and that the purpose of the proposed amendment was to streamline the invoicing process.

Chair Theoharides asked if there was any discussion or objections. Hearing none, she advanced the motion to an omnibus roll call vote. (ref. IV A.1)

Contract Awards

Management, Operation, and Maintenance of the Union Park Pump Station/CSO Facility and the Unstaffed Pump Stations: Woodard & Curran, Inc., Contract S606

A motion was duly made and seconded to approve the award of Contract S606, Management, Operation, and Maintenance of the Union Park Pump Station/CSO Facility and the Unstaffed Pump Stations, to the lowest responsible and eligible bidder, Woodard & Curran, Inc., and to authorize the Executive Director, on behalf of the Authority, to jointly execute said contract along with the Boston Water and Sewer Commission for a contract service fee amount of \$6,181,262, of which MWRA will pay \$1,668,940.74 (27%) and Boston Water and Sewer Commission will pay \$4,512,321.26 (73%), plus a funding allowance amount of \$1,050,000 for preventative and corrective maintenance and repairs (which includes \$300,000 for MWRA and \$750,000 for Boston Water and Sewer Commission), for a total contract amount not to exceed \$7,231,262, and for a contract term of three years, from March 1, 2022 through February 28, 2025, with options to extend the term for up to two additional years, subject to future Board approval.

MWRA Director of Wastewater Operations and Maintenance Charles Ryan presented an overview of the Union Park CSO facility's treatment process, location, tributary area, Environmental Justice service population, and discharge frequency. He summarized the scope and terms of the proposed contract. Finally, Mr. Ryan explained that the proposed contract represents a 46% increase in costs for additional maintenance, services, and staffing.

Chair Theoharides asked for more details on the increased contract cost. Mr. Ryan explained that cost increases included cybersecurity, electrical system maintenance and staffing. Mr. Ryan described industry-wide challenges in recruiting and maintaining qualified licensed operators. Chair Theoharides noted that staffing and supply side cost increases were recurring issues, and recommended that MWRA staff conduct a longitudinal analysis of inflationary increases across contract categories.

There was discussion about the bidding process, specialized facility operations and maintenance staff requirements, Woodard & Curran's qualifications and experience, and the reasons for the proposed labor rate increases, which reflected industry trends.

Chair Theoharides asked if there was further discussion or any objections. Hearing none, she advanced the motion to an omnibus roll call vote. (ref. IV B.1)

Contract Amendments/Change Orders

Chemical Tank Relining & Pipe Replacement, Deer Island Treatment Plant: Walsh Construction Company II, LLC, Contract 7373, Change Order 5

A motion was duly made and seconded to authorize the Executive Director, on behalf of the Authority, to approve Change Order 5 to Contract 7373, Chemical Tank Relining and Pipe Replacement, Deer Island Treatment Plant, with Walsh Construction Company II, LLC, for a lump sum amount of \$112,167.20, increasing the contract amount from \$8,698,340.69 to \$8,810,507.89, with no increase in contract term; further, to authorize the Executive Director to approve additional change orders as may be needed to Contract 7373 in an amount not to exceed the aggregate of \$50,000, in accordance with the Management Policies and Procedures of the Board of Directors.

MWRA Deer Island Treatment Plant Director David Duest explained that pinhole voids in two chemical tanks were discovered while performing liner replacement and tank inspection. Mr. Duest added that the voids could cause the new liner to fail, and that an alternatives evaluation determined that the application of steel field epoxy putty would be the most cost-effective means of filling the pinhole voids.

Chair Theoharides asked if there was any discussion or objections. Hearing none, she advanced the motion to an omnibus roll call vote. (ref. IV C.1)

Remote Headworks Upgrade: Arcadis U.S., Inc., Contract 7206, Amendment 8

A motion was duly made and seconded to authorize the Executive Director, on behalf of the Authority, to approve Amendment 8 to Contract 7206, Remote Headworks Upgrade Design and

Construction Administration, with Arcadis U.S., Inc., increasing the contract amount by \$148,000, from \$10,754,831 to \$10,902,831, with no increase in contract term.

MWRA Chief Engineer John Colbert summarized the reason for the proposed amendment. He explained that the substantial completion of Chelsea Creek Headworks construction was declared four months later than anticipated, requiring additional out of scope work to provide daily support and engineering services.

There was brief discussion about the condition of the chain that had previously been replaced in the grit collectors.

Chair Theoharides asked if there was further discussion or any objections. Hearing none, she advanced the motion to an omnibus roll call vote. (ref. IV C.2)

WATER POLICY AND OVERSIGHT

Information

Wachusett Watershed Railroad Update

MWRA Deputy Director of Finance/Treasurer Matthew Horan presented an update on the status of negotiations with CSX Transportation (“CSXT”) related to improvements to the Worcester Main Line. He reported that CSXT had agreed to all MWRA terms, including track upgrades from FRA Class 1 to Class 3; significantly reduced (25 mph) track speed limits within the Wachusett watershed; the prohibition of parking or idling of trains and equipment within the watershed except in limited, safety-related circumstances; the installation of monitoring equipment; the distribution of hazardous materials and derailment notices; and, the provision of hazardous material information on a monthly basis. Mr. Horan noted that the Surface Transportation Board (“STB”) was expected to issue a ruling on CSXT’s application to purchase Pan Am in April, 2022; if approved, the agreement terms would become part of the STB order.

Mr. Laskey thanked Mr. Horan for his tenacity. He provided Board members with historical context about the railroad’s significance to the Wachusett watershed. Finally, Mr. Laskey thanked Secretary Theoharides, Board members, and Massachusetts Bay Transportation Authority and Massachusetts Department of Transportation staff for their assistance and support.

Chair Theoharides commended MWRA staff for conducting successful negotiations.

Committee Chair Peña asked if there was further discussion or any objections. Hearing none, he proceeded to the next agenda item. (ref. V A.1)

Update on Revisions to EPA’s Lead and Copper Rule

MWRA Director of Planning and Sustainability Stephen Estes-Smargiassi presented an overview of the EPA’s revisions to the Lead and Copper Rule (“LCR”). He noted that the major parts of the revision would go forward with a compliance date of October of 2024. Mr. Estes-Smargiassi highlighted the changes that would most effect MWRA water customer communities. He explained that MWRA and the MWRA Advisory Board had conducted LCR training sessions for

MWRA service communities in May, 2021 and would provide additional training when EPA issues new guidance. He added that MWRA would continue to provide laboratory services and zero interest lead service line replacement loans for communities. Finally, Mr. Estes-Smargiassi noted that staff would provide future updates to Board members as program guidance was developed.

Committee Chair Peña asked if there was any discussion or objections. Hearing none, he proceeded to the next agenda item. (ref. V A.2)

Contract Awards

Wachusett Dam Bastion Improvements — Resident Engineering Services: Kleinfelder Northeast, Inc., Contract 7716

A motion was duly made and seconded to approve the recommendation of the Consultant Selection Committee to award Contract 7716, Wachusett Dam Bastion Improvements Resident Engineering Services, to Kleinfelder Northeast, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in an amount not to exceed \$435,044 for a contract term of 15 months from the Notice to Proceed.

Mr. Colbert summarized the proposed contract to provide resident engineering services for the Wachusett Dam Bastion Improvements project.

There was brief discussion about the preparation of the Engineer's Estimate.

Chair Theoharides asked if there was further discussion or any objections. Hearing none, she advanced the motion to an omnibus roll call vote. (ref. V B.1)

John J. Carroll Water Treatment Plant Chemical Feed System Improvements: Walsh Construction Co. II, Contract 7598

A motion was duly made and seconded to approve the award of Contract 7598, John J. Carroll Water Treatment Plant Chemical Feed System Improvements, to the lowest responsible and eligible bidder, Walsh Construction Company II, LLC, and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$2,479,000, with a contract term of 457 calendar days from the Notice to Proceed.

MWRA Assistant Director of Engineering Lisa Hamilton explained that the plant's fluoride and soda ash chemical feed equipment and piping were 15 to 20 years old and beyond their useful lives, and that associated control panels and components were obsolete.

Board Member Vitale requested further specifics on a 2018 OSHA violation cited in the Staff Summary, the number of MWRA staff who had attended OSHA 30 training, and the number of staff who had been OSHA 30 certified. Mr. Colbert and Ms. Hamilton responded that they would provide those details after the meeting.

There was discussion about the procurement process, the Engineer's Estimate, and the bid prices of the selected and non-selected contracting firms.

Chair Theoharides asked if there was further discussion or any objections. Hearing none, she advanced the motion to an omnibus roll call vote. (ref. V B.2)

John J. Carroll Water Treatment Plant Chemical Feed System Improvements – Resident Engineering Services: CDM Smith, Contract 7972

A motion was duly made and seconded to approve the recommendation of the Consultant Selection Committee to award Contract 7972, John J. Carroll Water Treatment Plant Chemical Feed System Improvements Resident Engineering Services, 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 \$331,713, with a contract term of 15 months from the Notice to Proceed.

Ms. Hamilton summarized the scope of the proposed resident engineering contract.

There was discussion about the proposed resident engineer's hourly rates, qualifications, and experience.

Chair Theoharides asked if there was further discussion or any objections. Hearing none, she advanced the motion to an omnibus roll call vote. (ref. V B.3)

PERSONNEL AND COMPENSATION

Approvals

PCR Amendment – January 2022

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

MWRA Human Resources Director Andrea Murphy briefly summarized the proposed PCR amendment for the creation of a new position in the Operations Division, Metro Maintenance Department.

There was brief discussion about the position's job duties and work location.

Chair Theoharides asked if there was further discussion or any objections. Hearing none, she advanced the motion to an omnibus roll call vote. (ref. VI A.1)

Appointment of Program Manager, Environmental Compliance and Monitoring, ENQUAL

A motion was duly made and seconded to approve the appointment of Ms. Maret Smolow to the position of Program Manager, Environmental Compliance and Monitoring, ENQUAL Wastewater (Unit 9, Grade 29) at an annual salary of \$105,752.38, commencing on a date to be determined by the Executive Director.

Ms. Murphy summarized the proposed candidate's work history, experience, education, and qualifications.

Chair Theoharides asked if there was any discussion or objections. Hearing none, she advanced the motion to an omnibus roll call vote. (ref. VI A.2)

Appointment of Program Manager, Environmental Compliance and Monitoring, ENQUAL

A motion was duly made and seconded to approve the appointment of Ms. Andrea Adams to the position of Program Manager, Structural Engineering (Unit 9, Grade 29) in the Engineering and Construction Department at an annual salary of \$128,958.93, commencing on a date to be determined by the Executive Director.

Ms. Murphy summarized the proposed candidate's work history, experience, education, and qualifications.

Chair Theoharides asked if there was any discussion or objections. Hearing none, she advanced the motion to an omnibus roll call vote. (ref. VI A.3)

Contract AwardsWorkers' Compensation Third Party Administrator Services: USI Insurance Services, LLC d/b/a FutureComp, Contract A633

A motion was duly made and seconded to approve the recommendation of the Consultant Selection Committee to award Contract A633, Workers' Compensation Third Party Administrator Services, to USI Insurance Services, LLC d/b/a FutureComp and authorize the Executive Director, on behalf of the Authority, to execute said contract in a not-to-exceed amount of \$135,975 and for a contact term from March 15, 2022 through March 31, 2025.

Ms. Murphy summarized the proposed contract's scope and the bidding process.

Board Member Vitale noted that the vendor had performed excellent work for the BWSC.

Chair Theoharides asked if there was further discussion or any objections. Hearing none, she advanced the motion to an omnibus roll call vote. (ref. VI B.1)

ADMINISTRATION, FINANCE AND AUDITInformationUpdate on New Environmental Justice Initiatives

MWRA staff presented an update on MWRA's Environmental Justice (EJ) initiatives. MWRA Director of Administration Michele Gillen described the Authority's robust Diversity, Equity and Inclusion program that includes new EJ initiatives developed under the guidance of EEA staff. Next, MWRA Director of Environmental and Regulatory Affairs Rebecca Weidman reported that MWRA serves a significant number of communities with EJ populations. She described MWRA's process to initiate several EJ initiatives, which began in 2021 with the submittal of a draft Environmental Justice Strategy to EEA. Ms. Weidman noted that staff were working to ensure compliance with revisions to the Massachusetts Environmental Protection Act (MEPA) regulations, which were effective January 1, 2022. Finally, Ms. Weidman reported that staff had performed an initial review of current and potential projects expected to undergo MEPA review in 2022, and that staff were developing guidelines for outreach and education, and methods for analyzing impacts of those projects to EJ populations.

Hearing no questions or discussion, Committee Chair Vitale proceeded to the next agenda item. (ref. VII A.1)

Change Order and Amendment Statistics

MWRA Director of Construction Cori Barrett presented a change order and amendment statistics analysis. She reported that 91 (5.92%) of MWRA's 134 construction contracts had change orders during the last ten-year period. Of those, 28 were for Chapter 30 (horizontal) projects; 63 were for Chapter 149 (vertical) projects; 43 projects had no change orders. Ms. Barrett then presented a review of MWRA projects that required change orders due to unforeseen conditions. She then explained that the MWRA consultant performance review committee may also seek cost recovery. Next, Ms. Barrett presented an eleven-year analysis of design amendments. She reported that of 67 total design contracts, 27 (9.05%) had amendments. She noted that of those 27 amendments, 7 were for Chapter 30 projects, while 37 were for Chapter 149 projects; 40 projects had no amendments. Finally, Ms. Barrett presented a review of MWRA projects that triggered design amendments for project enhancements such as zero net energy and flood protection.

There was discussion about the financial impact of time extensions on design and construction contracts, and MWRA staff's plans to incorporate lessons learned from the analysis.

Hearing no further questions or discussion, Mr. Vitale proceeded to the next agenda item. (ref. VII A.2)

Delegated Authority Report – December 2021

Committee Chair Vitale invited questions or comments from Board Members.

Hearing no questions or discussion, Mr. Vitale proceeded to the next agenda item. (ref. VII A.3)

Update on HEEC Cross-Harbor Cable Funding

Mr. Durkin updated Board Members on the funding of the Harbor Electric Energy Company (HEEC) cross harbor cable. He reported that the capacity support charge was in place following the Massachusetts Department of Public Utilities (DPU) December, 2021 approval of HEEC's proposed Final Tariff Addendum submission for recovery of project costs. Mr. Durkin described MWRA staff's successful negotiation of key financing points for the benefit of ratepayers. He reported that a financial resolution had been reached, and that the cost to the MWRA would be approximately \$6 million per year for 30 years. Finally, Mr. Durkin noted that the HEEC project, which required dredging of the Boston Harbor, was beneficial to shipping access, adding that the largest ship ever (Evergreen's Ever Fortune) was recently able to enter Conley Terminal.

There was brief comment about the priority and success of the dredging project.

Hearing no further questions or discussion, Committee Chair Vitale proceeded to the next agenda item. (ref. VII A.4)

FY2022 Financial Update and Summary as of December 2021

Mr. Durkin summarized financial results for FY22 through December 2021. He reported that overall the budget had a \$12.8 million positive surplus, attributable to revenue and direct expenses. He noted that direct expenses were 9.2% under budget, due in large part to underspending related to nationwide staffing challenges; that indirect expenses were 0.2% under budget, primarily due to lower watershed reimbursements, with higher spending for insurance payments/claims and HEEC costs; and, that debt services expenses were on budget after a transfer to the defeasance account. Finally, Mr. Durkin noted that MWRA staff planned to request another defeasance in spring 2022.

There was general discussion about the hypothetical impact of projected federal interest rate increases on MWRA budgets, wages and salaries and the potential budgetary impacts of rising fuel and utilities costs.

Hearing no further questions or discussion, Mr. Vitale proceeded to the next agenda item. (ref. VII A.5)

ApprovalsTransmittal of the FY2023 Proposed Capital Improvement Program

A motion was duly made and seconded to approve the transmittal of the FY23 Proposed Capital Improvement Program to the Advisory Board for its 60-day review and comment period.

MWRA staff presented an overview of the FY23 Capital Improvement Program for transmittal to the MWRA Advisory Board for review. Mr. Durkin described the FY19-23 base line cap, and the process of calculations and adjustments. MWRA Budget Director Michael Cole presented a list of MWRA's top twelve spending construction projects, excluding community loans, in FY23, and the top ten projected contract awards. Mr. Cole then highlighted the MWRA Facilities Management Office Space Modification project (\$13.8 million), with an expected Notice to Proceed in August, 2022. Mr. Horan presented a summary of capital spending and debt service from FY86, noting that as of December 31, 2021, MWRA's total indebtedness was \$4.7 billion. He explained that the debt peak had been lowered by \$117 million in six years through prudent structuring of debt and application of defeasances. Mr. Durkin then explained that MWRA's capital spending was expected to focus on asset protection and redundancy. Finally, he noted that inflation, federal stimulus and grant programs, and fiscal uncertainty due to the ongoing Covid pandemic could potentially impact the capital budget.

Chair Theoharides asked if there was any discussion or objections. Hearing none, she advanced the motion to an omnibus roll call vote. (ref. VII B.1)

Proposed Amendments to the Management Policies of the Board of Directors

After staff presented a summary of the proposed amendments and there was discussion about the existing and proposed delegations of authority the item was postponed. (ref. VII B.2)

Legal Services Furnished by Special Assistant Attorney General Jonathan Ettinger/Foley Hoag LLP in the Boston Harbor Case, U.S. v. MDC, et al., USDC No. 85-0489-RGS

A motion was duly made and seconded that the Board approve an increase of the hourly rate at which the Authority compensates Foley Hoag LLP for the legal services furnished by Attorney Jonathan Ettinger in his capacity as a Special Assistant Attorney General in the Boston Harbor case from \$700 an hour to \$790 an hour for CY2022, \$850 an hour CY2023 and \$950 an hour CY2024.

Ms. Francisco Murphy explained that MWRA had last increased the rate in 2019, and that the proposed rates through 2024 were below Attorney Ettinger's non-discounted, current billable rate of \$980 per hour. She noted that MWRA staff worked closely with Attorney Ettinger on the Boston Harbor case and performed as much work as possible to help keep costs down. Finally, Ms. Francisco Murphy commented that the Foley Hoag provides excellent representation, and that staff considered the proposed rate increases to be reasonable.

Board Member Vitale noted that the Attorney Ettinger and Foley Hoag had performed excellent work for the BWSC.

Chair Theoharides asked if there was further discussion or any objections. Hearing none, she advanced the motion to an omnibus roll call vote. (ref. VII B.3)

Contract Awards

Financial and Swap Advisory Services: PFM Financial Advisory LLC, Contract F264

A motion was duly made and seconded to approve the recommendation of the Consultant Selection Committee to award Contract F264 for financial and swap advisory services to PFM Financial Advisors LLC and to authorize the Executive Director, on behalf of the Authority, to execute Contract F264 in an amount not to exceed \$632,925 for a term of four years from the notice to proceed.

Mr. Durkin described the purpose of financial and swap advisory services. Next, Mr. Horan summarized the bidding process, noting that PFM offered a strong team with considerable experience at a significantly lower cost than the second-ranked bidder.

Chair Theoharides asked if there was any discussion or objections. Hearing none, she advanced the motion to an omnibus roll call vote. (ref. VII C.1)

Purchase of 45 Cisco Switches, Installation Services and a Five-Year Maintenance Service Agreement: ePlus Technology, Inc., WRA-5053Q, State Contract ITT50

A motion was duly made and seconded to approve the award of Purchase Order Contract WRA-5053Q for 45 Cisco switches, installation services and a five-year maintenance service agreement to the lowest responsive bidder, ePlus Technology, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said Purchase Order Contract in the bid amount of \$484,163.00.

MWRA MIS Director Paula Weadick summarized the procurement for replacement network switches at MWRA's Deer Island and Southborough facilities. She explained that the existing switches were over five years old, beyond useful life, and were no longer supported by the hardware manufacturer. Ms. Weadick noted that this contract was phase three of a project to replace network switches at all MWRA facilities.

There was discussion about costs for hardware and labor. There was also discussion about the lack of bidder competition in this procurement, Cisco's preferred vendor policy, MWRA's standardization on the Cisco platform at all facilities, and MWRA's procurement best practices.

Chair Theoharides noted that the proposed award was an example of the need to update MWRA's approval authority. She suggested that the Board vote on the proposed award and encouraged staff to review procurement guidance.

Chair Theoharides asked if there was further discussion or any objections. Hearing none, she advanced the motion to an omnibus roll call vote. (ref. VII C.2)

Delegation of Authority to Execute Contracts for the Purchase and Supply of Electric Power for the MWRA Interval Account

A motion was duly made and seconded to authorize the Executive Director, on behalf of the Authority, to execute a contract for the supply of electric power to the Interval Accounts, consisting of the Carroll Water Treatment Plant and the larger Field Operations and Facility Management Accounts, and a contract to purchase additional Renewable Energy Credits to voluntarily increase the percentage of the energy supply for the Interval Accounts to be 100% renewable, with the lowest responsive and responsible bidder(s) for the period and pricing structure selected, as determined by staff to be in MWRA's best interest, and for a contract supply term not to exceed 37 months. This delegation of authority is necessary because MWRA will be required to notify the selected bidders within a few hours of bid submittal to lock in the bid prices in a constantly changing market. (ref. VII C.3)

MWRA Program Manager, Energy and Environment Denise Breiteneicher summarized the process to solicit and accept bids for electric power supply for MWRA's Interval Accounts. She explained that the proposed contracts were to supply power for MWRA's Carroll Water Treatment Plant, Clinton treatment facility, other large water and wastewater pump stations, MWRA's largest CSO facilities, and Chelsea facility. She noted that staff were adding a component to seek price offers on enough renewable energy certificates from the New England sources to drive the Interval Account energy supply to 100% renewable. Finally, Ms. Breiteneicher explained that MWRA staff could accept or decline offers relative to pricing.

Chair Theoharides asked if there was any discussion or objections. Hearing none, she advanced the motion to an omnibus roll call vote. (ref. VII C.3)

OMNIBUS ROLL CALL VOTE

Chair Theoharides called for an omnibus roll call vote on the motions made and seconded.

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Theoharides		
Cook		
Flanagan		
Foti		
Pappastergion		
Peña		
Vitale		
J. Walsh		
P. Walsh		
Wolowicz		

Voted: to approve the minutes of the Board of Directors' meeting of December 15, 2021 (ref. I);

Further, voted: to designate this January 19, 2022 meeting as the Annual meeting, which, as provided in the Authority's By-Laws, will be deemed a special meeting of the Board for the purpose of election of officers; further, voted: to elect John Carroll as Vice Chairman of the Board; to appoint Andrew Pappastergion as Secretary of the Board and Rose Marie Convery and Kristin MacDougall as Assistant Secretaries; to appoint Matthew Horan as Treasurer, Thomas Durkin as Retirement Board Member; Robert Belkin and Michael Cole as Assistant Treasurers; and, to ratify the appointments of Board members to standing Committees, as set forth in the January 19, 2022 Staff Summary presented and filed with the records of the meeting; further, these appointments will take effect at the next Board Meeting; (ref. II.A)

Further, voted: to authorize the Executive Director, on behalf of the Authority, to approve Amendment No. 3 to the Memorandum of Agreement between the Boston Water and Sewer Commission and the Massachusetts Water Resources Authority governing the design, construction, operation, maintenance and costs of the Union Park Detention/Treatment Facility and associated equipment, substantially in the form attached to the January 19, 2022 Staff Summary and filed with the records of the meeting; (ref. IV A.1)

Further, voted: to approve the award of Contract S606, Management, Operation, and Maintenance of the Union Park Pump Station/CSO Facility and the Unstaffed Pump Stations, to the lowest responsible and eligible bidder, Woodard & Curran, Inc., and to authorize the Executive Director, on behalf of the Authority, to jointly execute said contract along with the Boston Water and Sewer Commission for a contract service fee amount of \$6,181,262, of which MWRA will pay \$1,668,940.74 (27%) and Boston Water and Sewer Commission will pay \$4,512,321.26 (73%), plus a funding allowance amount of \$1,050,000 for preventative and corrective maintenance and repairs (which includes \$300,000 for MWRA and \$750,000 for Boston Water and Sewer Commission), for a total contract amount not to exceed \$7,231,262, and for a contract term of three years, from March 1, 2022 through February 28, 2025, with options to extend the term for up to two additional years, subject to future Board approval; (ref. IV B.1)

Further, voted: to authorize the Executive Director, on behalf of the Authority, to approve Change Order 5 to Contract 7373, Chemical Tank Relining and Pipe Replacement, Deer Island

Treatment Plant, with Walsh Construction Company II, LLC, for a lump sum amount of \$112,167.20, increasing the contract amount from \$8,698,340.69 to \$8,810,507.89, with no increase in contract term; further, voted: to authorize the Executive Director to approve additional change orders as may be needed to Contract 7373 in an amount not to exceed the aggregate of \$50,000, in accordance with the Management Policies and Procedures of the Board of Directors; (ref. IV C.1)

Further, voted: to authorize the Executive Director, on behalf of the Authority, to approve Amendment 8 to Contract 7206, Remote Headworks Upgrade Design and Construction Administration, with Arcadis U.S., Inc., increasing the contract amount by \$148,000, from \$10,754,831 to \$10,902,831, with no increase in contract term; (ref. IV C.2)

Further, voted: to approve the recommendation of the Consultant Selection Committee to award Contract 7716, Wachusett Dam Bastion Improvements Resident Engineering Services, to Kleinfelder Northeast, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in an amount not to exceed \$435,044 for a contract term of 15 months from the Notice to Proceed; (ref. V B.1)

Further, voted: to approve the award of Contract 7598, John J. Carroll Water Treatment Plant Chemical Feed System Improvements, to the lowest responsible and eligible bidder, Walsh Construction Company II, LLC, and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$2,479,000, with a contract term of 457 calendar days from the Notice to Proceed; (ref. V B.2)

Further, voted: to approve the recommendation of the Consultant Selection Committee to award Contract 7972, John J. Carroll Water Treatment Plant Chemical Feed System Improvements Resident Engineering Services, 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 \$331,713, with a contract term of 15 months from the Notice to Proceed; (ref. V B.3)

Further, voted: to approve the amendment to the Position Control Register (PCR) as presented and filed with the records of this meeting; (ref. VI A.1)

Further, voted: to approve the appointment of Ms. Maret Smolow to the position of Program Manager, Environmental Compliance and Monitoring, ENQUAL Wastewater (Unit 9, Grade 29) at an annual salary of \$105,752.38, commencing on a date to be determined by the Executive Director; (ref. VI A.2)

Further, voted: to approve the appointment of Ms. Andrea Adams to the position of Program Manager, Structural Engineering (Unit 9, Grade 29) in the Engineering and Construction Department at an annual salary of \$128,958.93, commencing on a date to be determined by the Executive Director; (ref. VI A.3)

Further, voted: to approve the recommendation of the Consultant Selection Committee to award Contract A633, Workers' Compensation Third Party Administrator Services, to USI Insurance Services, LLC d/b/a FutureComp and authorize the Executive Director, on behalf of the Authority, to execute said contract in a not-to-exceed amount of \$135,975 and for a contact term from March 15, 2022 through March 31, 2025; (ref. VI B.1)

Further, voted: to approve the transmittal of the FY23 Proposed Capital Improvement Program to the Advisory Board for its 60-day review and comment period; (ref. VII B.1)

Further, voted: that the Board approve an increase of the hourly rate at which the Authority compensates Foley Hoag LLP for the legal services furnished by Attorney Jonathan Ettinger in

his capacity as a Special Assistant Attorney General in the Boston Harbor case from \$700 an hour to \$790 an hour for CY2022, \$850 an hour CY2023 and \$950 an hour CY2024; (ref. VII B.3)

Further, voted: to approve the recommendation of the Consultant Selection Committee to award Contract F264 for financial and swap advisory services to PFM Financial Advisors LLC and to authorize the Executive Director, on behalf of the Authority, to execute Contract F264 in an amount not to exceed \$632,925 for a term of four years from the notice to proceed; (ref. VII C.1)

Further, voted: to approve the award of Purchase Order Contract WRA-5053Q for 45 Cisco switches, installation services and a five-year maintenance service agreement to the lowest responsive bidder, ePlus Technology, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said Purchase Order Contract in the bid amount of \$484,163.00; (ref. VII C.2)

Further, voted: to authorize the Executive Director, on behalf of the Authority, to execute a contract for the supply of electric power to the Interval Accounts, consisting of the Carroll Water Treatment Plant and the larger Field Operations and Facility Management Accounts, and a contract to purchase additional Renewable Energy Credits to voluntarily increase the percentage of the energy supply for the Interval Accounts to be 100% renewable, with the lowest responsive and responsible bidder(s) for the period and pricing structure selected, as determined by staff to be in MWRA's best interest, and for a contract supply term not to exceed 37 months. This delegation of authority is necessary because MWRA will be required to notify the selected bidders within a few hours of bid submittal to lock in the bid prices in a constantly changing market. (ref. VII C.3)

CORRESPONDENCE TO THE BOARD

There was no correspondence to the Board.

OTHER BUSINESS

There was no other business.

EXECUTIVE SESSION

Chair Theoharides 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 scheduled topics of discussion were Prison Point Contract 7462 and Annual Litigation and Claim Summary. She announced that the Board would not return to Open Session and would adjourn the meeting from Executive Session. A motion was duly made and seconded to enter Executive Session, and adjourn the meeting from Executive Session.

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

(Ms. Wolowicz briefly left the meeting.)

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Theoharides		
Cook		
Flanagan		
Foti		
Pappastergion		
Peña		
Vitale		
J. Walsh		
P. Walsh		

Voted: to enter Executive Session, and to adjourn the meeting from at the conclusion of Executive Session.

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

(Ms. Wolowicz returned to the meeting after Roll Call was conducted.)

*** EXECUTIVE SESSION ***

The meeting adjourned at 3:19pm.

Approved: February 16, 2022

Attest:

Andrew M. Pappastergion, Secretary

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director *Frederick A. Laskey*
DATE: February 16, 2022
SUBJECT: Report on 2021 Water Use Trends and Reservoir Status

COMMITTEE: Water Policy & Oversight

X INFORMATION
 VOTE

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

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

RECOMMENDATION:

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

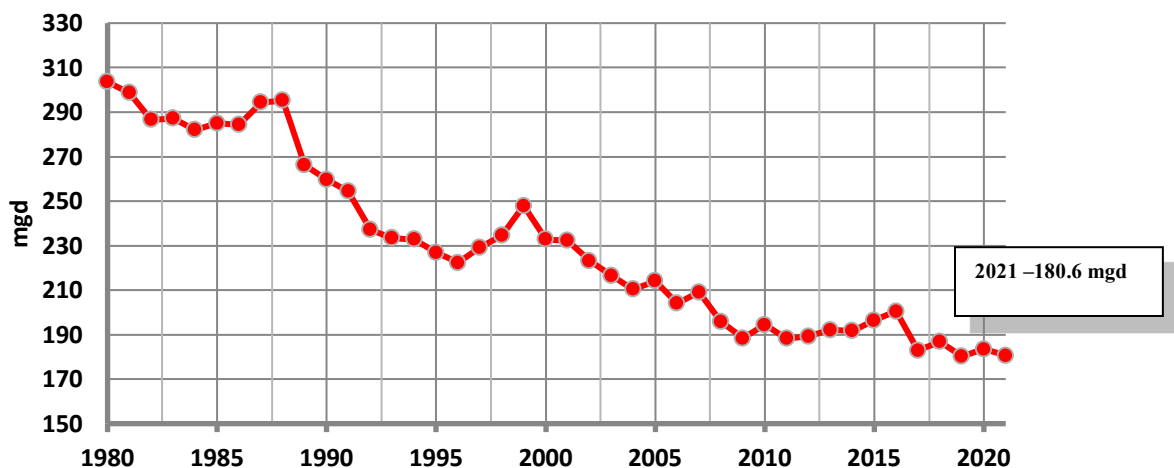
DISCUSSION:

This staff summary provides an overview of water consumption by communities; base and seasonal water use trends; use by MWRA's partial and emergency customers; and reservoir withdrawals and reservoir status. Water use continued the long-term trend downward.

Water Consumption by MWRA Communities

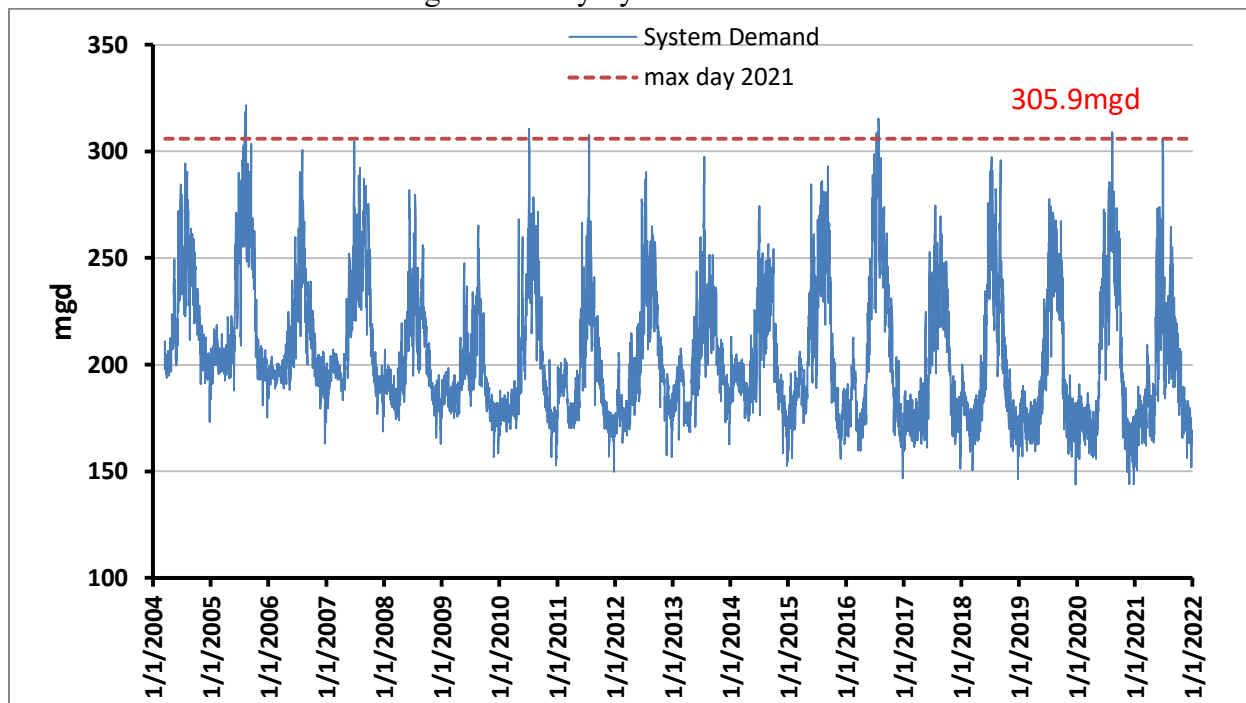
Calendar year 2021 water consumption by all MWRA communities of 180.6 million gallons per day (mgd) was 3.3 mgd (1.8 percent) lower than 2020, as shown on Figure 1.

Figure 1 – Total Consumption by MWRA Communities (1980 to 2021)



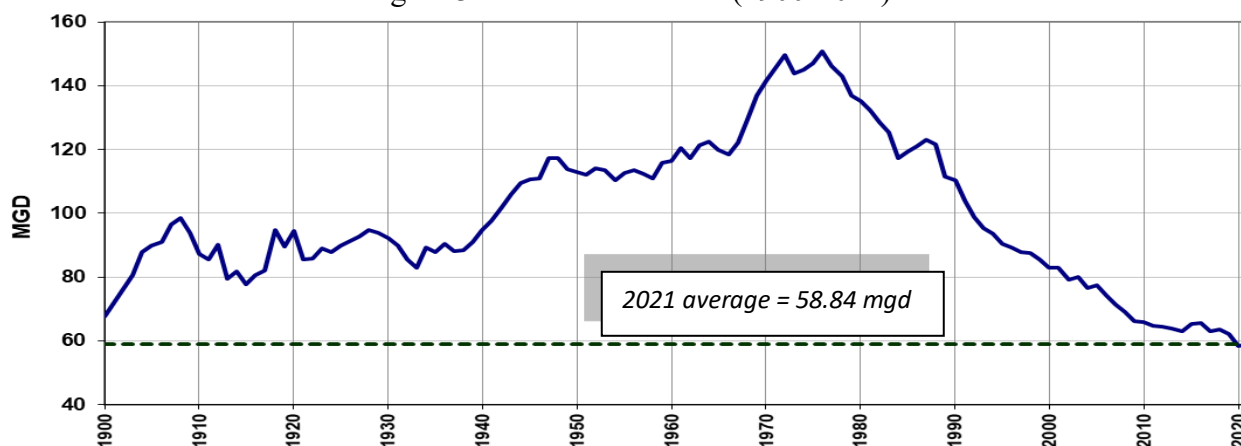
System wide, 2021 had a maximum day withdrawal of 305.9 mgd on June 28 (one percent lower than 2020). At the opposite extreme, the Friday after Thanksgiving Day, at 156.3 mgd, and the day after Christmas, at 151.9 mgd, were the lowest two days of the year, but both slightly higher than last year’s Christmas. Figure 2 below shows daily system withdrawals since 2004.

Figure 2: Daily System Withdrawals



Demand from MWRA’s largest customer, the Boston Water and Sewer Commission, was 58.8 mgd, which was just slightly higher than last year by 0.3 mgd (0.55 percent). Current Boston demand continues to be lower than demand before 1900 as shown on Figure 3 below.

Figure 3: Boston Water Use (1900-2021)

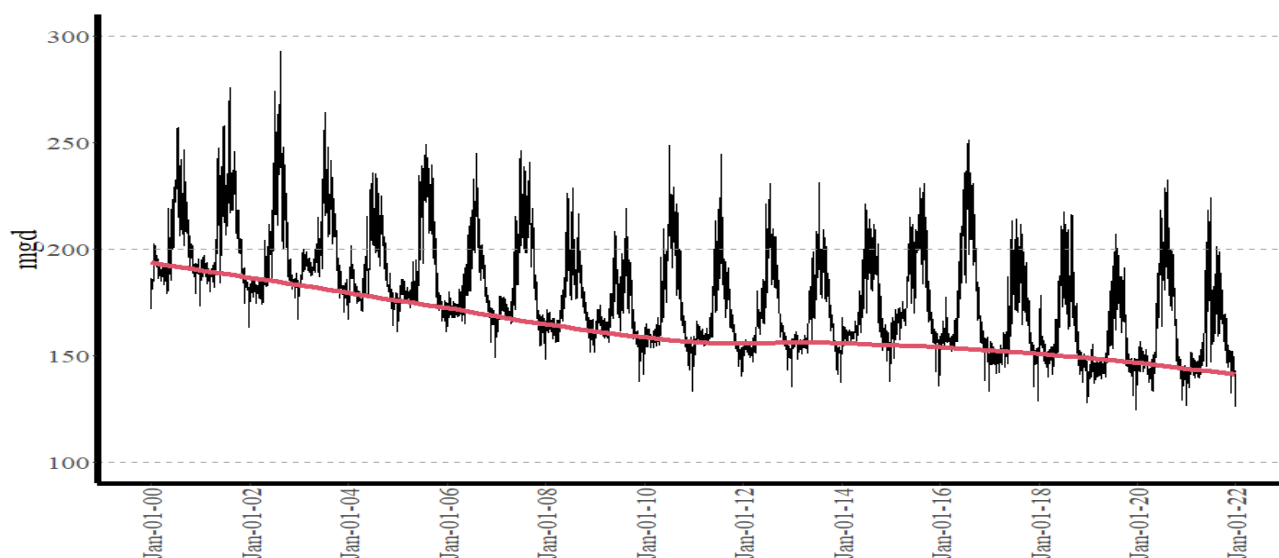


The pandemic caused substantial shifts in demand during 2020 from the center cities to suburbs with office closings and work from home. Calendar year 2021 saw a shift back toward more normal demand patterns with a rebalancing of the suburban and center city demand. Many communities saw decreases in demand, while Boston saw a slight increase, resulting in an increase in Boston’s share of total system demands of 1.8 percent. See Attachment A for community demands and system share data.

Base or Indoor Demand

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

Figure 4: Fully Supplied Communities Demand (1999 to 2021)¹



Seasonal or Outdoor Demand

Seasonal water use is more variable than indoor demand and driven in large part by weather during the irrigation season. Factors influencing seasonal use include the total irrigation season precipitation, the number of dry days between rainfall events, temperature, and the total amount of sunshine. During drought conditions, mandatory restrictions or general media exposure will reduce outdoor use over what it would have been, but dry years still tend to have higher demand. Over time, the price of water also influences seasonal use.

Figures 5 and 6 on the next page show the variation in seasonal water use over time, and both the longer-term decline in both base and total use, and the relatively small impact that seasonal demand has on total water use. Seasonal use in 2021 of 17.3 mgd was about typical on a volume basis, but above average on a percentage use basis, at 10.9%. The early part of the outdoor use season was relatively dry, but the later portions saw well above average rainfall.

¹ Certain analyses can only be done on fully supplied communities where MWRA has information on their daily use available from MWRA's revenue meters. MWRA receives data on monthly total use for partially supplied communities, but not until they provide that data to DEP in their Annual Statistical Reports in March. Fully-supplied communities represent almost 90% of the total annual demand.

Figure 5: Fully Supplied Communities Annual Base and Seasonal Demand

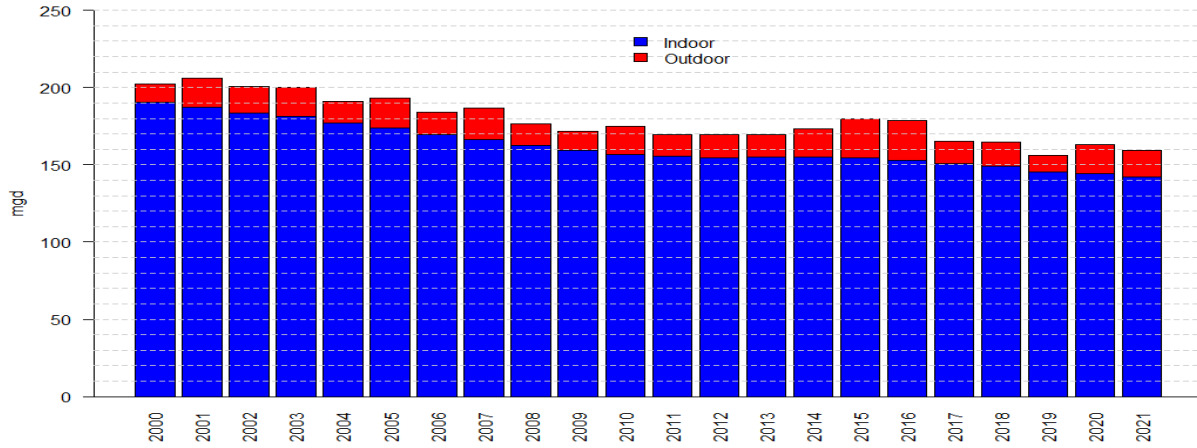
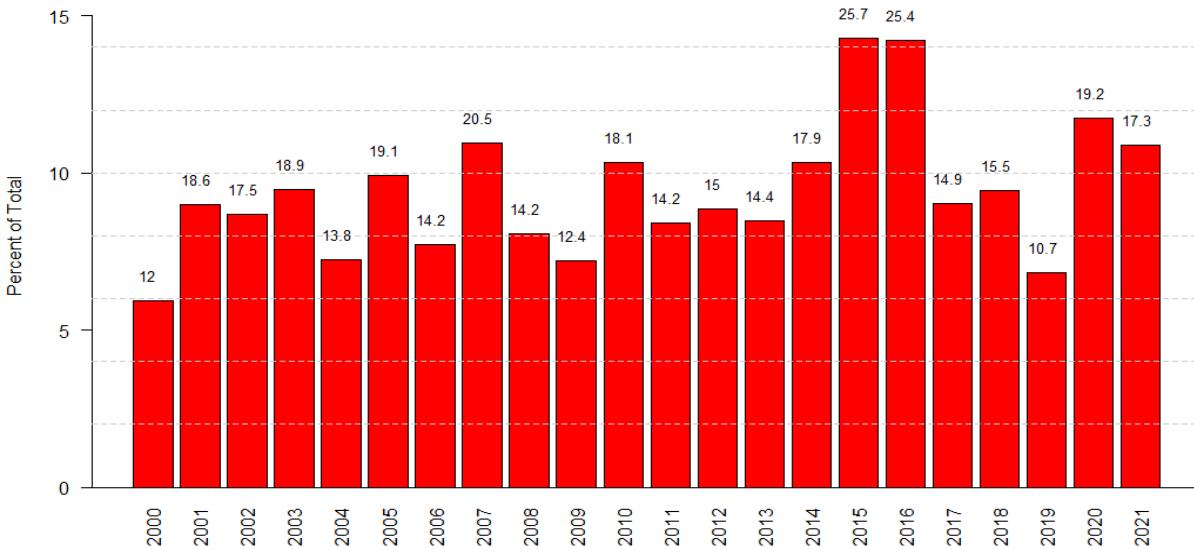


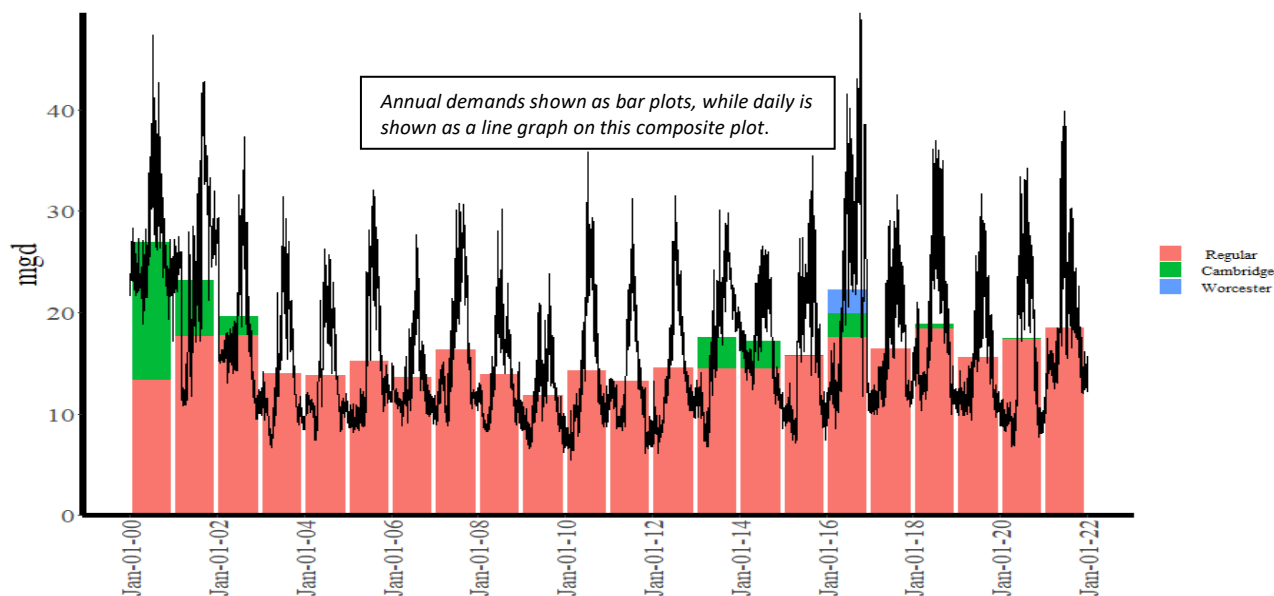
Figure 6: Fully Supplied Communities' Annual Seasonal Demand (Labels show demand in mgd)



Partially Supplied Communities

Demand for the partially supplied communities, shown on Figure 7, was up by 1.1 mgd (6.0%) when compared to 2020.

Figure 7: Partially Supplied Communities – MWRA Supplied Demand (Daily and Annual)



Cambridge used 19.4 million gallons over three separate days in August and September. Burlington, the newest partially supplied community used 270.8 million gallons in 2021.

Reservoir Withdrawals and Releases

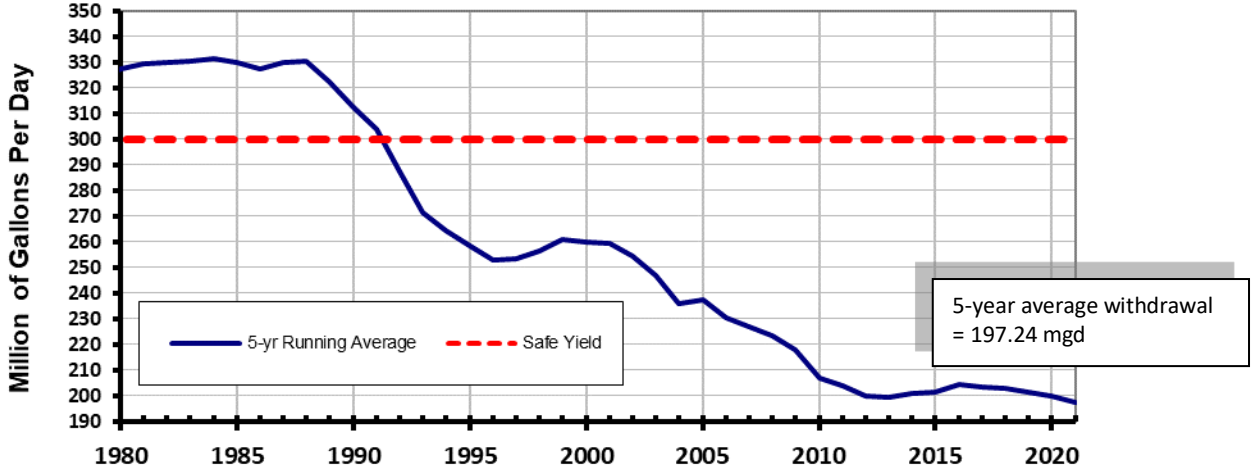
Reservoir withdrawals are the metric used to compare to the 300 mgd safe yield of the watershed/reservoir system². Withdrawals include water sold to MWRA communities, as well as other non-revenue generating uses in the watershed and MWRA system. Total MWRA water withdrawals decreased by 2.44 percent in 2021, from 199.4 mgd in 2020 to 194.6 mgd.

The pipeline supplying the McLaughlin Fish Hatchery in Belchertown was in service for the entire year, with an average withdrawal of 6.2 mgd. Without that withdrawal, total reservoir withdrawals for community water supply in 2021 would have been 188.4 mgd. MWRA began serving the hatchery through the dedicated hydroelectric station and pipeline in December 2016.

Figure 8, on the next page, shows five-year averages of withdrawals from 1980 to present. The five-year averaging reduces the effects of year-to-year variability due to weather, and provides a good indication of longer-term trends. The average shows a 1.4 percent decrease from 2020, although the trend line is essentially flat for most of the past decade.

² The 300-mgd safe yield is based on the drought of the 1960s. Use of a less conservative 20-year recurrence drought, as allowed by DEP, would result in a safe yield as high as 350 mgd. MWRA's Water Management Act registration is for 312 mgd.

Figure 8: Total Reservoir Withdrawals – Five-Year Running Average 1980 to 2021

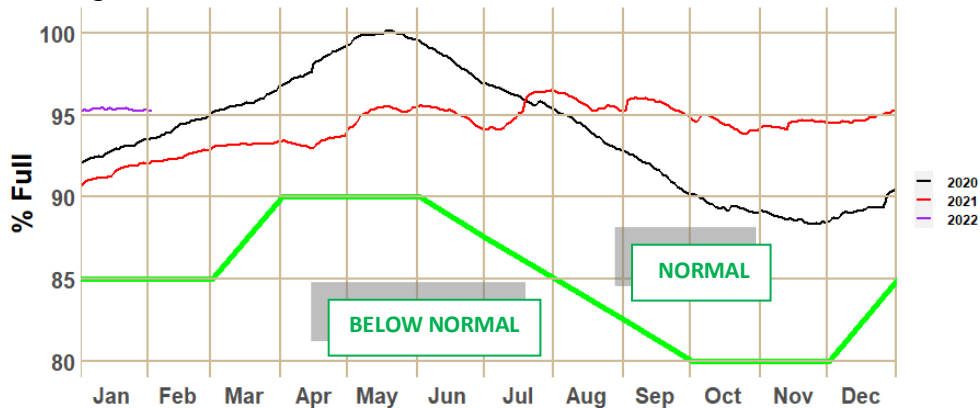


It is worth noting that since MWRA was created, MWRA has added demand from eight additional communities and the McLaughlin Fish Hatchery, as well as the added demand from the growth in population and employment within the original service area. Without the added communities and hatchery demands, the five-year average demand would have been almost nine mgd lower at 188.6 mgd. This further demonstrates the substantial improvements in water use efficiency within the MWRA service area, which have improved system reliability and allowed MWRA to provide service to additional communities in need of that reliable supply.

Reservoir Status

Quabbin Reservoir levels were well within the normal operating band and steadily rose through the year. Figure 9 below shows a comparison of Quabbin volume levels between 2020 and 2021. The green line on the figure shows the seasonal monthly benchmarks for the operating band. Levels above the line are considered normal and below the line are considered below normal. Further operating bands for varying degrees of drought status are significantly lower still.

Figure 9: Quabbin Reservoir Volumes for 2020 to 2021



Quabbin Reservoir spilled 20.26 million gallons to the Swift River in 2021, beginning on July 19 and spilling for just 18 days. In order to meet metro-Boston water demand and to maintain water quality, 48.8 billion gallons of the higher quality Quabbin water was transferred to Wachusett Reservoir during 2021. The transfer was equivalent to about 75 percent of Wachusett’s volume

and equivalent to about 80 percent of the water used by MWRA's customers in the metro Boston system. To maintain Wachusett Reservoir in its normal narrow operating band, MWRA released 38.4 billion gallons to the Nashua River through controlled releases.

ATTACHMENT:

Community Water Use Data

Massachusetts Water Resources Authority
MWRA Water Supplied
Reporting Period: December 2021

ALL DATA SUBJECT TO CHANGE OR ADJUSTMENT PENDING ADDITIONAL MWRA AND COMMUNITY REVIEW

	Monthly (MG)			YTD (MG)			YTD System Share			Prior Year-End Totals 2020	
	Dec		Flow Change	YTD		Flow Change	Flow Share ¹		% Change in YTD Flow Share	Annual Flow (mg)	Flow Share ¹
	2021	2020		2021	2020		2021	2020			
Metro-System (Fully Served)											
Arlington	95.5	103.5	-7.7%	1,220.4	1,358.0	-10.1%	1.96%	2.14%	-8.8%	1,358.0	2.14%
Belmont	46.1	49.1	-6.0%	677.3	757.1	-10.5%	1.09%	1.20%	-9.2%	757.1	1.20%
Boston (BWSC)	1,716.2	1,619.1	6.0%	21,475.3	21,417.0	0.3%	34.41%	33.81%	1.8%	21,417.0	33.81%
Brookline	124.2	120.6	3.0%	1,732.6	1,826.0	-5.1%	2.78%	2.88%	-3.7%	1,826.0	2.88%
Chester	94.3	107.4	-12.3%	1,179.9	1,244.6	-5.2%	1.89%	1.96%	-3.8%	1,244.6	1.96%
Everett	109.2	113.6	-3.8%	1,387.8	1,429.7	-2.9%	2.22%	2.26%	-1.5%	1,429.7	2.26%
Frammingham	156.7	151.2	3.6%	2,059.4	2,117.0	-2.7%	3.30%	3.34%	-1.2%	2,117.0	3.34%
Lexington ²	113.0	118.0	-4.2%	1,835.2	1,999.7	-8.2%	2.94%	3.16%	-6.8%	1,999.7	3.16%
Lynnfield W.D.	11.8	9.9	19.1%	187.0	196.5	-4.8%	0.30%	0.31%	-3.4%	196.5	0.31%
Malden	157.8	155.7	1.4%	1,892.4	1,909.6	-0.9%	3.03%	3.01%	0.6%	1,909.6	3.01%
Marblehead	40.1	40.3	-0.7%	635.5	705.0	-9.8%	1.02%	1.11%	-8.5%	705.0	1.11%
Medford	131.2	115.0	14.1%	1,656.5	1,677.6	-1.3%	2.65%	2.65%	0.2%	1,677.6	2.65%
Melrose	56.6	63.9	-11.5%	756.2	800.3	-5.5%	1.21%	1.26%	-4.1%	800.3	1.26%
Milton	62.2	62.6	-0.6%	869.2	885.5	-1.8%	1.39%	1.40%	-0.4%	885.5	1.40%
Nahant	8.5	7.2	18.9%	125.0	121.6	2.8%	0.20%	0.19%	4.4%	121.6	0.19%
Newton	215.4	208.9	3.1%	3,059.0	3,126.7	-2.2%	4.90%	4.94%	-0.7%	3,126.7	4.94%
Norwood	71.7	68.5	4.7%	972.9	1,005.0	-3.2%	1.56%	1.59%	-1.7%	1,005.0	1.59%
Quincy	240.5	237.0	1.5%	2,994.0	3,063.6	-2.3%	4.80%	4.84%	-0.8%	3,063.6	4.84%
Reading	41.2	41.9	-1.6%	606.7	645.3	-6.0%	0.97%	1.02%	-4.6%	645.3	1.02%
Revere	111.9	110.5	1.3%	1,371.8	1,312.0	4.6%	2.20%	2.07%	6.1%	1,312.0	2.07%
Saugus	84.5	76.0	11.1%	1,084.9	1,108.0	-2.1%	1.74%	1.75%	-0.6%	1,108.0	1.75%
Somerville	160.9	157.7	2.1%	2,046.6	2,045.3	0.1%	3.28%	3.23%	1.6%	2,045.3	3.23%
Southborough	20.4	21.7	-6.2%	322.1	390.8	-17.6%	0.52%	0.62%	-16.3%	390.8	0.62%
Stonham	48.9	49.5	-1.1%	710.7	811.8	-12.4%	1.14%	1.28%	-11.1%	811.8	1.28%
Swampscott	43.0	38.8	11.0%	551.6	588.4	-6.3%	0.88%	0.93%	-4.8%	588.4	0.93%
Waltham	178.5	170.5	4.7%	2,386.3	2,356.4	1.3%	3.82%	3.72%	2.8%	2,356.4	3.72%
Watertown	66.7	70.1	-4.8%	896.1	949.6	-5.6%	1.44%	1.50%	-4.2%	949.6	1.50%
Weston	29.7	27.8	7.0%	530.7	646.8	-17.9%	0.85%	1.02%	-16.7%	646.8	1.02%
Winthrop	32.5	33.4	-2.7%	414.5	472.8	-12.3%	0.66%	0.75%	-11.0%	472.8	0.75%
Subtotal Metro-System (Fully Served)	4,269.2	4,148.9	2.9%	55,637.4	56,967.5	-2.3%	89.2%	89.9%	-0.9%	56,967.5	89.93%
Metro-System (Partially Served)											
Ashland (P)	-	-	0.0%	-	-	0.0%	0.00%	0.00%	0.0%	-	0.0%
Burlington (P)	32.9	-	100.0%	270.8	-	100.0%	0.43%	0.00%	100.0%	-	0.0%
Canton (P)	14.2	12.9	10.6%	436.9	343.6	27.2%	0.70%	0.54%	29.1%	343.58	0.5%
Dedham-Westwood W.D. (P)	13.4	0.0	39538%	55.3	141.3	-60.8%	0.09%	0.22%	-60.3%	141.3	0.2%
Leominster (P)	-	-	0.0%	-	-	0.0%	0.00%	0.00%	0.0%	-	0.0%
Lynn (LWSC) (P)	3.4	3.4	-0.7%	40.6	28.6	41.6%	0.07%	0.05%	43.7%	28.6	0.0%
Marlborough (P)	114.0	105.0	8.6%	1,454.8	1,502.1	-3.1%	2.33%	2.37%	-1.7%	1,502.1	2.4%
Needham (P)	-	2.7	-100%	316.4	380.7	-16.9%	0.51%	0.60%	-15.7%	380.7	0.6%
Northborough (P)	24.4	26.6	-8.3%	326.0	401.2	-18.7%	0.52%	0.63%	-17.5%	401.212	0.6%
Peabody (P)	54.7	62.7	-12.6%	817.1	523.7	56.0%	1.31%	0.83%	58.4%	523.7	0.8%
Stoughton (P)	1.5	3.2	-54.5%	25.7	38.2	-32.7%	0.04%	0.06%	-31.7%	38.17	0.1%
Wakefield (P)	48.0	32.5	47.7%	565.5	643.9	-12.2%	0.91%	1.02%	-10.9%	643.9	1.0%
Wellesley (P)	52.7	8.9	489.4%	718.5	524.6	37.0%	1.15%	0.83%	39.0%	524.6	0.8%
Wilmington (P)	2.5	8.5	-70.6%	154.8	250.4	-38.2%	0.25%	0.40%	-37.2%	250.4	0.4%
Winchester (P)	16.9	28.0	-39.4%	420.0	477.1	-12.0%	0.67%	0.75%	-10.6%	477.1	0.8%
Woburn (P)	49.5	51.7	-4.1%	1,163.7	1,125.1	3.4%	1.86%	1.78%	5.0%	1,125.1	1.8%
Subtotal Metro-System (Partially Served)	428.2	346.1	23.7%	6,766.2	6,380.7	6.0%	10.8%	10.1%	7.6%	6,380.7	10.1%
Subtotal Metro-System (Full & Partial)	4,697.4	4,495.0	4.5%	62,403.6	63,348.2	-1.5%	100%	100%		63,348.2	100%
Chicopee Valley Aqueduct											
Chicopee	124.6	130.3	-4.4%	1,811.7	1,902.4	-4.8%	69.75%	68.33%	2.08%	1,902.4	68.3%
South Hadley FD #1	25.3	26.1	-3.3%	383.5	421.1	-8.9%	14.77%	15.13%	-2.37%	421.1	15.1%
Wilbraham	24.6	22.9	7.4%	402.1	460.5	-12.7%	15.48%	16.54%	-6.41%	460.5	16.5%
Subtotal CVA System	174.4	179.3	-2.7%	2,597.3	2,784.0	-6.7%	100%	100%		2,784.0	100%
Other Revenue Supply											
Cambridge (P)	-	-	0.0%	0.05	19.4	-99.8%				19.4	
Clinton ³	32.0	37.5	-14.8%	449.5	495.0	-9.2%				495.0	
Worcester (P)	-	-	0.0%	-	-	0.0%				0.0	
Other Revenue Customers⁴	39.0	42.6	-8.6%	483.5	500.6	-3.4%				500.6	
Subtotal Other Revenue Supply⁵	70.9	80.1	-11.5%	933.0	1,015.1	-8.1%				1,015.1	
Total Water Supplied											
Fully Supplied Metro Communities	4,269.2	4,148.9	2.9%	55,637.4	56,967.5	-2.3%				56,968	
CVA Communities	174.4	179.3	-2.7%	2,597.3	2,784.0	-6.7%				2,784	
Partially Supplied Communities	428.2	346.1	23.7%	6,766.2	6,380.7	6.0%				6,381	
Other Revenue Customers	70.9	80.1	-11.5%	933.0	1,015.1	-8.1%				1,015.1	
Total Water Supplied⁶	4,942.7	4,754.4	4.0%	65,933.9	67,147.3	-1.8%				67,147.3	

1) System share for each rate revenue community is the community's share of total MWRA water use for all rate revenue communities. System share for each Chicopee Aqueduct Valley (CVA) community is each CVA community's share of total MWRA water supplied to the CVA system. Water assessments for revenue communities are calculated by allocating the total annual water rate revenue requirement based on each community's share of flow. Water assessments for CVA communities are calculated by allocating the annual CVA rate revenue requirement based on each CVA community's share of CVA flow.

2) Lexington supplies Bedford with partial MWRA water service.

3) The Town of Clinton receives up to 800 million gallons of water per year free of charge and is charged a flat wholesale rate per million gallons for water in excess of 800 million gallons per year.

4) Other Revenue Customers: D.C.R. (Parks & Pools), DCR Blue Hills Ski Area, Stone Zoo, and the Deer Island WWTP.


5) Other Revenue Customers are charged a flat wholesale rate per million gallons of water supplied.

6) This report includes only water supplied for which revenue is collected in accordance with existing user agreements. It does not include water utilized for system maintenance.

(P) Community is partially supplied by MWRA. Marlborough & Northborough are temporarily being fully supplied.

Question's regarding water supplied can be directed to Michael Greeley @ (857) 305-5814 or Leo Norton @ (617) 788-2256.


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: February 16, 2022
SUBJECT: Metropolitan Redundancy Interim Improvements Projects Update

COMMITTEE: Water Policy and Oversight

X INFORMATION
 VOTE

Valerie Moran, P.E., Director of Waterworks
John P. Colbert, P.E., Chief Engineer
Lisa Hamilton, P.E., Assistant Director, Engineering
Preparer/Title


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

RECOMMENDATION:

For information only. This staff summary provides an update on the Metropolitan Interim Improvements projects. These projects are being implemented to reduce the risk of failure of surface pipe components of the three Metropolitan Tunnels (City Tunnel, City Tunnel Extension and Dorchester Tunnel) and to improve MWRA's ability to respond in the event of a failure that requires shut down of any part of the Metropolitan Tunnel system. These projects were developed at the direction of the Board of Directors to provide interim improvements to mitigate the risk of a failure while staff proceed with planning, design, construction and ultimately start-up of the new tunnels. A presentation will be provided to the Board on the construction activities for these projects.

DISCUSSION:

Each of the existing Metropolitan Tunnels consists of concrete-lined deep rock tunnel sections linked to the surface through steel and concrete vertical shafts. The tunnels and shafts themselves require little or no maintenance and represent a low risk of failure. The shafts are located in Weston, Chestnut Hill, Allston, Somerville, Malden, West Roxbury, and Dorchester. At the top of each shaft, cast iron or steel pipe and valves connect to the MWRA surface pipe network. These pipes and valves are accessed through subterranean vaults and chambers. The piping and many of the valves are in poor condition. Interim improvements as detailed below are being implemented to strengthen the physical assets at top of shaft structures and to provide additional flow capacity and redundancy in the event of an emergency due to a tunnel failure.



Corroded air valve at Shaft 9A

1. Commonwealth Avenue Pumping Station Improvements – This project added pumps and piping to provide a means of supply independent of the City Tunnel, by adding a pipeline connection to MWRA’s Low Service system and two new pumps capable of pumping from the Low Service grade line. This project was completed in July 2021 at a final cost of \$7,977,169.



New Pumps Commonwealth Avenue

2. Tunnel-shaft Pipeline Improvements – Modifications are being implemented to protect the valves and piping in the chambers at the tops of the tunnels shafts and to reduce water infiltration that is contributing to corrosion and can require significant pumping in order to access valves for operation. Construction was recently completed at Shafts 6, 8, and 9A at a cost of \$2,391,500 that provided protection of all exposed piping, shaft caps, end caps, nuts, bolts, and valve bodies with corrosion protection tape or exterior carbon fiber wrapping; removed and replaced corroded nuts and bolts; and reduced or eliminated water infiltration in eight vaults through waterproofing and grouting. Improvements for Shaft 5 are currently in design with an anticipated construction award in October 2022. The design scope for the upgrades to Shafts 7, 7B, 7C, and 7D is in progress.



Flooded Shaft 7D valve chamber

3. Weston Aqueduct Supply Main (WASM) 3 Rehabilitation - This ten-mile steel pipe, installed in the 1920s and 1930s, is a critical supply line to over 250,000 customers in the Northern High, Northern Extra High, and Intermediate High supply systems. In the event of a loss of the City Tunnel or City Tunnel Extension, this large pipeline can provide emergency flow to the Gillis Pump Station, which would serve the Northern High and Northern Intermediate High communities. The first of two contracts is currently in construction that will rehabilitate over 2.5 miles of 56-inch and 60-inch piping at an estimated cost of \$19,487,850. Construction is currently scheduled to be completed in May 2023 significantly ahead of the contract schedule. The second phase of the WASM 3 rehabilitation is currently under design with



WASM 3 Cleaned and Lined Piping

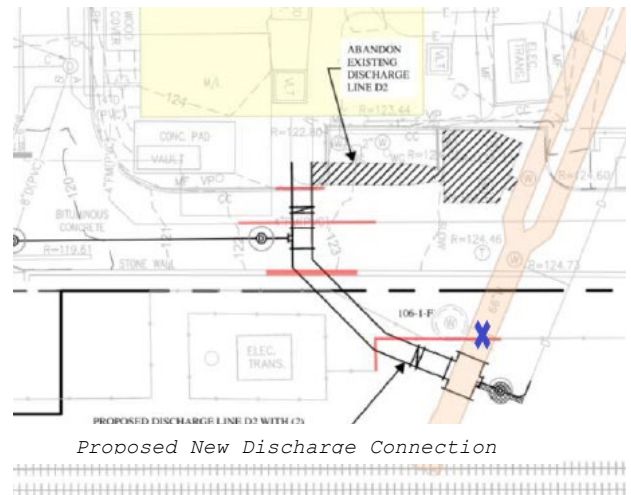
an anticipated construction award in January 2023.

- 4. Low Service Pressure Reducing Valve Improvements - This project is currently under construction at a cost of \$11,326,000, and will increase the size of pressure reducing valves on the WASM 4 pipeline at Nonantum Road in Boston and the WASM 3 pipeline at



Mystic Valley Parkway in Medford. This will increase the capacity of flow from these High Service mains to the Northern Low service area and ultimately to the Spot Pond and Gillis Pumping Stations in an emergency condition with either the City Tunnel or the City Tunnel Extension out of service. With this increased capacity, these stations will be capable of supplying the Northern High and Northern Intermediate High service areas without the need to pump from the open Spot Pond emergency reservoir. This project is currently in construction and anticipated to be completed in July 2023.


- 5. The Chestnut Hill Pumping Station Design Upgrade – This project includes a new discharge connection and vault to provide isolation of the pump station in the event of failure of the City Tunnel or the Dorchester Tunnel. The Chestnut Hill Pumping Station would be utilized to pump water from the open Chestnut Hill Reservoir to supply the Southern High and Southern Extra High service areas. The new pump station discharge connection and vault will be installed on Section 106 downstream of an existing valve. The anticipated construction award is November 2022.



BUDGET/FISCAL IMPACT:

The cost of these projects are included in the Capital Improvement Program budget.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: February 16, 2022
SUBJECT: Northern Extra High Pressure Zone Improvements Section 63 (Lexington)
Albanese D&S, Inc.
Contract 6522

COMMITTEE: Water Policy & Oversight

 INFORMATION

 X VOTE


Michele S. Gillen

Director of Administration

John P. Colbert, P.E., Chief Engineer
Paul T. Rullo P.E., Program Manager
Preparer/Title


David W. Coppes, P.E.

Chief Operating Officer

RECOMMENDATION:

To approve the award of Contract 6522, Northern Extra High Pressure Zone Improvements Section 63 (Lexington), to the lowest responsible and eligible bidder, Albanese D&S, Inc. and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$11,737,000 for a contract term of 840 calendar days from the Notice to Proceed.

DISCUSSION:

The Northern Extra High (NEH) Pressure Zone provides water to Arlington, Bedford (through Lexington), Belmont, Lexington, Waltham and Winchester. In addition, the Town of Burlington was recently approved for admission to the MWRA water system to purchase water to be supplied via the NEH Pressure Zone. To allow for the connection by Burlington, MWRA will construct a portion of the Northern Extra High redundancy project extending Section 63 by approximately 5,200 linear feet under construction Contract 6522. Burlington is moving forward with pipeline construction of approximately 10,000 feet of 24-inch diameter water main, which is scheduled to be complete by November 2022. In response, MWRA accelerated design and construction of its pipeline to join to Burlington's pipeline to allow Burlington to begin taking water as soon as is practical. The new MWRA 5,200 linear foot 24-inch diameter water main is located on Lowell Street and Summer Street (MassDOT State Route 2A) in Lexington from Maple Street to the town border with Arlington.

Construction Contract 6522 Section 63 (Lexington) is the first of three construction contracts that, in addition to providing a connection to Burlington, will also improve hydraulic conditions and provide redundancy for communities of the NEH Pressure Zone. In addition to 5,200 linear feet of 24-inch MWRA water main, this contract also includes installation of 5,200 linear feet of 16-inch diameter local water main for Lexington. Under the terms of a Memorandum of Agreement between MWRA and Lexington, the Town will reimburse MWRA for the cost of Lexington's work. The MOA was approved at the October 20, 2021 Board of Directors Meeting.

Contract Schedule

Given the tight schedule for this project, in order to coordinate with Burlington's new pipeline, staff have modified our typical procurement process in two ways.

1. A materials purchase contract was awarded at the December 15, 2021 Board of Directors meeting to Everett J. Prescott Inc. This pre-purchase includes 24-inch, 20-inch, 16-inch and small diameter pipe, fittings, and valves to support installation of the new MWRA Section 63 piping for approximately one mile. Shop drawing submittal and review and scheduling for the delivery of materials can take a significant amount of time at the beginning of a contract before any actual construction can commence. Pre-purchase of materials mitigates this time, which will allow the selected contractor to start actual construction months sooner. All shop drawings for the pre-purchase contract have been approved.
2. The contract was advertised prior to receipt of a final permit from MassDOT, which has jurisdiction of the roadways within the entire length of this contract. MWRA applied for a construction access permit and has worked closely with MassDOT staff, incorporating all MassDOT requirements pertaining to traffic plans and roadway design from two rounds of review comments, into the contract bid documents. To maintain schedule, staff recommend award of the contract without a formal access permit from MassDOT. MWRA anticipates that the construction access permit will be issued prior to commencement of construction activity.

Procurement Process

Contract 6522 was advertised in the Central Register, the Boston Herald, Banner Publications, El Mundo, and COMMBUYS and bid utilizing MWRA's e-procurement system (Event 4926) in accordance with Massachusetts General Laws, Chapter 30. Five bids were received and opened on February 2, 2022. The bid results were as follows:

<u>Bidders</u>	<u>Bid Amount</u>
<i>Engineers Estimate</i>	\$9,625,000.00
GVC Construction, Inc.	\$10,919,410.25*
Albanese D&S, Inc.	\$11,737,000.00
R. Zoppo Corp.	\$12,596,500.00
RJV Construction Corp.	\$12,632,500.00
Revoli Construction Co., Inc.	\$12,952,500.00

* *Bid allowed to be withdrawn due to a bid error.*

Albanese submitted a bid price that is \$2,112,000 (21.9%) higher than the Engineer's Estimate, and 6.8% less than the next lowest bidder. The cost difference between the Engineer's Estimate and the award amount is attributed largely to inflationary costs for materials not covered by the pre-purchase for the 2023 construction season.

Staff interviewed Albanese and confirmed the bid price reflects all work described in the contract documents. Staff reviewed Albanese's bid in detail and discussed the major bid items with the company. Based on the bid review and subsequent discussions with Albanese, staff are satisfied that the firm understands the full scope of work and can perform the work for the bid price, which includes the payment of prevailing wages.

References were checked and found to be favorable. Albanese successfully completed several water and sewer projects for MWRA including the three Northern Intermediate High Pipeline projects in Stoneham, Wakefield and Reading, which included large diameter pipe construction. Albanese's performance on these projects was good. Albanese is currently working on Contract 6544, WASM 3 Rehabilitation Construction Package 1, in the amount of \$19,487,850 and its performance to date has been good and they were awarded rehabilitation of Sections 23, 24 and 47 Water Mains (Boston and Newton) in October 2021. Staff also checked references for other non-MWRA projects, which were favorable. Five years of OSHA records for Albanese were reviewed and no violations were found.

Staff have concluded that Albanese possesses the skill, ability, and integrity necessary to perform the work under this contract, and is qualified to do so. Staff have determined that the bid price is reasonable, complete and includes the payment of prevailing wage rates, as required. Therefore, staff recommend that Contract 6522 be awarded to Albanese D&S, Inc. as the lowest responsible and eligible bidder.

BUDGET/FISCAL IMPACT:

The FY22 CIP includes \$4,400,000 for contract 6522. The award amount is \$11,737,000 or \$7,337,000 over plan. This amount will be absorbed within the five-year CIP spending cap. In addition, the cost associated with replacement of the town's 16-inch water main is \$3,504,500 and will be reimbursed to MWRA in accordance with the terms of the Memorandum of Agreement between MWRA and Town of Lexington.

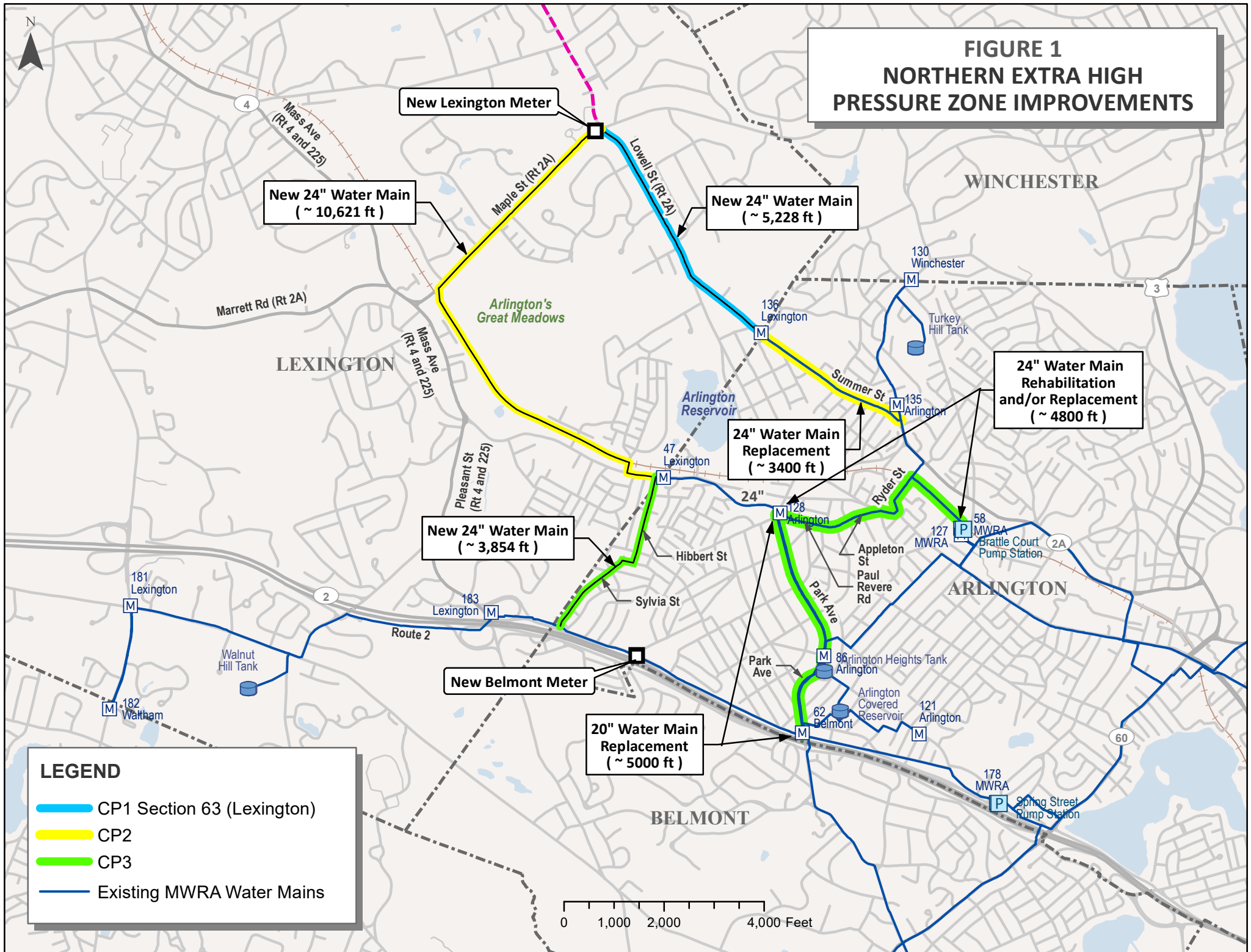
MBE/WBE PARTICIPATION:

The MBE and WBE participation requirements for this project were established at 7.24% and 3.6%, respectively. The Affirmative Action and Compliance Unit has reviewed the bids and determined that the bid from Albanese D&S, Inc. is responsive to these requirements.

ATTACHMENT:

Figure 1 – Project Location


**FIGURE 1
NORTHERN EXTRA HIGH
PRESSURE ZONE IMPROVEMENTS**



LEGEND

- CP1 Section 63 (Lexington)
- CP2
- CP3
- Existing MWRA Water Mains

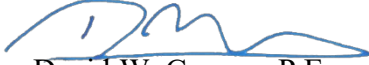
STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: February 16, 2022
SUBJECT: John J. Carroll Water Treatment Plant Sodium Hypochlorite System Modifications
Harding & Smith, LLC
Contract 7085H, Change Order 5

COMMITTEE: Water Policy & Oversight

INFORMATION
 VOTE

Corinne M. Barrett, Director, Construction
Jami Walsh, P.E. Construction Coordinator
Preparer/Title


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

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Change Order 5 to Contract 7085H, John J. Carroll Water Treatment Plant Sodium Hypochlorite System Modifications, with Harding & Smith, LLC for a not-to-exceed amount of \$140,000, increasing the contract amount from \$1,865,917.47 to \$2,005,917.47, and extending the contract term by 150 calendar days from February 7, 2022 to July 7, 2022.

Further, to authorize the Executive Director to approve additional change orders as may be needed to Contract 7085H in an amount not to exceed the aggregate of \$250,000 and 180 days in accordance with the Management Policies and Procedures of the Board of Directors.

DISCUSSION:

The sodium hypochlorite system at the Carroll Water Treatment Plant is located in the Chemical Building between the Ozone and Post Treatment Buildings. The system consists of eight 12,000-gallon storage tanks, five chemical metering pumps, piping and appurtenances. The existing hypochlorite system pumps and piping must be upgraded, as these components are at the end of their useful life.

Multiple leaks have occurred in the Chlorinated Polyvinyl Chloride (CPVC) pipe in the Chemical and Post Treatment Buildings because of exposure to sodium hypochlorite for over 15 years. The CPVC pipe is being upgraded to polyvinylidene fluoride (PVDF) pipe because it has better corrosion resistance to sodium hypochlorite. Additionally, PVDF pipe utilizes fused joints, which have better resistance to sodium hypochlorite than the CPVC glued joints. Sodium hypochlorite piping at the Deer Island Treatment Plant has already been changed from CPVC due to the superior performance of PVDF. The existing feed pumps have been in operation since plant startup in 2005, and have also experienced failures and must be replaced. Construction has been sequenced to allow replacement of the pipe and pumps without adversely impacting disinfection operations. Some work is being done during winter maintenance periods when each half of the plant is shut down for maintenance.

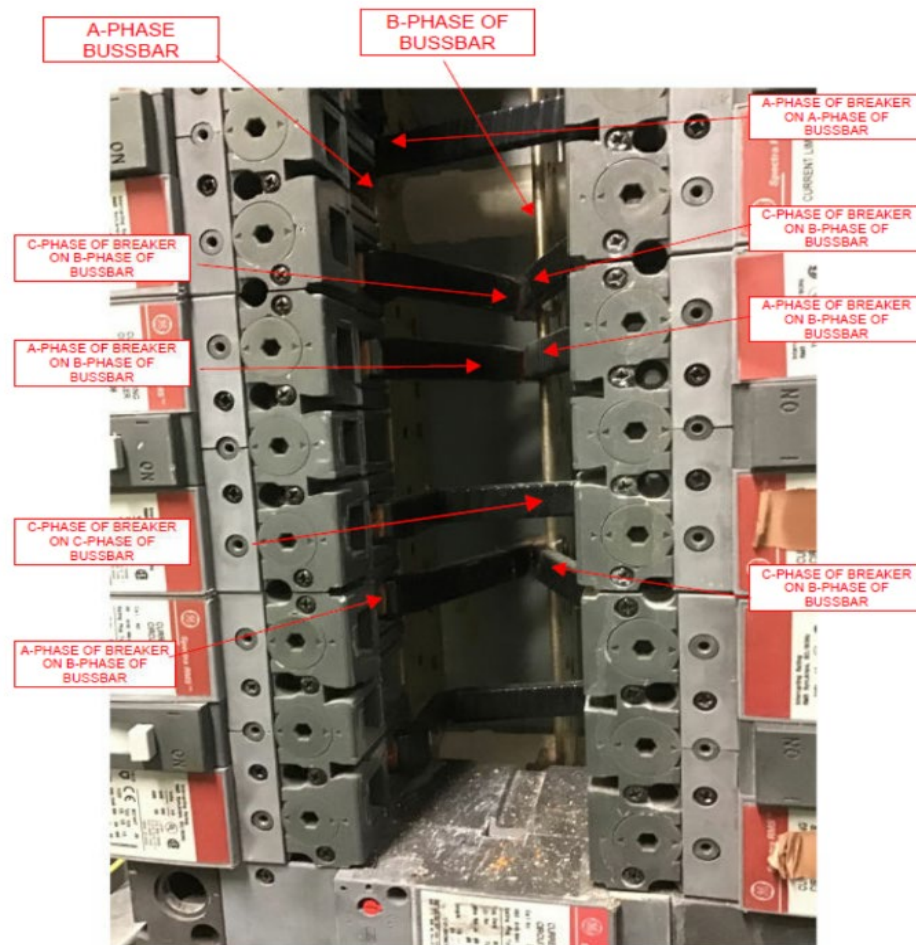
This Change Order

Change Order 5 consists of the following item:

Modifications to Power Panel 1 and Extension
of the Contract Time by 150 Calendar Days

Not To Exceed \$140,000

During modification of the power feed to the chemical metering pumps from a single power source to redundant power sources, it was determined that the existing power panel could not accept three-phase power due to the manner in which the panel was originally constructed. This panel had cross connections between phases and was therefore only supplying single-phase power, despite the



Interior of Power Panel 1 showing existing circuit and cross connections that require modification.

presence of spare 3-phase breakers in the panel. The five new chemical feed pumps require three-phase power and, therefore, could not be supplied from this panel as currently configured. Modifications to the panel must be made, including furnishing new three-phase breakers, replacing interior components, and rearranging existing breakers to ensure there is a balanced load across the three phases.

The discovery that this power panel could not accept three-phase power could not have been made while the power panel was live and therefore was only identified during a plant shutdown. This problem did not have an obvious solution at the time of discovery and additional research into code requirements and availability of materials compatible with the existing panel were necessary to determine if the existing panel could be modified, or if a new panel was required. The final solution to the problem was not developed in time for the January 19, 2022 Board of Directors' meeting. While the problem was being investigated, the pump installation work could not proceed because the power panel modifications are required prior to such installation. Accounting for the time it took to diagnose the problem, and the time needed to secure the parts and perform the remaining project work, a contract extension of 150 calendar days is requested. The Contractor supported this request with a schedule analysis which was acceptable to staff.

This item was identified by MWRA staff as an unforeseen condition. MWRA staff, the Consultant, and the Contractor have agreed to an amount not to exceed \$140,000 for the additional labor, materials, and other allowable direct costs associated with this work; and to extend the contract term by 150 calendar days from February 7, 2022 to July 7, 2022.

CONTRACT SUMMARY:

	AMOUNT	TIME	DATED
Original Contract:	\$1,406,830.00	235 Days	10/19/20
CHANGE ORDERS:			
Change Order 1*	\$3,204.00	0 Days	03/18/21
Change Order 2	\$312,750.00	240 Days	06/07/21
Change Order 3*	\$94,016.47	0 Days	09/24/21
Change Order 4*	\$49,117.00	0 Days	12/30/21
Change Order 5	<u>\$140,000.00</u>	<u>150 Days</u>	Pending
Total Change Orders:	\$599,087.47	390 Days	
Adjusted Contract:	\$2,005,917.47	625 Days	

*Approved under delegated authority

If Change Order 5 is approved, the cumulative value of all change orders to this contract will be \$599,087.47, or 42.6% of the original contract amount. Work on this contract is approximately 75% complete.

BUDGET/FISCAL IMPACT:

The FY22 CIP includes \$1,710,034 for contract 7085H. Including this change order for \$140,000, the adjusted subphase total will be \$2,005,917.47, or \$295,883.47 greater than the amount in the CIP. This amount will be absorbed in the five-year CIP spending cap.

MBE/WBE PARTICIPATION:

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

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director *Frederick A. Laskey*
Patterson Riley, Special Assistant, Affirmative Action & Compliance *Patterson Riley*
DATE: February 16, 2022
SUBJECT: Diversity, Equity and Inclusion Workgroup Update

COMMITTEE: Personnel & Compensation

 X INFORMATION
 VOTE

Tomeka Cribb-Jones, Associate Special Assistant
Prepared/Title

RECOMMENDATION:

For information only. Staff have provided the Board with periodic updates on MWRA’s Diversity, Equity and Inclusion (DEI) efforts. Staff thought it timely to provide another update at this meeting as staff are also seeking the Board’s approval on the MWRA Affirmative Action Plan presented in a separate staff summary.

DISCUSSION:

Like many other entities, several events during the past 2 plus years have prompted MWRA to re-assess its already robust DEI efforts. A significant first step was the establishment in 2020 of a DEI working group that includes a variety of MWRA staff including several high level managers and that represents every MWRA Division. That group, co-chaired by Patterson Riley, Special Assistant, Affirmative Action and Michele Gillen, Director of Administration, has initiated and advanced several key new initiatives and enhanced several existing ones that together advance MWRA’s DEI program.

An early and important step was the inclusion, for the first time, of a DEI goal in the Five Year Strategic Business Plan FY 2021-2025. This goal, “Foster a diverse and inclusive workplace” is closely related to another important goal “Foster and sustain an excellent workforce.” The addition of this goal along with previously established goals, as well the establishment of a DEI mission statement that is closely tied to MWRA’s core mission and values establish the foundation upon which staff have advanced many new key initiatives. That mission statement reads:

“MWRA's mission is the provision of reliable, cost-effective, high quality water and wastewater treatment services that protects the public health, promotes environmental stewardship, maintains customer confidence and supports a vital economy. Recruiting, developing and retaining a high-performance workforce that reflects our service area and underscores our core principles of diversity, equity and inclusion, enables us to achieve our mission, brings value to our staff and makes us better able to serve the ratepayers. We believe MWRA staff are stronger as a team when we include diverse perspectives, experiences and approaches, which fosters continuous improvement and performance as an Authority.”

Other ongoing DEI efforts are described below.

Staff Engagement:

One of the early initiatives of the DEI working was the development of a DEI survey of all staff that provided valuable information to guide the working group's ongoing efforts. The results of that survey have been provided to the Board previously. Those results as well as other feedback from staff have helped shape the DEI program going forward.

Staff have also established a DEI page on MWRA's internal webpage "Pipeline" that celebrates MWRA's diversity, highlights cultural events and recognitions, and makes staff aware of training, seminars, webinars and other DEI informational opportunities.

Training and Mentoring:

Training has always played a multi-faceted and critical role in MWRA's efforts to provide a workplace that is free of harassment and hostility, that welcomes and encourages diverse views and perspectives and that provides advancement opportunities to all staff. Staff continue to enhance and improve existing trainings while seeking new ones.

Harassment Prevention and DEI training:

MWRA provides mandatory harassment prevention training every other year. Last year staff determined that it would be valuable and timely to add additional DEI training in the year in between harassment prevention training. MWRA will continue to provide bi-annual harassment prevention training and additional DEI related training in the alternate years.

Professional Development and Skills Training:

Staff continue to seek and offer other trainings to develop staff's skills. Supervisory and interview skills trainings have been effective tools to develop staff and provide advancement opportunities. Leadership training has been provided to many non-union managers.

As part of a pilot telework program for administrative support staff skills training is being provided to refresh staff skills where necessary and to provide new skills as MWRA continues to transition to a more virtual and digital work environment.

Mentoring:

MWRA has participated in mentoring programs with the National Association of Clean Water Agencies (NACWA) and is in the process of developing an in-house mentoring program. Staff are developing a survey soon to further gauge staff interest and to gather input to refine the future program.

Staff Recruitment and Retention:

Staff are developing new recruitment strategies to address staffing shortages resulting from a significant numbers of retirements and resignations (the "Great COVID Resignation") with an eye

on assuring MWRA has a highly qualified and diverse staff. Those include the expanding the use of social media platforms as part of the overall staff recruitment, the “re-branding” of MWRA’s job postings to highlight the MWRA’s diverse and inclusive work culture and environment, telework availability for certain positions and education and training opportunities, the development of targeted career paths, the expansion of the intern program and the continued development of opportunities for vocational technical school students. Staff will present MWRA Affirmative Action Plan in a separate staff summary at this Board meeting.

One of the principal duties of the Workforce Development Coordinator in AACU, not only includes career counseling on career development topics such as resumes, mock interviews, and the use of LinkedIn profiles, but also comprehensive assessments for employees to identify possible barriers to employment and develop plans for employees to address these potential challenges.

Staff are evaluating the use of staffing agencies to fill high level and hard to fill positions. Staff continue to use the Local Job Network, a web based recruiting site where entry, mid-level and senior level positions are posted to expand outreach to diverse protected classes.

Staff have expanded recruitment efforts and networking partnerships with Mass Hire Chelsea, City of Cambridge Workforce Development Program, Community Teamwork in Lowell, and Boston Veteran Collaborative.

MWRA joined Boston Public School’s Madison Park Advisory Council and increased the agency’s visibility at area local high schools, vocational technical schools and community groups. These enhanced relationships have resulted in the recent hiring of two co-op students from vocational technical high schools.

Staff continue to offer and look for new strategies and programs to develop staff skills and to provide advancement opportunities with the continued goal of recruiting and retaining a diverse staff and “building the bench for the future.”

Contracts:


MWRA has long established M/WBE goals where appropriate and applicable and is in the process of developing a Request for Proposals to undertake a disparity study to measure MWRA’s current minority and women business participation programs to determine whether the Authority’s program has an evidentiary basis for adjusting our race and gender-conscious contracting policies.

Environmental Justice:

In 2021, MWRA submitted a draft Environmental Justice (EJ) strategy to EEOEA. This strategy outlined MWRA’s plan for promoting EJ considerations across MWRA’s programs, policies and activities. Tomeka Cribb-Jones, Associate Special Assistant, Affirmative Action and Rebecca Weidman, Director Environmental and Regulatory Affairs will lead MWRA’s efforts in establishing an Environmental Justice Working Group to further our mission in promoting environmental stewardship.

STAFF SUMMARY

TO: Board of Directors
FROM: Patterson Riley, Special Assistant, Affirmative Action & Compliance Unit
DATE: February 16, 2022
SUBJECT: Approval of the 2022 Affirmative Action Plan



COMMITTEE: Personnel & Compensation

 INFORMATION
 X VOTE

RECOMMENDATION:

That the Board of Directors approve the Massachusetts Water Resources Authority's Affirmative Action Plan effective for a one-year period from January 1, 2022 through December 31, 2022.

DISCUSSION:

The Affirmative Action Plan sets out the basic parameters of MWRA's commitment to Equal Opportunity in the areas of Employment (EEO) and Minority/Women Business Enterprise (M/WBE) participation in MWRA procurements and contracted services. The Plan has been prepared pursuant to Section 7(g) of the Authority's Enabling Act, which states:

“The Authority shall develop policies and plans for affirmative action in employment, procurement, and contracting in accordance with laws and consistent with general policies and plans for the Commonwealth.”

MWRA updates its Affirmative Action Plan annually and provides information on the development, implementation and monitoring of the various plan elements in accordance with guidelines of the U.S. Department of Labor, Office of Federal Contract Compliance Programs (OFCCP). Since 2002, MWRA has utilized Affirmity, a nationally known computer software package to produce the required workforce staffing summary reports for each Affirmative Action Plan. Affirmative Action and Compliance Unit staff works with staff from the MIS and Human Resources Departments to convert personnel transaction data from the MWRA's Human Resources Information System and to validate the proposed workforce goals for CY2022.

The text of the plan is attached (Attachment A). Copies of the full plan, including appendices will be available on request. Attachment B, “MWRA Job Group Representation,” shows the actual number of minority and female employees currently, along with the numbers of over-and under-utilized job groups. The underutilized job groups denote areas for AACU recruitment focus if positions become available. This report is included in the MWRA Orange Notebook, presented to the Board on a quarterly basis.

During the 2021 Affirmative Action Plan year, MWRA hired a total of 62 new employees, including 11 (18%) females and 14 (23%) minorities. There were 94 employees promoted during this period, including 13 (14%) females and 12 (13%) minorities. For Affirmative Action Plan reporting purposes, 61 of these promotions reflect employee promotions where there has been a change in Job Group as described under “Availability Analysis.” Of this total, 13 (21%) females and 12 (20%) minorities were promoted. In addition, to enhance upward mobility and avail all employees of a career track where one exists, there were 21 transfers and a voluntary demotion during the 2021 Affirmative Action Plan year and of these, 6 (29%) were females and 2 (10%) were minorities.

A total of 88 terminations occurred within the period and of these, 21 (24%) were females and 15 (17%) were minorities. Of the total number of terminations, 94% left voluntarily, 69% were employees who retired, and 26% were employees who resigned.

In comparison, during the 2020 Affirmative Action Program year, a total of 35 terminations occurred, including 1 (3%) female and 5 (14%) minorities. Of the total number of terminations, 29% were employees who resigned and 57% were employees who retired. A review of the total number of termination statistics for calendar years 2019, 2020 and 2021 is included in Table A below.

Table A

Termination Statistics	Employee Count	Minority		Female	
Total Terminations CY2019	78	17	22%	20	26%
Total Terminations CY2020	35	5	14%	1	3%
Total Terminations CY2021	88	21	24%	15	17%

The race/sex composition of the workforce did not change significantly during the 2021 Affirmative Action Plan year, particularly as compared to Plan years 2019 and 2020.

The current race/sex composition of the workforce for minorities of 23.9% greater than the overall 2021 MWRA workforce staffing goal of 21.0%; and the current sex composition of the workforce for females of 23.1% is greater than the overall 2021 workforce staffing goal of 20.0%.

A review of MWRA workforce staffing statistics for calendar years 2019, 2020, and 2021 is included in Table B below:

Table B

Calendar Year	Minority	Female
12/31/19	23.2%	23.0%
12/31/20	23.2%	23.5%
12/31/21	23.9%	23.1%

The 2022 Affirmative Action Plan documents include detailed workforce data for the reporting period December 1, 2020 through November 30, 2021. The data indicates that the number of underutilized job groups for females has decreased. In calendar year 2021, there were 6 job groups underutilized by women and this number has remained 6 job groups for 2021. In calendar year 2021, the data indicate that the number of underutilized job groups for minorities has decreased.

In calendar year 2021, there were 6 job groups underutilized by minorities and this number has decreased to 5 job groups for 2021.

MWRA will continue its good faith efforts to maintain minority and female workforce staffing representation and to further reduce the number of job groups underutilized by women and minorities. There may be opportunities to fill critical positions through promotions of qualified internal candidates, including women and minority employees. The Affirmative Action and Compliance Unit will continue to focus its efforts to assist senior management to fill vacancies through the promotion of qualified women and minorities in the Management, Skilled Crafts, Operator, and Professional job groups. In addition, where external recruitment efforts are necessitated by the absence of qualified internal candidates, and senior management deem that the need exists to fill critical position vacancies, AACU will work with MWRA hiring managers and Human Resources to recruit qualified minority and female candidates.

It is the policy of the MWRA to ensure the equitable participation of Minority Business Enterprises (MBEs) and Women Business Enterprises (WBEs) in the award of all contracts including contracts for construction, goods/non-professional services and professional services. As required by the Massachusetts Department of Environmental Protection via the Environmental Protection Agency, the program will also include Disadvantaged Business Enterprises (DBEs) which means an ongoing, independent small business concern which is at least 51% owned and controlled by one or more individual(s) who are both socially and economically disadvantaged and meets the U.S. Department of Transportation eligibility criteria specified under 49 CFR Part 23 and 26 and has certification issued by the federal government or the Massachusetts Supplier Diversity Office. As of January 1, 2018, the goals for all categories – Construction, Professional Services, Goods and Equipment are 4.2% for D/MBE and 4.5% for D/WBE.

The Plan also includes information on the MBE/WBE/DBE Procurement Program. The MWRA spent \$4.2 million and \$3.2 million, respectively, with minority-and women-owned businesses in the last fiscal year. These amounts were 51.6% and 79.3% of the respective MBE and WBE targets, which reflect the achievements of the last fiscal year.

ATTACHMENT:

Affirmative Action Plan

MASSACHUSETTS WATER RESOURCES AUTHORITY



AFFIRMATIVE ACTION PROGRAM

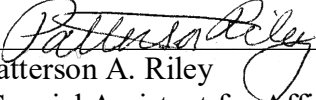
JANUARY 1, 2022 - DECEMBER 31, 2022

Frederick A. Laskey
Executive Director


Patterson A. Riley
Special Assistant
Affirmative Action & Compliance Unit

Affirmative Action Program

Massachusetts Water Resources Authority
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AAP Completed by:  January 26, 2022
Patterson A. Riley Date
(Special Assistant for Affirmative Action)

Telephone Number: (617) 788-4070

Approved by:  January 26, 2022
Frederick A. Laskey Date
(Executive Director)

Inclusive Dates of the AAP: January 1, 2022 - December 31, 2022

**Massachusetts Water Resources Authority
Affirmative Action Plan**

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INTRODUCTION

The Affirmative Action Plan for the Massachusetts Water Resources Authority (the “MWRA” or “Authority”), is prepared and adopted under Section 7(g) of the Enabling Act, which states:

“The Authority shall develop policies and programs for Affirmative Action in employment, procurement and contracting in accordance with law and consistent with general policies and programs of the Commonwealth.”

The AA Plan was developed to be consistent with federal and state laws and regulations:

Federal Executive Order 11246, as amended.

41 CFR Parts 60-1, 60-2, 60-20, 60-50, 60-250, 60-300, 60-741; Office of Federal Contract Compliance Programs (OFCCP): Affirmative Action Requirements.

The Rehabilitation Act of 1973, as amended.

The Vietnam-era Veterans’ Readjustment Assistance Act of 1974, as amended.

In addition, MWRA’s policies and personnel practices adhere to the nondiscrimination provisions of all applicable federal and state laws, as amended, including the following:

- Title VII of the Civil Rights Act of 1964.
- Civil Rights Act of 1991.
- Age Discrimination in Employment Act of 1967.
- Equal Pay Act of 1963.
- Americans with Disabilities Act of 1990, as amended.
- Massachusetts General Laws, Chapter 151B.
- Massachusetts Comparable Pay Act.

The AA Plan has been developed by the Affirmative Action and Compliance Unit (AACU) to cover the time period January 1, 2022 through December 31, 2022. The Plan includes a results-oriented set of procedures designed to achieve the full utilization of minorities and women in all levels of the MWRA’s workforce and to promote job opportunities for individuals with disabilities and covered veterans. The Plan has been reviewed by the MWRA Board of Directors, voted on and approved for full implementation.

The Massachusetts Legislature created the MWRA in December 1984 to manage water and sewer services for 3.0 million people and 5,500 businesses in 61 communities. While the Boston Harbor Clean-up is the best known of its projects, MWRA has also completed a modernization of the drinking water system. MWRA also maintains 400 miles of water pipes, aqueducts, and tunnels and 228 miles of sewers. Also, nearly completed are projects to control combined sewer overflows, provide adequate water delivery and meet all federal, state and local water and wastewater standards.

II. POLICY STATEMENT

Executive Director's Statement

Our agency serves citizens in every neighborhood, economic class and cultural group in our service area. MWRA will be in harmony with its social role only when our work environment reflects our broader social aspirations for equal opportunity, justice, personal dignity and cross-cultural respect. To that end, we must take personal responsibility for diversity in our organization and in our community.

All of us at the MWRA recognize that we must take affirmative action to prevent and to remedy any discriminatory effects of business or employment practices based on race, color, religion, sex, sexual orientation, gender identity and expression, genetic information, national origin, age, ancestry, citizenship, disability, veteran and marital status.

On behalf of the MWRA, its managers and employees, I am committed to taking those steps which ensure equitable participation in our employment opportunities by the members of any protected class group without regard to race, color, religion, sex, sexual orientation, gender identity and expression, genetic information, national origin, age, ancestry, citizenship, disability, veteran status and marital status. We are committed to achieving equal opportunity for all through fair and effective implementation of our affirmative action plan.

Frederick A. Laskey
Executive Director

Board of Directors' Statement

We, the Board of Directors of the MWRA, take great pride in our diverse and talented workforce. We recognize that our continued success depends largely on the collective strengths of our employees. Developing the right mix of skills, ideas and individuals requires an unwavering commitment to Equal Employment Opportunity and Affirmative Action. Accordingly, it is our policy to recruit, hire, and advance individuals without regard to their race, color, religion, sex, sexual orientation, gender identity and expression, genetic information, national origin, age, ancestry, citizenship, disability, veteran and marital status.

Our commitment to the principles of Affirmative Action and Equal Employment Opportunity is reflected in all of our policies and procedures from recruitment and hiring to training, compensation, benefits, transfers and promotions. This commitment is based on sound management and business practices, as well as legal requirements.

In keeping with fair employment practices, we will maintain a positive and productive work environment which calls for the highest standard of personal conduct. In accordance with this standard, any type of harassment or discrimination directed toward any employee or applicant for employment on the basis of race, color, religion, sex, sexual orientation, gender identity and expression, genetic information, national origin, age, ancestry, citizenship, disability, veteran and marital status will not be tolerated.

MWRA is committed to Equal Employment Opportunity and Affirmative Action. We expect each employee to be an active partner in this effort by supporting, in word and deed, the spirit and principles of Equal Employment Opportunity and Affirmative Action. Further, we expect that these values will govern the relationships we establish with communities we serve and others with whom we do business. Working together, we can build upon this commitment and create an environment that reflects diversity in its fullest and truest sense.

The Special Assistant, Affirmative Action and Compliance Unit, has responsibility for implementing and monitoring the Authority's Affirmative Action and Compliance Plan. Employees are encouraged to contact the Affirmative Action & Compliance Unit directly in order to obtain a copy of the Authority's Policy on Equal Employment Opportunity and Affirmative Action.

III. RESPONSIBILITY FOR IMPLEMENTATION

Senior Management Responsibilities

The responsibility for achieving affirmative action goals and objectives rests with the Executive Director, the Special Assistant of Affirmative Action and Compliance Unit, the Director of Human Resources, Division/Department Directors and other managers and supervisors.

Affirmative Action and Compliance Staff

The Special Assistant, AACU is provided with sufficient authority, senior management support, and staff to execute these responsibilities, and is identified in all internal and external communications regarding the AAP. The Special Assistant may propose additional programs and activities to strengthen the MWRA's commitment to equal employment opportunity and affirmative action and to effectively address AAP/EEO matters.

The Special Assistant, AACU in conjunction with the appropriate staff, is responsible for:

- Implementing affirmative action programs.
- Developing policy statements.
- Designing and conducting audit and reporting systems to monitor protected class status for the following:
 - Recruiting
 - Hiring
 - Promotions
 - Transfers
 - Terminations
 - Demotions
- Periodically reviewing, with the Chairman of the Board of Directors and the Executive Director, the progress of senior managers in furthering the achievement of the Authority's goals.
- Serving as a liaison between MWRA and enforcement agencies.
- Acting as a liaison between MWRA and minority organizations, women's organizations and community action groups concerned with employment opportunities of minorities and women.
- Reviewing the MWRA's AAP with managers and supervisors to ensure the policy is understood and followed.

The MBE/WBE Program Manager in conjunction with the appropriate staff is responsible for:

- Administration and monitoring of the MWRA's MBE/WBE/DBE Plan.
- Assisting divisions in the implementation of the MWRA's MBE/WBE/DBE Program.
- Ensuring that the program is consistent with the MWRA's Supplementary Provision for Equal Employment Opportunity, Anti-Discrimination, and Affirmative Action.

Line Management Responsibilities

Managers and supervisors will implement the program in the following ways:

- Assist in identifying problem areas, establishing goals, and developing time lines.
- Maintain open door policy for employees to discuss issues of equal opportunity and affirmative action.
- Meet with other managers, supervisors, and employees to adhere to MWRA EEO/AA policies.
- Assist in the performance of internal audits to determine compliance.
- Evaluate the performance of subordinate managers and supervisors in achieving affirmative action plan objectives.

Other Key Staff

The Director, Human Resources, has developed and implemented appropriate mechanisms to ensure equal employment opportunity for all applicants and employees.

The General Counsel and the Associate General Counsel for Labor & Employment provide legal advice regarding equal employment opportunity and affirmative action as they affect the Authority.

IV. EQUAL EMPLOYMENT OPPORTUNITY

Dissemination of the Plan

MWRA will communicate its equal employment opportunity policies and affirmative action programs to all relevant audiences in the following manner:

Internally

Communicate to employees the existence of the Affirmative Action Plan and make it available for inspection. Prominently display EEO/AA posters throughout all business locations identifying appropriate staff to contact.

Conduct special meetings with managers, supervisors and employees to explain the intent of the equal employment opportunity policies, discuss individual responsibility for implementation and make clear the Executive Director's support of the policies.

Discuss the policies in employee orientation sessions and reference it in management training sessions.

Include the policies in the Policies and Procedures Manual.

Publicize the policy on the MWRA's internal and external websites, reports and other media.

Publish articles covering EEO programs, updates, and promotions in newsletters and other publications.

Include non-discrimination clauses in union agreements, and work to eliminate contract provisions that may have discriminating effects.

Externally

Communicate to applicants for employment the existence of the Affirmative Action Plan, and make it available for review if requested.

Incorporate the EEO clause in all purchase orders, leases and contracts.

Ensure that both minority and non-minority men and women, Veterans, and persons with disabilities are represented in recruitment advertisements.

Communicate to all recruitment sources the existence of the Affirmative Action Plan.

Development and Execution of the Plan

Development

Workforce Analysis

As of November 30, 2021, MWRA employed 1,108 people. The MWRA divides its workforce into 31 organizational units in Executive, Administration, Finance, Law, and Operations as follows:

Board of Directors

Executive - Office of the Executive Director	Operations - Administration
Executive - Affirmative Action	Operations - ENQUAL
Executive - Office of Emergency Preparedness Services	Operations - Facilities Management
Executive - Internal Audit	Operations - Laboratory Services
Executive - Public Affairs	Operations - Planning
Executive - Tunnel Redundancy Department	Operations - Toxic Reduction & Control
Administration - MIS	Operations - Engineering & Construction
Administration - Facilities	Operations - Wastewater Operations
Administration - Fleet Services	Operations - Water Distribution & Pumping
Administration - Human Resources	Operations - Water & Wastewater O&M
Administration - Procurement	Operations - Water Treatment & Transmission
Administration - Real Property & Environmental	Operations - Operation Support
Finance - Director's Office	
Finance - Rates & Budget	
Finance - Treasury	
Finance- Controller	
Finance - Risk Management	
Law	

The Office of Federal Contract Compliance Programs requires that non-construction contracts maintain an organizational profile or a workforce analysis to depict staffing patterns. It is a method to determine whether barriers to equal opportunity exist within an organization.

Pursuant to 41 C.F.R. § 60-2.11(a), the Workforce Analysis Report (Appendix A) lists each job title as it appears in the applicable collective bargaining agreements or payroll records, ranked from the highest paid to the lowest paid within each of the 31 organizational units.

The reports display within each organizational unit for each job title, the total number of incumbents, the total number of male and female incumbents, and the total number of male and female incumbents who are White, Black, Hispanic, Asian, American Indian, Native Hawaiian and Other, and Two or More Races. Finally, the reports also supply a wage rate code for each job title.

Employment Activities December, 2020 - November, 2021

From December 1, 2020 through November 30, 2021, there were a total of 78 new hires at the MWRA, including 22 (28%) females and 28 (36%) minorities. The current race/sex composition of the workforce for minorities of 23.2% is greater than the overall 2021 MWRA workforce staffing goal of 21.1%; and the current race/sex composition of the workforce for females of 23.1% is greater than the overall 2021 workforce staffing goal of 20.0%.

A total of 88 promotions occurred during this reporting period, including 26 (29%) females and 24 (27%) minorities. For Affirmative Action Plan reporting purposes 61 of these promotions reflect employee promotions where there has been a change in Job Group as described under "Availability Analysis." Of this total, 17 (27%) females and 16 (26%) minorities were promoted. In addition, to enhance upward mobility and avail all employees of a career track where one exists, there were 27 such promotions during the 2019 Affirmative Action Plan Year and of these 9 (33%) were females and 9 (33%) were minorities.

A total of 78 terminations occurred within the period, and of these, 20 (25%) were females and 17 (22%) were minorities. Of the total number of terminations, 91% left voluntarily, and of those, 55% were employees who retired and 35% were employees who resigned.

Availability Analysis

Pursuant to 41 C.F. R. 60-2.11(b), an analysis of all major Job Groups is included in the Plan (see Appendix B Job Group Analysis Report). Those jobs having similar content, wage rates and opportunities had been grouped together into 18 Job Groups:

Administrator A	Management A
Administrator B	Management B
Clerical A	Operator A
Clerical B	Operator B
Engineers A	ParaProfessional
Engineers B	Professional A
Craft A	Professional B
Craft B	Technical A
Laborers	Technical B

Moreover, the 18 Job Groups have been kept sufficiently large enough to make for meaningful statistical analyses. The grouping avoids placing job titles from different EEO-4 categories within the same Job Group, wherever possible. Alternative job groupings were reflected because they do not make substantial differences and do not mask any potential underutilization of minorities or women. This analysis of the major Job Groups on the Availability Analysis forms is shown in Appendix C.

Action-Oriented Program for Affirmative Employment Opportunities

MWRA is committed to a strong policy of equal employment opportunity and affirmative action and this commitment is clearly expressed in its Affirmative Action Plan, which covers all aspects of the employment process from recruiting and hiring to training and promotion.

MWRA takes affirmative action to ensure that applicants for employment and employees are treated fairly during employment, without regard to their race, color, religion, sex, national origin and other protected groups. MWRA also takes affirmative action steps and make good faith efforts to develop and implement action-oriented programs designed to remove any employment barriers, expand employment opportunities and strive to achieve established workforce staffing goals and objectives.

During the 2020 Affirmative Action Plan year and continuing, MWRA will make good faith efforts to continue to develop and implement an action-oriented program designed to increase employment opportunities, while tailoring the size of its workforce to meet its future mission and maintain organizational efficiency.

The Special Assistant of the Affirmative Action and Compliance Unit, working in conjunction with MWRA Division Directors, will take affirmative steps to establish the following joint accountability good faith efforts to direct their attention toward employee development programs and career counseling initiatives to prepare all interested employees including individuals in targeted EEO groups for consideration of future promotional opportunities, as follows:

- Assist Divisions in efforts to promote qualified employees including minorities and females to fill current or unanticipated vacancies, particularly those positions in underutilized job groups.
- Review the appropriate education, experience and skill requirements for successful job performance.
- Participate in programs, which may impact protected group members, especially in the areas of the development of training and recruitment.
- Schedule confidential meetings with employees who request information on MWRA affirmative action policies, including promotion and training.
- Encourage current employees to take advantage of the above listed training and developmental opportunities, as well as opportunities for promotion.
- Monitor and review, where appropriate, the qualifications of all employees to assure that protected group members are given full opportunities for training and promotion.
- Implement strategic recruitment strategies for underutilized positions likely to require external recruitment.
- Ensure that all promotional opportunities are posted.

Identification of Areas for Special Attention/Goals

Underutilization exists in the following job groups: Administrator B, Clerical B, Engineer A, Craft A, Craft B, Management A, Operator A, Professional A, Technical A and Technical B. Special attention is required to increase the representation of minority and/or females in these job groups by the following:

- Identify any applicable barriers to equal employment opportunity.
- Conduct training/awareness sessions with managers and continue to make them aware of the Affirmative Action Plan elements designed to ensure that the Authority policy and affirmative action program objectives are being followed.

During this affirmative action plan period, there may be 190 opportunities to fill vacant positions. These positions may be filled by new hires, promotions or transfers. For unanticipated position vacancies that occur in other job groups, good faith efforts will be made to attain the established goals for women and minorities. Based on the two-factor availability analysis, the following goals have been set. The chart listed below identifies the goals for those projected vacancies.

Goals for Projected Vacancies							
JOB GROUP ADMINISTRATIVE B	# Opportunities	% Availability		% Workforce		Goal	
		Minority	Female	Minority	Female	Minority	Female
Total	5	27.32	27.32	0.00	27.27	1	
JOB GROUP ENGINEER A	# Opportunities	% Availability		% Workforce		Goal	
		Minority	Female	Minority	Female	Minority	Female
Total	9	22.44	22.02	32.93	19.51		1
JOB GROUP CRAFT A	# Opportunities	% Availability		% Workforce		Goal	
		Minority	Female	Minority	Female	Minority	Female
Total	14	20.37	3.24	13.04	0.00	1	1
JOB GROUP CRAFT B	# Opportunities	% Availability		% Workforce		Goal	
		Minority	Female	Minority	Female	Minority	Female
Total	18	16.57	3.24	15.07	2.05	1	1
JOB GROUP MANAGEMENT A	# Opportunities	% Availability		% Workforce		Goal	
		Minority	Female	Minority	Female	Minority	Female
Total	16	24.62	34.83	22.77	33.66	1	1
JOB GROUP OPERATOR A	# Opportunities	% Availability		% Workforce		Goal	
		Minority	Female	Minority	Female	Minority	Female
Total	15	20.77	6.86	6.15	3.08	3	
JOB GROUP PROFESSIONAL A	# Opportunities	% Availability		% Workforce		Goal	
		Minority	Female	Minority	Female	Minority	Female
Total	3	16.99	43.43	10.00	66.67	1	
JOB GROUP TECHNICAL A	# Opportunities	% Availability		% Workforce		Goal	
		Minority	Female	Minority	Female	Minority	Female
Total	9	18.07	11.06	27.45	13.73		1

Execution

Advertising and Recruitment

- The Special Assistant, AACU, annually submits an ad specifically targeted at a publication that has a high minority and female readership.
- The Director, Human Resources ensures that reasonable recruiting and advertising dollars are being targeted to reach minority and female candidates and conducts an analysis to determine the effectiveness of the employment advertisements.
- Recruiters send vacancy announcements to over 30 public and private recruitment sources. The sources included state employment offices, community organizations, interest groups, and other sources.
- Recruiters distribute literature, attend career fairs, and maintain contact with referral sources to assure a steady flow of qualified protected class applicants.

Selection

- Human Resources and Affirmative Action staff review existing promotion, transfer, training and selection procedures to ensure equal opportunity.
- Human Resources, Affirmative Action, and Division staff develop selection criteria that do not discriminate or tend to screen out women, minorities, covered veterans and/or individuals with disabilities.
- Human Resources and Affirmative Action staff monitor the selection process to ensure equal opportunity and the absence of adverse impact on protected class applicants.
- Human Resources and Affirmative Action staff review application forms to ensure non-discrimination.
- Managers and Supervisors ensure that employees in protected classes receive equal consideration in all selections.

Promotion, Transfer, Layoff and Recall

Promotions and transfer policies are designed to provide equal opportunity to all employees regardless of race, color, religion, sex, sexual orientation, gender identity and expression, national origin, age, ancestry, citizenship, disability, veteran and marital status. All employees who demonstrate management potential are encouraged to seek advancement into supervisory or other managerial positions. All employees are encouraged to take advantage of the benefits and financial support provided to them for professional development and continuing education, which may enhance their promotional opportunities.

Compensation

The principle of equal pay for equal work for all employees is a reality. All employees, including females and minorities, receive compensation in accordance with the same standards. Opportunities for overtime work or otherwise earning increased compensation, when available, is afforded to qualified employees without discrimination based on race, color, religion, sex, sexual orientation, gender identity and expression, genetic information, national origin, age, ancestry, citizenship, disability, veteran and marital status. MWRA does not reduce the amount of compensation offered because of any disability income, pension or other benefit the applicant or employee receives from another source.

Facilities

MWRA maintains all of its facilities on a non-segregated basis. MWRA maintains appropriate facilities for both sexes and handicapped individuals unless the construction of such facilities would create an undue burden on the Authority, its facilities or its operations.

Training/Career Development

MWRA assures that training programs and seminars are offered to all employees, including members of protected classes on the basis of appropriate and realistic need. All eligible employees are encouraged to participate in the Authority's tuition reimbursement and tuition remission benefit for continued education, career development and job advancement. Training programs are monitored to assure equal opportunity for protected class employees in all training opportunities.

Training needs are re-evaluated annually to determine the areas of highest priority. Emphasis is on programs to increase productivity and meet job requirements.

Human Resources and Division staff have conducted cross-functional training, to facilitate promotional opportunities and reassignments. This training often requires new skills, licenses and/or certifications.

During calendar year 2020, the Authority will continue to offer, as needed, a series of 6 classes which make up the training component of the Unit 2 and Unit 3 Productivity Improvement Program (PIP) and a series of 12 classes which make up the Unit 1 Administrative Certificate Program (ACP). In calendar year 2020, MWRA will continue to provide wastewater and water license preparatory courses to enhance new skills and development, as well as appropriate licenses and certifications to staff. While PIP and ACP classes are required for employees in designated job titles, classes are available for general enrollment by individuals developing their qualifications for future job openings.

Consideration of Minorities and Females not Currently in the Workforce

MWRA recruits minorities and women, not currently in our workforce, who have the qualifications and requisite skill for employment. All employees engaged in recruiting are committed to the development of sources of minorities and females from organizations, institutions, community agencies, training schools and colleges.

Support for Community Action Programs

School Education Program

The MWRA offers School Education Program presentations for grades K-12. The MWRA School Education Program has provided meaningful educational experiences to a number of students of the MWRA service community, including those in the urban communities of the metropolitan area.

Subjects range from the Quabbin Reservoir and the water distribution system to Deer Island and the transformation of wastewater into effluent. One of the School Education Program's goals and objectives is to increase outreach to the schools in the communities that reflect the diverse population of the MWRA service area. The School Education Program has been instrumental in informing students, and by extension, the general public of these communities, of the operation and work of the MWRA.

Sex Discrimination Guidelines

MWRA does not discriminate against any applicant or employee on the basis of sex in hiring, recruiting, promoting, transferring, layoff, termination, compensation or in selecting employees for training or other related programs.

Recruiting and Advertising

Job advertisements placed by the MWRA in newspapers and other online media for employment do not express a sex preference.

Job Policies and Practices

- Written personnel policies for affirmative action expressly indicate that there shall be no discrimination against employees on account of sex.
- Employees of both sexes have equal opportunity to any available position which the individuals are qualified to perform.
- MWRA does not make any distinction based upon sex in employment contributions, wages, hours or other conditions of employment. MWRA contribution for insurance, pension, welfare programs and other fringe benefits is the same for men and women, resulting in equal benefits.
- MWRA does not support distinctions between married and unmarried persons of one sex that are not made between married and unmarried persons of the other sex.
- MWRA provides appropriate and comparable physical facilities to both sexes.
- MWRA does not deny a female employee the right to any job which she is qualified to perform.
- MWRA does not penalize women in their conditions of employment because they require time away from work on account of child bearing.
- MWRA does not specify differences for male or female employees on the basis of sex in either involuntary or optional retirement age.

Wages

- MWRA's wage schedules do not relate to and are not based on the sex of its employees.
- MWRA does not discriminatorily restrict one sex to certain job classifications.

Sexual Harassment

Acts of harassment by employees are prohibited employment practices under Title VII of the Civil Rights Act of 1964, Massachusetts General Laws, Chapter 151(B) and MWRA policy and are subject to sanctions and disciplinary measures.

It is the goal of the MWRA to promote a workplace that is free from sexual harassment. Sexual harassment means sexual advances, requests for sexual favors, and verbal or physical conduct of a sexual nature when:

- Submission to or rejection of such advances, requests or conduct is made explicitly or implicitly a term or condition of employment or as a basis for employment decisions; or
- Such advances, requests or conduct have the purpose or effect of unreasonably interfering with an individual's work performance by creating an intimidating, hostile, humiliating or sexually offensive work environment.

MWRA's Harassment Prevention Policy, policy HR.21, updated January 3, 2017, sets forth procedures for employees to follow and notify management of any sexual harassment violations. All MWRA employees received harassment training in 2020, and diverse, inclusive and respectful workplace training in 2021.

MWRA personnel investigate complaints of sexual harassment in a prompt, thorough and confidential manner, and recommend appropriate discipline up to and including termination for offenders. Employees should feel confident that retaliation against an individual who has complained about sexual harassment and retaliation against individuals for cooperating with an investigation of a sexual harassment complaint is unlawful and will not be tolerated by this organization.

Religion and National Origin Discrimination Guidelines

MWRA's affirmative action policy prohibits discrimination against employees or applicants for employment on the basis of religion or national origin.

MWRA makes every effort to accommodate the religious observances and practices of employees and prospective employees who regularly observe Friday evening or some other day of the week as their day of religious observance, and/or who observe certain religious holidays during the year and who are conscientiously opposed to performing work or engaging in similar activity on such days when such accommodations can be made without undue hardship on the operation of the Authority's business.

In determining the extent of its obligations under this section, MWRA considers the following factors:

- Business necessity;
- Financial cost and expenses; and
- Resultant personnel problems.

To assure non-discrimination based on religion or national origin, MWRA is engaged in the following activities:

- Internal communications;
- Development of internal procedures described previously;
- Regular notification to employees of EEO policy regarding religion or national origin;
- Utilization of external recruitment sources, including those educational institutions with substantial enrollments of students from various religious and ethnic groups;
- Utilization of religious and ethnic media for institutional and employment advertising.

Affirmative Action Program for Individuals with Disabilities

Policy Statement

The MWRA is committed to take affirmative action to assure equal employment opportunity for qualified individuals with disabilities.

Definition of Qualified Individual with Disability

A “qualified individual with a disability” is a person who:

- Has a physical or mental impairment that substantially limits a “major life activity”,
- Has a record of such an impairment, or
- Is regarded as having such an impairment and
- Is capable of performing the essential functions of the job with or without reasonable accommodation to his or her disability.

Pregnancy and Childbirth

Disabilities caused or contributed to by pregnancy, childbirth or other related medical conditions, will be treated the same as disabilities caused or contributed to by other medical conditions.

Definition of Reasonable Accommodation

A “reasonable accommodation” for a qualified individual with a disability may include, but is not limited to,

- Making existing facilities readily accessible;
- Job restructuring; part-time or modified work schedules; reassignment to a vacant position; modification of equipment or devices; or other similar accommodations.

Note: An accommodation must be reasonable and is not required if it would impose an “undue hardship” on the MWRA.

Request for Reasonable Accommodations

MWRA commits to making reasonable accommodations to the limitations of qualified individuals with disabilities and qualified disabled veterans, unless such an accommodation would impose on undue hardship on the MWRA’s business.

An employee with a disability may make a request for reasonable accommodations at any time to their supervisor or directly to the Affirmative Action and Compliance Unit or the Director of Human Resources. The Special Assistant of Affirmative Action & Compliance or his or her designee shall be notified of all reasonable accommodation requests by supervisors or managers and shall ensure that reasonable accommodation records are kept separate from individual employee files.

Communication of Policy

- The Executive Director or his designee will communicate to Division and Department Directors and other managers the MWRA's policy statement concerning employment of qualified individuals with disabilities.
- Where the MWRA conducts employment activities, posters will be prominently displayed setting forth such information regarding the employment of individuals with disabilities as may be required by government agencies.
- The MWRA will ensure that a list of schools, private and state placement agencies and community and social service organizations receive job listings which are externally posted and advertised by the Authority and that the list is reviewed annually.
- The MWRA will continue to notify relevant organizations as well as appropriate public employment agencies and unions, of MWRA's commitment to equal employment opportunity and affirmative action for individuals with disabilities, including veterans.
- A clause concerning the commitment to equal employment opportunity and affirmative action for individuals with disabilities will continue to be included in contracts and purchase orders of \$2,500 or more.
- The MWRA will continue to notify labor unions and (sub) contractors of the commitment to equal employment opportunity and affirmative action for individuals with disabilities and will seek their cooperation and assistance.

Voluntary Disclosure

An individual may voluntarily self-identify himself/herself as an individual with disabilities by completing the Affirmative Action Data Form, at any time.

Information submitted will be kept confidential, except that (i) supervisors and managers may be informed regarding restrictions on the work or duties of individuals with disabilities, and regarding necessary accommodations; (ii) first aid and safety personnel may be informed, when and to the extent appropriate, if the individual has a condition that might require emergency treatment; and (iii) Government officials engaged in enforcing laws administered by OFCCP, or enforcing the Americans with Disabilities Act, as amended, may be informed.

Review of Selection Process

All human resources processes shall be reviewed to determine whether present procedures assure careful, thorough and systematic consideration of the job qualifications of disabled applicants and employees for job vacancies filled either by hiring or promotion, and for all training opportunities offered or available.

Consideration of Qualifications

Records are kept by the Human Resources Department identifying those vacancies, including promotions, for which known disabled persons have been considered. Should any known disabled person be rejected for employment, promotion, or training, a record is made and kept of the reason. If such reason is medically related, the record is treated as a confidential medical record.

Where applicants or employees are selected for hire, promotion, or training, MWRA will undertake any reasonable accommodation which makes it possible to place a disabled person on the job. Records are maintained to describe the accommodation; such records are treated as confidential medical records.

Miscellaneous

- All MWRA job descriptions reflect the essential qualifications and requirements of each job.
- When an opportunity for hiring or promotion occurs, the MWRA will review the applicable job descriptions to ensure that the qualifications are job related and consistent with business necessity and the safe performance of the job.

Affirmative Action Program for Protected Veterans

Policy Statement

The Authority is committed to take affirmative action to assure equal employment opportunity in every respect for disabled veterans, Armed Forces service medal veterans, recently separated veterans, or other veterans who served during a war, or in a campaign or expedition for which a badge has been authorized (“protected veterans”).

Communication of Policy

- The Executive Director or his designee will communicate to Division and Department Directors and other managers the Authority’s policy statement concerning employment of qualified protected veterans.
- The MWRA will ensure that a list of established veteran’s organizations and public and private recruitment services, included in Appendix D of this Plan, including the appropriate local employment service offices, will receive copies of all positions, which are externally posted and advertised by the MWRA, and that this list will be reviewed annually and MWRA will continue to notify veteran’s service organizations as well as appropriate public employment agencies of the commitment to equal employment opportunity and affirmative action for protected veterans.
- A clause concerning the commitment to equal employment opportunity and affirmative action for protected veterans will continue to be included in contracts and purchase orders of \$10,000 or more.
- The MWRA will continue to notify labor unions and contractors of the commitment to equal employment opportunity and affirmative action for protected veterans and will seek their cooperation and assistance.
- The MWRA will use the outreach measures it uses for others covered by MWRA’s Affirmative Action Program to recruit and employ veterans also covered by this program.
- The MWRA will submit to the Office of the Assistant Secretary of Veterans Employment and Training no later than March 31st of each year, a form titled Federal Contract Veterans Employment Report, which shall contain a list of new employees, and those individuals who have self-identified as protected veterans hired during the period covered by the Report.

Voluntary Disclosure

- Subsequent to making a job offer, but prior to commencing duties, a prospective employee will be offered the opportunity to self-identify as a special disabled veteran, disabled veteran, a veteran of the Vietnam Era or other protected veteran. The MWRA will consider only that portion of the veteran's military record that is relevant to the job for which the veteran is being considered. After beginning employment, an employee may voluntarily self-identify him/herself at any time as a protected veteran.
- Information submitted will be kept confidential, except that (i) supervisors and managers may be informed regarding restrictions on the work or duties of disabled veterans, and regarding necessary accommodations; (ii) first aid and safety personnel may be informed, when and to the extent appropriate, if a veteran has a condition that might require emergency treatment; and (iii) Government officials engaged in enforcing laws administered by OFCCP, or enforcing the Americans with Disabilities Act, as amended, may be informed.

Review of Selection Process

All human resources processes shall be reviewed to determine whether present procedures assure careful, thorough and systematic consideration of the job qualifications of protected veteran applicants and employees for job vacancies filled either by hiring or promotion, and for all training opportunities offered or available.

Consideration of Qualifications

In determining the qualifications of a covered veteran, MWRA will consider only that portion of the military record, including discharge papers, relevant to the specific job qualifications for which the veteran is being considered.

Records are kept by the Human Resources Department identifying those vacancies, including promotions, for which known disabled persons and protected veterans have been considered. Should any known disabled person or protected veteran be rejected for employment, promotion, or training, a record is made and kept of the reason. If such reason is medically related, the record is treated as a confidential medical record.

Where applicants or employees are selected for hire, promotion, or training, MWRA will undertake any reasonable accommodation which makes it possible to place a disabled person or veteran on the job, that is not an undue hardship. Records are maintained to describe the accommodation; such records are treated as confidential medical records.

Miscellaneous

- All MWRA job descriptions reflect the essential qualifications and requirements of each job.
- When an opportunity for hiring or promotion occurs, the MWRA will review the applicable job descriptions to ensure that the qualifications are job related and consistent with business necessity and the safe performance of the job.

- MWRA has established a hiring benchmark for veterans of 8% for the 2020 Affirmative Action Plan year.
- The MWRA will not reduce the amount of compensation to veterans by the amount the veteran receives from disability income, pension or other benefits related to his or her status as a veteran.

Internal Auditing and Reporting Systems

Internal auditing and reporting for Affirmative Action is managed through the use of monthly, quarterly, and annual reports generated by AACU and shared with management. Reports reflecting workforce compensation, promotions, transfers and terminations are reviewed to ensure that the policy of non-discrimination and equal employment opportunity is carried out. State and local governments information reports (EEO-4) are prepared and submitted in accordance with regulation and written instructions.

Internal Complaint Procedure

The internal complaint procedure provides the opportunity for any individual (employee or applicant) who believes that she or he has been harassed, discriminated against or unfairly treated by the MWRA to file a complaint using the procedures set forth below.

Filing a Complaint

- The individual alleging discrimination should file a written and signed complaint with the Special Assistant of Affirmative Action and Compliance Unit (form available in AACU), or the Director of Human Resources. Detailed and specific allegations should be provided along with an indication of the action(s) or resolution the individual is seeking.
- The complaint must be filed in as timely a fashion as possible.

No Retaliation

Employees and applicants shall not be subject to harassment, intimidation, threats, coercion or discrimination because they have engaged in or may engage in the following activities:

- Filing a complaint;
- Assisting or participating in an investigation, compliance evaluation, hearing, or any other activity related to the administration of the affirmative action provisions of the Federal, state or local law requiring equal opportunity for women, minorities, individuals with disabilities or protected veterans;
- Opposing any act or practice made unlawful by any Federal, state or local law requiring equal opportunity for women, minorities, individuals with disabilities or protected veterans; or

- Exercising any other right protected by any Federal, state or local law requiring equal opportunity for women, minorities, individuals with disabilities or protected veterans.

Procedure

- The Special Assistant of Affirmative Action and Compliance Unit and/or Director of Human Resources, will be responsible for accepting complaints of discrimination in writing.
- Upon receiving a complaint of discrimination, a complaint investigator will be assigned, who shall attempt to determine through preliminary fact finding if a formal investigation is warranted.
- Upon determination that an investigation is warranted, a date will be scheduled for an in-depth interview with the complainant and other relevant parties. The complaint investigator shall attempt to bring about a satisfactory resolution with the complainant and appropriate management and make recommendations accordingly.
- Any agreement or resolution may be in writing and if in writing, copies provided to all appropriate parties.
- The complaint resolution process shall be concluded in an expeditious manner. It is the MWRA's intention to resolve all complaints internally and every effort will be made to maintain confidentiality to the extent practicable.
- The complaint investigator will advise the complainant of his or her administrative rights and the right to file a formal charge with a state or federal agency and the time limits imposed on the exercise of these rights.

Rejection or Cancellation of the Complaint

The MWRA will indicate when a complaint has been rejected for further processing.

In the event an individual files an external complaint, the MWRA's legal counsel will handle all communications. All investigations shall be conducted in a confidential manner to the extent practicable.

In addition to the above, you may file a formal complaint with the government agencies listed below. Using MWRA's complaint process does not prohibit you from filing a complaint with these agencies.

Massachusetts Commission Against
Discrimination (MCAD)
One Ashburton Place, 6th Floor
Boston, MA 02108

Massachusetts Office of Diversity and Equal
Opportunity
One Ashburton Place - Rm. 213
Boston, MA 02108

Springfield Office
MCAD
436 Dwight Street - Rm. 220
Springfield, MA 01103

U.S. Equal Employment Opportunity
Commission
JFK Federal Building
475 Government Center
Boston, MA 02203

Worcester Office
MCAD
455 Main Street - Rm. 101
Worcester, MA 01608

U.S. Department of Labor
Office of Federal Contract
Compliance Programs
JFK Federal Building - Rm. E235
Boston, MA 02203

New Bedford Office
MCAD
800 Purchase Street - Rm. 501
New Bedford, MA 02740

V. MBE/WBE/DBE Program

Policy Statement

It is the policy of the Massachusetts Water Resources Authority (Authority) to ensure the equitable participation of Minority Business Enterprises (MBEs) and Women Business Enterprises (WBEs) and Disadvantaged Business Enterprise (DBEs) in the award of all contracts including contracts for construction, goods/non-professional services (supplies and equipment) and professional services (design selection and consultants).

Definitions

- Minority Business Enterprise (MBE) means an ongoing and independent business enterprise which is owned and controlled by one or more minority persons and meets the Massachusetts Supplier Diversity Office (SDO) criteria specified under 425 CMR 2.03 (d) (and, if applicable, one or more of the provisions of 425 CMR 2.06).
- Women Business Enterprise (WBE) means an ongoing and independent business enterprise which is owned and controlled by one or more women and meets SDO certification criteria specified under 425 CMR 2.03 (d) (and, if applicable, one or more of the provisions of 425 CMR 2.06).
- Disadvantaged Business Enterprise (DBE) means an ongoing, independent small business concern which is at least 51% owned and controlled by one or more individual(s) who are both socially and economically disadvantaged and meets the U.S. DOT eligibility criteria specified under 49 CFR Part 23 and 26 and has certification issued by the federal government or the SDO.

Outreach

The Authority communicates with appropriate advocacy groups and representatives such as SDO, Massachusetts Minority Contractors, and National Association of Minority and Women Owned Law Firms, as well as others, to develop new sources of supply, discuss the M/W/DBE Program and develop initiatives designed to enhance the Plan's effectiveness.

Monitoring and Reporting

The Affirmative Action and Compliance Unit will maintain such records, data and information as may be required to document compliance with Authority policies and procedures, and applicable federal, state and local laws and regulations.

MassDEP Procurement Goals

MassDEP has undertaken an Availability Analysis with Clean Water Trust in 2016 and the first half of 2017 to develop new DBE goals. As of January 1, 2018, the goals for all categories – Construction, Professional Services, Goods and Equipment are 4.2% for D/MBE and 4.5% for D/WBE.

Procurement Categories		
	Construction Goals	Professional Goals
D/MBE	4.2%	4.5%
D/WBE	4.2%	4.5%

In FY20, EPA-assisted contracts totaled 1.5% for construction, with the balance related to engineering, environmental consulting and other services. On this basis, MassDEP has utilized the above goals for both construction and professional services. The specific sub-industries such as water and wastewater engineering, etc. accounted for some of the dollars of these prime contracts and subcontracts.

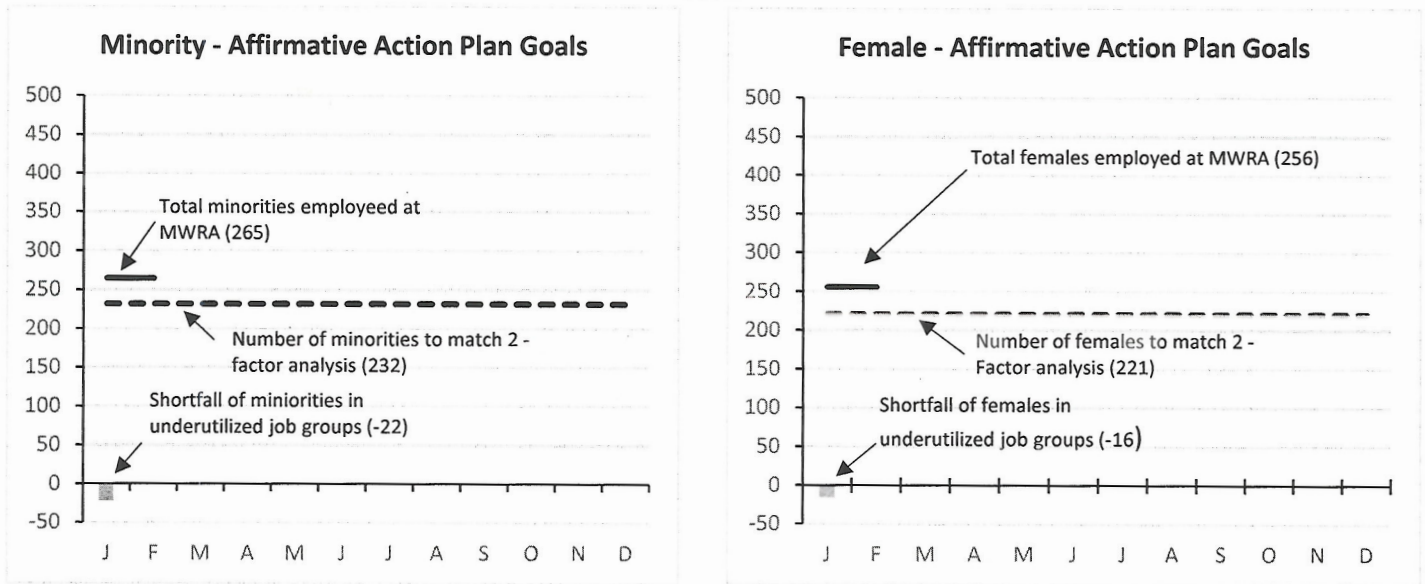
MWRA Procurement Goals

Based upon the Authority's 2002 Availability Study, the MBE and WBE procurement goals are as follows:

Procurement Categories			
	Construction Goals	Professional Goals	NonProfessional Goals
MBE	7.24%	7.18%	5.61%
WBE	3.60%	5.77%	4.88%

For FY20 the MWRA spent \$6.3 million and \$4.3 million respectively with minority and women owned business. These amounts were 60.5% and 63.9% of the respective MBE and WBE targets.

Attachment B
MWRA Job Group Representation
CY22



Underutilized Job Groups – Workforce Representation

Job Group	Total Employees as of 1/1/2022	Actual Minorities as of 1/1/2022	Achievement Level	Minority Over or Under utilized	Actual Females As of 1/1/2022	Achievement Level	Female Over or Under utilized
Administrative A	24	3	1	2	12	6	6
Administrative B	25	2	8	-6	8	5	3
Clerical A	21	7	4	3	19	16	3
Clerical B	23	8	6	2	3	7	-4
Engineer A	80	23	18	5	19	19	0
Engineer B	61	20	17	3	14	9	5
Craft A	111	17	21	-4	0	4	-4
Craft B	133	21	18	3	2	3	-1
Laborers	68	21	16	5	5	3	2
Management A	92	22	28	-6	34	19	15
Management B	40	11	8	3	7	9	-2
Operators A	59	4	8	-4	2	2	0
Operators B	70	21	9	12	3	2	1
Professional A	30	5	7	-2	18	14	4
Professional B	165	49	39	10	80	70	10
Para Professional	47	15	10	5	23	21	2
Technical A	54	14	13	1	6	11	-5
Technical B	5	2	1	1	1	1	0
Total	1108	265	232	55/-22	256	221	51/-16

STAFF SUMMARY


TO: Board of Director
FROM: Frederick A Laskey, Executive Director
DATE: February 16, 2022
SUBJECT: PCR Amendments - February 2022



COMMITTEE: Personnel and Compensation

INFORMATION
 VOTE

Andrea Murphy, Director of Human Resources
Preparer/Title


Michele S. Gillen
Director, Administration

RECOMMENDATION:

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

DISCUSSION:

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

February PCR Amendments

There are three PCR Amendments this month.

Organizational Changes:

1. Title and grade change to one vacant position in the Operations Division, Deer Island Process Control department from Project Engineer, Process Monitoring Unit 9 Grade 21 to Project Manager, PICS Unit 9 Grade 25 to better meet the staffing needs of the department.
2. Title and grade change to one vacant position in the Operations Division, SCADA Engineering department from Senior Monitoring and Control Engineer Unit 9 Grade 23 to Project Manager, SCADA Engineering Unit 9 Grade 25 to better meet the staffing needs of the department.
3. Creation of a new position in the Administration Division, MIS department for a Business Relationship Manager Non-Union Grade 14 to oversee one of the MIS business units to make it consistent with the organizational structure of the other MIS units.

BUDGET/FISCAL IMPACT:

The annualized budget impact of these PCR amendments will be a maximum cost of \$177,987. Staff will ensure that the cost increase associated with this PCR amendment will not result in spending over the approved FY22 Wages and Salaries budget.

ATTACHMENTS:

New Job Descriptions
Old Job Descriptions

**MASSACHUSETTS WATER RESOURCES AUTHORITY
POSITION CONTROL REGISTER AMENDMENTS
FISCAL YEAR 2022**

PCR AMENDMENTS REQUIRING BOARD APPROVAL - February 16, 2022																	
Number	Current PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Current/Budget Salary	Estimated New Salary		Estimated Annual		Reason For Amendment		
													\$ Impact				
B28	Operations Deer Island Process Control 2938501	V	T,G	Project Engineer, Process Monitoring	9	21	Project Manager, PICS	9	25	\$92,264	\$79,357	-	\$110,569	-\$12,907	-	\$18,305	To better meet staffing needs.
B29	Operations SCADA Engineering 5841019	V	T,G	Senior Monitoring and Control Engineer	9	23	Project Manager, SCADA	9	25	\$101,241	\$79,357	-	\$110,569	-\$21,884	-	\$9,328	To better meet staffing needs.
B30	Administration MIS TBD	N/A	N/A	N/A	N/A	N/A	Business Relationship Manager	NU	14	\$0	\$98,993	-	\$150,354	\$98,993	-	\$150,354	To create a position to oversee one of the MIS business units to make it consistent with the organizational structure of the other MIS units.
BOARD TOTAL=					3						TOTAL:		\$64,202 - \$177,987				

**MWRA
POSITION DESCRIPTION**



POSITION: Project Engineer, Process Monitoring

DIVISION: Operations

DEPARTMENT: Process Control DI

BASIC PURPOSE:

Performs work in support of and assists in the development of new technical programs for process monitoring at the Deer Island Treatment Plant including the sampling and testing program, plant process data collection, collation, evaluation and report generation. Assists in the work to support operations and process control to ensure sufficient information is available to evaluate plant performance versus NPDES (National Pollutant Discharge Elimination System) permit requirements, Air Emissions permit requirements, process goals and plant efficiencies.

SUPERVISION RECEIVED:

Works under the general supervision of the Program Manager, Process Monitoring.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Generates engineering and monitoring reports from plant performance and laboratory analysis data compiled from DITP Process Information System (PI), DITP Operations Management System (OMS), Process Laboratory Information System (PLIS), Waste Water Quality (WWQ) database (housing Laboratory Information Management System (LIMS) data), the transport SCADA system, and other data centers as needed.
- Critiques and reviews reports and data for technical accuracy and flags questionable data for review by management.

- Works with Process Engineers and other Deer Island and MWRA personnel to develop standardized and customized process data presentations.
- Works with Process Engineers and other Deer Island and MWRA personnel to develop new and/or refine existing monitoring programs to support operations and process control.
- Routinely reviews and evaluates data to monitor plant performance, process goals, and plant efficiencies.
- Routinely provides process updates to Process Engineers, managers, and other Deer Island personnel.
- Utilizes spreadsheets, databases, and other types of software to enter/import data, create, and modify reports.
- Performs process control and compliance field readings and measurements on a daily basis in accordance with Standard Operating Procedures (SOPs) for air monitoring and wastewater performance testing.
- Performs daily readings for air emissions compliance requirements and for odor control treatment monitoring.
- Performs a variety of process control laboratory tests, including microscopic examinations and solids testing.
- Performs sample collection of air, wastewater, sludge, or other materials as needed.
- Monitors and performs minor troubleshooting of various process laboratory and sampling equipment or other monitoring instrumentation used in Process Control.

SECONDARY DUTIES:

- Performs other related duties as required

MINIMUM QUALIFICATIONS:

Education and Experience:

- A Bachelor's degree in chemical engineering, civil engineering, biology, chemistry, or related science or engineering field; and
- Two (2) to four (4) years of experience in wastewater engineering or wastewater treatment process control required; laboratory experience in wastewater sampling, chemical and microbiological analysis is preferred; or
- Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Knowledge of wastewater unit operations, process control theory, practices and principles and computer applications.
- (B) Demonstrated written and communication skills.
- (C) Proficiency and experience using Microsoft Office (specifically Excel and Access).
- (D) Familiarity with basic laboratory testing procedures, the operation, calibration, and maintenance of basic laboratory equipment and instrumentation.

SPECIAL REQUIREMENTS:

- Massachusetts Wastewater Treatment Plant Operator Grade IV Certification, or ability to obtain within one (1) year.
- A valid Massachusetts Motor Vehicle Operators license.

TOOLS AND EQUIPMENT USED:

Sampling and monitoring equipment for wastewater, sludges, and air. Laboratory test equipment. Office equipment as normally associated with the use of telephone, personal computer including word processing and other software, copy and fax machine.

PHYSICAL DEMANDS:

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

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

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

WORK ENVIRONMENT:

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

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

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

September 2021

**MWRA
POSITION DESCRIPTION**



POSITION: Project Manager, PICS

DIVISION: Operations

DEPARTMENT: Deer Island Process Control

BASIC PURPOSE:

Supports and maintains process instrumentation and control system (PICS) used to control and monitor the wastewater treatment processes at the Deer Island Treatment Plant (DITP). PICS is a distributed control system (DCS). This position supports PICS hardware, and software maintenance, and performance monitoring.

SUPERVISION RECEIVED:

Works under the general supervision of the Program Manager, Process Engineering.

SUPERVISION EXERCISED:

Exercises close supervision of contract staff as necessary.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Monitors PICS network and system security through the use of hardware, software and tools that detect intrusion and anomalous behavior.
- Evaluates, recommends, procures and deploys hardware and software tools for use in detecting, preventing, and analyzing network security threats.
- Assists in developing and implementing information security plans and policies for the PICS network.
- Assists in developing an incident response plan to prevent and/or counteract security breaches.

- Participates in all aspects of PICS hardware turnover to ensure system hardware integrity, including preventive maintenance, corrective action, upgrade and/or replacement, spare parts inventory and replacement.
- Responsible for tracking PICS equipment history.
- Monitors the preventive and corrective maintenance programs for all PICS hardware.
- Responsible for PICS configuration and backup. Maintains end-user licenses for compliance audits. Develops and maintains a backup program and retention schedule to ensure system restoration in the event of system or hardware failure or security breach.
- Maintains familiarity and knowledge base of current computer technology, particularly in the areas of operating systems and digital communications used in control systems.
- Works with staff to execute ongoing maintenance as required to ensure maximum system availability.
- Participates in PICS on-call program to provide emergency response for PICS hardware and system functions supporting operations personnel in the event of system malfunction.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A Bachelor of Science degree (or higher) in electrical, chemical or mechanical engineering or computer science from an accredited college or related field; and
- (B) Four (4) to six (6) years of experience working with computerized networks, preferably a computer-based process control system such as a distributed control system (DCS) as normally provided by vendors such as Honeywell, Foxboro or Bailey Controls (ABB); and
- (C) Two (2) to four (4) years of experience in the MS Windows and DOS operating systems. Experience with Server 2008 and Server 2012 Active Domain administration a plus; and
- (D) Two (2) to four (4) years of experience with digital communications technology such as Ethernet, Decnet, TCP/IP, RS232, RS485 and proprietary vendor DCS communication

techniques; and

- (E) Two (2) to four (4) years of experience in network and secure systems management; and
- (F) Two (2) to four (4) years of experience with the application of signal processing requirements of field instrumentation devices (flow, level, pressure, etc. measurements) and peripheral systems (energy monitoring, PLCs, etc.) and their integration into a computer based process control system preferred; or
- (G) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Demonstrated ability to rapidly organize and implement troubleshooting plans for computer-based networks.
- (B) Ability to develop diagrams such as process and instrumentation and logic diagrams.
- (C) Experience installing and configuring software on MS Windows-based systems.
- (D) An understanding of modern network system design, architecture and security.
- (E) An understanding of system administration methods and procedures supporting multiple platforms and applications.
- (F) Excellent interpersonal, oral and written communications skills are required.

SPECIAL REQUIREMENTS:

A valid Class D Massachusetts Motor Vehicle Operators license or equivalent.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

WORK ENVIRONMENT:

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

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

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

June 2019

**MWRA
POSITION DESCRIPTION**

OLD

POSITION: Senior Monitoring & Control Engineer
(SCADA)

DIVISION: Operations

DEPARTMENT: SCADA

BASIC PURPOSE:

Participates in the design, development, operation and maintenance of the Authority's Water and Wastewater Supervisory Control and Data Acquisition (SCADA) systems.

SUPERVISION RECEIVED:

Works under the general supervision of the Project Manager, SCADA Engineering.

SUPERVISION EXERCISED:

May exercise close supervision of technical and support staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Participates in the design, development, installation and troubleshooting of control logic for programmable logic controllers (PLCs) and control system software.
- Participates in the design, development, installation and troubleshooting of Human Machine Interface (HMI) software.
- Assists with the installation, maintenance and troubleshooting of the SCADA network and SCADA personal computers.
- Insures in-house and consultant compliance with the SCADA Standards.
- Assists with the installation, maintenance and monitoring of SCADA security systems.

- Assists in the training of staff on the monitoring and control systems.
- Updates records and documentation on SCADA network, PC and PLC installations.
- Assists in the management of SCADA databases and coordinates any necessary changes.
- Maintains SCADA data backups through local node collection and networked archive collection systems.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A Bachelor's degree in Electronic Engineering, Electrical Engineering or a related field; and
- (B) Three (3) to five (5) years of experience in the design, installation, operation and maintenance of process control systems required; Water or wastewater industry experience preferred; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Working knowledge of ladder logic and HMI programming.
- (B) Thorough knowledge of PCs, Windows operating systems, Ethernet, network equipment, spreadsheet, and database software
- (C) Ability to troubleshoot to the component level utilizing a variety of electronic test equipment as well as computer driven diagnostics.
- (D) Familiarity with water distribution and treatment systems or wastewater collection and treatment systems preferred.
- (E) Thorough understanding of control system instrumentation.

- (F) Thorough knowledge of electrical/electronic wiring practices.
- (G) Familiarity with CAD (computer aid design) program.
- (H) Demonstrated ability to plan and organize projects, and direct and train others.
- (I) Demonstrated interpersonal, written and verbal communication skills.

SPECIAL REQUIREMENTS:

A valid Massachusetts Class D Motor Vehicle Operators License.

Any level of a valid Massachusetts Water Distribution License, Water Treatment License, Wastewater Operator's License or Wastewater Collection System Certification or the ability to obtain within six (6) months.

Ability to pass the Confined Space Entry Training within six months.

Participates in-call rotation assignments if needed. In the absence of volunteers, may be required to be on-call or report to work during off hours in an inverse seniority pool.

TOOLS AND EQUIPMENT USED:

Metering oscilloscopes, signal generator, personal computer, including word processing and other software, hand tools, mobile radio, copy and fax machines.

PHYSICAL DEMANDS:

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

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

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities, required by this job include close vision, distance vision, color vision, depth perception 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 frequently works near moving mechanical parts and is occasionally exposed to wet and/or humid conditions and vibration. The employee occasionally works in high, precarious places and is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals and risk of electrical shock.

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

September 2021

**MWRA
POSITION DESCRIPTION**

NEW

POSITION: Project Manager, SCADA Engineering

DIVISION: Operations

DEPARTMENT: SCADA Engineering

BASIC PURPOSE:

Manages and participates in the design, development, operation and technical support of the Authority's Water and Wastewater Supervisory Control and Data Acquisition (SCADA) systems.

SUPERVISION RECEIVED:

Works under the basic supervision of the Program Manager, SCADA Engineering.

SUPERVISION EXERCISED:

Exercises close supervision of assigned Senior Monitoring and Control Engineer and Project Engineer staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Manages and participates in the design, implementation and troubleshooting of control logic for programmable logic controllers (PLCs).
- Manages and participates in the design, implementation and troubleshooting of Human Machine Interface (HMI) software.
- Manages, installs, maintains and troubleshoots the SCADA networks and the SCADA PCs.
- Insures that work on new and modified monitoring and control systems includes preparation of project scope and P & ID drawings through user interview, PLC and HMI program testing, documentation and training.
- Insures in-house and consultant compliance with the SCADA standards.

- Monitors in detail the SCADA programming, testing and startup work of consultants and integrators.
- Coordinates the testing, startup and training needs associated with the monitoring and control systems.
- Installs, maintains and monitors SCADA security systems.
- Creates and maintains up to date records and documentation on SCADA network, PC and PLC installations.
- Manages SCADA tag databases and coordinates any necessary changes.
- Insures that SCADA data is backed-up on local nodes and on the network archive system.

SECONDARY DUTIES:

- Works with MIS staff as needed.
- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A Bachelor's degree in electronic engineering, electrical engineering or related field; and
- (B) Five (5) to seven (7) years of experience in the installation, operation and maintenance of process control systems of which a minimum of two (2) years are in the water/wastewater or comparable industry; and
- (C) Two (2) to four (4) years of experience with ladder logic and HMI programming (Allen Bradley PLC and GE Proficy iFIX Software preferred); and
- (D) Two (2) to four (4) years supervisory experience; or
- (E) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Through knowledge of Ethernet, routers, firewalls, managed switches, hubs, PCs, and Windows operating systems required.
- (B) The ability to test and troubleshoot to the component level using a variety of electronic test equipment as well as computer driven diagnostics.
- (C) Familiarity with water distribution and treatment systems or wastewater collection and treatment systems.
- (D) Thorough understanding of water and wastewater instrumentation.
- (E) Thorough knowledge of electrical/electronic wiring practices.
- (F) Demonstrated ability to plan, organize, direct, train and assign duties to subordinates.
- (G) Familiarity with AutoCAD or other equivalent CAD program.
- (H) Demonstrated interpersonal, written and verbal communication skills.

SPECIAL REQUIREMENTS:

Participates in on-call rotation assignments if needed with other SCADA engineering staff. In the absence of volunteers, may be required to be on-call or report for comp time in an inverse seniority pool.

A valid Massachusetts Driver's License required.

FCC General Radiotelephone Operator License or ability to obtain within six (6) months.

A valid Massachusetts Grade II Water Distribution or Treatment Licenses; or a Grade II Wastewater Collection System Certification; or a Grade III Wastewater Treatment Plant certification; or the ability to obtain same within six (6) months.

Certification in Confined Space Entry or ability to pass MWRA Confined Space Training within six (6) months

TOOLS AND EQUIPMENT USED:

Hand tools, mobile radio, telephone, personal computer, network equipment, software, copy and fax machine.

PHYSICAL DEMANDS:

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

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

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move up to 25 pounds. Specific vision abilities required by this job include close vision, distance, color vision, 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 occasionally works near moving mechanical parts and is occasionally exposed to wet and/or humid conditions and vibration. The employee occasionally works in high, precarious places and is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals, and risk of electrical shock.

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

June 2020

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: February 16, 2022
SUBJECT: FY2022 Second Quarter Orange Notebook



COMMITTEE: Administration, Finance & Audit

INFORMATION
 VOTE

Carolyn M. Fiore, Deputy Chief Operating Officer
Stephen Estes-Smargiassi, Director, Planning & Sustainability
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 both the First and Second Quarters, as the First Quarter Orange Notebook was not presented due to the cancelled November meeting.

Staffing

As discussed at previous Board meetings, high levels of staff turnover have continued, especially retirements, and hiring replacements has been particularly difficult, resulting in staffing levels below planned and budgeted levels. Staffing levels dropped below those seen at the end of the last fiscal year (1,130.7 FTEs) to 1,090.7 FTEs (full time equivalents) at the end of December compared to a target of 1150 FTEs. In the current highly competitive employment market, recruitment of staff continues to be difficult, with some positions attracting no qualified applicants requiring reposting and delaying replacements. Staff are developing new recruitment strategies, including the possible use of staffing agencies for high level positions, the continued development of long-term relationships with vocational technical schools, the possible creation of entry level positions in operations and the enhanced use of social media. (See page 42.)

A number of routine activities have been adversely affected by the reduced availability of staff. Examples of these include delays in replacements of blow-off valves (see page 7), issuance of Significant Industrial User (SIU) permits (see page 12), and several of the laboratory's performance measures (see page 15).

Looking forward to the Third Quarter, the next Orange Notebook will likely show some additional impacts during the beginning of the quarter due to the imposition of additional COVID safety protocols during the Omicron surge.

Wastewater Treatment Plant Flows

First Quarter wastewater flow to the Deer Island Wastewater Treatment Plant was 63 percent higher than the four-year average (414 actual vs. 263.9 expected million gallons per day) as precipitation was more than 2.5 times above expected (24.5 inches vs. 9.8 inches). The Deer Island plant set new high flow records in both July and September. Interestingly, Deer Island set low flow records during the first quarter of the prior fiscal year, as noted in the Orange Notebook report to the Board in November of last year. During the Second Quarter, flows were about on target. (See page 1.)

Higher precipitation and plant flows were also experienced at the Clinton Wastewater Treatment Plant with flow from Clinton and Lancaster in each month of the First Quarter substantially higher than the very low flows during the same period last year. This raised the 12-month rolling average up to 2.83 mgd, close to the NPDES permit limit of 3.01 mgd. While flows declined somewhat during the Second Quarter, the October and November flows were well above the previous year's flows during those months, resulting in the 12-month rolling annual average exceeding the NPDES permit limit for each month in the Second Quarter. (See page 28.)

Energy Costs at the Deer Island Treatment Plant

While flows decreased towards the end of the Second Quarter, higher influent flows than the budget target occurred four of the six months during the first two quarters increased power use for pumping. This, coupled with higher unit costs for electricity, resulted in electricity costs that are \$939,576 (30.9 percent) higher than the budget forecast for the first four months of the fiscal year. (See page 1.)

Drinking Water Use

The wet end to the seasonal irrigation season reduced drinking water use by communities during the first quarter by 26.5 mgd, a reduction of 11.8 percent below that same period the prior year during very dry conditions. Second Quarter use was similar to the previous two years. (See pages 26 and 29.) A more detailed review of 2021 water use is presented in a separate staff summary being presented at this meeting.

Drinking Water Quality

The very high levels of late summer precipitation proved challenging from a water quality perspective for the metro Boston drinking water system during the First Quarter and the early part of the Second Quarter. The impact was felt all the way from the Wachusett Reservoir, through the treatment process at Carroll Water Treatment Plant, and then out to the community distribution systems. The excess rain occurred during the summer period when MWRA is normally optimizing the flow of "well aged" Quabbin water to the Cosgrove Intake. Instead, the Carroll Plant received water that had higher than usual fresh "reactive" organic matter. This is measured by UV254, and those levels in Wachusett Reservoir were high for that time of year. (See page 20.)

This resulted in the need to add more chlorine at the Carroll Plant, but as the chlorine also breaks down more rapidly under these conditions, the decline continued throughout community distribution systems. While the chlorine dose was at the highest level since the plant started operation in 2005, there were still locations within community systems that had low chlorine

residuals. The widespread low chlorine levels and warm temperatures provided the opportunity for harmless total coliform bacteria to grow from the biofilm inside the pipes. (See page 24.) With the beginning of colder weather and decreasing water temperatures, the situation improved during November and December, as bacterial activity is significantly lower in cold temperatures, and chlorine decays more slowly. Staff provided technical assistance to communities that were required to conduct distribution system assessments under the Total Coliform Rule.

Staff issued a community advisory in early October on the lower residuals and held three informational technical webinars for community staff later in the month, as well as providing a briefing at the October Advisory Board Operations Committee meeting. Staff continue to evaluate the data and potential changes to system operations, and anticipate conducting additional technical training sessions for community staff early this spring.

MASSACHUSETTS WATER RESOURCES AUTHORITY

Board of Directors Report

on

Key Indicators of MWRA Performance

Second Quarter FY2022

Q1	Q2	Q3	Q4



Frederick A. Laskey, Executive Director
David Coppes, Chief Operating Officer
February 16, 2022

Board of Directors Report on Key Indicators of MWRA Performance

2nd Quarter FY22

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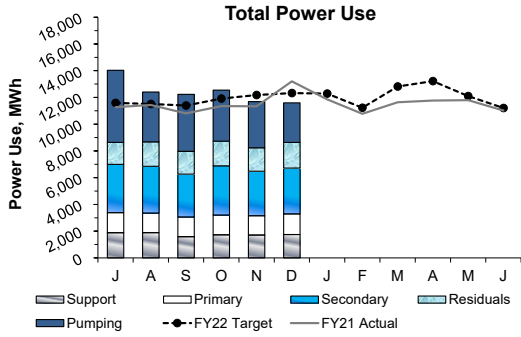
This quarterly report is prepared by MWRA staff to track a variety of MWRA performance measures for routine review by MWRA's board of directors. The content and format of this report is expected to develop as time passes. Information is reported on a preliminary basis as appropriate and available for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

Frederick A. Laskey, Executive Director
David Coppes, Chief Operating Officer
February 16, 2022

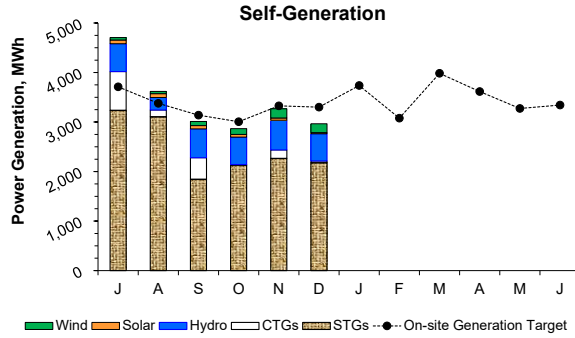
OPERATIONS AND MAINTENANCE

Deer Island Operations

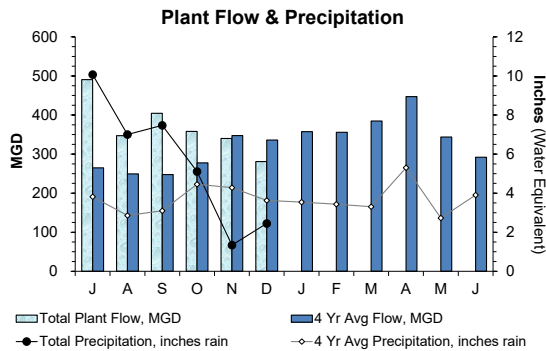
2nd Quarter - FY22



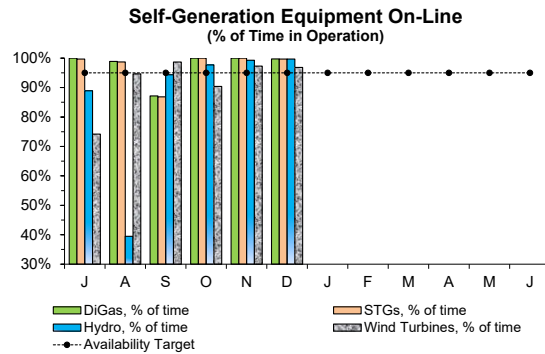
Total power usage in the 2nd Quarter was on target (-1.6%) as plant flow for this period was also on target (+1.9%) with historical data (4 year average) used to generate the electricity model. As a result, power usage for all treatment process areas were similar to or below target during the 2nd Quarter.



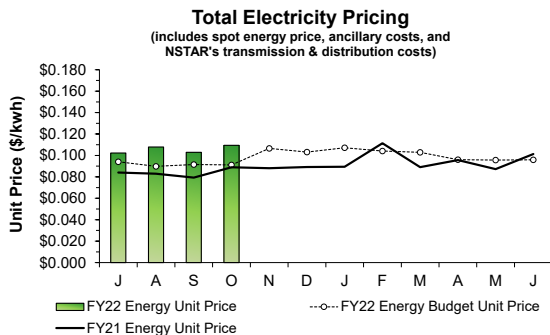
Power generated on-site during the 2nd Quarter was 5.5% below target. CTG generation was below target by 77.5% since there were no storms and high flow conditions during this quarter that met the criteria for CTG operation as had been included in the budget based on historical operation. The CTGs were operated for routine maintenance/checkout purposes, for an ISO-New England winter audit test event, and for nearly 15 hours on November 9 to allow Eversource to perform maintenance on the cross-harbor electrical cable. STGs generation was 5.4% below target as digester gas production was 7.9% below target. Hydro Turbine generation was 73.8% above target due to a budget estimate that was biased low. Wind Turbine generation was 19.5% below target even as turbine availability met the 95% target. Solar Panel generation was within 2.6% of the target.



Total Plant Flow for the 2nd Quarter was on target (+1.9%) with the budgeted 4 year average plant flow (326.3 MGD actual vs. 320.3 MGD expected) even though precipitation was 28.1% below target this quarter (8.90 inches actual vs. 12.37 inches expected). Plant flows remained elevated into the 2nd Quarter due to rainfall that was more than double the amount expected during the first four (4) months of FY22.

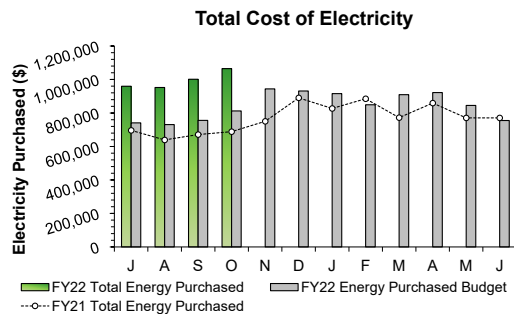


The DiGas System, STGs, Hydro Turbine, and Wind Turbine availability all met or exceeded the 95% availability in the 2nd Quarter.



Under the current energy supply contract, a block portion of DI's energy is a fixed rate and the variable load above the block is purchased in real time. The actual Total Energy Unit Price in October (the most current invoice available) was 20.1% above target with budgetary estimates. The actual Total Energy Unit Prices in November and December are not yet available as the complete invoices have not been received. The Total Energy Unit Price includes a fixed block price, spot energy price, transmission & distribution charges, and ancillary charges.

Note: Only the actual energy prices are reported. Therefore, the dataset lags by two (2) months due to the timing of invoice receipt and review.



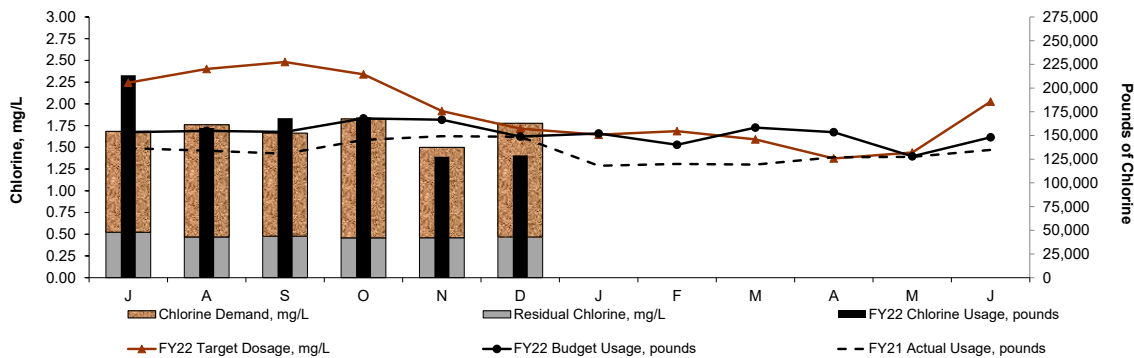
The Electricity cost data for Electricity Purchased for November and December are not yet available as the complete invoices have not been received. Year-to-date Total Cost of Electricity is \$939,576 (30.9%) higher than budgeted through October as the Total Energy Unit Price was 15.3% higher than target and the Total Electricity Purchased was 13.6% above target.

Note: Only months with complete Electricity Purchased data are reported. Therefore, the dataset lags by two (2) months due to the timing of invoice receipt and review.

Deer Island Operations

2nd Quarter - FY22

Deer Island Sodium Hypochlorite Use



The disinfection dosing rate in the 2nd Quarter was 15.0% below target with budgetary estimates. Actual sodium hypochlorite usage in pounds of chlorine was 12.0% lower-than-expected even though the average plant flow was on target (+1.9%). DITP maintained an average disinfection chlorine residual of 0.46 mg/L this quarter with an average dosing rate of 1.70 mg/L (as chlorine demand was 1.24 mg/L).

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

Secondary Blending Events

Month	Count of Blending Events	Count of Blending Events Due to Rain	Count of Blending Events Due to Non-Rain-Related Events	Secondary, as a Percent of Total Plant Flow	Total Hours Blended During Month
J	7	7	0	95.1%	84.65
A	6	6	0	99.0%	17.42
S	2	2	0	96.4%	35.02
O	5	5	0	99.3%	16.48
N	1	1	0	99.9%	2.41
D	0	0	0	100.0%	0.00
J					
F					
M					
A					
M					
J					
Total	21	21	0	98.0%	155.97

99.7% of all flows were treated at full secondary during the 2nd Quarter. There were six (6) secondary blending events due to high plant flows from heavy precipitation. These blending events resulted in 18.89 hours of blending and a total of 89.44 MGal of primary-only treated effluent blended with secondary effluent. The Maximum Secondary Capacity during the entire quarter was 700 MGD. Secondary permit limits were met at all times during the 2nd Quarter of FY22.

Deer Island Operations & Maintenance Report

Environmental/Pumping:

The plant achieved an instantaneous peak flow rate of 1,031.1 MGD in the 2nd Quarter during the evening on October 30. This peak flow occurred during a storm event that brought 4.23 inches of precipitation to the metropolitan Boston area. Overall, Total Plant Flow in the 2nd Quarter was 1.9% above target with the 4 year average plant flow estimate for the quarter.

On September 16, staff discovered a significant leak due to corrosion in the pump head just below the volute on raw wastewater Pump #5 in the Winthrop Terminal Headworks Facility. DITP maintenance staff found two (2) holes in the volute near the pump head. Repairs to the pump were completed by staff on October 19 and the pump was reinstalled by October 22. However, some leakage around the mechanical seal was observed during pump testing indicating the seal was in need of replacement which often occurs as a result of the pump being physically removed for maintenance work. The mechanical seal was replaced by the seal provider on November 8 which corrected the issue with the leak.

Secondary Treatment:

Annual turnaround maintenance was performed on Train #1 in the Cryogenic Oxygen Facility in October. This 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 #1 as well as, a number of other components of the oxygen plant. The same turnaround maintenance was completed on Train #2 in the spring (April).

Odor Control Treatment:

Carbon adsorber (CAD) units #1 and #4 in the North Pumping Odor Control (NPOC) Facility, #5 in the Residual Odor Control (ROC) Facility, and #1 and #2 in the Secondary Odor Control (SOC) Facility were emptied and refilled with regenerated activated carbon media in the 2nd Quarter as part of routine maintenance to replace spent activated carbon.

Deer Island Operations

2nd Quarter - FY22

Deer Island Operations & Maintenance Report (continued)

Residuals Treatment:

On October 25, Module #1 Digester #4 developed a leak on the far side of the lower feed ring line at a Victaulic flange. This digester was immediately taken out of service and drained to allow repairs to be made. The failed flange and several other feed ring valves were replaced in early November. While the digester was offline and empty, an inspection revealed the draft tube mixer had extensive corrosion. A crane was mobilized and the mixer was replaced by staff on November 19. The process of refilling the digester with sludge by diverting the sludge overflows from the other online digesters in Module #1 began immediately after the mixer replacement was completed and normal sludge feed to this digester resumed on November 29 returning DITP to eight (8) digester operation.

Energy and Thermal Power Plant:

Overall, total power generated on-site accounted for 25.4% of Deer Island's total power use for the 2nd Quarter. Renewable power generated on-site (by Solar, Wind, STGs, and Hydro Turbines) accounted for 24.8% of Deer Island's total electrical power use for the quarter.

DITP took delivery of 430,000 gallons of #2 fuel oil, a total of 43 oil tanker trucks, without incident from October 5 through October 15. 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.

High winds during the October 26-27 nor'easter storm event caused damage to several pieces of equipment at DITP including a portion of the solar panel array on the rooftop of the Residuals Odor Control (ROC) Facility which disabled the ability of this array to generate electricity for the remainder of the month. Inspections revealed that 40 out of the 525 solar panels in this array and parts of the supporting structure were damaged. Staff were able to electrically bypass the damaged portion of the ROC solar array on November 3 to restore electricity generation from the remaining viable portions of the array.

The CTGs were operated for nearly 15 hours on November 9 while DITP was disconnected from utility power. The cross-harbor power cable was de-energized during this time to allow Eversource to perform scheduled maintenance on the cross-harbor electrical cable and the equipment at their Station 132 on DITP. The CTGs were successfully able during this Eversource outage to provide the power needs for DITP. Electrical and additional Operations staff were onsite prior to and after the Eversource outage to support this work and in the event of an unanticipated power issue.

CTG-1A was operated for approximately two (2) hours on December 8 for an ISO-New England declared Demand Response winter audit event.

Routine annual maintenance and inspections were conducted on CTG-2B during the week of December 13. This year's maintenance included invasive work as the scope included a generator bearing inspection which required the removal of the generator covers and instrumentation. Therefore, the amount of time required to return the CTG to service in the event of an emergency would be slightly longer than two (2) hours. CTG-1A, however, was available for operation during this work. The maintenance also included non-invasive inspections, instrument calibrations and system checks. CTG-2B was successfully test operated at the end of the week on December 17 after the annual maintenance work was completed. Similar maintenance will be conducted on CTG-1A in the near future but without the bearing inspection since the inspection is not yet due for this CTG.

Other:

Congresswoman and Assistant House Speaker Katherine Clark toured the Deer Island Treatment Plant on December 7 and held a press event to help promote the clean water infrastructure provisions in the recently signed Infrastructure Investment and Jobs Act. Massachusetts is slated to receive about \$12.5 billion, with just over \$1 billion dedicated to improving water infrastructure.

Clinton Operations & Maintenance Report

Dewatering Building:

Maintenance staff installed a new hydraulic cylinder on belt filter press sludge hopper. Staff also installed a new 2" water valve on #1 belt filter press. They also changed out 3 circulator pumps in dewatering boiler room they were pump # P-3, P-4, and P-5. Operations staff unblocked # 1 gravity thickener scum well and washed down the gravity thickener weirs.

Chemical Building:

Maintenance staff removed and replaced a flange on the Returned Activated Sludge (RAS) piping to drain the header for the contractor valve & pipe replacement project. The contractor has now completed the valve and piping project in the lower chemical building. Maintenance performed laser alignment on #1 RAS pump. Deer Island staff installed a VFD controller on the #1 hypochlorite pump and they also installed a new # 2 hypochlorite pump. Deer Island staff also completed the sodium hypochlorite piping project in the chemical building. Operations staff cleaned the #1 and #2 polymer pumps for the winter shut down period. Maintenance staff installed a new mixing shaft for the soda ash mixing tank and also replaced a worn soda ash feed belt. The plumbing contractor installed a new condensate pump.

Aeration Basins:

Operations staff cleaned the pH and D.O. probes. Maintenance staff replaced Aerzen blower # 6A. Facilities specialist continues to repair concrete and expansion joints.

Phosphorus Building:

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

Headworks:

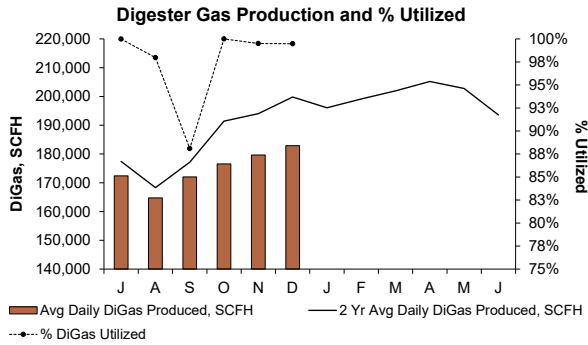
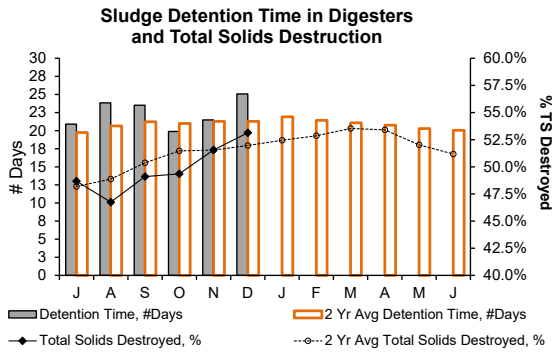
Operations staff put #1 grit chamber on line. Staff moved diesel hydraulic pump from the intermediate lift station to the influent lift station. Maintenance staff also cleaned the influent and mechanical bar rack, and greased the upper and lower pin rack. They replaced both sampler lines and installed heat trace on the influent Lab samplers. Staff rebuilt primary pump # 2. Maintenance staff and the contractor installed EXP motor on the grit rake system. The contractor completed welding of 30 large patches on the # 2 grit classifier. Also a plumbing contractor replaced the headworks' boiler condensate float and a malfunctioning flow switch for the Lab eyewash stations.

Digester Building:

Maintenance staff checked all equipment for proper operation. They also greased the Ovivo mixer on the floating cover.

Deer Island Operations and Residuals

2nd Quarter - FY22



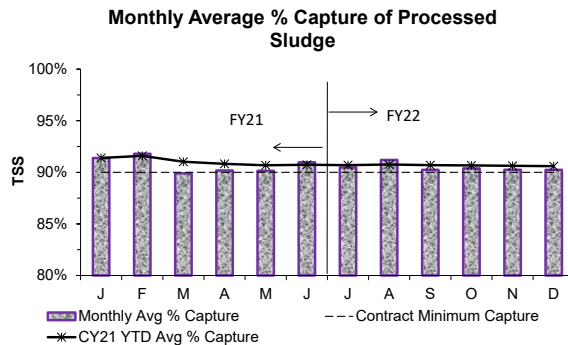
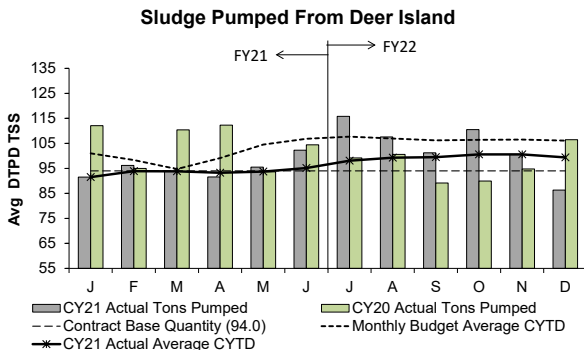
Total solids (TS) destruction following anaerobic sludge digestion averaged 51.4% during the 2nd Quarter, on target with the 2 year average of 51.7%. Sludge detention time in the digesters was 22.1 days, 4.5% above target, even though 7.4 digesters were in operation in comparison to the 6 year average of 7.9 digesters.

The Avg Daily DiGas Production in the 2nd Quarter was 7.9% below the 6 Year Avg Daily DiGas Production. 99.7% of all the DiGas produced in the quarter was utilized at the Thermal Power Plant (TPP).

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

Residuals Pellet Plant

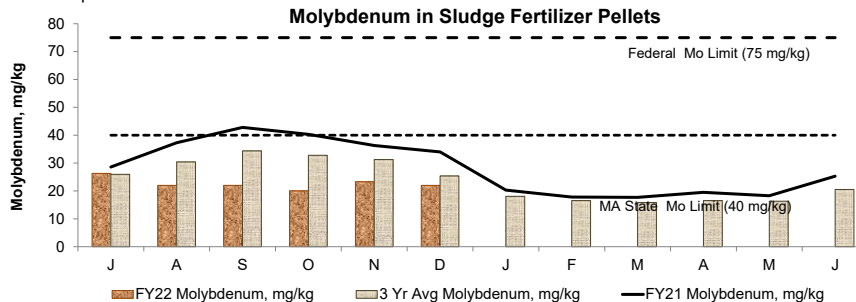
New England Fertilizer Company (NEFCO) operates the MWRA Biosolids Processing Facility (BPF) in Quincy under contract. MWRA pays a fixed monthly amount for the calendar year to process up to 94.0 DTPD/TSS as an annual average (for the extended contract period of January 1, 2021 through December 31, 2022). The monthly invoice is based on 94.0 DTPD/TSS (Dry Tons Per Day/Total Suspended Solids) times 365 days divided by 12 months. At the end of the year, the actual totals are calculated and additional payments are made on any quantity above the base amount. On average, MWRA processes more than 94.0 DTPD/TSS each year (FY21's budget is 107.9 DTPD/TSS and FY22's budget is 106.2 DTPD/TSS).



The average quantity of sludge pumped to the Biosolids Processing Facility (BPF) in the 2nd Quarter was 99.1 TSS Dry Tons Per Day (DTPD) - 6.2% below target with the FY22 budget of 105.7 TSS DTPD for the same period.

The contract requires NEFCO to capture at least 90.0% of the solids delivered to the Biosolids Processing Facility. The average capture for the 2nd Quarter was 90.29% and the CY21-to-date average capture was 90.60%.

The overall CY21 average quantity of sludge pumped through December is 99.4 DTPD - 6.3% below target compared with the CY21-to-date average budget of 106.1 DTPD during the same time period.



Copper, lead, and molybdenum (Mo) are metals of concern for MWRA as their concentrations in its biosolids have, at times, exceeded regulatory standards for unrestricted use as fertilizer. Molybdenum-based cooling tower water is a significant source of Mo in the sludge fertilizer pellets. The Federal standard for Mo is 75 mg/kg. In 2016, Massachusetts Type I biosolids standard for molybdenum was changed to 40 mg/kg from the previous standard of 25 mg/kg. This has allowed MWRA to sell its pellets in-state for land application whereas the previous limits forced several months' worth of pellets to be shipped out of state. This made it an impractical source of fertilizer for local Massachusetts farms since NEFCO does not distribute product that does not meet the suitability standards.

Overall, the levels have been below the DEP Type 1 limit for all three (3) metals. For Mo, the level in the MWRA sludge fertilizer pellets during the 2nd Quarter averaged 29.8 mg/kg, 27% above the 3 year average, 46% below the MA State Limit, and 71% below the Federal Limit.

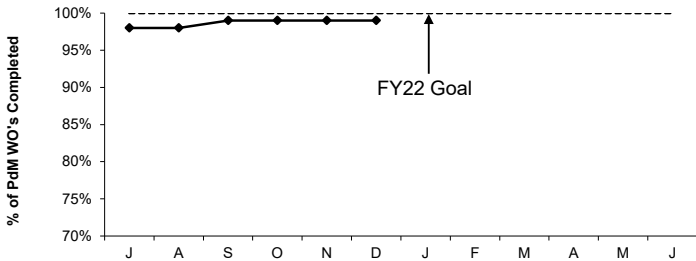
Deer Island Maintenance

2nd Quarter - FY22

Productivity Initiatives

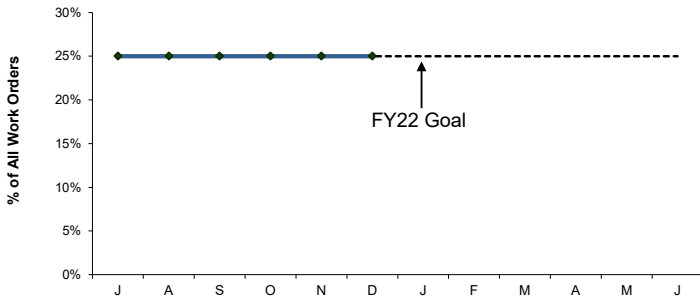
Productivity initiatives include increasing predictive maintenance compliance and increasing PdM work orders. Accomplishing these initiatives should result in a decrease in overall maintenance backlog.

Predictive Maintenance Compliance



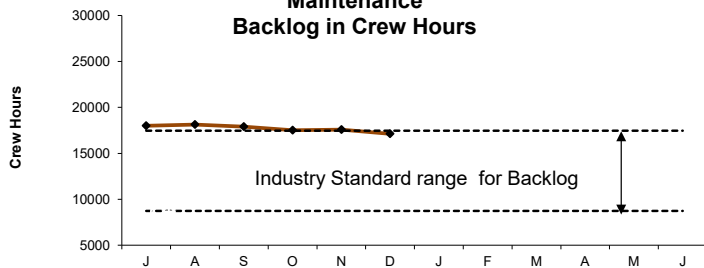
Deer Island's FY22 predictive maintenance goal is 100%. DITP completed 99% of all PdM work orders this quarter. DITP is continuing with an aggressive predictive maintenance program. Deer Island is below our goal this quarter, but we are trending upward.

Predictive Maintenance



Deer Island's increased FY22 predictive maintenance goal is 25% of all work orders to be predictive. 25% of all work orders were predictive maintenance this quarter. The industry is moving toward increasing predictive maintenance work to reduce downtime and better predict when repairs are needed.

Maintenance Backlog in Crew Hours

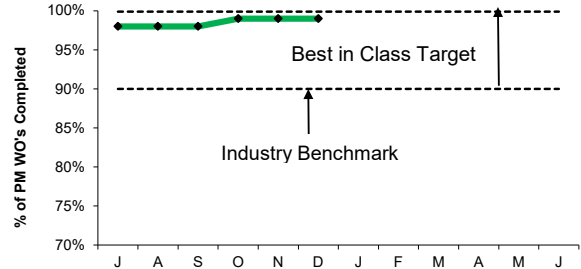


DITP's maintenance backlog at Deer Island is 17,120 hours this quarter. DITP is within the industry average for backlog. The industry Standard for maintenance backlog with 97 staff (currently planned staffing levels) is between 8,730 hours and 17,460 hours. Backlog is affected by (6) vacancies; (1) HVAC Tech (3) Electricians, and (2) Plumbers. Management continues to monitor backlog and to ensure all critical systems and equipment are available.

Proactive Initiatives

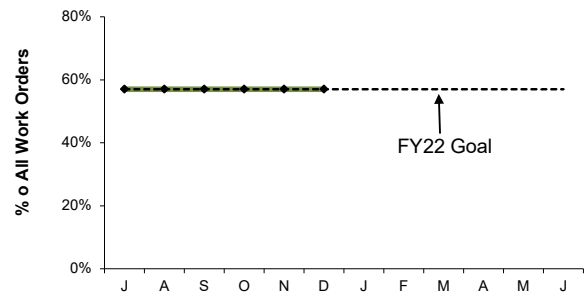
Proactive initiatives include completing 100% of all preventative maintenance tasks and increasing preventative maintenance kitting. These tasks should result in lower maintenance costs.

Preventive Maintenance Compliance



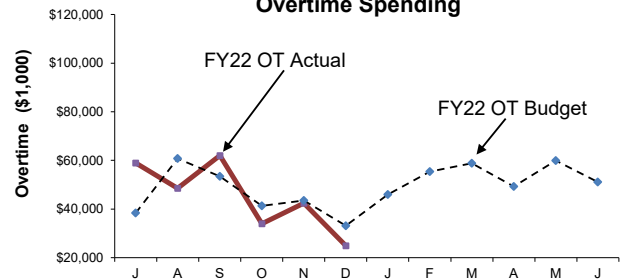
Deer Island's FY22 preventative maintenance goal is 100% completion of all work orders from Operations and Maintenance. DITP completed 99% of all PM work orders this quarter. Deer Island was below our goal, but well within Industry Standards.

Maintenance Kitting



Deer Island's increased FY22 maintenance kitting goal is 57% of all work orders to be kitted. 57% of all work orders were kitted this quarter. Kitting is staging of parts or material necessary to complete maintenance work. This has resulted in more wrench time and increased productivity.

Overtime Spending

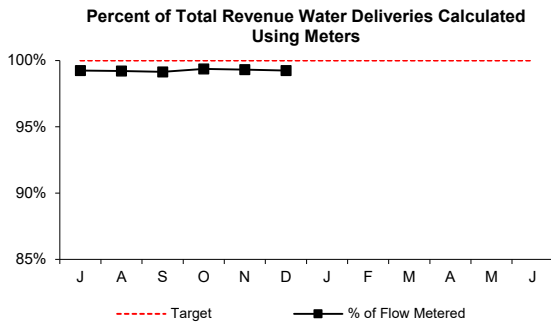


Maintenance overtime was over budget by \$17K this quarter and right on target for the year. Management continues to monitor backlog and to ensure all critical equipment and systems are available. This quarter's overtime was predominately used for Storm Coverage/High Flows, Pump/Grinder Clogging Issues, Replacement of (4) Heating Coils in Residuals, and Fabrication of RSL Shafts/Platform.

Operations Division Metering & Reliability

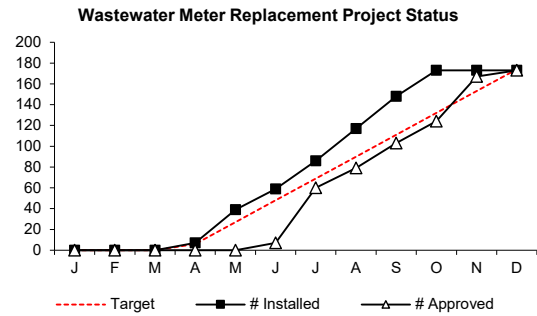
2nd Quarter - FY22

WATER METERS



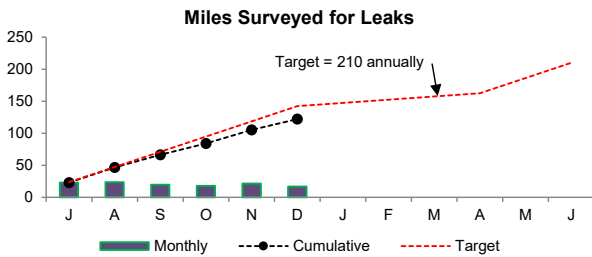
The target for revenue water deliveries calculated using meters is 100%. Estimates are generated for meters that are out of service due to instrumentation problems or in-house and capital construction projects. During Q2 FY22, 0.68% of the billed water flow was estimated. 99.32% was based on meter actuals. A total of 2.43% of the total flow was measured using annubar meters, mostly due to bypass valves that were opened in Lexington to increase the available flow to Burlington. An additional 1.0% was billed through 3 temporary bypass setups.

WASTEWATER METERS



The Wastewater Meter Replacement Project was approved at the October 2020 Executive Board meeting. The first installations were performed in the final week of April 2021. Through Q2 FY22 the contractor has installed and performed final confirmations on 173 meters out of the original total of 174. The remaining meter has been removed from the project. The installation phase has been completed on time and the Metering Department is on track to begin volume billing in January 2022.

WATER DISTRIBUTION SYSTEM PIPELINES



During the 2nd Quarter of FY22, 55.72 miles of water mains were inspected. The total inspected for the fiscal year to date is 122.06.

Leak Backlog Summary													
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June	Totals
Leaks Detected	2	2	0	1	1	1							7
Leaks Repaired	0	2	1	1	1	2							7
Backlog	5	5	4	4	4	3							n/a

During the 2nd Quarter of FY22 three leaks were detected, and four were repaired. Refer to FY22 Leak Report below for details. Also, community service ranging from individual leak location to hydrant surveys were conducted for Arlington, Medford, Newton, Revere, Saugus, Somerville and Swampscott.

2nd Quarter - Leak Report FY22

Date Detected	Location of Leaks	Repaired
07/01/21	Fellsway West @ Fells Ave., Medford	08/26/21
08/08/21	Fellsway East @ Pond St., Stoneham	08/18/21
07/28/21	Western Ave. @ WHDH Radio Station-Saugus	09/13/21
08/27/21	Middlesex Fells/Wellington, Medford	10/20/21
10/12/21	Middlesex Ave. @ Kensington, Somerville	11/23/21
07/01/16	241 Forest St., Winchester. Sect. 89	12/31/21
11/24/21	Waltham St. @ Lexington Line. Sec-101	12/02/21

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.
12/27/21	River St. @ Willow St., Waltham

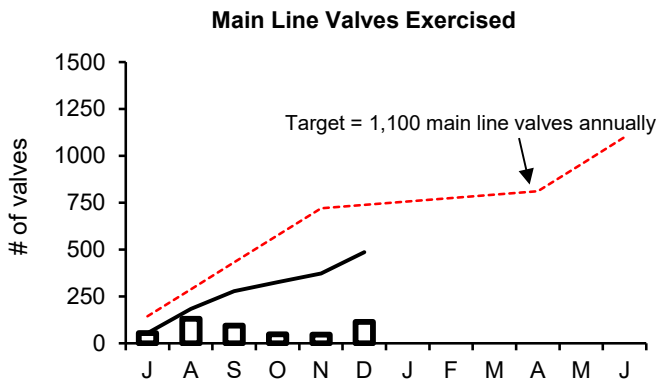
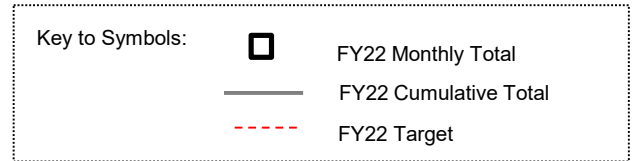
Water Distribution System Valves

2nd Quarter - FY22

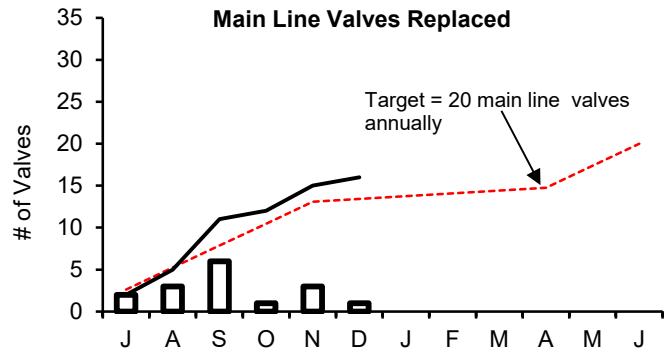
Background

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

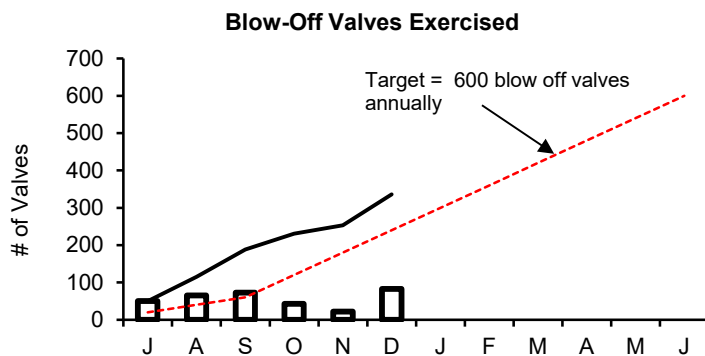
Type of Valve	Inventory #	Operable Percentage	
		FY22 to Date	FY22 Targets
Main Line Valves	2,159	97.1%	95%
Blow-Off Valves	1,317	98.6%	95%
Air Release Valves	1,380	95.6%	95%
Control Valves	49	100.0%	95%



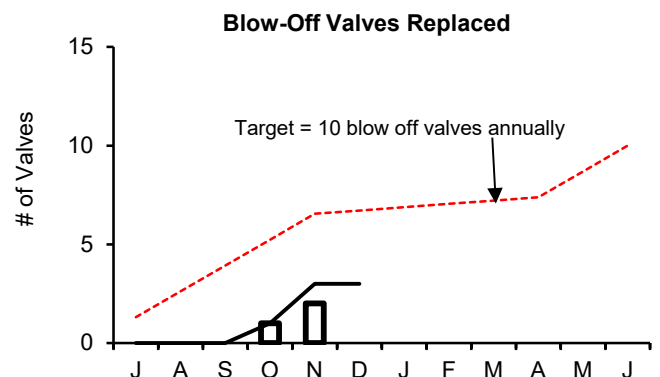
During the 2nd Quarter of FY22, 208 main line valves were exercised. The total exercised for the fiscal year to date is 486.



During the 2nd Quarter of FY22, there were five main line valve replaced. The total replaced for the fiscal year to date is sixteen.



During the 2nd Quarter of FY22, 148 blow off valves were exercised. The total exercised for the fiscal year to date is 336.

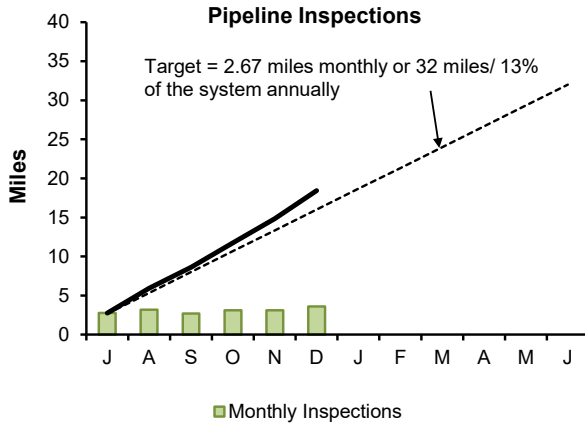


During the 2nd Quarter of FY22, there were three blow off valves replaced. The total replaced for the fiscal year to date is three. Below target due to isolation & permit issues and staff vacancies.

Wastewater Pipeline and Structure Inspections and Maintenance

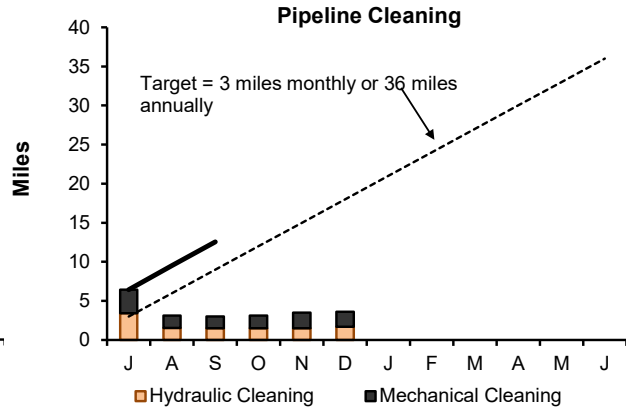
2nd Quarter - FY22

Inspections

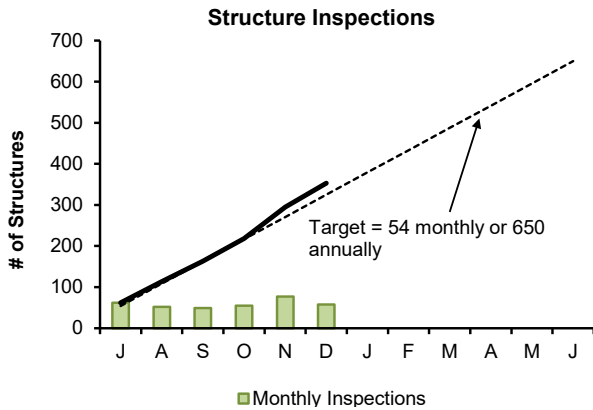


Staff internally inspected 9.80 miles of MWRA sewer pipe during this quarter. The year to date total is 8.63 miles. No Community Assistance was provided.

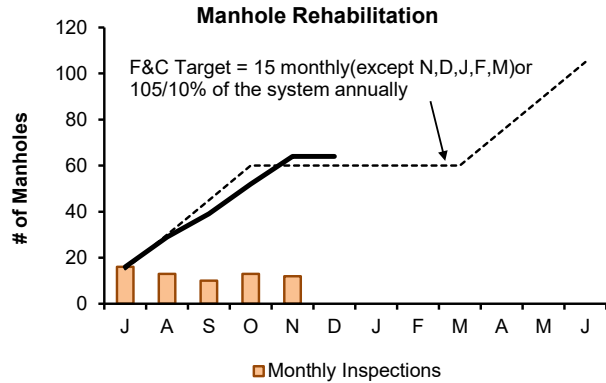
Maintenance



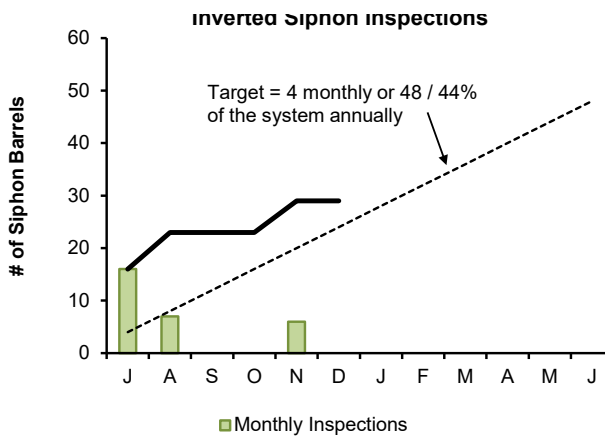
Staff cleaned 10.47 miles of MWRA sewer pipe, and removed 34 yards of grit. The year to date total is 23.02 miles. No Community Assistance was provided.



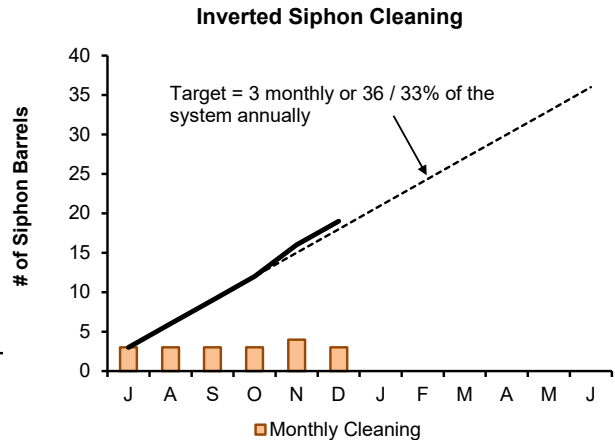
Staff inspected the 36 CSO structures and performed 154 other additional manhole/structure inspections during this quarter. The year to date total is 353 inspections.



Staff replaced 25 frame and cover replacements this quarter. The year to date total is 64.



Staff inspected 6 siphon barrels this quarter. The year total is 29 inspections.

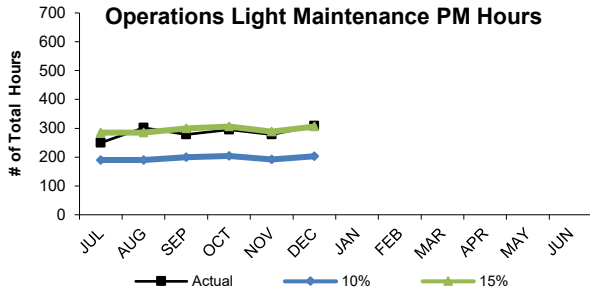


Staff cleaned 10 siphon barrels this quarter. The year total is 19.

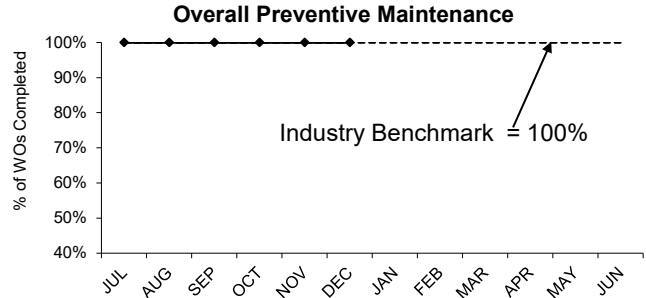
Field Operations' Metropolitan Equipment & Facility Maintenance

2nd Quarter - FY22

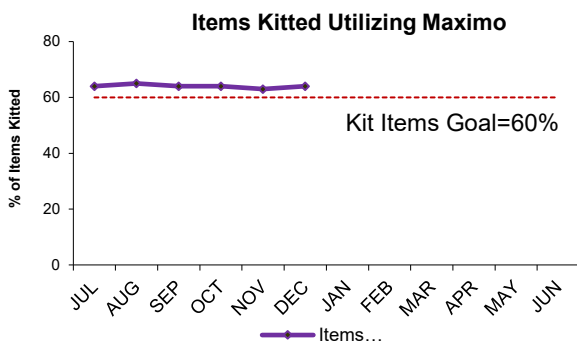
Several maintenance and productivity initiatives are in progress. The goal for the Overall PM completion and the Operator PM completion is 100%. The Operator PM and kitting initiatives frees up maintenance staff to perform corrective maintenance and project work, thus reducing maintenance spending. Backlog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



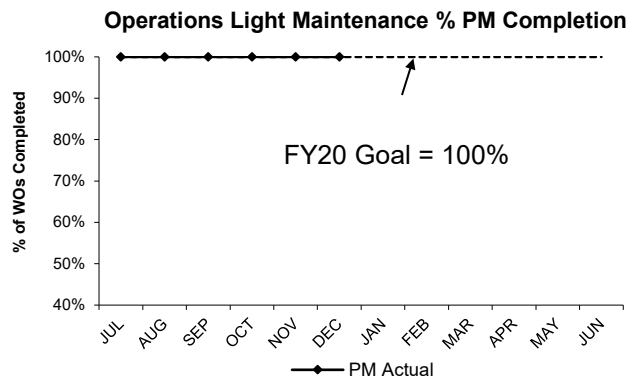
Operations staff averaged 294 hours per month of preventive maintenance during the 2nd Quarter of FY22, an average of 15% of the total PM hours for the 4th Quarter, which is within the industry benchmark of 10% to 15%.



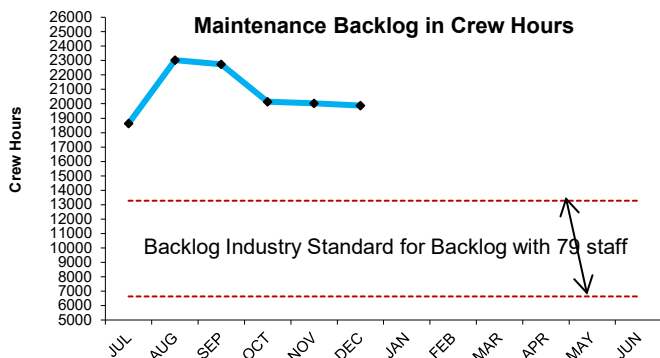
The Field Operations Department (FOD) preventive maintenance goal for FY22 is 100% of all PM work orders. Staff completed 100% of all PM work orders in the 2nd Quarter of FY22.



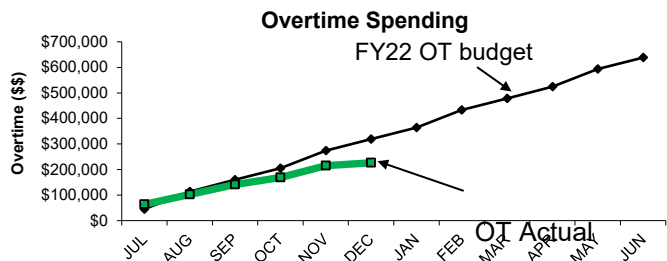
Operations' FY22 maintenance kitting goal has been set at 60% of all work orders to be kitted. Kitting is the staging of parts or material necessary to complete maintenance work. In the 2nd Quarter of FY22, 64% of all applicable work orders were kitted. This resulted in more wrench time and increased productivity.



Wastewater Operations complete light maintenance PM's which frees up maintenance staff to perform corrective maintenance. Operations' FY22 PM goal is completion of 100% of all PM work orders assigned. Operations completed 100% of PM work orders in the 2nd Quarter of FY22.



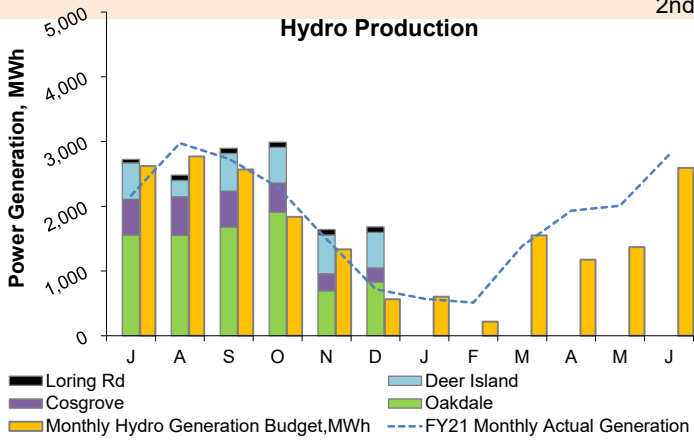
The 2nd Quarter of FY22 backlog average is 20,018 hours. Management's goal is to continue to control overtime and try to get back within the industry benchmark of 6,636 to 13,275 hours. The increase is due to vacations and several large maintenance projects.



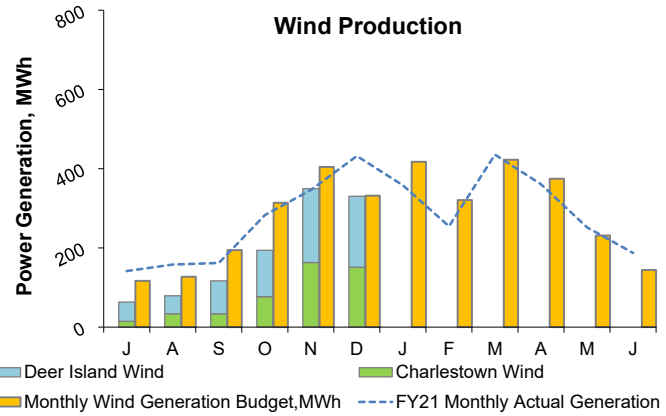
Maintenance overtime was \$28,565 under budget on average, per month, for the 2nd Quarter of FY22. Overtime is used for critical maintenance repairs and wet weather events. The overtime budget for the 2nd Quarter of FY22 is \$319,098. Overtime spending was \$226,365 which is \$92,733 under budget for the fiscal year.

Renewable Electricity Generation: Savings and Revenue

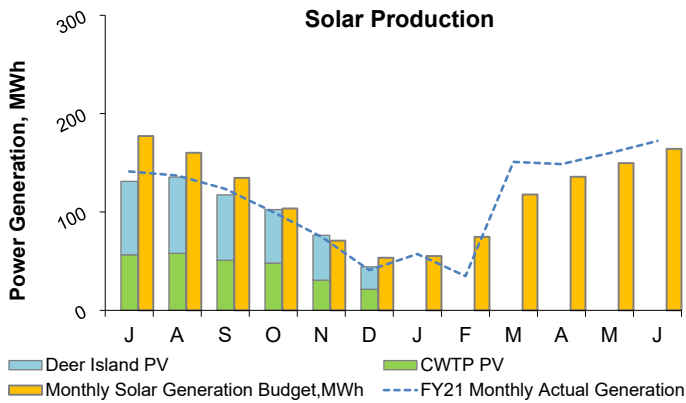
2nd Quarter - FY22



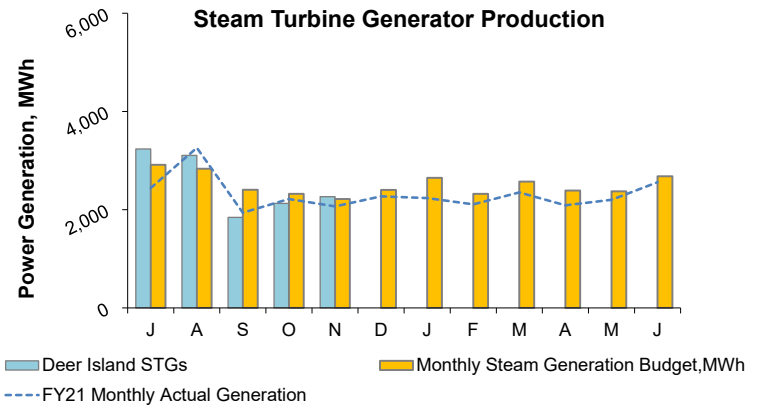
In Quarter 2 of FY22, the renewable energy produced from all hydro turbines totaled 6,461 MWh; 73% above budget³. The total savings and revenue to date in FY22 (actuals through Oct¹) is \$631,659 ; 101% above budget³. The savings and revenue value does not include RPS REC revenue (see next page).



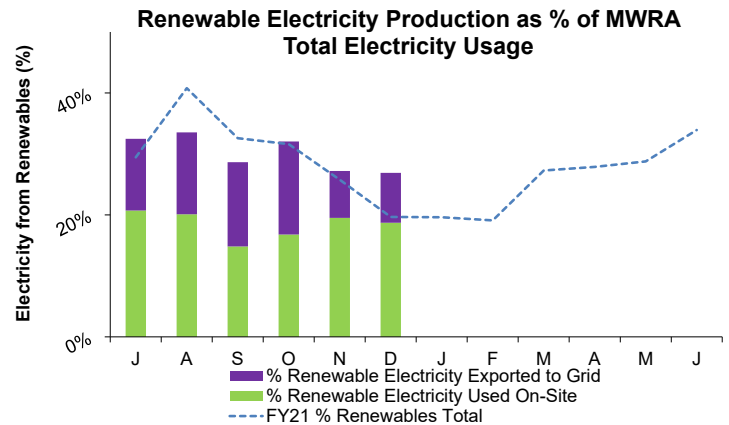
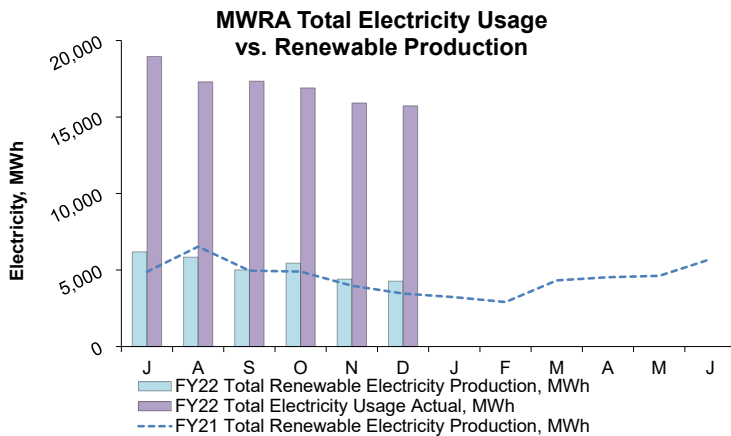
In Quarter 2 of FY22, the renewable energy produced from all wind turbines totaled 873 MWh; 17% below budget³. The total savings and revenue to date in FY22 (actuals through Oct¹) is \$66,114 ; 46% below budget³. The savings and revenue value does not include RPS REC revenue (see next page).



In Quarter 2 of FY22, the renewable energy produced from all solar PV systems totaled 76 MWh; 12% above budget³. The total savings and revenue to date in FY22 (actuals through Oct¹) is \$67,863 ; 7% below budget³. The savings and revenue value does not include RPS REC revenue (see next page).



In Quarter 2 of FY22, the renewable energy produced from all steam turbine generators totaled 6,572 MWh; 5% below budget³. The total savings and revenue to date in FY22 (actuals through Oct¹) is \$1,088,746 ; 13% above budget³. The savings and revenue value does not include RPS REC revenue (see next page).



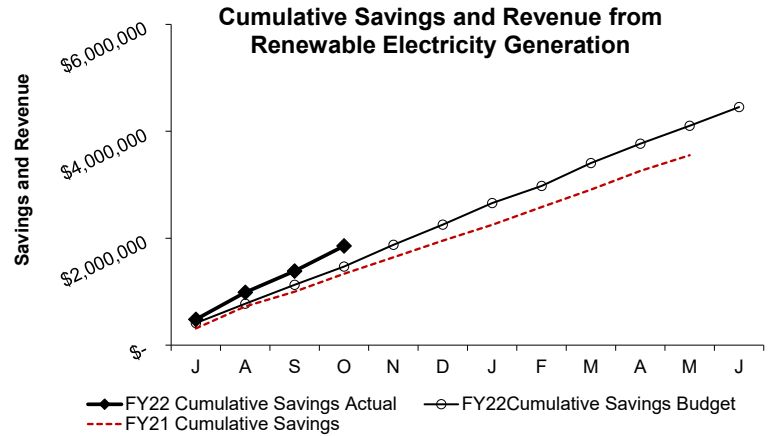
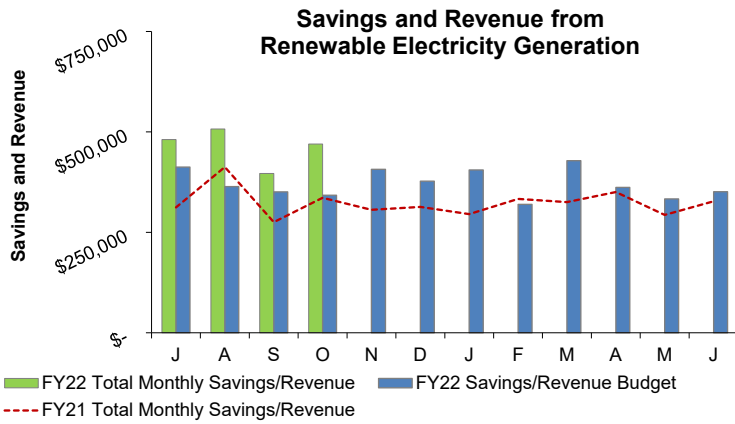
Quarter 2 of FY22, MWRA's electricity generation by renewable resources totaled 14,129 MWh, 18% above budget. MWRA's total electricity usage was approximately 48,565 MWh. Renewable generation was 29% of total electrical use. The MWRA total electricity usage is the sum of all electricity purchased for Deer Island and FOD plus electricity produced and used on-site at these facilities. Approximately 99% of FOD electrical accounts are accounted for by actual billing statements; minor accounts that are not tracked on a monthly basis such as meters and cathodic protection systems are estimated based on this year's budget.

All renewable electricity generated on DI is used on-site (this accounts for more than 50% of MWRA renewable generation). Almost all renewable electricity generated off-DI is exported to the grid.

- Notes:
1. Only the actual energy prices are being reported. Therefore, some of the data lags up to 2 months due to timing of invoice receipt.
 2. Savings and Revenue: Savings refers to any/all renewable energy produced that is used on-site therefore saving the cost of purchasing that electricity, and revenue refers to any value of renewable energy produced that is sold to the grid.
 3. Budget values are based on historical averages for each facility and include operational impacts due to maintenance work.

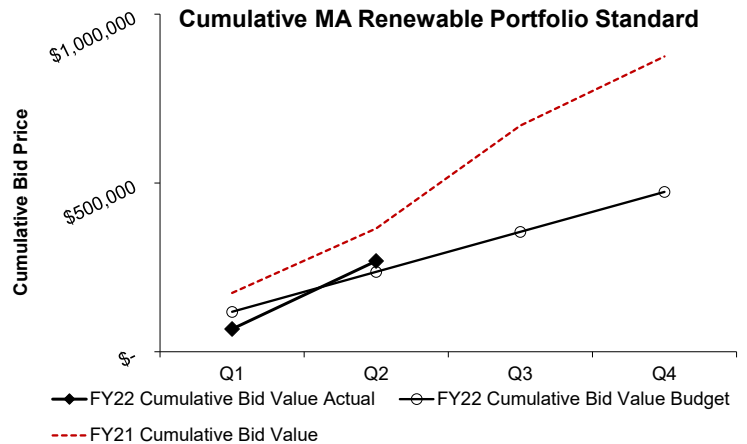
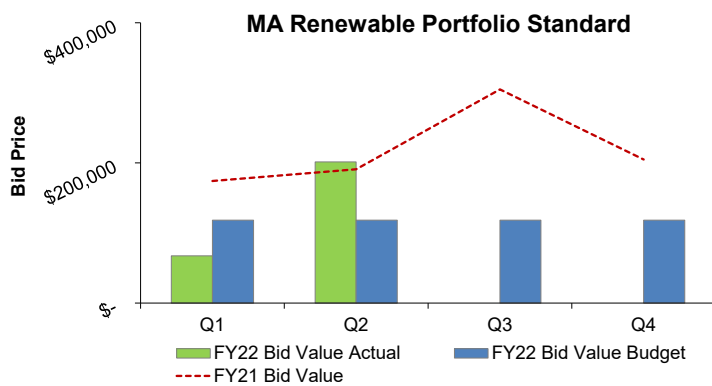
Renewable Electricity Generation: Savings and Revenue

2nd Quarter - FY22



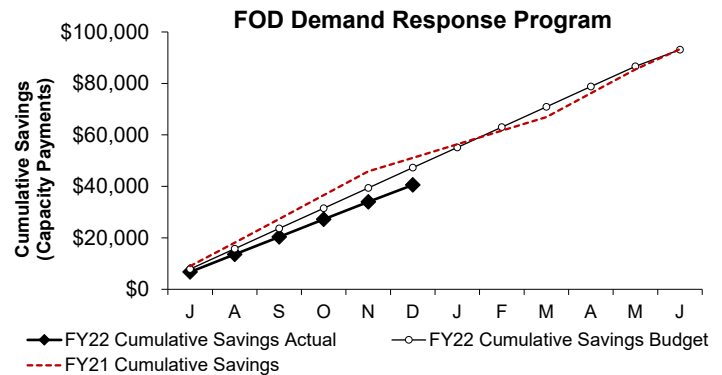
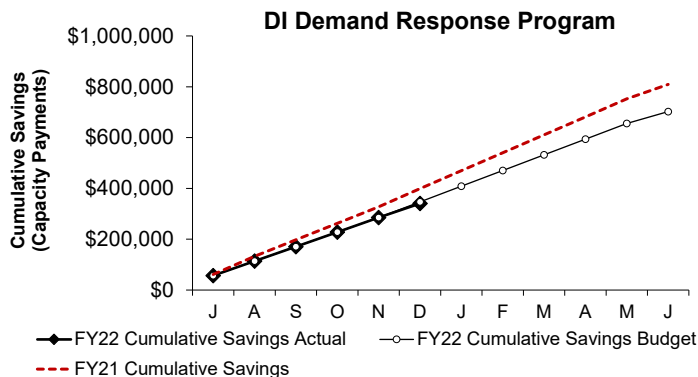
Savings and revenue from MWRA renewable electricity generation in the first four months of FY22 (actuals only through Oct¹) is \$1,854,382; which is 26% above the budget³.

Savings and revenue² from all renewable energy sources include wind turbines, hydroelectric generators, solar panels, and steam turbines (DI). This includes savings and revenue due to electricity generation (does not include avoided fuel costs and RPS RECs). The use of DITP digester gas as a fuel source provides the benefit of both electricity generation from the steam turbine generators, and provides thermal value for heating the plant, equivalent to approximately 5 million gallons of fuel oil per year (not included in charts above).



Bids were awarded during the 2nd Quarter¹ from MWRA's renewable energy assets; 2,239 Q2 CY2021 Class I Renewable Energy Certificates (RECs); 3,301 Q2 CY2021 Class 2 RECs; and 97 Q2 CY2021 Solar RECs were sold for a total value of \$201,462 RPS revenue; which is 70% above budget³ for the Quarter.

REC values reflect the bid value on the date that bids are accepted. Cumulative bid values reflects the total value of bids received to date.

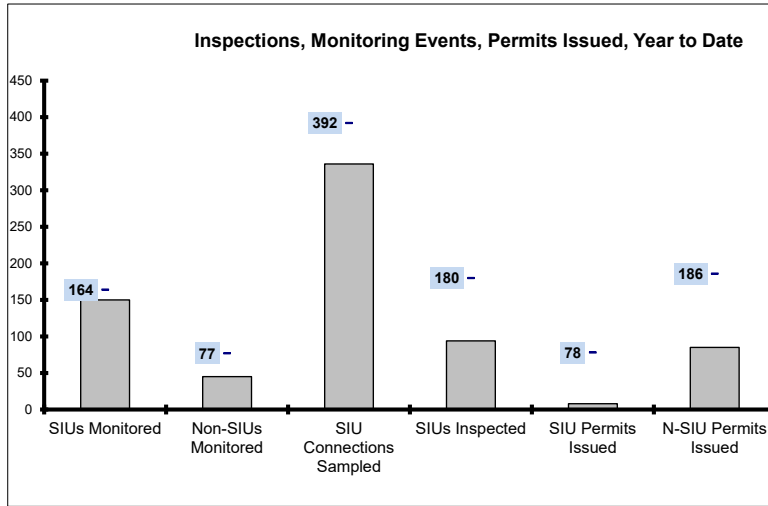


Currently Deer Island, JCWTP, Loring Rd, and Brutsch participate in the ISO-New England Demand Response Programs⁴. By agreeing to reduce demand and operate the facility generators to help reduce the ISO New England grid demand during periods of high energy demand, MWRA receives monthly Capacity Payments from ISO-NE. When MWRA operates the generators during an ISO-NE called event, MWRA also receives energy payments from ISO-NE. FY22 Cumulative savings (Capacity Payments only) through December¹ total \$340,455 for DI and payments for FOD total \$40,539 for the same period¹.

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

Toxic Reduction and Control

2nd Quarter - FY22



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

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

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

	Number of Days to Issue a Permit						Permits Issued	
	0 to 120		121 to 180		181 or more		SIU	Non-SIU
Jul	3	9	2	1	0	0	5	10
Aug	0	14	0	6	0	3	0	23
Sep	0	7	0	8	0	4	0	19
Oct	2	12	0	5	0	3	2	20
Nov	0	6	0	2	0	2	0	10
Dec	1	2	0	1	0	0	1	3
Jan							0	0
Feb							0	0
Mar							0	0
Apr							0	0
May							0	0
Jun							0	0

% YTD	75%	59%	25%	27%	0%	14%	8	85
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This is the second quarter of the MWRA fiscal year, FY22. SIU permit issuances are off to a slow start. This is mainly due to the incidences of staff turnover coupled with the workload of the available personnel and the effects of the COVID pandemic.

In the second quarter, 36 permits were issued, three of which were SIUs. All of the SIU permits were issued within the 120-day timeframe.

There were 33 non-SIU permits issued, of which 13 were issued late.

Reasons for late issuances continue to include a) waiting for critical data needed for permit processing and b) delays relating to new start-up operations - some result in the late payment of the relevant permit charges and in permits issued beyond the 120-day timeframe.

Overall in the first half of FY22, only 93 of the projected permits have been issued. For SIUs, only about 10% have been issued and they have a 75% compliance rate, falling short of the 90% compliance rate required by the EPA.

There have also been a number of facility closings since the COVID pandemic started and these are slowly being brought to the department's attention and being processed. For the Clinton Sewer Service area, there were no SIU permits issued in the first half of the fiscal year.

EPA Required SIU Monitoring Events
for FY22: 164
YTD: **150**

Required Non-SIU Monitoring Events
for FY22: 77
YTD: **45**

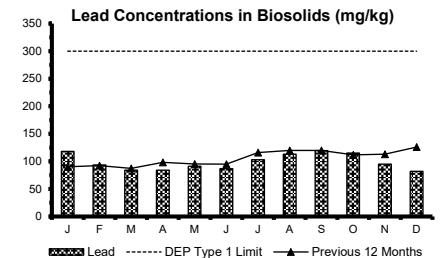
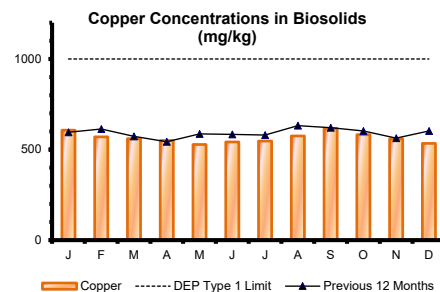
SIU Connections to be Sampled
For FY22: 392
YTD: **336**

EPA Required SIU Inspections
for FY22: 180
YTD: **94**

SIU Permits due to Expire
In FY22: 78
YTD: **8**

Non-SIU Permits due to Expire
for FY22: 186
YTD: **85**

TRAC's annual monitoring and inspection goals are set at the beginning of each fiscal year but they can fluctuate due to the actual number of SIUs. Monitoring of SIUs and Non-SIUs is dynamic for several reasons, including: newly permitted facilities; sample site changes within the year requiring a permit change; changes in operations necessitating a change in SIU designation; non-discharging industries; a partial sample event is counted as an event even though not enough sample was taken due to the discharge rate at the time; and also, increased/decreased inspections leading to permit category changes requiring additional monitoring events.



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

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

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

Field Operations Highlights

2nd Quarter – FY22

Western Water Operations and Maintenance

- Carroll Water Treatment Plant Annual Half Plant – Annual maintenance on side B of the plant began November 15 and finished on December 30. This shutdown provides a chance to clean tanks and perform tasks that would impact treatment when online. The critical work is the hypochlorite piping replacement that needs to be performed inside the flow path.
- Foss Reservoir Level – Foss Reservoir in Framingham was drained approximately 10 feet below its normal operating band during November as part of a periodic invasive plant species control program. Following sufficient freezing of plant roots, we will return to the normal operating band.

Metro Water Operations and Maintenance

- Valve Program: Valve operations to support in-house work including providing isolations on: Section 26 (Hydrant Replacement), Section 6 (Leak Repair), Section 86 (Leak Repair), Section 101 (Leak Repair), Watertown Supply Line (Leak Repair), Section 40 (Valve Replacement), Section 63 (Valve Replacement). CIP contractors were supported by isolation and dewatering of portions of WASM 11 and 12 and Section 51 (Contract 6544) as well as Meter 121 (Contract 6955). Other work included the disinfection of Section 79 after leak repair, the disinfection of Norwood's and Winthrop's Water Storage Tanks and mainline valve exercising of 8 water main sections.

Operations Engineering

- Staff continued community assistance as needed:
 - Testing of Newton's system with reduce storage volume.
 - Planning for Wayland and Natick emergency connections.
 - Initial system feasibility analysis for system expansion to the south and north.
 - Disinfection of Norwood and Winthrop community tanks.
 - Provided daily facility flow data to support Biobot Study.
- Staff continued to manage the lead pipe rig study at CWTP.
- Staff managed the outfall inspections at the Nut Island Headworks.
- Staff procured tank inspection services.
- Staff managed the carbon replacement for BWRPS and HNPS, and continued to monitor the performance on MWRA's carbon systems treating odorous air.
- 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.

Wastewater Operations & Maintenance

- Nut Island Headworks Odor Control & HVAC Improvements: Operations staff continues to attend weekly virtual coordination meetings with Engineering and Construction staff, the contractor and the consultant engineer for this project. The contractor continues to perform work on the facility odor control system, the facility boilers, HVAC ductwork, replacement of two underground fuel storage tanks, and the replacement of the facility's four (4) emergency spillway gates. Operations staff assisted with numerous MCC and odor control shutdowns to support this work. Operations staff also attended instrumentation and control meetings every week. Operations staff attended a meeting with SCADA and

Engineering Operations staff to discuss the layout of the new SCADA screens for the odor control system on 10/6/21. Operations staff supported the contractor in transferring fuel oil from the two existing underground storage tanks to the new underground storage tanks and assisted the contractor in completing work at the emergency spillway gates. Operations staff attended training on interim boiler operation and continue to monitor the system. Operations staff attended a meeting to discuss lost time/ increased cost claims on the project during the month of November. Operations staff assisted the contractor with commissioning odor control fan #3 and associated dampers, Operations also assisted with isolation and decommissioning of odor control fans #1 & #2 during the month of December.

- Cottage Farm Engine: Cottage Farm engine #2 was repaired and tested under load, and is now restored to full capacity.
- Ward Street and Columbus Park Headworks: Operations staff continues to work with Engineering staff and the consultant for this project to review concepts for super structure design, and to discuss and gather information about velocity and flow conditions in the influent channels at both facilities for upcoming channel inspections.
- Chelsea Creek Headworks: Wastewater Operations staff continues to work with Engineering & Construction staff and the contractor. This included support of punch list activities and testing the new security system. All channels and odor control system are in service. Operations staff attended meetings to walk through the facility and review remaining punch list items, and to discuss the implementation of the new security system.
- Operations & Maintenance Meeting: Operations and maintenance staff attended weekly meetings to discuss the top 25 critical maintenance items then need to be addressed.
- Nuisance alarms: Operations and Engineering Operations staff attended bi-weekly meeting to discuss the top 15 alarms that have come into SCADA to determine if operational issued are causing the condition.

Metro Equipment and Facility Maintenance

- Hayes Pump Station: MWRA plumbers installed new suction and discharge gauges needed for flow tests for rehabilitation.
- Nut Island Headworks: The baffle box for the #6 vortex was corroded beyond repair. MWRA mechanists, welders and mechanics fabricated and installed a new baffle box.
- MWRA electricians replaced perimeter lighting at the Somerville Chemical Building, and at the lower levels of Gillis Pump Station and Bellevue Tank with energy efficient LED fixtures.
- DeLauri Pump Station: MWRA machinist's fabricated new rake guides with structural enhancements which will prevent the rakes from catching and tripping the clutch.
- MWRA plumbers conducted annual backflow inspections for Spring Street, Commonwealth Ave, Dudley Road, Gillis, Lexington Street, and Belmont Pump Stations.

Field Operations Highlights

2nd Quarter – FY22

- Nut Island Headworks: MWRA mechanics and machinist replaced the worn out Conveyor #2 carry belt, worn bearings/shafts and rollers.

Metering

- Pandemic Response: This quarter continued to display trends that indicate that demand trends are returning toward normal, pre-pandemic averages. The overall demand in the entire system was down 1.6% compared to the pre-pandemic averages. Boston saw significant recovery to the COVID demand decrease with a 7.1% increase in demand compared to Q2FY21.
- Wastewater upgrade project: Through December, ADS installed meters and performed final confirmations at 173 of 174 total sites initially specified in the project (99%), with the lone remaining site having been removed from the project. Installs are thus considered complete. Meter data is set to begin billing communities using metered volumes starting in January 2022.

TRAC

Compliance and Enforcement

- TRAC issued 39 Notices of Violation, 1 Extension Letter and 1 Notice of Noncompliance/Order.
- Annual Fees: The Fiscal Year 2022 Annual Permitting and Monitoring Charge invoices were issued for all permits except the new group Dental Discharges permits. Those invoices will be issued in the Spring of 2022.

Inspections and Permitting

- This second quarter TRAC issued a total of 106 MWRA 8(m) Permits allowing companies to work within an easement or other property interest held by the Authority. Permits were issued in an average of 80 days from receipt.
- TRAC monitored the septage receiving sites a total of 30 times. Staff conducted inspection at 38 new construction gasoline/oil separators and 147 existing gasoline/oil separators.
- 35 MWRA Sewer Use Discharge Permits (Permits) were issued and/or renewed to its sewer users. No permits were issued and/or renewed in the Clinton Service Area.

Monitoring

- During the second quarter of FY22, TRAC completed 110 first time SIU monitoring events, 19 first time NSIU monitoring events and 397 other events including Clinton NPDES sampling, Clinton Local Limits sampling, Metropolitan Local Limits sampling, Clinton and Metropolitan Local Limits PFAS sampling, Special Sulfide sampling, Cosgrove and Oakdale NPDES sampling, CSO NPDES sampling, Sudbury Aqueduct monitoring and CSO Hypochlorite Tank chemical sampling.

Environmental Quality-Water

- Algae: MWRA completed seasonal algae monitoring in October; DCR continued to monitor both reservoirs throughout the quarter. Staff reviewed buoy and sampling data extensively due to Microcystis detection at the Wachusett Reservoir in October. All algal toxin testing was non-detect and all other nuisance algae were below levels of concern.

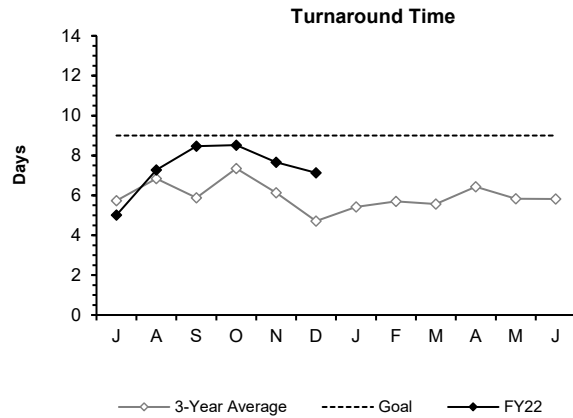
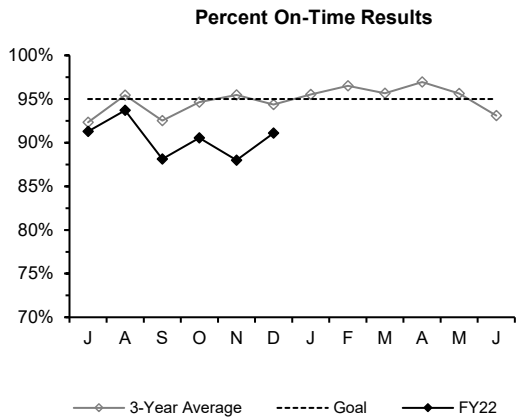
Community & In-House Support

- Sampling & Analysis: Staff provided support to several communities throughout the quarter including Winthrop: 10/6, 12/2 & 3; Norwood: 10/6, 22 & 11/2; Arlington: 10/15; Wakefield: 10/18; Reading: 10/21; Chelsea: 11/1; Marlborough: 11/26.
- Training & Guidance: On two occasions, staff provided a virtual presentation to community water departments regarding proper coliform sampling technique and chlorine measurement. Additionally, staff held four meetings with community water superintendents, and presented at MWRA's Emergency Response Planning Program training to review source and finished water quality data.
- Contaminant Monitoring System (CMS): Staff responded to seven CMS alarms this quarter. Staff followed routine response protocols during each incident. Staff also exercised the mobile contaminant response trailer as part of emergency preparedness activities. All system components functioned successfully.
- Chemical Supply: Staff are closely monitoring bulk chemical inventories and contract adherence to delivery schedules. Staff continue to work on chemical supply emergency planning.

Environmental Quality-Wastewater

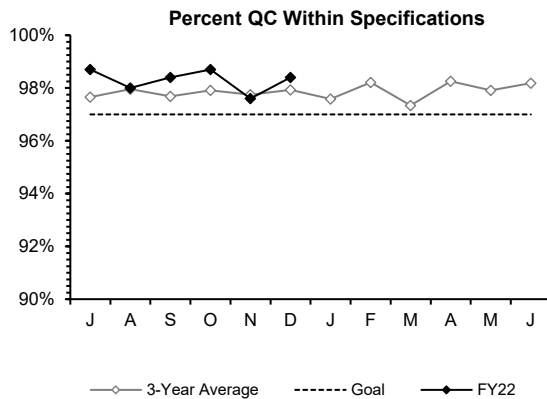
- Ambient Monitoring: Due to hazardous weather, the final scheduled water column survey of the 2021 field season was deferred to early November. Results from the November survey showed exceedance of the dissolved oxygen concentration and percent saturation thresholds in Stellwagen Basin; required notifications to the regulators and interested parties were made. Analysis of datasets collected in 2021 continues. The annual Outfall Monitoring Overview for 2020 was completed, presented to the Board of Directors in October, and submitted to regulatory agencies in November as required by the NPDES permit. The Outfall Monitoring Science Advisory Panel met on December 6.
- Harbor/CSO Receiving Water Monitoring: The CSO receiving water monitoring ended for the season in October while the biweekly monitoring will continue through the winter.
- Cooperation with other agencies: Worked with the Massachusetts Bays Partnership to plan and conduct a forum on low dissolved oxygen in Cape Cod Bay in recent years, as well as attending meetings of the MBP Management Committee. Met with Gloucester Health Department and wastewater staff to discuss their enterococci sampling results and share information on our sampling and monitoring experiences. Submitted comments to MassDEP on new regulation implementing the Sewage Notification Law, and to Mass. Coastal Zone Management on the Massachusetts Ocean Plan update. Staff presented at the annual meeting of the Regional Association for Research in the Gulf of Maine and at the Coastal and Estuarine Research Federation on red tide in Massachusetts Bay

Laboratory Services 2nd Quarter - FY22

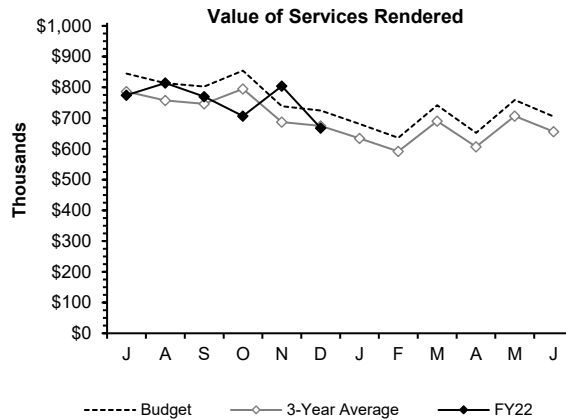


The Percent On-Time measurement fell below the 95% goal due to staffing vacancies.

Turnaround Time met the 9-day goal.



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



Value of Services Rendered is 2.6% below the annual budget projection due to staffing vacancies

Performance:

Met Turnaround Time, Percent QC within Specification indicators for the quarter at reduced staffing level. Value of Services Rendered is slightly below budget, but ahead of the 3-year average year to date.

School Lead Program:

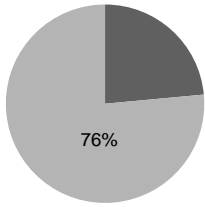
During the 2nd quarter of FY22, MWRA's lab completed 112 tests from 18 schools and childcare facilities in 7 communities. Since 2016, MWRA's Laboratory has conducted over 39,000 tests from 535 schools and daycares in 44 communities. We have also completed 657 home lead tests under the DPH sampling program since 2017.

CONSTRUCTION PROGRAMS

Projects In Construction

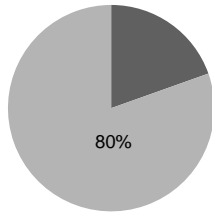
2nd Quarter – FY22

Money



- Amount Remaining
- Billed to Date

Time



- Days Remaining
- Days Expended

Permanent Metering Replacement and Installation

Project Summary: This project consists of the replacement of 174 flow meters in sewer manholes located throughout the MWRA service district.

Contract Amount: \$3,291,198.64

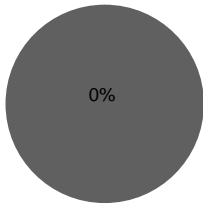
Contract Duration: 450 Days

Notice to Proceed: 3-Dec-20

Contract Completion: 26-Feb-22

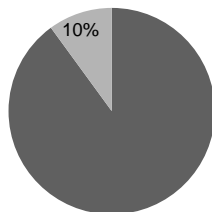
Status and Issues: As of December, the Contractor installed 173 meters of which, 159 have received final acceptance. All meter confirmations are complete.

Money



- Amount Remaining
- Billed to Date

Time



- Days Remaining
- Days Expended

Section 89 Replacement Pipeline

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

Contract Amount: \$32,619,000

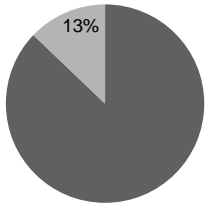
Contract Duration: 1,475 Days

Notice to Proceed: 15-Aug-21

CoContract Completion: 25-Aug-25

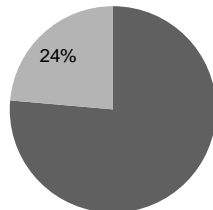
Status and Issues: As of December, the Contractor continued to secure the necessary permits, laydown areas and organizing the field office. They have continued to provide submittals for review and have completed pre-construction videos of phase one surface areas.

Money



- Amount Remaining
- Billed to Date

Time



- Days Remaining
- Days Expended

Low Service PRV Improvements

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

Contract Amount: \$11,326,000

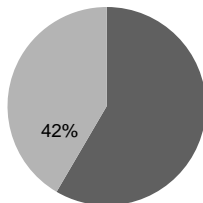
Contract Duration: 720 Days

Notice to Proceed: 14-Jul-21

Contract Completion: 4-Jul-23

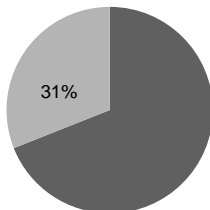
Status and Issues: As of December, the contractor Installed forms and placed concrete for the north and south vertical walls of the cast in place (CIP) vault. Loaded trucks with excavated material for disposal. They installed rebar and wall pipe sleeves for the east and west vertical walls of the CIP vault.

Money



- Amount Remaining
- Billed to Date

Time



- Days Remaining
- Days Expended

Rehabilitation of WASM 3

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

Contract Amount: \$19,656,427.23

Contract Duration: 1,383 Days

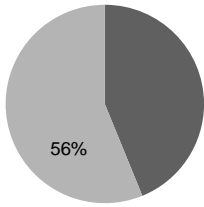
Notice to Proceed: 28-Oct-20

Contract Completion: 11-Aug-24

Status and Issues: As of December, the Contractor installed and welded a new (20 lf) 60" steel connection piece to the existing cement lined pipes, backfilled and paved at AP 14 Irvington Road Somerville. They finished cleaning and cement lining the 60" water main from AP 12 to AP 13B (505 LF) and AP 11 towards AP 10 in Town of Arlington.

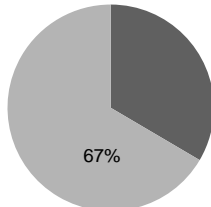
Projects In Construction 2nd Quarter – FY22

Money



■ Amount Remaining
■ Billed to Date

Time



■ Days Remaining
■ Days Expended

Nut Island Odor Control and HVAC

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

Contract Amount: \$58,541,461.62

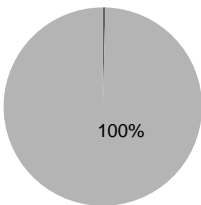
Contract Duration: 1,034 Days

Notice to Proceed: 12-Feb-20

Contract Completion: 12-Dec-22

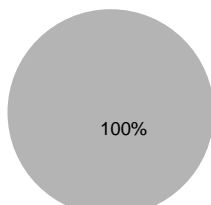
Status and Issues: As of December, the Contractor set frames and covers to grade for the underground storage tank (UST) and adjusted rebar to grade. They placed 4,000 psi concrete for the top slab, finished, and cured after which, they removed the forms and backfilled and compacted around the top slab and removed the access covers at abandoned existing USTs.

Money



■ Amount Remaining
■ Billed to Date

Time



■ Days Remaining
■ Days Expended

Chemical Tank Relining & Pipe Replacement

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

Contract Amount: \$8,698,341

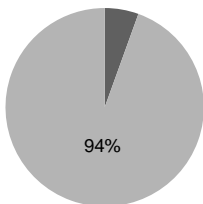
Contract Duration: 850 Days

Notice to Proceed: 13-Aug-19

Contract Completion: 10-Dec-21

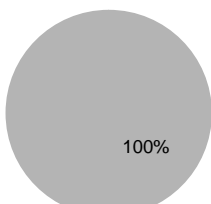
Status and Issues: As of December, the Contractor complete the 7-day leak test for Sodium Bisulfite Tank No. 2., they complete miscellaneous punch list items and began demobilizing from site.

Money



■ Amount Remaining
■ Billed to Date

Time



■ Days Remaining
■ Days Expended

Clinton Valve and Pipe Replacement

Project Summary: This project involves the replacement of return activated sludge, waste activated sludge and plant water valves and associated piping.

Contract Amount: \$488,946.27

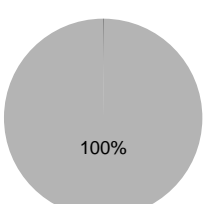
Contract Duration: 493 Days

Notice to Proceed: 8-Sep-20

Contract Completion: 14-Jan-22

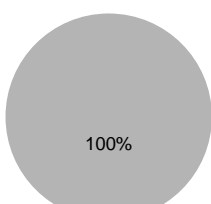
Status and Issues: As of December the Contractor addressed punch list items (valve tags, pipe stenciling, grouting, concrete repair, installation of SS chain and replacement of damaged flanges) and has completed all project related work with the exception of touch-up paint to the concrete pedestals.

Money



■ Amount Remaining
■ Billed to Date

Time



■ Days Remaining
■ Days Expended

Gravity Thickener Rehabilitation

Project Summary: This project involves the upgrade of all six gravity thickeners, including the complete replacement of each tank's sludge and scum thickening equipment and 5 of the 6 FRP dome covers.

Contract Amount: \$20,223,830.33

Contract Duration: 1,230 Days

Notice to Proceed: 11-May-18

Contract Completion: 22-Sep-21

Status and Issues: As of December, the contract is being closed out.

CSO CONTROL PROGRAM

2nd Quarter – FY22

All 35 projects in the CSO Long-Term Control Plan (LTCP) were complete as of December 2015 in compliance with milestones in the Federal District Court Order. MWRA has completed a multi-year CSO post-construction monitoring program and performance assessment, filing the Final CSO Post Construction Monitoring Program and Performance Assessment Report with the Court and submitted copies to EPA and DEP in December 2021. The report shows that 70 of 86 outfalls met the LTCP goals for CSO activation frequency and volume. MWRA and its member CSO communities are moving forward with plans to bring 6 of the 16 CSOs in line with the LTCP goals. The remaining 10 will require further investigation to determine an appropriate plan. The MWRA is in discussion with the court parties and anticipates a 3-year extension to accomplish these remaining efforts. MWRA Board of Directors on December 15, 2021 gave approval to approach the Court to file a motion for a 3 year extension. Of the \$913.1 million budget in the FY22 CIP for the CSO Control Program, **approximately \$2.5 million remain to be spent**, as described below.

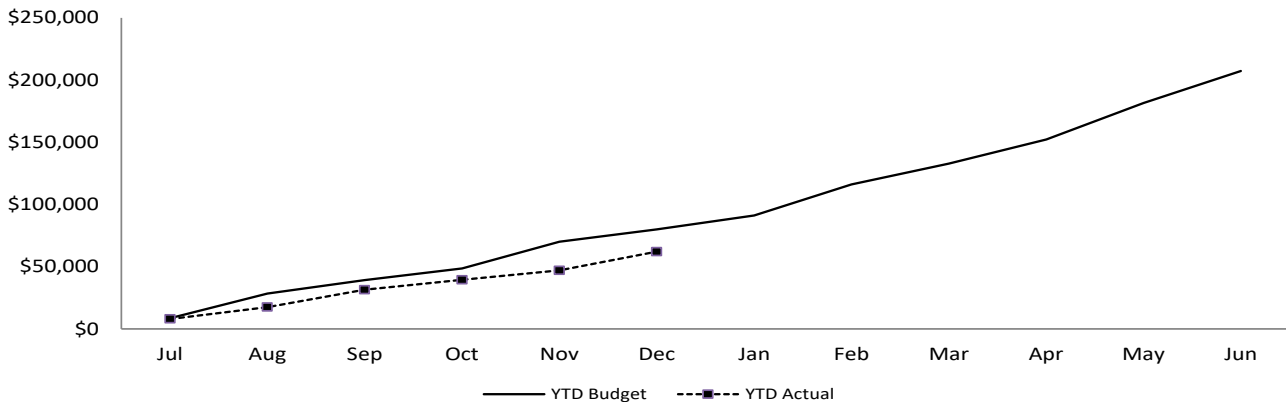
Project/Item	Status as of December 31, 2021
BWSC Dorchester Interceptor Inflow Removal	This agreement with BWSC provided up to \$3.76 million in MWRA financial assistance for reimbursement of the eligible costs of construction to remove inflow from the BWSC's Dorchester Interceptor system. BWSC awarded one construction contract for inflow removal in the amount of \$1.58 million. BWSC completed the contract work on June 30, 2021, when the financial assistance agreement ended. MWRA has received payment requests from BWSC for a portion of the expended amount, which is under review. \$2.18 million of remaining funds in the Dorchester agreement has been transferred into a new agreement by which BWSC will construct sewer separation and other CSO improvements in East Boston (see below).
BWSC East Boston Sewer Separation and other CSO Improvements	On April 14, 2021, the MWRA Board of Directors authorized the East Boston CSO financial assistance agreement in the amount of \$2.18 million for a term of two years, from July 1, 2021 through June 30, 2023. BWSC and MWRA executed the agreement on June 10, 2021. BWSC has awarded East Boston Sewer Separation Contract 3 and is finalizing design of an upgraded connection to the MWRA system to lower CSO discharges at Outfall BOS014. Per the agreement, BWSC has submitted a request for payment of two-thirds of the agreement amount upon contract award, which had been processed on September 16, 2021 in the amount of \$1,454,445. BWSC is eligible for the remaining one-third of the agreement amount once as-builts have been produced for the BOS014 modifications. It is anticipated that the request along with the as-build will come in May.
City of Cambridge Memorandum of Understanding and Financial Assistance Agreement	The City of Cambridge attained substantial completion of its last MWRA CSO plan project in December 2015 in compliance with Schedule Seven. The \$100.2 million MOU/FAA by which MWRA funded the eligible costs of the Cambridge-implemented CSO projects ended on June 30, 2018. With the assistance of internal audit, MWRA recently revisited the final eligibility review of the Cambridge construction contracts, making a few revisions and reviewing those edits with Cambridge. Staff expect to issue a final eligibility certification in Q3 FY22.
City of Somerville Financial Assistance Agreement	By this agreement, MWRA will provide up to \$1.4 million upon construction award of City of Somerville's repair of its combined sewer trunk line upstream of the Somerville Marginal CSO Facility. Pursuant to the agreement, the repair work is intended to maintain the full in-system storage capacity of the trunk sewer to support CSO control. Somerville completed the design that includes a cementitious/geopolymer lining and has awarded to National Water Main. The City of Somerville has provided details of the notice to proceed and has begun to process the payment in accordance with the FAA.
MWRA CSO Performance Assessment – Contract 7572	<p>MWRA issued the Notice to Proceed with the contract for CSO Post-Construction Monitoring and Performance Assessment to AECOM Technical Services, Inc., in November 2017. 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 DEP in December 2021 verifying whether the LTCP goals are attained. The current contract amount is \$5.28 million <u>of which approximately \$4.6 million has been spent</u>.</p> <p>On August 30, 2019, DEP issued five-year CSO variances to water quality standards for the Lower Charles River/Charles Basin and the Alewife Brook/Upper Mystic River effective through August 31, 2024. The variance conditions include receiving water quality modeling and CSO and stormwater sampling; the evaluation of certain additional CSO controls; other requirements intended to minimize CSO discharges, their impacts and public health risk; and preparation of updated CSO control plans for these waters. In compliance with the CSO variances, MWRA has implemented a subscriber-based system to notify the public of CSO discharges at its permitted outfalls within four hours of the start of discharge at each location, using meter readings. MWRA also reports estimated discharge volumes on its CSO notification web page. Cambridge and Somerville are also parties to the variances and have implemented notification systems for their own outfalls. AECOM continues to make progress with CSO variance-required project evaluations and other site-specific investigations to mitigate CSO discharges at locations where LTCP goals are not yet attained. In these efforts, MWRA is maintaining close coordination with the CSO communities. CSO mitigation implemented in late 2020/early 2021 included: BWSC completed its East Boston sewer separation Contract 1, Chelsea raised the overflow weir at Outfall CHE004, Cambridge removed heavy sediments in the Outfall CAM401A system, - all expected to bring associated outfalls into attainment with LTCP discharge goals. In addition, Cambridge completed the partial sewer separation improvements that have reduced discharges from the Cottage Farm facility. MWRA has reached the 100% design stage associated with the new interceptor connection at Chelsea's Outfall CHE008 which is currently under procurement review. Design has begun to add a new connection to the Somerville Marginal Conduit upstream of the Somerville Marginal Facility which is predicted to significantly reduce CSO discharges at from the facility (MWR205/MWR205A). MWRA and BWSC continue to work on a project to improve flow conveyance at Outfall BOS017 in Charlestown. Final design of the dry-weather connection in East Eagle Square to be constructed under an allowance with BWSC's Construction contract 3 (partially funded by MWRA) was reviewed and approved. Modification to BOS014 are being constructed as long as weather conditions allow. BWSC has also has commenced construction of South Boston sewer separation Contract 1 that will lower CSO discharges to Fort Point Channel.</p> <ul style="list-style-type: none"> • AECOM updated the MWRA hydraulic model to Q4-2021 system conditions in part to produce an updated Typical Year CSO performance assessment relative to the LTCP activation and volume goals. The Final CSO Post Construction Monitoring Program and Performance Assessment Report which was submitted to the Court and EPA and DEP on December 29, 2021. The report shows that 70 of 86 outfalls met the LTCP goals for CSO activation frequency and volume. MWRA and its member CSO communities are moving forward with plans to bring 6 of the 16 CSOs in line with the LTCP goals. The remaining 10 will require further investigation to determine an appropriate plan. MWRA and the CSO communities will continue to identify and evaluate alternatives to further reduce discharges at these outfalls. • Utilizing receiving water quality models of the Lower Charles River and the Alewife Brook/Upper Mystic River AECOM completed and calibrated last fall, it performed water quality assessments of current river conditions and the impacts of remaining CSO and non-CSO (dry weather and stormwater) pollution sources. MWRA responded to comments provided on the draft and distributed a final Water Quality Assessment Report to EPA, DEP, the CSO communities, Charles River Watershed Association, and Mystic River Watershed Association. MWRA submitted the Water Quality Alternatives Assessment report in December. Comments on the report were received and the MWRA will respond to each individual. The comments were outside of the scope of the report and therefore the report will not be re-issued.

CIP Expenditures 2nd Quarter – FY22

FY22 Capital Improvement Program Expenditure Variances through December by Program - (\$ in thousands)				
Program	FY22 Budget Through December	FY22 Actual Through December	Variance Amount	Variance Percent
Wastewater	\$43,894	\$36,302	(\$7,592)	-17%
Waterworks	\$30,819	\$23,689	(\$7,131)	-23%
Business and Operations Support	\$5,289	\$2,156	(\$3,133)	-59%
Total	\$80,002	\$62,146	(\$17,855)	-22%

Project underspending within Wastewater was due to updated construction schedule for Prison Point Rehabilitation contract, timing of grant and loan distributions for the I/I Local Financial Assistance program, completion of some design and inspection tasks were later than anticipated for Ward Street and Columbus Park Headworks Upgrades Design/CA, timing of final work for Winthrop Terminal Facility (WTF) VFD Replacement, Gravity Thickener Rehab, and the Dorchester Interceptor Sewer. This underspending was partially offset by work scheduled in FY21 that was completed in FY22 for the Chelsea Creek Headworks Upgrades and NI Odor Control & HVAC Construction, work completed earlier than anticipated for East Boston CSO Control, and timing of payment for Dorchester I/I Removal work. Project underspending in Waterworks was due to updated schedules for the NIH Section 89 & 29 Replacement, and CP-3 Sections 23, 24, and 47 Design CA/RI contracts, timing of community distributions for the Water Loan program, and scope reduction for Sections 50 & 57 Water Rehabilitation - Design/ESDC. This underspending was partially offset by earlier than anticipated land purchase for the Tunnel Admin, Legal & Public Outreach contract, and contractor progress for WASM/Spot Pond Supply Mains Pressure Reducing Valves Improvements, WASM 3 Rehabilitation CP-1 and CP-1 Shafts 6, 8, and 9A construction.

Budget vs. Actual CIP Expenditures (\$ in thousands)
Total FY22 CIP Budget of \$207,312



Construction Fund Management

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

Cash Balance as of 12/25/21	\$159.3million
Unused capacity under the debt cap:	\$1.74 billion
Estimated date for exhausting construction fund without new borrowing:	Apr-22
Estimated date for debt cap increase to support new borrowing:	Not anticipated at this time
Commercial paper/Revolving loan outstanding:	\$128 million
Commercial paper capacity / Revolving Loan	\$350 million
Budgeted FY22 Cash Flow Expectancy*:	\$186 million

* Cash based spending is discounted for construction retainage.

DRINKING WATER QUALITY AND SUPPLY

Source Water – Microbial Results and UV Absorbance

2nd Quarter – FY22

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

Sample Site: Quabbin Reservoir

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

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

Sample Site: Wachusett Reservoir

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

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

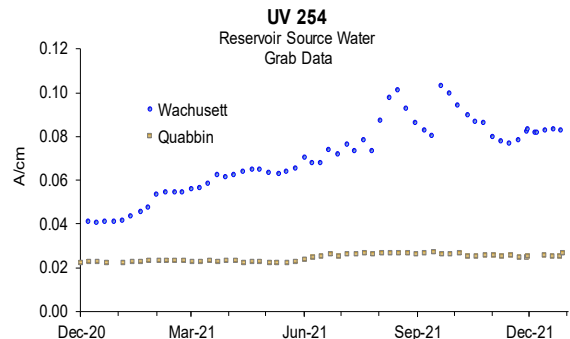
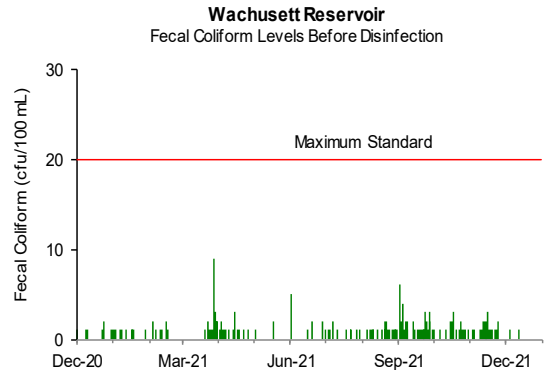
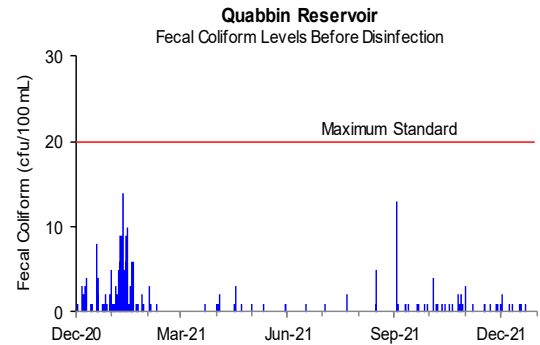
All samples collected during the 2nd Quarter were below 20 cfu/100mL. **For the current six-month period, 0.0% of the samples exceeded a count of 20 cfu/100mL.**

Source Water – UV Absorbance

UV Absorbance at 254nm wavelength (UV-254), is a measure of the amount and reactivity of natural organic material in source water. Higher UV-254 levels cause increased ozone and chlorine demand resulting in the need for higher ozone and chlorine doses, and can increase the level of disinfection by-products. UV-254 is impacted by tributary flows, water age, sunlight and other factors.

Quabbin Reservoir UV-254 levels averaged 0.025 A/cm for the quarter.

Wachusett Reservoir UV-254 levels averaged 0.083 A/cm for the quarter.



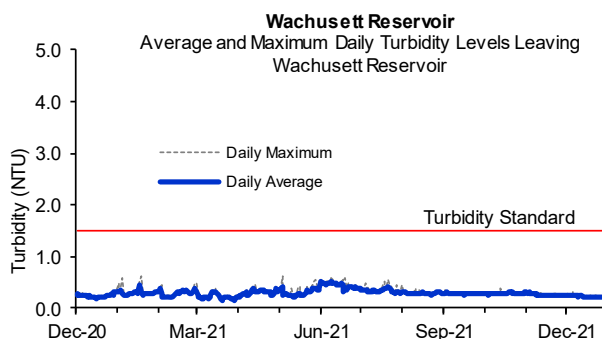
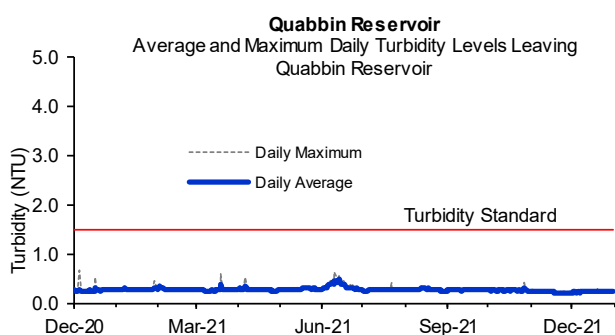
Source Water – Turbidity

2nd Quarter – FY22

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.

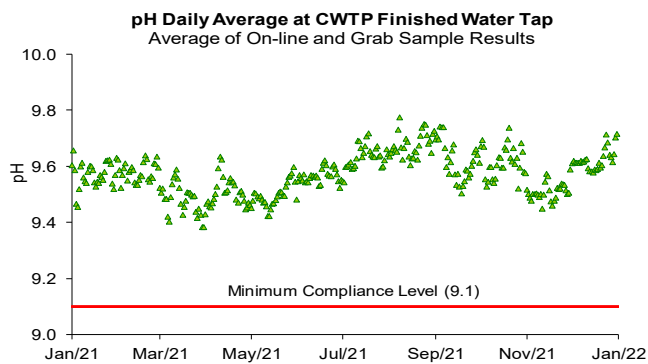
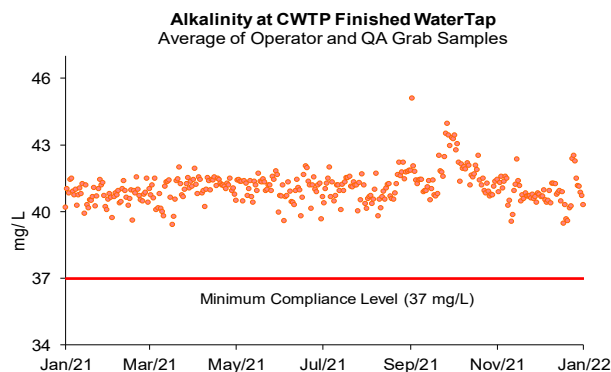


Treated Water – pH and Alkalinity Compliance

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 December. Distribution system sample pH ranged from 9.3 to 9.7 and alkalinity ranged from 38 to 42 mg/L. No sample results were below DEP limits for this quarter.



Treated Water – Disinfection Effectiveness

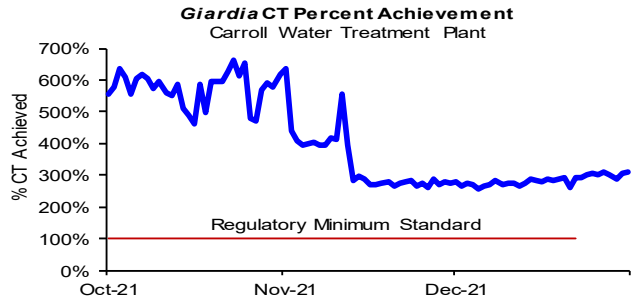
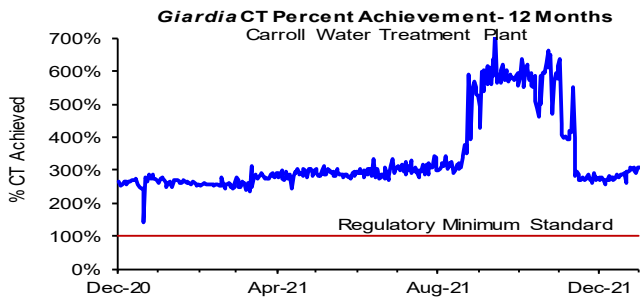
2nd Quarter – FY22

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.

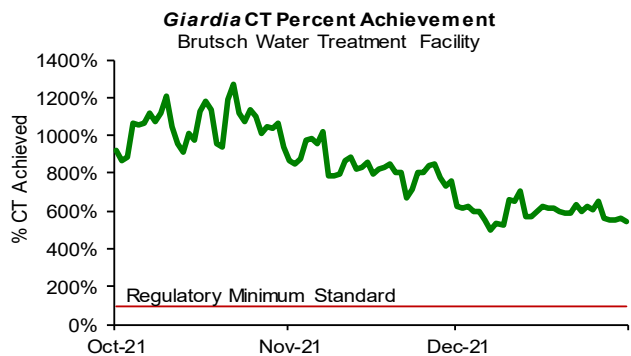
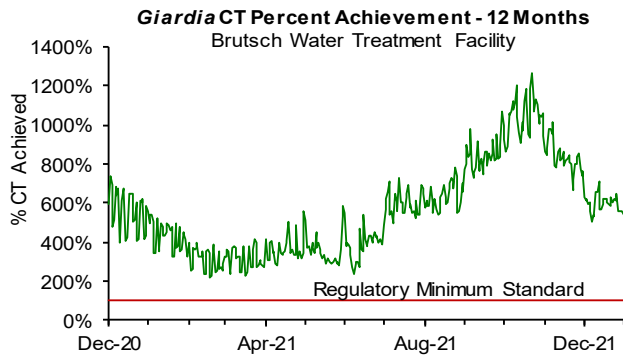
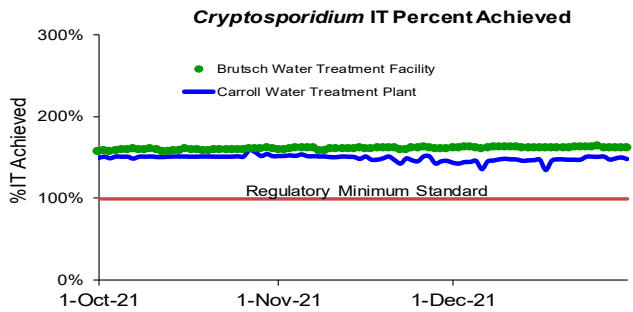
Wachusett Reservoir – MetroWest/Metro Boston Supply:

- Ozone dose at the CWTP varied between 2.4 to 3.9 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%.
- The slight dip in *Giardia* CT Achievement on December 21, 2020 was due to Train B returning to service after undergoing winter maintenance. *Giardia* CT Achievement was met this day. This is visible in the top left graph.
- The ozone target was increased in mid-August 2021 through early November to reduce chlorine demand and decay, as during this time chlorine residuals declined in the distribution system.



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 1.45 to 1.70 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%.



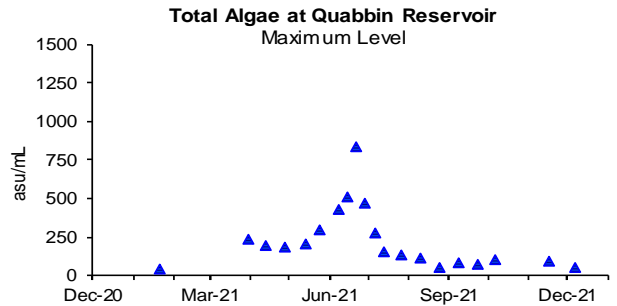
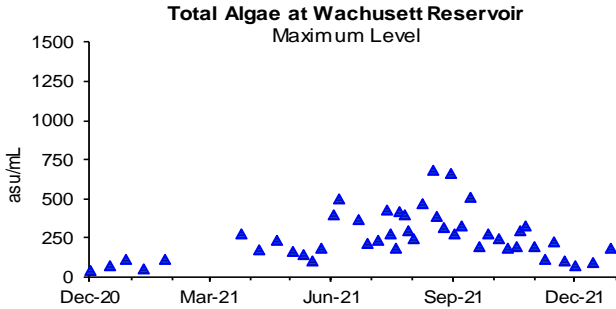
Source Water - Algae

2nd Quarter – FY22

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 2nd quarter, there were no complaints which may be related to algae reported from the local water departments.



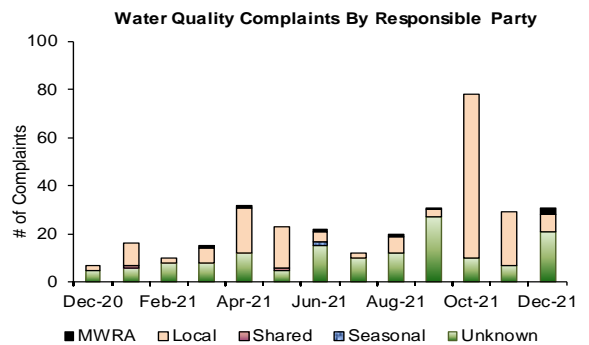
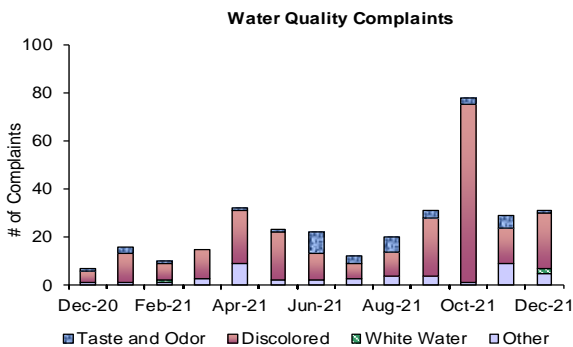
Drinking Water Quality Customer Complaints: Taste, Odor, or Appearance

MWRA collects information on water quality complaints that typically fall into four categories: 1) discoloration due to MWRA or local pipeline work; 2) taste and odor due to algae blooms in reservoirs or chlorine in the water; 3) white water caused by changes in pressure or temperature that traps air bubbles in the water; or 4) "other" complaints including no water, clogged filters or other issues.

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

Communities reported 138 complaints during the quarter compared to 28 complaints from 2nd Quarter of FY21. Of these complaints, 112 were for "discolored water", 9 were for "taste and odor", 2 were for "white water", and 15 were for "other". Of these complaints, 97 were local community issues, 3 were MWRA related, and 38 were unknown in origin.

- During October, Arlington reported sixty-three discolored water complaints which may have been related to water hydrant flushing in the area.



Bacteria & Chlorine Residual Results for Communities in MWRA Testing Program

2nd Quarter – FY22

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 141 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.

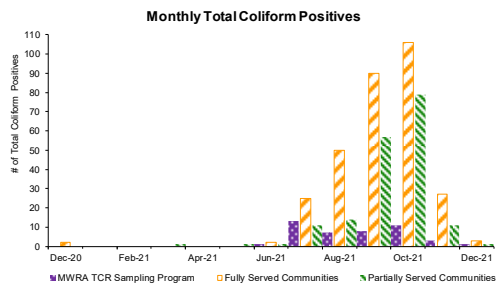
A disinfectant residual is intended to maintain the sanitary integrity of the water; MWRA considers a residual of 0.2 mg/L a minimum target level at all points in the distribution system.

Highlights

In the 2nd Quarter, two hundred and twenty-seven of the 6,931 samples (3.28% system-wide) submitted to MWRA labs for analysis tested positive. Eleven communities were required to perform a Level Assessment. (Bedford, Boston, Chelsea, Everett, Melrose, Needham, Stoneham, Wakefield, Waltham, Winthrop – October; Bedford, Chelsea, Wakefield, Winchester, Winthrop – November; Winthrop - December). Fifteen of the 1928 MWRA locations or Community/MWRA Shared samples (0.78%) tested positive for total coliform. No samples tested positive for *E.coli*. Only 1.9% of the Fully Served community samples had chlorine residuals lower than 0.2 mg/L for the quarter.

NOTES:

- MWRA total coliform and chlorine residual results include data from community locations. In most cases these community results are indicative of MWRA water as it enters the community system; however, some are strongly influenced by local pipe conditions. Residuals in the MWRA system are typically between 1.0 and 2.8 mg/L.
- The number of samples collected depends on the population served and the number of repeat samples required.
- These communities are partially supplied, and may mix their chlorinated supply with MWRA chloraminated supply.
- Part of the Chicopee Valley Aqueduct System. Free chlorine system.
- Wakefield's sample collection begins October 4.



		Total Coliform		E.coli	# Assessment	
		# Samples (b)	# (%) Positive	Positive	Required	
MWRA	a	MWRA Locations	357	1 (0.28%)	0	
	Shared Community/MWRA sites	1571	14 (0.89%)	0		
		Total: MWRA	1928	15 (0.78%)	0	No
Fully Served		ARLINGTON	156	0 (0%)	0	
		BELMONT	104	0 (0%)	0	
		BOSTON	817	16 (1.96%)	0	Yes
		BROOKLINE	227	1 (0.44%)	0	No
		CHELSEA	187	10 (5.35%)	0	Yes
		DEER ISLAND	52	0 (0%)	0	
		EVERETT	181	10 (5.52%)	0	Yes
		FRAMINGHAM	243	2 (0.82%)	0	No
		LEXINGTON	123	1 (0.81%)	0	No
		LYNNFIELD	21	1 (4.76%)	0	No
		MALDEN	248	5 (2.02%)	0	No
		MARBLEHEAD	72	0 (0%)	0	
		MARLBOROUGH	126	0 (0%)	0	
		MEDFORD	195	1 (0.51%)	0	No
		MELROSE	135	8 (5.93%)	0	Yes
		MILTON	102	0 (0%)	0	
		NAHANT	30	0 (0%)	0	
		NEWTON	276	0 (0%)	0	
		NORTHBOROUGH	48	0 (0%)	0	
		NORWOOD	100	0 (0%)	0	
		QUINCY	354	0 (0%)	0	
		READING	136	2 (1.47%)	0	No
		REVERE	198	1 (0.51%)	0	No
		SAUGUS	104	0 (0%)	0	
		SOMERVILLE	252	0 (0%)	0	
		SOUTHBOROUGH	30	0 (0%)	0	
		STONEHAM	106	8 (7.55%)	0	Yes
		SWAMPSCOTT	52	0 (0%)	0	
		WALTHAM	232	9 (3.88%)	0	Yes
		WATERTOWN	130	0 (0%)	0	
		WESTON	45	0 (0%)	0	
		WINTHROP	120	61 (50.83%)	0	Yes
			Total: Fully Served	5202	136 (2.61%)	
Partially Served		BEDFORD	99	48 (48.48%)	0	Yes
		BURLINGTON	129	1 (0.78%)	0	No
		CANTON	92	1 (1.09%)	0	No
		NEEDHAM	132	3 (2.27%)	0	Yes
		PEABODY	209	1 (0.48%)	0	No
		WAKEFIELD (6)	170	29 (17.06%)	0	Yes
		WELLESLEY	113	0 (0%)	0	
		WILMINGTON	90	1 (1.11%)	0	No
		WINCHESTER	97	3 (3.09%)	0	Yes
		WOBURN	198	1 (0.51%)	0	No
		Total: Partially Served	1329	90 (6.77%)		
CVA		MWRA CVA Locations	106	0 (0%)	0	
		CHICOPEE	186	0 (0%)	0	
		SOUTH HADLEY FD1	63	1 (1.59%)	0	No
		WILBRAHAM	45	0 (0%)	0	
		Total: CVA	400	1 (0.25%)		
		Total: Community Samples	6931	227 (3.28%)		

Chlorine Residuals in Fully Served Communities

	2020	2021											
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
% <0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.3	0.7	0.9	0.5	0.4
% <0.2	0.4	0.2	0.1	0.0	0.0	0.0	0.2	0.7	1.3	2.8	3.1	1.7	0.8
% <0.5	2.5	1.9	0.8	0.2	0.3	0.2	0.6	2.6	6.0	12.3	10.9	7.4	2.8
% <1.0	5.3	3.6	2.5	1.5	2.0	1.0	2.1	8.6	17.3	27.9	26.2	15.7	7.3
% ≥1.0	94.7	96.5	97.6	98.5	98.0	99.0	97.9	91.4	82.7	72.1	73.8	84.4	92.7

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

2nd Quarter – FY22

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

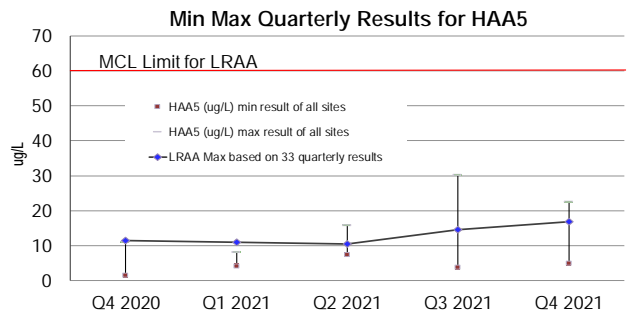
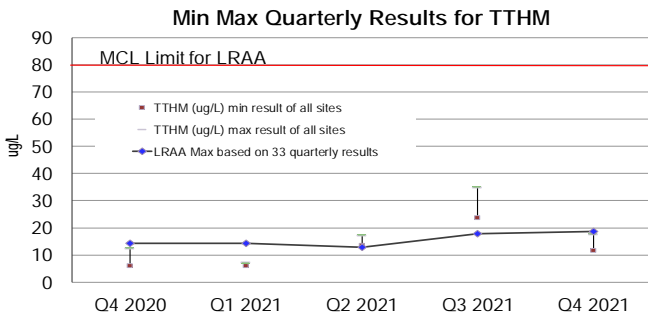
The locational running annual average calculated quarterly at each individual sampling location must be below the Total HAA5 or Total TTHM MCL standard. The charts below show the highest and lowest single values for all sites, and the LRAA of the highest location each quarter.

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

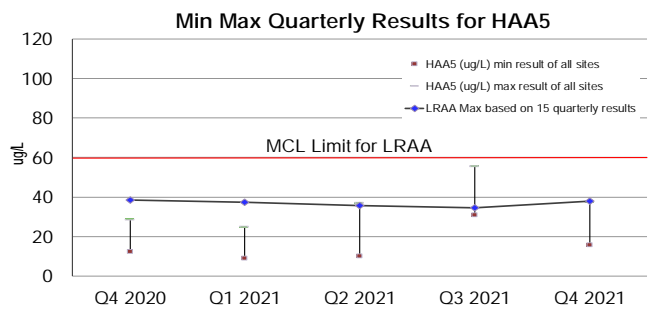
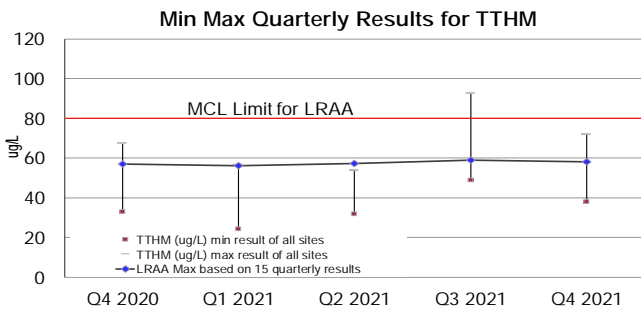
Bromate is tested monthly as required for water systems that treat with ozone. Bromide in the raw water may be converted into bromate following ozonation. EPA's RAA MCL standard for bromate is 10 µg/L.

The LRAA for TTHMs and HAA5s for MWRA's Compliance Program (represented as the line in the top two graphs below) remain below current standards. The Max LRAA in the quarter for TTHMs = 18.6 µg/L; HAA5s = 16.8 µg/L. The current RAA for Bromate = 0.0 µg/L. No LRAA exceedances or violations occurred this quarter for MetroBoston and any of the CVA communities. MWRA and the CVA communities continue to closely monitor and manage the disinfection process to minimize DBP production.

MetroBoston Disinfection By-Products



CVA Disinfection By-Products (Combined Results)



Water Supply and Source Water Management

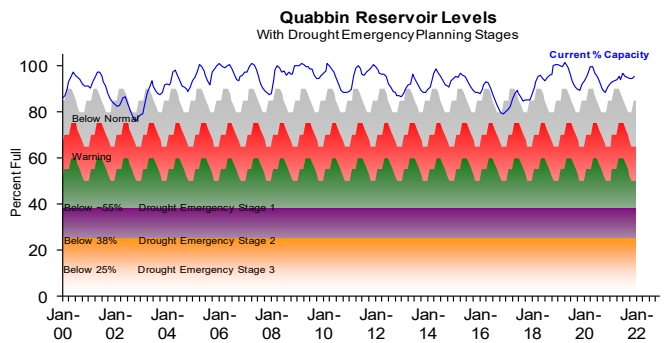
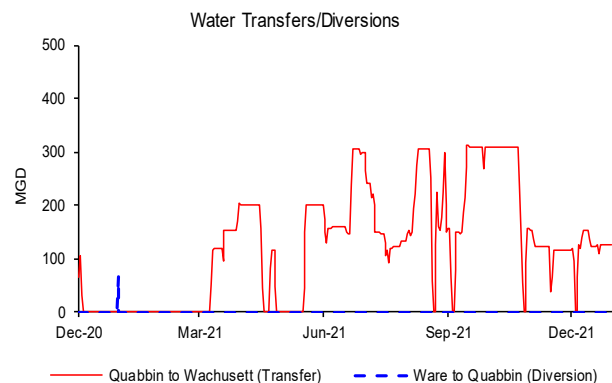
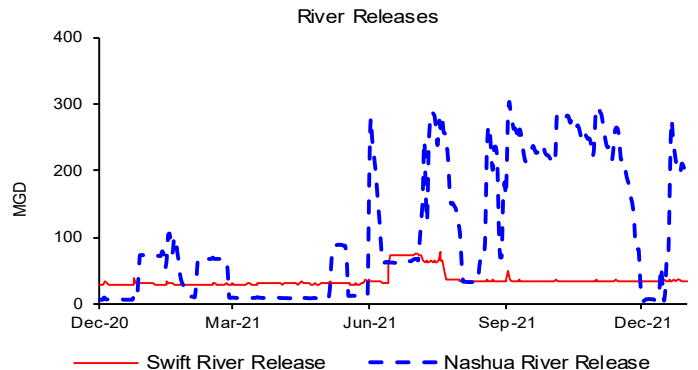
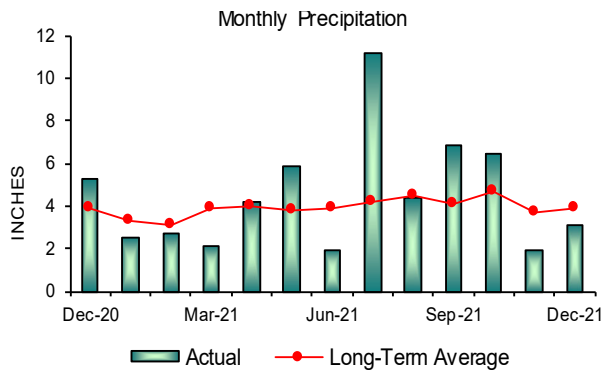
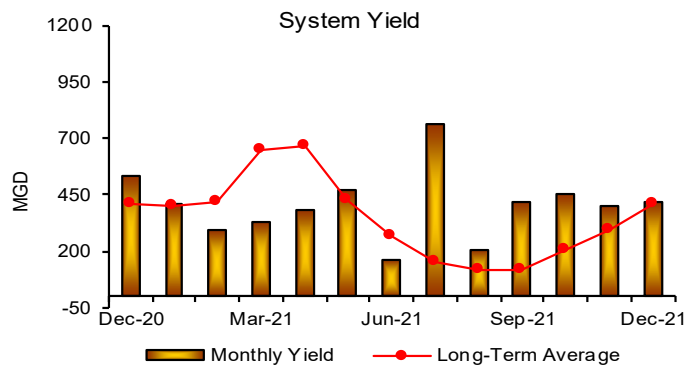
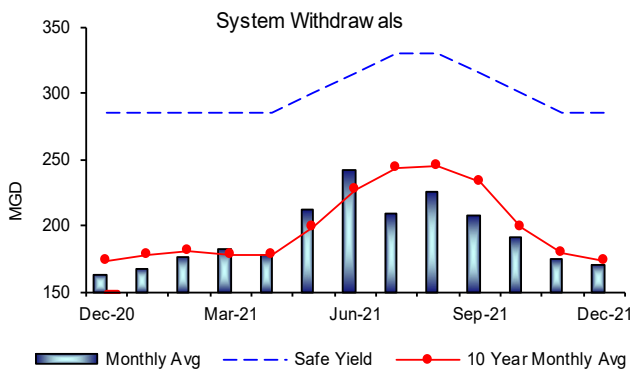
2nd Quarter – FY22

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 95.2% as of December 31, 2021; a 0.50 % increase for the quarter, which represents a gain of more than 1.9 billion gallons of storage and an increase in elevation of 0.26'. System withdrawal and precipitation were below their long term quarterly average. Yield for the quarter was above its long term quarterly average. Quabbin is in Normal Operating Range for this time of year.



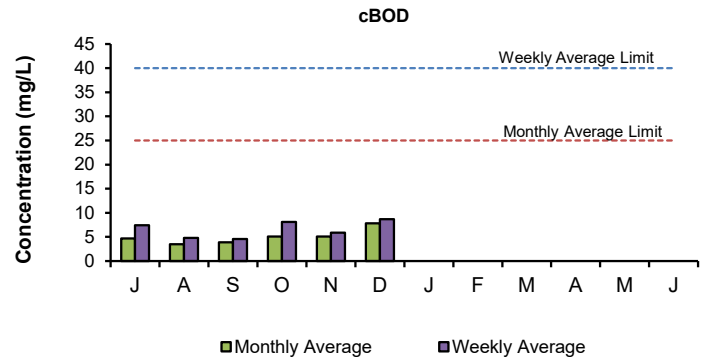
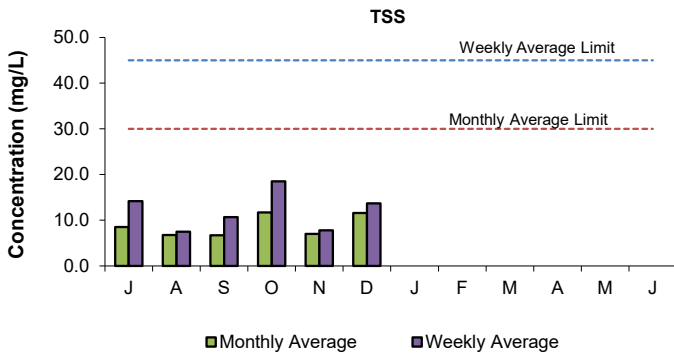
WASTEWATER QUALITY

NPDES Permit Compliance: Deer Island Treatment Plant 2nd Quarter - FY22

NPDES Permit Limits

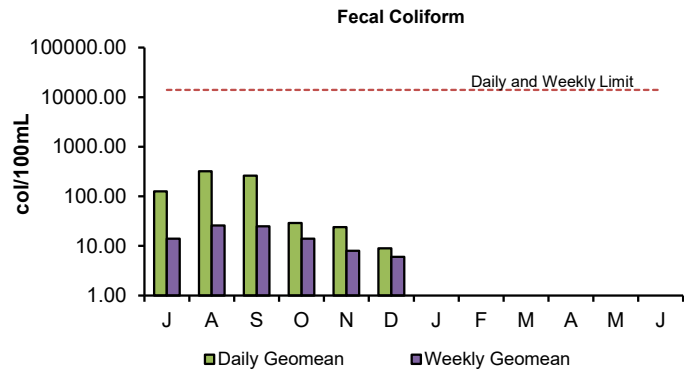
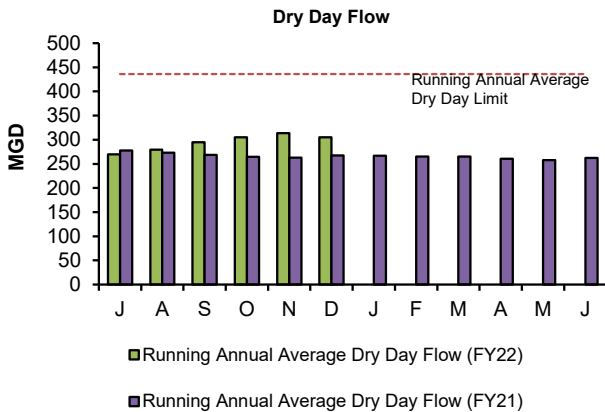
Effluent Characteristics		Units	Limits	October	November	December	2nd Quarter Violations	FY22 YTD Violations
Dry Day Flow (365 Day Average):		mgd	436	304.9	313.6	305.0	0	0
cBOD:	Monthly Average	mg/L	25	5.1	5.1	7.8	0	0
	Weekly Average	mg/L	40	8.1	5.9	8.7	0	0
TSS:	Monthly Average	mg/L	30	11.7	7.0	11.6	0	0
	Weekly Average	mg/L	45	18.5	7.8	13.7	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	29	24	9	0	0
	Weekly Geometric Mean	col/100mL	14000	14	8	6	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	6.5-6.9	6.5-7.0	6.4-7.1	0	0
PCB, Aroclors:	Monthly Average	ug/L	0.000045	UNDETECTED			0	0
Acute Toxicity:	Mysid Shrimp	%	≥50	>100	>100	>100	0	0
	Inland Silverside	%	≥50	>100	>100	>100	0	0
Chronic Toxicity:	Sea Urchin	%	≥1.5	50	100	100	0	0
	Inland Silverside	%	≥1.5	100	50	50	0	0

There have been no permit violations in FY22 to date at the Deer Island Treatment Plant (DITP).



Total Suspended Solids (TSS) in the effluent is a measure of the amount of solids that remain suspended after treatment. All TSS measurements for the 2nd Quarter were within permit limits.

Carbonaceous Biochemical Oxygen Demand (cBOD) is a measure of the amount of dissolved oxygen required for the decomposition of organic materials in the environment. All cBOD measurements for the 2nd Quarter were within permit limits.



Running Annual Average Dry Day Flow is the average of all dry weather influent flows over the previous 365 days. The Dry Day Flow for the 2nd Quarter was well below the permit limit of 436 MGD.

Fecal Coliform is an indicator for the possible presence of pathogens. The levels of these bacteria after disinfection show how effectively the plant is inactivating many forms of disease-causing microorganisms. In the 2nd Quarter, all permit conditions for fecal coliform were met.

NPDES Permit Compliance: Clinton Wastewater Treatment Plant 2nd Quarter - FY22

NPDES Permit Limits

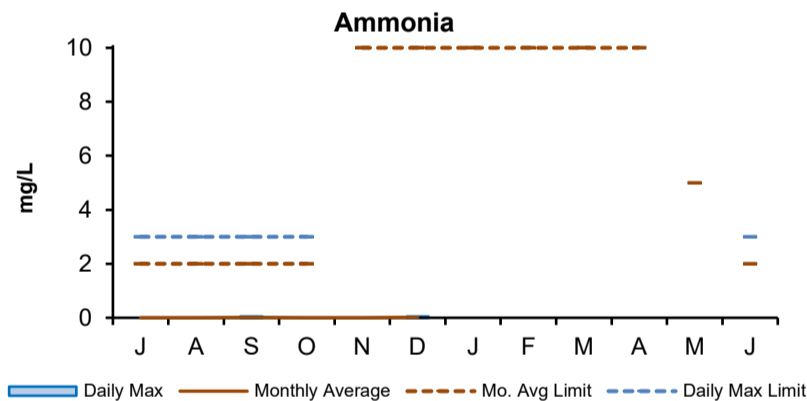
Effluent Characteristics		Units	Limits	October	November	December	2nd Quarter Violations	FY22 YTD Violations
Flow:	12-month Rolling Average:	mgd	3.01	3.03	3.19	3.15	3	3
BOD:	Monthly Average:	mg/L	20	1.20	0.80	3.50	0	0
	Weekly Average:	mg/L	20	1.70	1.70	3.80	0	0
TSS:	Monthly Average:	mg/L	20	1.60	0.90	4.30	0	0
	Weekly Average:	mg/L	20	1.60	1.70	4.50	0	0
pH:		SU	6.5-8.3	7.2-7.6	7.1-7.9	7.1-7.6	0	0
Dissolved Oxygen:	Daily Average Minimum:	mg/L	6	8.90	9.50	10.00	0	0
E. Coli:	Monthly Geometric Mean:	cfu/100mL	126	5	5	6	0	0
	Daily Geometric Mean:	cfu/100mL	409	7	18	16	0	0
TCR:	Monthly Average:	ug/L	17.6	0.00	0.00	0.13	0	0
	Daily Maximum:	ug/L	30.4	0.00	0.00	4.00	0	0
Copper:	Monthly Average:	ug/L	11.6	7.12	6.62	10.52	0	0
	Daily Maximum:	ug/L	14.0	7.12	6.62	11.40	0	0
Total Ammonia Nitrogen: November 1st - March 31st	Monthly Average:	mg/L	10.0	0.00	0.00	0.02	0	0
	Daily Maximum:	mg/L	35.2	0.00	0.00	0.04	0	0
Total Phosphorus: November 1st - March 31st	Monthly Average:	ug/L	1000	31	236	525	0	0
	Daily Maximum:	ug/L	RPT	41	593	691	0	0
Acute Toxicity ⁺ :	Daily Minimum:	%	≥100	N/A	N/A	>100	0	0
Chronic Toxicity ⁺ :	Daily Minimum:	%	≥62.5	N/A	N/A	62.5	0	0

There have been three permit violations at the Clinton Treatment Plant in FY22.

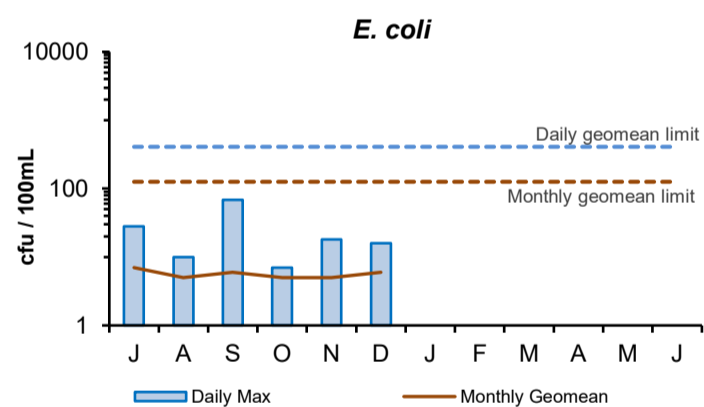
1st Quarter: There were no permit violations in the first quarter.

2nd Quarter: There were three permit violations in the second quarter, all rolling average flow exceedances. The 12-month rolling average flow exceeded 3.01 MGD in the 2nd quarter due to excessive rains in the region during summer 2021.

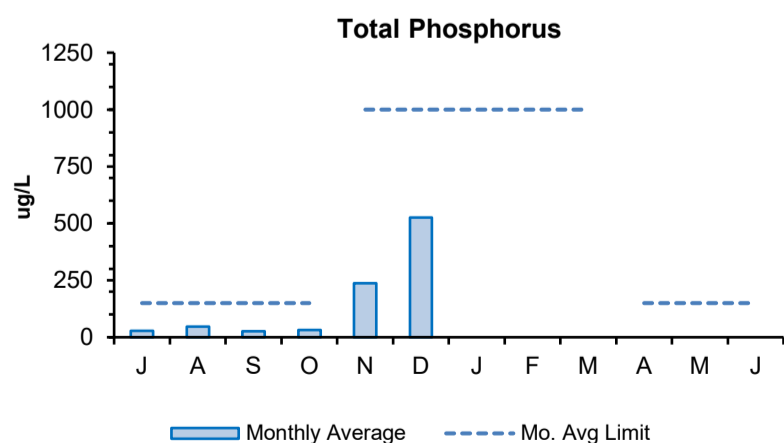
+ Toxicity testing at the Clinton Treatment Plant is conducted on a quarterly basis.



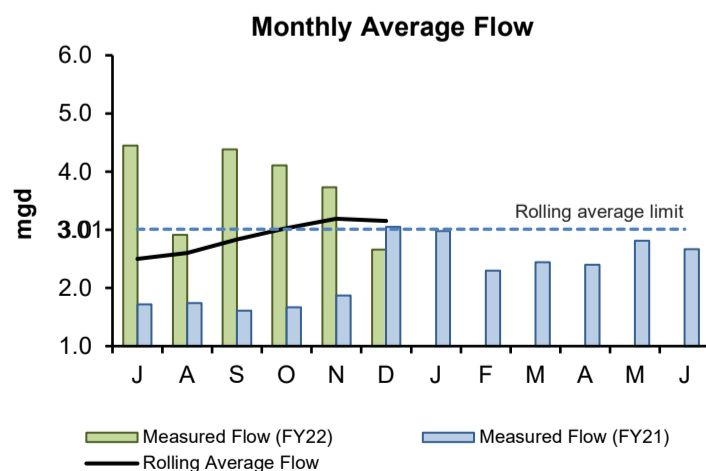
The 2nd Quarter's monthly average and daily maximum concentrations of ammonia were below the permit limits. The monthly average and daily maximum limits for the 2nd Quarter are variable. The permit limits are most stringent from June to October when warm weather conditions are most conducive to potential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



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



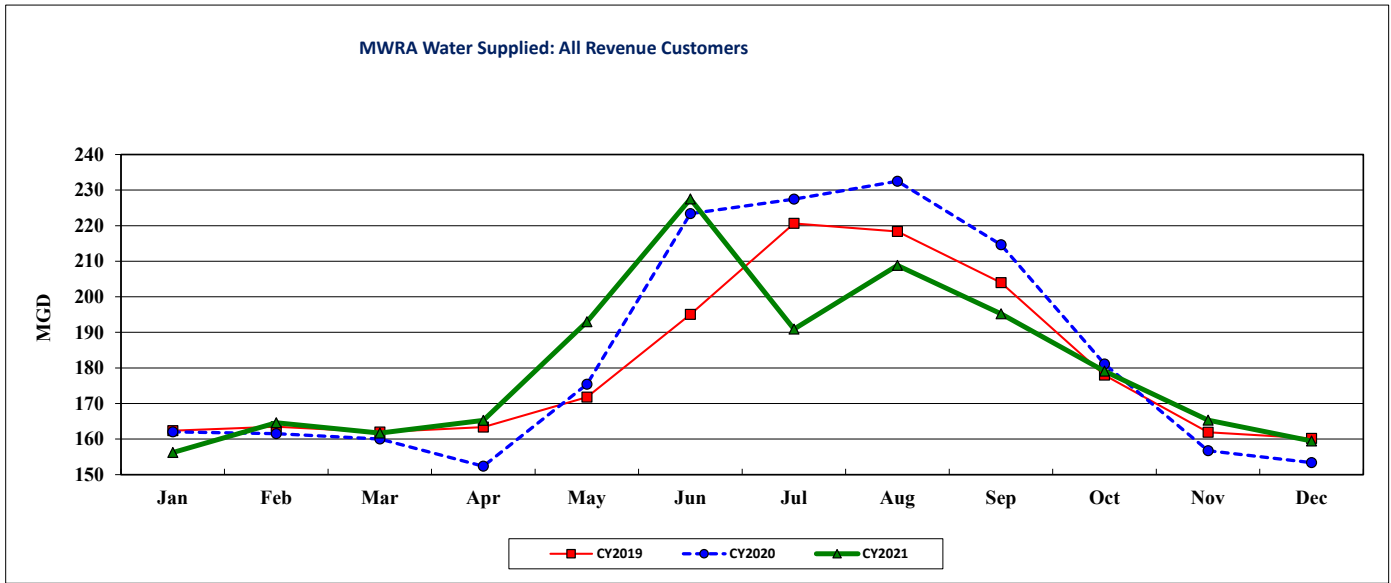
Total phosphorus limits are most stringent during the growing season from April to October. The 2nd Quarter's monthly average concentrations for total phosphorus were below permit limits.



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

COMMUNITY FLOWS AND PROGRAMS

Customer Water Use 2nd Quarter - FY22



MGD	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD Average	Annual Average
CY2019	162.367	163.492	161.984	163.350	171.773	195.025	220.621	218.376	203.996	177.998	161.941	160.207	180.220	180.220
CY2020	162.016	161.551	160.018	152.368	175.435	223.405	227.454	232.496	214.617	181.110	156.727	153.367	183.462	183.462
CY2021	156.213	164.567	161.697	165.284	192.998	227.522	190.945	208.810	195.229	179.116	165.302	159.442	180.641	180.641

The December 2021 Community Water Use Report was recently distributed to communities served by the MWRA 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 2021 water use will be used to allocate the FY2023 water utility rate revenue requirement.

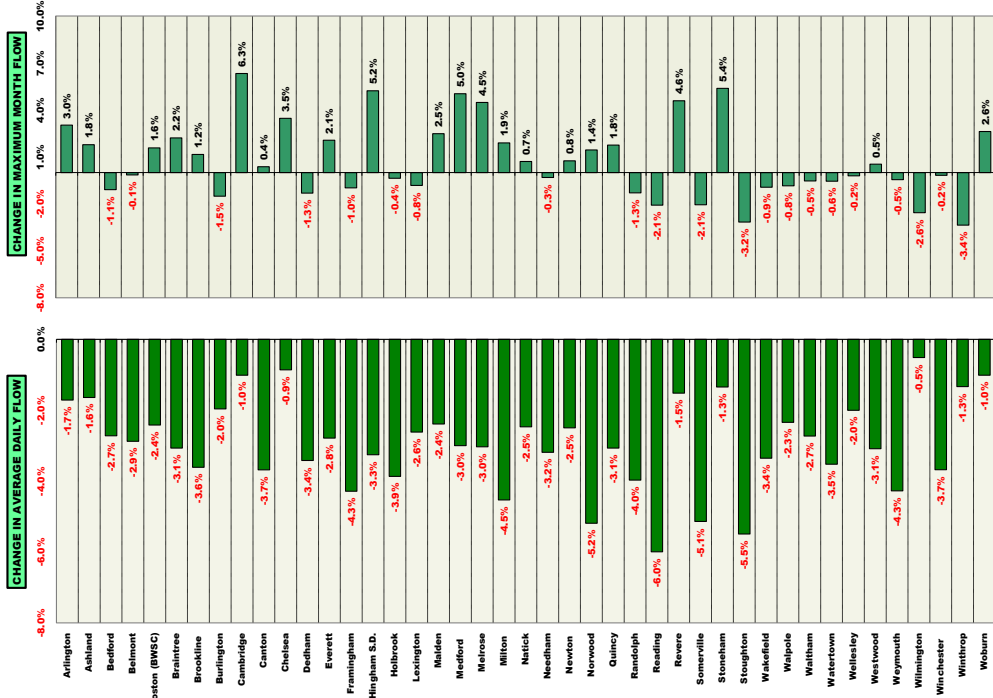
MWRA customers used an average of 167.98 mgd in the 2nd quarter (Oct-Dec 2021) of FY2022. This is an increase of 4.17 mgd or 2.5% compared to the 2nd quarter of FY2021.

Community Wastewater Flows

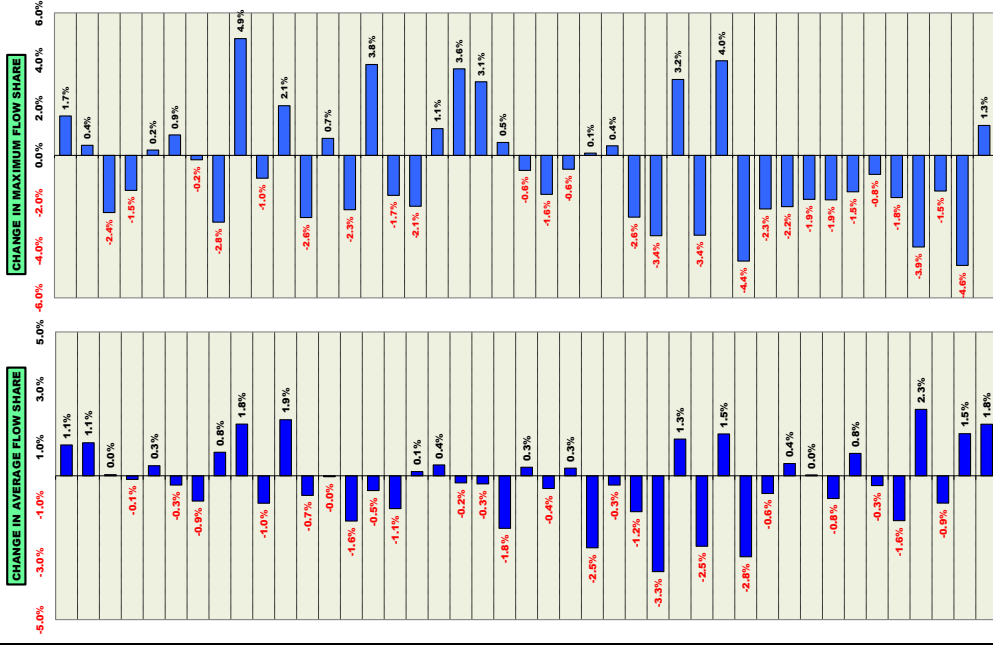
2nd Quarter - FY22

How CY2019-21 Community Wastewater Flows Could Effect FY2023 Sewer Assessments

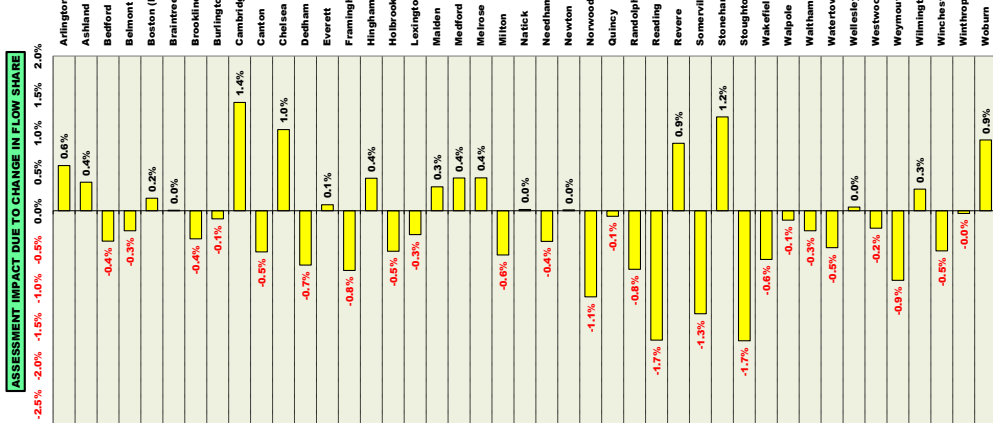
The flow components of FY2023 sewer assessments will be calculated using a 3-year average of CY2019 to CY2021 wastewater flows compared to FY2022 assessments that will use a 3-year average of CY2018 to CY2020 wastewater flows.



But as MWRA's sewer assessments are a ZERO-SUM calculation, a community's assessment is strongly influenced by the RELATIVE change in CY2019 to CY2021 flow share compared to CY2018 to CY2020 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 smooths the impact of year-to-year changes in community flow share, but does not eliminate the long-term impact of changes in each community's relative contribution to the total flow.
² Based on actual flows for 2018 and 2019, and January to March, and June to December 2020. April & May 2020 based on the average of three prior years, adjusted for 2020 water use. January to December 2021 estimate based on the average of the three 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.

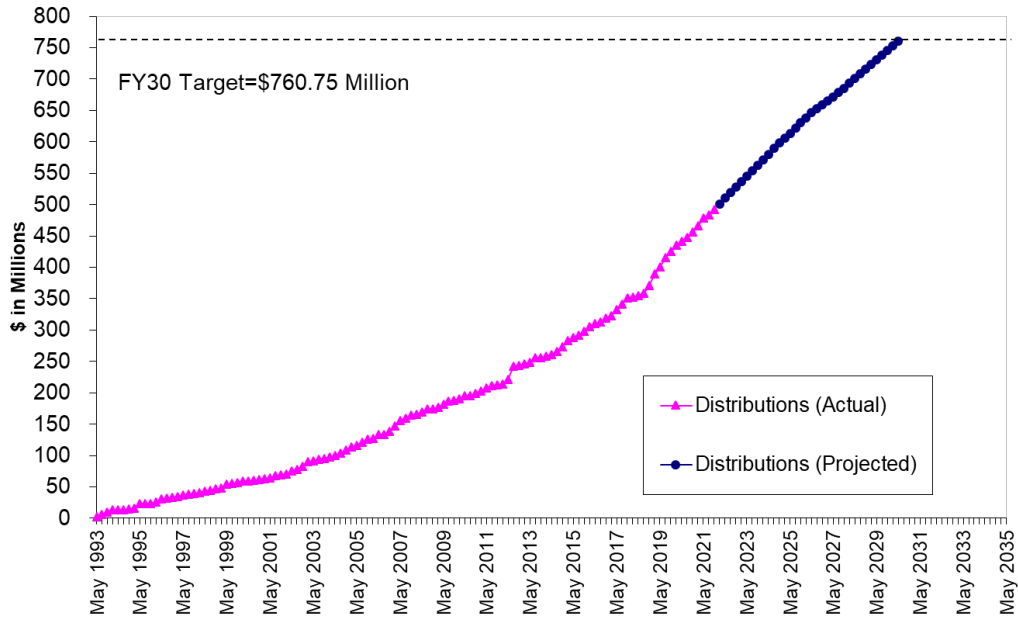
Community Support Programs

2nd Quarter – FY22

Infiltration/Inflow Local Financial Assistance Program

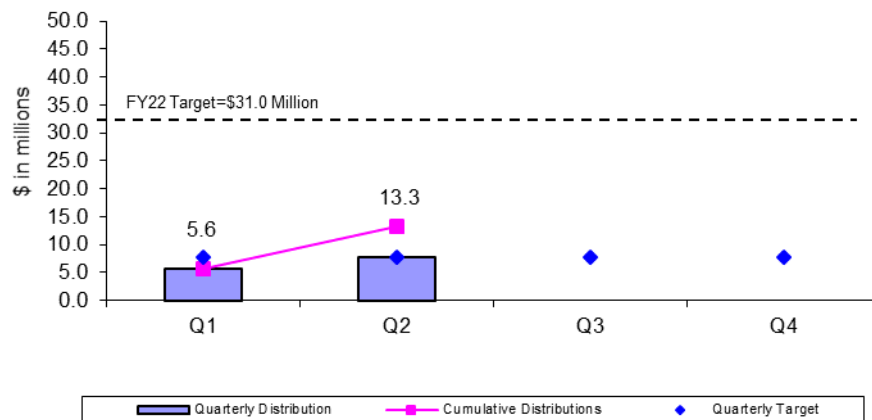
MWRA's Infiltration/Inflow (I/I) Local Financial Assistance Program provides \$760.75 million in grants and interest-free loans (average of about \$20 million per year from FY93 through FY30) to member sewer communities to perform I/I reduction and sewer system rehabilitation projects within their locally-owned 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.

I/I Local Financial Assistance Program Distribution FY93-FY30



During the 2nd Quarter of FY22, \$7.7 million in financial assistance (grants and interest-free loans) was distributed to fund local sewer rehabilitation projects in Boston, Revere, Stoneham and Winthrop. Total grant/loan distribution to date for FY22 is \$13.3 million. From FY93 through the 2nd Quarter of FY22, all 43 member sewer communities have participated in the program and \$492 million has been distributed to fund 639 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.

FY22 Quarterly Distributions of Sewer Grant/Loans



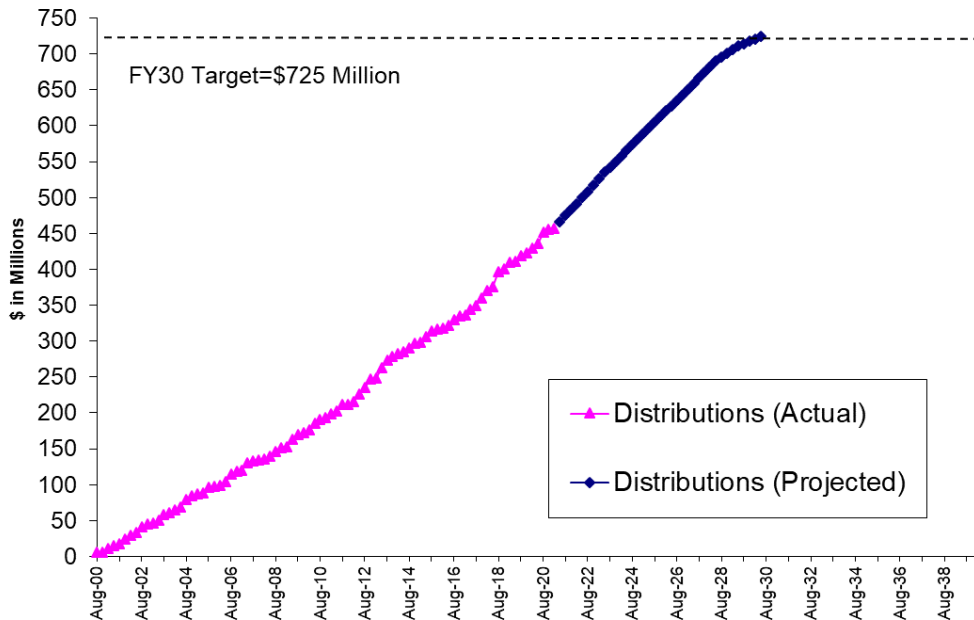
Community Support Programs

2nd Quarter – FY22

Local Water System Assistance Program

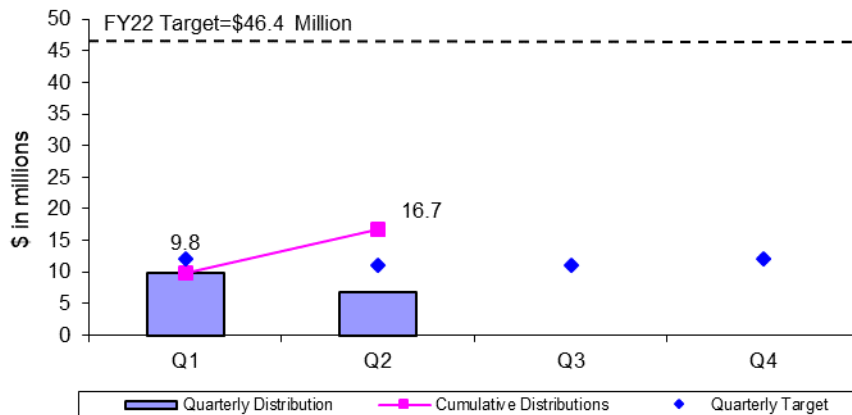
MWRA's Local Water System Assistance Programs (LWSAP) provides \$725 million in interest-free loans (an average of about \$24 million per year from FY01 through FY30) to member water communities to perform water main rehabilitation projects within their locally-owned water distribution systems. There have been 3 phases: Phase 1 at \$222 Million, Phase 2 at \$210 Million, and Phase 3 at \$293 Million. Eligible project costs include: water main cleaning/lining, replacement of unlined water mains, lead service replacements, valve, hydrant, water meter, tank work, engineering design, engineering services during construction, etc. MWRA partially-supplied communities receive pro-rated funding allocations based on their percentage use of MWRA water. Interest-free loans are repaid to MWRA over a ten-year period beginning one year after distribution of the funds. The Phase 1 water loan program concluded in FY13 with \$222 million in loan distributions. The Phase 2 - LWSAP continues distributions through FY23. The Phase 3 Water Loan Program is authorized for distributions FY18 through FY30.

Local Water System Assistance Program Distribution FY01-FY30



During the 2nd Quarter of FY22, \$6.9 million in interest-free loans was distributed to fund local water projects in Boston, Newton, and Saugus. Total loan distribution to date for FY22 is \$16.7 million. From FY01 through the 2nd Quarter of FY22, \$483 million has been distributed to fund 493 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.

FY22 Quarterly Distributions of Water Loans



Community Support Programs

2nd Quarter – FY22

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.

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.

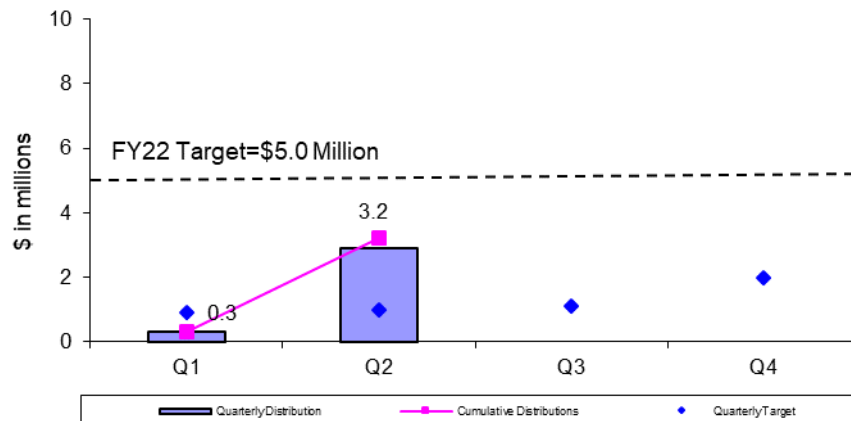
FY21 is the fifth year of the Lead Loan Program – MWRA made seven Lead Loans.

FY22 is the sixth year of the Lead Loan Program – MWRA made three Lead Loans in the first two quarters.

Summary of Lead Loans:

Somerville in FY22	\$1.6 Million	Winthrop in FY18	\$0.3 Million
Revere in FY22	\$1.3 Million	Marlborough in FY18	\$1.0 Million
Chelsea in FY22	\$0.3 Million	Newton in FY17	\$4.0 Million
Watertown in FY21	\$0.6 Million	Quincy in FY17	\$1.5 Million
Marlborough in FY21	\$2.0 Million	<u>Winchester in FY17</u>	<u>\$0.5 Million</u>
Everett in FY21	\$1.5 Million	TOTAL	\$28.4 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		

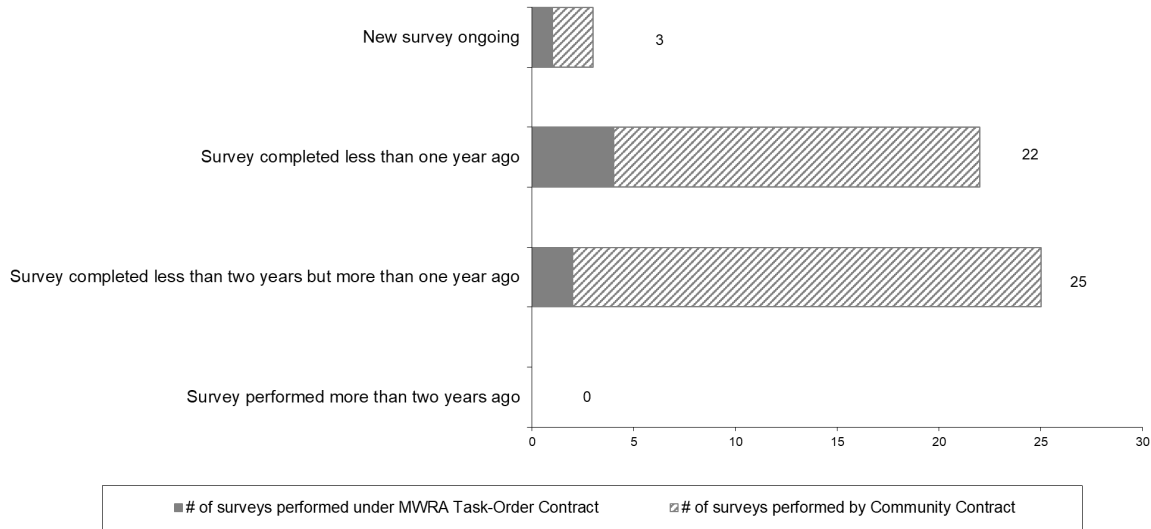
FY22 Quarterly Distributions of Lead Service Line Replacement Loans



Community Support Programs 2nd Quarter – FY22

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 2nd Quarter of FY22, 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	732	11,057			11,789
Low-Flow Fixtures (showerheads and faucet aerators)	10,000	1,070	970			2,040
Toilet Leak Detection Dye Tablets	—	1,432	657			2,089

BUSINESS SERVICES

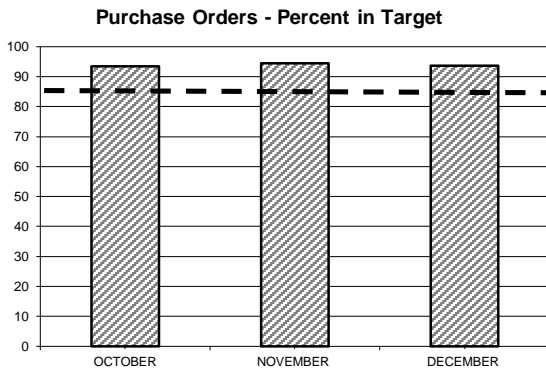
Procurement: Purchasing and Contracts

2nd Quarter - FY22

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

Outcome: Processed 94% of purchase orders within target; Average Processing Time was 4.85 days vs. 4.30 days in Qtr 2 of FY21. Processed 36% (4 of 11) of contracts within target timeframes; Average Processing Time was 217 days vs. 183 days in Qtr 2 of FY21.

Purchasing



	No.	TARGET	PERCENT IN TARGET
\$0 - \$500	525	3 DAYS	89.9%
\$500 - \$2K	555	7 DAYS	95.8%
\$2K - \$5K	421	10 DAYS	98.0%
\$5K - \$10K	54	25 DAYS	85.1%
\$10K - \$25K	61	30 DAYS	86.8%
\$25K - \$50K	10	60 DAYS	80.0%
Over \$50K	25	90 DAYS	92.0%

The Purchasing Unit processed 1651 purchase orders, 282 less than the 1933 processed in Qtr 2 of FY21 for a total value of \$19,232,725 versus a dollar value of \$10,379,019 in Qtr 2 of FY21.

The purchase order processing target was not met for the \$25K - \$50K category due to staff summary requirements.

Contracts, Change Orders and Amendments

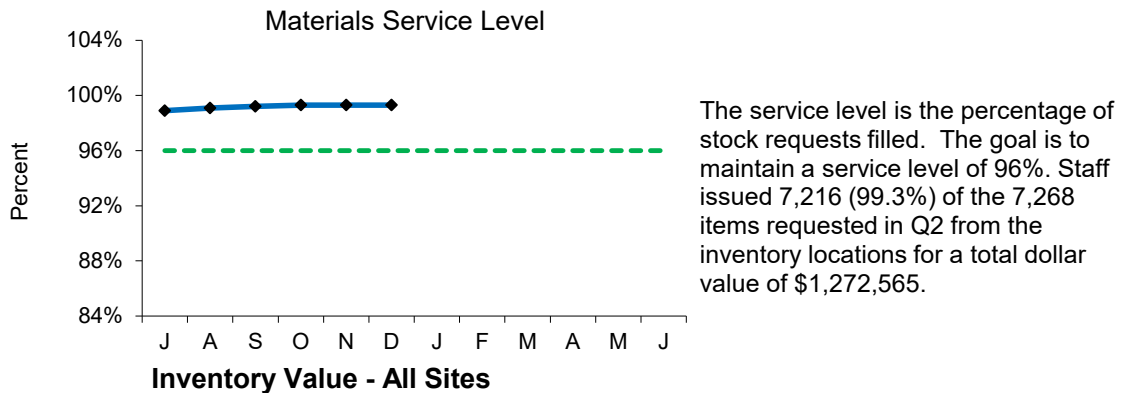
Procurement executed eleven contracts with a value of \$77,728,775 and seven amendments with a value of \$1,303,253. Twenty five change orders were executed during the period. The dollar value of all non-credit change orders during Qtr 2 was \$700,877 and the value of credit change orders was (\$1,197,276).

Seven contracts was not executed within the target timeframes. One contract was delayed due to a change order to extend the existing contract thereby delaying the establishment of the new contract. A second contract was delayed due to specification reviews that took longer than anticipated. Another contract was delayed due to an error in the first ranked proposer's compensation tables which required a review and ultimately led to a rejection. This circumstance led to the review and subsequent approval of the second ranked proposer. A fourth contract was delayed due to additional procurement requirements necessary for insurance services. Insurance for all categories of coverage was obtained timely and according to schedule. Another contract was delayed due to legal requirements between MWRA and National Grid resulting in a negotiated agreement for work occurring near the Hi voltage/Hi power lines. A sixth contract was delayed due to the retirement of the project manager. The final contract was delayed due the additional time required to review and approve the thirty filed sub-bid submissions in addition to the need to re-bid one filed sub-bid category and the review of the general bid results.

Staff reviewed 35 proposed change orders and 31 draft change orders.

Materials Management

2nd Quarter - FY22



Inventory goals focus on:

- Maintaining optimum levels of consumables and spare parts inventory
- Adding new items to inventory to meet changing business needs
- Reviewing consumables and spare parts for obsolescence
- Managing and controlling valuable equipment and tools via the Property Pass Program

The FY22 goal is to reduce consumable inventory from the July '21 base level (\$8.7 million) by 2.0% (approximately \$175,120), to \$8.5 million by June 30, 2022.

Items added to inventory this quarter include:

- Deer Island – cables, power supplies, coupling pads, transmitter, comb sensor, flow blocks, moisture barriers, and proximity switches for I&C; pillow block bearings, hose pumps, pressure sensors, and VFD cards for Power & Pump; gate controller and gate arm for Security; hydraulic filters for Fleet Services; microwave and computer stands for plant-wide departments.
- Chelsea –data logger, output card, power cords, cables, network box, sensors, wall mount kit, module battery and velocity sensor cable for Metering; printheads and plotter maintenance cartridges for Procurement; labels for Security; filter frames, clips and neoprene wheels for Planning.
- Southboro – filters and v-belts for Maintenance; illuminators for all Trades.

Property Pass Program:

- Fourteen audits were conducted during Q2.
- Scrap revenue received for Q2 amounted to 11,172. Year to date revenue received amounted to \$25,463.
- Revenue received from online auctions held during Q2 amounted to \$94,555. Year to date revenue received amounted to \$462,957.

Items	Base Value July-21	Current Value w/o Cumulative New Adds	Reduction / Increase To Base
Consumable Inventory Value	8,756,035	8,788,582	32,547
Spare Parts Inventory Value	9,317,998	9,278,255	-39,743
Total Inventory Value	18,074,033	18,066,837	-7,196

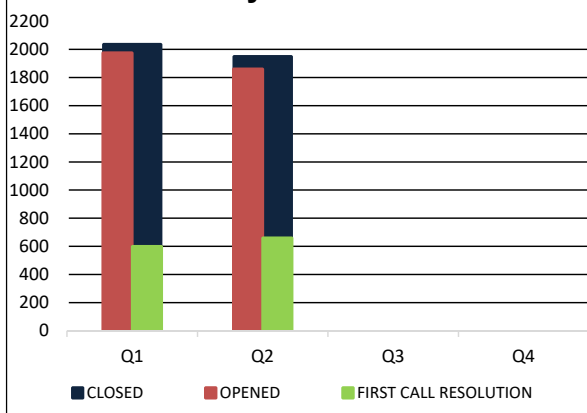
Note: New adds are items added at an inventory location for the first time for the purpose of servicing a group/department to meet their business needs/objectives.

MIS Program

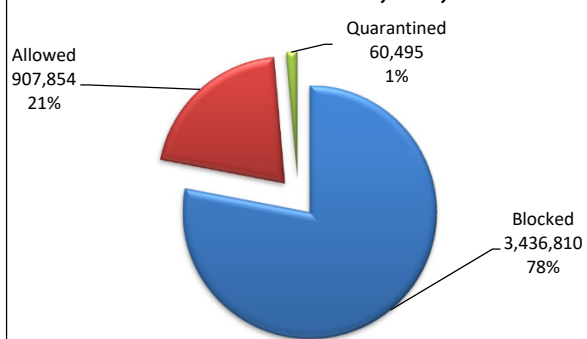
Second Quarter – FY22

Numbers & Statistics

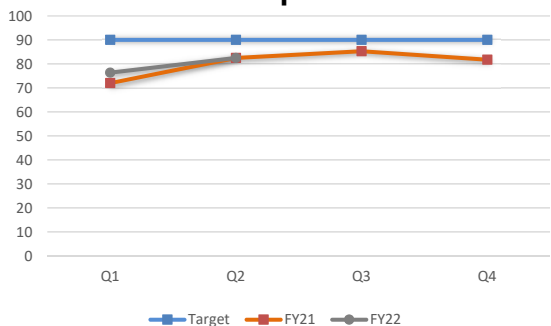
Monthly Call Volume



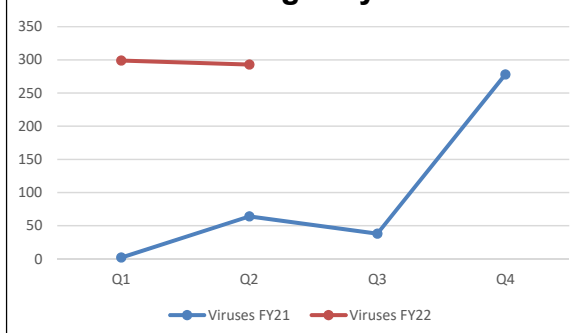
Emails Received: 4,405,159



PC Compliance



Viruses Caught by McAfee



Project Updates

Infrastructure & Security

AWIA Risk and Resiliency Assessment: Remediation work to resolve vulnerabilities continued. At the end of the quarter, 66% of the identified tasks were “Completed”; 1% were “In Progress”; and 33% were identified as longer term projects.

Cyber Security Awareness Training: At the end of the quarter, all employees had completed their assigned training.

PBX (Telephone System) Upgrade: Planning and infrastructure upgrades for the installation, configuration, and roll-out of the new phones continued. SIP trunk provisioned by VZB and successfully tested at Chelsea and DITP. Working with VZB on preparing deployment, which is planned for Q3.

Identity and Access Management: Implementation of the Okta single sign-on (SSO) solution was started during Q2 and is targeted to complete in Q3. Initial integrations will be with Webex, and LMS.

Next Managed Security Services Contract: Procurement of required firewalls and software is underway. The Scope of Services for this RFQ/P was started during this quarter and anticipate the SOW going to procurement in February.

Digital Displays: Site visits have been conducted to survey display locations and cabling requirements. Hardware have been procured and will be installed pending completion of cabling.

Other Software & Custom Applications

ECM/Electronic Document Management: Multiple meetings on physical records management file structure and DISC CAD standards. Held meetings to reconcile and standardize the list of MWRA Facilities and their associated codes leveraging GIS and Maximo data. Analysis continued on InfoStar reporting, File Structures, historical drawing duplicates, and current business workflows. Continued to refine and build technical infrastructure, focusing on disaster recovery and availability.

MWRA Website Replacement: The website replacement project was put out to bid and closed. Neither bidder met requirement for an on-premises solution. The SOW is being rewritten to include option for cloud solutions for reposting.

Learning Management System: Functional and User Acceptance Testing (UAT) complete. Course history and license/certificate history imported into new system. Administrator Job Aid in progress. Planned go-live in late February or early March.

OMMS Communities Upgrade: Work on the OMMS Website replacement continued in Q2. The first two communities (Boston, Brookline) are expected to be deployed by the end of January, with the remaining deployed in February and March.

HOML: Upgrade of the HOML continues development with additional security requirements. Anticipated completion the end of Q3.

CROMERR: All development work on has been completed.

Library, Record Center, & Training

Library: Undertook 25 research requests, supplied 19 books for circulation, provided 15 articles, and 3 standards. The MWRA Library Portal supported 13172 end-user searches. Research topics include Northfield Water Supply Project, original CSO flow volume, change in allowed CSO activations at Somerville Marginal, CSO program affordability analysis, Wachusett Dam Pool historic discharge tables.

Record Center (RC): The Record Center added 182 new boxes, handled 282 total boxes, and shredded (14) 65 gallon bins of confidential documentation on-site. It performed 45 database/physical box searches for multiple departments on various topics, which saved the delivery of 28 boxes. The RC was able to dispose 178 archived boxes stored at the RC adhering to appropriate approvals.

Training: Training: In Q2, 60 online IT lessons were taken, by 14 employees, spanning 76 hours (208 YTD). 22 total sessions of 5 standard class lessons were taken by 33 employees, spanning 305 hours.

Legal Matters

2nd Quarter - FY22

PROJECT ASSISTANCE

Real Estate, Contract, Environmental and Other Support:

8(m) Permits and Licenses:

Reviewed one hundred and five (105) 8(m) permits and one (1) Direct Connection Permit. Drafted Reservoir Manor Corporation 8(m) permit for the use of certain Quincy High Level Sewer property off of Sea Street in Quincy under MWRA's care, custody and control, 8(m) permit for 12 Cleverly Court and use by the City of Quincy for a laydown site for placement of sediments from pond dredging, and 8(m) permit for Montvale, LLC for the use of an easement area under MWRA's care, custody and control in the Town of Winchester and the City of Woburn. Drafted licenses for Paul Revere Transportation, LLC, Urban Growth Property, LP, and Eastern Condominium Trust relative to MWRA's installation of traffic signals on Eastern Avenue in Chelsea. Drafted amendments to public access permits for the City of Marlborough and the Town of Southborough. Finalized license for Massachusetts Institute of Technology for use of certain areas of Deer Island Waste Water Treatment Plant for the purpose of testing a passive camera system.

Real Property:

Drafted temporary and permanent water easements in Woburn related to MWRA Contract 7117 - Northern Intermediate High Section 89 Replacement Pipeline. Reviewed proposed edits to 12 Cleverly Court Memorandum of Agreement between MWRA and Quincy. Finalized review of DCR's Wachusett Watershed Preservation Restriction Acquisition W-001223, related to the Thorell property located at 112 Mirick Road in Princeton and made recommendation for payment. Reviewed updated Activity and Use Limitation documents related to Chelsea Creek Headworks. Reviewed plans and drafted grant of permanent water easements relative to new MWRA water meters and water main lines at proposed development in Revere/Boston at site of former Suffolk Downs. Reviewed Order of Taking documents for fee interest and easement regarding the Wachusett Aqueduct and parcels of land in Northbridge along Hudson Street for the Assabet River Bridge to confirm MWRA property rights and surplus process. Researched and drafted opinion on payment of real property taxes when acquisition is by purchase and eminent domain. Researched and confirmed non-taxable status for prior MWRA property acquisitions by purchase. Researched MWRA land takings and created database for mapping and archiving electronic records. Reviewed documents related to traffic signalization project located at Eastern Avenue/Griffin Way, Chelsea.

Recorded two Certificates of Compliance for MWRA Contract #7505, Southern Extra High Section 111, Dedham South. Confirmed certificate of recording for Waltham Conservation Commission for Order of Conditions for Lexington Street, Waltham. Reviewed updated appraisal with property valuation for property site to support the Tunnel Redundancy Project. Reviewed historic taking documents related to the Deer Island Treatment Plant (DITP) and Nut Island Treatment Plant (NITP) for updating MWRA's electronic database for property

ownership. Researched and reviewed Article 97 for acquisition of property interests for the Tunnel Redundancy Project.

Researched deeds and takings by the Town of Wellesley concerning 125 Barton Road, Wellesley (Hegarty Pump Station).

Energy:

Prepared analysis regarding the of City of Boston's update to its Building Energy Reporting and Disclosure Ordinance (a.k.a., BERDO 2.0). Finalized Interconnection Service Agreement with Eversource for the Charlestown wind turbine facility. Reviewed recent Federal Infrastructure Act for hydropower incentives and applicability to existing and new resources. Assist with policy development regarding employee use of electric vehicle charging stations. Review of studies and related materials regarding potential photo-voltaic systems at MWRA facilities. Review and analysis regarding MWRA hydro facility eligibility in Commonwealth's Small Hydro Net Metering Program. Analyze use of Green Communities Act procurement options in municipal light plant jurisdictions.

Environmental/NPDES:

Prepared summary regarding Chapter 322 of the Acts of 2020 An Act Promoting Awareness Of Sewage Pollution In Public Waters, now codified at M.G.L. c. 21, Section 43A. Assisted with CSO semi-annual report Number Seven. Provided guidance to TRAC division regarding Per- and Poly-fluoroalkyl substances. Assisted with preparation of revisions to comment letter regarding proposed regulations 314 CMR 16.00 Notification Requirements to Promote Public Awareness of Sewage Pollution. Assisted with preparation of communication regarding Contingency Plan threshold exceedance for low dissolved oxygen in Stellwagen Basin. Assist TRAC with sewer use discharge permit and enforcement issues. Review of changes to ASTM Phase I Environmental Site Assessment standards and potential applicability to MWRA real property/environmental programs. Review of Water Quality Standard Variance submittals.

Miscellaneous:

Prepared analysis regarding Section 1441 of the Safe Drinking Water Act and the corresponding emergency chemical procurement provisions and processes. Drafted testimony regarding Massachusetts Senate Bill S.1348, a bill relative to local water and sewer district oversight. Reviewed and revised initial draft Continual Water Supply Agreements for DWWD and Marlborough. Reviewed Chapter 647 of the Acts of 1989 concerning applicability to MWRA. Reviewed Enabling Act pursuant to Project Labor Agreements and ascertained no requirement for legislative nor governor's approval. Reviewed Metrowest Tunnel Supply Project board staff summaries for the Tunnel Redundancy Division. Reviewed MetroWest construction management professional services agreement. Drafted terms for Tunnel Redundancy consultant contract. Reviewed and approved outdated documents for submission to Records Conservation Board for destruction. Reviewed, indexed and archived historical land takings, deeds, releases and easements for mapping and archiving electronic records. Collaborated with Real Property and GIS Divisions to improve

Legal Matters

2nd Quarter - FY22

and expand Real Property/GIS interactive database, including: refining and charting coding, adding and editing taking documents and undertaking quality control to ensure consistency and accuracy in the designation of property interests held by MWRA and property interests conveyed by MWRA. Updated schedule and sequencing of tasks for property acquisitions to support Tunnel Redundancy. Reviewed boring test report and information from the Town of Ludlow for

proposed construction of a new communications tower at Nash Hill. Advised on use of network drives for long-term records retention.

Public Records Requests: During the 2nd Quarter of FY22, MWRA received and responded to one hundred forty three (143) public records requests.

A former employee appealed a Division of Unemployment Assistance (DUA) decision disqualifying him from unemployment benefits. Following a hearing before a Review Examiner, the DUA reversed its initial decision and awarded unemployment benefits. The MWRA has appealed the Review Examiner's decision and the matter is currently under review.

LABOR, EMPLOYMENT AND ADMINISTRATIVE

New Matters

Two demands for arbitration were filed.

A charge was filed at the Massachusetts Commission Against Discrimination alleging that the MWRA discriminated against an employee on the basis of a disability when he was not interviewed for a position.

A union filed a charge of prohibited practice at the Massachusetts Department of Labor Relations alleging the MWRA violated Chapter 150E when it filled a vacant Unit Supervisor position as a Unit 3 (NAGE) position rather than a Unit 2 (AFSCME) position in repudiation of a stipulated agreement between the parties.

Ongoing Matters

The Department of Labor Relations deferred a charge of prohibited practice brought by a union regarding the posting of a position at the Brutsch Water Treatment Facility to the parties' grievance-arbitration procedure.

Matters Concluded

Received an arbitrator's decision in favor of the MWRA following a hearing regarding a grievance alleging that it violated a collective bargaining agreement when grievant was suspended.

Received decision in Claimant's favor from the Department of Unemployment Assistance regarding former employee's appeal of the denial of his claim for unemployment benefits.

LITIGATION/CLAIMS

New lawsuits/claims:

Geico a/s/o Abdessamad Marah v. MWRA, Superior Court C.A. No. 2184CV02107

Insurer filed subrogation action seeking \$24,000 for alleged property damage arising out of an August 11, 2020 motor vehicle accident between Claimant and an MWRA vehicle on Eastern Avenue in Chelsea.

Significant

Developments:

(Employee) v. MWRA: Suffolk Superior Court C.A. No. 16-3708E

The Court held a final Pre-Trial Conference and scheduled a trial date of May 17, 2022.

MWRA v. Bharat Bhushan et al, Superior Court C.A. No. 1984CV03586

In November 2021, defendant homeowners completed most restorative work on the affected portion of the Sudbury Aqueduct land pursuant to an approved Section 8(m) permit application. Due to winter conditions, seeding is to proceed in the spring of 2022.

(Employee) v. MWRA: Suffolk Superior Court C.A. No. 21-1434

The parties exchanged written discovery Plaintiff's deposition began on October 12, 2021 and is scheduled to conclude on January 11, 2022.

DiGregorio, et al. v. Griffin Way, LLC v. MWRA,

Suffolk Superior Court C.A. No. 2084-CV-02429-K

Plaintiffs filed an Assented to Motion to Approve Settlement on December 14, 2021. A hearing on the motion has been scheduled for January 7, 2022.

Closed Lawsuits:

There are no closed lawsuits.

Closed Claims:

There are no closed claims.

Legal Matters

2nd Quarter - FY22

Subpoenas

During the Second Quarter of FY 2022, no subpoenas were received but one subpoena was closed during the Second Quarter FY 2022.

**Wage
Garnishments**

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

SUMMARY OF PENDING LITIGATION MATTERS

TYPE OF CASE/MATTER	As of Dec 2021	As of Sept 2021	As of June 2021
Construction/Contract/Bid Protest (other than BHP)	0	0	1
Tort/Labor/Employment	5	3	4
Environmental/Regulatory/Other	3	3	2
Eminent Domain/Real Estate	0	1	0
Total	8	7	7
Other Litigation matters (restraining orders, etc.)	2	2	2
Total – all pending lawsuits	10	9	9
Claims not in suit:	0	1	1
Bankruptcy	1	1	1
Wage Garnishment	2	2	2
TRAC/Adjudicatory Appeals	0	0	0
Subpoenas	0	1	0
TOTAL – ALL LITIGATION MATTERS	13	14	13

TRAC/MISC.

New Appeals:

There are no new appeals in the 2nd Quarter FY 2022.

**Settlement by
Agreement of
Parties**

There are no Settlements by Agreement of Parties in the 2nd Quarter FY 2022.

**Stipulation of
Dismissal**

No Joint Stipulation of Dismissals filed.

**Notice of
Dismissal
Fine paid in full**

No Notices of Dismissal, Fine Paid in Full.

**Tentative
Decision**

There are no Tentative Decisions issued in the 2nd Quarter FY 2022.

**Final
Decisions**

There are no Final Decisions issued in the 2nd Quarter FY 2022.

**INTERNAL AUDIT AND CONTRACT AUDIT ACTIVITIES
2nd Quarter FY22**

Highlights

During the 2nd quarter FY22, Internal Audit (IA) performed a Fleet Inspection review observing the quality of tire treads, Mass State inspection compliance, other inspection compliance [hoists and cranes affixed to utility trucks] and recorded EZ Pass transponder serial numbers. IA provided observations and recommendations and is working with management to enhance controls and procedures to increase inspection compliance. An internal review of water and wastewater licenses and certifications is nearing completion.

In addition, IA supported negotiations and verified costs related to the cross-harbor electric cable replacement (new cable) and HEEC's tariff filing with the DPU, participated in the RFP/Q process to select tax consultant FRRRC, and completed preliminary reviews of 2 professional service contracts while 3 others are in process. IA issued 30 indirect cost rate letters to professional service consultants. Management advisory services included support and analysis on delegation of authority.

Status of Recommendations

During FY22, 19 recommendations were closed.

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

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

Report Title (issue date)	Audit Recommendations		
	Open	Closed	Total
Asset Tracking – Fleet Data Verification (8/21/19)	1	15	16
Fleet Services Non-Plated Equipment Inspections (3/30/20)	3	12	15
Overhead Crane Inspections (4/28/21)	2	9	11
Compliance Status of Employees' Mandatory Confined Space Entry Training (6/30/21)	<u>7</u>	<u>1</u>	<u>8</u>
Total Recommendations	13	37	50

Cost Savings

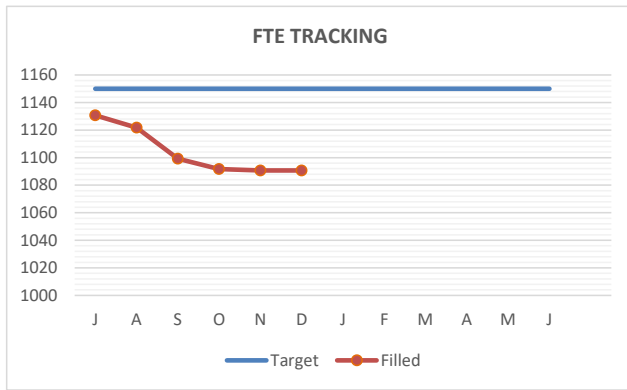
IA's target is to achieve at least \$1,000,000 in cost savings each year. Cost savings vary each year based upon many factors. In some cases, cost savings for one year may be the result of prior years' audits.

Cost Savings	FY18	FY19	FY20	FY21	FY22 Q2	TOTALS
Consultants	\$118,782	\$262,384	\$643,845	\$563,525	\$0	\$1,588,536
Contractors & Vendors	\$1,323,156	\$3,152,884	\$2,097,729	\$1,547,223	\$651,637	\$8,772,629
Internal Audits	\$204,202	\$210,063	\$212,517	\$214,458	\$117,957	\$959,197
Total	\$1,646,140	\$3,625,331	\$2,954,091	\$2,325,206	\$769,594	\$11,320,363

OTHER MANAGEMENT

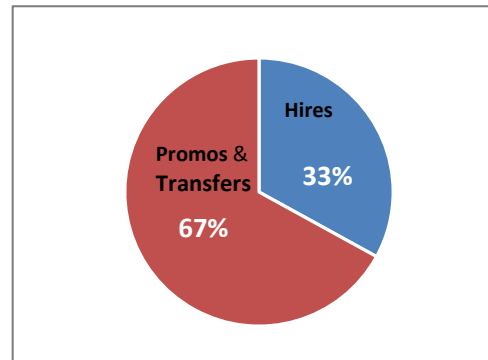
Workforce Management

2nd Quarter - FY22

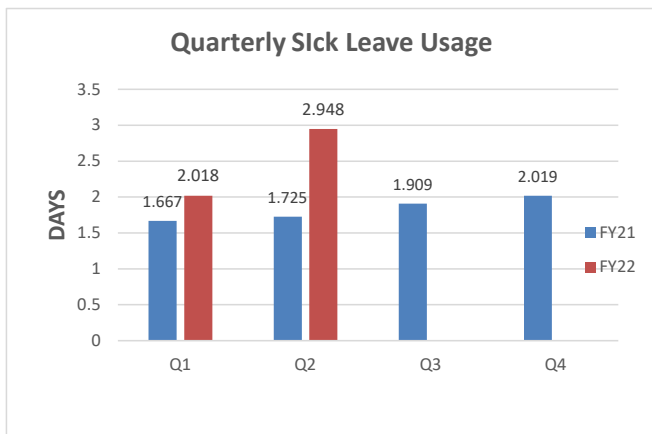


FY22 Target for FTE's = 1150
 FTE's as of December 2021 = 1090.7
 Tunnel Redundancy as of Dec 2021 = 10

Position Filled by Hires/Promos



	Pr/Trns	Hires	Total
FY20	84 (59%)	58 (41%)	142
FY21	81 (56%)	64 (44%)	145
FY22	56 (67%)	28 (33%)	84

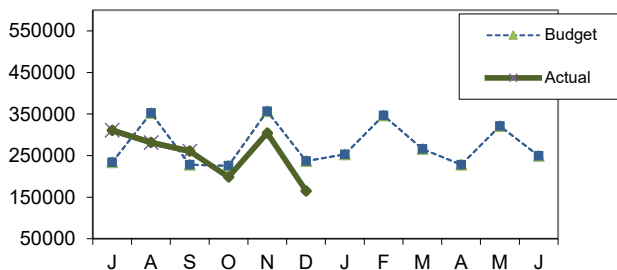


Average quarterly-sick leave for the 2nd Quarter of FY22 has increased compared to the 2nd Quarter of FY21 (2.948 from 1.725)

	Number of Employees	YTD (usage to date)	Annualized Total	Annual FMLA %	FY21
Admin	137	3.29	13.16	8.5%	5.87
Aff. Action	7	3.72	14.86	51.7%	3.14
Executive	4	1.97	7.89	0.0%	3.60
Finance	32	3.15	12.60	0.0%	3.17
Int. Audit	5	0.51	2.04	0.0%	0.89
Law	11	6.17	24.68	13.1%	5.83
OEP	4	4.91	19.63	0.0%	1.33
Operations	887	5.37	21.49	21.2%	7.95
Tunnel Red	10	2.28	9.10	29.0%	1.62
Pub. Affs.	11	4.03	16.11	40.4%	1.13
MWRA Avg	1108	1.66	9.93	20.6%	7.32

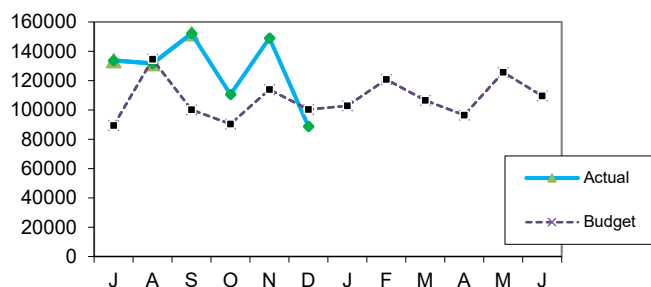
Percent of sick leave usage for FY22, attributable to Family and Medical Leave Act (FMLA) is 20.6%.

Field Operations
Monthly Overtime \$



Total Overtime for Field Operations for the second quarter of FY22 was \$668K which is \$146K under budget. Emergency overtime was \$271K, which is \$158K under budget. Rain events were \$208k and Emergency Maintenance was \$37k. Coverage overtime was \$201k, which is \$54K over budget, reflecting the month's shift coverage requirements. Planned overtime was \$196K or \$41K under budget with combined spending of \$59K for Maintenance, \$43K for Planned Ops including \$21K for Holiday Overtime Straight Time (OTST), and \$44K for Half-Plant Operations.

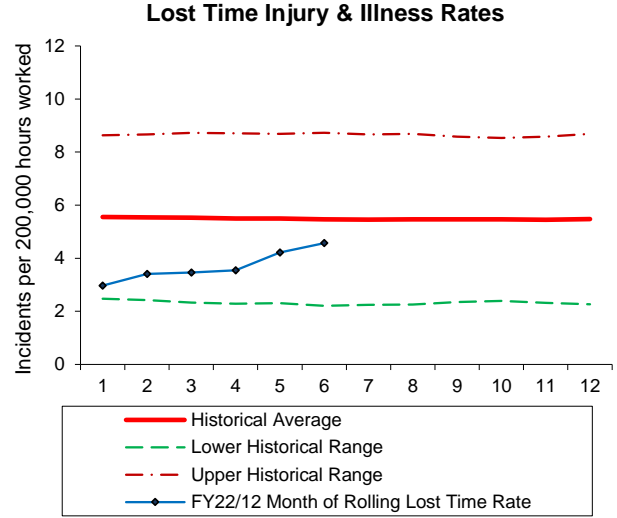
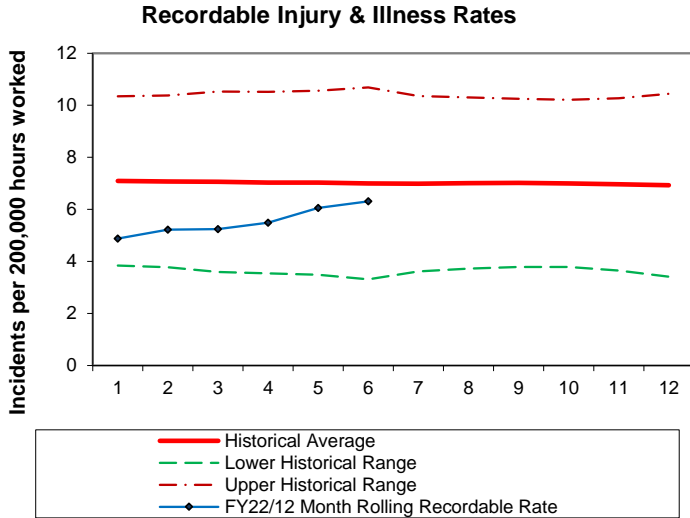
Deer Island Treatment Plant
Monthly Overtime \$



Deer Island's total overtime expenditure during the second quarter of FY22 was \$348K, which was \$44K or 14.3% over budget. During the second quarter of FY22 Deer Island experienced higher than anticipated shift coverage of \$74K. This is offset by lower than anticipated storm coverage of \$20K and planned/unplanned overtime of \$10K. YTD Deer Island's overtime spending is \$766K, which is \$137K or 21.8% over budget due to higher than anticipated shift coverage of \$132K and storm coverage of \$55K. This is offset by lower than anticipated planned/unplanned overtime of \$50K.

Workplace Safety

2nd Quarter - FY22



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

WORKERS COMPENSATION HIGHLIGHTS

	2nd Quarter Information		Open Claims
	New	Closed	
Lost Time	9	11	63
Medical Only	21	26	32
Report Only	13	13	
	QYTD		FYTD
Regular Duty Returns	9		14
Light Duty Returns	0		0
Indemnity payments as of December 2021 included in open claims listed			22

COMMENTS:

Regular Duty Returns

Oct 3 Employees returned to full duty/no restrictions
November 2 Employees returned to full duty/no restrictions
December 4 Employees returned to full duty/no restrictions

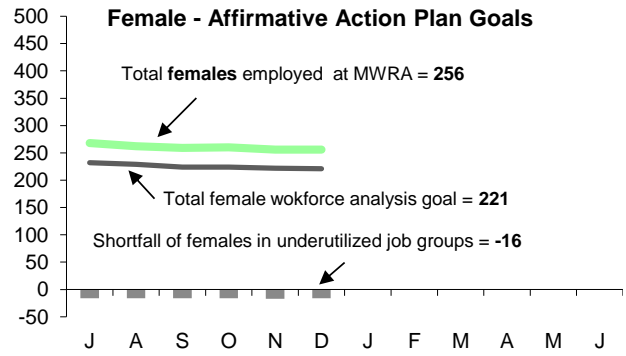
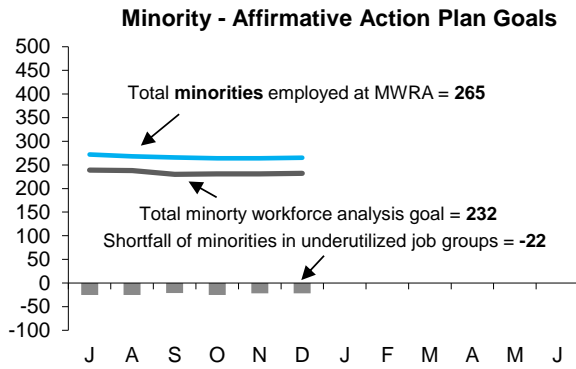
Light Duty Returns

Oct N/A
Nov N/A
December N/A

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

MWRA Job Group Representation

2nd Quarter - FY22



Highlights:

At the end of Q2 FY22, 5 job groups or a total of 22 positions are underutilized by minorities as compared to 6 job groups for a total of 26 positions at the end of Q2 FY21; for females 5 job groups or a total of 16 positions are underutilized by females as compared to 6 job groups or a total of 17 positions at the end of Q2 FY21. During Q2, 2 minorities and 2 female were hired. During this same period 0 minorities and 1 female were terminated.

Underutilized Job Groups - Workforce Representation

Job Group	Employees as of 12/31/2021	Minorities as of 12/31/2021	Achievement Level	Minority Over or Under Underutilized	Females As of 12/31/2021	Achievement Level	Female Over or Under Underutilized
Administrator A	24	3	1	2	12	6	6
Administrator B	25	2	8	-6	8	5	3
Clerical A	21	7	4	3	19	16	3
Clerical B	23	8	6	2	3	7	-4
Engineer A	80	23	18	5	19	19	0
Engineer B	61	20	17	3	14	9	5
Craft A	111	17	21	-4	0	4	-4
Craft B	133	21	18	3	2	3	-1
Laborer	68	21	16	5	5	3	2
Management A	92	22	28	-6	34	19	15
Management B	40	11	8	3	7	9	-2
Operator A	59	4	8	-4	2	2	0
Operator B	70	21	9	12	3	2	1
Professional A	30	5	7	-2	18	14	4
Professional B	165	49	39	10	80	70	10
Para Professional	47	15	10	5	23	21	2
Technical A	54	14	13	1	6	11	-5
Technical B	5	2	1	1	1	1	0
Total	1108	265	232	55/-22	256	221	51/-16

AACU Candidate Referrals for Underutilized Positions

Job Group	Title	# of Vac	Requisition Int./Ext.	Promotions/Transfers	AACU Ref. External	Position Status
Administrative B	Dir, Metropolitan Operations	1	Int./Ext.	1	0	Promo = WM
Craft A	M & O Specialist	2	Int./Ext.	2	0	Promo = 1WM, 1BM
Craft A	Unit Supervisor	1	Int.	1	0	Promo = WM
Craft A	Trades Foreman	2	Int.	2	0	Promo = 1WM, 1AM
Craft B	Third Class Engineer	2	Ext.	0	0	NH = 2WM
Craft B	Instrumentation Specialist	1	Int./Ext.	1	0	Promo = WM
Craft B	Med Volt Electrical Specialist	1	Int./Ext.	1	0	Promo = WM
Craft B	Facilities Specialist	1	Int./Ext.	1	0	Promo = WM
Craft B	Heavy Equipment Operator	1	Int./Ext.	1	0	Promo = WM
Craft B	Construction Pipelayer	1	Int./Ext.	1	0	Promo = TM
Management A	Sr Program Manager	1	Int./Ext.	1	0	Promo = WM
Management A	Business Applications Manager	1	Int./Ext.	1	0	Promo = WM
Management A	MBE/WBE Program Manager	1	Int.	1	1	Promo = BM
Management B	Proj Mgr, Hrbr & Outfl Monit	1	Int./Ext.	1	1	Promo = WM
Operators A	Area Supervisor	2	Ext.	2	0	NH = 2WM
Professional A	Asst Mgr, WC & Labor Relations	1	Int./Ext.	1	0	NH = WF
Professional A	Technical Operations Manager	1	Int./Ext.	1	1	NH = HM
Technical A	Tele-Inspection Foreman	1	Int.	1	0	Promo = WM

MWRA FY22 CEB Expenses through 2nd Quarter – FY22

As of December 2021, total expenses are \$364.9 million, \$11.5 million or 3.1% lower than budget, and total revenue is \$408.9 million, \$1.2 million or 0.3% over budget, for a net variance of \$12.8 million.

Expenses –

Direct Expenses are \$113.4 million, \$11.5 million or 9.2% under budget.

- **Wages & Salaries** are \$6.7 million under budget or 12.3%. Regular pay is \$6.7 million under budget, due primarily to lower head count, and timing of backfilling positions. YTD through December, the average Full Time Equivalent (FTE) positions was 1,119, forty-eight fewer than the 1,167 FTE's budgeted.
- **Ongoing Maintenance** expenses are \$2.9 million under budget or 17.6%, primarily due to the timing of projects.
- **Fringe Benefits** expenses are \$770k under budget or 6.8%, primarily due lower health insurance expense, reflecting the lower headcount.
- **Professional Services** expenses are \$691k under budget or 15.5%, primarily due to under spending for Computer System Consultant of \$581k, Engineering \$207k, and Legal expense of \$111k. Underspending was partially offset by higher spending on Security and Other Services which were over budget by \$126k and \$104k, respectively.
- **Workers Compensation** expenses are \$548k under budget or 41.9%, primarily due to under spending for Compensation Payments of \$313k and Medical Payments of \$190k. Due to uncertainties of when spending will happen, the budget is spread evenly throughout the year.
- **Chemicals** expenses are \$350k under budget or 5.3%, primarily due to under spending for Hydrogen Peroxide of \$306k based on usage as excessive rainfall helped lower H2S levels at Deer Island, Polymer of \$96k due to less usage for centrifuge operations, and Soda Ash of \$63k driven by Water Operations due to lower average flows at CWTP. These are partially offset by higher spending for Sodium Hypochlorite \$98k and Sodium Bisulfite of \$72k due to higher wastewater flows.
- **Utilities** expenses are \$1.0 million over budget or 8.5%, primarily due over spending for Electricity of \$1.4 million due to higher flows at Deer Island which accounted for \$773k of the electricity variance. Field Operations accounted for overspending of \$593k in electricity spending. Deer Island purchased 6.7% more kWh than planned as plant flows were 28.9% over budget due to wet weather events. Higher electricity prices also contributed to the spending variance. Lower spending for diesel, \$224k under budget, driven by DITP due to timing of deliveries.

Indirect Expenses are \$25.7 million, \$54k or 0.2% under budget. Lower Watershed Reimbursements of \$195k are partially offset by higher Insurance Claims of \$108k.

Capital Finance Expenses totaled \$225.8 million, matching budget after the transfer of \$6.3 million to the Defeasance account, driven by lower than budgeted variable interest expense and the impact of the refunding and new money transaction.

Revenue and Income –

Total Revenue and Income is \$408.9 million, or \$1.2 million over budget. Other Revenue was \$754k over budget, reflecting Miscellaneous Revenue of \$435k (includes Commonwealth reimbursement for BioBot expenses), gains on the disposal of equipment of \$518k, and Energy Rebates of \$197k, partially offset by lower Permit Fees of \$235k and lower energy revenues of \$162k. Other User Charges were \$487k over budget, reflecting unplanned water used by the Town of Burlington.

	Dec 2021 Year-to-Date			
	Period 6 YTD Budget	Period 6 YTD Actual	Period 6 YTD Variance	%
EXPENSES				
WAGES AND SALARIES	\$ 54,562,190	\$ 47,830,182	\$ (6,732,008)	-12.3%
OVERTIME	2,542,900	2,569,974	27,074	1.1%
FRINGE BENEFITS	11,406,088	10,635,664	(770,424)	-6.8%
WORKERS' COMPENSATION	1,307,079	758,806	(548,273)	-41.9%
CHEMICALS	6,578,477	6,228,439	(350,038)	-5.3%
ENERGY AND UTILITIES	12,293,609	13,336,483	1,042,874	8.5%
MAINTENANCE	16,302,724	13,440,086	(2,862,638)	-17.6%
TRAINING AND MEETINGS	255,417	141,679	(113,738)	-44.5%
PROFESSIONAL SERVICES	4,467,655	3,776,251	(691,404)	-15.5%
OTHER MATERIALS	2,235,865	1,961,052	(274,813)	-12.3%
OTHER SERVICES	12,962,008	12,743,947	(218,061)	-1.7%
TOTAL DIRECT EXPENSES	\$ 124,914,012	\$ 113,422,563	\$ (11,491,449)	-9.2%
INSURANCE	\$ 1,971,800	\$ 2,080,586	\$ 108,786	5.5%
WATERSHED/PILOT	7,519,222	7,323,760	(195,462)	-2.6%
HEEC PAYMENT	3,495,977	3,528,161	32,184	0.9%
MITIGATION	846,680	846,679	(1)	0.0%
ADDITIONS TO RESERVES	706,323	706,323	-	0.0%
RETIREMENT FUND	11,205,000	11,205,000	-	0.0%
POST EMPLOYEE BENEFITS	-	-	-	---
TOTAL INDIRECT EXPENSES	\$ 25,745,002	\$ 25,690,509	\$ (54,493)	-0.2%
STATE REVOLVING FUND	\$ 44,882,248	\$ 44,882,248	\$ -	0.0%
SENIOR DEBT	118,265,507	117,424,634	(840,873)	-0.7%
DEBT SERVICE ASSISTANCE	(1,287,870)	(1,287,870)	-	0.0%
CURRENT REVENUE/CAPITAL	-	-	-	---
SUBORDINATE MWRA DEBT	62,351,365	62,351,365	-	0.0%
LOCAL WATER PIPELINE CP	-	-	-	---
CAPITAL LEASE	1,608,530	1,608,530	-	0.0%
VARIABLE DEBT	-	(5,410,531)	(5,410,531)	---
DEFEASANCE ACCOUNT	-	6,251,404	6,251,404	---
DEBT PREPAYMENT	-	-	-	---
TOTAL CAPITAL FINANCE EXPENSE	\$ 225,819,779	\$ 225,819,779	\$ -	0.0%
TOTAL EXPENSES	\$ 376,478,793	\$ 364,932,851	\$ (11,545,942)	-3.1%
REVENUE & INCOME				
RATE REVENUE	\$ 396,042,000	\$ 396,042,000	\$ -	0.0%
OTHER USER CHARGES	4,360,428	4,847,730	487,302	11.2%
OTHER REVENUE	4,717,671	5,471,416	753,745	16.0%
RATE STABILIZATION	625,000	625,000	-	0.0%
INVESTMENT INCOME	1,964,418	1,955,252	(9,166)	-0.5%
TOTAL REVENUE & INCOME	\$ 407,709,517	\$ 408,941,398	\$ 1,231,882	0.3%

Cost of Debt 2nd Quarter – FY22

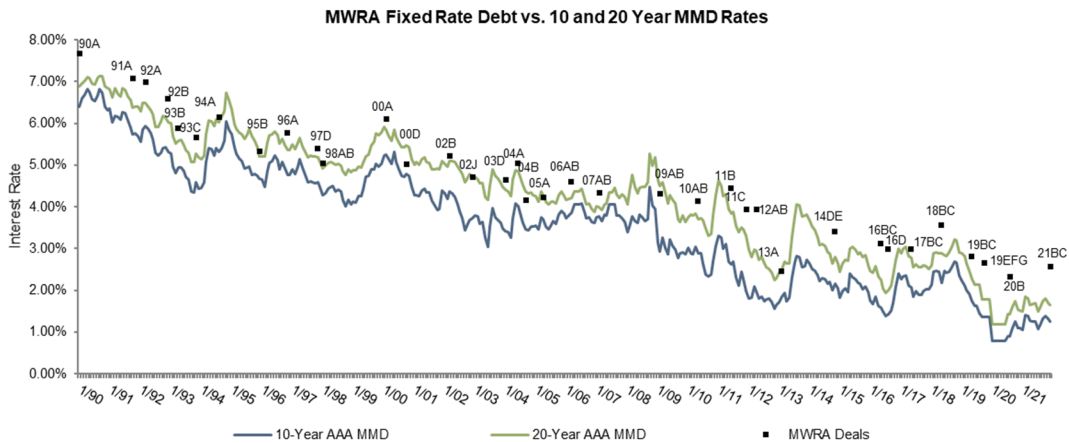
MWRA borrowing costs are a function of the fixed and variable tax exempt interest rate environment, the level of MWRA's variable interest rate exposure and the perceived creditworthiness of MWRA. Each of these factors has contributed to decreased MWRA borrowing costs since 1990.

Average Cost of MWRA Debt FYTD

Fixed Debt (\$3.41 billion)	3.22%
Variable Debt (\$299.1million)	0.46%
SRF Debt (\$832.3 million)	1.64%
Weighted Average Debt Cost (\$4.54 billion)	2.79%

Most Recent Senior Fixed Debt Issue December 2021

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

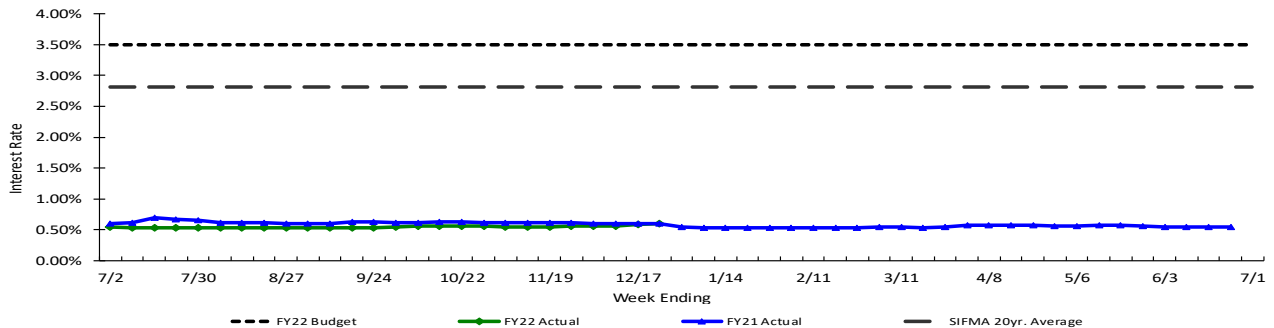


Bond Deal	1996A	1997D	1998AB	2000A	2000D	2002B	2002J	2003D	2004A	2004B	2005A	2006AB	2007AB	2009AB
Rate	5.78%	5.40%	5.04%	6.11%	5.03%	5.23%	4.71%	4.64%	5.05%	4.17%	4.22%	4.61%	4.34%	4.32%
Avg Life	19.5 yrs	21.6 yrs	24.4 yrs	26.3 yrs	9.8 yrs	19.9 yrs	19.6 yrs	18.4 yrs	19.6 yrs	13.5 yrs	18.4 yrs	25.9 yrs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

Bond Deal	2010AB	2011B	2011C	2012AB	2013A	2014D-F	2016BC	2016D	2017BC	2018BC	2019BC	2019EFG	2020B	2021BC
Rate	4.14%	4.45%	3.95%	3.93%	2.45%	3.41%	3.12%	2.99%	2.98%	3.56%	2.82%	2.66%	2.33%	2.56%
Avg Life	16.4 yrs	18.8 yrs	16.5 yrs	17.9 yrs	9.9 yrs	15.1 yrs	17.4 yrs	18.8 yrs	11.2 yrs	11.7 yrs	11.9 yrs	9.73 yrs.	15.6 yrs	12.2 yrs

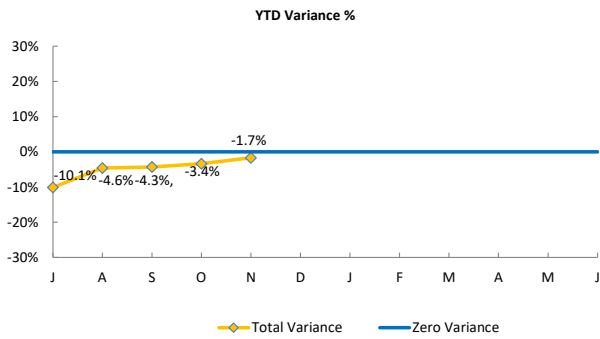
Weekly Average Variable Interest Rates vs. Budget

MWRA currently has nine variable rate debt issues with \$540.7 million outstanding, excluding commercial paper. Of the ten outstanding series, four have portions which have been swapped to fixed rate. Variable rate debt has been less expensive than fixed rate debt in recent years as short-term rates have remained lower than long-term rates on MWRA debt issues. In December, the SIFMA rate ranged from a high of 0.11% to a low of 0.05% for the month. MWRA's issuance of variable rate debt, although consistently less expensive in recent years, results in exposure to additional interest rate risk as compared to fixed rate debt.



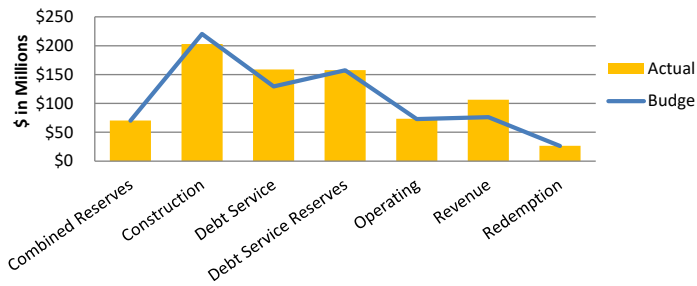
Investment Income 2nd Quarter – FY22

Year To Date

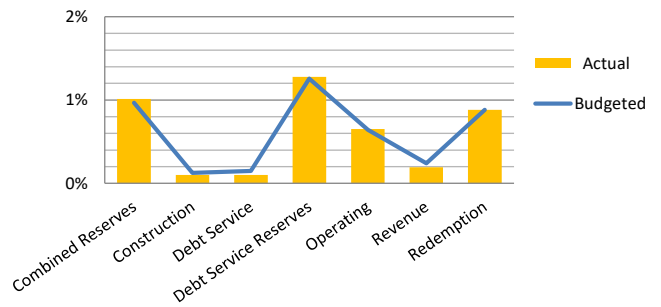


	(\$000)				
	BALANCES IMPACT	RATES	IMPACT	TOTAL	%
Combined Reserves	(\$0)		\$16	15	4.6%
Construction	(\$9)		(\$26)	(35)	-26.3%
Debt Service	\$22		(\$38)	(16)	-16.9%
Debt Service Reserves	\$3		\$16	18	1.9%
Operating	\$2		\$4	6	2.8%
Revenue	\$26		(\$24)	3	2.7%
Redemption	(\$0)		(\$0)	(0)	-0.4%
Total Variance	\$43		(\$52)	(\$9)	-0.5%

YTD Average Balances Budgeted vs. Actual

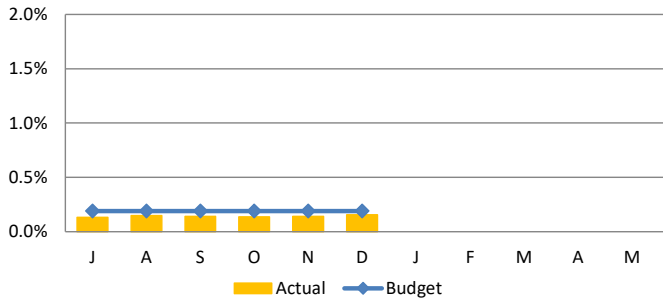


YTD Average Interest Rate Budgeted vs. Actual

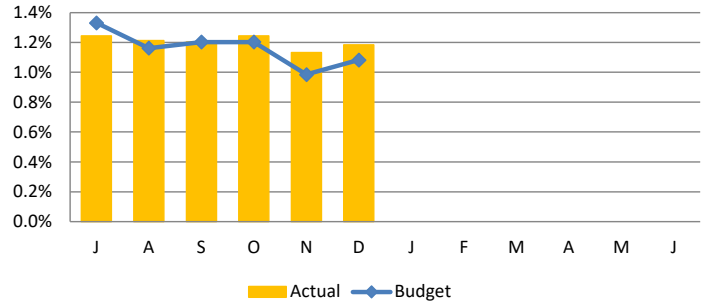


Monthly

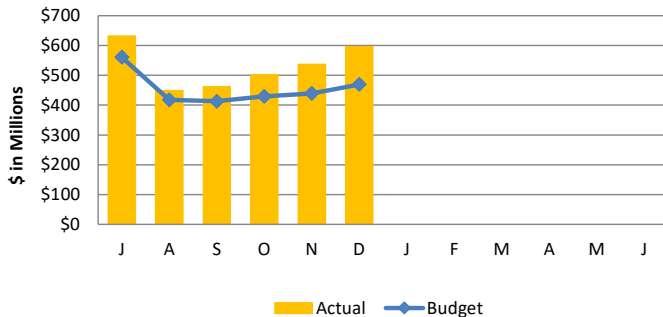
Short -Term Interest Rates



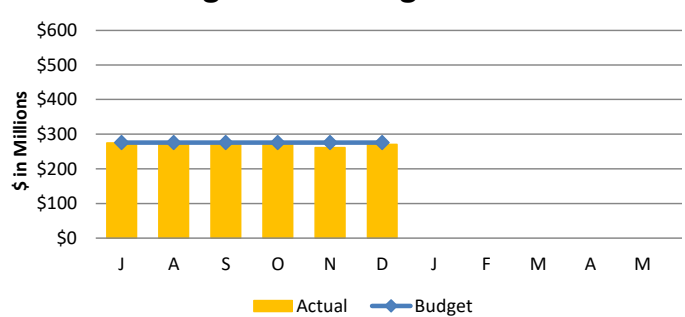
Long -Term Interest Rates



Short-Term Average Balances



Long-Term Average Balances



STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: February 16, 2022
SUBJECT: Delegated Authority Report – January 2022



COMMITTEE: Administration, Finance & Audit

INFORMATION
 VOTE

Jacqueline Collins, Administrative Coordinator
Barbara Aylward, Administrator A & F
Preparer/Title


Michele S. Gillen
Director, Administration
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 January 1 to 31, 2022.

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 21, 2018, delegate authority to the Executive Director to approve the following:

Construction Contract Awards:

Up to \$1 million if the award is to the lowest bidder.

Change Orders:

Up to 25% of the original contract amount or \$250,000, 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 \$100,000 and one year with a firm; or up to \$50,000 and one year with an individual.

Non-Professional Service Contract Awards:

Up to \$250,000 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 \$1 million if the award is to the lowest bidder.

Amendments:

Up to 25% of the original contract amount or \$250,000, whichever is less, and for a term not exceeding an aggregate of six months.

Amendments to the Position Control Register:

Amendments which result only in a change in cost center.

BUDGET/FISCAL IMPACT:

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


CONSTRUCTION/PROFESSIONAL SERVICES DELEGATED AUTHORITY ITEMS JANUARY 1 - 31, 2022

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	01/06/22	WIND TURBINE MAINTENANCE FINAL BALANCING CHANGE ORDER TO DECREASE THE FOLLOWING ITEMS TO REFLECT ACTUAL QUANTITIES USED: UNSPECIFIED MAINTENANCE AND REPAIR SERVICES, REPLACEMENT PARTS, AUTHORIZED FACTORY SERVICE REPRESENTATIVES AND FIRE DEPARTMENT SERVICES AND PERMITS.	S582	1	BALDWIN ENERGY, LLC	(\$114,831.24)
C-2.	01/10/22	HULTMAN AQUEDUCT TREE CLEARING, PHASE 1 AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR HULTMAN AQUEDUCT TREE CLEARING, PHASE 1, FOR A TERM OF 90 CALENDAR DAYS.	OP-437	AWARD	MAYER TREE SERVICE, INC.	\$74,417.00
C-3.	01/10/22	REPLACEMENT OF ODOR CONTROL DAMPERS - DEER ISLAND AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE REPLACEMENT OF ODOR CONTROL DAMPERS AT DEER ISLAND FOR A TERM OF 365 CALENDAR DAYS.	7913	AWARD	HARDING AND SMITH, LLC	\$538,000.00
C-4.	01/25/22	ENERGY EFFICIENT LIGHTING UPGRADES AT THE JOHN J. CARROLL WATER TREATMENT PLANT AND CLINTON WASTEWATER TREATMENT PLANT FURNISH AND INSTALL ADDITIONAL EXIT SIGNS AND LIGHTS; EXTEND THE CONTRACT TERM BY 91 CALENDAR DAYS FROM JANUARY 3, 2022 TO APRIL 4, 2022	OP-414	1	THIELSCH ENGINEERING, INC.	\$32,000.00
C-5.	01/25/22	SECTION 4 WALNUT STREET BRIDGE STREET PIPE RESTRAINT REPLACEMENT AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE SECTION 4 WALNUT STREET BRIDGE PIPE RESTRAINT REPLACEMENT FOR A TERM OF 180 CALENDAR DAYS.	7483	AWARD	R. ZOPPO CORP.	\$314,900.00
C-6.	01/28/22	HVAC SYSTEMS MAINTENANCE AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR HVAC SYSTEMS MAINTENANCE FOR A TERM OF 730 CALENDAR DAYS.	OP-436	AWARD	N.B. KENNEY COMPANY, INC.	\$709,221.00
C-7.	01/31/22	FIRE ALARM SYSTEMS SERVICES, CENTRAL AND WESTERN MASSACHUSETTS FINAL BALANCING CHANGE ORDER TO DECREASE THE FOLLOWING ITEMS TO REFLECT ACTUAL QUANTITIES USED: ON-SITE TESTING OF FIRE ALARM SYSTEMS, ON-SITE NON-EMERGENCY AND EMERGENCY REPAIR SERVICES, SERVICE REPRESENTATIVES, REPLACEMENT PARTS AND RENTAL EQUIPMENT.	OP-396	1	ENCORE HOLDINGS LLC d/b/a ENCORE FIRE PROTECTION	(\$33,798.71)
C-8.	01/31/22	WIND TURBINE MAINTENANCE AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR WIND TURBINE MAINTENANCE AT THE DEER ISLAND TREATMENT PLANT AND THE DELAURI PUMP STATION FOR A TERM OF 730 CALENDAR DAYS.	S605	AWARD	BALDWIN ENERGY, LLC	\$312,809.00

PURCHASING DELEGATED AUTHORITY ITEMS January 1 - 31

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-1	01/03/22	PURCHASE OF ARUBA HARDWARE Award of a purchase order under State Contract ITC73 to the lowest responsive bidder for Aruba hardware at various MWRA facilities. This hardware will be used to create 30 additional wireless access points to support staff using mobile devices at Deer Island.			NWN Corporation	\$30,879.60
P-2	01/03/22	PURCHASE OF ONE DUPLEX BOOSTER PUMPING SYSTEM Award of a purchase order to the lowest responsive bidder for one Duplex Pumping System to replace the existing pumping system at the Bellevue Standpie 1. The pumping system is used to pump water from the standpipe into the MWRA SEH system and to cycle water in the tank and maintain water quality.	WRA-5012		Wescor Associates, Inc.	\$46,695.00
P-3	01/03/22	PURCHASE OF LED REPLACEMENT EMERGENCY LIGHTING FIXTURES Award of a purchase order to the lowest responsive bidder for 418 LED Replacement Emergency Lighting Fixtures at the Deer Island Treatment Plant	WRA-5054		Bell Electric Supply Co., Inc.	\$188,243.00
P-4	01/06/22	PURCHASE OF ONE HUNDRED HEWLETT PACKARD PROBOOK LAPTOPS Award of a critical need purchase order under State Contract ITC73 to the lowest responsive bidder for One Hundred Hewlett Packard ProBook Laptops	WRA-5057Q		Firstworld USA, Inc.	\$94,718.00
P-5	01/10/22	ANNUAL MAINTENANCE AND SUPPORT OF SEWER LICENSE SOFTWARE Award of a Sole Source purchase order for the Annual Maintenance and Support of InfoWater Suite, InfoSurge, and InfoWorks Sewer License Software			Innovyze, Inc.	\$47,044.00
P-6	01/21/22	SUPPLY AND DELIVERY OF 3/4-INCH CRUSHED STONE Award of a one-year purchase order to the lowest responsive bidder for the Supply and Delivery of 3/4-inch Crushed Stone to the Chelsea Facility	WRA-5047Q		S.M. Lorusso & Sons, Inc.	\$29,375.00
P-7	01/21/22	PURCHASE TO PROVIDE A SYSTEM ADMINISTRATION III CONSULTANT Award of a purchase order contract under State Contract ITS77 Category 1A and 1B to the lowest responsive bidder for a System Administration III Consultant to assist with MIS initiatives	WRA-5060Q		Computer & Engineering Services, Inc.	\$87,174.75
P-8	01/21/22	MAINTENANCE AND SUPPORT OF EXISTING DESKTOP AND MOBILE APPLICATIONS, SUBSCRIPTIONS, AND IMPLEMENTATION SERVICES Award of a purchase order under State Contract ITC73 for the Maintenance and Support of Existing Citrix Workspace, XenMobile and Virtual Applications and Desktop Licenses and the purchase of Application Delivery Controller Subscriptions, and Implementation Services	WRA-5064Q		IntraSystems, Inc.	\$145,224.00
P-9	01/21/22	PURCHASE OF FOUR NEW MOWER TRACTORS Award of a purchase order to the lowest responsive bidder for Four New Mower Tractors	WRA-5018		United Ag & Turf NE, LLC	\$184,664.59
P-10	01/26/22	SUPPLY AND DELIVERY OF BIODIESEL FUEL Award of a two-year purchase order contract under State Contract ENE47 for the Supply and Delivery of Biodiesel Fuel to the MWRA Chelsea Facility			Dennis K. Burke, Inc.	\$400,000.00
P-11	1/31/22	WHOLE EFFLUENT TOXICITY TESTING OF THE MWRA'S NPDES SAMPLES Award of a three-year purchase order contract to the lowest responsive bidder for Whole Effluent Toxicity Testing of MWRA's National Pollutant Discharge Elimination Systems Samples	WRA-4933		New England Bioassay, Inc.	\$71,600.00
P-12	01/31/22	SUPPLY AND DELIVERY OF SODIUM BISULFITE TO THE DEER ISLAND TREATMENT PLANT Award of a one-year purchase order contract to the lowest responsive bidder for the Supply and Delivery of Sodium Bisulfite to the Deer Island Treatment Plant	WRA-5068		Holland Company, Inc.	\$202,500.00
P-13	01/31/22	SUPPLY AND DELIVERY OF LIQUID EMULSION POLYMER TO THE DEER ISLAND TREATMENT PLANT Award of a one-year purchase order contract to the lowest responsive bidder for the Supply and Delivery of Liquid Emulsion Polymer to the Deer Island Treatment Plant	WRA-5061		Polydyne, Inc.	\$621,000.00


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: February 16, 2022
SUBJECT: Fiscal Year 2022 Mid-Year Capital Improvement Program Spending Report

COMMITTEE: Administration, Finance & Audit

X INFORMATION
 VOTE

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


Thomas J. Durkin
Director, Finance

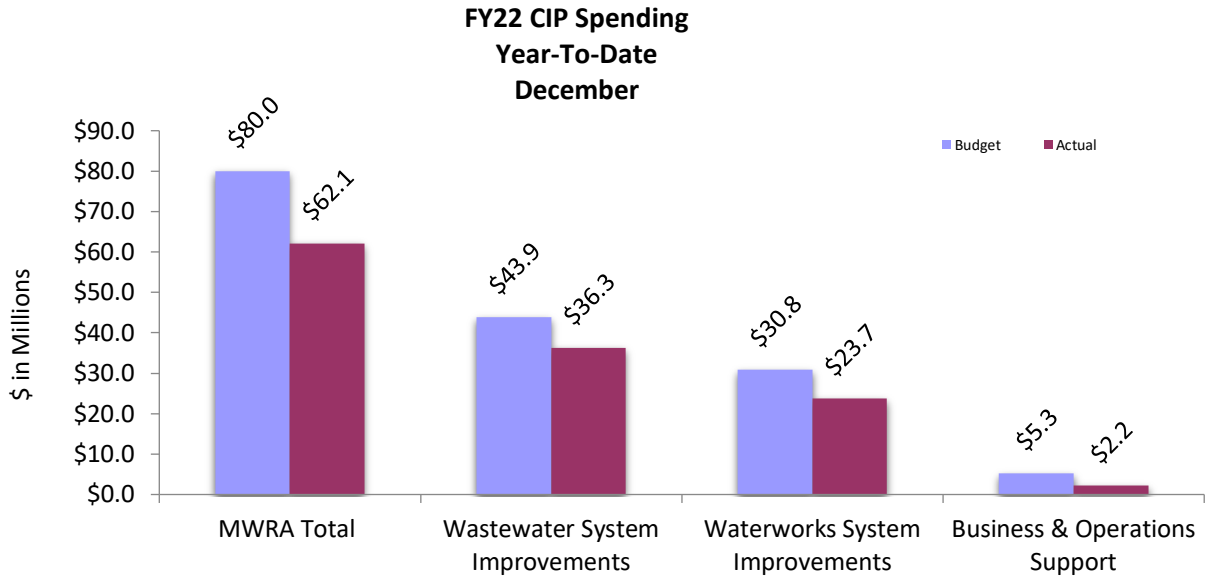
RECOMMENDATION:

For information only. The Fiscal Year 2022 Mid-Year Capital Improvement Program Spending Report highlights major capital program accomplishments and provides explanations for spending variances and schedule changes versus the budget.

DISCUSSION:

FY22 actual spending for the first half of the year is \$62.1 million, \$17.9 million or 22.3% under budget. 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 \$45.1 million, \$13.7 million or 23.3% under budget. The projected spending for FY22, based on the FY23 Proposed CIP, is estimated at \$180.9 million versus the budget of \$207.8 million which is \$26.8 million or 12.9% less than budget as compared to the historical 24.5% variance below budget spending pattern. After accounting for programs which are not directly under MWRA's control, the projected spending for FY22 is estimated at \$130.6 million versus the budget of \$162.8 million which is \$32.2 million or 19.7% less than budget as compared with a historical 31.4% variance below budget spending pattern.

Projected spending may decline due to some major projects that have not yet been awarded These include the Deer Island Primary and Secondary Clarifier Rehabilitation Phase 2 Construction, Deer Island Fire Alarm Equipment Replacement and Motor Control Center Switch Gear Replacement. Staff are meeting monthly to discuss planned projects and issues that need to be resolved to ensure timely award of contracts.



Projects that were completed or reached substantial completion in the first half of FY22 included:

- Facility Asset Protection- Chelsea Creek Headworks Upgrades – Construction
 - FY22 Budget: \$84.7 million
 - Completion Date: August 2021
 - Total Project Duration: 3.9 years
- Deer Island Treatment Plant Asset Protection – Chemical Tank and Digester Pipe
 - FY22 Budget: \$8.8 million
 - Completion Date December 2021
 - Total Project Duration: 2.4 years
- Deer Island Treatment Plant Asset Protection – Gravity Thickener Rehab
 - FY22 Budget: \$20.2 million
 - Completion Date September 2021
 - Total Project Duration: 3.4 years
- Facility Asset Protection- Inter Ren 3, Dorchester Interceptor Sewer – Construct
 - FY22 Budget: \$4.7 million
 - Completion Date: December 2021
 - Total Project Duration: 1.5 years
- Facility Asset Protection- Fuel Oil Tank Replacement Construction Phase 1
 - FY22 Budget: \$1.5 million
 - Completion Date: December 2021
 - Total Project Duration: 1.8 years

- Watershed Division Capital Improvement- River Road Improvement – Wachusett
 - FY22 Budget: \$2.1 million
 - Completion Date: November 2021
 - Total Project Duration: 0.9 years
- Quabbin Transmission System- Wachusett Dam Bridge Crane Removal
 - FY22 Budget: \$.3 million
 - Completion Date: September 2021
 - Total Project Duration: .6 years
- SEH Redundancy and Storage- Redundancy Pipeline Phase 1 Design/CA/RI
 - FY22 Budget: \$7.6 million
 - Completion Date: August 2021
 - Total Project Duration: 7.6 years

MWRA also has a number of projects currently in design or under construction. Expenditures for some of the larger active contracts are:

Wastewater System Improvements

Project	FY22 Budget \$s in 000	Life to Date Spending \$s in 000	% Complete
Corrosion & Odor Control Nut Island Odor Control HVAC Improvement Construction Phase 2	\$59,741	\$32,895	55.1%
Facility Asset Protection Ward St & Colum Pk Headworks Design/Construction Admin	\$28,897	\$1,525	5.3%
Wastewater Meter System-Equipment WW Metering Asset Protect/Equip Purchase	\$12,953	\$3,046	23.5%
Corrosion & Odor Control Nut Island Odor Control & HVAC Design/Construction Admin/Resident Engineer Inspection	\$8,366	\$5,952	71.1%
Siphon Structure Rehabilitation Design/CS/RI	\$2,855	\$1,612	56.5%
CSO Support CSO Performance Assessment	\$5,284	\$4,806	91.0%
Deer Island Treatment Plant Asset Protection E Seawall Des/ESDC/REI	\$2,600	\$664	25.5%
Deer Island Treatment Plant Asset Protection MCC Switchgr Repl Des/ESDC/REI	\$2,880	\$806	28.0%

Waterworks System Improvements

Project	FY22 Budget \$s in 000	Life to Date Spending thru 12/21 \$s in 000	% Complete
Metro Tunnel Redundancy Preliminary Design & Massachusetts Environmental Policy Act Review	\$15,693	\$4,915	31.3%
Metro Redundancy Interim Improvements WASM 3 - Massachusetts Environmental Policy Act/Design/Construction Admin/Resident Inspection	\$15,513	\$2,580	16.6%
Metro Redundancy Interim Improvements WASM 3 CP-1	\$19,691	\$7,971	40.5%
Metro Redundancy Interim Improvements CP1 Shafts 6, 8, 9A	\$2,399	\$1,422	59.3%
Metro Redundancy Interim Improvements WASM/SPSM West Pressure Reducing Valves Construction	\$11,326	\$1,344	11.9%
Central Monitoring System CWTP SCADA Upgrade Construction	\$12,905	\$391	3.0%

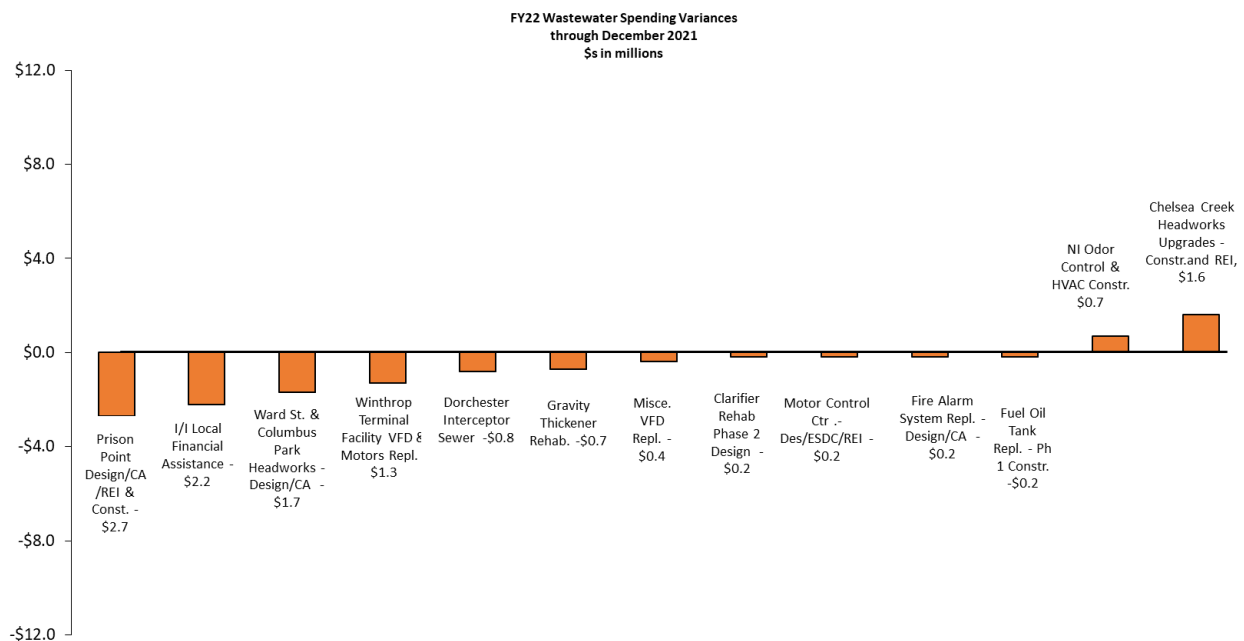
Community Financial Assistance

In the first half of FY22, MWRA continued support for the community financial assistance programs includes overall spending of \$14.3 million. Inflow and Infiltration (I/I) spending consisted of \$7.6 million in grants and \$5.7 million in loans offset by \$2.9 million in prior period loan repayments for net spending of \$10.4 million. The Local Water System Assistance Program spending was \$19.9 million in loans, including CVA communities, offset by \$16.0 million in prior period loan repayments for net spending of \$3.9 million that includes Lead Service Line Replacement loans of \$2.5 million.

Major Variances to FY22 Budget

FY22 Capital Improvement Program Spending Through December 2021 (\$000s)					
Program	Budgeted Spending	Actual Spending	Variance to Budget		% of Total YTD Actual Spending
			\$	%	
Total Wastewater System	\$43,894	\$36,302	(\$7,592)	-17%	58%
Interception & Pumping	\$22,577	\$18,681	(\$3,896)	-17%	30%
Treatment	\$6,709	\$4,063	(\$2,645)	-39%	7%
Residuals	\$0	\$14	\$14	NA	0%
Combined Sewer Overflow	\$2,018	\$3,128	\$1,109	55%	5%
Other Wastewater Programs	\$12,590	\$10,415	(\$2,174)	-17%	17%
Total Waterworks System	\$30,819	\$23,689	(\$7,131)	-23%	38%
Drinking Water Quality Improvements	\$988	\$1,348	\$360	36%	2%
Transmission	\$13,213	\$15,299	\$2,086	16%	25%
Distribution and Pumping	\$8,071	\$2,228	(\$5,843)	-72%	4%
Other Waterworks Programs	\$8,547	\$4,814	(\$3,733)	-44%	8%
Business & Operations Support	\$5,289	\$2,156	(\$3,133)	-59%	3%
Total MWRA (without Contingency)	\$80,002	\$62,146	(\$17,855)	-22%	100%

Wastewater System Improvements Wastewater year-to-date spending was \$36.3 million, \$7.6 million or 17.3% below budget. The graph below reflects a selection of contract variances.



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

Interception & Pumping: Net underspending of \$3.9 million

- \$2.7 million for Prison Point Design CA/RI and Construction due to updated construction schedule.
- \$1.7 million for Ward Street & Columbus Park Headworks - Design/CA due to completion of some design and inspection tasks later than anticipated.
- \$0.8 million for Interceptor Renewal No. 3, Dorchester Interceptor Sewer – Construction due to timing of contractor work. Contract is substantially complete.
- \$0.2 million for Fuel Oil Tank Replacement - Phase 1 Construction due to fabrication of tank top slabs at Gillis Pumping Station taking longer than anticipated.
- This underspending was partially offset by overspending of \$1.6 million for Chelsea Creek Headworks Upgrades - Construction and REI, and \$0.7 million for Nut Island Odor Control & HVAC Improvements Phase 2 – Construction due to work scheduled for FY21 performed in FY22.

Wastewater Treatment: Net underspending of \$2.6 million

- \$1.3 million for Winthrop Terminal Facility VFD and Motors Replacements, \$0.7 million for Gravity Thickener Rehabilitation, and \$0.4 million for Miscellaneous VFD Replacements due to timing of work.
- \$0.2 million each for Motor Control Center and Switchgear Replacement - Design/ESDC/REI, and Fire Alarm System Replacement - Design/CA due to updated construction schedules.
- \$0.2 million for Clarifier Rehab Phase 2 Design due to pending time extension.

Other Wastewater: Net underspending of \$2.2 million

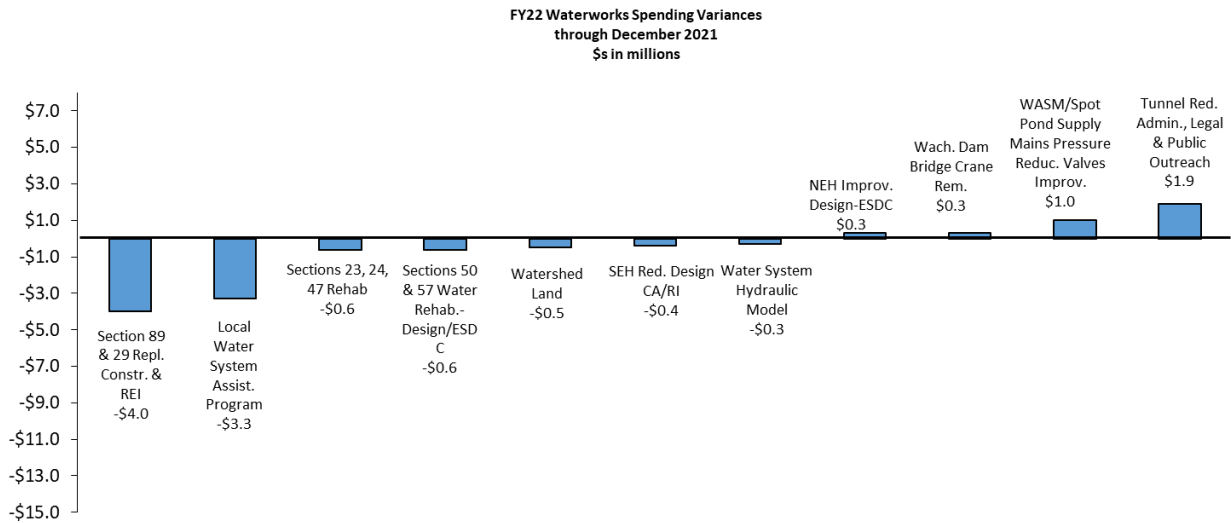
- \$2.2 million for Community I/I due to timing of community distributions of grants and loans.

Combined Sewer Overflow: Net overspending of \$1.1 million

- \$0.7 million for East Boston CSO Control - BOS014 and 0.6 million for Dorchester Inflow Removal Construction due to timing of payments.

Waterworks System Improvements

Waterworks actual spending was \$23.7 million, \$7.1 million or 23.1% less than budget. The graph below reflects a selection of contract variances.



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

Water Distribution and Pumping: Net underspending of \$5.8 million

- \$4.0 million for Section 89 and 29 Replacement Construction and REI and \$0.6 million for CP-3 CP3-Sections 23, 24, 47 Final Design/CA/RI due to updated schedules.
- \$0.6 million for Sections 50 and 57 Water Rehabilitation - Design/ESDC due to contract scope reduction.
- \$0.4 million for SEH Redundancy Design CA/RI due to less than anticipated budgeted spending.
- This underspending was partially offset by overspending of \$0.3 million for NEH Improvements Design-ESDC due to timing of consultant work.

Other Waterworks: Net underspending of \$3.7 million

- \$3.3 million for Local Financial Assistance due to timing of community loan distributions.
- \$0.3 million for Water System Hydraulic Model due to slower than anticipated start-up.

Waterworks Transmission: Net overspending of \$2.1 million

- \$1.9 million for Metropolitan Tunnel Redundancy Administration, Legal & Public Outreach due to earlier than anticipated land purchase.
- \$1.0 million for WASM/Spot Pond Supply Mains Pressure Reducing Valves Improvements due to timing of contractor work.
- \$0.3 million for Wachusett Dam Bridge Crane Removal for FY21 planned work completed in FY22.
- \$0.3 million for WASM 3 CP-1 due contractor progress.
- This overspending was partially offset by underspending of \$0.5 million for Watershed Land due to timing of land purchases, \$0.3 million for Tunnel Redundancy Preliminary Design & MEPA Review, and \$0.3 million for WASM 3 Design due to timing of consultants work.

Drinking Water Quality Improvements: Net overspending of \$0.4 million

- \$0.1 million for CP-7 Existing Facilities Modifications - Cosgrove Storage Facility due to contractor progress, and \$0.2 million for As-Needed Technical Assistance due to greater than projected task order work.

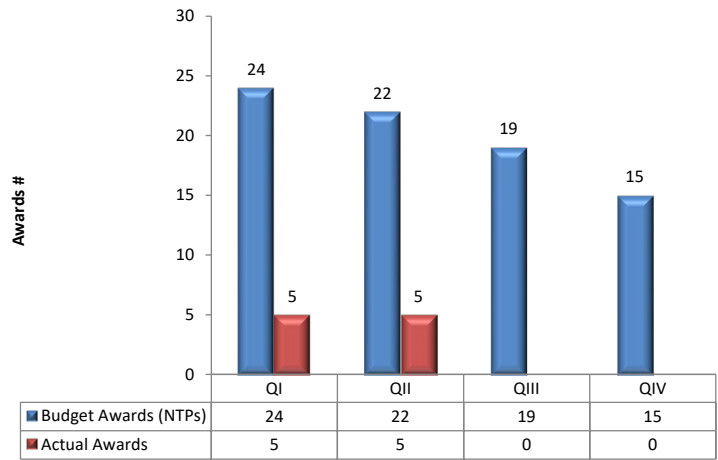
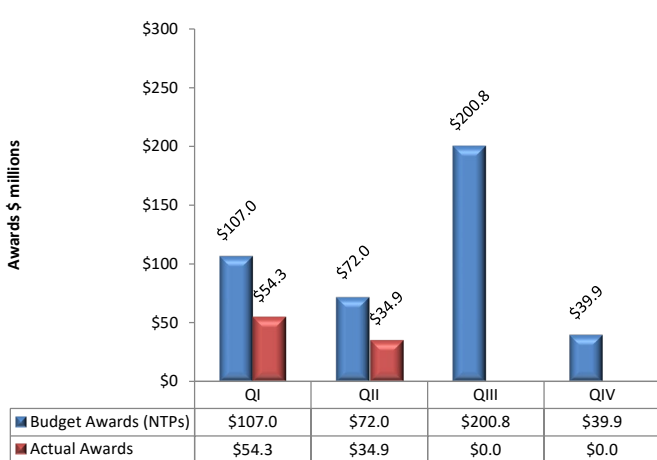
Business & Operations Support: Net underspending of \$3.1 million

- \$1.8 million for As-Needed Technical Assistance and Resident Engineering and Inspection Services due to lower than projected task order work, \$0.6 million for Vehicle Purchases due to timing of purchases, and \$0.2 million each for Enterprise Content Management and Edge Switches due to timing of work.

Please refer to Attachment A for detailed FY22 CIP variance explanations.

Status of Contract Awards Planned for FY22

MWRA’s FY22 CIP projected 80 contracts to be awarded for the year with a value of \$420.0 million. Through December, 46 awards with a value of \$179.2 were planned. Through mid-year, MWRA has awarded 10 contracts with a value of \$89.3 million or 49.8% of plan. The two largest contract awards total \$66.4 million and include the Prison Point Rehabilitation and CP-3 Section 23, 24, 47 Rehabilitation.



As part of the FY22 CIP development and monthly CIP coordination meetings, staff have reviewed planned contract awards for FY22 and have updated assumptions based on new information. By the end of FY22, staff expect to award 36 additional planned contracts valued at \$253.1 million for a total of 46 contracts valued at \$342.4 million (\$149 million of which is the Clarifier Rehabilitation contract expected to be awarded by the end of FY22).

The primary reasons for not expecting to award all contracts in FY22 are:

- Two projects have been delayed due to changes in scope that have required additional work;
- Ten projects were delayed due to a change in priorities;

- Thirteen projects have been deleted or are being either combined with another project, are on hold or will be handled through as-needed technical assistance;
- Eight projects with Bidder Issue/Outside Design Delay/Contractor issue/Additional specifications review; and
- Two projects were delayed due to permitting.

The table below summarizes the total number of capital contract awards planned for FY22 and highlights the number planned for award during the second half of FY22.

Please refer to Attachment B for contract award status for all FY22 budgeted contracts.

Recap of Planned FY22 Contract Awards

	# of Awards	\$ Award
Total Planned Awards per FY22 CIP	80	\$420.0
Actual Planned Awards in FY22	9	88.4
Actual Unplanned Awards in FY22	1	0.9
Subtotal	10	\$89.3
Planned Award in Second Half of FY22	36	253.1
Shifted Beyond FY22 - Scope/Priority Change/Issues/Permit	22	73.9
Deleted/Transferred from CIP/Project on hold	13	13.8
Total Projects Planned awarded in FY22	46	\$342.4

The following ten contracts were awarded in the first half of FY22:

- Prison Point Rehabilitation Construction - \$39.4 million
- CP-3 Sections 23, 24, 47 Rehabilitation - \$26.8 million
- Carroll Water Treatment Plant SCADA Upgrade Construction - \$12.9 million
- Wachusett Bastion Rehabilitation Construction - \$3.9 million
- Clinton Screw Pump Replacement - \$3.5 million
- Marlborough Pump Station Emergency Connection - \$0.9 million
- New Roofs at Water PS Construction - \$0.7 million
- Wachusett Lower Gatehouse Windows and Doors - \$0.6 million
- Edge Switches - \$0.4 million
- ITSM Access Management - \$0.1 million

Major Awards Planned for the 2nd Half of FY22

Looking ahead to the second half of FY22, the MWRA anticipates awarding 36 contracts including several major construction contracts. The largest projected awards are listed below:

Major Planned Contract Awards the Second Half of FY22		
Program / Project	Subphase	FY22 Budget Contract Amount (\$ in millions)
DI Treatment Plant Asset Protection	Clarifier Rehab Phase 2 - Construction	\$149.0
Metro Redundancy Interim Improvements	Waltham Water Pipeline Construction	\$13.8
DI Treatment Plant Asset Protection	MCC & Switchgear Replace Construction	\$11.2
Braintree-Weymouth Relief Facilities	B/W Improvements - Construction	\$8.8
Application Improvement Program	Lawson Upgrade	\$7.6
DI Treatment Plant Asset Protection	Odor Control Rehab - Design/ESDC	\$5.3
DI Treatment Plant Asset Protection	Cryogenics Plant Equipment Replace-Design	\$5.3
Information Security Program ISP	MSSP/SIEM	\$5.2
Northern Extra High Service New Pipeline	CP-1 NEH Improvements	\$4.4
DI Treatment Plant Asset Protection	Digester & Storage Tank Rehab Design/ESDC	\$4.1
DI Treatment Plant Asset Protection	Gas Protect System Replacement Phase 2	\$3.5
DI Treatment Plant Asset Protection	Clarifier Rehab Phase 2 - REI	\$3.0
CWTP Asset Protection	Soda Ash & Ammonia Equip Repl	\$3.0
DI Treatment Plant Asset Protection	DITP Roofing Replacement	\$3.0
Facility Asset Protection	Remote HW Shaft Access Improv-Construction	\$2.8
Northern Extra High Service New Pipeline	NEH Improvements REI	\$2.6
Cathodic Protection Of Distribution Mains	Cathodic Protection Shafts N&W	\$2.5
DI Treatment Plant Asset Protection	Radio Repeater System Upgrade 2	\$2.5
Facility Asset Protection	Somerville-Marginal CSO Facility Rehab Des/CA	\$2.4
MWRA Facilities Management	Office Space Modifications	\$2.0
Total		\$241.9

It should be noted that the Clarifier Rehabilitation Phase 2 Construction and Office Space Modifications cost estimates have increased in the FY23 Proposed CIP Budget to \$160.0 million and \$13.8 million, respectively.

In the second half of the FY22, MWRA also anticipates substantial completion on major contracts including Clinton Valves and Pipe Replacement, Winsor Station Pipeline Shaft 2 Construction, Spot Pond Supply Mains Walnut Street Bridge Truss-Construction, Weston Aqueduct Sluice Gates – Construction, Carroll Water Treatment Plant Sodium Hypochlorite System Modifications, Cosgrove Facility Storage, Metro Redundancy Interim Improvements CP-1 Shafts 6, 8, & 9A, Wastewater Metering Equipment & Installation, and Marlborough Emergency Pump Connection.

ATTACHMENTS:

- A. FY22 CIP Variance Explanations through December 2021
- B. FY22 CIP Contract Award Update

**ATTACHMENT A
FY22 CIP Year-to-Date Variance Report (\$000's)**

	FY22 Budget YTD December	FY22 Actuals YTD December	YTD Actuals vs. Budget		Explanations
			\$	%	
Wastewater					
Interception & Pumping (I&P)	\$22,577	\$18,681	(\$3,896)	-17.3%	<u>Underspending</u> Prison Point Design CA/RI and Construction: \$2.7M (updated construction schedule) Ward Street & Columbus Park Headworks - Design/CA: \$1.7M (completed some design and inspection tasks later than anticipated) Interceptor Renewal No. 3, Dorchester Interceptor Sewer - Construction: \$846k (timing of contractor work. Contract is substantially complete.) Fuel Oil Tank Replacement - Phase 1 Construction: \$226k (fabrication of tank top slabs at Gillis Pumping Station taking longer than anticipated) <u>Offset Overspending</u> Chelsea Creek Headworks Upgrades - Construction, CA and REI: \$1.6M, and Nut Island Odor Control & HVAC Improvements Phase 2 - Construction: \$715k (work scheduled for FY21 performed in FY22)
Treatment	\$6,709	\$4,063	(\$2,645)	-39.4%	<u>Underspending</u> Winthrop Terminal Facility (WTF) VFD Replacement - Construction: \$1.3M, Gravity Thickener Rehabilitation: \$676k, and Miscellaneous VFD Replacements FY19-FY23: \$350k (timing of work) Motor Control Center and Switchgear Replacement - Design/ESDC/REI: \$176k and Fire Alarm System Replacement - Design/CA: \$162k (updated construction schedules) Clarifier Rehabilitation Phase 2 - Design: \$153k (pending time extension) <u>Offset Overspending</u> Clinton Wastewater Treatment Plant Valves and Pipe Replacement: \$177k (contractor progress)
Residuals	\$0	\$14	\$14		
CSO	\$2,018	\$3,128	\$1,109	55.0%	<u>Overspending</u> East Boston CSO Control - BOS014: \$727k (work completed earlier than anticipated) Dorchester Inflow Removal Construction: \$572k (timing of payment)
Other Wastewater	\$12,590	\$10,415	(\$2,174)	-17.3%	<u>Underspending</u> I/I Local Financial Assistance: \$2.2M (timing of community distributions of grants and loans)
Total Wastewater	\$43,894	\$36,302	(\$7,592)	-17.3%	

**ATTACHMENT A
FY22 CIP Year-to-Date Variance Report (\$000's)**

	FY22 Budget YTD December	FY22 Actuals YTD December	YTD Actuals vs. Budget		Explanations
			\$	%	
Waterworks					
Drinking Water Quality Improvements	\$988	\$1,348	\$360	36.4%	<u>Overspending</u> CWTP As-Needed Technical Assistance: \$177k (greater than projected task order work) CP-7 Existing Facilities Modifications: \$91k (contractor progress)
Transmission	\$13,213	\$15,299	\$2,086	15.8%	<u>Overspending</u> Metropolitan Tunnel Redundancy Administration, Legal & Public Outreach: \$1.9M (timing of land purchase), and Program Support Services: \$258k (timing of consultant work) WASM/Spot Pond Supply Mains West Pressure Reducing Valves - Construction: \$994k, WASM 3 Rehabilitation, CP-1: \$284k, and CP1 Shafts 6, 8, 9A: \$172k (contractors progress) Wachusett Dam Bridge Crane Removal: \$291k (FY21 planned work completed in FY22) <u>Offset Underspending</u> Watershed Land: \$491k (timing of purchases) River Road Improvements-Wachusett: \$274k (timing of work) Tunnel Redundancy Preliminary Design & MEPA Review: \$252k and WASM 3 - MEPA/Design/CA/RI: \$251k (timing of consultant work) Winsor Station Pipeline Shaft 2 - Construction: \$186k (delays due to concrete issues) Weston Aqueduct Sluice Gates - Construction: \$167k (issues with hatches)
Distribution & Pumping	\$8,071	\$2,228	(\$5,843)	-72.4%	<u>Underspending</u> Section 89/29 Replacement - Construction and RE/RI Services: \$4.0M, and CP3-Sections 23, 24, 47 Final Design/CA/RI: \$642k (updated schedules) Sections 50 & 57 Water Rehabilitation - Design/ESDC; \$648k (contract scope reduction) SEH Redundancy Pipeline Phase 1 - Design/CA/RI: \$365k (Construction Administration and Resident Inspection services less than anticipated budgeted spending) <u>Offset Overspending</u> NEH Improvements Design - ESDC: \$294k (timing of consultant work)

ATTACHMENT A
FY22 CIP Year-to-Date Variance Report (\$000's)

	FY22 Budget YTD December	FY22 Actuals YTD December	YTD Actuals vs. Budget		Explanations
			\$	%	
Other Waterworks	\$8,547	\$4,814	(\$3,733)	-43.7%	<u>Underspending</u> Local Water Pipeline Financial Assistance Program: \$3.3M (timing of community distributions) Water System Hydraulic Model: \$254k (slower than anticipated start-up) <u>Offset Overspending</u> CWTP SCADA Upgrades Construction: \$211k (contractor progress)
Total Waterworks	\$30,819	\$23,689	(\$7,131)	-23.1%	

**ATTACHMENT A
FY22 CIP Year-to-Date Variance Report (\$000's)**

	FY22 Budget YTD December	FY22 Actuals YTD December	YTD Actuals vs. Budget		Explanations
			\$	%	
Business & Operations Support					
Total Business & Operations Support	\$5,289	\$2,156	(\$3,133)	-59.2%	<u>Underspending</u> As-Needed Technical Assistance and CS/REI Services: \$1.8M (lower than projected task order work) FY19-23 Vehicle Purchases: \$555k (due to timing) Enterprise Content Management: \$167k, Edge Switches: \$156k, Instrumentation & Controls: \$155k, and Servers: \$143k (timing of work)
Total MWRA	\$80,002	\$62,146	(\$17,855)	-22.3%	

ATTACHMENT B
FY22 Planned Contract Awards (\$\$ in Millions)

Program / Project	Contract No.	Subphase	Notice to Proceed	Revised Notice to Proceed	Total Contract Amount (\$ in millions)	Award Amount (\$ in millions)	Vendor	Schedule Change Reason Code *
IT Infrastructure Program	7802	Future Workplace	Jul-21	Jul-22	\$0.5			5
Facility Asset Protection	7462	Prison Point Rehab - Construction	Jul-21	Oct-21	\$42.5	\$39.5	Barletta Heavy Division	1
Waterworks Facility Asset Protection	7626	New Roofs at Water PS Construction	Jul-21	Dec-21	\$0.5	\$0.7	MDM Engineering Company	1
Waterworks Facility Asset Protection	7628	New Roofs at Water PS REI	Jul-21	Dec-21	\$0.3			2
Quabbin Transmission System	7788	Wachusett Lower Gate House Windows & Doors	Jul-21	Jul-21	\$0.3	\$0.6	J J Cardosi	1
Facility Asset Protection	7785	Chelsea Creek Headworks Radio Equipment	Aug-21	Mar-22	\$0.1			3
DI Treatment Plant Asset Protection	7420	MCC & Switchgear Replace Construction	Aug-21	Mar-22	\$11.2			3
DI Treatment Plant Asset Protection	7913	Replacement of Odor Control Dampers	Aug-21	Jan-22	\$0.5			3
Quabbin Transmission System	7697	Wach Bastion Rehab Construction	Aug-21	Feb-22	\$2.0	\$3.9	MAS Building & Bridge, Inc.	1
Application Improvement Program	7652	Hyperion	Sep-21	Sep-22	\$0.4			7
IT Infrastructure Program	7664	Instrumentation & Controls IT	Sep-21	Mar-22	\$0.3			6
Braintree-Weymouth Relief Facilities	7366	B/W Improvements - Construction	Sep-21	May-22	\$8.8			3
Braintree-Weymouth Relief Facilities	7683	B/W Improvements - REI	Sep-21	May-22	\$0.7			3
Facility Asset Protection	7689	Somerville-Marginal CSO Facility Rehab Des/CA	Sep-21	Jul-22	\$2.4			3
DI Treatment Plant Asset Protection	7052	Digester & Storage Tank Rehab Design/ESDC	Sep-21	Mar-22	\$4.1			3
DI Treatment Plant Asset Protection	7088	Odor Control Rehab - Design/ESDC	Sep-21	Jun-22	\$5.3			3
DI Treatment Plant Asset Protection	7169	Gas Protect System Replacement Phase 2	Sep-21	Jan-22	\$3.5			3
Clinton Wastewater Treatment Plant	7704	Screw Pump Replacement	Sep-21	Nov-21	\$3.5	\$3.5	IPC Lydon, LLC.	1
Cathodic Protection Of Distribution Mains	7610	Cathodic Protection Shafts N&W	Sep-21	Jun-22	\$2.5			3
Spot Pond Supply Mains Rehabilitation	7483	Walnut St Bridge Truss-Construction	Sep-21	Dec-21	\$0.2			3
Central Monitoring System	7582	CWTP SCADA Upgrade Construction	Sep-21	Sep-21	\$14.0	\$12.9	LeVangie Electric Company	1
Waterworks Facility Asset	7711	Masonry/Struct Rep Des/ESDC	Sep-21	May-22	\$1.3			3
Watershed Division Capital Improvement	7569	Quabbin Admin Building Concept Design Report	Sep-21	Dec-21	\$0.3			3
MWRA Facilities Management	7980	Office Space Modifications	Sep-21	Aug-22	\$2.0			3
Application Improvement Program	7286	Lawson Upgrade	Oct-21	Apr-22	\$7.6			3
Information Security Program ISP	7440	Inform Security Plan Implementation	Oct-21	Jan-00	\$0.4			2
Facility Asset Protection	7555	Fuel Oil Tank Repl Construction Phase 2	Oct-21	Apr-22	\$1.5			3
DI Treatment Plant Asset Protection	7051	Fire Alarm System Replacement - Construction	Oct-21	Oct-22	\$28.8			7
Section 80 Rehabilitation	6892	Section 80 Rehab Design/CA	Oct-21	Jul-23	\$2.5			2
Quabbin Transmission System	7380	Wach LGH Pipe Replacement Construction	Oct-21	Oct-22	\$4.1			2
Quabbin Transmission System	7717	Wach LGH Pipe Replacement REI	Oct-21	Oct-22	\$0.5			2
CWTP Asset Protection	7737	Corr Control Pipe Loop Study	Nov-21	Jan-00	\$0.5			2
CWTP Asset Protection	7755	CWTP Parapet Wall Repairs	Nov-21	Jul-22	\$0.5			2
Information Security Program ISP	7657	ITSM Access Management	Dec-21	Jan-24	\$0.3	\$0.1	Carahsoft Technology Corp.	1
Information Security Program ISP	7658	MSSP/SIEM	Dec-21	Dec-21	\$5.2			3
Facility Asset Protection	7508	Cottage Farm Chemical Building Improvement-Des	Dec-21	Apr-22	\$1.0			3
DI Treatment Plant Asset Protection	7134	Radio Repeater System Upgrade 2	Dec-21	Feb-22	\$2.5			3
DI Treatment Plant Asset Protection	7135	DI Dystor Membrane Replacements	Dec-21	Aug-22	\$4.0			7
DI Treatment Plant Asset Protection	7139	Cryogenics Plant Equipment Replace-Design	Dec-21	Apr-22	\$5.3			3
DI Treatment Plant Asset Protection	7426	Fire System Replacement - REI	Dec-21	Dec-22	\$2.1			7
Clinton Wastewater Treatment Plant	7371	Clinton WWTP Rehab Des/ESDC/RE	Dec-21	Dec-23	\$1.5			2
Clinton Wastewater Treatment Plant	7648	Digester Cover Replacement	Dec-21	Mar-22	\$0.8			3
Clinton Wastewater Treatment Plant	7735	Clinton Fire Alarm Replacement.	Dec-21	Jan-00	\$0.9			2
Clinton Wastewater Treatment Plant	7754	Landfill Cell #1 Closure	Dec-21	May-22	\$1.0			4
Waterworks Facility Asset	7729	Beacon St Line Des/ESDC	Dec-21	Jul-22	\$0.9			3
Quabbin Transmission System	7716	Wach Bastion Rehab REI	Dec-21	Feb-22	\$0.4			3
Application Improvement Program	7666	PI (OSI)	Jan-22	Jan-23	\$0.3			6
Facility Asset Protection	7550	Remote HW Shaft Access Improv-Construction	Jan-22	May-22	\$2.8			3
Facility Asset Protection	7781	Remote HW Shaft Access Impr. ESDC/REI	Jan-22	May-22	\$0.3			3
Residuals Asset Protection	7143	Residuals Facility Plan / EIR	Jan-22	Jan-00	\$1.0			2
Quabbin Transmission System	7726	Wach LGH Bld Rehab REI	Jan-22	Jan-00	\$0.3			2
Metro Redundancy Interim Improvements	7562	CHEPS Improvements Construction	Jan-22	Jul-22	\$3.0			7
Metro Redundancy Interim Improvements	7669	CHEPS Improvements REI	Jan-22	Jul-22	\$0.6			7
Metro Redundancy Interim Improvements	7671	CP2 Shafts 5, 9	Jan-22	Apr-22	\$2.5			6
Metro Redundancy Interim Improvements	7702	CP2 Tops of Shafts REI	Jan-22	Dec-22	\$0.3			6
Chelsea Trunk Sewer	7915	Chelsea 008 Conn. Relief	Feb-22	Feb-22	\$0.6			3
New Connect Mains-Shaft 7 to WASM 3	6392	CP3-Sect 23,24,47, Rehab	Feb-22	Feb-22	\$14.7	\$26.8	Albanese D & S	1

ATTACHMENT B
FY22 Planned Contract Awards (\$s in Millions)

Quabbin Transmission System	7789	Wach LGH Roof & Repointing	Feb-22	Feb-24	\$0.4			6
Metro Redundancy Interim Improvements	7672	Waltham Water Pipeline REI	Feb-22	Feb-22	\$1.0			3
Metro Redundancy Interim Improvements	7457	Waltham Water Pipeline Construction	Feb-22	Feb-22	\$13.8			3
Metro Redundancy Interim Improvements	7547	Waltham Water Pipeline CA	Feb-22	Feb-22	\$1.5			3
IT Infrastructure Program	7662	Edge Switches	Mar-22	Mar-22	\$1.4	\$0.4	ePlus Technology, Inc.	1
DI Treatment Plant Asset Protection	7395	Clarifier Rehab Phase 2 - Construction	Mar-22	Jun-22	\$149.0			3
DI Treatment Plant Asset Protection	7397	Clarifier Rehab Phase 2 - REI	Mar-22	Jun-22	\$3.0			3
Cathodic Protection Of Distribution Mains	7950	Cathodic Protection Metro South DES/CA	Mar-22	Jul-22	\$4.6			6
Facility Asset Protection	7827	Hingham Pump Station Rehab Des	Apr-22	Oct-22	\$0.9			7
Northern Extra High Service New Pipeline	6522	CP-1 NEH Improvements	Apr-22	Apr-22	\$4.4			3
Northern Extra High Service New Pipeline	7724	NEH Improvements REI	Apr-22	Apr-22	\$2.6			3
CWTP Asset Protection	7598	Soda Ash & Ammonia Equip Repl	Apr-22	Apr-22	\$3.0			3
Quabbin Transmission System	7698	Wach LGH Bld Boiler & Lead Reh	Apr-22	Jan-00	\$0.7			2
Dam Projects	7615	Sudbury/Foss Dam Const	Apr-22	Jul-23	\$1.8			6
Metro Redundancy Interim Improvements	7670	CP3 Shafts 7, 7B, 7C, 7D	Apr-22	Dec-22	\$2.5			6
Metro Redundancy Interim Improvements	7703	CP3 Tops of Shafts REI	Apr-22	Apr-22	\$0.3			6
MWRA Facilities Management	6983	Design/Engineering Services Demolition of DI Old A	May-22	May-22	\$0.7			2
Siphon Structure Rehabilitation	6225	Construction	May-22	Jul-22	\$8.3			4
Residuals Asset Protection	7145	Residuals Facility Upgrades - Design	May-22	Aug-22	\$2.0			5
Rehabilitation of Other Pump Stations	7526	PS Rehab-Des/CA	May-22	May-23	\$3.9			6
DI Treatment Plant Asset Protection	6730	CHP Des/ESDC/REI	Jun-22	Oct-22	\$5.6			7
DI Treatment Plant Asset Protection	7734	DITP Roofing Replacement	Jun-22	Jun-22	\$3.0			3
Watershed Divsion Capital Improvements	7752	Quabbin Water Supply Des/CA/RI	Jun-22	Jun-22	\$0.3			3
FY22 80 Anticipated Contract Awards 9 Planned Contract Awards					\$420.0	\$88.4		
Unplanned Awards								
Carroll Water Treatment Asset Protection	7791	Marlborough Pump Station Emergency Connectio	Sep-21	Oct-21	\$0.5	\$0.9	GVC Construction & Engr. Inc.	1


10 Total Awards Through December 2021.

\$89.3

*** Reason Codes:**

1. NTP issued in FY22
2. Project/Phase eliminated or being performed in-house; combined with another project, or phase completed but on hold.
3. NTP expected in FY22.
4. Schedule change due to permitting.
5. Scope changes.
6. Changes in priorities/scheduling
7. Bidder Issue/Outside Design Delay/Contractor issue/Additional specifications review

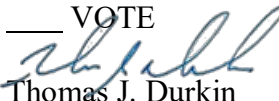
STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: February 16, 2022
SUBJECT: FY22 Financial Update and Summary through January 2022

COMMITTEE: Administration, Finance & Audit

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

X INFORMATION
 VOTE


Thomas J. Durkin
Director, Finance

RECOMMENDATION:

For information only. This staff summary provides the financial results and variance highlights for Fiscal Year 2022 through January 2022, comparing actual spending to the budget, and includes a projection to June 30, 2022.

DISCUSSION:

MWRA is continuing the practice of setting aside favorable Capital Finance variances into the Defeasance Account with the intention of recommending Board approval to use these funds to defease debt and provide rate relief in future years. Targeted defeasances are a critical component of the Authority's multi-year rate management strategy. As such, in January the year-to-date debt related savings of \$7.7 million was transferred to the Defeasance Account. This variance is primarily due to lower than budgeted variable interest expense.

The total Year-to-Date variance for the FY22 CEB is \$14.9 million, due to lower direct expenses of \$13.4 million, lower indirect expenses of \$0.3 million, and higher revenue of \$1.2 million. The year-end favorable variance is projected at \$32.3 million, of which \$15.7 million is related to debt service. Beyond debt service savings, staff project a surplus of approximately \$16.6 million at year-end of which \$12.6 million would be from lower direct expenses, \$1.3 million from lower indirect expenses, and \$2.7 million from greater than budgeted revenues.

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

FY22 Current Expense Budget

The CEB expense variances through January 2022 by major budget category were:

- Lower Direct Expenses of \$13.4 million or 9.2% under budget. Spending was lower for Wages & Salaries, Maintenance, Professional Services, Fringe Benefits, Other Materials, Worker's Compensation, Chemicals, Other Services, Training & Meetings, and Overtime. Spending was higher than budget for Utilities.
- Lower Indirect Expenses of \$0.3 million or 1.0% under budget primarily due to lower Watershed Reimbursements. Spending was higher for insurance payments/claims.
- Debt Service expenses were right on budget after the transfer to the defeasance account, driven by lower than budgeted variable interest expense and the impact of the refunding and new money transactions.

FY22 Budget and FY22 Actual Variance by Expenditure Category
(in millions)

	FY22 Budget YTD	FY22 Actual YTD	\$ Variance	% Variance
Direct Expenses	\$144.8	\$131.4	-\$13.4	-9.2%
Indirect Expenses	\$28.5	\$28.2	-\$0.3	-1.0%
Capital Financing	\$262.2	\$262.2	\$0.0	0.0%
Total	\$435.5	\$421.9	-\$13.6	-3.1%

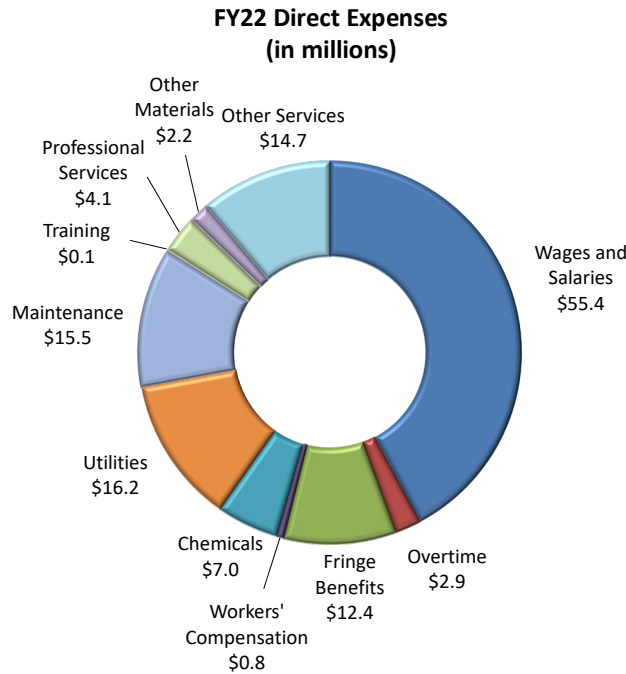
Totals may not add due to rounding

Total Revenues of \$472.4 million were \$1.2 million or 0.3% over budget due to higher Other Revenue and Other User Charges.

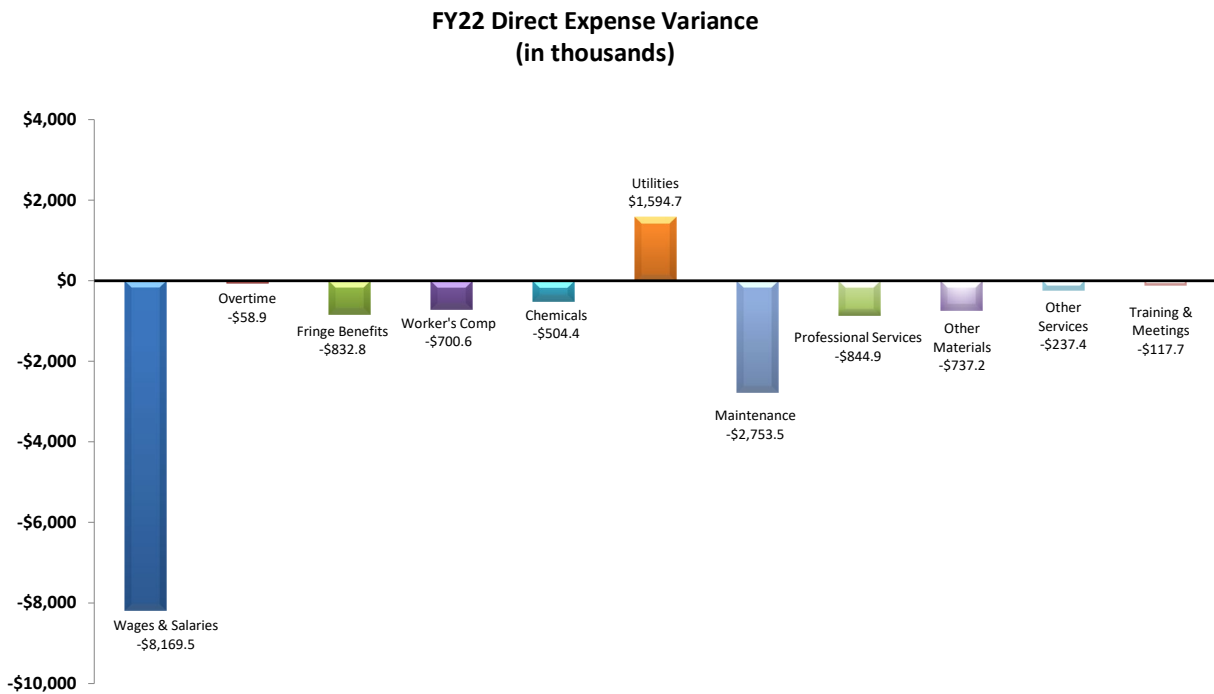
Please refer to Attachment 1 for a more detailed comparison by line item of the budget variances for FY22.

Direct Expenses

FY22 direct expenses through January totaled \$131.4 million, which was \$13.4 million or 9.2% less than budgeted.

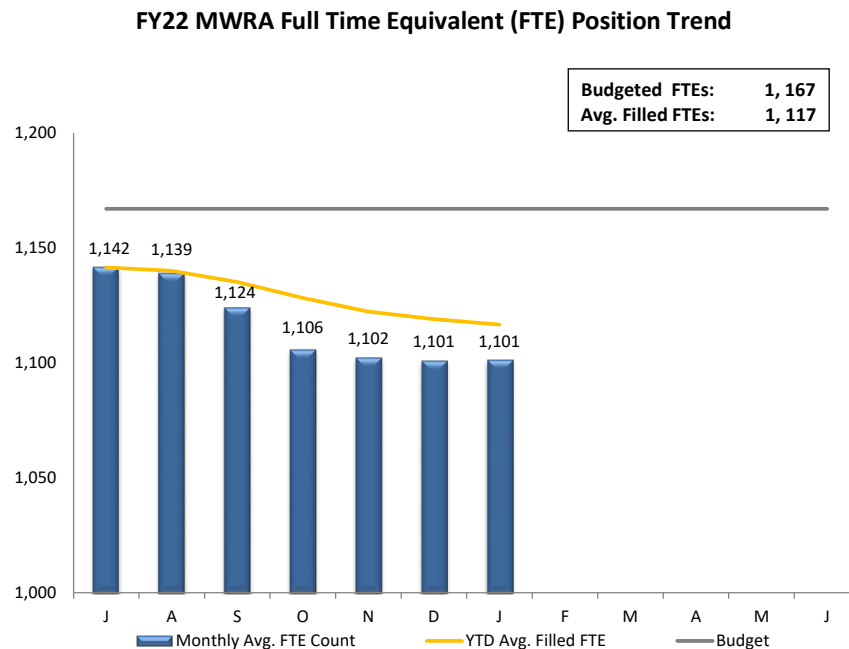


Lower spending for Wages & Salaries, Maintenance, Professional Services, Fringe Benefits, Other Materials, Worker's Compensation, Chemicals, Other Services, Training & Meetings, and Overtime. Spending was higher than budget for Utilities.



Wages and Salaries

Wages and Salaries are under budget by \$8.2 million or 12.8%. Through January, there were 50 fewer average FTEs (1,117 versus 1,167 budget) or 4.3% and lower average salaries for new hires versus retirees. The timing of backfilling vacant positions also contributed to Regular Pay being under budget.



Maintenance

Maintenance was less than budget by \$2.8 million or 15.1%, largely driven by the timing of projects. Maintenance Services are under budget by \$1.4 million driven by Plant and Machine Services of \$439,000 primarily due to timing of Deer Island scrubber work, less than expected boiler work and a delay on the final invoice for the Deer Island coating contract, Building and Grounds Services of \$395,000 due to timing of service contracts, Special Equipment Services of \$341,000 primarily due to timing of service contracts and a lower award than budgeted for the telephone system maintenance contract, and Computer Services of \$150,000 due to HP and Cisco Smartnet renewal contracts being less than budgeted and the Distributed Antenna System Support agreement at Deer Island being delayed. Maintenance Materials are under budget by \$1.4 million, driven by Plant and Machine Materials of \$643,000, Special Equipment Materials of \$339,000, Pipe Materials of \$212,000, and HVAC Materials of \$170,000, all largely due to timing.

Professional Services

Professional Services were lower than budget by \$0.8 million or 16.9%. The overall underspending is driven by lower spending in Computer Systems Consultant of \$656,000 in MIS primarily due to a reduction in scope for Managed Security Service Provider (MSSP) Year 5 monitoring extension and a delay in Internet/Intranet Pipeline project, and Engineering of \$190,000 primarily in Field Operations.

Fringe Benefits

Fringe Benefit spending was lower than budget by \$0.8 million or 6.3%. This is primarily driven by lower Health Insurance costs of \$627,000 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.

Other Materials

Other Materials were lower than budget by \$0.7 million or 25.1%, driven by less than budgeted spending for Other Materials of \$412,000 primarily due to funding for the office space modifications now coming from the CIP, Vehicle Purchases/Replacements of \$93,000, Computer Software of \$88,000, Equipment/Furniture of \$88,000, and Office Supplies of \$57,000, all largely due to the timing of purchasing. This underspending was partially offset by Computer Hardware of \$107,000 in MIS due to additional hardware purchased for teleworking.

Worker's Compensation

Worker's Compensation expenses were lower than budget by \$0.7 million or 45.9%. The lower expenses were primarily due to favorable variances in compensation payments of \$428,000, medical payments of \$232,000, and administrative expenses of \$41,000. Due to uncertainties of when spending will happen, the budget is spread evenly throughout the year.

Chemicals

Chemicals were lower than budget by \$0.5 million or 6.8%. Lower than budget spending on Hydrogen Peroxide of \$306,000 driven by Deer Island based on usage as excessive rainfall helped lower H₂S levels, Polymer of \$132,000 driven by Deer Island due to less usage for centrifuge operations, and Soda Ash of \$126,000 driven by Water Operations due to lower average flows at Carroll. Deer Island flows are 23.2% higher than the budget and Carroll preliminary flows are 3.6% lower than the budget through January. It is important to note that Chemical variances are also based on deliveries which in general reflect the usage patterns. However, the timing of deliveries is an important factor.

Other Services

Other Services were lower than budget by \$0.2 million or 1.6%. Lower than budgeted spending for Telecommunication costs of \$51,000, Space/Lease Rentals of \$48,000, Health/Safety of \$47,000, and Sludge Pelletization of \$29,000 due to lower sludge quantities.

Training & Meetings

Training & Meetings expenses were lower than budget by \$0.1 million or 45.0% driven by reduced spending during the pandemic, as well as the timing of spending.

Overtime

Overtime expenses were less than budget by \$59,000 or 2.0%. Lower spending mainly in Field Operations of \$162,000 and Engineering & Construction of \$62,000 are partially offset by higher spending at Deer Island of \$129,000 for storm and shift coverage. Year-to-date rainfall was a major contributor for the increased overtime. In addition, vacancies at the Deer Island Thermal/Power Plant continue to drive higher overtime costs than anticipated.

Utilities

Utilities were greater than budget by \$1.6 million or 10.9%. Overspending in Electricity of \$2.0 million primarily at Deer Island of \$1.4 million driven by power demand charges being more than budgeted based on flows, Transition and Distribution (T&D) rates from Eversource, and higher real time market prices for the non-block purchases under the Direct Energy contract. Also, Field Operations of \$0.7 million is over budget primarily due to new T&D rates and quantity. Diesel Fuel is underspent by \$0.3 million driven by Deer Island Treatment Plant due to timing of deliveries.

Indirect Expenses

Indirect Expenses totaled \$28.2 million, which is \$0.3 million or 1.0% under budget. The variance is driven by lower Watershed Reimbursements of \$413,000 and slightly lower HEEC costs of \$31,000, partially offset by higher insurance premiums/claims of \$169,000.

Based on FY22 operating activity only, the Watershed Division is \$482,000 or 5.2% under budget. Lower spending on Wages & Salaries, Professional Services, and Telecommunications are the drivers. When factoring in the FY21 balance forward (\$69,000) which was paid during Q1 of FY22, Watershed Reimbursement is \$413,000 or 4.5% below budget through January 2022.

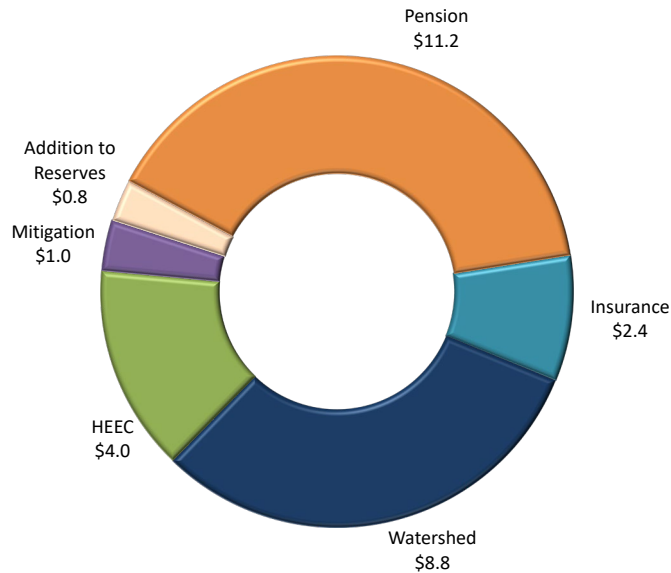
FY22 Watershed Variance

\$ in millions	YTD Budget	YTD Actual	YTD \$ Variance	YTD % Variance
Operating Expenses	9.8	9.4	-0.4	-3.7%
Operating Revenues - Offset	0.6	0.7	0.1	20.4%
FY22 Operating Totals	9.2	8.7	-0.5	-5.2%
DCR Balance Forward (FY21 4th quarter accrual true-up)	0.0	0.1	0.1	
FY22 Adjusted Operating Totals	9.2	8.8	-0.4	-4.5%
PILOT	0.0	0.0	0.0	0.0%
Total Watershed Reimbursement	9.2	8.8	-0.4	-4.5%

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 quarterly in arrears. Accruals are being made monthly based on estimated expenses provided by DCR and true-up quarterly based on the quarterly invoice. MWRA's budget is based on the annual Fiscal Year Work Plan approved by the Massachusetts Water Supply Protection Trust. The FTE count at the end of January was 137 (and 132.7 on a year-to-date basis) vs. a budget of 150.

**FY22 Indirect Expenses
(in millions)**

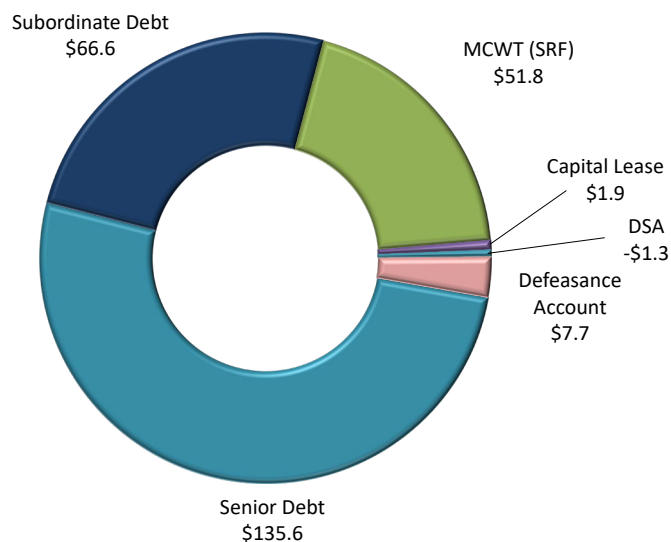


Capital Financing

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

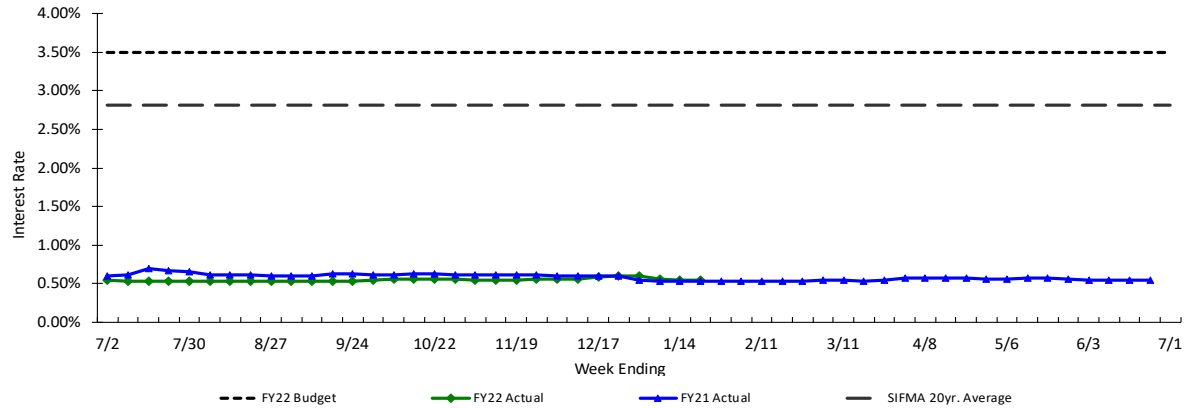
Capital Financing expenses for FY22 through January totaled \$262.2 million, which is on the budget after the transfer of \$7.7 million to the Defeasance account, driven by lower than budgeted variable interest expense of \$6.0 million due to lower interest rates, and \$1.7 million related to the refunding and new money transaction.

**FY22 Capital Finance
(\$ in millions)**



The graph below reflects the FY22 actual variable rate trend by week against the FY22 Budget.

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



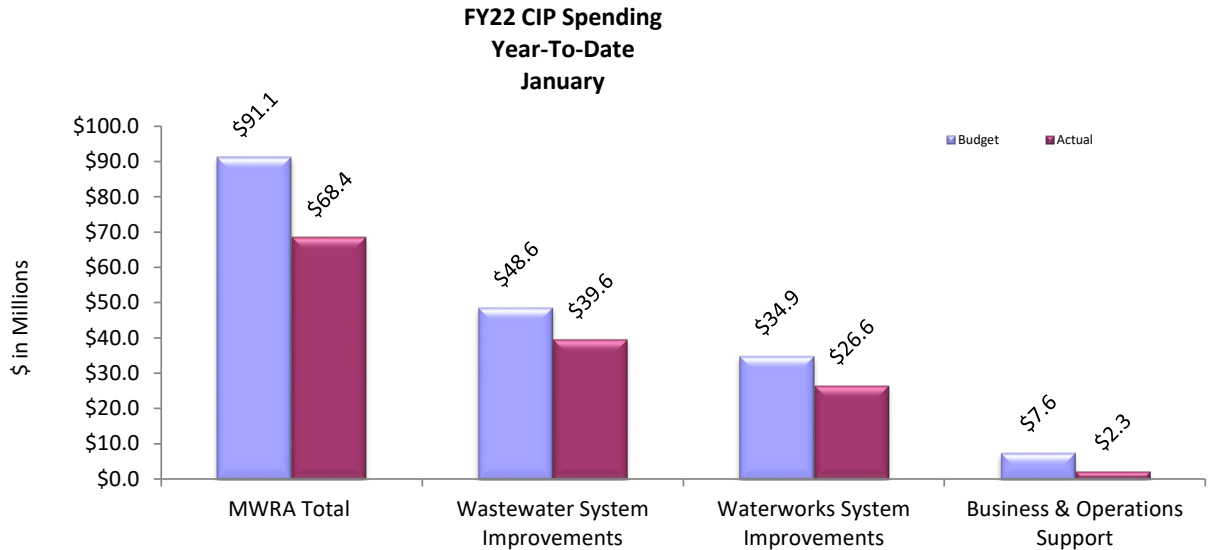
Revenue & Income

Revenues of \$472.4 million were \$1.2 million or 0.3% over budget. Other Revenue was \$0.8 million or 15.3% over budget due to Miscellaneous Revenue of \$438,000 driven by the reimbursement from the Commonwealth of Massachusetts for Biobot costs associated with FY21, Income from the Disposal of Equipment of \$311,000, and Energy Rebates of \$172,000, partially offset by lower Permit Fees of \$228,000 due to timing. Other User Charges were over budget by \$0.4 million or 7.0% primarily for unplanned water use by the Town of Burlington. Investment Income was \$23,000 or 1.0% slightly over budget due to higher than budgeted average balances offset by lower than budgeted interest rates (0.50% actual vs. 0.54%).

FY22 Capital Improvement Program

Capital expenditures in Fiscal Year 2022 through January total \$68.4 million, \$22.7 million or 24.9% under budget.

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 \$51.4 million, \$18.5 million or 26.5% under budget.



Overall, CIP spending reflects the underspending in Wastewater Improvements (\$9.0 million), Waterworks (\$8.4 million) and Business and Operations Support (\$5.3 million). Major variances in Wastewater are primarily due to updated schedule for the Prison Point Rehabilitation contract, timing of community grants and loans for the I/I Local Financial Assistance Program, timing of work for the Winthrop Terminal Facility VFD Replacement and Gravity Thickener contracts, and completion of some design and inspection tasks later than anticipated for the Ward Street and Columbus Park Headworks Upgrades Design/ESDC. This was partially offset by planned FY21 work completed in FY22 for the Chelsea Creek Headworks Upgrades and NI Odor Control and HVAC Improvements.

Waterworks variances are primarily due to updated schedules for NIH Section 89 & 29 Replacement and New Connecting Mains CP3 - Sections 23, 24, 47 Final Design/CA/RI, timing of community loan distributions for the Water Loan Program, and reduction in scope for Sections 50 & 57 Water Pipeline. This was partially offset by an earlier than anticipated land purchase for the Metropolitan Tunnel Redundancy Administration, Legal, Public Outreach contract, contractor progress for WASM 3 Rehabilitation, CP-1 and WASM/Spot Pond Supply Mains Pressure Reducing Valves Construction, and timing of work for the Tunnel Program Support Services.

**FY22 Budget and FY22 Actual Variance by Program
(in millions)**

\$ in Millions	Budget	Actuals	\$ Var.	% Var.
Wastewater System Improvements				
Interception & Pumping	26.3	20.6	(5.7)	-21.7%
Treatment	7.6	4.0	(3.6)	-47.3%
Residuals	0.0	0.0	0.0	0.0%
CSO	2.1	4.6	2.4	115.5%
Other	12.6	10.4	(2.2)	-17.3%
Total Wastewater System Improvements	\$48.6	\$39.6	(\$9.0)	-18.5%
Waterworks System Improvements				
Drinking Water Quality Improvements	1.3	1.6	0.3	26.4%
Transmission	15.1	17.6	2.5	16.4%
Distribution & Pumping	9.6	2.5	(7.2)	-74.4%
Other	8.9	4.9	(4.0)	-45.2%
Total Waterworks System Improvements	\$34.9	\$26.6	(\$8.4)	-23.9%
Business & Operations Support	\$7.6	\$2.3	(\$5.3)	-69.9%
Total MWRA	\$91.1	\$68.4	(\$22.7)	-24.9%

Totals may not add due to rounding

FY22 Spending by Program:

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

Water Distribution and Pumping: Net underspending of \$7.2 million

- \$4.8 million for Section 89 & 29 Replacement Construction and REI and \$0.7 million for CP-3 CP3-Sections 23, 24, 47 Final Design/CA/RI due to updated schedules.
- \$0.6 million for Sections 50 & 57 Water Rehabilitation - Design/ESDC due to contract scope reduction.
- \$0.4 million for SEH Redundancy Design CA/RI due to less than anticipated budgeted spending.
- This underspending was partially offset by overspending of \$0.2 million for NEH Improvements Design-ESDC due to timing of consultant work.

Interception & Pumping: Net underspending of \$5.7 million

- \$3.9 million for Prison Point Design CA/RI and Construction due to updated construction schedule.
- \$1.8 million for Ward Street & Columbus Park Headworks - Design/CA due to completion of some design and inspection tasks later than anticipated.
- \$0.8 million for Interceptor Renewal No. 3, Dorchester Interceptor Sewer – Construction due to timing of contractor work. Contract is substantially complete.
- This underspending was partially offset by overspending of \$1.6 million for Chelsea Creek Headworks Upgrades - Construction and REI, and \$0.2 million for Nut Island Odor Control & HVAC Improvements Phase 2 – Construction due to work scheduled for FY21 performed in FY22.

Business & Operations Support: Net underspending of \$5.3 million

- \$2.0 million for As-Needed Technical Assistance and Resident Engineering and Inspection Services due to lower than projected task order work, \$0.7 million for Vehicle Purchases due to timing of purchases, and \$0.4 million for Cabling, \$0.3 million for Enterprise Content Management, \$0.2 million for Instrumentation & Controls all due to timing of work, and \$0.2 million for Office Space Modifications due to updated schedule.

Other Waterworks: Net underspending of \$4.0 million

- \$3.3 million for Local Financial Assistance due to timing of community loan distributions.
- \$0.3 million for Water System Hydraulic Model due to slower than anticipated start-up.
- \$0.2 million for CWTP SCADA Upgrades Design/Programming/RE due to time extension.

Other Wastewater: Net underspending of \$2.2 million

- \$3.3 million for Community I/I due to timing of community distributions of grants and loans.
- \$0.3 million for Water System Hydraulic Model due to lower than anticipated start-up.

Wastewater Treatment: Net underspending of \$3.6 million

- \$1.8 million for Winthrop Terminal Facility VFD and Motors Replacements, \$0.6 million for Gravity Thickener Rehabilitation, and \$0.4 million for Miscellaneous VFD Replacements due to timing of work.
- \$0.2 million each for Motor Control Center and Switchgear Replacement - Design/ESDC/REI, Fire Alarm System Replacement - Design/CA, and Clinton Screw Pump Replacement due to updated construction schedules.
- \$0.1 million for Clarifier Rehab Phase 2 Design due to time extension.

Waterworks Transmission: Net overspending of \$2.5 million

- \$1.9 million for Metropolitan Tunnel Redundancy Administration, Legal & Public Outreach due to earlier than anticipated land purchase.
- \$1.3 million for WASM 3 Rehabilitation, CP-1, and \$1.1 million for WASM/Spot Pond Supply Mains Pressure Reducing Valves Improvements due to contractor progress.
- \$0.3 million for Wachusett Dam Bridge Crane Removal for FY21 planned work completed in FY22.
- \$0.3 million for Program Support Services due to timing of consultant work.
- This overspending was partially offset by underspending of \$0.6 million for Tunnel Redundancy Preliminary Design & MEPA Review and \$0.3 million for WASM 3 Design due to timing of consultants work, and \$0.5 million for Watershed Land due to timing of land purchases.

Combined Sewer Overflow: Net overspending of \$2.4 million

- \$1.4 million for Somerville Marginal In-System Storage due to timing of payment.
- \$0.7 million for East Boston CSO Control - BOS014 due to work completed earlier than anticipated.
- \$0.6 million for Dorchester Inflow Removal Construction due to timing of payment.

Drinking Water Quality Improvements: Net overspending of \$0.3 million

- \$0.2 million for As-Needed Technical Assistance due to greater than projected task order work.

Construction Fund Balance

The construction fund balance was \$151.4 million as of the end of January. Commercial Paper/Revolving Loan available capacity was \$197 million.

ATTACHMENTS:

Attachment 1 – Variance Summary January 2022

Attachment 2 – Current Expense Variance Explanations

Attachment 3 – Capital Improvement Program Variance Explanations

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

ATTACHMENT 1
FY22 Actuals vs. FY22 Budget

	Jan 2022 Year-to-Date				
	Period 7 YTD Budget	Period 7 YTD Actual	Period 7 YTD Variance	%	FY22 Approved
EXPENSES					
WAGES AND SALARIES	\$ 63,595,589	\$ 55,426,055	\$ (8,169,534)	-12.8%	\$ 116,680,341
OVERTIME	2,941,830	2,882,919	(58,911)	-2.0%	5,156,681
FRINGE BENEFITS	13,270,954	12,438,124	(832,830)	-6.3%	23,253,137
WORKERS' COMPENSATION	1,524,926	824,373	(700,553)	-45.9%	2,614,159
CHEMICALS	7,457,695	6,953,279	(504,416)	-6.8%	12,202,286
ENERGY AND UTILITIES	14,631,640	16,226,320	1,594,680	10.9%	24,749,865
MAINTENANCE	18,275,464	15,521,948	(2,753,516)	-15.1%	32,442,382
TRAINING AND MEETINGS	261,776	144,091	(117,685)	-45.0%	473,994
PROFESSIONAL SERVICES	4,989,520	4,144,643	(844,877)	-16.9%	8,773,258
OTHER MATERIALS	2,932,962	2,195,754	(737,208)	-25.1%	8,334,774
OTHER SERVICES	14,908,729	14,671,317	(237,412)	-1.6%	25,129,234
TOTAL DIRECT EXPENSES	\$ 144,791,085	\$ 131,428,823	\$ (13,362,264)	-9.2%	\$ 259,810,111
INSURANCE	\$ 2,275,154	\$ 2,444,593	\$ 169,439	7.4%	\$ 3,943,600
WATERSHED/PILOT	9,189,264	8,775,828	(413,436)	-4.5%	26,731,490
HEEC PAYMENT	4,033,819	4,002,435	(31,384)	-0.8%	6,991,953
MITIGATION	976,938	976,938	-	0.0%	1,693,360
ADDITIONS TO RESERVES	814,988	814,988	-	0.0%	1,412,647
RETIREMENT FUND	11,205,000	11,205,000	-	0.0%	11,205,000
POST EMPLOYEE BENEFITS	-	-	-	---	4,673,624
TOTAL INDIRECT EXPENSES	\$ 28,495,163	\$ 28,219,782	\$ (275,381)	-1.0%	\$ 56,651,674
STATE REVOLVING FUND	\$ 51,787,209	\$ 51,787,209	\$ -	0.0%	\$ 95,673,399
SENIOR DEBT	137,294,986	135,613,241	(1,681,745)	-1.2%	244,957,128
DEBT SERVICE ASSISTANCE	(1,287,870)	(1,287,870)	-	0.0%	(1,287,870)
CURRENT REVENUE/CAPITAL	-	-	-	---	17,200,000
SUBORDINATE MWRA DEBT	72,558,909	72,558,909	-	0.0%	125,046,218
LOCAL WATER PIPELINE CP	-	-	-	---	6,120,127
CAPITAL LEASE	1,855,996	1,855,996	-	0.0%	3,217,060
VARIABLE DEBT	-	(6,005,140)	(6,005,140)	---	-
DEFEASANCE ACCOUNT	-	7,686,886	7,686,886	---	-
DEBT PREPAYMENT	-	-	-	---	5,609,355
TOTAL CAPITAL FINANCE EXPENSE	\$ 262,209,230	\$ 262,209,230	\$ -	0.0%	\$ 496,535,417
TOTAL EXPENSES	\$ 435,495,478	\$ 421,857,836	\$ (13,637,645)	-3.1%	\$ 812,997,202
REVENUE & INCOME					
RATE REVENUE	\$ 456,971,539	\$ 456,971,539	\$ -	0.0%	\$ 792,084,000
OTHER USER CHARGES	6,222,794	6,655,460	432,666	7.0%	9,222,883
OTHER REVENUE	5,008,806	5,775,317	766,511	15.3%	6,479,203
RATE STABILIZATION	721,154	721,154	-	0.0%	1,250,000
INVESTMENT INCOME	2,256,893	2,280,121	23,228	1.0%	3,961,116
TOTAL REVENUE & INCOME	\$ 471,181,186	\$ 472,403,591	\$ 1,222,405	0.3%	\$ 812,997,202

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY22 Budget YTD January	FY22 Actuals January	FY22 YTD Actual vs. FY22 Budget		Explanations
			\$	%	
Direct Expenses					
Wages & Salaries	63,595,589	55,426,055	(8,169,534)	-12.8%	Wages and Salaries are under budget by \$8.2 million. Year to date, there have been 50 fewer average FTEs (1,117 versus 1,167 budget), lower average new hire salaries versus retirees, the timing of backfilling vacant positions.
Overtime	2,941,830	2,882,919	(58,911)	-2.0%	Overtime expenses were less than budget by \$59,000 or 2.0%. Lower spending mainly in Field Operations of \$162,000 and Engineering & Construction of \$62,000 are partially offset by higher spending at Deer Island of \$129,000 for storm and shift coverage. Year-to-date rainfall was a major contributor for the increased overtime. In addition, vacancies at the Thermal Power Plant continue to drive higher overtime costs than anticipated.
Fringe Benefits	13,270,954	12,438,124	(832,830)	-6.3%	Lower than budget in Health Insurance of \$627,000, 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.
Worker's Compensation	1,524,926	824,373	(700,553)	-45.9%	The lower expenses were due to favorable variances in Compensation Payments of \$428,000, Medical Payments of \$232,000, and Administrative Expenses of \$41,000. Due to uncertainties of when spending will happen, the budget is spread evenly throughout the year.
Chemicals	7,457,695	6,953,279	(504,416)	-6.8%	Chemicals were lower than budget by \$0.5 million or 6.8%. Lower than budget spending on Hydrogen Peroxide of \$306,000 driven by DITP based on usage as excessive rainfall helped lower H2S levels, Polymer of \$132,000 driven by DITP due to less usage for centrifuge operations, and Soda Ash of \$126,000 driven by Water Operations due to lower average flows at CWTP. DITP flows are 23.2% higher than the budget and CWTP preliminary flows are 3.6% lower than the budget through January. It is important to note that Chemical variances are also based on deliveries which in general reflect the usage patterns. However, the timing of deliveries is an important factor.
Utilities	14,631,640	16,226,320	1,594,680	10.9%	Utilities were greater than budget by \$1.6 million or 10.9%. Overspending in Electricity of \$2.0 million primarily at DITP of \$1.4 million driven by power demand charges being more than budgeted based on flows, T&D rates from Eversource, and higher real time market prices for the non-block purchases under the Direct Energy contract. Also, Field Operations of \$0.7 million is over budget primarily due to new T&D rates and quantity. Diesel Fuel is underspent by \$0.3 million driven by Deer Island Treatment Plant due to timing of deliveries.

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY22 Budget YTD January	FY22 Actuals January	FY22 YTD Actual vs. FY22 Budget		Explanations
			\$	%	
Maintenance	18,275,464	15,521,948	(2,753,516)	-15.1%	Maintenance was less than budget by \$2.8 million or 15.1%, largely driven by the timing of projects. <i>Maintenance Services</i> are under budget by \$1.4 million driven by Plant and Machine Services of \$439,000 primarily due to timing of DITP scrubber work, less than expected boiler work and a delay on the final invoice for the DITP coating contract, Building & Grounds Services of \$395,000 due to timing of service contracts, Special Equipment Services of \$341,000 primarily due to timing of service contracts and a lower award than budgeted for the telephone system maintenance contract, and Computer Services of \$150,000 due to HP and Cisco Smartnet renewal contracts being less than budgeted and the Distributed Antenna System Support agreement at DITP being delayed. <i>Maintenance Materials</i> are under budget by \$1.4 million, driven by Plant and Machine Materials of \$643,000, Special Equipment Materials of \$339,000, Pipe Materials of \$212,000, and HVAC Materials of \$170,000, all largely due to timing.
Training & Meetings	261,776	144,091	(117,685)	-45.0%	Lower than budget spending on Training & Meetings by \$118,000 is driven by MIS of \$68,000, Tunnel Redundancy of \$15,000, DITP of \$10,000, and Procurement of \$8,000, partially offset by higher spending in Engineering & Construction of \$10,000.
Professional Services	4,989,520	4,144,643	(844,877)	-16.9%	Lower than budget spending primarily for Computer Systems Consultant of \$656,000 in MIS primarily due to a reduction in scope of Managed Security Services Provider (MSSP) Year 5 monitoring extension and delay in Internet/Intranet Pipeline Upgrade project and Engineering of \$190,000 primarily in Field Operations.
Other Materials	2,932,962	2,195,754	(737,208)	-25.1%	Other Materials were lower than budget by \$0.7 million or 25.1%, driven by less than budgeted spending for Other Materials of \$412,000 primarily due to funding for the office space modifications now coming from the CIP, Vehicle Purchases/Replacements of \$93,000, Computer Software of \$88,000, Equipment/Furniture of \$88,000, and Office Supplies of \$57,000, all largely due to the timing of purchasing. This underspending was partially offset by Computer Hardware of \$107,000 in MIS due to additional hardware purchased for teleworking.
Other Services	14,908,729	14,671,317	(237,412)	-1.6%	Other Services were lower than budget by \$0.2 million or 1.6%. Lower than budgeted spending for Telecommunication costs of \$51,000, Space/Lease Rentals of \$48,000, Health/Safety of \$47,000, and Sludge Pelletization of \$29,000 due to lower sludge quantities.
Total Direct Expenses	144,791,085	131,428,823	(13,362,262)	-9.2%	

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY22 Budget YTD January	FY22 Actuals January	FY22 YTD Actual vs. FY22 Budget		Explanations
			\$	%	
Indirect Expenses					
Insurance	2,275,154	2,444,593	169,439	7.4%	Higher Payments/Claims of \$165,000 and higher Premiums of \$4,000 than budgeted.
Watershed/PILOT	9,189,264	8,775,828	(413,436)	-4.5%	Lower Watershed Reimbursement of \$0.4 million favorable variance to budget driven by lower spending on (1) Wages & Salaries, (2) Professional Services, and (3) Telecommunication costs.
HEEC Payment	4,033,819	4,002,435	(31,384)	-0.8%	Decrease is due to HEEC Revenue Requirement partially offset by HEEC O&M charge.
Mitigation	976,938	976,938	-	0.0%	
Addition to Reserves	814,988	814,988	-	0.0%	
Pension Expense	11,205,000	11,205,000	-	0.0%	
Post Employee Benefits	-	-	-		
Total Indirect Expenses	28,495,163	28,219,782	(275,381)	-1.0%	
Debt Service					
Debt Service	262,209,230	262,209,231	1	0.0%	Debt Service matches the budget after the transfer of \$7.7 million to the Defeasance account, driven by lower than budgeted variable interest expense of \$6.0 million due to lower interest rates and lower Senior Debt spending of \$1.7 million as a result of the refunding and new money transactions.
Debt Service Assistance			-		
Total Debt Service Expenses	262,209,230	262,209,231	1	0.0%	
Total Expenses					
Total Expenses	435,495,478	421,857,836	(13,637,642)	-3.1%	

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY22 Budget YTD January	FY22 Actuals January	FY22 YTD Actual vs. FY22 Budget		Explanations
			\$	%	
Revenue & Income					
Rate Revenue	456,971,539	456,971,539	-	0.0%	
Other User Charges	6,222,794	6,655,460	432,666	7.0%	Unplanned water use by the town of Burlington.
Other Revenue	5,008,806	5,775,317	766,511	15.3%	Other Revenue was \$0.8 million or 15.3% over budget due to Miscellaneous Revenue of \$438,000 driven by the reimbursement from the Commonwealth of Massachusetts for Biobot costs associated with FY21, Income from the Disposal of Equipment of \$311,000, and Energy Rebates of \$172,000, partially offset by lower Permit Fees of \$228,000 due to timing.
Rate Stabilization	721,154	721,154	-	0.0%	HEEC Reserve.
Investment Income	2,256,893	2,280,121	23,228	1.0%	Investment Income is slightly over budget is due to higher than budgeted average balances offset by lower than budgeted interest rates (0.50% actual vs. 0.54% budget).
Total Revenue	471,181,186	472,403,591	1,222,405	0.3%	
Net Revenue in Excess of Expenses	35,685,708	50,545,755	14,860,047		

**ATTACHMENT 3
FY22 CIP Year-to-Date Variance Report (\$000's)**

	FY22 Budget YTD January	FY22 Actuals YTD January	YTD Actuals vs. Budget		Explanations
			\$	%	
Wastewater					
Interception & Pumping (I&P)	\$26,341	\$20,618	(\$5,724)	-21.7%	<u>Underspending</u> Prison Point Design CA/RI and Construction: \$3.9M (updated construction schedule) Ward Street & Columbus Park Headworks Upgrades - Design/CA: \$1.8M (completed some design and inspection tasks later than anticipated) Interceptor Renewal No. 3, Dorchester Interceptor Sewer - Construction: \$846k (timing of contractor work. Contract is substantially complete.) <u>Offset Overspending</u> Chelsea Creek Headworks Upgrades - Construction, CA and REI: \$1.6M, and Nut Island Odor Control & HVAC Improvements Phase 2 - Construction: \$165k (work scheduled for FY21 performed in FY22)
Treatment	\$7,557	\$3,986	(\$3,572)	-47.3%	<u>Underspending</u> Winthrop Terminal Facility (WTF) VFD and Motors Replacement - Construction: \$1.8M, Gravity Thickener Rehabilitation: \$616k, and Miscellaneous VFD Replacements FY19-FY23: \$408k (timing of work) Motor Control Center and Switchgear Replacement - Design/ESDC/REI: \$209k and Fire Alarm System Replacement - Design/CA: \$189k and Clinton Screw Pump Replacement: \$160k (updated construction schedules) Clarifier Rehabilitation Phase 2 - Design: \$138k (time extension) <u>Offset Overspending</u> Chemical Tank and Digester Pipe: \$231k (timing of final work) Clinton Wastewater Treatment Plant Valves and Pipe Replacement: \$182k (contractor progress)
Residuals	\$0	\$14	\$14		
CSO	\$2,112	\$4,553	\$2,440	115.5%	<u>Overspending</u> Somerville Marginal In-System Storage: \$1.4M (timing of payment) East Boston CSO Control - BOS014: \$727k (work completed earlier than anticipated) Dorchester Inflow Removal Construction: \$572k (timing of payment)
Other Wastewater	\$12,590	\$10,415	(\$2,174)	-17.3%	<u>Underspending</u> I/I Local Financial Assistance: \$2.2M (timing of community distributions of grants and loans)
Total Wastewater	\$48,601	\$39,585	(\$9,015)	-18.5%	

**ATTACHMENT 3
FY22 CIP Year-to-Date Variance Report (\$000's)**

	FY22 Budget YTD January	FY22 Actuals YTD January	YTD Actuals vs. Budget		Explanations
			\$	%	
Waterworks					
Drinking Water Quality Improvements	\$1,283	\$1,621	\$338	26.4%	<u>Overspending</u> CWTP As-Needed Technical Assistance: \$211k (greater than projected task order work) CWTP Ancillary Modifications - Construction 2: \$187k (contractor progress)
Transmission	\$15,142	\$17,618	\$2,476	16.4%	<u>Overspending</u> Metropolitan Tunnel Redundancy Administration, Legal & Public Outreach: \$1.9M (timing of land purchase), and Program Support Services: \$333k (timing of consultant work) WASM 3 Rehabilitation, CP-1: \$1.3M, and WASM/Spot Pond Supply Mains West Pressure Reducing Valves - Construction: \$1.1M (contractors progress) Wachusett Dam Bridge Crane Removal: \$291k (FY21 planned work completed in FY22) <u>Offset Underspending</u> Watershed Land: \$491k (timing of purchases) River Road Improvements-Wachusett: \$274k (timing of work) Tunnel Redundancy Preliminary Design & MEPA Review: \$554k and WASM 3 - MEPA/Design/CA/RI: \$272k (timing of consultant work) Weston Aqueduct Sluice Gates - Construction: \$172k (issues with hatches)
Distribution & Pumping	\$9,619	\$2,463	(\$7,157)	-74.4%	<u>Underspending</u> Section 89/29 Replacement - Construction and RE/RI Services: \$4.8M, and CP3-Sections 23, 24, 47 Final Design/CA/RI: \$747k (updated schedules) Sections 50 & 57 Water Pipeline Rehabilitation - Design/ESDC; \$756k (contract scope reduction) SEH Redundancy Pipeline Phase 1 - Design/CA/RI: \$365k (Construction Administration and Resident Inspection services less than anticipated budgeted spending) Cathodic Protection Shafts North & West: \$200k (schedule change) <u>Offset Overspending</u> NEH Improvements Design - ESDC: \$205k (timing of consultant work)
Other Waterworks	\$8,886	\$4,869	(\$4,017)	-45.2%	<u>Underspending</u> Local Water Pipeline Financial Assistance Program: \$3.3M (timing of community distributions) Water System Hydraulic Model: \$290k (slower than anticipated start-up) CWTP SCADA Upgrades Design/Programming/RE: \$245k (due to time extension)

**ATTACHMENT 3
FY22 CIP Year-to-Date Variance Report (\$000's)**


	FY22 Budget YTD January	FY22 Actuals YTD January	YTD Actuals vs. Budget		Explanations
			\$	%	
Total Waterworks	\$34,930	\$26,570	(\$8,360)	-23.9%	
Business & Operations Support					
Total Business & Operations Support	\$7,582	\$2,282	(\$5,300)	-69.9%	<u>Underspending</u> As-Needed Technical Assistance and CS/REI Services: \$2.0M (lower than projected task order work) FY19-23 Vehicle Purchases: \$665k (due to timing) Cabling: \$445k, Lawson Upgrade: \$292k, Enterprise Content Management: \$213k, and Instrumentation & Controls: \$207k (timing of work) Office Space Modifications: \$200k (updated schedule)
Total MWRA	\$91,113	\$68,437	(\$22,676)	-24.9%	

Attachment 4
FY22 Budget vs. FY22 Projection

TOTAL MWRA	FY22 Budget	FY22 Projection	Change FY22 Budget vs FY22 Projection	
			\$	%
EXPENSES				
WAGES AND SALARIES	\$ 116,680,341	\$ 107,378,367	\$ (9,301,974)	-8.0%
OVERTIME	5,156,681	5,030,378	(126,303)	-2.4%
FRINGE BENEFITS	23,253,137	22,209,351	(1,043,786)	-4.5%
WORKERS' COMPENSATION	2,614,159	1,960,619	(653,540)	-25.0%
CHEMICALS	12,202,286	12,255,355	53,069	0.4%
ENERGY AND UTILITIES	24,749,865	27,684,687	2,934,822	11.9%
MAINTENANCE	32,442,381	30,066,732	(2,375,649)	-7.3%
TRAINING AND MEETINGS	473,994	314,875	(159,119)	-33.6%
PROFESSIONAL SERVICES	8,773,258	7,895,932	(877,326)	-10.0%
OTHER MATERIALS	8,334,774	7,501,297	(833,477)	-10.0%
OTHER SERVICES	25,129,236	24,877,944	(251,292)	-1.0%
TOTAL DIRECT EXPENSES	\$ 259,810,111	\$ 247,175,536	\$ (12,634,575)	-4.9%
INSURANCE	\$ 3,943,600	\$ 4,117,831	174,231	4.4%
WATERSHED/PILOT	26,731,490	25,589,022	(1,142,468)	-4.3%
HEEC PAYMENT	6,991,953	6,640,819	(351,134)	-5.0%
MITIGATION	1,693,360	1,693,360	-	0.0%
ADDITIONS TO RESERVES	1,412,647	1,412,647	-	0.0%
RETIREMENT FUND	11,205,000	11,205,000	-	0.0%
POSTEMPLOYMENT BENEFITS	4,673,624	4,673,624	-	0.0%
TOTAL INDIRECT EXPENSES	\$ 56,651,673	\$ 55,332,302	\$ (1,319,371)	-2.3%
STATE REVOLVING FUND	\$ 95,673,399	\$ 95,673,399	-	0.0%
SENIOR DEBT	244,957,128	238,650,582	(6,306,546)	-2.6%
SUBORDINATE DEBT	125,046,217	117,017,639	(8,028,578)	-6.4%
LOCAL WATER PIPELINE CP	6,120,127	4,750,000	(1,370,127)	-22.4%
CURRENT REVENUE/CAPITAL	17,200,000	17,200,000	-	0.0%
CAPITAL LEASE	3,217,060	3,217,060	-	0.0%
DEBT PREPAYMENT	5,609,355	5,609,355	-	0.0%
DEBT SERVICE ASSISTANCE	(1,287,870)	(1,287,870)	-	0.0%
TOTAL DEBT SERVICE	\$ 496,535,417	\$ 480,830,165	\$ (15,705,251)	-3.2%
TOTAL EXPENSES	\$ 812,997,201	\$ 783,338,004	\$ (29,659,198)	-3.6%
REVENUE & INCOME				
RATE REVENUE	\$ 792,084,000	\$ 792,084,000	-	0.00%
OTHER USER CHARGES	9,222,884	10,693,360	1,470,477	15.9%
OTHER REVENUE	6,479,202	7,557,169	1,077,968	16.6%
RATE STABILIZATION	1,250,000	1,250,000	-	0.0%
INVESTMENT INCOME	3,961,116	4,100,116	139,000	3.5%
TOTAL REVENUE & INCOME	\$ 812,997,202	\$ 815,684,646	\$ 2,687,444	0.3%

VARIANCE: **\$ (32,346,642)** **\$ (32,346,642)**


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: February 16, 2022
SUBJECT: Preliminary FY2023 Water and Sewer Assessments

COMMITTEE: Administration, Finance & Audit

INFORMATION
 VOTE

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


Thomas J. Durkin
 Director of Finance

Consistent with the Proposed FY23 Current Expense Budget (CEB), preliminary FY23 water and sewer assessments are based on a Rate Revenue Requirement of \$819,138,000, a 3.4% increase over the FY22 Rate Revenue Requirement. This includes a 3.9% increase for water assessments, and a 3.1% increase for sewer assessments.

The preliminary FY23 Rate Revenue Requirement will be allocated to MWRA communities based on their respective shares of CY21 MWRA water use, the average of CY19-CY21 wastewater flows, corresponding strength of flows, and population.

RECOMMENDATION:

For information only. This staff summary provides information on preliminary FY23 wholesale water and sewer assessments. Staff plan to transmit preliminary FY23 assessments to MWRA communities on or before Thursday, February 17, 2022.

DISCUSSION:

The Proposed FY23 CEB recommends a Rate Revenue Requirement of \$819,138,000, an increase of 3.4% over the final FY22 requirement.

	FY23 Preliminary	FY22 Approved	\$ Change from FY22	% Change from FY22
Water	\$288,304,865	\$277,415,068	\$10,889,797	3.9%
Sewer	\$530,833,135	\$514,668,932	\$16,164,203	3.1%
Total	\$819,138,000	\$792,084,000	\$27,054,000	3.4%

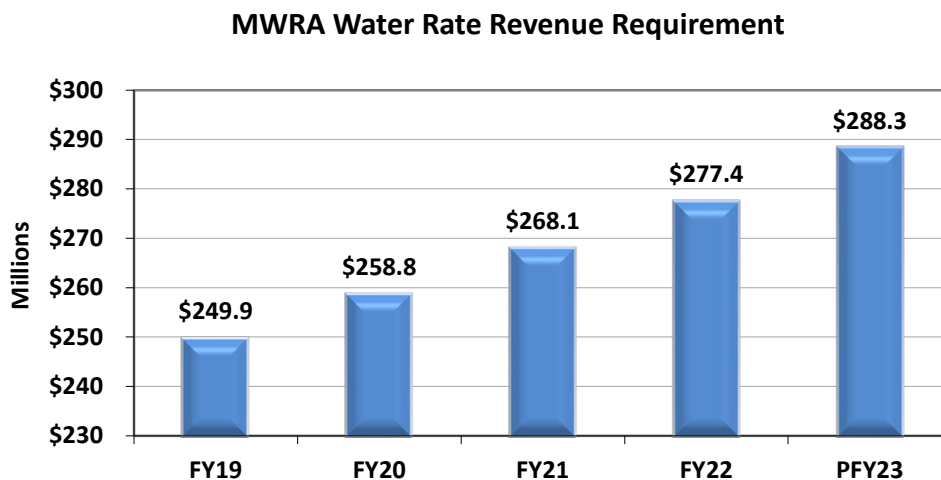
Attachment 1 summarizes preliminary FY23 wholesale water and sewer charges for each MWRA community.

The estimated annual impact of the preliminary FY23 assessment increase on the MWRA portion of the average household bill for water and sewer service in a fully served MWRA community that uses close to the system average of 61,000 gallons of water per year is approximately \$19.

Water Assessments

MWRA calculates water assessments for customer communities by apportioning the water rate revenue requirement according to each community's share of total water use for the most recent calendar year. Preliminary FY23 assessments are based on each community's share of CY21 water use of 62.294 billion gallons, a 1.5% decrease compared to CY20 water use of 63.232 billion gallons. Changes in FY23 water assessments for customer communities compared to FY22 assessments will vary considerably, depending on each community's use of water and how that use factors into their share of the water system in CY21 compared to CY20. This is particularly true for communities that receive only part of their water from MWRA.

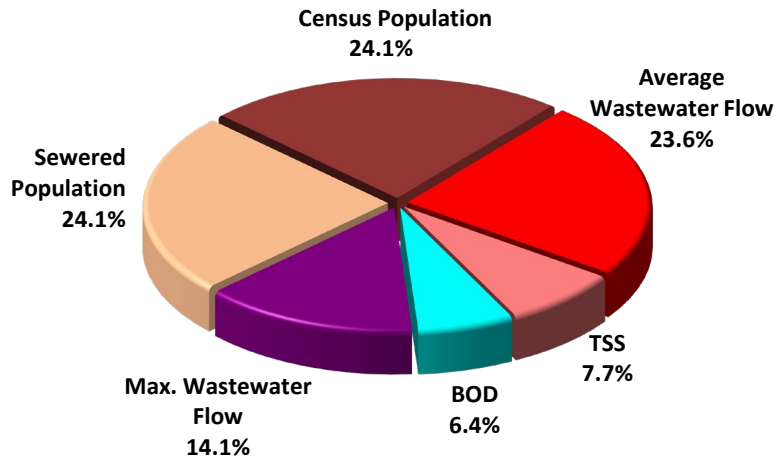
The graph below illustrates the water Rate Revenue Requirement for the past 5 years. The changes from FY22 to PFY23 are primarily the result of increased debt service related to water system rehabilitation and improvements.



Sewer Assessments

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

On average, approximately 52% of a community's preliminary FY23 sewer assessment is based on each community's share of wastewater flow and strength of flow (total suspended solids or TSS and biochemical oxygen demand or BOD), and approximately 48% is based on population as illustrated in the following chart.

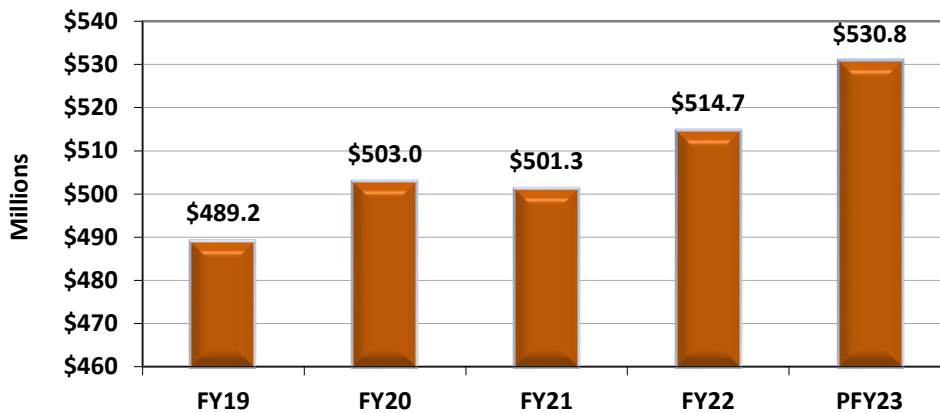


Both the preliminary and final FY23 assessments for population will be calculated using the 2020 Census, as well as the percentage of total population receiving municipal sewer service reported by each MWRA community.

Preliminary FY23 assessments have also been calculated using the average of CY19, CY20 and CY21 wastewater flows. CY21 wastewater flows were estimated during the sewer system meter replacement project, and are based on the average of CY18, CY19, and CY20 flows.

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

MWRA Sewer Rate Revenue Requirement



Clinton and Lancaster Sewer Assessments

Proposed FY23 operating and maintenance and capital expenses attributable to the Clinton Wastewater Treatment Plant are \$4,911,292, an increase of 13.6% from FY22. This includes an 8.6% increase in operating costs, and a 24.9% increase in capital expenses. The increase in capital expenses is primary due to the Digester Cover replacement, Screw Pump replacement, and Cell 1 closure at the landfill.

In accordance with the agreement that allows the City of Worcester to take water from the Wachusett watershed, Worcester is charged approximately 7.9% of the direct operating expenses for the Clinton Wastewater Treatment Plant. Proposed FY23 direct operating expenses for the plant total \$2,620,936, resulting in a preliminary FY23 charge of \$207,342 for the City of Worcester. Worcester has been paying this annual charge to MWRA or its predecessors since 1914.

The Town of Clinton and the Lancaster Sewer District are allocated proportional shares of the remaining expenses based on annual metered wastewater flow to the Clinton Plant. Based on proposed FY23 expenses and CY21 wastewater flows, Lancaster's preliminary FY23 charge is \$460,636, an increase of 3.8% from the final FY22 charge of \$443,883.

The preliminary FY23 charge for the Town of Clinton is \$4,225,886. However, pursuant to Chapter 307, Section 8 of the Acts of 1987, Clinton is only liable for the first \$500,000 of its share of O&M and capital costs.

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

CVA Water Assessments

Based on the Proposed FY23 CIP and CEB for the Chicopee Valley Aqueduct (CVA) water system, the preliminary FY23 system assessment is \$5,529,536, an increase of 4.9% from FY22 assessments.

MWRA's CVA water assessment methodology allocates CVA assessments to the three communities served by the CVA system based on their share of prior calendar year water use. Based on CY21 water use, preliminary FY23 assessments are as follows:

- City of Chicopee: \$3,855,020 (+7.1%)
- South Hadley Fire District #1: \$ 816,382 (+2.4%)
- Town of Wilbraham: \$ 858,134 (-1.7%)

As with the metropolitan water system, changes in preliminary FY23 water assessments for each CVA community compared to FY22 assessments vary depending on their water use and how that use factors into their share of the CVA water system in CY21 compared to CY20.

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

Wholesale Water Rate

MWRA's wholesale water rate per million gallons is applied to customers purchasing MWRA water on a pay-as-you-go basis (including customers with emergency agreements). The preliminary wholesale water rate for FY23 is \$4,628.12 per million gallons. The proposed FY23 CEB includes revenue of \$160,226 from these customers.

Retail Sewer Rate

MWRA provides direct retail sewer service to Regis College in Weston and the New England Center for Children in Southborough. In accordance with MWRA Policy #OP.11, "Admission of New Community to MWRA Sewer System and Other Requests for Sewer Service to Locations Outside MWRA Sewer Service Area", both entities are charged a modified per million gallon "retail" rate that captures both sanitary and non-sanitary flows. Based on preliminary FY23 sewer assessments, the FY23 retail sewer rate will be \$8,046.83 per million gallons. The Proposed FY23 CEB includes revenue of \$64,269 from these customers.

ATTACHMENTS:

1. Preliminary FY23 Water and Sewer Assessments
2. Clinton Wastewater Treatment Plant Sewer User Charge Determination
3. Chicopee Valley Aqueduct System Assessment

MWRA Fully Served Water and Sewer Customers	Final FY22 Water Assessment	Preliminary FY23 Water Assessment	Percent Change from FY22	Final FY22 Sewer Assessment	Preliminary FY23 Sewer Assessment	Percent Change from FY22	Final FY22 Combined Assessment	Preliminary FY23 Combined Assessment	Dollar Change from FY22	Percent Change from FY22
ARLINGTON	\$5,958,052	\$5,648,095	-5.2%	\$9,124,432	\$9,484,574	3.9%	\$15,082,484	\$15,132,669	\$50,185	0.3%
BELMONT	3,321,668	3,134,847	-5.6%	5,482,714	5,731,794	4.5%	8,804,382	8,866,641	62,259	0.7%
BOSTON (BWSC)	93,962,296	99,390,501	5.8%	148,872,321	150,947,874	1.4%	242,834,617	250,338,375	7,503,758	3.1%
BROOKLINE	8,011,141	8,018,472	0.1%	13,660,245	14,402,848	5.4%	21,671,386	22,421,320	749,934	3.5%
CHELSEA	5,460,223	5,460,876	0.0%	8,986,504	9,437,973	5.0%	14,446,727	14,898,849	452,122	3.1%
EVERETT	6,272,641	6,422,774	2.4%	9,618,364	10,143,337	5.5%	15,891,005	16,566,111	675,106	4.2%
FRAMINGHAM	9,287,668	9,531,024	2.6%	13,764,605	13,770,784	0.0%	23,052,273	23,301,808	249,535	1.1%
LEXINGTON	8,743,912	8,493,467	-2.9%	8,177,213	8,499,573	3.9%	16,921,125	16,993,040	71,915	0.4%
MALDEN	8,378,155	8,758,033	4.5%	13,820,322	14,832,152	7.3%	22,198,477	23,590,185	1,391,708	6.3%
MEDFORD	7,360,071	7,666,268	4.2%	12,538,844	13,153,014	4.9%	19,898,915	20,819,282	920,367	4.6%
MELROSE	3,511,330	3,499,715	-0.3%	6,842,727	7,240,440	5.8%	10,354,057	10,740,155	386,098	3.7%
MILTON	3,884,900	4,022,582	3.5%	5,910,238	6,132,056	3.8%	9,795,138	10,154,638	359,500	3.7%
NEWTON	13,717,608	14,157,661	3.2%	22,344,621	22,974,751	2.8%	36,062,229	37,132,412	1,070,183	3.0%
NORWOOD	4,409,127	4,502,690	2.1%	8,482,434	8,847,930	4.3%	12,891,561	13,350,620	459,059	3.6%
QUINCY	13,440,835	13,856,502	3.1%	21,473,437	22,727,958	5.8%	34,914,272	36,584,460	1,670,188	4.8%
READING	2,831,288	2,807,828	-0.8%	5,376,119	5,430,037	1.0%	8,207,407	8,237,865	30,458	0.4%
REVERE	5,756,009	6,348,919	10.3%	11,066,469	12,420,922	12.2%	16,822,478	18,769,841	1,947,363	11.6%
SOMERVILLE	8,973,256	9,471,778	5.6%	17,020,189	17,178,392	0.9%	25,993,445	26,650,170	656,725	2.5%
STONEHAM	3,561,396	3,289,382	-7.6%	5,585,497	5,699,305	2.0%	9,146,893	8,988,687	(158,206)	-1.7%
WALTHAM	10,338,346	11,044,210	6.8%	14,299,920	14,909,243	4.3%	24,638,266	25,953,453	1,315,187	5.3%
WATERTOWN	4,166,126	4,147,401	-0.4%	6,806,903	6,870,077	0.9%	10,973,029	11,017,478	44,449	0.4%
WINTHROP	2,074,166	1,918,276	-7.5%	3,831,735	4,006,489	4.6%	5,905,901	5,924,765	18,864	0.3%
TOTAL	\$233,420,214	\$241,591,301	3.5%	\$373,085,853	\$384,841,523	3.2%	\$606,506,067	\$626,432,824	\$19,926,757	3.3%

MWRA Sewer and Partial Water Customers	Final FY22 Water Assessment	Preliminary FY23 Water Assessment	Percent Change from FY22	Final FY22 Sewer Assessment	Preliminary FY23 Sewer Assessment	Percent Change from FY22	Final FY22 Combined Assessment	Preliminary FY23 Combined Assessment	Dollar Change from FY22	Percent Change from FY22
ASHLAND	\$0	\$0	-	\$2,752,284	\$2,919,377	6.1%	\$2,752,284	\$2,919,377	\$167,093	6.1%
BURLINGTON	0	1,253,355	-	6,168,357	6,071,100	-1.6%	6,168,357	7,324,455	1,156,098	18.7%
CANTON	1,507,385	2,022,211	34.2%	4,765,395	4,901,007	2.8%	6,272,780	6,923,218	650,438	10.4%
NEEDHAM	1,670,433	1,464,186	-12.3%	6,614,690	6,822,134	3.1%	8,285,123	8,286,320	1,197	0.0%
STOUGHTON	167,480	118,822	-29.1%	5,434,313	5,521,610	1.6%	5,601,793	5,640,432	38,639	0.7%
WAKEFIELD	2,825,130	2,617,209	-7.4%	6,748,184	6,900,194	2.3%	9,573,314	9,517,403	(55,911)	-0.6%
WELLESLEY	2,301,709	3,325,451	44.5%	6,082,193	6,331,423	4.1%	8,383,902	9,656,874	1,272,972	15.2%
WILMINGTON	1,098,672	716,510	-34.8%	3,013,693	3,256,544	8.1%	4,112,365	3,973,054	(139,311)	-3.4%
WINCHESTER	2,093,282	1,943,817	-7.1%	4,535,279	4,639,624	2.3%	6,628,561	6,583,441	(45,120)	-0.7%
WOBURN	4,936,119	5,385,782	9.1%	9,490,135	9,885,893	4.2%	14,426,254	15,271,675	845,421	5.9%
TOTAL	\$16,600,210	\$18,847,343	13.5%	\$5,604,523	\$7,248,906	3.0%	\$72,204,733	\$76,096,249	\$3,891,516	5.4%

MWRA Sewer-only Customers	Final FY22 Water Assessment	Preliminary FY23 Water Assessment	Percent Change from FY22	Final FY22 Sewer Assessment	Preliminary FY23 Sewer Assessment	Percent Change from FY22	Final FY22 Combined Assessment	Preliminary FY23 Combined Assessment	Dollar Change from FY22	Percent Change from FY22
BEDFORD				\$3,616,974	\$3,723,136	2.9%	\$3,616,974	\$3,723,136	\$106,162	2.9%
BRAINTREE				10,463,134	10,945,624	4.6%	10,463,134	10,945,624	482,490	4.6%
CAMBRIDGE				27,759,220	28,791,191	3.7%	27,759,220	28,791,191	1,031,971	3.7%
DEDHAM				6,076,744	6,200,644	2.0%	6,076,744	6,200,644	123,900	2.0%
HINGHAM SEWER DISTRICT				2,061,694	2,148,312	4.2%	2,061,694	2,148,312	86,618	4.2%
HOLBROOK				1,883,097	1,958,381	4.0%	1,883,097	1,958,381	75,284	4.0%
NATICK				6,126,567	6,356,674	3.8%	6,126,567	6,356,674	230,107	3.8%
RANDOLPH				6,830,622	7,009,640	2.6%	6,830,622	7,009,640	179,018	2.6%
WALPOLE				4,280,744	4,494,069	5.0%	4,280,744	4,494,069	213,325	5.0%
WESTWOOD				3,247,430	3,305,428	1.8%	3,247,430	3,305,428	57,998	1.8%
WEYMOUTH				13,632,330	13,809,607	1.3%	13,632,330	13,809,607	177,277	1.3%
TOTAL				\$85,978,556	\$88,742,706	3.2%	\$85,978,556	\$88,742,706	\$2,764,150	3.2%

MWRA Water-only Customers	Final FY22 Water Assessment	Preliminary FY23 Water Assessment	Percent Change from FY22	Final FY22 Sewer Assessment	Preliminary FY23 Sewer Assessment	Percent Change from FY22	Final FY22 Combined Assessment	Preliminary FY23 Combined Assessment	Dollar Change from FY22	Percent Change from FY22
LYNNFIELD WATER DISTRICT	\$861,938	\$865,543	0.4%				\$861,938	\$865,543	\$3,605	0.4%
MARBLEHEAD	3,092,888	2,941,372	-4.9%				3,092,888	2,941,372	(151,516)	-4.9%
NAHANT	533,340	578,355	8.4%				533,340	578,355	45,015	8.4%
SAUGUS	4,860,987	5,020,868	3.3%				4,860,987	5,020,868	159,881	3.3%
SOUTHBOROUGH	1,232,930	984,014	-20.2%				1,232,930	984,014	(248,916)	-20.2%
SWAMPSCOTT	2,581,317	2,552,649	-1.1%				2,581,317	2,552,649	(28,668)	-1.1%
WESTON	2,837,540	2,456,156	-13.4%				2,837,540	2,456,156	(381,384)	-13.4%
TOTAL	\$16,000,940	\$15,398,957	-3.8%				\$16,000,940	\$15,398,957	(\$601,983)	-3.8%

MWRA Partial Water-only Customers	Final FY22 Water Assessment	Preliminary FY23 Water Assessment	Percent Change from FY22	Final FY22 Sewer Assessment	Preliminary FY23 Sewer Assessment	Percent Change from FY22	Final FY22 Combined Assessment	Preliminary FY23 Combined Assessment	Dollar Change from FY22	Percent Change from FY22
DEDHAM-WESTWOOD WATER DISTRICT	\$620,024	\$256,078	-58.7%				\$620,024	\$256,078	(\$363,946)	-58.7%
LYNN (LWSC)	125,688	187,732	49.4%				125,688	187,732	62,044	49.4%
MARLBOROUGH	6,589,994	6,733,069	2.2%				6,589,994	6,733,069	143,075	2.2%
NORTHBOROUGH	1,760,228	1,508,715	-14.3%				1,760,228	1,508,715	(251,513)	-14.3%
PEABODY	2,297,770	3,781,670	64.6%				2,297,770	3,781,670	1,483,900	64.6%
TOTAL	\$11,393,704	\$12,467,264	9.4%				\$11,393,704	\$12,467,264	\$1,073,560	9.4%

SYSTEMS TOTAL	\$277,415,068	\$288,304,865	3.93%	\$514,668,932	\$530,833,135	3.14%	\$792,084,000	\$819,138,000	\$27,054,000	3.42%
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Massachusetts Water Resources Authority
Clinton Wastewater Treatment Plant
Sewer User Charge Determination

BUDGETED EXPENSES: Preliminary FY23	
Clinton Direct Operating Expenses:	\$2,620,936
MWRA Support Allocation:	637,870
Subtotal O&M Expenses:	\$3,258,806
Total Debt Service Expenses:	\$1,652,487
Total Clinton Service Area Expenses	\$4,911,292
Less Revenue (City of Worcester Payment)	-207,342
Clinton WWTP Rate Revenue Requirement:	\$4,703,950

WASTEWATER FLOW and FLOW SHARES:	CY2021		
	Town of Clinton Flow	Lancaster Sewer District Flow	Total Wastewater Flow
Average Daily Flow (MGD)	2.436	0.276	2.712
Average Flow (MG/YR)	889.276	100.602	989.878
Proportional Share of Flow	89.84%	10.16%	100.0%

Sewer User Charge Determination

TOWN OF CLINTON	
O&M Expenses	\$3,258,806
Less Revenue (City of Worcester Payment)	-207,342
O&M Expenses to be Recovered	\$3,051,464
Clinton's Share of Flow	89.84%
Clinton's Share of O&M Costs	\$2,741,342

LANCASTER SEWER DISTRICT	
O&M Expenses	\$3,258,806
Less Revenue (City of Worcester Payment)	-207,342
O&M Expenses to be Recovered	\$3,051,464
Lancaster's Share of Flow	10.16%
Lancaster's Share of O&M Costs	\$310,122

Total Clinton O&M Charge	\$2,741,342
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Total Lancaster Sewer District O&M Charge	\$310,122
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Debt Service Costs to be Recovered	\$1,652,487
Clinton's Share of Wastewater Flow	89.84%

Debt Service Costs to be Recovered	\$1,652,487
Lancaster's Share of Wastewater Flow	10.16%

Total Clinton Debt Service Charge	\$1,484,544
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Total Lancaster Sewer District Debt Service Charge	\$167,943
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Total Clinton O&M and Debt Service Charge	\$4,225,886
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Total Lancaster O&M and Debt Service Charge	\$478,065
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Less MWRA Water Ratepayer Subsidy -3,725,886

Billable Charge to the Town of Clinton as per CH. 307, Section 8 The Acts of 1987	\$500,000
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Billable Charge to Lancaster Sewer District	\$478,065
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Clinton WWTP Charges and Payment Schedule

Sewer Customer	Billable Charges	Change from Prior Year	
Town of Clinton (billable)	\$500,000	\$0	0.0%
Lancaster Sewer District (before adj.)	\$478,065		
Lancaster Sewer District (prior yr. adj.)	-\$17,429		
Lancaster Sewer District (billable)	\$460,636	\$16,753	3.8%
Total Billable Sewer Use Charges	\$960,636		
City of Worcester	\$207,342	\$190,780	8.7%

Payment 1 on or before Sept 15, 2022	Payment 2 on or before Nov 15, 2022	Payment 3 on or before Feb 15, 2023	Payment 4 on or before May 15, 2023
\$125,000	\$125,000	\$125,000	\$125,000
\$115,159	\$115,159	\$115,159	\$115,159
\$240,159	\$240,159	\$240,159	\$240,159
\$0	\$0	\$207,342	\$0

Massachusetts Water Resources Authority

Chicopee Valley Aqueduct Water System Assessment

Preliminary FY2023 Budget and Assessments

CVA Operating Budget	FY22	PFY23
CVA Cost Center Expenses	\$955,678	\$1,151,012
Allocated Waterworks Expenses	151,498	174,268
Allocated Watershed/PILOT	463,776	556,146
Allocated Watershed Land Acquisition	28,792	34,219
Allocated MWRA Indirect Expenses	661,503	761,915
SUBTOTAL OPERATING BUDGET	\$2,261,246	\$2,677,559

Change from Prior Year	
Dollars	Percent
\$195,334	20.4%
22,769	15.0%
92,369	19.9%
5,427	18.8%
100,412	15.2%
\$416,312	18.4%

CVA Capital Budget	FY22	PFY23
Capital Expenses	\$3,048,338	\$3,047,744
TOTAL CVA BUDGET	\$5,309,585	\$5,725,302

Change from Prior Year	
Dollars	Percent
-\$594	0.0%
\$415,718	7.8%

BASE COMMUNITY ASSESSMENT	FY22 ¹	PFY23 ²
Chicopee	\$3,628,248	\$3,993,574
South Hadley Fire District #1	803,078	845,424
Wilbraham	878,258	886,304
CVA BASE SYSTEM ASSESSMENT	\$5,309,585	\$5,725,302

Change from Prior Year	
Dollars	Percent
\$365,326	10.1%
42,346	5.3%
8,046	0.9%
\$415,718	7.8%

PRIOR PERIOD ADJUSTMENTS	FY22 ³	PFY23 ³
Chicopee	-\$27,865	-\$138,554
South Hadley Fire District #1	-5,844	-29,042
Wilbraham	-5,699	-28,171
TOTAL ADJUSTMENTS	-\$39,408	-\$195,766

Change from Prior Year	
Dollars	Percent
-\$110,689	397.2%
-23,198	397.0%
-22,471	394.3%
-\$156,359	396.8%

ADJUSTED ASSESSMENT	FY22	PFY23
Chicopee	\$3,600,383	\$3,855,020
South Hadley Fire District #1	797,235	816,382
Wilbraham	872,559	858,134
ADJUSTED ASSESSMENT	\$5,270,177	\$5,529,536


Change from Prior Year	
Dollars	Percent
\$254,637	7.1%
19,148	2.4%
-14,425	-1.7%
\$259,359	4.92%

¹ Based on CY2020 water use and before prior period adjustments.

² Based on CY2021 water use and before prior period adjustments.

³ Prior period adjustment to account for budget to actual expenses.


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: February 16, 2022
SUBJECT: Transmittal of the FY2023 Proposed Current Expense Budget

COMMITTEE: Administration, Finance & Audit

 INFORMATION
 X VOTE

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


Thomas J. Durkin
Director, Finance

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

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

The FY23 Proposed Budget puts forth a 3.4% combined assessment increase.

The FY23 Proposed Budget reflects the benefits of a planned \$15.0 million defeasance to be executed in FY22 with targeted savings during FY23-26. Besides the planned defeasances, the Authority is continuing to address the Pension and the Other Post Employment Benefits (OPEB) obligations, which are the largest long-term liabilities after the debt payments.

RECOMMENDATION:

To approve transmittal of the FY23 Proposed Current Expense Budget to the MWRA Advisory Board for its 60 day review and comment period.

DISCUSSION:

This staff summary presents an overview of the FY23 Proposed Current Expense Budget (CEB) and projects the Rate Revenue Requirement for the next five years.

Summary

The FY23 Proposed Budget recommends a combined increase in rates and charges of 3.42%. Capital Financing costs remain the largest component of the CEB and account for 61.2% of total expenses. Total expenses are \$840.2 million, an increase of \$27.2 million or 3.4% over the FY22 Budget. There are no offsets from Debt Service Assistance (DSA) assumed for FY23 or in any future years.

Total expenses include \$514.0 million for Capital Financing costs and \$326.3 million for operating expenses, of which \$267.7 million is for Direct Expenses and \$58.6 million is for Indirect Expenses. The total expense increase over FY22 was driven by the following:

- Higher Capital Financing costs of \$17.4 million due to the structure of the existing debt and the projected issuance.
- Higher Direct Expenses of \$7.8 million mainly due to higher Wages & Salaries, Other Services due to increased costs for sludge pelletization, Utilities due to updated electricity costs, and Fringe Benefits due to projected increases to Health Insurance premiums.
- Higher Indirect Expenses of \$2.0 million mainly due to latest valuation for the Retirement Fund and updated costs for Watershed Reimbursement.

The FY23 Proposed Budget revenues, excluding rate revenue, total \$21.1 million, an increase of \$0.2 million or 0.9% from the FY22 Budget. The FY23 Proposed Budget non-rate revenue budget includes \$16.0 million in Other User Charges and Other Revenue, \$4.1 million for Investment Income, and \$1.0 million in Rate Stabilization.

The FY23 Proposed Rate Revenue Requirement is \$819.1 million, an increase of \$27.1 million or 3.4% over the FY22 Budget.

Table 1 on the following page provides a comparison of the FY23 Proposed CEB and FY22 Budget by major categories. Additional detail by line item is provided in Attachments A.

Table 1				
MWRA Current Expense Budget				
FY23 Proposed Budget versus FY22 Approved Budget				
(\$ in Millions)	FY22 Approved Budget	FY23 Proposed Budget	\$ Change	% Change
Directs	\$ 259.8	\$ 267.7	\$ 7.8	3.0%
Indirects	56.7	58.6	2.0	3.5%
Sub-Total Operating Expenses	\$ 316.5	\$ 326.3	\$ 9.8	3.1%
Capital Financing (before Offsets)	497.8	514.0	16.1	3.2%
<i>Offsets: Bond Redemption¹</i>	-	-	-	-
Variable Debt Savings	-	-	-	-
Debt Service Assistance	(1.3)	-	1.3	-100.0%
Sub-Total Capital Financing	\$ 496.5	\$ 514.0	\$ 17.4	3.5%
Total Expenses	\$ 813.0	\$ 840.2	\$ 27.2	3.4%
Investment Income	\$ 4.0	\$ 4.1	\$ 0.2	4.5%
Non-Rate Revenue	15.7	16.0	0.3	1.8%
Rate Stabilization ¹	1.3	1.0	(0.3)	-21.6%
Sub-Total Non-Rate Revenue	\$ 20.9	\$ 21.1	\$ 0.2	0.9%
Rate Revenue	792.1	819.1	27.1	3.4%
Total Revenue & Income	\$ 813.0	\$ 840.2	\$ 27.2	3.4%
FY23 Rate Revenue Increase			3.42%	
Combined Use of Reserves			\$ 1.0	

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

EXPENSES:

Direct Expenses

FY23 Direct Expenses total \$267.7 million, an increase of \$7.8 million, or 3.0%, from the FY22 Budget.

FY23 PROPOSED CURRENT EXPENSE BUDGET				
MWRA DIRECT EXPENSES BY LINE ITEM				
Line Item	FY22 Approved Budget	FY23 Proposed Budget	Change FY23 vs FY22	
WAGES AND SALARIES	\$116,680,341	\$119,281,491	\$2,601,150	2.2%
OVERTIME	\$5,156,681	\$5,337,896	\$181,215	3.5%
FRINGE BENEFITS	\$23,253,137	\$24,287,374	\$1,034,237	4.4%
WORKERS' COMPENSATION	\$2,614,159	\$2,519,751	(\$94,408)	-3.6%
CHEMICALS	\$12,202,286	\$12,997,814	\$795,528	6.5%
ENERGY AND UTILITIES	\$24,749,865	\$26,926,612	\$2,176,747	8.8%
MAINTENANCE	\$32,442,381	\$32,730,687	\$288,306	0.9%
TRAINING AND MEETINGS	\$473,994	\$492,197	\$18,204	3.8%
PROFESSIONAL SERVICES	\$8,773,258	\$8,254,714	(\$518,544)	-5.9%
OTHER MATERIALS	\$8,334,774	\$6,702,897	(\$1,631,877)	-19.6%
OTHER SERVICES	\$25,129,236	\$28,120,922	\$2,991,686	11.9%
TOTAL	\$259,810,111	\$267,652,357	\$7,842,245	3.0%

- *Wages and Salaries* – The budget includes \$119.3 million for Wages and Salaries as compared to \$116.7 million in the FY22 Budget, an increase of \$2.6 million or 2.2%. Regular Pay which is 98.4% of total Wages and Salaries, increased by \$2.5 million due to bargaining unit step increases and increases to the leave balance accrual and other payroll reserves. The FY23 Proposed Budget includes 1,167 FTEs which is the same as in the FY22 Budget.
- *Overtime* – The budget includes \$5.3 million for Overtime, an increase of \$181,000 or 3.5% over the FY22 Budget. Overtime was increased to reflect wage increases and recent trends in planned overtime for off-hours maintenance, emergency, coverage and planned projects that include construction.
- *Fringe Benefits* – The budget includes \$24.3 million for Fringe Benefits, an increase of \$1.0 million or 4.4% over the FY22 Budget. Health Insurance premiums total \$20.8 million, an increase of \$1.1 million or 5.4% from the FY22 Budget largely due to an anticipated 6% increase in rate structure offset by a change to the number and mix of plans based on FY22 enrollment changes.
- *Workers' Compensation* – The budget includes \$2.5 million for Workers' Compensation. This is \$94,000 or 3.6% less than the prior year's level and is based on historical average spending for Worker's Compensation.

- *Chemicals* – The budget includes \$13.0 million for Chemicals, an increase of \$796,000 or 6.5% over the FY22 Budget. Higher prices drove the budget increase. Several chemicals increased including Ferric Chloride by \$407,000 or 21.6%, Sodium Hypochlorite by \$272,000 or 8.4%, Aqua Ammonia by \$116,000 or 70.1%, and Sodium Bisulfite by \$99,000 or 30.9%. This is partially offset by Soda Ash which was reduced by \$282,000 or 8.1% due to lower cost, partially offset by increased volume. The FY23 Budget does not include any funding for a new Deer Island National Pollutant Discharge Elimination System (NPDES) permit, which is anticipated to have more stringent requirements for enterococcus treatment compliance.
- *Utilities* – The budget includes \$26.9 million for Utilities, which is an increase of \$2.2 million or 8.8% over the FY22 Budget. The budget funds \$20.6 million for Electricity, an increase of \$1.8 million or 9.6% over the FY22 budget primarily due to higher pricing based on FY22 procurement. The Diesel Fuel budget of \$2.7 million is \$181,000 or 7.1% higher than the FY22 Budget primarily due to increased price and volume at Deer Island.
- *Maintenance* – The budget includes \$32.7 million for Maintenance projects, an increase of \$288,000 or 0.9% over the FY22 budget. The increase is driven by Computer Services of \$313,000 primarily for SCADA software maintenance, Electrical Materials of \$303,000 driven by Deer Island for new equipment including PLCs for flares and breakers for the South System Pump Station and Winthrop Terminal Facility, and Computer Software Licenses of \$262,000 primarily due to new Sequel Server Enterprise Software Assurance license. These increases are partially offset by lower Plant and Machinery Materials of \$479,000 for materials that were purchased in FY22 including Deer Island strainers and other reductions to as-needed items.
- *Training and Meetings* – The budget includes \$492,000 for Training and Meetings, an increase of \$18,000 or 3.8% over the FY22 Budget. The increase is mainly due to Rapid Excavation and Tunneling Conference for Tunnel Redundancy for \$15,000.
- *Professional Services* – The budget includes \$8.3 million for Professional Services, a decrease of \$519,000 or 5.9% from the FY22 Budget. The decrease is driven by MIS for a reduction in scope for Managed Security Service Provider of \$474,000, internet and intranet upgrades of \$275,000, and Oracle Professional Services of \$100,000 that are planned in FY22. This decrease was partially offset by increase in Security costs of \$368,000 based on updated rates, and Lab and Testing Analysis of \$141,000 primarily in Environmental Quality for the new eutrophication model.
- *Other Materials* – The budget includes \$6.7 million for Other Materials, a decrease of \$1.6 million or 19.6% from the FY22 Budget. The decrease reflects \$2.1 million in Other Materials due to office space modifications costs for staff moving from CNY to Chelsea and Deer Island. This is partially offset by Vehicle Expense of \$391,000 driven by the purchase and installation of fifteen electric vehicle chargers and five Direct Current fast electric vehicle chargers for the Chelsea Facility.
- *Other Services* – The budget includes \$28.1 million for Other Services, an increase of \$3.0 million or 11.9% over the FY22 Budget. The increase reflects \$2.4 million for Sludge Pelletization due mainly to the projected cost increase of the NEFCo contract

extension primarily due to inflation, partially offset by reduced sludge quantities based on historical trends. Also, Space/Lease Rentals increased by \$332,000 primarily due to Rock Core Shed lease and shelving for the Tunnel Redundancy Program, and Telecommunications of \$177,000 primarily based on updated network costs.

Indirect Expenses

Indirect Expenses for FY23 total \$58.6 million, an increase of \$2.0 million or 3.5% over the FY22 Budget. Below are the highlights of major changes:

- The budget includes \$3.9 million for Insurance, a decrease of \$28,000 or 0.7% over the FY22 Budget. This reflects an anticipated 10% property premium credit. Claim payments were reduced based on a 5-year average.
- The budget includes \$28.0 million for the Watershed Management budget, an increase of \$1.3 million or 4.8% above the FY22 Budget. The budget includes \$19.2 million for reimbursement of operating expenses net of revenues, and \$8.8 million for Payment in Lieu of Taxes (PILOT). The budget increase is driven by contractual increases and healthcare costs. Consistent with FY22, a vacancy adjustment has been applied to reflect the actual timing of hiring. The PILOT payments decreased by \$19,000 or 0.2% from FY22.
- The budget includes \$6.2 million for the Harbor Energy Electric Company (HEEC), a decrease of \$766,000 or 11.0% from the FY22 Budget. The budget reflects the latest cost estimates.
- The budget includes \$1.7 million for Mitigation payments to the City of Quincy and Town of Winthrop in accordance with mitigation agreements, which expire in FY25.
- Funding for the Operating Reserve for FY23 is \$1.4 million. The Operating Reserve balance is in compliance with MWRA General Bond Resolution which requires a balance of one-sixth of annual operating expenses. Based on the FY23 Proposed Budget, the required balance is \$48.7 million versus the \$47.3 million required in FY22.
- The budget includes \$12.6 million for the Retirement Fund, which is level to planning estimates, but an increase of \$1.4 million or 12.1% over the FY22 budget. The increase is per the the January 2021 actuarial valuation. MWRA's pension fund is at the 88.2% funding level and projected to be fully funded by June 30, 2030.
- The Authority has complied with the GASB 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other than Pensions (OPEB)*, by disclosing this liability in the year-end Financial Statements. As part of the multi-year strategy to address its unfunded liabilities for OPEB and pension holistically, the Board approved a plan to pay down the pension liability and upon reaching full funding, move to address the OPEB obligation. To maximize the benefits in terms of returns and accounting treatment, an irrevocable OPEB Trust was established with Board approval and funding started on April 23, 2015. The OPEB Trust balance was \$66.3 million as of December 31, 2021. Starting in FY18, GASB 75 is the governing regulation for employee OPEB

contributions. The proposed \$4.8 million budget is based on 50% of the contribution determined in the January 1, 2020 actuarial report.

Capital Financing

As a result of the Authority's Capital Improvement Program, capital financing as a percent of total expenses (before offsets) has increased from 36% in 1990 to 61.2% in the FY23 Proposed Current Expense Budget. Much of this debt service is for completed projects, primarily the Boston Harbor Project, the Integrated Water Supply Improvement Program, and the Combined Sewer Overflow (CSO) projects. MWRA's capital spending, from its inception, has been dominated by projects mandated by court ordered or regulatory requirements, which in total have accounted for ~72% of capital spending to date. Going forward, the majority of spending will be focused on asset protection and water redundancy initiatives.

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

The FY23 Proposed Budget capital financing costs total \$514.0 million and remains the largest portion of the MWRA's budget.

The FY23 Proposed Budget includes a planned defeasance of \$15.0 million in late FY22 which will reduce debt service by approximately \$665,800 in FY23, \$6.6 million in FY24, \$382,000 in FY25, and \$8.0 million in FY26.

The FY23 Proposed Budget assumes a 3.50% interest rate for variable rate debt which is the same as the FY22 rate. The Authority's variable rate debt assumption is comprised of three separate elements: the interest rate for the daily and weekly series; liquidity fees for the Standby Bond Purchase Agreement, Letter of Credit, and Direct Purchase providers; and remarketing fees. While MWRA continues to experience low interest rates, they are not reflective of historical averages and there is some consensus that short-term rates will increase in light of current market conditions.

The FY23 Proposed Budget capital financing costs increased by \$17.4 million or 3.5% compared to the FY22 Budget. This increase in the MWRA's debt service is the result of projected FY23 borrowings and the structure of the existing debt, partially offset by the impact of the projected defeasance.

The FY23 capital financing budget includes:

- \$305.9 million in principal and interest payments on MWRA's senior fixed rate bonds. This amount includes \$15.0 million to support new money issuances of \$125.0 million in October 2022 and \$100.0 million in June 2023;
- \$75.5 million in principal and interest payments on subordinate bonds;

- \$99.4 million in principal and interest payments on SRF loans. This amount includes \$11.8 million to support an issuances of \$65.0 million in the spring of 2022 and spring of 2023;
- \$18.2 million to fund ongoing capital projects with current revenue and to meet coverage requirements;
- \$5.5 million in debt prepayment;
- \$6.2 million to fund the interest expense related to the Local Water Pipeline Assistance Program; and,
- \$3.2 million for the Chelsea Lease.

Revenue

FY23 non-rate revenue totals \$21.1 million, which is an increase of \$186,000 or 0.9% versus the FY22 Budget. The FY23 non-rate revenue budget includes:

- \$9.9 million in Other User Charges, including \$5.5 million for the Chicopee Valley Aqueduct (CVA) communities, \$2.2 million for Deer Island water usage, \$208,000 for entrance fees from member communities, and \$500,000 for the Commonwealth’s partial reimbursement for Clinton Wastewater Treatment Plant expenses. Other User Charges are \$648,000 or 7.0% higher than the FY22 Budget.
- \$6.1 million in Other Revenue, a decrease of \$370,000 from the FY22 Budget. Other Revenue includes \$2.2 million from the sale of the Authority’s Renewable Portfolio Credits, revenue from participating in load response programs, and the sale of generated power to the grid. Energy related revenue decreased \$106,000 reflecting decreased power sales revenue and reduced pricing for Renewable Portfolio Credits. The balance of Other Revenue includes \$2.5 million in permit fees and penalties, a decrease of \$208,000 from the FY22 Budget.
- \$4.1 million in Investment Income, an increase of \$178,000 or 4.5% from the FY22 Budget. The budget reflects rate impacts as a result of current market conditions.

The Rate Revenue Requirement for FY23 is \$819.1 million, an increase \$27.1 million or 3.4% over the FY22 Budget. The Rate Revenue Requirement is the difference between total expenses of \$840.2 million and non-rate revenue of \$21.1 million.

Planning Estimates and Future Rate Projections

MWRA’s planning estimates are projections based on a series of assumptions about future spending (operating and capital), interest rates, inflation, and other factors. MWRA uses the planning estimates to model and project what future rate increases might be based upon these assumptions, as well as to test the impact of changes to assumptions on future rate increases. The planning estimates are not predictions of what rate increases will be but rather they provide the context and framework for guiding MWRA financial policy and management decision making that ultimately determine the level of actual rate increases on an annual basis. Historically, the planning

estimates were based on conservative financial assumptions. Conservative projections of future rate increases benefit the MWRA by providing assurance to all stakeholders, including the rating agencies that MWRA anticipates raising revenues sufficient to pay for its operations and outstanding debt obligations now and over the long-term. Additionally, conservative forecasts of rate revenue requirements enable member communities to adequately plan and budget for future payments to MWRA.

Table 3 below presents the combined estimated future rate increases and household charges based on the Proposed FY23 Budget. The planning estimates shown below assume no Debt Service Assistance from the Commonwealth or use of Bond Redemption reserves through FY27. It does, however, assume the use of Rate Stabilization (HEEC reserve) through FY27.

Table 3

Rates & Budget Projections						
Proposed FY23 CEB	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027
Total Rate Revenue (\$000)	\$ 792,084	\$ 819,138	\$ 846,780	\$ 874,348	\$ 902,971	\$ 931,623
Rate Revenue Change from Prior Year (\$000)	\$ 22,699	\$ 27,054	\$ 27,642	\$ 27,567	\$ 28,624	\$ 28,651
Rate Revenue Increase	3.0%	3.4%	3.4%	3.3%	3.3%	3.2%
Use of Reserves (\$000)	\$ 1,250	\$ 980	\$ 800	\$ 575	\$ 425	\$ 350

Estimated Household Bill

Based on annual water usage of 61,000 gallons	\$1,275	\$1,330	\$1,389	\$1,449	\$1,512	\$1,577
Based on annual water usage of 90,000 gallons	\$1,881	\$1,963	\$2,049	\$2,138	\$2,231	\$2,327

CEB Review and Adoption Process

The Advisory Board has a minimum of 60 days from the transmittal of the FY23 Proposed Budget to review the budget and prepare comments and recommendations. During the review period, Advisory Board and MWRA staff will continue to meet and evaluate the impact of changing circumstances as they arise. Following the receipt of the Advisory Board’s comments and recommendations, MWRA presents its official responses to the Board of Directors at budget hearings. Staff will present the final budget and the final assessments and for Fiscal Year 2023 to the Board for approval in June 2022.

ATTACHMENTS:

- Attachment A FY23 Proposed Current Expense Budget compared to FY22 Budget
- Attachment B FY23 Proposed Current Expense Budget compared to FY22 Projection


Massachusetts Water Resources Authority
FY23 Proposed Budget vs. FY22 Approved Budget

TOTAL MWRA	FY22 Approved Budget	FY23 Proposed Budget	Change FY23 Proposed Budget vs FY22 Approved Budget	
			\$	%
EXPENSES				
WAGES AND SALARIES	\$ 116,680,341	\$ 119,281,491	\$ 2,601,150	2.2%
OVERTIME	5,156,681	5,337,896	181,215	3.5%
FRINGE BENEFITS	23,253,137	24,287,374	1,034,237	4.4%
WORKERS' COMPENSATION	2,614,159	2,519,751	(94,408)	-3.6%
CHEMICALS	12,202,286	12,997,814	795,528	6.5%
ENERGY AND UTILITIES	24,749,865	26,926,612	2,176,747	8.8%
MAINTENANCE	32,442,381	32,730,687	288,306	0.9%
TRAINING AND MEETINGS	473,994	492,197	18,204	3.8%
PROFESSIONAL SERVICES	8,773,258	8,254,714	(518,544)	-5.9%
OTHER MATERIALS	8,334,774	6,702,897	(1,631,877)	-19.6%
OTHER SERVICES	25,129,236	28,120,922	2,991,686	11.9%
TOTAL DIRECT EXPENSES	\$ 259,810,111	\$ 267,652,357	\$ 7,842,245	3.0%
INSURANCE	\$ 3,943,600	\$ 3,916,002	\$ (27,598)	-0.7%
WATERSHED/PILOT/DEBT	26,731,490	28,023,798	1,292,308	4.8%
HEEC PAYMENT	6,991,953	6,225,566	(766,387)	-11.0%
MITIGATION	1,693,360	1,735,694	42,334	2.5%
ADDITIONS TO RESERVES	1,412,647	1,406,800	(5,847)	-0.4%
RETIREMENT FUND	11,205,000	12,555,203	1,350,203	12.1%
POSTEMPLOYMENT BENEFITS	4,673,624	4,754,061	80,438	1.7%
TOTAL INDIRECT EXPENSES	\$ 56,651,673	\$ 58,617,124	\$ 1,965,451	3.5%
STATE REVOLVING FUND	\$ 95,673,399	\$ 99,402,956	\$ 3,729,557	3.9%
SENIOR DEBT	244,957,128	305,911,389	60,954,261	24.9%
SUBORDINATE DEBT	125,046,217	75,491,975	(49,554,242)	-39.6%
LOCAL WATER PIPELINE CP	6,120,127	6,243,882	123,755	2.0%
CURRENT REVENUE/CAPITAL	17,200,000	18,200,000	1,000,000	5.8%
CAPITAL LEASE	3,217,060	3,217,060	-	0.0%
DEBT PREPAYMENT	5,609,355	5,500,000	(109,355)	-1.9%
DEBT SERVICE ASSISTANCE	(1,287,870)	-	1,287,870	-100.0%
TOTAL DEBT SERVICE	\$ 496,535,417	\$ 513,967,263	\$ 17,431,846	3.5%
TOTAL EXPENSES	\$ 812,997,202	\$ 840,236,744	\$ 27,239,542	3.4%
REVENUE & INCOME				
RATE REVENUE	\$ 792,084,000	\$ 819,138,000	\$ 27,054,000	3.42%
OTHER USER CHARGES	9,222,884	9,870,899	648,015	7.0%
OTHER REVENUE	6,479,202	6,108,752	(370,449)	-5.7%
RATE STABILIZATION	1,250,000	980,000	(270,000)	-21.6%
INVESTMENT INCOME	3,961,116	4,139,091	177,975	4.5%
TOTAL REVENUE & INCOME	\$ 812,997,202	\$ 840,236,744	\$ 27,239,542	3.4%
Rate Revenue Increase	2.95%	3.42%		

Attachment B
FY23 Proposed vs. FY22 Projection

TOTAL MWRA	FY22 Budget	FY22 Projection	FY23 Proposed	Change	
				FY23 Proposed Budget vs FY22 Projection	
				\$	%
EXPENSES					
WAGES AND SALARIES	\$ 116,680,341	\$ 107,378,367	\$ 119,281,491	\$ 11,903,125	11.1%
OVERTIME	5,156,681	5,030,378	5,337,896	307,519	6.1%
FRINGE BENEFITS	23,253,137	22,209,351	24,287,374	2,078,023	9.4%
WORKERS' COMPENSATION	2,614,159	1,960,619	2,519,751	559,132	28.5%
CHEMICALS	12,202,286	12,255,355	12,997,814	742,459	6.1%
ENERGY AND UTILITIES	24,749,865	27,684,687	26,926,612	(758,074)	-2.7%
MAINTENANCE	32,442,381	30,066,732	32,730,687	2,663,955	8.9%
TRAINING AND MEETINGS	473,994	314,875	492,197	177,322	56.3%
PROFESSIONAL SERVICES	8,773,258	7,895,932	8,254,714	358,782	4.5%
OTHER MATERIALS	8,334,774	7,501,297	6,702,897	(798,400)	-10.6%
OTHER SERVICES	25,129,236	24,877,944	28,120,922	3,242,979	13.0%
TOTAL DIRECT EXPENSES	\$ 259,810,111	\$ 247,175,536	\$ 267,652,357	\$ 20,476,821	8.3%
INSURANCE	\$ 3,943,600	\$ 4,117,831	\$ 3,916,002	(201,829)	-4.9%
WATERSHED/PILOT	26,731,490	25,589,022	28,023,798	2,434,776	9.5%
HEEC PAYMENT	6,991,953	6,640,819	6,225,566	(415,253)	-6.3%
MITIGATION	1,693,360	1,693,360	1,735,694	42,334	2.5%
ADDITIONS TO RESERVES	1,412,647	1,412,647	1,406,800	(5,847)	-0.4%
RETIREMENT FUND	11,205,000	11,205,000	12,555,203	1,350,203	12.1%
POSTEMPLOYMENT BENEFITS	4,673,624	4,673,624	4,754,061	80,438	1.7%
TOTAL INDIRECT EXPENSES	\$ 56,651,673	\$ 55,332,302	\$ 58,617,124	\$ 3,284,822	5.9%
STATE REVOLVING FUND	\$ 95,673,399	\$ 95,673,399	\$ 99,402,956	3,729,557	3.9%
SENIOR DEBT	244,957,128	238,650,582	305,911,389	67,260,807	28.2%
SUBORDINATE DEBT	125,046,217	117,017,639	75,491,975	(41,525,664)	-35.5%
LOCAL WATER PIPELINE CP	6,120,127	4,750,000	6,243,882	1,493,882	31.5%
CURRENT REVENUE/CAPITAL	17,200,000	17,200,000	18,200,000	1,000,000	5.8%
CAPITAL LEASE	3,217,060	3,217,060	3,217,060	-	0.0%
DEBT PREPAYMENT	5,609,355	5,609,355	5,500,000	(109,355)	-1.9%
DEBT SERVICE ASSISTANCE	(1,287,870)	(1,287,870)	-	1,287,870	-100.0%
TOTAL DEBT SERVICE	\$ 496,535,417	\$ 480,830,165	\$ 513,967,263	\$ 33,137,097	6.9%
TOTAL EXPENSES	\$ 812,997,202	\$ 783,338,004	\$ 840,236,744	\$ 56,898,740	7.3%
REVENUE & INCOME					
RATE REVENUE	\$ 792,084,000	\$ 792,084,000	\$ 819,138,000	27,054,000	3.4%
OTHER USER CHARGES	9,222,884	10,693,360	9,870,899	(822,461)	-7.7%
OTHER REVENUE	6,479,202	7,557,169	6,108,752	(1,448,417)	-19.2%
RATE STABILIZATION	1,250,000	1,250,000	980,000	(270,000)	-21.6%
INVESTMENT INCOME	3,961,116	4,100,116	4,139,091	38,975	1.0%
TOTAL REVENUE & INCOME	\$ 812,997,202	\$ 815,684,646	\$ 840,236,744	\$ 24,552,098	3.0%
VARIANCE:		\$ (32,346,642)		\$ (32,346,643)	

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: February 16, 2022
SUBJECT: Proposed Amendments to the Management Policies of the Board of Directors

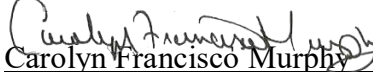
COMMITTEE: Administration, Finance & Audit

 INFORMATION

 X VOTE


Michele S. Gillen

Director, Administration


Carolyn Francisco Murphy

General Counsel

Douglas J. Rice, Director of Procurement
Preparer/Title

RECOMMENDATION:

To adopt the proposed amendments to the Management Policies of the Board of Directors to (1) increase the Procurement Delegated Authority thresholds for the Executive Director and certain staff to reflect inflationary increases since the current delegations were established; (2) provide the Executive Director with separate delegated authority for routine chemical purchases when awarded to the low bidder; (3) incorporate re-delegation of authority language for professional and non-professional service contract amendments to make it consistent with the Executive Director’s construction contract change order re-delegation authority; (4) allow the Executive Director to approve appointments for all positions that fall under collective bargaining agreements; (5) allow the Executive Director to approve changes on amendments to the PCR register for changes in job title; and (6) increase the Executive Director’s delegated authority for the bringing of suit and settlement of claims and suits, each substantially in the form presented and filed with the records of the meeting.

DISCUSSION:

In July 1985, the Board adopted a set of Management Procedures (MWRA Policy #ADM.01, Management Policies of the Board of Directors) designed to regulate the day-to-day responsibilities of the Authority. This Policy set forth specific delegations of authority for certain staff to purchase materials, award contracts, and execute amendments and change orders up to certain values. With the exception of minor increases to the delegated authority thresholds granted to the Purchasing Manager, COO and Director of Administration in 2015, these delegated thresholds have been largely unchanged since they were established in 1985. The Management Policy also sets forth certain thresholds for the approval of staff appointments by the Board. That policy has been amended on three occasions. The most recent amendment in 2017 established certain job classifications (non-union managers, Unit 6, job grade 12 and higher and Unit 9, job grade 29 or higher) to be approved by the Board. Finally, the Management Policy set forth specific delegations of authority to the Executive Director to bring suits and settle certain legal claims. Those delegations have not been modified since at least 1990.

Procurement

Since 1985, the annual rate of inflation in the United States has been approximately 2.6%. Staff are recommending increases to the delegated authority dollar amounts. These adjustments will ensure that MWRA continues to efficiently handle routine matters, while larger awards will continue to be brought before the Board for approval. No amendments or changes are being recommended for either the Authority’s Change Order Process policy (ADM.03) or the Contract Amendments - Professional Services policy (ADM.25). A survey of peer agencies - MassPort, MassDOT and MBTA - revealed that the delegations proposed by staff would be comparable to, or in some cases, significantly lower than the delegations at those agencies.

Staff are recommending that a new purchasing delegation be created to specifically address routine, recurring chemical purchases. For this category, staff are recommending that the Executive Director be authorized to approve a purchase of up to \$15 million when that award is to the lowest responsive bidder.

This chart presents the current and proposed delegations:

Category	Delegate	Current Delegation	Proposed Delegation
Purchasing	Executive Director	\$1,000,000	\$3,500,000
	Director of Administration	\$35,000	\$120,000
	Director of Procurement	\$25,000	\$90,000
	Purchasing Manager	\$5,000	\$20,000
	Authorized Representative ¹	\$2,000	\$10,000
Purchasing Amendments	Executive Director	25% of original contract or \$250,000 and not more than 6 months.	25% of original contract and not more than 6 months.
Chemical Purchases	Executive Director	N/A	\$15,000,000
Construction Contracts	Executive Director	\$1,000,000	\$3,500,000
Change Orders	Executive Director	25% of original contract or \$250,000 and not more than 6 months.	25% of original contract or not more than \$1,000,000 and not more than 6 months.
Professional Services (With an Individual)	Executive Director	\$50,000 and 12 months	\$200,000 and 24 months
Professional Services (With a Firm)	Executive Director	\$100,000 and 12 months	\$1,000,000 and 36 months
Non-Professional Services	Executive Director	\$250,000	\$1,000,000

¹ Only with the approval of the Executive Director

Professional and Non-Professional Services	Director of Administration and Chief Operating Officer	\$35,000 and 12 months	\$350,000 and 12 months
	Deputy Chief Operating Officer, Director of Finance and General Counsel	\$10,000 and 12 months	\$100,000 and 12 months
	Authorized Designee	\$5,000 and 12 months	\$50,000 and 12 months
Amendments	Executive Director	25% of original contract or \$250,000 and not more than 6 months.	25% or \$500,000 and not more than 12 months. Re-delegation from the Board consistent with Change Orders
Temporary Delegation of Authority (All Categories)	A designee duly authorized in writing by the Executive Director		All approvals delegated to the Executive Director

For consistency, staff are also recommending that the same re-delegation of authority language currently found in the Construction section be incorporated into the Amendment section, authorizing the Executive Director to approve additional amendments as may be needed to an engineering contract in an amount not to exceed the aggregate of \$500,000. In the event that this initial re-delegation becomes allocated, the Executive Director will need to seek additional approval from the Board for further incremental delegations of time and money.

Human Resources

Currently the Management Policies of the Board of Directors require the Personnel Committee and the Board of Directors to approve the recommendation of the Executive Director on appointments of positions which are in the non-union classification structure or grade 12 and above of the USW Local 9360 classification structure or grade 29 or above of the MOSES classification structure. Staff are now recommending that the Executive Director be granted the authority to make all appointments other than those that fall in the non-union classification structure. This adjustment will ensure that MWRA continues to efficiently handle staff hiring, while all policy making positions will continue to be brought before the Board for approval. Staff are also recommending that amendments to the Authority's Position Control Register, which result only in a change of title or cost center for a position may be approved by the Executive Director or his designee and shall be included in the report of actions under delegated authority.

Law

Staff are recommending an increase in the Executive Director's delegated authority to bring suit and settle claims and suits, which delegations were last established at least in 1990. Under the Policy, such authority is exercised upon the written advice of the General Counsel. Also, on an annual basis Law Division staff will continue to provide to the Board a summary and update of significant litigation and construction claims (demands above \$100,000).

BUDGET/FISCAL IMPACT:

The changes discussed in this staff summary will have no budgetary impacts.

ATTACHMENTS:

- Proposed Amendments to the Management Policies of the Board of Directors
- Delegated Authority Comparison Chart

Current
Proposed

Management Policies of the Board of Directors (ADM.01)

II. Human Resources

G. Delegated Authority

1. Staff Appointments.

The Personnel and Compensation Committee and the Board of Directors shall approve, upon the recommendation of the Executive Director, appointments of positions which are in the non-union classification structure ~~or Grade 12 and above of the Unit 6 classification structure or Grade 29 and above of the Unit 9 classification structure~~. The Executive Director or his designee may approve appointments to all other established positions. The Executive Director, however, shall have no power hereunder to amend, change, extend or otherwise modify on behalf of the Authority contracts for employment with the Authority

3. Amendments to Position Control Register.

All amendments to the Authority's Position Control Register, except those resulting only in a change in cost center for a position, must be approved by the Personnel and Compensation Committee of the Board of Directors. Positions with salaries of \$85,000 or more will not be advertised until the Personnel and Compensation Committee approves the amendment. 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 costs by \$10,000 or more, must be approved by the Board of Directors after review by the Personnel and Compensation Committee. Amendments which result only in a change of **title** ~~or~~ cost center for a position may be approved by the Executive Director or his designee and shall be included in the report of actions under delegated authority required by Article V.E.4(a)

III. Law

B. Delegated Authority with Respect to Certain Legal Actions

1. Claims and Litigation.

(a) Claims Against the Authority.

(1) **Insured Claims.** The Executive Director, upon the written advice of the General Counsel, is authorized to settle claims and approve payment of deductible amounts for any amount up to ~~\$100,000~~ \$300,000.

(2) **Other Claims.** The Executive Director, upon the written advice of the General Counsel, may settle claims against the Authority, before or after litigation is filed, for any amount up to ~~\$100,000~~ \$300,000.

(b) **Claims Instituted by the Authority.** The Executive Director, upon the written advice of the General Counsel, is authorized to direct the bringing of suit where the amount claimed does not exceed ~~\$50,000~~ \$300,000 or where immediate injunctive relief is required to protect the interests

of the Authority. The Executive Director may also settle and discharge the suit for any amount up to ~~\$50,000~~ \$300,000.

V. Procurement

E. Delegated Authority

1. Purchasing.

(a) By Executive Director. The Executive Director may award contracts for purchase or lease of equipment, materials or supplies for not more than ~~\$1,000,000~~ \$3,500,000 where the recommendation to award is to the lowest responsive and eligible bidder under a competitive procurement conducted by the Authority or where the recommendation to award is under a contract awarded by the State Purchasing Agent, a Multi-State Cooperative or the Federal General Services Administration (see Article V.B above).

(i) For purchases of chemicals that are required for the normal day-to-day operations of the Authority's water and wastewater treatment operations, the Executive Director may award contracts for not more than \$15,000,000 where the recommendation to award is to the lowest responsive and eligible bidder under a competitive procurement conducted by the Authority.

(b) By Other than Executive Director. The Director of Administration may award contracts for purchase or lease of equipment, materials or supplies for not more than ~~\$35,000~~ \$120,000; the Director of Procurement may award such contracts for not more than ~~\$25,000~~ \$90,000; the Purchasing Manager may award such contracts for not more than ~~\$5,000~~ \$20,000; and persons duly authorized in writing by the Executive Director may award such contracts for not more than ~~\$2,000~~ \$10,000.

(c) Amendments. The Executive Director may amend any contract for purchase or lease of equipment, materials or supplies by not more than ~~25%~~ of the original contract amount or ~~\$250,000~~ \$500,000 whichever is less and for a term not exceeding an aggregate of ~~six~~ months.

2. Construction Contracts.

(a) Original Contract. The Executive Director may award construction contracts for an amount not more than ~~\$1,000,000~~ \$3,500,000 where the recommendation is in accordance with the competitive public bidding laws.

(b) Change Orders and Amendments. The Executive Director may award change orders or amendments to contracts for the construction of buildings or public works which increase the contract amount by not more than ~~25%~~ of the original amount or ~~\$250,000~~ \$1,000,000 whichever is less and for a term not exceeding an aggregate of ~~six~~ months, and which decrease the contract amount by any amount and for any term; provided however that cost increase changes and cost credit changes must be awarded separately.

(c) Additional Authority for Change Orders or Amendments. Once the delegated Authority granted to the Executive Director in paragraphs (a) and (b) above is exceeded, the Executive Director may

request the Board of Directors to approve a set increment of additional delegated authority for time and money. This additional set increment of delegated authority shall be in amounts to be decided by the Board, although the Executive Director may make recommendations as he deems appropriate. Upon approval by the Board of Directors of the additional amount or time, the Executive Director shall be authorized to award any change orders or amendments within the approved increments.

3. Professional and Non-Professional Service Contracts.

(a) Professional Services:

(1) With Individual. The Executive Director may award an agreement for professional services with an individual for a term not exceeding ~~twelve~~ **twenty-four** months and for an amount not more than ~~\$50,000~~ **\$200,000**, provided, however, that the Board of Directors reserves the right to approve any consecutive agreements with the same individual.

(2) With Firm. The Executive Director may award an agreement for professional services with a firm for a term not exceeding ~~twelve~~ **twenty four** months and for an amount not more than ~~\$100,000~~ **\$1,000,000**.

(b) Non-Professional Services: The Executive Director may award an agreement for non-professional services, by contract or purchase order, with either a firm or an individual for an amount not more than ~~\$250,000~~ **\$1,000,000** if a competitive procurement process has been conducted by the Authority or if selecting a contract awarded by the State Purchasing Agent, a Multi-State Collective or the Federal General Services Administration (see Article V.B above), or for an amount not more than ~~\$100,000~~ if a procurement process other than a competitive process has been conducted.

(c) By Other than Executive Director. The Chief Operating Officer or the Director of Administration may award an agreement for professional or non-professional services for not more than ~~\$35,000~~ **\$350,000** and for a term not exceeding ~~twelve~~ months; and the Deputy Chief Operating Officer, the Director of Finance or the General Counsel may award such agreements for an amount not more than ~~\$10,000~~ **\$100,000** and for a term not exceeding ~~twelve~~ months. A designee duly authorized in writing by the Executive Director, the Chief Operating Officer, the Director of Administration, the Director of Finance or the General Counsel may award such agreements for not more than ~~\$5,000~~ **\$50,000** and for a term not exceeding ~~twelve~~ months.

(d) Amendments. The Executive Director may amend any service agreement with individuals or with firms by not more than ~~25%~~ of the original contract amount or ~~\$250,000~~ **\$500,000** whichever is less and for a term not exceeding an aggregate of twelve months.

(e) Additional Authority for Amendments. Once the delegated Authority granted to the Executive Director in paragraphs (a-d) above is exceeded, the Executive Director may request the Board of Directors to approve a set increment of additional delegated authority for time and money. This additional set increment of delegated authority shall be in amounts to be decided by the Board, although the Executive Director may make recommendations as he deems appropriate. Upon approval by the Board of Directors of the additional amount or time, the Executive Director shall be authorized to award any amendments within the approved increments.

4. **Miscellaneous.**

(a) Reporting Requirements. The Executive Director shall on a monthly basis present a written report to the Board of Directors stating all actions under delegated authority for more than \$25,000. The report shall state the nature of the action taken, the name of each person or firm with whom the Authority has contracted, the duration and the amount of the contract, change order or amendment.

(b) Further Actions by the Executive Director. The Executive Director is authorized to take all actions deemed necessary or appropriate to effectuate, perform and benefit from contracts and agreements duly entered into by or on behalf of the Authority, including without limitation, the execution and delivery of documents and pertinent certificates. The Executive Director may further delegate to a designee the ability to temporarily make approvals up to their delegated authority thresholds.


(c) Request for Proposals and Other Pre-Contract Steps. Whenever the power to enter into agreements has not been delegated to the Executive Director, formal approval by the Board of Directors will be obtained prior to entering into the contractual arrangement except in emergencies. Requests for Proposals and other pre-contract steps may be taken by the responsible officer or staff of the Authority without prior approval by the Board of Directors.

(d) Retainages. The Executive Director may approve or execute any release of any retainage on any agreement, contract or order.

Attachment 2: Delegated Authority Comparison Chart

	<u>MWRA Current</u>	<u>MassPort</u>	<u>MBTA</u>	<u>MassDOT</u>
Purchasing	\$1,000,000	\$5,000,000		\$15,000,000
Construction Contracts	\$1,000,000	\$5,000,000	\$15,000,000	\$15,000,000
Construction Change Orders	\$250,000	10%		\$15,000,000
Professional Services	\$100,000	\$2,000,000	\$3,000,000	\$15,000,000
Non-Professional Services	\$250,000			\$15,000,000
Prof & Non-Prof Amendments	\$250,000			\$15,000,000

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: February 16, 2022
SUBJECT: Groundskeeping Services – Metropolitan Boston
C&W Facility Services, Inc. d/b/a C&W Services
Contract OP-439

COMMITTEE: Administration, Finance and Audit

 INFORMATION

 X VOTE



Michele S. Gillen

Director of Administration

Charles Ryan, Director, Wastewater O & M
Lisa Bina, P.E., Deputy Director, Waterworks
George Bacon, P.E., Project Manager, PC & PS
Preparer/Title



David W. Coppes, P.E.

Chief Operating Officer

RECOMMENDATION:

To approve the award of Contract OP-439, Groundskeeping Services – Metropolitan Boston, to the lowest responsible and eligible bidder, C&W Facility Services, Inc. d/b/a C&W Services and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$534,316.75 for a contract term of 1,095 calendar days from the Notice to Proceed.

DISCUSSION:

Contract OP-439 will provide grounds maintenance services at 31 MWRA water and wastewater locations within the metropolitan Boston area. Contracted work includes basic grounds maintenance tasks, such as mowing and trimming at weekly or biweekly frequencies. It will also include spring and fall clean-ups that entail removing leaves, dead branches and other debris, inspecting the property for pests and diseases and mulching planting beds. Several dams at the Fells Reservoir will be regularly mowed and vegetation that could affect structural integrity will be removed.

MWRA has been contracting a portion of its grounds maintenance work since 2006 because it is the most cost-effective way to complete this work.

Procurement Process

Contract OP-439 was publicly advertised in the Boston Herald, the Central Register, Banner Publications, El Mundo, and COMMBUYS and bid as a non-professional services contract. In addition, bids were made available for public downloading on MWRA's e-procurement system (Event 4903). A remote pre-bid meeting was held on December 16, 2021. On January 13, 2022, bids were received and opened with the following results:

<u>Contractor</u>	<u>Bid Amount</u>
Greener Horizon, LLC	\$299,231.00*
C&W Facility Services, Inc.	\$534,316.75
<i>Engineer's Estimate</i>	<i>\$540,000.00</i>
M. Neves, Inc.	\$665,000.00

*Greener Horizon, LLC withdrew its bid, citing a significant error in its bid calculation.

The Engineer's Estimate for this contract was developed based on past experience with contracted landscape and lawn maintenance contracts, and included a projected inflationary increase.



View of the Grounds at Alewife Brook Pump Station

C&W's bid is one percent lower than the Engineer's Estimate. Staff interviewed a representative from C&W who demonstrated a clear understanding of the scope of work and affirmed that the bid price included all work items.

C&W is very familiar with the scope of work of OP-439, as it is the contractor for the current groundskeeping services contract (OP-408). It was also the contractor for four other Authority groundskeeping services contracts. Staff are of the opinion that familiarity

with the work allows C&W to provide competitive pricing. In addition to the metropolitan Boston groundskeeping contracts, C&W has successfully performed groundskeeping services at Deer Island under a number of separate contracts competitively bid over the past 14 years.

Based on the interview and a review of C&W's bid price, staff are of the opinion that the bid price is reasonable and complete. References were checked and found to be favorable. In addition, OSHA records were checked and no violations were noted. Further, C&W meets the requirements for experience, and MWRA staff have reported the company's performance as excellent. Accordingly, staff are of the opinion that C&W possesses the skill, ability, and integrity necessary to perform the work under this contract and is qualified to do so. Therefore, staff recommend the award of Contract OP-439 to C&W Facility Services, Inc. d/b/a C&W Services as the lowest responsive bidder.

BUDGET/FISCAL IMPACTS:

The FY22 Current Expense Budget contains sufficient funding for the remainder of the fiscal year for this contract. Appropriate funding will be included in subsequent proposed CEB requests for the remaining term of the contract.

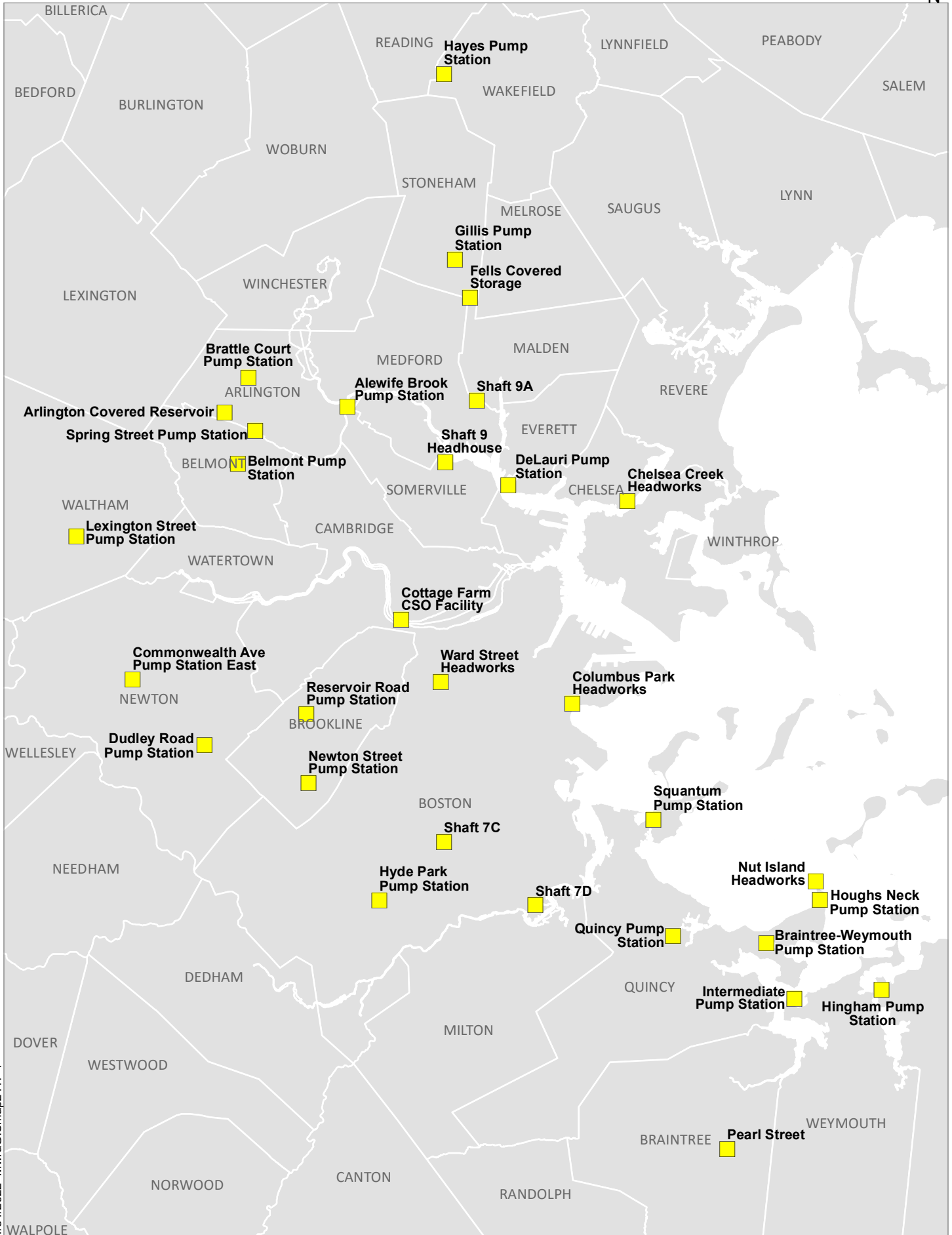
MBE/WBE PARTICIPATION:

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

ATTACHMENT:

Map of Facilities Included in the Contract

OP-439, Groundskeeping Services – Metropolitan Boston




1/31/2022 MwaGISmap2117-1

0 2.5 5 Miles

Facilities To Be Serviced


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: February 16, 2022
SUBJECT: Purchase Order Contract for New Next Generation Firewall System Hardware, Software, Five Years Maintenance/Support and Installation Services
ePlus Technology, Inc.
WRA-5073Q, State Contract ITS74

COMMITTEE: Administration, Finance, & Audit

 INFORMATION
 X VOTE

Paula Weadick, MIS Director
Douglas J. Rice, Director, Procurement
Preparer/Title


Michele S. Gillen
Director, Administration

RECOMMENDATION:

To approve the award of a purchase order contract for new Next Generation Firewall system hardware, software, five years maintenance/support, and installation services to the lowest responsive bidder under Bid WRA-5073Q, ePlus Technology, Inc., and authorize the Executive Director to execute said purchase order in the bid amount of \$431,839.00.

DISCUSSION

On March 16, 2016, the Board of Directors approved the award of Contract 7499 for Managed Security Services to NWN Corporation. This contract included network firewalls, intrusion detection and prevention components, and the management of existing FireEye appliances across multiple sites. These technologies, along with web security appliances, are key components of the MWRA's defense in depth cyber security strategy. The equipment purchased under Contract 7499 and the existing web security technology will reach End of Support by June 2022 and is in need of replacement.

Staff engaged Klogix Security in May 2021 to (1) perform a gap analysis of MWRA's current and recommended future cyber security posture; (2) provide recommendations on technologies that MWRA should consider implementing to fortify its stance on IT Security for the next 5 years; and (3) identify managed security service providers that could manage and support those technologies. A cyber security ecosystem centered on either Fortinet or Palo Alto technologies was determined to best meet MWRA's future cyber security needs. Bid WRA-5073Q requested that bidders provide only pricing for one of the two solutions, either wholly Fortinet or wholly Palo Alto. The low bidder, ePlus Technology, Inc. proposed the Fortinet solution.

Fortinet is a security leader in Gartner's Magic Quadrant. The Magic Quadrant is a series of market research reports published by leading IT consulting firm Gartner that rely on proprietary qualitative data analysis methods to demonstrate market trends.

MIS currently uses both Fortinet FortiGate appliances to provide secure VPN connectivity and Fortinet FortiMail appliances to provide email filtering and other email-based cyber protections.

This procurement includes the following Fortinet hardware and software solutions along with services for the configuration and implementation of these solutions to industry best practices:

- **FortiManager Virtual Appliances** to provide a central management console for all appliances.
- New **Fortigate Next Generation Firewalls** which have the capability of application control, intrusion protection services, antivirus, antimalware, web filtering and Software Defined Wide Area Network.
- **FortiAnalyzer Appliances** for Centralized Logging and Analytics.
- **FortiClient Software Licenses** to extend cyber security protections to teleworkers when working at remote locations outside the MWRA IT network.

These Fortinet technology solutions will replace the existing Cisco Firewalls, FireEye Appliances and Forcepoint/Websense Web filtering appliances. These solutions along with those already deployed for branch office connectivity and email security will be managed from a single console.

Another component of Contract 7499 is Managed Security Services to provide 24/7/365 monitoring and co-management of the security network firewalls and intrusion detection and prevention solutions. These services will be procured separately in the coming months.

Procurement Process:

Under Bid WRA-5073Q, utilizing MWRA’s e-procurement system (Event 4939), staff directly solicited seven vendors listed on State Contract ITS74, which are authorized to provide IT Project Services, Systems, Services and Equipment.

On January 25, 2022, Event 4939 closed with the following results:

BIDDERS	SOLUTION	BID AMOUNT
ePlus Technology, Inc.	Fortinet	\$431,839.00
Presidio Networked Solutions	Palo Alto	\$741,809.20
NWN Corporation	Fortinet	\$924,949.66

ePlus Technology, Inc.’s bid was lower in all categories (hardware, software and professional services) of the components within the bid. Staff contacted ePlus Technology, Inc. and confirmed that the bid price reflects all work described in the contract documents. Staff reviewed ePlus Technology, Inc.’s bid in detail and discussed the major bid items with the company. Staff are satisfied that the firm understands the full scope of work and can perform the work for the bid price. Therefore, staff recommend the award of this purchase order to ePlus Technology, Inc. as the lowest responsive bidder.


BUDGET/FISCAL IMPACT:

The FY22 CIP includes sufficient funds to award this contract.

MBE/WBE PARTICIPATION:

ePlus Technology, Inc. is not a certified Minority-owned or Women-owned business.


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: February 16, 2022
SUBJECT: CSO Post-Construction Monitoring and Performance Assessment
AECOM Technical Services, Inc.
Contract 7572, Amendment 3

COMMITTEE: Wastewater Policy & Oversight

INFORMATION
 VOTE

John P. Colbert, P.E., Chief Engineer
Brian L. Kubaska, P.E., Assist. Director of Engineering, E&C
Preparer/Title


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

With the Board's approval, MWRA counsel filed a motion on February 4, 2021 with the Federal District Court requesting a three-year extension in the Boston Harbor case in connection with the performance assessment of the Authority's Long-Term CSO Control Plan (LTCP). The motion was filed with the assent of EPA, MassDEP and CLF. If the motion is approved, during the next three years the Authority will focus on the 16 outfalls that have not met the LTCP goals (projects are planned for 6 of these outfalls), file annual (rather than biannual) reports, meet at certain intervals with EPA, DEP, CLF and the watershed associations and submit a supplemental report at the conclusion of the three year period (December 2024). This staff summary is for an amendment to Contract 7572 with AECOM to support these additional efforts, as well as requirements under current variances.

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Amendment 3 to Contract 7572, CSO Post-Construction Monitoring and Performance Assessment, with AECOM Technical Services, Inc., to increase the contract amount by \$1,559,000, from \$5,284,405 to \$6,843,405 and to extend the contract term by three years (1,097 calendar days, from April 7, 2022 to April 7, 2025).

DISCUSSION:

The last milestone in the Boston Harbor Federal District Court case required MWRA to submit the results of a performance assessment of its Long-Term Combined Sewer Overflow Control Plan to determine whether the levels of CSO control included in the LTCP had been achieved. On December 30, 2021, MWRA complied with this milestone in submitting its Performance Assessment Report. CSO outfalls that discharge to the Lower Charles River/Charles River Basin and the Alewife Brook/Upper Mystic River (the Variance Waters) currently operate under regulatory variances to the Massachusetts Surface Water Quality Standards. These CSO outfalls are also included within the LTCP. The variances (issued through August 2024) include requirements that overlap with, or are in addition to, the requirements of the performance assessment.

MWRA consulted with court parties, the U.S. Environmental Protection Agency, the Massachusetts Department of Environmental Protection and the Conservation Law Foundation (CLF), regarding a potential framework for the Boston Harbor case over the next three years. The parties reached an agreement on such a framework. With the assent of EPA, MassDEP and CLF, MWRA filed a motion with the Court requesting its approval of this framework.

AECOM has worked for over four years as MWRA's CSO consultant on the performance assessment and variance requirements, performing complex work to support the CSO program, including:

- installing meters and analyzing meter data at 57 CSO regulators;
- performing inspections to document the closure of CSOs and configuration of regulators;
- expanding, recalibrating, and updating MWRA's collection system model used in assessing CSO performance against the LTCP goals;
- assessing alternatives to improve CSO performance and determining the current levels of CSO control;
- developing and calibrating receiving water quality models for the variance waters and then using these models to assess water quality impacts from remaining CSOs and other pollutant sources, as well as evaluating water quality impacts from various alternate scenarios;
- evaluating system optimization alternatives as required under the current variances; and
- assisting MWRA with developing seven Semi-Annual Reports as well as the Final CSO Post Construction Monitoring Program and Performance Assessment Report, which was filed in December 2021 in accordance with the last milestone in the 36-year old Federal District Court case.

AECOM's work to date has been excellent. The firm is well qualified to continue this important work given its in-depth knowledge of the MWRA wastewater system obtained through inspections, metering, model calibration and development and analysis of alternatives to improve system operation. AECOMM can leverage its knowledge and experience to assist MWRA in addressing remaining challenges in the program.

Amendment 1 increased the contract amount by \$931,490, and extended the term by one year. The scope of services was modified to: develop a receiving water quality model for the Variance Waters at the request of EPA and MassDEP; extend temporary metering at certain CSO outfalls; and to purchase the CSO outfall meter equipment that had been installed for temporary measurement so MWRA could permanently monitor and implement near real-time CSO outfall reporting.

Amendment 2 increased the contract amount by \$1,431,700, with no increase in contract term. This amendment included additional modeling and analysis necessary to support requirements of the most recent variances. Amendment 2 also included additional hydraulic model calibration, modeling and analysis to evaluate system improvements due to activation frequencies or volumes above the LTCP goals after model recalibration.

This Amendment:

Proposed Amendment 3 seeks to increase the contract amount by \$1,559,000, and extend the contract term by three years. The amendment includes: further investigations and hydraulic modeling to support development of alternatives and concept designs for CSOs not currently meeting LTCP goals; developing three Annual Reports to provide updates as to 16 outfalls that have not met the LTCP goals; providing model predictions of CSOs during each calendar year; developing an updated CSO Control Plan for the Variance Waters (variance requirement); and preparing a supplement to the Performance Assessment Report. The extent of the work is dependent, in part, on the Court’s action on MWRA’s motion. Only work which is consistent with the Court’s order, or required in any event under the current variances, will be performed.

To date, AECOM has performed within the total contract budget. A reallocation of unused funds in the amount of \$196,000 from various tasks near completion and an unused allowance of funds for police details, is included in this amendment to offset overages for other tasks, including extensive hydraulic model adjustments and calibrations checks, additional calibration and report efforts on the two receiving water models; and preparation of the final CSO Post Construction Performance Assessment report, which will document the work and investigations of MWRA and CSO communities to move closer to meeting LTCP goals.

Updated CSO Control Plan \$441,000

As required in the current variance for CSO discharges to the Variance Waters MWRA is required to submit an Updated CSO Control Plan by December 31, 2023. The CSO communities of Somerville and Cambridge will also be required to submit their own Updated CSO Control Plans for their remaining CSO discharges to the Variance Waters. This will require close coordination with our member CSO communities, given MWRA’s continued work on a few of the CSOs that have not met LTCP goals owned by Somerville (SOM001A) and Cambridge (CAM005).

Under this amendment, additional services will be added to allow AECOM to assist MWRA in preparing the required Updated CSO Control Plan, which will include a description of the existing level of CSO control; an evaluation of the costs, performance and water quality improvements achieved by additional CSO control alternatives, up to and including, elimination of CSO discharges; development and support of a public participation plan to inform the public of these plans and provide opportunities to provide comments; and an affordability analysis to assess financial capacity to complete these improvements.

Additional Project Management Services \$406,000

The Consultant will be required under this amendment to provide three years of additional project administration and management services, including preparation for and attendance at project coordination meetings, meetings with CSO communities, meetings with the MWRA CSO Management Team, periodic meetings with court parties and watershed groups, project team coordination and preparation of monthly progress reports. An estimated budget surplus of \$29,000 is anticipated at the end of the original contract in April 2022. This estimated surplus will be used to offset the proposed cost to support three additional years of project administration and management services.

Additional Investigations and Tracking of 16 CSO Outfalls

\$303,000

As agreed with the court parties as part of the three-year extension, and if approved by the Court, MWRA will be required to track progress and further develop and implement plans, where feasible, to meet the LTCP goals at the 16 CSO locations that have not met LTCP goals. This includes:

- at six of the 16 outfalls forecasted to meet LTCP goals after December 2021 (Somerville Marginal primary MWR205 and high tide MWR205A/SOM007A, BOS003, BOS009, BOS014, and CHE008) that are currently in design or construction, AECOM will complete additional scope to update the model to as-built conditions and provide assistance to refine operational strategies at hydraulic control points;
- at four of the 16 CSOs where conceptual plans have been modeled and are being considered by BWSC for constructability (BOS017, BOS062/BOS065, BOS070 (RE070/7-2) additional scope will be added to allow modeling of refinements to the concepts and prepare sketches to support the design and construction; and
- at six of the 16 remaining CSOs noted to be particularly challenging to further reduce CSO to meet LTCP goals (SOM001A, MWR201 Cottage Farm, CAM005, MWR018, MWR019, MWR020) additional scope will be added to update the hydraulic model to better evaluate potential CSO community system interactions and system changes, develop concept sketches and cost estimates, and develop and investigate other potential means to improve receiving water quality in lieu of further CSO reductions.

Annual Reports

\$243,000

As agreed with the court parties as part of the three-year extension, and if approved by the Court, annual reports will document CSO performance and track progress on investigations, designs, and construction efforts to move closer to meeting LTCP goals at the remaining 16 CSOs. Additional scope is required to support the development of the three (2022, 2023 and 2024) annual reports. To complete each annual report, the hydraulic model is required to be updated to incorporate system improvements that occurred over the preceding year. The hydraulic model will then be run using Typical Year rainfall to update the LTCP performance, as well as against actual storm events in the preceding year, and compared against MWRA and CSO community-measured CSO discharges. The annual reports will further provide an analysis of the prior year's rainfall in comparison to the Typical Year, and provide a summary of any improvement work completed since the prior report and an update on MWRA's investigative work and analysis.

Supplement to the Final Post Construction Monitoring Report

\$50,000

As agreed to under the three-year extension, and if approved by the Court, MWRA with assistance from AECOM will produce a supplement to the Performance Assessment Report by December 31, 2024. The report will document the final Typical Year performance of all 86 outfalls as compared to 1992 system conditions. In addition, the final results and conclusions as to the 16 outfalls will be included and an alternatives analysis provided describing what additional actions and costs could be taken to further reduce or meet LTCP activation and volume goals for any of the outfalls that do not meet the LTCP goals. This supplemental report, together with the Performance Assessment Report and Water Quality Assessment Report filed in December 2021, will provide information to EPA, MassDEP, and the Court to make any determinations as to

attainment of the levels of control in the LTCP, and draw any final conclusions.

Allowances

\$116,000

This amendment includes additional funds should AECOM be required to perform services outside of those described herein. Services, authorized through task orders may include additional efforts in site investigations; hydraulic model calibration; receiving water model runs and refinements; public outreach and support; and further efforts to advance MWRA’s progress in meeting its court and regulatory obligations on CSO matters.

CONTRACT SUMMARY:

	<u>Amount</u>	<u>Time</u>	<u>End Date</u>
Original Contract	\$2,921,215	41 Months	4/7/2021
Amendment 1	\$931,490	12 Months	4/7/2022
Amendment 2	\$1,431,700	0 Months	
Proposed Amendment 3	<u>\$1,559,000</u>	<u>36 Months</u>	<u>4/7/2025</u>
Adjusted Contract	\$6,843,405	89 Months	4/7/2025


BUDGET/FISCAL IMPACT:

The FY22 CIP includes a budget of \$5,284,405 for Contract 7572. Including this amendment for \$1,559,000, the adjusted contract amount will be \$6,843,405 or \$1,559,000 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 0% and 4.0%, respectively, remain unchanged by this amendment.


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: February 16, 2022
SUBJECT: Nut Island Headworks Odor Control and HVAC Improvements
Walsh Construction Company II, LLC
Contract 7548, Change Order 9

COMMITTEE: Wastewater Policy & Oversight

INFORMATION
 VOTE

Corinne M. Barrett, Director, Construction
Martin E. McGowan, Construction Coordinator
Preparer/Title


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

RECOMMENDATION:

To Authorize the Executive Director, on behalf of the Authority, to approve Change Order 9 to Contract 7548, Nut Island Headworks Odor Control and HVAC Improvements, with Walsh Construction Company II, LLC, for a lump sum amount of \$187,410.85, increasing the contract amount from \$58,726,514.84 to \$58,913,925.69, with no increase in contract term.

Further, 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 \$250,000, in accordance with the Management Policies and Procedures of the Board of Directors.

DISCUSSION:

Contract 7548 provides 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 also provides 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.

Improvements to the odor control system include 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.

Improvements to the HVAC system include replacement of the air handling units and unit heaters; replacement of the boilers; replacement of the energy management system; and installation of equipment to provide ventilation setbacks and recirculation to improve energy efficiency, as allowed by code.

Improvements to other equipment 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 and stop logs.

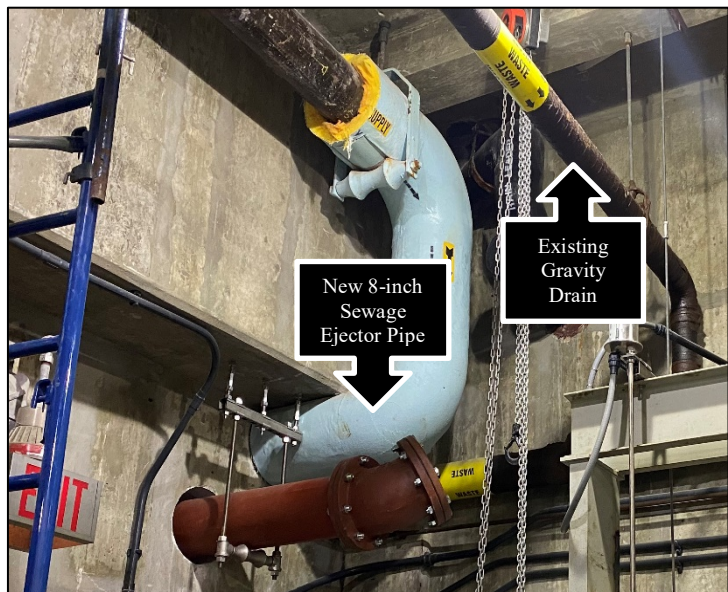
This Change Order

Change Order 9 consists of the following two items:

Sewage Ejector Piping

\$100,983.64

The Contractor is required to replace the existing sewage ejector pumps in the basement-level pump and blower room. Under normal operating conditions, these pumps receive flows from bathrooms and floor drains located in the wastewater process areas. The basement flooded during the January 2016 fire while the fire sprinkler system was activated. To ensure the basement does not flood and cause significant water damage, the design increased the pump capacity and discharge piping to handle normal flows as well as the potential for fire sprinkler flow. The contract includes replacing the entire run of existing six-inch ductile iron pipe with eight-inch ductile iron pipe from the basement level up to the screen room where it connects with an existing eight-inch sanitary line. After commencement of the contract, the plumbing filed subcontractor noted the existing eight-inch sanitary line in the screen room has multiple gravity drain connections from bathrooms and floor drains located on the upper levels of the facility. The Uniform State Plumbing Code prohibits gravity drain connections to the sewage discharge pipe from an ejector pump. This code was in effect at the time of design and should have been included as part of the as-bid contract documents. To comply with the code, these lines cannot be connected and must run separately to the sewer. The connection point for the new sewage ejector piping will be at an existing eight-inch sanitary drain line located in the odor control room. To correct this error, the plumbing filed subcontractor must extend the eight-inch sewage ejector piping and supports from the screen room to the odor control room and make a connection to an existing eight-inch sanitary drain line to comply with the Plumbing Code.



Sewage Ejector Piping in Screen Room

This item was identified by MWRA staff as a design error. MWRA staff, the Consultant, and the Contractor have agreed to a lump sum amount of \$100,983.64 for this work. The Contractor proceeded with this work at its own risk in order to complete the remainder of the contract work.

The Contractor is required to furnish and install new odor control and HVAC ductwork to replace the existing systems throughout the facility. This requires that the existing fire protection piping and sprinklers be modified to accommodate these improvements. The National Fire Protection Association Standard for the Installation of Sprinkler Systems requires that sprinklers be installed under fixed obstructions greater than 48 inches in width to ensure sprinkler coverage. The Design Engineer did not require sprinklers in a number of locations in the odor control room and grit room where the width of ductwork exceeds 48 inches.

In the odor control room, the new 72-inch odor control duct at the wet scrubbers and fans did not have the required sprinkler coverage. In the grit room, duct modifications are necessary to eliminate conflicts that resulted in the need to install additional sprinklers under a section of 60-inch by 32-inch exhaust air duct. It was also noted that additional sprinklers are required in the odor control room at the equipment hatch and at Stair 12 to provide the required sprinkler coverage. To correct these errors, the Contractor will furnish and install new sprinkler piping under the 72-inch odor control duct and the 60-inch by 32-inch exhaust air duct and install additional sprinklers at Stair 12 and equipment hatch to comply with NFPA sprinkler standards.



72-inch Odor Control Duct Requiring Sprinklers

Relocated Exhaust Air Duct Requiring Sprinklers

This item was identified by MWRA staff as a design error. MWRA staff, the Consultant, and the Contractor have agreed to a lump sum amount of \$86,427.21 for this work. The Contractor proceeded with this work at its own risk in order to complete the remainder of the contract work.

CONTRACT SUMMARY:

	<u>Amount</u>	<u>Time</u>	<u>Dated</u>
Original Contract:	\$57,565,399.00	1,034 Days	02/12/20
CHANGE ORDERS			
Change Order 1*	\$24,995.58	0 Days	12/08/20
Change Order 2*	\$126,224.03	0 Days	01/08/21
Change Order 3	\$376,355.91	0 Days	03/10/21
Change Order 4*	\$22,320.58	0 Days	03/10/21
Change Order 5*	\$203,986.91	0 Days	09/22/21

Change Order 6	\$222,179.61	0 Days	09/22/21
Change Order 7*	\$23,871.28	0 Days	11/29/21
Change Order 8*	\$161,181.94	0 Days	Pending
Change Order 9	<u>\$187,410.85</u>	<u>0 Days</u>	Pending
Total Change Orders	\$1,348,526.69	0 Days	
Adjusted Contract:	\$58,913,925.69	1,034 Days	

*Approved under delegated authority

If Change Order 9 is approved, the cumulative value of all change orders will be \$1,348,526.69 or 2.3% of the original contract. Work on this contract is 58% complete.

BUDGET/FISCAL IMPACT:

The FY22 Capital Improvement Program includes \$58,873,295 for Contract 7548. Including this change order for \$187,410.85, the adjusted subphase total will be \$58,913,925.69 or \$40,630.69 greater than the amount in the CIP. This amount will be absorbed in the five-year CIP spending cap.

MBE/WBE PARTICIPATION:

The MBE/WBE participation requirements for this project were established at 1.1% and 1.2%, respectively. The Contractor has been notified that they are still expected to meet these requirements.



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

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February 7, 2022

Dear Executive Director Laskey and Members of the MWRA Board of Directors,

WSCAC members would like to offer congratulations on MWRA's settlement agreement with CSXT. The terms of agreement provide MWRA with much needed improvements on safety issues along the reservoir segment within the Wachusett Reservoir Watershed.

Track upgrades to Class 3 classifications, scheduled maintenance and inspections as well as lower speeds and no idling within the reservoir segment will serve to lower the risk of a derailment. The development of emergency response plans and trainings to address risks associated with the transportation of hazardous materials will improve communication between state agencies and emergency responders, and will increase the ability to respond quickly and efficiently.

WSCAC notes that the CSXT agreement will provide a monthly report to MWRA that will document all items including hazardous cargo transported during the prior month. We suggest that MWRA request the Material Data Safety Sheets (MSDS) that CSXT receives from shipping companies before hazardous cargo moves across the reservoir segment. Chemical manufacturers and importers are required to provide Material Safety Data Sheets with all shipments. OSHA regulations require manufacturers and importers to provide information on the hazard of their chemicals to persons using or distributing those chemicals. Advance notice would provide MWRA with improved options for protection of the public drinking water supply.

We thank you for your long standing efforts that have led to this comprehensive agreement.

Sincerely,

Jerry Eves, WSCAC Chair