Posted 05/21/2021, 2:20pm

MASSACHUSETTS WATER RESOURCES AUTHORITY
Charlestown Navy Yard
100 First Avenue, Building 39
Boston, MA 02129

Frederick A. Laskey
Executive Director

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

BOARD OF DIRECTORS' MEETING

To be Held Virtually on May 26, 2021

Pursuant to Governor Baker's March 12, 2020 Order
Suspending Certain Provisions of the Open Meeting Law

WebEx Meeting Link for Attendees (Registration Required):

https://mwra.webex.com/mwra/onstage/g.php?MTID=efa3765da5c4bd7bb0448322efa6427e4

Event number: 173 757 7621 **Event password:** 52621

Time:
1:00 p.m.

AGENDA

I. APPROVAL OF MINUTES

II. REPORT OF THE CHAIR

III. REPORT OF THE EXECUTIVE DIRECTOR

IV. FY2022 BUDGET HEARINGS

- Advisory Board Integrated Comments and Recommendations on the MWRA's Proposed FY2022 CIP and CEB
- MWRA's FY2022 Draft Final Budget Hearings Presentation

V. PERSONNEL AND COMPENSATION

A. Approvals

1. Adoption of Juneteenth Holiday
2. PCR Amendments – May 2021
3. Appointment of Director, Western Operations
4. Appointment of Director SCADA, Metering & Monitoring
5. Appointment of Director, Environmental and Regulatory Affairs
6. Appointment of Program Manager, SCADA Tech

V. PERSONNEL AND COMPENSATION (Continued)

A. Approvals (Continued)

7. Appointment of Program Manager, Engineering and Construction
8. Appointment of Program Manager, Electrical

B. Annual Meeting of the Personnel and Compensation Committee Independent of Management

1. Authority Accountability and Transparency Act Compliance

VI. ADMINISTRATION, FINANCE AND AUDIT

A. Information

1. FY2021 Third Quarter Orange Notebook
2. Delegated Authority Report – April 2021
3. FY21 Financial Update and Summary as of April 2021

B. Approvals

1. Bond Defeasance of Future Debt Service
2. Conveyance of 12 Cleverly Court, Quincy
3. Memorandum of Understanding between MWRA and BWSC for Reimbursement for Health and Safety Training

C. Contract Awards

1. Managed Security Services: Purchase Order for Design and Engineering Services, Rutter Networking Technologies
2. Task Order Appraisal Services: Colliers International Valuation and Advisory Services, LLC, Contract 608TA
3. MWRA FY22 Insurance Program Renewal

VII. WATER POLICY AND OVERSIGHT

A. Information

1. Update on Section 79 Water Main Break – Melrose

VII. WATER POLICY AND OVERSIGHT (Continued)

B. **Contract Awards**

1. Supply and Delivery of Sodium Hypochlorite for the John J. Carroll Water Treatment Plant and the William A. Brutsch Treatment Facility: Univar USA, Inc., Bid WRA-4965
2. Water System Hydraulic Model: CDM Smith Inc., Contract 7613
3. Northern Intermediate High Section 89 Replacement Pipeline: P. Gioioso and Sons Inc., Contract 7117
4. Low Service Pressure Reducing Valve Improvements - Boston/Medford: RJV Construction Corporation, Contract 7563

C. Contract Amendments/Change Orders

1. Low Service Pressure Reducing Valve Improvements – Boston/Medford, Design and Engineering Services During Construction: CDM Smith Inc., Contract 7575, Amendment 1
2. John J. Carroll Water Treatment Plant Sodium Hypochlorite System Modifications: Harding & Smith, LLC, Contact 7085H, Change Order 2

VIII. CORRESPONDENCE TO THE BOARD

IX. OTHER BUSINESS

A. Review and Extension of Contract for Executive Director (verbal)

X. EXECUTIVE SESSION

i. Approval of April 14, 2021 Executive Session Minutes

A. Collective Bargaining

1. Collective Bargaining Update (verbal)

XI. ADJOURNMENT

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Board of Directors

April 14, 2021

Pursuant to Governor Baker's March 12, 2020 Order Suspending Certain Provisions of the Open Meeting Law the April 14, 2021 meeting of the Board of Directors of the Massachusetts Water Resources Authority was conducted by remote participation. Vice Chair Carroll presided. Present remotely from the Board, in addition to Mr. Carroll, were Ms. Wolowicz and Messrs. Cook, Flanagan, Foti, Pappastergion, Peña, Vitale, J. Walsh and P. Walsh. Secretary Theoharides was absent. MWRA staff participants 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; Carl Leone, Senior Program Manager, Planning; John Gregoire, Program Manager, Reservoir Operations; Lisa Hamilton, Assistant Director, Engineering; John Colbert, Chief Engineer; Patrick Barrett, Program Manager, Engineering and Construction; Andrea Murphy, Director, Human Resources; Bethany Card, Director, Environmental and Regulatory Affairs; Katherine Ronan, Environmental Analyst; Matthew Horan, Deputy Director of Finance/Treasurer; Lisa Grollman, Real Property Project Manager; Richard Geisler, Environmental Manager; Paula Weadick, Director, MIS; Brian Kubaska, Assistant Director, Engineering; and, Assistant Secretaries Ria Convery and Kristin MacDougall. Vandana Rao, EOEEA, and Joseph Favaloro, MWRA Advisory Board, also participated. The meeting was called to order at 1:06 pm. All motions were individually made and presented for discussion and deliberation. After any discussion and deliberation, motions for which there were no objections were then consolidated for one omnibus roll call vote.

APPROVAL OF MARCH 17, 2021 MINUTES

A motion was duly made and seconded to approve the minutes of the Board of Directors' meeting of March 17, 2021.

Vice Chair Carroll called for any discussion or objections. Hearing none, the Chair referred the motion to an omnibus roll call vote. (ref. I)

REPORT OF THE CHAIR

On behalf of the Board of Directors, Vice Chair Carroll welcomed Mr. Patrick J. Walsh to the Board. (ref. II)

REPORT OF THE EXECUTIVE DIRECTOR

Mr. Laskey welcomed Mr. Patrick Walsh to the Board of Directors on behalf of MWRA staff. Next, Mr. Laskey and MWRA staff provided the Board with a COVID-19

Documents used for this meeting, referenced above, can be found here:
https://www.mwra.com/monthly/bod/boardmaterials/2021/OS-2021-03-17%20BoardMaterials.pdf

update. Mr. Laskey then reported that he or a designee will serve on the Commonwealth's PFAS Task Force. Finally, Mr. Laskey noted that the Annual Meeting of the Personnel and Compensation Committee Independent of Management is expected to be held in May or June, 2021. (ref. III)

WATER POLICY AND OVERSIGHT

INFORMATION

Quarterly Update: Section 22 Rehabilitation Alternatives Analysis and Environmental Permitting, Black & Veatch Corporation, Contract 7155

Staff gave a presentation.

There were questions and answers.

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

CONTRACT AWARDS

Diver Assisted Suction Harvesting of Invasive Plants at Wachusett Reservoir Lower Basin and Coves: AE Commercial Diving Services, Contract WRA-4942

A motion was duly made and seconded to approve the award of a purchase order contract for the control of invasive plants in the Wachusett Reservoir lower basins and main reservoir coves to the lowest responsive bidder under Bid WRA-4942, AE Commercial Diving Services, and to authorize the Executive Director, on behalf of the Authority, to execute said purchase order contract in the bid amount of $448,000 for a term of six months from July 1, 2021 to December 31, 2021.

Staff gave a presentation.

Hearing no questions or objections, Vice Chair Carroll referred the motion to an omnibus roll call vote. (ref. IV B.1)

Community Leak Detection Survey Services: Arthur Pyburn & Sons, Inc. and Liston Utility Services

A motion was duly made and seconded to authorize the Executive Director, on behalf of the Authority, to award Contracts W332 and W332A for Community Leak Detection Survey Task Order Services to Arthur Pyburn & Sons, Inc. and Liston Utility Services, respectively, and to authorize the Executive Director, on behalf of the Authority, to execute each contract in an amount not to exceed $400,000 for a contract term of three years from the Notice to Proceed.

Staff provided a summary.

Hearing no questions or objections, Vice Chair Carroll referred the motion to an omnibus roll call vote. (ref. IV B.2)

Shaft 5 Building Improvements Design and Engineering Services During Construction: Kleinfelder Northeast, Inc., Contract 7599

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Documents used for this meeting, referenced above, can be found here:
https://www.mwra.com/monthly/bod/boardmaterials/2021/OS-2021-04-14%20Board%20Materials.pdf

A motion was duly made and seconded to approve the recommendation of the Consultant Selection Committee to award Contract 7599, Shaft 5 Building Improvements Design and Engineering Services During Construction, to Kleinfelder Northeast, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the amount of $1,158,678 for a contract term of 60 months from the Notice to Proceed.

Staff gave a presentation. There were questions and answers.

Hearing no further questions or objections, Vice Chair Carroll referred the motion to an omnibus roll call vote. (ref. IV B.3)

Section 89 Replacement Project, Resident Engineering Services: Stantec Consulting Services Inc., Contract 7633

A motion was duly made and seconded to approve the recommendation of the Consultant Selection Committee to award Contract 7633, Section 89 Replacement Project, Resident Engineering Services, to Stantec Consulting Services Inc. and to authorize the Executive Director, on behalf of the Authority, to execute said contract in an amount not to exceed $1,697,990, for a contract term of forty-eight months from the Notice to Proceed.

Staff gave a presentation. (Ms. Wolowicz joined the meeting during the presentation.) There was brief discussion and questions and answers.

Hearing no further questions or objections, Vice Chair Carroll referred the motion to an omnibus roll call vote. (ref. IV B.4)

CONTRACT AMENDMENTS/CHANGE ORDERS

Section 89 Replacement Project Design and Engineering Services During Construction: Stantec Consulting Services Inc., Contract 7116, Amendment 1

A motion was duly made and seconded to authorize the Executive Director, on behalf of the Authority, to approve Amendment 1 to Contract 7116, Section 89 Replacement Project Design and Engineering Services During Construction, with Stantec Consulting Services Inc., increasing the contract amount by $443,100, from $3,948,625, to $4,391,725, and extending the contract term time by 41 months, from January 2, 2023 to June 2, 2026.

Staff provided a summary. There was brief discussion and questions and answers.

Hearing no further questions or objections, Vice Chair Carroll referred the motion to an omnibus roll call vote. (ref. IV C.1)

PERSONNEL AND COMPENSATION

APPROVALS

Appointment of Deputy Director, Waterworks

A motion was duly made and seconded to approve the appointment of Ms. Lisa Bina to the position of Deputy Director, Waterworks (Non-Union, Grade 15) in the

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Operations Division, at the recommended annual salary of $149,968 commencing on a date to be determined by the Executive Director.

Staff provided a verbal summary.

Hearing no questions or objections, Vice Chair Carroll referred the motion to an omnibus roll call vote. (ref. V A.1)

CONTRACT AWARDS

Employee Medical Services: AllOne Health, Contract A628

A motion was duly made and seconded to approve the recommendation of the Selection Committee to award Contract A628 for Occupational and Medical Services to AllOne Health Resources, Inc., and to authorize the Executive Director on behalf of the Authority to execute said contract in an amount not to exceed $132,625.50 for a three year period, commencing June 1, 2021.

Staff provided a verbal summary.

Hearing no questions or objections, Vice Chair Carroll referred the motion to an omnibus roll call vote. (ref. V B.1)

ADMINISTRATION, FINANCE AND AUDIT

INFORMATION

2020 Annual Update on New Connections to MWRA System

Staff gave a presentation. There were questions and answers.

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

Delegated Authority Report – March 2021

There was brief discussion.

Hearing no further questions or objections, Committee Chair Vitale proceeded to the next agenda item. (ref. VI A.2)

FY21 Financial Update and Summary as of March 2021

Staff gave a verbal summary. There were questions and answers.

Hearing no further questions or objections, Committee Chair Vitale proceeded to the next agenda item. (ref. VI A.3)

APPROVALS

Assignment and Assumption of Contract 7347, Quinapoxet Dam Removal Design, Permitting and Engineering Services During Construction, from Milone & MacBroom, Inc. to SLR International Corporation

A motion was duly made and seconded to authorize the Executive Director, on behalf of the Authority, to approve the assignment and assumption of Contract 7347, Quinapoxet Dam Removal Design, Permitting and Engineering Services During

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Documents used for this meeting, referenced above, can be found here:
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Construction, from Milone & MacBroom, Inc. to SLR International Corporation, and to further authorize the Executive Director, on behalf of the Authority, to execute a separate Assignment and Assumption Agreement to effectuate that assignment with no increase in price or contract term.

Staff gave a presentation. There were questions and answers.

Hearing no further questions or objections, Vice Chair Carroll referred the motion to an omnibus roll call vote. (ref. VI B.1)

CONTRACT AWARDS

Task Order Appraisal Services: Foster Appraisal and Consulting, Contract 607TA

A motion was duly made and seconded to approve the recommendation of the Consultant Selection Committee to award Contract 607TA to Foster Appraisal & Consulting Co., Inc. to provide appraisal services and to authorize the Executive Director, on behalf of the Authority, to execute a contract in an amount not to exceed $100,000 for a term of three years from the Notice to Proceed.

Staff provided a verbal summary. There were questions and answers.

Hearing no further questions or objections, Vice Chair Carroll referred the motion to an omnibus roll call vote. (ref. VI C.1)

Technical Assistant Consultant Services, Hazardous Materials: Hydro-Environmental Technologies, Inc., Contract 609TA; and Green Seal Environmental, Inc., Contract 610TA

A motion was duly made and seconded to approve the recommendation of the Consultant Selection Committee to award Contract 609TA to Hydro-Environmental Technologies, Inc. and Contract 610TA to Green Seal Environmental, Inc. to provide Technical Assistance Consulting Services for Hazardous Materials and to authorize the Executive Director, on behalf of the Authority, to execute said contracts, each for an amount not to exceed $550,000, and each with a contract term of three years from the Notice to Proceed..

Staff provided a verbal summary.

Hearing no questions or objections, Vice Chair Carroll referred the motion to an omnibus roll call vote. (ref. VI C.2)

Maintenance and Support of the Integrated Financial, Procurement and Human Resources/Payroll Management System, Infor Inc.

A motion was duly made and seconded to approve the award of a sole source purchase order contract for the annual maintenance and support of the integrated financial, procurement and human resources/payroll management system to Infor Inc. and to authorize the Executive Director, on behalf of the Authority, to execute said purchase order contract in an amount not to exceed $508,757.77 for a period of one year, from June 1, 2021 through May 31, 2022.

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Staff provided a verbal summary. There was discussion and questions and answers.

Hearing no further questions or objections, Vice Chair Carroll referred the motion to an omnibus roll call vote. (ref. VI C.3)

Telephone System Replacement: ePlus Technology, Inc., Contract WRA-4957Q, State Contract ITT50

A motion was duly made and seconded to approve the award of a purchase order contract for telephone system hardware, software, five years maintenance support, three years managed services, and installation services to the lowest responsive bidder under Bid WRA-4957Q, ePlus Technology, Inc., and authorize the Executive Director, on behalf of the Authority, to execute said purchase order in the bid amount of $1,094,551.80.

Staff gave a presentation. There were questions and answers.

Hearing no further questions or objections, Vice Chair Carroll referred the motion to an omnibus roll call vote. (ref. VI C.4)

WASTEWATER POLICY AND OVERSIGHT

APPROVALS

Financial Assistance Agreement with Boston Water and Sewer Commission for East Boston Sewer Separation and Other CSO Improvements

A motion was duly made and seconded to authorize the Executive Director, on behalf of the Authority, to execute the *Financial Assistance Agreement by and between Massachusetts Water Resources Authority and Boston Water and Sewer Commission for East Boston Sewer Separation and Other CSO Improvements*, substantially in the form attached to the staff summary presented to the Board and filed with the records of the meeting, by which BWSC agrees to perform sewer separation and other CSO system improvements in East Boston to further reduce CSO activations and volumes and assist MWRA in meeting its Long Term CSO Control Plan goals and MWRA agrees to provide funding for eligible sewer separation and CSO system improvement costs at a total amount not to exceed $2,181,667 and a term of 24 months, from July 1, 2021 through June 30, 2023.

Staff gave a presentation. There were questions and answers.

Hearing no further questions or objections, Vice Chair Carroll referred the motion to an omnibus roll call vote. (ref. VII A.1)

CONTRACT AWARDS

Deer Island South System Pump Station Improvements Preliminary Design, Final Design, Bidding, ESDC and RE/RI: Hazen and Sawyer, Contract 7126

A motion was duly made and seconded to approve the recommendation of the Consultant Selection Committee to award of Contract 7126, Deer Island Treatment Plant South System Pump Station Improvements – Preliminary Design, Final Design, Bidding, Engineering Services During Construction, and Resident Engineering/Inspection

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Services, to Hazen and Sawyer, P.C., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in an amount not to exceed $7,535,701.14, for a contract term of 80 months from the Notice to Proceed.

Staff gave a presentation.

Hearing no questions or objections, Vice Chair Carroll referred the motion to an omnibus roll call vote. (ref. VII B.1)

Repair of Three Deer Island Treatment Plant Digester Mixer Assemblies: Aqua Solutions, Inc.

A motion was duly made and seconded to approve the award of a sole source contract for the repair of three Deer Island Treatment Plant digester mixer assemblies to Aqua Solutions, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the amount of $302,820 for a contract term of three years, from April 14, 2021 through April 13, 2024.

Staff gave a presentation.

Hearing no questions or objections, Vice Chair Carroll referred the motion to an omnibus roll call vote. (ref. VII B.2)

OMNIBUS ROLL CALL VOTE

Vice Chair Carroll 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:

Yes	No	Abstain	Present
Carroll			
Cook			
Flanagan			
Foti Pappastergion			
Peña			
Vitale			
J. Walsh			
			P. Walsh
Wolowicz			

Voted: to approve the minutes of the Board of Directors' March 17, 2021 meeting as presented and filed with the records of the meeting; (ref. I)

Further, voted: to approve the award of a purchase order contract for the control of invasive plants in the Wachusett Reservoir lower basins and main reservoir coves to the lowest responsive bidder under Bid WRA-4942, AE Commercial Diving Services, and to authorize the Executive Director, on behalf of the Authority, to execute said purchase

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order contract in the bid amount of $448,000 for a term of six months from July 1, 2021 to December 31, 2021; (ref. IV B.1)

Further, voted: to authorize the Executive Director, on behalf of the Authority, to award Contracts W332 and W332A for Community Leak Detection Survey Task Order Services to Arthur Pyburn & Sons, Inc. and Liston Utility Services, respectively, and to authorize the Executive Director, on behalf of the Authority, to execute each contract in an amount not to exceed $400,000 for a contract term of three years from the Notice to Proceed; (ref. IV B.2)

Further, voted: to approve the recommendation of the Consultant Selection Committee to award Contract 7599, Shaft 5 Building Improvements Design and Engineering Services During Construction, to Kleinfelder Northeast, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the amount of $1,158,678 for a contract term of 60 months from the Notice to Proceed; (ref. IV B.3)

Further, voted: to approve the recommendation of the Consultant Selection Committee to award Contract 7633, Section 89 Replacement Project, Resident Engineering Services, to Stantec Consulting Services Inc. and to authorize the Executive Director, on behalf of the Authority, to execute said contract in an amount not to exceed $1,697,990, for a contract term of forty-eight months from the Notice to Proceed; (ref. IV B.4)

Further, voted: to authorize the Executive Director, on behalf of the Authority, to approve Amendment 1 to Contract 7116, Section 89 Replacement Project Design and Engineering Services During Construction, with Stantec Consulting Services Inc., increasing the contract amount by $443,100, from $3,948,625, to $4,391,725, and extending the contract term time by 41 months, from January 2, 2023 to June 2, 2026; (ref. IV C.1)

Further, voted: to approve the appointment of Ms. Lisa Bina to the position of Deputy Director, Waterworks (Non-Union, Grade 15) in the Operations Division, at the recommended annual salary of $149,968 commencing on a date to be determined by the Executive Director; (ref. V A.1)

Further, voted: to approve the recommendation of the Selection Committee to award Contract A628 for Occupational and Medical Services to AllOne Health Resources, Inc., and to authorize the Executive Director on behalf of the Authority to execute said contract in an amount not to exceed $132,625.50 for a three year period, commencing June 1, 2021; (ref. V B.1)

Further, voted: to authorize the Executive Director, on behalf of the Authority, to approve the assignment and assumption of Contract 7347, Quinapoxet Dam Removal Design, Permitting and Engineering Services During Construction, from Milone & MacBroom, Inc. to SLR International Corporation, and to further authorize the Executive Director, on behalf of the Authority, to execute a separate Assignment and Assumption Agreement to effectuate that assignment with no increase in price or contract term; (ref. VI B.1)

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Further, voted: to approve the recommendation of the Consultant Selection Committee to award Contract 607TA to Foster Appraisal & Consulting Co., Inc. to provide appraisal services and to authorize the Executive Director, on behalf of the Authority, to execute a contract in an amount not to exceed $100,000 for a term of three years from the Notice to Proceed; (ref. VI C.1)

Further, voted: to approve the recommendation of the Consultant Selection Committee to award Contract 609TA to Hydro-Environmental Technologies, Inc. and Contract 610TA to Green Seal Environmental, Inc. to provide Technical Assistance Consulting Services for Hazardous Materials and to authorize the Executive Director, on behalf of the Authority, to execute said contracts, each for an amount not to exceed $550,000, and each with a contract term of three years from the Notice to Proceed; (ref. VI C.2)

Further, voted: to approve the award of a sole source purchase order contract for the annual maintenance and support of the integrated financial, procurement and human resources/payroll management system to Infor Inc. and to authorize the Executive Director, on behalf of the Authority, to execute said purchase order contract in an amount not to exceed $508,757.77 for a period of one year, from June 1, 2021 through May 31, 2022; (ref. VI C.3)

Further, voted: to approve the award of a purchase order contract for telephone system hardware, software, five years maintenance support, three years managed services, and installation services to the lowest responsive bidder under Bid WRA-4957Q, ePlus Technology, Inc., and authorize the Executive Director, on behalf of the Authority, to execute said purchase order in the bid amount of $1,094,551.80; (ref. VI C.4)

Further, voted: to authorize the Executive Director, on behalf of the Authority, to execute the *Financial Assistance Agreement by and between Massachusetts Water Resources Authority and Boston Water and Sewer Commission for East Boston Sewer Separation and Other CSO Improvements*, substantially in the form attached to the staff summary presented to the Board and filed with the records of the meeting, by which BWSC agrees to perform sewer separation and other CSO system improvements in East Boston to further reduce CSO activations and volumes and assist MWRA in meeting its Long Term CSO Control Plan goals and MWRA agrees to provide funding for eligible sewer separation and CSO system improvement costs at a total amount not to exceed $2,181,667 and a term of 24 months, from July 1, 2021 through June 30, 2023; (ref. VII A.1)

Further, voted: to approve the recommendation of the Consultant Selection Committee to award of Contract 7126, Deer Island Treatment Plant South System Pump Station Improvements – Preliminary Design, Final Design, Bidding, Engineering Services During Construction, and Resident Engineering/Inspection Services, to Hazen and Sawyer, P.C., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in an amount not to exceed $7,535,701.14, for a contract term of 80 months from the Notice to Proceed; (ref. VII B.1) and,

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Further, voted: to approve the award of a sole source contract for the repair of three Deer Island Treatment Plant digester mixer assemblies to Aqua Solutions, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the amount of $302,820 for a contract term of three years, from April 14, 2021 through April 13, 2024. (ref. VII B.2)

CORREPONDENCE TO THE BOARD

Mr. Laskey noted that correspondence from the Water Supply Citizens Advisory Committee had been forwarded to Board Members.

EXECUTIVE SESSION

Vice Chair Carroll moved that the Board enter Executive Session to discuss litigation, real estate and security since discussion in Open Session may have a detrimental effect upon the negotiating position of the Authority; further, to not return to Open Session and to adjourn the meeting from Executive Session.

MWRA General Counsel Francisco Murphy announced that under the Open Meeting Law, at the start of an Executive Session, members who are participating remotely must state that no other person is present or able to hear the discussion at their remote locations, and that a response of “yes” to the Roll Call to enter Executive Session when their names are called would be deemed their statements that no other person is present or able to hear the Executive Session discussion at their remote locations.

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

Yes	No	Abstain	Present
Carroll			
Cook			
Flanagan			
Foti			
Pappastergion			
Peña			
Vitale			
J. Walsh			
P. Walsh			
Wolowicz			

Voted: to enter Executive Session to discuss litigation, real estate and security; further, voted: to not return to Open Session, and to adjourn the meeting from Executive Session.

*** EXECUTIVE SESSION ***

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The meeting entered Executive Session at 2:46pm and adjourned at 3:27pm.

Approved: May 26, 2021

Attest: _____

Andrew M. Pappastergion, Secretary

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STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: Approval of Juneteenth Holiday

COMMITTEE: Personnel & Compensation ____INFORMATION
__X__VOTE

Patterson Riley, Special Assistant, Affirmative Action and Compliance
Preparer/Title

RECOMMENDATION:

That the Board of Directors approve the Massachusetts Water Resources Authority observation of Juneteenth Independence Day, as an observed holiday and celebration each year on June 19th.

DISCUSSION:

At the direction of the Executive Director, a Diversity, Equity and Inclusion (DEI) workgroup was formed to initiate and implement Authority programs, services and initiatives designed to complement the outstanding and diverse work force that we have all worked diligently to achieve. The confluence of the national pandemic, coupled with the death of George Floyd and the attendant focus brought on by both tragedies, moved employers public and private, to create DEI workgroups similar to ours in order to assess and address the extent to which systemic racism permeates their respective workplaces.

MWRA has identified diversity, equity and inclusion as key strategic priorities and has formed its DEI workgroup of senior and mid-level managers as critical enablers of this important mission. We have undertaken an Authority-wide survey to provide information and opinion to senior managers regarding the culture of the organization. The newly created DEI mission statement relates favorably to the MWRA's own mission, values and stated objectives.

As part of these initiatives, on May 20, 2020, Governor Baker declared the June 19, 2020 as "Juneteenth Independence Day" in the Commonwealth of Massachusetts. "Juneteenth," a portmanteau of June and nineteenth, was established on June 19, 1865 when Major General Gordon Granger landed in Galveston, Texas and announced not only the end of the Civil War, and a victory for the Union, but also that all slaves were free. In spite of the fact that President Lincoln's Emancipation Proclamation of January 1, 1865 declared all enslaved people free, slaves in the Deep South and in some states along the Mason Dixon line did not enforce the new law.

In order for the Massachusetts Water Resources Authority to be aligned with our peers in The Commonwelath, we are recommending that the Authority observe the Juneteenth holiday in this and each successive year.

We anticipate returning to the Board with a project update of our Diversity, Equity, and Inclusion initiatives and programs at the June 23, 2021 Board meeting.

STAFF SUMMARY

TO: Board of Director
FROM: Frederick A Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: May PCR Amendments

COMMITTEE: Personnel and Compensation

____ INFORMATION
__X__ 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.

May PCR Amendments

There are two PCR Amendments this month.

Organizational Changes:

1. Title change to one vacant position in the Operations Division, Deer Island Maintenance department from Building/Grounds Worker Unit 2 Grade 13 to Tele-Inspection Operator, Unit 2 Grade 15 to better meet staffing needs for Wastewater Pipeline Maintenance.

2. Title change to one vacant position in the Operations Division, Wastewater Pipeline/TV Inspections department from Sewer Maintenance Foreman Unit 2 Grade 17 to Field Supervisor, Wastewater Pipeline Inspections Unit 2 Grade 21 to better meet staffing needs for Wastewater Pipeline Maintenance.

BUDGET/FISCAL IMPACT:

The annualized budget impact of these PCR amendments will be a maximum cost of $23,499. Staff will ensure that the cost increase associated with this PCR amendment will not result in spending over the approved FY21 Wages and Salaries budget.

ATTACHMENTS:
New Job Descriptions
Old Job Descriptions

MASSACHUSETTS WATER RESOURCES AUTHORITY
POSITION CONTROL REGISTER AMENDMENTS
FISCAL YEAR 2021

PCR AMENDMENTS REQUIRING BOARD APPROVAL - May 26, 2021

Number	Current PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Current/Budget Salary	Estimated New Salary			Estimated Annual $ Impact			Reason For Amendment
B31	Deer Island Maintenance Department Operations Division 29880175	V	T, G	Building/Grounds Worker	2	13	Tele-Inspection Operator	2	15	$64,928	$50,843	-	$72,437	-$14,085	-	$7,509	To better meet staffing needs for Wastewater Pipeline Maintenance.
B32	Wastewater Pipeline/ TV Inspections Department Operations Division 5434007	V	T, G	Sewer Maintenance Foreman	2	17	Field Supervisor, Wastewater Pipeline Inspections	2	21	$80,254	$66,786	-	$96,244	-$13,468	-	$15,990	To better meet staffing needs for Wastewater Pipeline Maintenance.
				BOARD TOTAL=	2						**TOTAL:**			-$27,553	-	$23,499	

MWRA
POSITION DESCRIPTION

OLD

POSITION: Building and Grounds Worker

PCR#:

DIVISION: Operations

DEPARTMENT: Maintenance/Deer Island

BASIC PURPOSE:

Performs a variety of maintenance and repair tasks to roads, grounds, buildings, structures and associated appurtenances together with other light maintenance tasks as assigned.

SUPERVISION RECEIVED:

Works under the general supervision of the Building & Grounds Supervisor.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Cleans process tanks (including unbolting and securing of access covers), galleries, drains, culverts, and structures as required.
- Cleans process spills and upsets as required.
- Maintains roadways, walkways, fencing and gates as necessary.
- Performs clean-up and housekeeping tasks for work area to maintain a clean environment within designated area.
- Removes snow and ice from roadways, walkways, buildings and structures as necessary.
- Maintains the appearance of the plant grounds by cutting, trimming or weeding grass, shrubs, trees or ornamental beds.
- Digs and/or refills ditches and holes. Breaks, removes and repairs concrete as required.
- Collects and disposes of trash and other waste materials.

- Operates machinery, vehicles, material handling equipment, snow removal equipment, and tools as necessary to perform assigned work such as (but not limited to) tractors, mowers, cement mixers, cleaning machinery, etc.

- Operates motor vehicles such as vans and pick up trucks to transport materials and equipment to work sites, pick up and deliver materials, etc.

- Washes and cleans vehicles, tools and equipment.

- Moves material and supplies.

- Loads and unloads vehicles, carts, trailers, etc., as required.

- Performs work in a safe and professional manner.

- Reports and documents work being performed.

- Follows established safety, operating and emergency response procedures and policies as established by the MWRA.

- Trained in Confined Space Entry, CPR and First Aid, and be capable of entering, setting up, installing, disassembling confined space equipment and ability to work in a confined space.

- Perform work in compliance with Authority Integrated Contingency Plan.

- Ability to attain knowledge and work processes required to perform maintenance tasks required by Reliability Centered Maintenance or similar Maintenance Management Program.

- Performs light maintenance independently or as part of a team. Light maintenance shall include but not limited to:

    - Operates forklift or other light equipment not requiring a specific license.

    - Inspects and troubleshoots various systems and equipment.

    - With proper training sets up ladders, staging and rigging and utilizes hoists, jacks, dollies, lifts, etc. for proper access to job and to remove and install equipment.

    - Performs, documents and reports inspections and work performed.

    - Operates portable pumping, ventilation and other equipment necessary to support and accomplish assigned tasks.

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

    - Lockout/Tagout of equipment to facilitate maintenance.

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

SECONDARY DUTIES:

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

MINIMUM QUALIFICATIONS:

Education and Experience:

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

(B) Requires from six (6) to twelve (12) months of related buildings and grounds experience.

(C) Satisfactory completion of training in accordance with cross-functional training program established at the MWRA.

(D) Any equivalent combination of education/training and experience.

Necessary Knowledge, Skills and Abilities:

(A) A working knowledge of the methods and tools required to perform building and grounds maintenance functions, to include the operation of a wide variety of machinery, vehicles, material handling equipment, hand and power tools and specialized machinery for roads, grounds, galleries, structures and facilities care.

(B) Ability to follow written and oral instructions.

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

SPECIAL REQUIREMENTS:

- A valid Massachusetts Class D Motor Vehicle Operators License.
- Complete competency based training program related to **ESSENTIAL DUTIES AND RESPONSIBILITIES** as outlined above and successfully demonstrates required competencies.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

WORK ENVIRONMENT:

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

While performing the duties of this job**,** the employee regularly works in outside weather conditions. The employee regularly works near moving mechanical parts and is occasionally exposed to wet and/or humid conditions and vibration. The employee occasionally works in 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 very loud in field settings and moderately loud at other work locations.

December, 2001

MWRA
POSITION DESCRIPTION

NEW

POSITION: Tele-Inspection Operator

PCR#:

DIVISION: Operations

DEPARTMENT: TV Inspection - Wastewater

BASIC PURPOSE:

Supervises set-up and operation of TV Inspection equipment, including cameras, winches and related items. Maintains related equipment and implements preventive maintenance programs.

SUPERVISION RECEIVED:

Works under the general supervision of the Tele-Inspection Foreman.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Act as backup in the absence of the Tele-Inspection Foreman.
- Operates the TV camera, software and related equipment associated with internal pipeline inspections.
- Supervises and participates in precision shop and fieldwork calibrating, troubleshooting, installing, repairing and maintaining internal pipeline inspection equipment.
- Implements preventive maintenance programs for internal pipeline inspection equipment.
- Ensures TV Inspection Unit is fully stocked and ready to go.
- Secures applicable TV Inspection vehicles and equipment on a daily basis.

- Orders and maintains inventory of necessary supplies.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Basic reading, writing, mathematical, scientific and oral communication skills as normally acquired through a high school education or equivalent; and

(B) Understanding of principles and practices of internal pipeline inspections as acquired through two (2) to four (4) years of directly related experience; and

(C) Understanding of basic mechanical and electronic concepts associated with inspection equipment as acquired through one (1) year experience; or

(D) Any equivalent combination of education and/or experience.

Necessary Knowledge, Skills and Abilities:

(A) Thorough understanding of pipeline inspection equipment and applicable safety practices and principles.

(B) Ability to read and interpret record plans, drawings and blueprints.

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

SPECIAL REQUIREMENTS:

Must possess a valid Massachusetts Motor Vehicle Class D Operators license.
The ability to get certifications from the following programs within 12 months after hire and renew every three years:

- NASSCO Pipeline Assessment Certification Program (PACP)
- NASSCO Manhole Assessment Certification Program (MACP)
- NAASCO Lateral Assessment Certification Program (LACP)

TOOLS AND EQUIPMENT USED:

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

Inspection Equipment; OZ111Camera, Sonar Camera, Steerable Pipe Ranger, Portable Camera Push System and Manhole Pole Camera.

PHYSICAL DEMANDS:

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

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

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

WORK ENVIRONMENT:

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

While performing the duties of this job, the employee regularly works in various field settings and occasionally in the office. The employee regularly works near moving mechanical parts, and is occasionally exposed to risk of vibration. The employee is occasionally exposed to risk of electrical shock.

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

May 2021

MWRA
POSITION DESCRIPTION

OLD

POSITION: Sewer Maintenance Foreman

PCR#:

DIVISION: Operations

DEPARTMENT: Pipe Maintenance-Wastewater

BASIC PURPOSE:

Assists in the supervision of crew's work in the inspection, operation, and maintenance of the Authority's sewer lines and associated MWRA sewer system facilities, performs related work as required and documents a variety of maintenance activities.

SUPERVISION RECEIVED:

Works under the general supervision of Sewer Maintenance Supervisor.

SUPERVISION EXERCISED:

Exercises close supervision over personnel who comprise the Pipeline Maintenance Crews.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Assists in the preparation of routine and emergency pipeline maintenance plans including work sequencing, scheduling, cost estimating, and assembling work order packages.
- Supervises and participates with work crews on related construction projects.
- Assists in the preparation of daily and weekly job status and time utilization reports to track execution of written work plan. Details include, but are not limited to, crew time productivity, material utilization and costs, equipment utilization and costs, and pipeline data collection and identification information.
- Utilizes computer technology, computerized maintenance management software, and other software to perform work order reporting, time utilization and written work plan completion.
- Supervises and participates with work crews supporting Department and Division projects that involve performing community assistance.
- Inspects applicable equipment and vehicles before and after each assignment.

- Operates applicable equipment such as vector jets, bucket machines, cranes, snow plows, etc as needed.

- Conducts "Tool Box Talks" on applicable safety practices and maintenance procedures.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Basic reading, writing, mathematical and oral communication skills as normally attained through a high school education; or

(B) Three (3) to five (5) years of related experience within a large sewer collection system including supervisory experience; or

(C) Any equivalent combination of education and, experience and MWRA supervisory training.

Necessary Knowledge, Skills and Abilities:

(A) Working knowledge of methods, practices and techniques used in the maintenance, cleaning and repair of sewers.

(B) Working knowledge of the mechanical and masonry trades.

(C) Ability to maintain and repair sewer lines, locate sewer stoppages and leaks, and operate sewer-cleaning equipment.

(D) Ability to read and understand blueprints.

(E) Ability to keep accurate records.

(F) Knowledge of applicable safety equipment and practices.

SPECIAL REQUIREMENTS:

A valid Massachusetts Hoisting License 1B, 2A,4E, 4G.

Grade II Wastewater Collection Systems Operator Certification or the ability to obtain within a year.

A current and valid Massachusetts Class B Commercial Drivers License (CDL). Will be subject to be controlled substances and alcohol testing policy and the random drug-testing program.

TOOLS AND EQUIPMENT USED:

Motor vehicles, sewer maintenance equipment, power and hand tools, mobile radio, portable gas monitors, confined space entry equipment, telephone, beeper.

PHYSICAL DEMANDS:

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

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

The employee must frequently lift and/or move up to 25 pounds and occasionally lift and/or move up to 100 pounds. Specific vision abilities required by this job include close, distance and 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 regularly works near moving mechanical parts and is frequently exposed to wet and/or humid conditions and vibration. The employee occasionally works in precarious places and is occasionally exposed to fumes and airborne particles, toxic or caustic chemicals and risk of electric shock.

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

November 2017

MWRA
POSITION DESCRIPTION

NEW

POSITION: Field Supervisor, Wastewater Pipeline Inspections

PCR#: 5435013

DIVISION: Operations

DEPARTMENT: TV Inspection-Wastewater

BASIC PURPOSE:

Coordinates and supervises all pipeline inspection field activities performed by the staff of the Wastewater TV Inspection Unit.

SUPERVISION RECEIVED:

Works under the general supervision of the Chief of Pipeline Maintenance.

SUPERVISION EXERCISED:

Exercises close supervision of Tele-Inspection Foreman and general supervision of Tele–Inspection Operators and OMC Laborers.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Oversees and coordinates all aspects of field activities performed by the Technical Inspection Unit, including but not limited to CCTV Interceptor Inspections, Structure Inspections and Sonar Siphon Inspections.
- Determines the daily assignments for staff and distributes work accordingly. Establishes deadlines and priorities based on the inspection schedule and emergencies.
- Supervises assigned crews, including taking disciplinary action (issuing verbal and written warnings) when necessary, conduct performance reviews, and preparing regular reports, as required on work accomplished and crew productivity.
- Creates efficient work schedules and monitors staff performance in order to minimize travel time and staff downtime, and maximize staff productivity. Keeps time utilization records and continuously strives for productivity improvements.
- Assists Planning/Scheduling Coordinator in coordinating, prioritizing and scheduling of internal pipeline, structure and siphon inspections.
- Documents and reports in the Maximo database results of inspections and work performed.
- Identifies and monitors tools, parts and material requirements and works with

Planning/Scheduling Coordinator to insure timely procurement and maintenance of adequate inventory levels.

- Assists MIS with the installation, maintenance and monitoring of the Granite Net Inspection and Sonar Software programs.
- Assists in the training of staff on the Granite Net and Sonar Inspection software programs.
- Prepares ARC Map/ARC GIS interceptor overviews along with record drawing, structure and connection data to assist Engineering and Construction staff with the preparation of conceptual design reports for wastewater rehabilitation projects.
- Utilizes Granite Net - TV Inspection software program to identify and prioritize interceptor observation data to assist Engineering and Construction staff with the preparation of conceptual design reports for wastewater rehabilitation projects.
- Prepare an annual list of interceptor renewal/asset protection projects, to update the existing list, and recommended wastewater system projects identified in the Master Plan.
- As TV inspections are completed, exports the inspection data to the MIS Oracle Database AMS.
- Perform QA/QC of the recorded TV inspection interceptor observation data for proper coding and scoring grade. Analyzes and edits the inspection data, grading and scoring as necessary, creating a final pipe score.
- Cross reference the connections observed through the TV inspections and manhole inspections to the Connection Permit Database, MIS - Chelsea 27 share, for QA/QC verification. Prepares asset information collected during the field inspections for QA/QC with the MIS GIS SDE Master Geodatabase.
- Ensure a safe work environment for all inspection personnel, through audits, training and adherence to safety policies and procedures.
- Records and monitors employee time and attendance and participates in corrective actions.
- Utilizes Maximo for work entry, and reporting requirements and utilizes Microsoft Office products such as excel, word, outlook. Arc Map, Arc GIS, Redline Drawings, Microfiche, Inspection database servers and Inspection Software Granite Net.
- Supervises, coordinates and participates in the maintenance of equipment, vehicles and facilities.
- Supervises and coordinates all confined space entry permits ensuring all crews have all appropriate safety equipment and personal protection equipment.
- Coordinates essential "on the job" training including but not limited to safety "Tool Box Talks" and proper equipment operation procedures.

SECONDARY DUTIES:

- Assists management with budget development and monitoring; procurement of equipment & materials; and support of engineering, design and construction projects as related to the inspection of the wastewater interceptor system.

- Assists employees with the preparation of injury/illness reports, safety and inspection work orders, and assures that they keep high quality
- Assists in maintaining harmonious labor management through proper application of the collective bargaining provisions and established personnel policies.
- Maintains effective working relationships with applicable municipal officials.
- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Basic reading and writing skills as normally attained through a high school education or equivalent; and

(B) Thorough knowledge of methods and practices associated with CCTV and Sonar inspection software, equipment, and processes as acquired through seven (7) to nine (9) years of related experience, of which at least five (5) years should be in a supervisory capacity; or

(C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Ability to read and understand blueprints.

(B) Working knowledge of the operation and maintenance of a large municipal wastewater collection system.

(C) Excellent analytical and writing skills.

(D) Working knowledge of Maximo for creating work orders, entering work results, and creating reports. Ability to use Microsoft Office products such as Word, Excel and Outlook.

(E) Skilled in the use of ARC Map, Arc GIS, redline drawings, Microfiche, Inspection database servers and Inspection Software –Granite Net.

SPECIAL REQUIREMENTS:

A valid Massachusetts Class D Motor Vehicle Operators license required.
Grade 4 Collection System Operator Certification or ability to obtain within 12 months.
Pipeline Assessment Certification (PACP Program)

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

WORK ENVIRONMENT:

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

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

May 2021

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: Appointment of the Director, Western Operations and Maintenance

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COMMITTEE: Personnel & Compensation

____ INFORMATION
__X__ VOTE

Andrea Murphy, Director, Human Resources
Valerie Moran, P.E., Director, Waterworks
Preparer/Title

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

RECOMMENDATION:

To approve the appointment of Mr. Eben Nash to the position of Director, Western Operations and Maintenance (Non-Union, Grade 15) in the Operations Division, at the recommended annual salary of $149,968 commencing on a date to be determined by the Executive Director.

DISCUSSION:

The position of Director, Western Operations and Maintenance became vacant upon the passing of the incumbent. The Director, Western Operations and Maintenance reports to the Director of Waterworks. The position directs a staff of more than 100, and is responsible for managing the operation and maintenance of the John J. Carroll Water Treatment Plant, the William A. Brutsch Treatment Facility, Chicopee Valley Aqueduct, Wachusett Reservoir System, reservoir transfers, and the water transmission system, including aqueducts, tunnels and storage tanks. The Director, Western Operations and Maintenance plans for and ensures that the necessary resources and support are provided to meet operational needs and applicable regulatory requirements. The position also plays an active role in facility construction coordination activities to ensure minimal impacts to MWRA's water customers.

Selection Process

This position was posted internally. One candidate applied for the position. Mr. Eben Nash was determined to be qualified and was referred for an interview. The Deputy Chief Operating Officer and the Director of Waterworks conducted the interview. Upon completion of the interview, Mr. Nash was recommended for the position based on his combination of experience, abilities, knowledge, skills and education.

Mr. Nash has over 30 years of engineering operations and maintenance experience, including 16 years at MWRA in progressively more responsible positions in Western Operations. Prior to coming to MWRA, Mr. Nash spent seven years as a Field Service Manager providing predictive maintenance services to a variety of industrial customers and manufacturers. During this time, he

was well known as an expert in the field of balancing and vibration of rotating machinery in the New England area.

In 2004, Mr. Nash was hired at the MWRA as the Senior Program Manager of Western Maintenance, and then was promoted to Manager, Western Maintenance in 2014. In these positions, he was responsible for the maintenance of MWRA's water transmission and treatment system including tunnels, aqueducts, treatment facilities, above ground storage tanks, hydro generation stations and administration buildings. He managed over 70 staff, and participated in the John J. Carroll Water Treatment Plant start-up, the Shaft 5 leak repair, the Shea Avenue leak repair on the Chicopee Valley Aqueduct, and the UV start-ups for both the Carroll Water Treatment and Brutsch Treatment Facilities. In October 2019, he became the Manager, Transmission and Treatment Operations, responsible for overseeing the operation of MWRA's water transmission and treatment systems. Since January 2021, he has been acting in the Director, Western Operations and Maintenance position.

From these experiences, he has gained a thorough knowledge of the operations and maintenance of the western water treatment and transmission facilities. He has extensive operational knowledge of the Carroll Water Treatment Plant and the Brutsch Treatment Facility, its equipment and its processes. He understands the role of the treatment plant and how it is integrated with the downstream hydraulic systems of both Western and Metropolitan Operations. He has experience with SCADA systems and Maximo, and experience with managing in a complex union environment with multiple trades. He is well respected by his managers, employees and colleagues. Mr. Nash's management experience, education, and in depth knowledge of operations, treatment and transmission make him an excellent candidate for the Director, Western Operations and Maintenance position.

Mr. Nash earned a Bachelor of Science in Marine Engineering from Massachusetts Maritime Academy. He is currently enrolled in a Master of Business Administration in Public Administration at Clark University. He holds a Water Distribution Grade 4 Full Operator license and a Water Treatment 2T Operator-in-training license.

BUDGET/FISCAL IMPACTS:

There are sufficient funds in the Operations Division's FY21 Current Expense Budget to fund this positon.

ATTACHMENTS:

Resume of Eben Nash
Position Description
Organization Chart

Eben A. Nash

Objective: To make a significant contribution to the Massachusetts Water Resources Authority in the role of Director, Western Operations and Maintenance

Education: Bachelor of Science in Marine Engineering, Massachusetts Maritime Academy, 1991. Currently pursuing a Master's Degree in Public Administration Clark University

Employment History:

Massachusetts Water Resources Authority

December 2019 – Present, Acting Director of Western Operations
Direct the operations, maintenance and support activities for all transmission and treatment facilities in the Western Operations. Provide direct supervision for Maintenance and Operations senior staff as well as indirect supervision of 115 maintenance, administration and operations personnel. Responsible for the development of engineering plans, plant start up, tunnel and pipe line operations and maintaining budgets. Member of the union bargaining committees for unit 2 and 3, as well as a participant in labor management meetings.

October 2019 –Present, Operations Manager Transmission and Treatment
Manage the operations group for MWRA's waters transmission and treatment systems. Provide direct supervision of 2 senior plant operations staff as well indirect support of 32 operations and instrumentation personnel. Serve as the hiring manager as well as the hearing officer for step one grievances within the group. Oversee budget management for the operations group at two treatment facilities and assist in the management flood control for the active and back reservoir systems. Actively involved with tunnel shutdowns and dewatering procedures as well as participated in selection committees and construction coordination meetings for major projects.

2014 – 2019, Manager, Western Maintenance Managed the maintenance program for MWRA's waters transmission and treatment systems. Provided supervision of 4 direct engineering support positions as well indirect support of over 70 maintenance personnel. Served as the hiring manager as well as the hearing officer for step one grievances within the group. Oversaw budget management for the maintenance group as well as performed periodic assessments of buildings and equipment. Member of the vehicle committee as well as the Apprenticeship working group. Provided engineering review and operations representative for various engineering and construction projects including Wachusett Aqueduct Pump Station, Marlboro Maintenance Facility, Golden Anderson Valve

replacement, Hultman Aqueduct Interconnection project, Southboro Lab rehabilitation, as well as many smaller in house or contracted projects. Member of the labor management team and has presided over step 1 grievances as well as participated in arbitrations and depositions.

2004 – 2014, Senior Program Manager, Western Maintenance
Responsible for the maintenance of MWRA's water transmission and treatment system including tunnels, aqueducts, treatment facilities, above ground storage tanks, hydro generation stations and administration buildings. Provided daily supervision of 65 staff members in the grounds, facility and equipment maintenance fields. Participated in the startup of Carroll Water Treatment facility Ozone and UV, shaft 5-leak repair and Shea Ave leak repair on the Chicopee Valley Aqueduct. Strong proponent of the PM optimization plan for Western Operations with a continued goal of maximizing the available maintenance staff and associated PM tasks.

Lindskog Balancing

1997 – 2004 Field Service Manager– Responsible for the daily operation of Field Service Division. Lindskog Balancing is an engineering service provider engaged in the field of mechanical repairs, vibration analysis, dynamic balancing and laser alignment. Responsibilities included the daily schedule of the technicians and engineers in the work group as well as customer relations, sales, recruiting, hiring, discipline, engineering support and report writing.

Transoceanic Cable Ship Company

1991 – 1997– Licensed Operating Engineering starting as Third assistant Engineering and working up to relief First Assistant Engineer. Responsibilities include the operations and maintenance of the ships propulsion and auxiliary cable laying equipment. As First assistant engineer my responsibilities included the daily work assignment of the engineering department as well as insuring the equipment was properly maintained and ready for service. Also responsible for initiating vibration based condition monitoring and computerized maintenance management system.

Certifications and Licenses:

Drinking Water Distribution Operators License 4D Full, 2T in Training
Commonwealth of Massachusetts Hoisting Engineer 3A (expired)
MWRA – Supervisory Development
Bentley University – Effective Leadership, Leading People, Team and Projects, 2017
Class D Driver's license
Certified Vibration Analyst level II
Certified Substation Technician
Incident Command Level 300/400 Trained
United States Coast Guard, Chief Engineer Motor Limited Horsepower and First Assistant Engineer unlimited Horsepower (expired)

References Available upon request

MWRA
POSITION DESCRIPTION

POSITION: Director, Western Operations and Maintenance

DIVISION: Operations

DEPARTMENT: Field Operations

BASIC PURPOSE:

Directs the operations, maintenance, and support activities for all MWRA waterworks treatment and transmission facilities in Western Operations. Plans for and ensures that the necessary resources and support are provided to meet operational needs and applicable regulatory requirements in a cost effective manner.

SUPERVISION RECEIVED:

Reports to the Director of Waterworks.

SUPERVISION EXERCISED:

Exercises close supervision of Manager of Western Maintenance, Manager of Treatment & Transmission, Program Manager of Reservoir Operations and Supervisor of Administrative Support; and indirect supervision of approximately 115 staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Directs the operations and maintenance of the western hydraulic and treatment operations including: the MetroWest Water Supply Tunnel, Chicopee Valley Aqueduct, Brutsch Treatment Facility, Nash Hill Storage Tanks, Quabbin Aqueduct, Wachusett Reservoir System, Carroll Water Treatment Plant, Hultman Aqueduct Norumbega Covered Storage Tank and back-up water supply systems.

- Oversees the preparation and updating of long range operation and maintenance planning for transmission and treatment facilities. Develops staffing requirement plans and recommendations.

- Directs the maintenance of all western grounds and facilities. Oversees development of grounds and facility maintenance plans, priorities and budgets.

- Oversees water treatment to ensure optimization of treatment processes. Establishes and updates operational procedures in accordance with process control strategies.

- Oversees the Process Engineering Unit in developing and maintaining a sophisticated water quality information management system, diagnosing water quality process problems, producing standard and non-standard water quality status reports, and developing and maintaining a corrosion control and process chemistry model.

- Plays an active role in transmission and treatment facility construction coordination activities and participates in the start-up planning.

- Oversees the operations and routine inspection of all western water storage facilities to ensure compliance with all drinking water protection laws and regulations and to optimize water quality in each storage facility.

Works closely with MWRA western water community departments to optimize water supply (volume, pressure and quality). Assists in planning major local systems improvements. Assists local communities with emergency response planning efforts. Coordinates improvements within local systems and between the MWRA and local water systems.

- Manages the development and updating of operations & maintenance manuals and systems and station operating procedures. Works with the design consultants to ensure timely production ofupdates.

- Collaborates with the Manager, Training and Development to oversee and provide opportunities for technical, supervisory and management training and education for all employees. Ensure that staff are trained properly to be ready to operate new facilities as they come on line.

Collaborates with the Manager of Occupational Health and Safety to oversee and implement the Western Operations safety program, maximizing employee involvement, supporting the Authority-wide safety program, and making inspections.

- Manages the preparation of and exercises control over the current expense budget for Western Operations.

- Establishes, with the assistance of emergency response and safety staff, emergency response procedures, training programs, and practice drills.

- Assures consistency and uniformity of work rules in accordance with established policies and procedures.

- Reviews, analyzes and prepares managerial reports for operational, maintenance, process control, budget, and personnel matters. Develops recommendations for ongoing improvements in facility operations and maintenance.

- Oversees successful administration of collective bargaining agreement provisions. Participates in grievance resolution, collective bargaining and contract negotiations. Serves as Step I hearing officer. Hears disciplinary actions.

- Provides feedback and coaching to managers to maximize successful performance.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Bachelor' s degree in civil, environmental or mechanical engineering or a related technical discipline; and

(B) Understanding of planning, design, operations and maintenance of major water utilities as acquired through ten (10) to twelve (12) years of related experience, of which at least five (5) years must be in the successful management of a waterworks system or other similar large operational facility with multiple supervisory levels; or

(C) An equivalent combination of education and/or experience.

Necessary Knowledge, Skills and Abilities:

(A) Excellent working knowledge of a large water supply and treatment facility and associated systems and equipment or of a similar complex hydraulic and treatment system operation.

(B) Demonstrated successful experience managing in a union environment with a diverse workforce.

(C) Working knowledge of computerized maintenance management systems and procedures.

(D) Personal computer experience and familiarity with associated software programs such as Maximo.

(E) Excellent interpersonal, written and verbal communication skills.

SPECIAL REQUIREMENTS:

Valid Massachusetts Grade II Water Treatment Operator's license (or ability to obtain within 24 months).

Valid Massachusetts Grade IV Water Distribution Operator's license (or ability to obtain within 12 months).

Registered Professional Engineer preferred.

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

Must be available for on-call assignments; and responding to emergencies on a 24/7 basis using a domicile MWRA vehicle.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

There are no requirements that weight is lifted or force is exerted in performing the duties of this job. Specific vision abilities required by this job include close and distance vision.

WORK ENVIRONMENT:

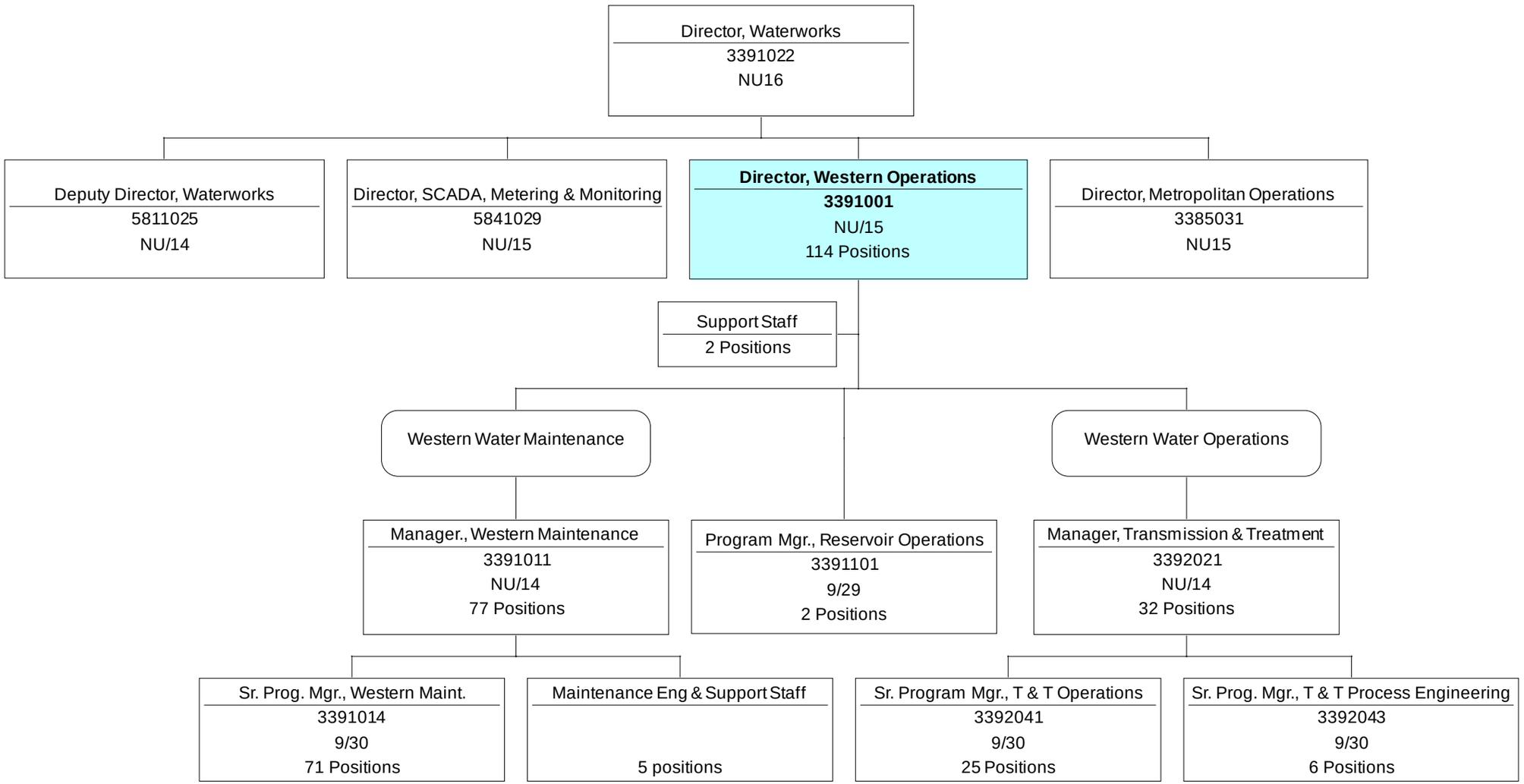
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job the employee regularly works in an office environment.

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

January 2021
Non-Union Grade 15

Western Water Operations & Maintenance

May, 2021



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: Appointment of the Director, SCADA Metering and Monitoring, Operations Division

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COMMITTEE: Personnel & Compensation

____ INFORMATION
__X__ VOTE

Andrea Murphy, Director, Human Resources
Valerie Moran, P.E, Director, Waterworks
Preparer/Title

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

RECOMMENDATION:

To approve the appointment of Mr. Ethan Wenger to the position of Director, SCADA, Meter and Monitoring (Non-Union, Grade 15), in the Operations Division at the recommended annual salary of $149,968, commencing on a date to be determined by the Executive Director.

DISCUSSION:

The position of Director, SCADA, Meter and Monitoring became vacant upon the retirement of the incumbent. The Director, SCADA, Meter and Monitoring reports to the Director of Waterworks. The position oversees the development, maintenance, and implementation of SCADA and metering systems for assigned water and wastewater facilities. The SCADA system is the critical computer-controlled heart of facility operations for both drinking water treatment, transmission and distribution, and wastewater collection, pumping, CSOs and headworks. The Deer Island Treatment Plant has its own independent computer controlled system that is not part of the SCADA system. SCADA is just one aspect of MWRA's system monitoring capability. In addition to SCADA, MWRA maintains water and wastewater meter systems with flow, pressure and elevation sensors at remote locations and local data collection loggers connected to centrally located computer systems via phone and radio. This position oversees meter data collection, quality control, and total flow calculations used for allocation of MWRA's rate revenue requirements for the water and wastewater systems using revenue meters.

Selection Process

This position was posted internally and externally. Twelve candidates applied for the position, three of whom were determined to be qualified and were referred for an interview. This included two internal candidates and one external. The external candidate declined the interview. The Director of Waterworks; the Director of Wastewater; the Director of MIS and the Special Assistant for Affirmative Action interviewed the candidates. Upon completion of the interviews, Mr. Ethan Wenger was determined to be the best candidate for the position based on his combination of experience, abilities, knowledge, skills and education.

Mr. Wenger has 25 years of experience in the wastewater industry working in progressively more responsible positions at the Deer Island Treatment Plant. He has over 12 years of experience in process control and more than 14 years supervising a multi-union labor force and a multi-disciplinary technical team. Mr. Wenger started as a Laboratory Supervisor II in the Central Laboratory and was quickly promoted to Project Manager, Process Control and then to Manager, Process Control. While in Process Control, he managed a team of engineers overseeing the Deer Island Treatment Plant automation and control. He also led a number of Deer Island process optimization efforts that helped reduce the plant's annual energy consumption.

Currently, Mr. Wenger is the Deputy Director of the Deer Island Treatment Plant (Non-Union Grade 15). In this position, he is responsible for ensuring effective operations, engineering and optimization of the Deer Island plant. He oversees the Process Control Department (including the plant's SCADA group known as PICs), Deer Island Wastewater Operations, and the Thermal Power Plant. He is responsible for compliance with Deer Island's NPDES permit and the Title V Air permit. He is also a member of the MWRA Information Security Council. He is well respected by his managers, employees, and colleagues. Since December 2020, Mr. Wenger has been splitting his time assisting in management of the SCADA, metering and monitoring group, while continuing to serve in his role as Deputy Director of Deer Island. Mr. Wenger's education, management experience, extensive knowledge of operations and process control and automation, and his ability to direct and implement complex projects, make him an excellent candidate for the Director, SCADA, Metering and Monitoring position.

Mr. Wenger earned a Bachelor of Science in Environmental Engineering Science from Massachusetts Institute of Technology and a Master of Science in Environmental Engineering from the University of Massachusetts. He is currently enrolled in a Master of Business Administration management program at the Isenberg School of Management at the University of Massachusetts, Amherst. He has his Professional Engineering License in the state of Massachusetts. He holds a Wastewater Operator Grade 7-C license, a Water Distribution Grade 4 Operator-in-training license, a Water Treatment Grade 4 Operator-in-training license, a Project Management Professional Certification and a GIAC Security Leadership Certification.

BUDGET/FISCAL IMPACTS:

There are sufficient funds in the Operations Division's FY21 Current Expense Budget to fund this positon.

ATTACHMENTS:

Resume of Ethan Wenger
Position Description
Organization Chart

Ethan Wenger

Experience

2016-present MWRA Winthrop, MA

Deputy Director, Deer Island Treatment Plant

- Direct the operation of the Deer Island Treatment Plant in Winthrop, MA, one of the largest wastewater plants in the United States.
- Responsible for over 75 operators, engineers, and other wastewater professionals
- Manage budget of over $24 million
- Direct the Process Control Department including Process Optimization, Process Monitoring, and PICS (Control system) groups
- Direct the Thermal/Power Plant, including two Zurn steam boilers, two Pratt and Whitney Combustion Turbine Generators, two 1 MW hydroturbines, and two 600kW Vestas wind turbines
- Responsible for compliance with all operating permits including NPDES discharge permits and Massachusetts DEP air permits

2014-2016 MWRA Winthrop, MA

Manager, Process Control

- Managed department of 16 technical professionals responsible for providing various types of support to the MWRA Deer Island
- Managed the optimization of the Deer Island process, including energy management, chemical usage, and implementation of new equipment processes
- Managed plant compliance with NPDES (discharge) permits and DEP air permits, including reporting to internal compliance units and interfacing directly with regulatory agencies when needed
- Responsible for managing the 30,000-point Process Information and Control System (distributed control system for Deer Island) which is valued at $40 million
- Responsible for the department's $2.5 million budget, and Deer Island's $3 million chemical budget

Ethan Wenger

2004-2014 MWRA Winthrop, MA

Project Manager, Process Control

- Prepared and managed the service contract for recharging carbon beds on Deer Island, valued at $900,000 for 3 years
- Co-managed the Oxygen Services Contract, valued at $1,500,000 for 3 years
- Operated the oxygen generation facility, the odor control facility, and the centrifuge facility during complex conditions, such as start-up
- Gave technical advice to operations, maintenance, and safety department as needed for the safe operation and maintenance of the treatment facility
- Designed and directed nitrogen purges for the digester gas system, consisting of the feeding of 200,000 cubic feet of nitrogen through the ENVIREX DYSTOR membrane cover of the digested sludge and gas storage tank to allow the installation of new valves
- Managed the design of new motors and variable frequency drives for the reactor aerators, allowing them to operate at lower speed and saving up to $300,000 per year in electrical costs.
- Led the effort to optimize secondary aeration process at Deer Island, saving a total of $1,000,000 annually in electrical costs.

1996-2004 MWRA Winthrop, MA

Laboratory Supervisor II, Central Laboratory

- Managed 4-7 temporary and full-time employees. Recommended employees for hire and termination as needed
- Responsible for all Deer Island compliance sample collection and management of all samples taken at the MWRA, including chain of custody and field sampling/testing quality control.
- Used NPDES permit limits and regulatory requirements to write procedures for sampling and analysis
- Managed team budget and procurement for sampling equipment and containers

Education

MIT Cambridge, MA

Bachelor of Science in Environmental Engineering Science

University of Massachusetts Lowell, MA

Master of Science in Environmental Engineering

Isenberg School of Management (UMASS) Amherst, MA

Enrolled in MBA program. 11 of 12 courses completed. Graduation in 2021.

Ethan Wenger

Certifications

Grade 7-C Wastewater Operator's License # 9909

Massachusetts P.E. Environmental Engineering #50268

Massachusetts Drinking Water License (OIT) 4T #27445

Massachusetts Drinking Water License (OIT) 4D #26857

GIAC GLSC (Security Leadership) Certification #9650

PMP (Project Management Professional) Certification #2780907

Presentations and Publications

Presented "Energy Optimization of Large Plant Aeration Process" at the NEWEA Joint energy and Plant Operations Seminar on May 16, 2012.

Presented "Aeration System Optimization/Dissolved Oxygen Study at the Deer Island Treatment Plant" at the Boston NEWEA Conference on January 29, 2014 and at WEFTEC Conference in New Orleans on September 29, 2014.

Presented "Struvite the Deer Island Experience" at NEBRA Conference in South Portland on October 23, 2014.

Presented "Hi Flow Operation of the Deer Island Treatment Plant" at the NEWEA CSO conference on October 26, 2015.

Presented "Twenty-year Valve Replacement at the Deer Island Treatment Plant" at the WEFTEC Conference on September 26, 2016 and at the NEWEA Conference in Boston on January 24, 2017. Paper was published in NEWEA Journal in Summer 2017.

Presented "Seven Miles of Sludge pipe" at the NEWEA Conference in Boston on January 22, 2018 and the WEFTEC conference in New Orleans on October 3, 2018.

Presented "MWRA Deer Island Treatment Plant Capital Improvement Program" at the 2020 NEWEA Conference and WEFTEC Connect 2020.

MWRA
POSITION DESCRIPTION

POSITION: Director, SCADA, Metering & Monitoring

DIVISION: Operations

DEPARTMENT: SCADA

BASIC PURPOSE:

The Director, SCADA, Metering & Monitoring oversees the development, maintenance, and implementation of SCADA and Metering systems for assigned water and wastewater facilities. It also oversees meter data collection, quality control, and total flow calculations used for allocation of MWRA's rate revenue requirements for the water and wastewater systems using revenue meters.

SUPERVISION RECEIVED:

Works under the general supervision of Director, Waterworks.

SUPERVISION EXERCISED:

Exercises direct supervision of Manager, Metering & Monitoring and Senior Program Manager SCADA, and close supervision of other assigned professional, engineering, technical, maintenance and operations staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Directs the further development, implementation, and optimization of SCADA and Process Control Standards for all water and wastewater facilities (excluding Deer Island Treatment Plant - DITP).

- Develops and implements new SCADA and Metering initiatives to ensure efficient, reliable and secure SCADA and Metering operation of all assigned water and wastewater facilities. Ensures that major initiatives and policy changes are properly communicated to all staff.

- Directs the SCADA group efforts related to cyber security. Keeps informed of emerging techniques related to cyber security protection. Participates in the MWRA Information Security Council.

- Oversees emergency and preventive maintenance on all meters, SCADA systems, and related equipment used in control, measurement and recording of water flow and pressure, treatment and real time water quality monitoring.

- Oversees water meter data collection, quality control, and data access for users and customer reporting.

- Reports to senior staff on department initiatives and progress towards agency goals.

- Recommends, develops and implements policies and procedures for the SCADA, Meter Maintenance, and Meter Data groups.

- Develops and implements continued updates of control strategies to ensure clear documentation of automated facility controls and alarming functions.

- Directs the operation, modification and continued improvement of the communication infrastructure to support secure and reliable transmission of SCADA data throughout MWRA's system.

- Directs the documentation of all control panels and instrumentation installations with support from other departments.

- Directs in-house and contract instrumentation maintenance, modifications and upgrades.

- Oversees the review of capital project designs, and directs staff support of construction and new equipment startup with regard to group responsibilities to ensure adherence to standards and effective integration into overall SCADA and metering systems.

- Directs the maintenance and implementation of Programmable Logic Controller (PLC) and Human Machine Interface (HMI) programming to support operations needs.

- Oversees staff productivity monitoring and continual improvement through staff skills development, strategic planning, standard operating procedures (SOP) improvements and research and implementation of technology advances.

- Partners with the Manager, Training and Development to oversee and provide opportunities for technical, supervisory and managerial training and education for all department employees. Ensure that staff are trained properly to be ready to operate new facilities as they come online.

- Directs the SCADA and Metering safety programs, maximizing employee involvement, supporting the Authority-wide safety program, and making inspections. Acts as liaison to

the Manager, Occupational Safety and Health.

- Maximizes effective use of the Maximo maintenance management software and related computer programs.

- Manages the preparation of and exercises control over current expense budget for SCADA, Metering, & Monitoring.

- Assures consistency and uniformity of work rules in accordance with established policies and procedures.

- Reviews assigned employees' performance per MWRA procedures. Provides feedback and coaching to managers to maximize successful performance.

- Reviews, analyzes and prepares managerial reports for operational, maintenance, budget, and personnel matters.

- Oversees successful administration of collective bargaining agreement provisions. Participates in grievance resolution, collective bargaining and contract negotiations. Serves as Step I hearing officer. Hears disciplinary actions.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) A Bachelor of Science degree in civil, electrical or mechanical engineering or related field is required (Master's degree is preferred); and

(B) Ten (10) to twelve (12) years of experience in design, startup, and management of SCADA and metering systems in a large industrial/utility setting (water or wastewater system experience preferred) which includes at least five (5) years of experience in a management position with multiple supervisory levels; or

(C) Ten (10) to twelve (12) years of experience in engineering, construction management, operations and maintenance in a large water/wastewater setting including at least five (5) to seven (7) years experience in design, startup and management of SCADA and metering

systems and at least five (5) years in a management position with multiple supervisory levels; or

(D) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Knowledge of engineering principles and practices.

(B) Knowledge of cyber security and how to implement initiatives in the water and wastewater industries.

(C) Knowledge of computer hardware and software such as SCADA and communications technology, routers and networking, cyber security, PLC control programming, HMI programming, databases, data presentation and analysis tools.

(D) Ability to read and interpret plans and drawings.

(E) Knowledge of computerized maintenance management systems and procedures.

(F) Excellent interpersonal, written and verbal communication skills required.

(G) Demonstrated successful experience managing in a union environment with a diverse workforce.

(H) Proficient in the use of personal computers and associated Microsoft Office software programs, including Word, Excel, and Access.

SPECIAL REQUIREMENTS:

- Able to respond to emergency situations 24 hours per day, seven days per week.
- A valid Massachusetts Class D Driver's License.
- Registered Professional Engineer license in the Commonwealth of Massachusetts preferred.
- A Grade IV Massachusetts Drinking Water Operator's license (Distribution or Treatment) or a Grade VI Wastewater Operator's license, preferred.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

WORK ENVIRONMENT:

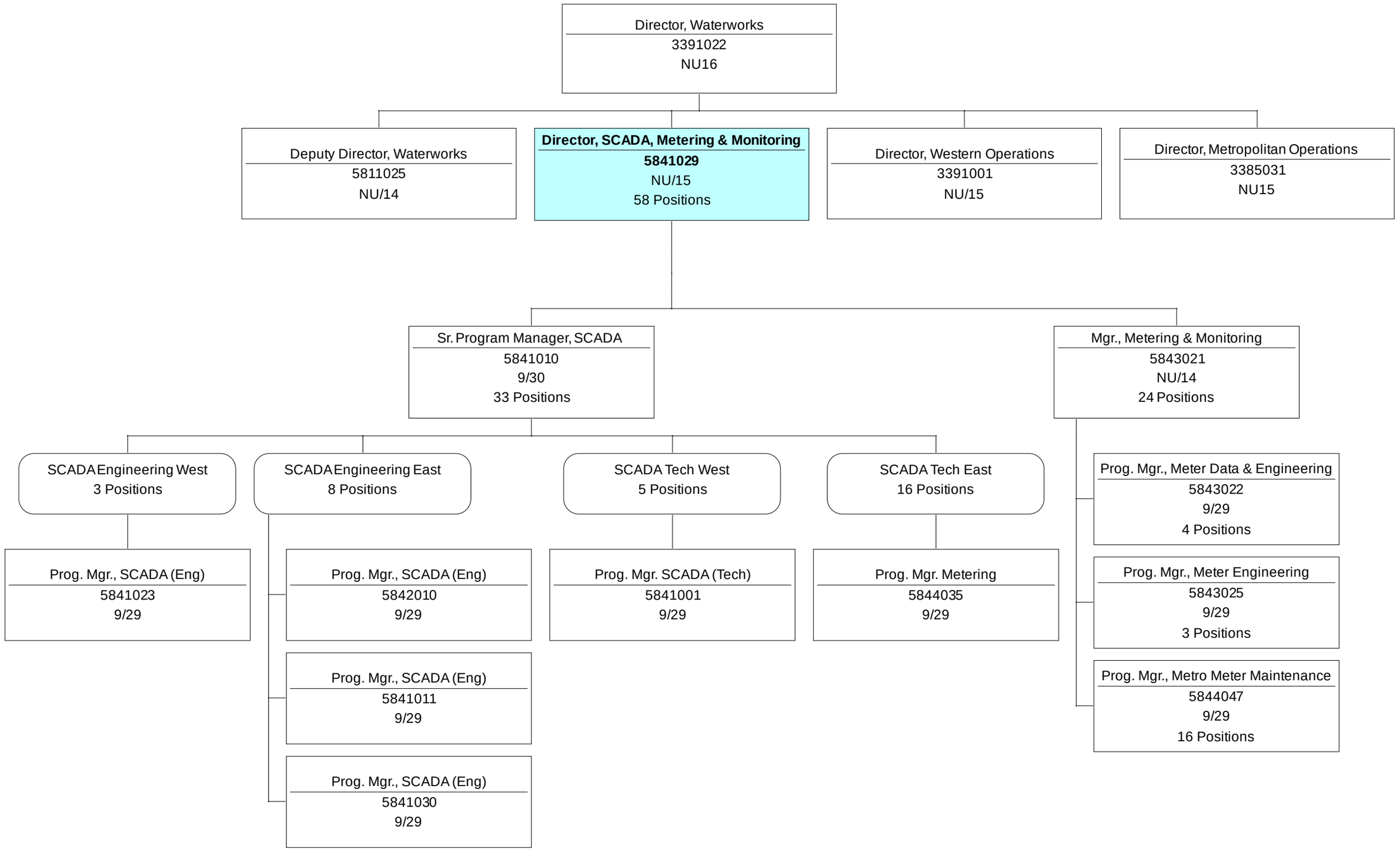
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works in an office environment. The employee occasionally exposed to outdoor weather conditions. The employee is occasionally exposed to fumes and airborne particles.
The noise level in the work environment is a moderately quiet in office setting.

December 2020

SCADA, Metering & Monitoring

May, 2021



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: Appointment of the Director, Environmental and Regulatory Affairs

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COMMITTEE: Personnel & Compensation

____ INFORMATION
__X__ VOTE

Andrea Murphy, Director, Human Resources
Carolyn M. Fiore, Deputy Chief Operating Officer
Preparer/Title

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

RECOMMENDATION:

To approve the appointment of Rebecca Weidman to the position of Director, Environmental and Regulatory Affairs, (Non-Union, Grade 16), in the Operations Division at the recommended annual salary of $151,000, commencing on a date to be determined by the Executive Director.

DISCUSSION:

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

Given the level of the position and its high profile nature, two MWRA senior managers were invited to be considered for the position, one of whom expressed interest in the position. The Executive Director, Chief Operating Officer, Deputy Chief Operating Officer, Special Assistant for Affirmative Action and the Director of Human Resources interviewed Rebecca M. Weidman and based on her education and experience, unanimously recommend her for the position.

Rebecca M. Weidman currently serves as the Director of MWRA's Toxic Reduction and Control Department (TRAC). In this position, she is responsible for managing MWRA's federally required and approved Industrial Pretreatment Program as well as the permitting program, known as the 8m program, for those requesting to do work in locations in physical proximity to MWRA assets. Ms. Weidman was appointed as the Director of TRAC in February 2018. She oversees the implementation of the day-to-day pretreatment program requirements, including sampling, inspections, permitting, and compliance and enforcement activities and ensures that the program

meets its federal requirements. During her tenure in TRAC, Ms. Weidman successfully undertook the development and adoption of the federally required regulatory program applicable to Dental Facilities, adding approximately 700 new permittees to the MWRA regulatory program. In addition, Ms. Weidman oversaw the necessary revisions to the MWRA regulations addressing Adjudicatory Proceedings, Enforcement and Administrative Penalties, and Sewer Use, to incorporate required updates, the new dental rules, and adjustments to the MWRA's incentive and other charges paid by holders of TRAC permits.

Prior to this, Ms. Weidman served as the Director of the Division of Watershed Management at the Massachusetts Department of Environmental Protection, which included oversight responsibilities for a technical assistance program and three regulatory programs, including Massachusetts' Drinking Water, Water Management, Watershed Planning, and Water Utility Resilience Programs. Prior to her employment at DEP, Ms. Weidman worked at the Cadmus Group, Inc., the New England Water Pollution Control Commission, the national Estuarine Research Reserve Association, and the National Oceanic and Atmospheric Administration.

Ms. Weidman has 20 years of experience in the water and wastewater industry working in progressively more responsible positions. She has extensive experience in environmental policy, permitting and regulatory initiatives, and importantly, has a proven track record in engaging stakeholders in policy and program development. She is well respected by her managers, employees, and colleagues. Ms. Weidman's education, management experience, extensive knowledge of the water and wastewater regulatory environments make her an excellent candidate for the Director, Environmental and Regulatory Affairs position.

Ms. Weidman holds a Bachelor of Arts in Biology from Carleton College in Minnesota, and a Master of Environmental Management from the Yale School of the Environment in New Haven, Connecticut. She was awarded the 2017 Manuel Carballo Governor's Award for Excellence in Public Service by Governor Charles Baker.

BUDGET/FISCAL IMPACTS:

There are sufficient funds in the Operations Division's FY21 Current Expense Budget to fund this positon.

ATTACHMENTS:

Resume of Rebecca M. Weidman
Position Description
Organization Chart

Rebecca M. Weidman

PROFESSIONAL EXPERIENCE

Massachusetts Water Resources Authority, Chelsea, Massachusetts, April 2018 - Present
Director, Toxic Reduction and Control Department
Manage all Massachusetts Water Resources Authority's (MWRA) permitting programs. Permitting programs include: the Industrial Pre-Treatment Program, consisting of approximately 2,000 permitted industries throughout MWRA's sewerage service area; Municipal permitting, each of MWRA's 45 communities has a permit for utilizing MWRA's sewerage system; and, the 8(M) permitting program for work conducted by outside parties within MWRA's easements.

Key Tasks and Accomplishments:
- Oversee MWRA's National Pollutant Elimination System (NPDES) Industrial Pre-Treatment Program consisting of inspection, permitting, sampling, and compliance and enforcement components.
- Oversaw the revision of MWRA's Sewer Use (360 CMR 10.000), Adjudicatory Proceedings (360 CMR 1.00), and Enforcement and Administrative Penalties (360 CMR 2.00) regulations.
- Lead the development and implementation of a new permitting program for over 700 Dental Dischargers.
- Develop annual Department goals, priorities and budget.

Massachusetts Department of Environmental Protection, Boston, Massachusetts, April 2013 – March 2018
Director, Division of Watershed Management
Manage three complex regulatory programs intended to protect public health and the environment. Responsible for program implementation, including the engagement key stakeholders, iteratively assessing programmatic tools and processes, determining required regulatory revisions, and ensuring the timely delivery of policies and permits.

Key Accomplishments
- Lead four programs (three regulatory and one technical assistance), including the Massachusetts' Drinking Water, Water Management, Watershed Planning (included Surface Water Quality Monitoring and Assessment, Surface Water Quality Standards, Total Maximum Daily Loads), and Water Utility Resilience Programs with a staff of 40.
- Lead the development of new statewide regulatory and non-regulatory programs within my division, including revisions to Massachusetts' Surface Water Quality Standards and Drink Water Regulations. Determine staffing needs, funding requirements and sources, and programmatic goals and processes.
- Leadership role in the implementation of the Commonwealth of Massachusetts' Lead in School Drinking Water Assistance Program. The goal of this program is to identify elevated lead and copper levels in school drinking water and remediate the causes of the elevated lead and copper levels.
- Chaired external advisory committees tasked with providing guidance to the Department's Commissioner.
- Lead a multi-agency working group to develop a guidance document to support water allocation regulations. Ensured appropriate technical experts participate and materials are easily understandable to the public.
- Developed and implemented a spending plan for over $3 million in state capital funding annually. Projects focused on enhancing statewide water quality monitoring; reviewing existing and developing revised surface water quality standards; and mapping water utility infrastructure statewide.
- Lead efforts to evaluate new database options for the Watershed Planning Program.
- Oversaw contracts with outside vendors for various MassDEP projects.
- Provided technical assistance to the regulated community and interested stakeholders.

The Cadmus Group, Inc., Waltham, Massachusetts, January 2011 - March 2013
Associate
Managed dynamic water related technical assistance projects and their associated budgets. Assisted with training initiatives to support the issuance of new federal Safe Drinking Water Act regulations. Supported business development activities for Cadmus' Water Group.

Key Accomplishments:

- Developed training materials and guidance documents to support implementation activities associated with federal Safe Drinking Water Act regulations.
- Developed tools to assist with the completion a utility management self-assessment program (Effective Utility Management) for 47 water and wastewater utilities throughout New England. Provided technical assistance to a sub-set of utilities visited. Managed project staff, budget, facilitated site visits, and oversaw development of reports.

New England Interstate Water Pollution Control Commission, Lowell, Massachusetts, 2003 - January 2011
Director of Water Resource Protection, 2008 - January 2011
Watershed Program Manager**,** 2007 – 2008; ***Environmental Analyst****,* 2003 - 2007
Project and grant management for a myriad of national, regional, and place-based programs. Promoted collaboration across the New England states, New York State, and federal environmental agencies. Planned technical workshops and program-specific conferences; chaired multi-agency working groups.

Key Accomplishments:

- As the director of water resource protection, managed a $4.5 million annual budget that supported several programs and dozens of staff. Responsible for the development and implementation of all program work plans, ensuring that all deliverables were completed on time and within budget.
- Worked collaboratively with a range of stakeholders, including state governments, the federal government, academic institutions, and not-for-profit organizations to achieve program goals.
- Throughout tenure, worked in a variety of program areas including: drinking water; groundwater and source water protection; climate change; cyanobacteria; underground storage tanks (UST), and nonpoint source pollution. Supported key initiatives and partners including: the Long Island Sound Study, the Narragansett Bay Estuary Program, the Hudson River National Estuarine Research Reserve, and the Hudson River Estuary Program.
- Planned several conferences, the largest being a national conference attended by more than 750 individuals and included an exhibition hall with 37 vendors. Responsible for all aspects of event planning – from promoting the event to setting the budget for the event and agenda development.
- Conceptualized and developed new training programs and tools for a wide-range of audiences.

National Estuarine Research Reserve Association, Watertown, Massachusetts, 2003 - 2009
National Estuaries Day Coordinator
Lead a national effort to educate the public about estuaries. Planned, produced, and promoted EstuaryLive, an interactive field trip through estuaries over the Internet.

Key Accomplishments:

- Worked with federal and state agencies and teachers around the country to produce an annual web-based educational program.
- Responsible for locating and supervising vendors needed to produce the event, coordinated program content, managed the program budget, and developed and implemented a program evaluation.
- Over the course of seven years, reached tens of thousands of students of all ages across the country.

Awards and Honors*:* 2017 Manuel Carballo Governor's Award for Excellence in Public Service

EDUCATION:

Master of Environmental Management ♦ YALE SCHOOL OF THE ENVIRONMENT,
New Haven, Connecticut
Bachelor of Arts, Biology ♦ CARLETON COLLEGE, Northfield, Minnesota

MWRA
POSITION DESCRIPTION

POSITION: Director, Environmental and Regulatory Affairs

DIVISION: Operations

DEPARTMENT: Operations Administration

BASIC PURPOSE:

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

SUPERVISION RECEIVED:

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

SUPERVISION EXERCISED:

Exercises supervision of MWRA environmental compliance staff in the Operations Division and consultant staff as assigned.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

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

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

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

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

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

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

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

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

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

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

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

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

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

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

(B) Ten (10) years professional experience with state and federal environmental regulations development and compliance; and

(C) Skills in management and policy analysis as acquired by a minimum of nine (9) to twelve (12) years experience in a public sector environment; or

(D) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

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

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

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

SPECIAL REQUIREMENTS:

A valid Massachusetts Class D Motor Vehicle Operators License.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

WORK ENVIRONMENT:

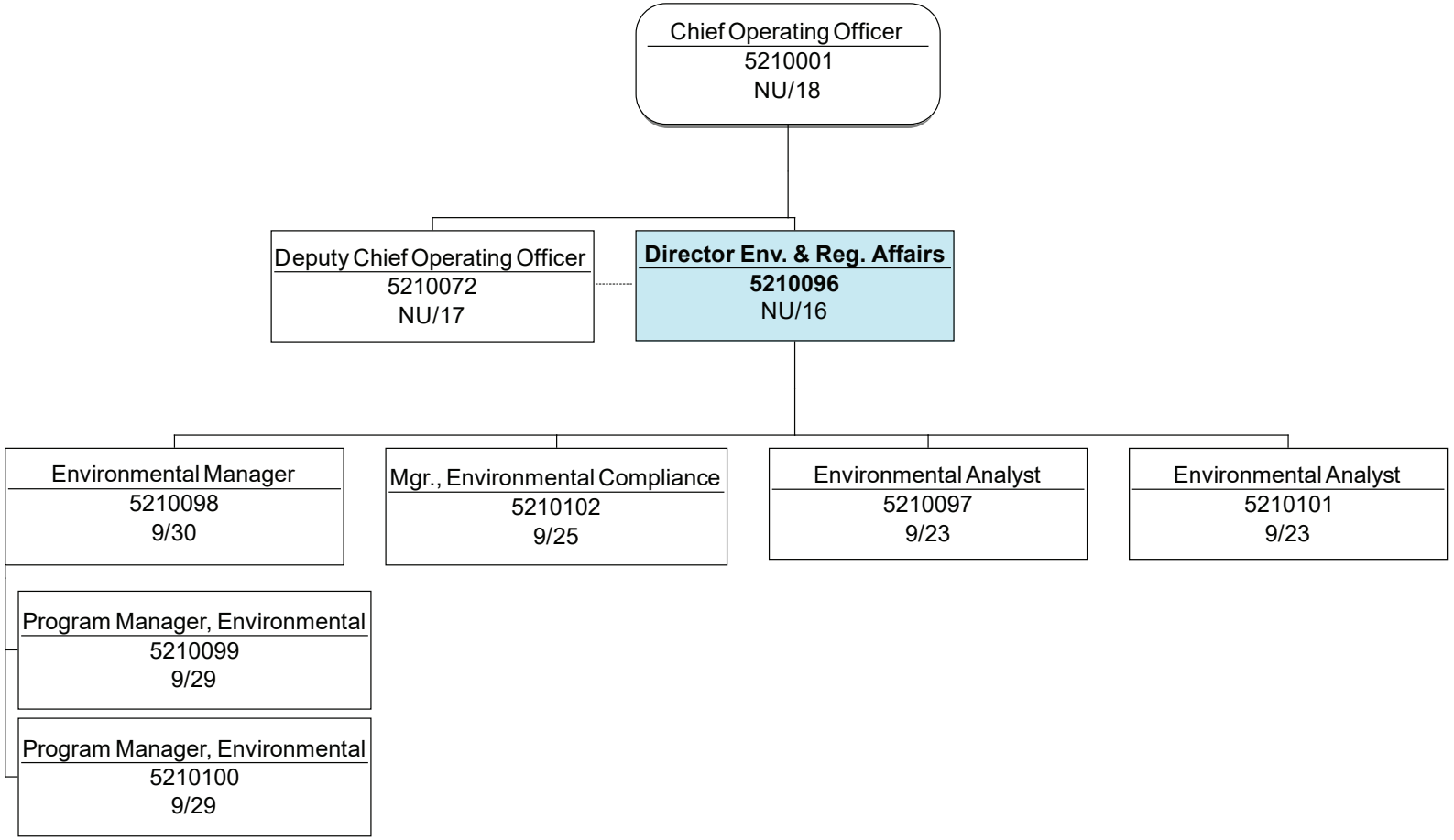
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job**,** the employee regularly works in an office environment.

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

May 2021

Environmental & Regulatory Affairs

May 2021



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: Appointment of Program Manager, SCADA Operations Division

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COMMITTEE: Personnel & Compensation

___ INFORMATION
_X_ VOTE

Andrea Murphy, Director, Human Resources
Valerie Moran, Director, Waterworks
Ethan Wenger, Deputy Director, Deer Island
Preparer/Title

David W. Coppes P.E.
Chief Operating Officer

RECOMMENDATION:

To approve the appointment of Mr. Carl Chin to the position of Program Manager, SCADA (Unit 9, Grade 29) at an annual salary of $128,958.93, commencing on a date to be determined by the Executive Director.

DISCUSSION:

The Program Manager, SCADA position became vacant upon the retirement of the incumbent. This position is responsible for managing the SCADA technicians in the western part of the MWRA service area. This includes overseeing and updating the existing preventive maintenance plans for all instrumentation and related equipment used to obtain data in this part of the MWRA district. This position also has responsibility for maintaining and upgrading the microwave radio communication system used to send data to and from remote sites. Finally, this position is responsible for providing technical direction and oversight to outside consultants working with the microwave radio system and other SCADA components. This position reports to the Senior Program Manager, SCADA.

Selection Process

The position was posted internally and externally. Eight candidates applied. The Deputy Director, Deer Island Wastewater Treatment, the Senior Program Manager, SCADA, and the Associate Special Assistant for Affirmative Action interviewed the candidates. Upon completion of the interview, Mr. Carl Chin was determined to be the best candidate for the position based on his direct technical knowledge of PLCs, field instrumentation, SCADA networks, and microwave radio systems, as well as his in depth experience working with MWRA instrumentation and SCADA systems.

Mr. Chin has over 30 years at the MWRA in positions of increasing levels of responsibility. Mr. Chin started with MWRA in 1990 as an Instrumentation Technician in the Metering Department, where he maintained flow metering instrumentation. He was promoted to Senior Instrument

Technician in 2004. In this role, he supervised a crew of technicians in maintaining Telog equipment and meters.

In 2006, Mr. Chin joined the SCADA Department. He spent 11 years maintaining SCADA equipment, microwave radios and data lines, first as a Communications and Control Technician and then for six years in a supervisory role as a Senior SCADA Technician. In 2017, Mr. Chin was promoted into a Senior Monitoring and Control Engineer position in the SCADA engineering group, which gave him the opportunity to learn the SCADA network, including cybersecurity monitoring. His outstanding performance in this role led to his promotion to Project Manager, SCADA Engineering in 2020. As Project Manager, SCADA Engineering, Mr. Chin manages the SCADA East network. This includes monitoring the network for security threats and failed or faulty equipment, as well as setting up new devices on the network as needed. He is also responsible for reviewing design documents and control strategies for SCADA engineering improvements associated with MWRA construction projects.

Mr. Chin has a Bachelor of Science Degree in Electronic Engineering from Wentworth Institute of Technology. He holds several control system and cybersecurity certifications, and has a Wastewater Collection Systems Grade 2 Operator license.

BUDGET/FISCAL IMPACT:

There are sufficient funds for this position in the FY21 Current Expense Budget.

ATTACHMENTS:

Resume of Carl Chin
Position Description
Organization Chart

CARL K. CHIN

WORK EXPERIENCE:

Massachusetts Water Resources Authority **1990-Present**

Project Manager SCADA Engineering **2020-Present**

- Manage all the maintenance, monitoring, and troubleshooting of the SCADA communication networks including microwave communications networks.
- Oversee and ensure our communications equipment is powered and functioning properly.
- Responsible for monitoring the SCADA communication networks using security onion for intrusion detection, network security monitoring, and log management.
- Review P&ID diagrams, SCADA tagging standard, control strategies, and loops numbering standard for capital improvement projects and serve as a liaison between MWRA, consultants and vendors.
- Participate in the design, implementation and troubleshooting of programmable logic controllers (Allen Bradley PLC).
- Participate in the design, implementation and troubleshooting of Human Machine Interface (GE Proficy iFIX HMI) software.
- Responsible for the hardening of MS Windows 10 administrative security policies.
- Configure, install, test and troubleshoot SCADA and Client HMI nodes.
- Document and update SCADA network drawings using MS VISIO (AutoCAD).
- Review technical specifications for SCADA equipment and contact vendors to obtain pricing quotes for budgetary evaluation.
- Manage, maintain, and update inv entory database for the SCADA department.
- Good interpersonal, written, and verbal communication skills.

Sr. Monitoring & Control Engineer **2017-2020**

- Assist in the design, implementation and troubleshooting of Human Machine Interface (GE Proficy iFIX HMI) software.
- Configure, install, test and troubleshoot SCADA and Client HMI nodes.
- Working knowledge of ladder logic programming language.
- Responsible for the maintenance, monitoring, and troubleshooting of the SCADA communication networks.
- Thorough knowledge of Ethernet, routers, firewalls, managed switches, hubs, PCs, and Windows 7 OS.
- Program, install, and troubleshoot Cisco routers, switches, and firewalls.
- Document configurations and test procedures for the Cisco routers.

- Responsible for monitoring the SCADA communication networks using security onion daily.
- Manage and maintain up to date records and documentation of SCADA networks, PCs and PLCs installations.
- Maintain and update HMI, PLC, and Router backups for water and wastewater sites.
- Monitor networks Firewall logs daily.

Sr. SCADA Technician **2010-2017**

- 20 plus years hands on experience in wiring, testing, and troubleshooting of telemetry, instrumentations and process control systems to the component level for MWRA Water and Wastewater SCADA Systems.
- Oversee Contractor's installations of SCADA instrumentation and control equipment.
- Work with SCADA Managers and Engineers to resolve instrumentation and control strategy issues.
- Partner with Engineers to update alarm logic and change or program new points to the PLC and HMI.
- Collaborate with Engineers to install, troubleshoot and connect communication equipment such as routers, switches and firewalls for SCADA communication networks.
- Participate in start-ups and testing phases of MWRA instrumentation and control SCADA system enhancement projects.
- Build, install and test SCADA instrumentations and control panels.
- Install, troubleshoot, test and configure SCADA instrumentation and control equipment.
- Install and terminate fiber optics cabling for communication networks.
- Supervise and train C & C Technicians in the development, installation, enhancement and maintenance of the SCADA control and monitoring system.
- Assign work schedules to C & C Technicians, maintain and update set of records using Maximo reporting software and documentations on all MWRA facilities.

Communications & Control System Technician **2006-2010**

- Participate in the development, installation and maintenance of the Authority's Supervisory Control and Data Acquisition (SCADA) system.
- Perform precision calibration and maintenance on primary instrumentation devices utilized for the control and operation of SCADA controlled and monitored water facilities.
- Install, troubleshoot, test and configure CSU/DSU modems, DGH's and AGM's transceivers.
- Utilize FIREBERD BER tester to confirm the integrity of communication lines.

- Work with the Telephone Company to install, repair, troubleshoot and test communication lines along with other telemetry vendors to resolve technical issues encountered out in the field.
- Assist in the installation, troubleshooting and configuration of spread spectrum MDS and Devar's data radios in the HF and UHF spectrum along with installing and servicing transmission lines, antennas and dehydrator units.

Senior Instrumentation Technician **2004-2006**

- Supervise a crew of instrumentation technicians in field installations, troubleshooting, repairs, maintenance and calibrations of electronic instrumentation equipment.
- Examine and provide solutions to problems encountered by the instrument technician during a corrective maintenance assignment, such as how to properly replace defective instruments, test individual instruments and circuitry to ensure the entire instrumentation system is functioning coherently.
- Use TELOG to analyze data and charts to isolate malfunctioning instruments at metering sites and to verify the instrumentation system is functioning properly after a preventive maintenance assignment.
- Instruct technicians to fabricate, troubleshoot, install and test instrumentation panels for fire-flow meters.
- Maintain and update Excel spreadsheet of corrective maintenance assignments for metering projects.
- Document completed work assignments, instruments and parts utilized, time spent on each work site and complete trouble report forms when instrumentation equipment are in poor condition, which needs to be repair or replace.
- Follow all MWRA safety policies and procedures to ensure a safe work environment.

Instrumentation Technician **1990-2004**

- Participate in a preventive maintenance program for the Authority's metering and monitoring system.
- Perform confined space entry for the purpose of in field installation, troubleshooting, repair, maintenance and calibration of electronic instrumentation equipment.
- Monitor and troubleshoot malfunctioning instruments and recommend repair or replacement.
- Fabricate, troubleshoot, install and test instrumentation panels for fire-flow meters.
- Maintain and equip vehicle with all the necessary parts and equipment needed to complete work assignments.

EDUCATION:	**Wentworth Institute of Technology** **Bachelor of Science Degree in** **Electronic Engineering**
CERTIFICATIONS:	**ISA'S Certified Communications and Control System Technician (CCST)** **FCC-General Radiotelephone Operator License** **Productivity Improvement Program Certification (PIP)** **Grade 2 Wastewater Collection Systems Operator License** **GIAC GISF Certification**

MWRA
POSITION DESCRIPTION

POSITION: Program Manager, SCADA (Technicians)

DIVISION: Operations

DEPARTMENT: SCADA Maintenance - Water

BASIC PURPOSE:

Provides supervision and technical support for the Authority's Supervisory Control and Data Acquisition (SCADA) security, networking, process data interfacing with management information systems, and all software control and monitoring aspects of the SCADA system.

SUPERVISION RECEIVED:

Works under the general supervision of the Senior Program Manager, SCADA.

SUPERVISION EXERCISED:

Exercises general supervision of SCADA Maintenance Technicians and on occasion Communication and Control Technicians.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Manages and supervises SCADA Technicians as well as support personnel. Develops, implements and maintains Operations Division's SCADA and telemetry systems.
- Prepares technical specifications and budget estimates for SCADA and telemetry systems, computer systems, local area networks and programmable logic controller (PLC) equipment.
- Serves as liaison between MWRA and SCADA system consultants and vendors.
- Prepares written and computer generated reports.
- Oversees daily work schedules, preventative maintenance schedules and calibration procedures.
- Ensures that the microwave equipment, antenna and transmission line systems are properly installed, tested and maintained.
- Ensures that all SCADA computers and LAN equipment are properly installed and correctly interfaced to the telemetry equipment.

- Ensures SCADA system network timing, synchronization and data integrity.

- Codes, debugs, integrates and tests software routines for Programmable Logic Controllers (PLC), Remote Terminal Units (RTU) and alarm controllers.

- Mentors, assists and trains Senior SCADA Maintenance Technicians in the theory and repair of SCADA system components including telemetry equipment, computer systems, programmable logic controllers, instrumentation and associated components.

- Monitors and reports on staff productivity and utilization. Recommends and implements improvements on same using Maximo reporting software.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Bachelor's degree in an engineering discipline (electronic, electrical), control systems, telecommunications engineering or a related field; and

(B) Seven (7) to nine (9) years experience in the design, configuration and implementation of PLC control systems as well as the development of Graphic User Interfaces (GUI), and digital communication technology, Pump Station instrumentation and microprocessor control and digital/analog circuit design lines, of which three (3) to five (5) years should be in a supervisory capacity; or

(C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

(A) Working knowledge of object oriented, assembly and ladder logic programming languages. Working knowledge of GE Proficy iFIX or equivalent control software. Working knowledge of AutoCAD or equivalent CAD design programs.

(B) Working knowledge of EIA RS-232, RS-422, RS-485, V.35, X.25, Ethernet and other communications signaling standards and protocols.

(C) Ability to test and troubleshoot to the component level using a microwave signal generators, spectrum analyzers, oscilloscopes, transmission line network analyzers, service monitors, power meters, frequency counters, BER test sets and logic analyzers.

(D) Ability to perform installation, alignment and maintenance of microwave parabolic, omni directional and Yagi antennas on radio towers in excess of 100 feet above ground level.

SPECIAL REQUIREMENTS:

Participates in on-call rotation assignments if needed. 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 is required.

Ability to obtain a FCC General Radiotelephone Operators License within six (6) months.

TOOLS AND EQUIPMENT USED:

Electronic test equipment, computers, PLCs, hand tools, climbing and fall retrieval equipment, mobile radio, etc.

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 site, 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 50 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.

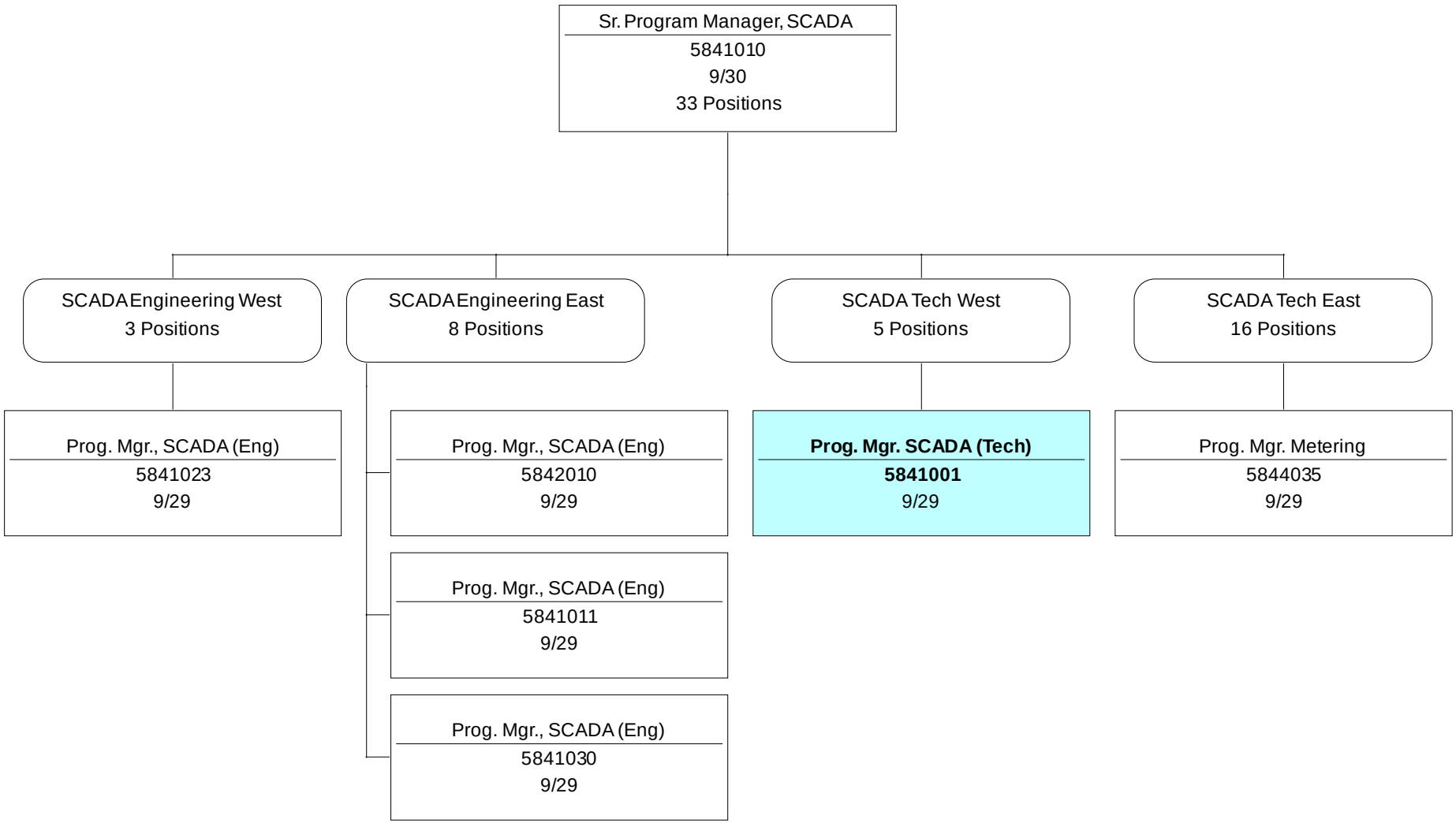
While performing the duties of this job, the employee regularly works in an office environment. The employee occasionally works in outside weather conditions. The employee occasionally works near moving mechanical parts and is occasionally exposed to wet and/or humid conditions and vibration. The employee occasionally works in high, precarious places ad 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.

January 2021

SCADA Maintenance & Engineering

May, 2021



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: Appointment of Program Manager
Engineering & Construction Department

COMMITTEE: Personnel & Compensation

____ INFORMATION
__X__ VOTE

Andrea Murphy, Director, Human Resources
John Colbert, P.E., Chief Engineer
Preparer/Title

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

RECOMMENDATION:

To approve the appointment of Ms. Kathleen Pearson to the position of Program Manager (Unit 9, Grade 29) in the Engineering & Construction Department, at an annual salary of $128,958.93 commencing on a date to be determined by the Executive Director.

DISCUSSION:

The position of Program Manager in the Engineering & Construction Department became vacant in February 2021 as a result of the retirement of the incumbent. The Program Manager position works under the general supervision of the Senior Program Manager and manages in-house engineering staff. This position manages projects in assigned programs from conceptual planning through construction contract award, including conformance to standards and procedures, staffing assignments, project scheduling and prioritization and work product quality. The position oversees the work of professional engineering consultants under contract with MWRA, including quality of outputs, budget and schedule compliance and conformance to contract terms. The position is also responsible for preparing annual and supplementary requests for projects in the Capital Improvement Program.

Selection Process

This position was posted internally and externally. A total of 14 candidates applied for the position. One external candidate and six internal candidates were determined to be qualified and were referred for an interview. The Assistant Director of Engineering, Senior Program Manager, and the Assistant Manager of Employment conducted the interviews. Upon completion of the interviews, Ms. Kathleen Pearson was determined to be the best candidate based on her experience, knowledge, skills and education.

Ms. Pearson has over 20 years of wide-ranging professional engineering experience from working for consultants, communities, and MWRA. Initially she worked for Malcolm Pirnie and then Metcalf & Eddie for six years, providing design engineering services on a wide spectrum of civil engineering projects related to storm water, wastewater, water, combined sewer overflow facilities and solid waste. Then she served on various committees for the town of Newbury for eight years and was Chair of the Planning Committee. During this period, she also worked as a project engineer evaluating the town's options for a public water supply, and estimating the cost for construction and return on investment.

In 2014, she was hired by MWRA as a Project Manager. She started in the Operations Engineering Department, providing engineering support for the Field Operations Department including implementing operational changes that have service impact, supporting emergency response, preparing maintenance plans, and performing in-house design and construction activities. She gained in-depth knowledge of MWRA's water facilities and pipelines. In January 2020, Ms. Pearson transferred into Engineering & Construction where she has worked on engineering design projects and supervised the work of professional engineering consultants. She has gained experience supervising and mentoring staff and managing engineering consultants while working in Newbury and in her roles at MWRA.

Ms. Pearson has a Bachelor of Science degree, a Master of Science degree, and a Certificate of Engineering Leadership in Civil Engineering from Northeastern University. She also has an Engineer-in-Training Certificate and she holds a certified Grade 4-full Massachusetts Water Distribution System Operator license.

BUDGET/FISCAL IMPACT:

There are sufficient funds for this position in the Operations Division's FY21 Current Expense Budget.

ATTACHMENTS:

Resume of Kathleen Pearson
Position Description
Engineering and Construction Department (Water Engineering) Organization Chart

KATHLEEN M. PEARSON

Ms. Pearson is a Project Manager, Engineering & Construction at the Massachusetts Water Resources Authority (MWRA) with over 20 years of experience in Civil Engineering. She has worked on multiple design, construction, and operations projects with knowledge of the MWRA waterworks and wastewater facilities and pipelines. She has overseen the work of professional engineering consultants and contractors, including review of all work products for quality control and technical content, oversight of budgets and schedules, and ensuring compliance with contractual requirements. She has developed engineering cost estimates and specifications, evaluated bids, supervised field staff, and prepared staff summaries. She has assisted in the procurement process, including the evaluation of qualifications packages and proposals. Ms. Pearson has excellent interpersonal and communication skills with the ability to work cross-functional teams within the MWRA as well as member communities, state agencies, and consultants/contractors.

EDUCATION

Master of Science in Civil Engineering, Northeastern University, 2014
Graduate Certificate in Engineering Leadership, Northeastern University, 2013
Bachelor of Science in Civil Engineering, Northeastern University, 1996

LICENSES/CERTIFICATES:

EIT / MA License Grade 4D Full / NEWEA Collection Systems Operator Grade 1

AWARD: 2017 MWRA Extraordinary Service Award - Team received the award for an alternative method to accomplish the work which negated the need for over 50 shutdowns of the North Main Pump Station and resulted in a savings of approximately $500,000 for MWRA and its ratepayers.

PROFESSIONAL EXPERIENCE:

Project Manager, Engineering & Construction, MWRA — 01/2020 to Present

- Oversaw the work of professional engineering consultants on multiple task orders, including review and approval of all work products for quality control and technical content, oversight and approval of budgets and schedules, and ensuring compliance with contractual requirements.

- Developed the scope of services, negotiated the level of effort, and managed the task orders for professional engineering consultants to provide inspection, evaluation, and design services for the replacement of the Somerville MWR205 Tide Gate and the CHE008 Pipe Replacement Projects. These projects will assist in MWRA meeting their Long-Term Combined Sewer Overflow Control Plan (LTCP) goals.

- Currently a member of the MWRA Combined Sewer Overflow (CSO) Program, which is responsible for assessing the performance of MWRA's $912 million approved LTCP and complying with CSO Variance conditions. Assisting in reporting requirements describing the MWRA's CSO data collection program, quantification of CSO discharges, calibration and utilization of the hydraulic model, Typical Year model results and comparison to LTCP goals, site-specific investigations into overflows at certain regulators and outfalls, and water quality modeling of the Charles River and the Alewife Brook/Upper Mystic River.

- Developed the scope of services, negotiated the level of effort, and managed the task order for a professional engineering consultant to evaluate the feasibility of demolishing the Charlestown Pump Station (CPS) from land, barge and bridge and provide the impact and concerns with the different approaches. The consultant evaluated the risks associated with demolishing the CPS superstructure,

including the risks associated with protecting the active 60-inch sewer main interceptor and sea wall, and maintaining access to the wastewater infrastructure as well as uninterrupted service of the wastewater system.

- Responsible for the coordination of technical information, investigations, work progress, and progress meetings with MWRA, consultant, and two member CSO communities (Cambridge & Somerville) and at times other state agencies. Daily management of coordinated activities involving member communities' sewer system improvement projects, MWRA and community hydraulic modeling, and investigations to identify the causes of higher CSO activity and evaluatulated mitigation alternatives.

- Performing technical reviews of data, results of engineering work, and model simulations provided by MWRA staff, the consultant and member communities, troubleshooting unusual meter data, and ensuring all parties receive updated information.

Project Manager, Operations Engineering, MWRA **11/2014 to 01/2020**

- Managed two Metro Operations paving contracts consisting of the developed of engineer's estimates and specifications, evaluated bids, prepared construction budgets and schedule projections, supervised field staff, reviewed and approved invoices, and prepared staff summaries to Board of Directors. Reviewed, negotiated, and processed change orders and claims in accordance with MWRA policies and procedures.

- Ensured contractor compliance with construction documents, MWRA procedures and policies, regulatory requirements, and applicable engineering standards. Performed constructability reviews of construction plans and specifications. Reviewed record drawings and detail records upon construction completion for accuracy.

- Functioned as liaison with MWRA Construction and Engineering staff on multiple design and construction projects to ensure that all contracts met Operations' requirements and maintained supply to member communities during construction.

- Successfully coordinated and supervised multiple MWRA and member community field crews during planned field activities requiring the activation of an alternative water source to supply the member community.

- Supervised field staff to complete the GPS Data Collection Project that identified ~8,000 locations on 122 water mains, 4 aqueducts, and the Fall River Railroad.

- Pulled all Boston Excavation Permits for MWRA Operations (Water/Wastewater) and functioned as point of contact responsible for addressing concerns of the quality of MWRA paving and casting work.

- Developed EPAs for the MWRA's transmission system and redundancy to the system in the event of an emergency isolation.

- Developed and approved multiple standard operating procedures for isolating, dewatering, filling, flushing, disinfecting, and activating water mains. (MA License Grade 4D Full)

- Conducted turbidity sampling, water quality analysis, and monitoring during the individual pump testing of the newly installed vertical turbine pumps at the Wachusett Aqueduct Pump Station.

- Provided operations engineering assistance to upper management during the Section 89 watermain break, Nut Island fire, 2015 blizzards, and monitoring the hydraulics of the wastewater collection system during wet weather events.

Planning Board, Town of Newbury, MA **2/2005 to 5/2007 & 12/2008 to 2/2015**

- Oversaw the work of various professional engineering consultants, including all work products for quality control, oversight of budgets and schedules, and ensured compliance with contractual terms.

- Reviewed stamped Civil PE plans for multiple ANR, OSRD, & Site Plan Review applications to ensure contractor compliance documents met the requirements of the MA Subdivision Control Law, Newbury Zoning Bylaws and Subdivision Rules & Regulations. Supervised the development and maintenance of construction tracking and reporting procedures. Provided final approval for release of retainage.

- Completed the evaluation of "The Impact of a Public Water Supply on Economic Development" for the Town of Newbury that became Ms. Pearson's graduate thesis. The projects assisted the town leaders in determining if economic development could be encouraged and provided direction when focusing future economic development efforts. Project included the evaluation of six potential water sources and determined their ability to meet the water quality and demand requirements for the maximum build-out of the Town's largest business district, preliminary design of a water treatment facility and distribution system, engineering economic analysis comparing the construction cost to provide a public water supply with the potential revenue gained from new development, and coordination with over 100 individuals at times in politically challenging environments.

- Completed the annual performance evaluations for the Newbury Town Planner. Recommended the Planning Department's fiscal year budget to the Board of Selectmen for their approval to be placed on the annual town meeting warrant.

- Served as Chair & Vice Chair of the Newbury Planning Board. Proved leadership and communication skills led to success in these roles. The successful fulfillment of leadership responsibilities resulted in being elected to office for three terms and twice appointed by the Board of Selectmen.

- Member of the Capital Planning Committee that identified deficiencies to assist Newbury maintain assets at a level adequate to protect the town's capital investment and to minimize future maintenance and replacement costs.

Project Engineer, Metcalf & Eddy Inc., Wakefield, MA **3/2001 to 11/2002**

- Conducted a system optimization analysis to reduce flows to a CSO facility and decrease the CSO overflow volumes. Coordinated with modeling group, developed technical reports and procurement of wet weather sampling.

Engineer, Malcolm Pirnie Inc., Wakefield, MA **10/1996 to 3/2001**

- Provided design and construction engineering services for a wide spectrum of civil engineering projects from water, wastewater, stormwater to solid waste.

Engineer/Coop. Student, SEA Consultants Inc., Cambridge, MA **1/1994 to 9/1996**

- Provided technical support for multiple Initial Site Investigations to determine contamination or potential risk(s) of contamination of a site. Developed report, specifications and drafted technical drawings.

PROFESSIONAL SOCIETIES: AWWA, NEWWA, WEF, NEWWEA, SWE

TRAINING: MWRA Supervisory Training, Keolis Railroad Safety Training, MBTA ROW Training

MWRA
POSITION DESCRIPTION

POSITION: Program Manager

DIVISION: Operations

DEPARTMENT: Engineering and Construction

BASIC PURPOSE:

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

SUPERVISION RECEIVED:

Works under the general supervision of a senior manager in the Engineering and Construction Department.

SUPERVISION EXERCISED:

Exercises close supervision of a staff of professional and technical employees and or consultants.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Oversees projects, including the planning and design of rehabilitation and capital engineering projects for waterworks and wastewater facilities and pipelines. Additionally, manages the planning and design phases of assigned water and wastewater engineering and or maintenance projects including, feasibility and environmental impact reports, detailed plans and specifications, permitting, project schedules, technical assistance, progress review and evaluation.

- Oversees the work of professional engineering consultants, including all work products for quality of work, budget, schedule, and compliance with contractual terms and MWRA objectives and policies.

- Supervises and manages professional staff, including assignment of projects, evaluation of

performance, and staff development planning. Provides technical and administrative assistance to staff in the development and management of projects which include design and engineering services during construction of new and rehabilitation water and wastewater projects, development of maintenance and operations procedures and working closely with MWRA Safety staff, development of safety procedures.

- Supervises professional multi-discipline engineering work of substantial difficulty and importance, requiring application of professional engineering principles and the exercise of independent engineering judgment.

- Oversees and coordinates cooperative project development with other MWRA divisions and departments to ensure complete and coordinated projects. Coordinates projects with communities, government agencies and other MWRA departments. Provides technical information and assistance. Addresses professional and community groups and initiates outreach projects as required.

- Participates in consultant selection procedures and contract negotiations for projects. Additionally, oversees all phases of consultant selection for assigned projects including development of scope of services, specifications, cost estimates, work schedules, negotiations, and preparations of contract award recommendations. Ensures compliance with contract budgets, schedules and terms.

- Prepares annual and supplementary budget requests for the projects in the Capital Improvement Program. Oversees and reviews projects' budgets and schedules for compliance with established department, division, and MWRA program goals.

- Ensures compliance with MWRA procedures and policies, regulatory requirements and applicable engineering standards. Ensures all project activities are coordinated with MWRA divisions and departments, outside regulatory and permitting agencies and communities, as appropriate.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Completion of a four (4) year college program in civil or related engineering field; and

(B) Seven (7) to nine (9) years of civil engineering experience of which three (3) years must be in a supervisory capacity and three (3) years in project management; or

(C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

(A) Knowledge of principles and practices of engineering.

(B) Understanding of issues related to design, construction and operation of water and wastewater facilities and infrastructure.

(C) Demonstrated ability to work effectively as part of a project team and also to function independently with minimal supervision.

(D) Knowledge of Massachusetts bidding laws, including M.G.L Chapter 30 and Chapter 149 construction bidding regulations.

(E) Familiarity with computer software such as Word and Excel

(F) Proven interpersonal, managerial, written and oral communications skills are required.

SPECIAL REQUIREMENTS:

Registered Massachusetts Professional Engineer preferred.

TOOLS AND EQUIPMENT USED:

Office machines as normally associated with the use of telephone, personal computer, including word processing and other software, copy fax machine, measuring equipment, light tools and mobile radio.

PHYSICAL DEMANDS:

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

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

The employee must occasionally lift and/or move up to 10 pounds. There are no special visual requirements for this job.

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 is not exposed to any unusual environmental conditions.

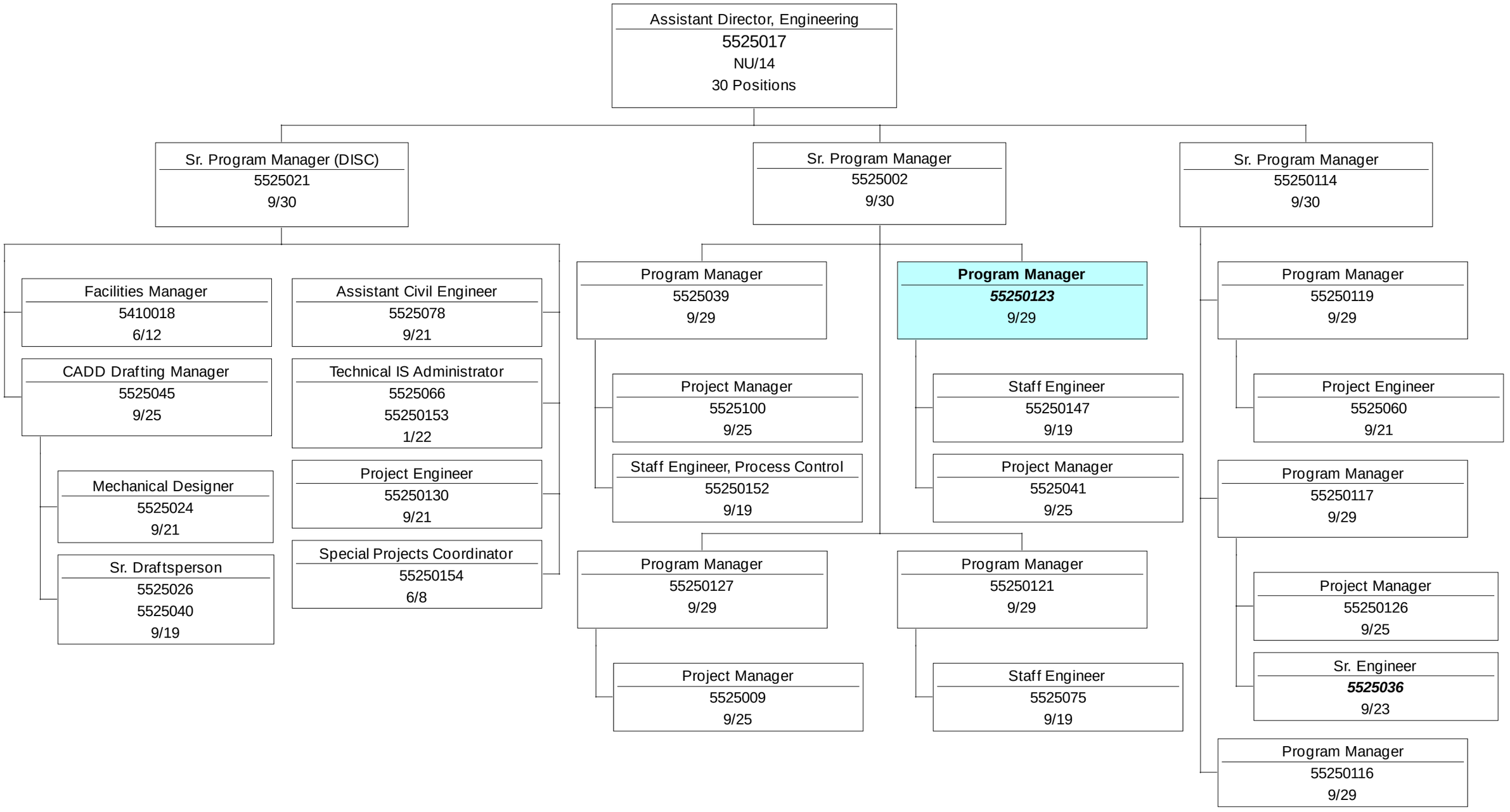
The noise level in the work environment is loud in field setting and moderately quiet in an office setting.

January 2013

Engineering & Construction

Water Engineering

May, 2021



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: Appointment of Program Manager, Electrical Engineering & Construction Department

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COMMITTEE: Personnel & Compensation

___ INFORMATION
_X_ VOTE

Andrea Murphy, Director, Human Resources
John Colbert, P.E., Chief Engineer
Preparer/Title

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

RECOMMENDATION:

To approve the appointment of Mr. Timothy McAleer to the position of Program Manager, Electrical (Unit 9, Grade 29) in the Engineering & Construction Department at an annual salary of $128,958.93, commencing on a date to be determined by the Executive Director.

DISCUSSION:

The position of Program Manager, Electrical in the Engineering & Construction Department became vacant in April 2021 as a result of the retirement of the incumbent. The Program Manager, Electrical position works under the general supervision of the Senior Program Manager, Technical Support, and exercises close supervision of internal staff. This position provides electrical engineering support to operation and maintenance departments and supervises project teams in the department to oversee projects related to the rehabilitation and capital improvement of water and wastewater facilities and infrastructure from conceptual planning through design and construction.

Selection Process

This position was posted internally and externally. Two external candidates and one internal candidate applied for the position. Mr. McAleer, the internal candidate, was determined to be the only qualified candidate and was referred for an interview. The Assistant Director of Engineering in the Engineering and Construction Department, the Manager of Engineering Services at Deer Island Treatment Plant and the Project Manager, Monitoring & Compliance for Affirmative Action conducted the interview. Upon completion of the interview, Mr. Timothy McAleer was recommended for the position based on his combination of experience, abilities, knowledge, skills and education.

Mr. McAleer has over 15 years of experience working as an Electrical Engineer. He has excelled in his current positon of Senior Staff Engineer, Electrical since he came to the MWRA in November 2019. He has quickly become an integral member of the Engineering & Construction Department. During his time with the MWRA, Mr. McAleer has provided excellent support to the Engineering and Construction and to the Operations and Maintenance Departments, reviewing consultant designs, inspecting and troubleshooting electrical systems, developing calculations and sketches, and has taken on increasing levels of responsibility including developing in-house designs.

Mr. McAleer's prior experience extended over 14 years, including more than 11 years working as an Electrical Engineer for Stantec. His past experience involved working on projects, equipment and facilities similar in nature to MWRA's and included designs of power distribution systems, Life Safety Systems, water and wastewater meters, SCADA components, lighting and communications systems. He worked on electrical engineering designs and construction efforts within facilities and systems for various municipalities and state agencies, including several projects for MWRA.

In Mr. McAleer's current and past positions, he has been responsible for writing specifications, developing design drawings, and providing design and construction submittal reviews. In these assignments, Mr. McAleer has effectively managed MWRA and consultant employees in order to complete various designs and assignments.

Mr. McAleer possesses a Bachelor of Science in Electrical Engineering from Northeastern University.

BUDGET/FISCAL IMPACT:

There are sufficient funds for this position in the Operations Division's FY21 Current Expense Budget.

ATTACHMENTS:

Resume of Timothy McAleer
Position Description
Engineering and Construction Department Organization Chart

Timothy J. McAleer

Team-oriented Electrical Engineer experienced in working under strict time and budgetary constraints. Experienced in various technical aspects including water and wastewater facilities and equipment, power distribution, lighting, and energy code. Also experienced in project/program management incorporating budgetary planning, labor coordination, and material acquisition. Capable of simultaneously handling many diverse projects with little direction.

PROFESSIONAL EXPERIENCE

Massachusetts Water Resources Authority, Chelsea, MA — November 2019 – Present

Senior Staff Engineer, Electrical

Member of the Engineering and Construction Department, Technical Support Group, designing and managing electrical projects as well as supporting the Operations and Maintenance Department and SCADA Department.

- Reviewing consultant and in-house electrical designs to ensure all code requirements as well as MWRA standards, preferences, and goals are met.
- Supporting the Operations and Maintenance department by assessing installations, performing calculations, and providing recommendations on designs or construction projects to improve the functionality or efficiency of the processes impacted.
- Supporting the Construction department by inspecting projects in construction, troubleshooting issues with existing or proposed equipment that arise from unexpected or undocumented field circumstances, and coordinated with the electrical inspector on any issues or questions he may have.
- Providing designs and sketches for projects in design and for change orders to construction projects.
- Designing and managing a project to provide a radio link between the Chelsea Creek Headworks and the Chelsea Main Office.
- Performing cost estimates to determine costs of construction and also to evaluate contractor change orders.
- Familiar with MWRA SCADA design due to involvement in the John J. Carroll Water Treatment Plant SCADA upgrade project as the reviewer of the power and communications wiring design.

Stantec, Burlington, MA — February 2008 – October 2019

Electrical Designer

Member of the Buildings Division designing and managing electrical projects as well as supporting Environmental, Transportation, and Structural Divisions.

- Designed power distribution and standby systems for office buildings, water treatment plants, pump stations, meter stations, transportation facilities, and other unique applications, often incorporating water process and instrumentation equipment and taking into account various hazardous environmental conditions.
- Performed site assessments and inspections for possible renovations or upgrades to equipment as well as providing resident engineering services for the MWRA as well as other state agency clients.
- Managed projects in construction including reviewing contractor submittals and pay requisitions, conducting client and contractor meetings, negotiating change orders, and overseeing active construction.
- Performed energy assessment, short circuit, voltage drop, generator sizing, and other electrical calculations.

- Designed indoor lighting systems with designs encompassing elements from hazardous area luminaires for treatment plants to decorative novel accent elements, performing lighting calculations as well as 3D renderings.
- Wrote proposals and estimated budgets for prospective projects.
- Coordinated with electrical and communications utility companies on behalf of clients for new and upgraded service connections and primary relocations.
- Designed a wide variety of outdoor lighting projects, including roadway, bridge, monument, parking lot, park, and sports field lighting with many different luminaire styles, incorporating lighting calculations that compensate for light loss and environmental factors to demonstrate accordance with lighting level and uniformity requirements.
- Well versed in the requirements of building energy codes. Designed various lighting control systems to fulfill energy usage and reduction requirements while achieving industry standard lighting levels.
- Designed fire alarm systems including a VESDA system for a historic building.

L-3 Communications: ESSCO, Concord, MA October 2005 - July 2007

Electrical Engineer

Member of the design team on a variety of mobile and fixed high performance antenna projects. Program manager for the antenna spares and repairs department.

- Contributed to the design, documentation, and implementation of multiple servo drive systems utilized to mechanize and control antenna movement.
- Designed power systems with various arrays of single phase, split phase, three phase and DC level distribution.
- Designed mechanical and electrical safety interlock circuits.
- Worked with vendors to choose and customize components often based on very stringent electrical and environmental requirements including radiation hardening and EMP protection.
- Traveled locally and abroad to conduct field maintenance, assessment, and integration.
- Upgraded old designs based on outdated equipment and incomplete documentation.
- Quoted and managed projects for a range of international and domestic customers, including budgeting, and coordinating labor as well as overseeing component procurement and shipment, assembly, testing, and integration.

EDUCATION

Northeastern University, Boston, Massachusetts August 2005

Bachelor of Science in Electrical Engineering

COMPUTER SKILLS

Software: Autocad, Revit, PDMWorks, Microsoft Word, Project, Outlook, PowerPoint, Excel, Bluebeam, Projectwise, Costworks

MWRA
POSITION DESCRIPTION

POSITION: Program Manager, Electrical

DIVISION: Operations

DEPARTMENT: Engineering - Chelsea

BASIC PURPOSE:

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

SUPERVISION RECEIVED:

Works under the general supervision of a Senior Program Manager.

SUPERVISION EXERCISED:

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

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Performs design, engineering and construction support of in-house projects involving repair/replace/modification activities, layout changes for shops, laboratories, offices and warehouses, lighting systems, and power distribution, including substation & power generation equipment.

- Develops preliminary designs and detailed designs and prepares plans and specifications for proposed electrical modifications/replacement and construction projects.

- Oversees installation, operation, maintenance and repair of complex electrical equipment including generation, transmissions, and distribution systems.

- Oversees the preparation of plans and specifications for vendor contracts for proposed electrical modifications.

- Oversees reviews of and modifications to all operations and maintenance documentation with respect to electrical design changes.

- Assists the Operations staff with engineering resolution and recommendations to electrical engineering problems, which arise during normal operations.

- Assists the maintenance staff with complex work orders and with the development of contract maintenance contracts.

- Provides on-site engineering inspection of construction projects generated by the in-house engineering staff and outside consultants.

- Develops and maintains files and familiarity with all codes, code addends, code cases, and industry standards applicable to the electrical field and ensure that facility specifications comply.

- Performs periodic inspections to ensure facility-wide compliance with local and national electrical codes and other rules of safe electrical practice are enforced.

- Reviews electrical and related portions of design plans by outside firms who have been hired to design improvements or additions to facilities and infrastructure.

- Develops scope of services, assists with procurement, and manages the services of engineering consultants as required.

- Supervises the updating of electrical engineering drawings and records, and the subsequent coordination (in accordance with established procedures) to ensure facility and equipment records are current.

- Provides oral and written reports to management detailing results of problem investigations, proposed resolution, and economic justification for the proposed changes.

- Evaluates assigned employees performance according to MWRA procedures.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Knowledge of general and specific engineering and design principles and practices as attained through an accredited bachelor's degree in electrical engineering or related field; and

(B) Experience in design, installation and maintenance of a wide variety of electrical power and control equipment as normally acquired through seven (7) to nine (9) years of related electrical engineering experience including at least three (3) years supervisory or project management experience; and

(C) Experience with a complex processing facility and water or wastewater treatment operations and utility systems are desirable; or

(D) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

(A) Knowledge of Microsoft Office Suite, project management and GDS, CADD and AutoCAD desired.

(B) Knowledge of Massachusetts bidding laws, including M.G.L Chapter 30, Chapter 149, and Chapter 25A construction bidding regulations.

(C) Clear understanding of the National Electric Code and Life Safety Code.

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

SPECIAL REQUIREMENTS:

A valid Massachusetts Class D Driver's License required.

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

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

WORK ENVIRONMENT:

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

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

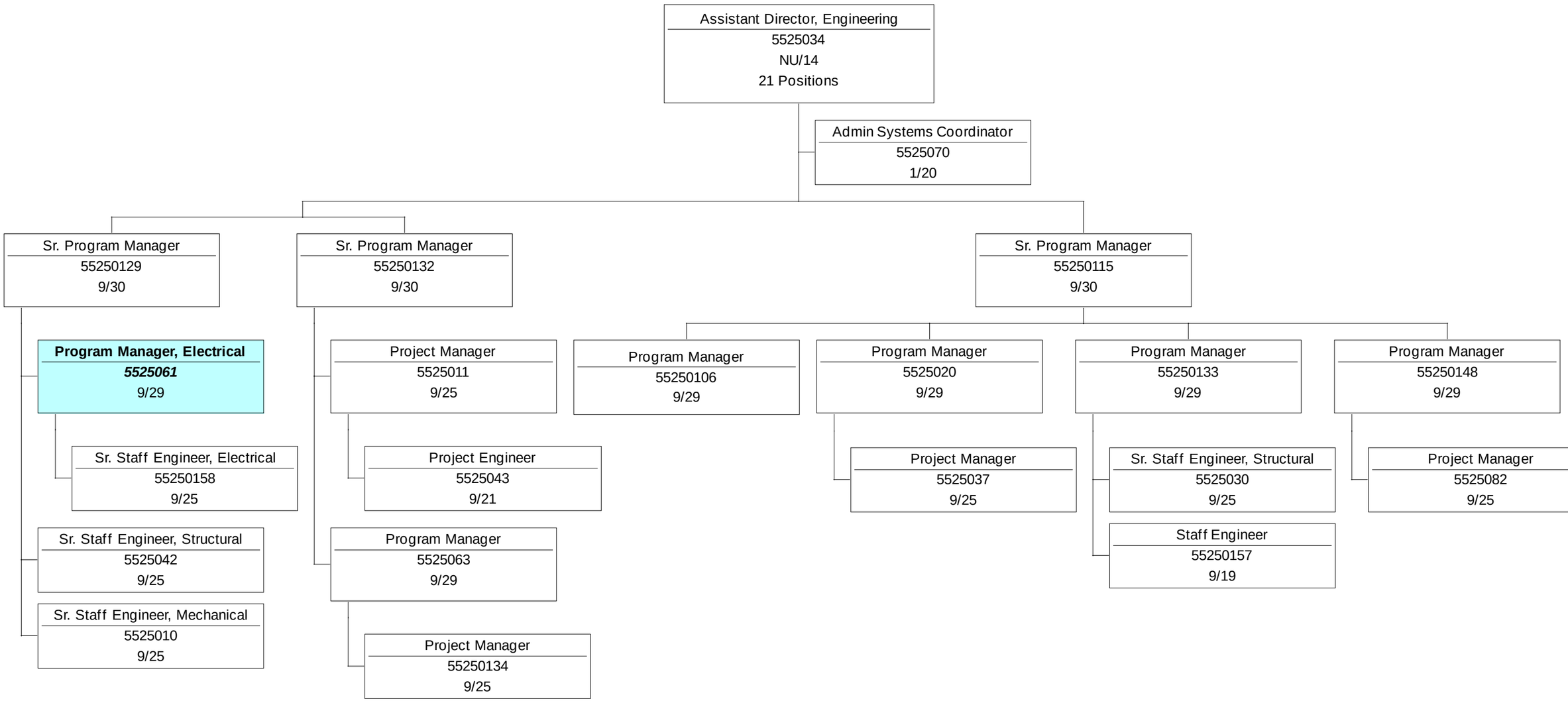
The noise level in the work environment is usually loud in field settings and moderately quiet in an office setting.

February 2021

Engineering & Construction

Wastewater Engineering

May, 2021



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: Authority Accountability and Transparency Act Compliance

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COMMITTEE: Personnel and Compensation

__X__ INFORMATION
_____ VOTE

Michele S. Gillen
Director, Administration

Andrea Murphy, Director, Human Resources
Preparer/Title

Carolyn Francisco Murphy
General Counsel

As required by the 2011 Authority Accountability and Transparency Act, the Personnel and Compensation Committee must meet independently of management at least once a year to establish and evaluate executive compensation, and analyze and assess comparable compensation for positions with similar functions and responsibilities at state agencies and authorities, and for-profit and non-profit private sector employers. This meeting will occur at the end of the May 26, 2021 Personnel and Compensation meeting. Analyses of comparable salaries are attached to facilitate the Committee's review.

RECOMMENDATION:

For information only.

DISCUSSION:

The Authority Accountability and Transparency Act (G.L. c. 29, §29K) became law in July 2011 and required the Executive Office for Administration and Finance (A&F) to adopt regulations governing accountability and transparency for state authorities. As applicable to MWRA, the statute requires the Board to review executive compensation based on an analysis of comparable public and private-sector compensation; and to prepare an annual report of all Authority expenditures including disclosure of salaries of highly compensated employees who earn more than the Governor's salary. It also prohibits the Commonwealth from subsidizing the health insurance, pension, and other post-employment benefits of employees and retirees of authorities that participate in the state retirement system or the Group Insurance Commission. A&F filed interim emergency regulations in July 2011, and in 2013, A&F promulgated the permanent regulation.

The final regulation:

- Defines the statutory term “executive” as the authority's chief executive officer, chief financial officer, general counsel and others as determined by the authority's compensation committee.

- Defines “highly compensated employees,” whose compensation is reported in the annual financial report, as those whose salary exceeds that of the Governor.

- Defines “meet independently of management” to exclude authority managers from statutorily required meetings of the authority's audit and compensation committees.

- Implements the benefits anti-subsidy statute, by requiring each state authority that participate in the state retirement system or the Group Insurance Commission to:

  - contribute the employer share of the cost attributable to that authority of the state retirement system (as determined by the PERAC actuary), and of the state group insurance system (as determined by the GIC);

  - be responsible for the full actuarial value of its liabilities as determined no less often than every 3 years by PERAC and the GIC after consulting A&F, the State Treasurer, and the State Board of Retirement.

At the April 2012 meeting, the Board took several steps in order to comply with the Transparency Act and the emergency regulations: the Board created the Administration, Finance and Audit Committee, as well as the Personnel and Compensation Committee; made adjustments to the sick leave buy back for executives; and made certain minor adjustments to existing employment contracts. At the April 2012, May 2013, May 2014, May 2015, May 2016, May 2017, May 2018, May 2019, and May 2020 meetings, the Personnel and Compensation Committee met independently of management as required by the regulations. As a result of these actions, MWRA is in compliance with the permanent regulations and Transparency Act. Neither MWRA Board members nor the Administration, Finance and Audit Committee are required to meet independently with respect to the audited financials of the Authority because the statute carves out an exception for state authorities that are otherwise required to retain an outside independent audit firm.

In order to remain in compliance with the statute’s requirements, staff recommend that the Personnel and Compensation Committee meet independently of management at the May 26, 2021 meeting. In order to facilitate the committee's review, analyses of comparable salaries are included with this staff summary.

BUDGET/FISCAL IMPACT:

The passage and implementation of section 29K of Chapter 29 of the Massachusetts General Laws will not have any impact upon either the FY22 CEB or CIP.

ATTACHMENTS:

Attachment A:	Summary of Compensation Data for State Agencies, Authorities, Non-Profit Organizations and Private Companies
Attachment B:	Survey of Comparable National Water/Wastewater Utilities
Attachment C:	American Water Works Association – 2020 Water Utility Survey

Attachment A
Summary of Compensation Data for State Agencies, Authorities, Non-Profit and Private Companies
May 2021

MWRA Position:	**Executive Director**			
Organization	**Sector**	**Title**	**Reporting Period**	**Annual Salary**
Eversource Energy	Private Utility	President and CEO	2021	$1,371,615
Citizens Energy, Inc.	Non-Profit	President and CEO	2018	$885,180
Boston Foundation, Inc.	Non-Profit	President and CEO	2019	$696,295
City Year, Inc.	Non-Profit	President	2019	$383,520
Greater Boston Food Bank, Inc.	Non-Profit	President and CEO	2019	$381,979
Mass Port Authority	Quasi Public	Chief Executive Officer	2021	$360,000
MBTA	State	General Manager	2021	$324,800
Conservation Law Foundation	Non-Profit	President	2019	$253,215
Mass Housing Partnership	Quasi Public	Executive Director	2021	$252,300
Mass Convention Center Authority	Quasi Public	Executive Director	2021	$252,012
Boston Harbor Now (formerly Boston Harbor Association)	Non-Profit	President	2020	$249,039
Commonwealth Health Insurance Connector Authority	Quasi Public	Executive Director	2021	$238,558
MWRA	**Quasi Public**	**Executive Director**	**2020**	**$220,000**
Commonwealth of Massachusetts	State	State Auditor	2021	$190,189
Commonwealth of Massachusetts	State	Treasurer	2021	$189,560
Commonwealth of Massachusetts	State	Attorney General	2021	$185,378
Commonwealth of Massachusetts	State	Governor	2021	$185,000
Commonwealth of Massachusetts	State	Secretary of State	2020	$178,695
MassDOT	State	Acting Secretary and CEO	2021	$170,406
Mass Department of Revenue	State	Commissioner of Revenue	2021	$170,000
Save the Harbor/Save the Bay	Non-Profit	President	2019	$91,385

Attachment A
Summary of Compensation Data for State Agencies, Authorities, Non-Profit and Private Companies
May 2021

MWRA Position:	**Chief Operating Officer**			
Organization	**Sector**	**Title**	**Reporting Period**	**Annual Salary**
Eversource Energy	Private Utility	Executive Vice President/Chief Operating Officer	2021	$765,885
Citizens Energy, Inc.	Non-Profit	Chief Executive Officer	2018	$606,913
Greater Boston Food Bank, Inc.	Non-Profit	Chief Operating Officer	2019	$286,345
Mass Port Authority	Quasi Public	Director, Capitol Programs & Environmental Affairs	2021	$260,000
MBTA	State	Deputy General Manager	2021	$257,556
City Year, Inc.	Non-Profit	Chief Operating Officer	2019	$246,656
Mass Housing Partnership	Quasi Public	Managing Director	2021	$222,400
Commonwealth Health Insurance Connector Authority	Quasi Public	Deputy Executive Director and COO	2021	$215,571
MWRA	**Quasi Public**	**Chief Operating Officer**	**2020**	**$191,611**
Conservation Law Foundation	Non-Profit	Executive VP and Director	2019	$158,079
Boston Harbor Now (formerly Boston Harbor Association)	Non-Profit	Vice President, Park Partnerships and Operations	2020	$110,117
Save the Harbor/Save the Bay	Non-Profit	No Match		
Boston Foundation, Inc.	Non-Profit	No Match		

Attachment A
Summary of Compensation Data for State Agencies, Authorities, Non-Profit and Private Companies
May 2021

MWRA Position:	**Director, Finance**			
Organization	**Sector**	**Title**	**Reporting Period**	**Annual Salary**
Eversource Energy	Private Utility	Executive Vice President & CFO	2021	$718,846
Citizens Energy, Inc.	Non-Profit	CFO	2018	$417,560
Boston Foundation, Inc.	Non-Profit	Chief Financial Officer/Treasurer	2019	$376,504
Mass Port Authority	Quasi Public	Director, Admin & Finance/Sec-Treasurer	2021	$311,825
City Year, Inc.	Non-Profit	Chief Financial and Administrative Officer	2019	$290,089
Greater Boston Food Bank, Inc.	Non-Profit	Chief Financial Officer	2019	$244,778
MBTA	State	Chief Financial Officer	2021	$217,000
Mass Housing Partnership	Quasi Public	Chief Finance & Admin Officer	2021	$200,000
Commonwealth Health Insurance Connector Authority	Quasi Public	Chief Financial Officer	2020	$181,414
Mass Convention Center Authority	Quasi Public	Chief Financial Officer	2021	$173,430
MWRA	**Quasi Public**	**Director, Finance**	**2021**	**$171,433**
MassDOT	State	Chief Financial Officer	2021	$152,966
Mass Department of Revenue	State	Chief Financial Officer	2021	$148,400
Boston Harbor Now (formerly Boston Harbor Association)	Non-Profit	Director of Finance	2020	$100,481
Conservation Law Foundation	Non-Profit	No Match		
Save the Harbor/Save the Bay	Non-Profit	No Match		

Attachment A
Summary of Compensation Data for State Agencies, Authorities, Non-Profit and Private Companies
May 2021

MWRA Position:	**General Counsel**			
Organization	**Sector**	**Title**	**Reporting Period**	**Annual Salary**
Eversource Energy	Private Utility	Executive Vice President and General Counsel	2021	$670,292
Mass Port Authority	Quasi Public	Chief Legal Counsel	2021	$255,397
City Year, Inc.	Non-Profit	Co-Clerk and General Counsel	2019	$241,621
Mass Housing Partnership	Quasi Public	General Counsel	2021	$193,800
MBTA	State	Chief Counsel	2021	$185,000
Mass Convention Center Authority	Quasi Public	General Counsel	2021	$173,430
MWRA	**Quasi Public**	**General Counsel**	**2021**	**$171,433**
Commonwealth Health Insurance Connector Authority	Quasi Public	General Counsel	2021	$171,158
MassDOT	State	General Counsel	2021	$170,310
Mass Department of Revenue	State	General Counsel	2021	$163,854
Conservation Law Foundation	Non-Profit	Sr. Counsel	2019	$160,259
Boston Foundation Inc.	Non-Profit	No match		
Greater Boston Food Bank Inc.	Non-Profit	No match		
Citizens Energy, Inc.	Non-Profit	No match		
Save the Harbor/Save the Bay	Non-Profit	No match		

Attachment B
MWRA Survey of Comparable National Water/Wastewater Utilities - May 2021

Executive Director										
Organization	**Location**	**Operating Budget**	**# Employees**	**Population Served**	**Title**	**Base Salary**	**Car Allowance**	**Deferred Comp**	**2020 Bonus**	**Employment Contract**
Fairfax Water	Fairfax, VA	$105.24 Million	439	2.5 million	General Manager	$283,000	$0 - car provided	$0	$26,000	No
Metropolitan Water District of Southern California	Los Angeles, CA	$1.496 billion	1786	19 million	General Manager	$434,990	District vehicle	$11,025	$0	Yes
WSSC Water	Laurel, MD	$817.4 million	1693	1.8 million	General Manager/CEO	$294,309	$12,000	$26,000	$0	Yes
Seattle Public Utilities*	Seattle, WA	935 Million	1,304	1.4 million	General Manager/CEO	$309,984	$0	$0	$0	No
East Bay Municipal Utility District	Oakland, CA	641.8 Million	1,962	1.4 Million	General Manager	$298,536	District vehicle	$26,000	$0	Yes
					Average Salary	**$324,164**				
MWRA					**MWRA Executive Director**	**$220,000**	**included in salary**	**$0**	**0**	**Yes**
Chief Operating Officer										
Organization	**Location**	**Operating Budget**	**# Employees**	**Population Served**	**Title**	**Base Salary**	**Car Allowance**	**Deferred Comp**	**2020 Bonus**	**Employment Contract**
Fairfax Water	Fairfax, VA	$105.24 Million	439	2.5 million	Deputy General Manager	$246,300	$0 - car provided	$0	$13,000	No
Metropolitan Water District of Southern California	Los Angeles, CA	$1.496 billion	1786	19 million	Assistant General Manager/ Chief Operating Officer	$338,624	$700	$0	$0	No
WSSC Water	Laurel, MD	$817.4 million	1693	1.8 million	Deputy General Manager for Operations	$235,767	$8,000	$0	$0	Yes
Seattle Public Utilities*	Seattle, WA	935 Million	1,304	1.4 million	Chief Administration Officer	vacant	$0	$0	$0	No
East Bay Municipal Utility District	Oakland, CA	641.8 Million	1,962	1.4 Million	Director, Operations & Maintenance	$276,204	$0	$0	$0	No
					Average Salary	**$274,224**				
MWRA					**MWRA Chief Operating Officer**	**$191,611**	**$700/month**	**$0**	**$0**	**No**
Director Finance										
Organization	**Location**	**Operating Budget**	**# Employees**	**Population Served**	**Title**	**Base Salary**	**Car Allowance**	**Deferred Comp**	**2020 Bonus**	**Employment Contract**
Fairfax Water	Fairfax, VA	$105.24 Million	439	2.5 million	Director, Finance	$227,979	$0	$0	$0	No
Metropolitan Water District of Southern California	Los Angeles, CA	$1.496 billion	1786	19 million	Assistant General Manager/ Chief Financial Officer	$329,514	$700	$0	$0	No
WSSC Water	Laurel, MD	$817.4 million	1693	1.8 million	Chief Financial Officer	$212,160	$3,000	$0	$0	Yes
Seattle Public Utilities*	Seattle, WA	935 Million	1,304	1.4 million	Division Director - Finance	$215,041	$0	$0	$0	No
East Bay Municipal Utility District	Oakland, CA	641.8 Million	1,962	1.4 Million	Director, Finance	$253,536	$0	$0	$0	No
					Average Salary	**$247,646**				
MWRA					**MWRA Director, Finance**	**$171,433**	**$0**	**$0**	**$0**	**No**

Attachment B
MWRA Survey of Comparable National Water/Wastewater Utilities - May 2021

General Counsel										
Organization	**Location**	**Operating Budget**	**# Employees**	**Population Served**	**Title**	**Base Salary**	**Car Allowance**	**Deferred Comp**	**2020 Bonus**	**Employment Contract**
Fairfax Water	Fairfax, Virginia	$105.24 Million	439	2.5 million	No Match					
Metropolitan Water District of Southern California	Los Angeles, CA	$1.496 billion	1786	19 million	General Counsel	$325,166	$700	$0	$0	No
WSSC Water	Laurel, MD	$817.4 million	1695	1.8 million	General Counsel	$205,000	$3,000	$0	$0	Yes
Seattle Public Utilities*	Seattle, WA	935 Million	1,304	1.4 million	No Match (uses city legal services)					
East Bay Municipal Utility District	Oakland, Ca	641.8 Million	1,962	1.4 Million	General Counsel	$308,928	$0	$0	$0	Yes
					Average Salary	**$279,698**				
MWRA					**MWRA General Counsel**	**$171,433**				**No**
* 2020 data										

Attachment C:
American Water Works Association 2020 Water Utility Compensation Survey

Survey Position: Top Executive
MWRA Position: Executive Director

Survey Scope: **ALL** utilities serving a population in excess of 1,000,000

# of Utilities	# of Employees	50th Percentile Salary	Average Salary	MWRA Salary
28	28	$234,700	$243,383	$220,000

Survey Scope: All **water** utilities serving a population in excess of 1,000,000

# of Utilities	# of Employees	50th Percentile Salary	Average Salary	MWRA Salary
13	14	$230,672	$234,533	$220,000

Survey Scope: All **water/wastewater** utilities serving a population in excess of 1,000,000

# of Utilities	# of Employees	50th Percentile Salary	Average Salary	MWRA Salary
15	14	$234,830	$252,234	$220,000

Survey Position: Top Operations and Maintenance Executive
MWRA Position: Chief Operating Officer

Survey Scope: **ALL** utilities serving a population in excess of 1,000,000

# of Utilities	# of Employees	50th Percentile Salary	Average Salary	MWRA Salary
25	29	$165,119	$171,912	$191,611

Survey Scope: All **water** utilities serving a population in excess of 1,000,000

# of Utilities	# of Employees	50th Percentile Salary	Average Salary	MWRA Salary
12	13	$159,750	$164,901	$191,611

Survey Scope: All **water/wastewater** utilities serving a population in excess of 1,000,000

# of Utilities	# of Employees	50th Percentile Salary	Average Salary	MWRA Salary
13	16	$171,916	$177,609	$191,611

Attachment C:
American Water Works Association 2020 Water Utility Compensation Survey

Survey Position: Top Finance Executive
MWRA Position: Director, Finance

Survey Scope: ALL utilities serving a population in excess of 1,000,000

# of Utilities	# of Employees	50th Percentile Salary	Average Salary	MWRA Salary
23	22	$157,401	$167,638	$171,433

Survey Scope: All water utilities serving a population in excess of 1,000,000

# of Utilities	# of Employees	50th Percentile Salary	Average Salary	MWRA Salary
13	12	$147,740	$162,356	$171,433

Survey Scope: All water/wastewater utilities serving a population in excess of 1,000,000

# of Utilities	# of Employees	50th Percentile Salary	Average Salary	MWRA Salary
10	10	$164,728	$173,381	$171,433

Survey Position: Top Legal Executive
MWRA Position: General Counsel

Survey Scope: ALL utilities serving a population in excess of 1,000,000

# of Utilities	# of Employees	50th Percentile Salary	Average Salary	MWRA Salary
14	17	$200,662	$201,827	$171,433

Survey Scope: All water utilities serving a population in excess of 1,000,000

# of Utilities	# of Employees	50th Percentile Salary	Average Salary	MWRA Salary
6	7	$211,407	$205,000	$171,433

Survey Scope: All water/wastewater utilities serving a population in excess of 1,000,000

# of Utilities	# of Employees	50th Percentile Salary	Average Salary	MWRA Salary
8	10	$191,827	$199,606	$171,433

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: FY21 Third Quarter Orange Notebook

COMMITTEE: Administration, Finance & Audit

X 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. No presentation is planned for the Orange Notebook at the Board meeting.

Effects of Reduced Precipitation

The effects of the ongoing period of below-average precipitation can be seen in several performance measures. Flows at the Deer Island Wastewater Treatment Plant were 13.1% below the four-year average this quarter, resulting in power use being 5.8% below its budget target. (See page 1.) Dry day flows have been below last year's flows in every month so far this fiscal year. (See page 27.)

On the drinking water side, while precipitation was below average each month this quarter, Quabbin Reservoir gained more than 11 billion gallons in storage for a 2.6 % increase. The MWRA water system remains well within its normal operating range for this time of year. (See page 26.) The Commonwealth has declared a Level 1 Mild Drought in the Western, Connecticut River Valley, Central, and Cape Cod Regions, and MWRA has provided social media outreach reminding customers to use water wisely. After running above the previous year's use for most of last summer, water use during the third quarter was essentially the same as last year, although the shift in share among communities from the core to the bedroom suburbs continues. (See page 29.)

Maintenance

The effects of the pandemic and MWRA's response to protect staff and slow its spread continue to be present on a number of performance indicators. Most measures continue to show substantial progress toward normal levels.

All Deer Island maintenance performance measures are either showing continued movement back toward FY21 goals (e.g. Predictive Maintenance Compliance and Maintenance Backlog) or have reached their target range (e.g. Predictive Maintenance, Preventative Maintenance Compliance, and Maintenance Kitting). (See page 5.)

Water Distribution System Valve performance measures for main line and blow-off valves exercised and main line valves replaced are all ahead of target, and blow–off valves replaced is close to target. All valve operability performance measures are being met. (See page 7.)

Wastewater Pipeline and Structure Inspection and Maintenance performance measures have seen less progress toward FY21 targets, primarily due to key staff vacancies and some COVID-19 exposures. (See page 8.)

Performance measures for Field Operations Metropolitan Equipment and Facility Maintenance are all back on target or within target range, with the exception of the maintenance backlog, which is still substantially above the industry target range, but trending downward. (See Page 9.)

The laboratory met its targets each month this quarter for on-time results, turnaround time, and quality control tests. (See page 15.)

MASSACHUSETTS WATER RESOURCES AUTHORITY

Board of Directors Report

on

Key Indicators of MWRA Performance

for

Third Quarter FY2021

Q1	Q2	Q3	Q4
		■	

Frederick A. Laskey, Executive Director
David Coppes, Chief Operating Officer
May 26, 2021

Board of Directors Report on Key Indicators of MWRA Performance

3rd Quarter FY21

Table of Contents

Operations and Maintenance

Construction Programs

Drinking Water Quality and Supply

Wastewater Quality

Community Flows and Programs

Business Services

Other Management

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.

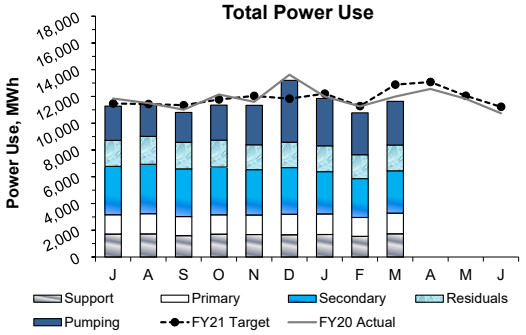
Frederick A. Laskey, Executive Director
David Coppes, Chief Operating Officer

May 26, 2021

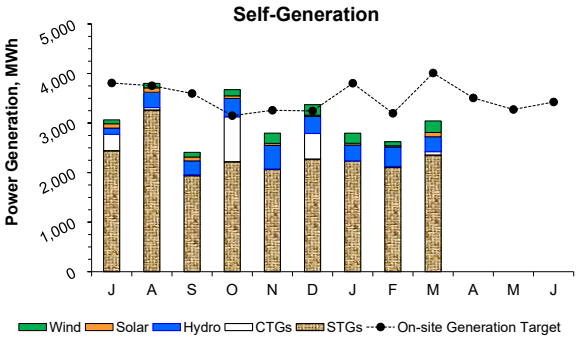
OPERATIONS AND MAINTENANCE

Deer Island Operations

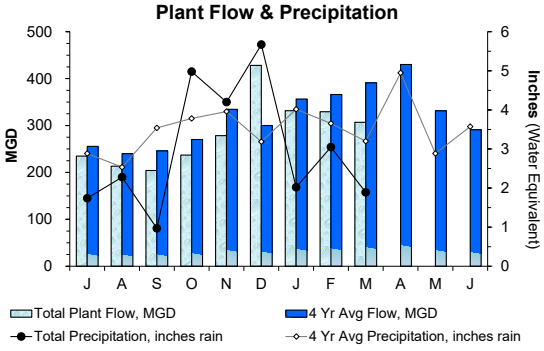
3rd Quarter - FY21



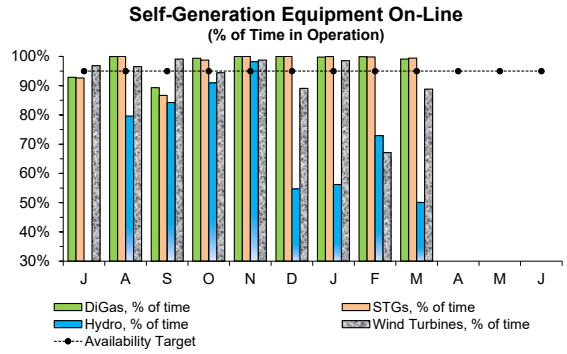
Total power usage in the 3rd Quarter was 5.8% below target as plant flow for this period was 13.1% below target with historical data (4 year average) used to generate the electricity model. While power usage was near or below target for most plant processes, power usage for raw wastewater pumping was 11.9% below target due to the lower-than-expected flows.



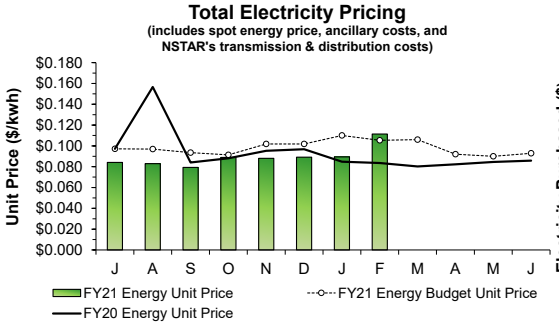
Power generated on-site during the 3rd Quarter was 23.1% below target. CTG generation was below target by 90.8% as it was not operated in January, and only briefly operated for maintenance and testing purposes and for compliance opacity audit during the other two (2) months. STGs generation was 13.1% below target as digester gas production was 6.1% lower-than-expected. Hydro Turbine generation was 29.5% below target due to several issues with Turbine #1, including a worn taper lock, and several issues with the speed increaser cap nut and oil sensor. Additionally, Turbine #2 remains offline pending repair of the runner blade assembly. Wind Turbine generation was 32.6% below target due mainly to various issues on Wind Turbine #1. Generation from the Solar Panels was 4.3% below target for the quarter.



Total Plant Flow for the 3rd Quarter was 13.1% below target with the budgeted 4 year average plant flow (322.6 MGD actual vs. 371.2 MGD expected) as precipitation was 36.0% below target (6.96 inches actual vs. 10.87 inches expected).

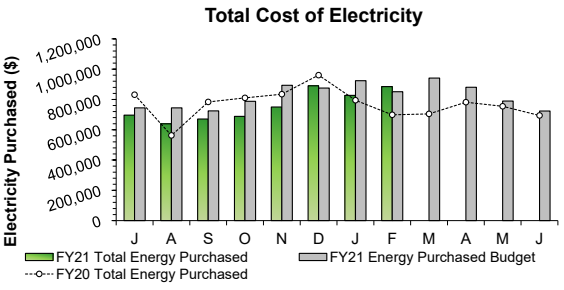


The availability of the DiGas system and STGs both met their 95% availability target, while Hydro Turbine and Wind Turbine availability fell below target during the 3rd Quarter. Hydro Turbine availability was 59.7% as Turbine #1 had several mechanical issues that caused the unit to trip during periods of high tide with low plant flows. flows.This turbine has been operating without issue since repaired on March 26. Hydro Turbine #2 remains offline pending repair of the runner blade assembly. Wind Turbine availability fell to 84.8% due to mechanical issues with the hydraulics system on Turbine #1.



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 February (the most current invoice available) was 5.7% below target with budgetary estimates. The actual total energy unit prices in March 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.

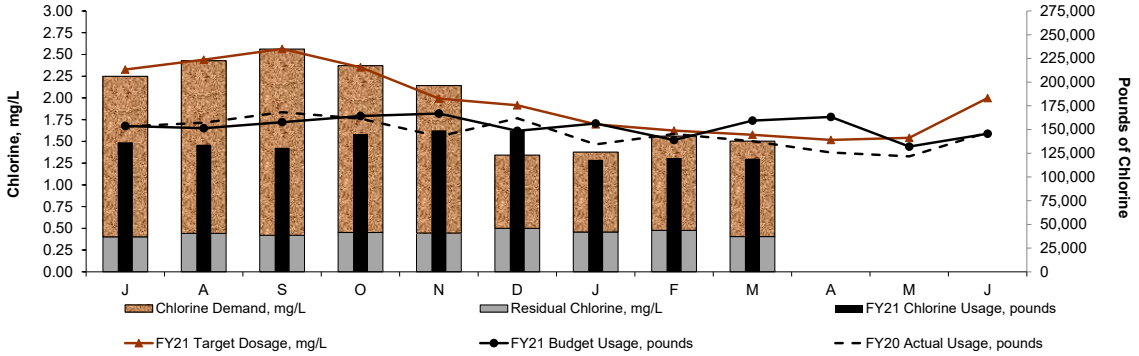
Note: Only the actual energy prices are reported. Therefore, the dataset lags by one (1) month due to the timing of invoice receipt and review.



The Electricity cost data for Electricity Purchased in March are not yet available. Year-to-date Total Cost of Electricity is $498,649 (7.6%) lower than budgeted through February as the Total Energy Unit Price was 10.8% lower than target while the Total Electricity Purchased was only 3.5% above target.

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

Deer Island Sodium Hypochlorite Use



The disinfection dosing rate in the 3rd Quarter was 9.0% below target with budgetary estimates. Actual sodium hypochlorite usage in pounds of chlorine was 21.4% lower than expected as the 4 year average plant flow used for estimating the hypochlorite usage target was 13.1% lower-than-expected. DITP maintained an average disinfection chlorine residual of 0.45 mg/L this quarter with an average dosing rate of 1.48 mg/L (as chlorine demand was 1.03 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	0	0	0	100.0%	0.00
A	1	1	0	99.97%	1.17
S	0	0	0	100.0%	0.00
O	2	1	1	99.9%	2.62
N	3	3	0	99.0%	13.63
D	3	3	0	97.4%	41.94
J	1	1	0	99.8%	4.62
F	0	0	0	100.0%	0.00
M	0	0	0	100.0%	0.00
A					
M					
J					
Total	10	9	1	99.42%	63.98

99.9% of all flows were treated at full secondary during the 3rd Quarter. There was one (1) secondary blending event on January16 due to high plant flows from heavy rain combined with significant snowmelt. This blending event resulted in 4.62 hours of blending and 23.76 MGal of primary-only treated effluent with secondary effluent. The Maximum Secondary Capacity during the entire quarter was 700 MGD.

Secondary permit limits were met at all times during the 3rd Quarter of FY21.

Deer Island Operations & Maintenance Report

Environmental/Pumping:
The plant achieved an instantaneous peak flow rate of 970.6 MGD during the morning of January 16. This peak flow occurred during a storm event that brought 1.03 inches of precipitation to the metropolitan Boston area and significant snowmelt also contributed to the high plant flows during this storm event. Overall, Total Plant Flow in the 3rd Quarter was 13.1% below target with the 4 year average plant flow estimate for the quarter.

Work on the Winthrop Terminal Facility (WTF) VFD (Variable Frequency Drive) and Synchronous Motor Replacement project was started by the contractor in 2018 and entails the demolition of existing older obsolete equipment (electrical systems, motors and VFDs on each of the six (6) raw wastewater pumps). The pumps are currently powered by 600 volts service and will be changed to 4,160 volts, consistent with other major pumps in both the South System Pump Station (SSPS) and the North Main Pump Station (NMPS). The contractor began the upgrade of WTF Pump #1 on January 25. The pump upgrade continued through March and the pump is anticipated to be available for performance testing in April. To date, work has been completed on five (5) of the six (6) pumps (#6, #2, #5, #4, and #3).

Disinfection Treatment:
The West Disinfection Basin (Basin #2) was taken offline for 2.2 days, during dry weather/low plant flow conditions, from 2:30 p.m. on January 19 to 7:00 p.m. on January 21 to allow staff to repair a leak in the dewatering line that serves the sodium bisulfite storage tank containment area. This dewatering line is routed from the sodium bisulfite storage containment area to the outfall through Basin #2. This basin was taken out of service and drained to allow access to the dewatering line to affect the repairs. The target chlorine residual (prior to dechlorination) was increased during operation of the single disinfection basin (Basin #1) to compensate for the reduced chlorine contact time thus ensuring fecal coliform inactivation below effluent permit limits. Additionally, the sodium bisulfite feed was also increased to ensure sufficient dechlorination at these higher residual chlorine levels to meet effluent total chlorine residual permit limits. The DEP and EPA were provided with a courtesy notification in advance of this maintenance activity.

Deer Island Operations & Maintenance Report (continued)

Odor Control Treatment:
The North Pumping Odor Control (NPOC) Facility, which is responsible for treating the process airflows from the North Main Pump Station and the Winthrop Terminal Headworks Facility, was taken offline for several hours on February 23 to allow staff and a contractor to troubleshoot the actuator for the suction damper that is in the ductwork common to both airflow fans in the odor control facility. Process airflow treatment in this facility was suspended more than once for a total shutdown of three (3) hours and 34 minutes. Stray process air was contained within the building during this work and no resident odor complaints were received during the shutdowns

Residuals Treatment:
On January 26, staff isolated Digested Sludge and Gas Storage (Dystor) Tank #1 from the second Dystor tank to begin the process of draining the sludge from the tank to allow the contractor to remove the remaining settled material in the tank once the bulk of the sludge has been pumped out. The Gravity Thickener Rehabilitation contract includes a task to drain and clean Dystor Tank #1. In addition to material removal, piping and valves will be replaced as part of the project. The sludge was drained from the Dystor tank and the tank flushed multiple times from January 26 to February 6 to remove as much sludge as possible prior to turnover to the contractor. The final step prior to turnover included a nitrogen gas purge to isolate the Dystor tank from the gas system. This purge involved displacing approximately 40,000 cubic feet of residual digester gas in the headspace of the Dystor's gas storage system with nitrogen gas. Several turnovers of the gas in the headspace are necessary to effectively remove all of the residual digester gas. This nitrogen purge was performed on February 10 and was successfully completed as planned over the course of the entire day. The Dystor Tank 1 gas system was then placed in maintenance mode to keep the digester gas bag from deflating while the Dystor tank remains out of service. The task of emptying the tank continued through March.

Sludge flow to Module #2 Digester #4 was suspended at approximately 2:00 a.m. on February 23 to begin preparing the digester for a mixer replacement. The sludge in the digester was emptied and the mixer was replaced. The digester was returned to operation on March 23 by filling the empty digester with the sludge overflows from the other operating digesters. Sludge feed to Digester #4 was incrementally resumed starting March 26 closing out the month with eight (8) active digesters in operation.

Energy and Thermal Power Plant:
Overall, total power generated on-site accounted for 24.7% of Deer Island's total power use for the 3rd Quarter. Renewable power generated on-site (by Solar, Wind, STGs, and Hydro Turbines) accounted for 24.4% of Deer Island's total electrical power use for the quarter.

The quarterly Continuous Emissions Monitoring System (CEMS) cylinder gas audits, along with the quarterly Continuous Opacity Monitoring System (COMS) audits for the two (2) boilers in the Thermal Power Plant were successfully completed by the contractor on February 11. The CEMS measures the nitrogen oxides (NOx) emissions, the oxygen, carbon monoxide, and sulfur dioxide concentrations in the boiler flue gas. The cylinder gas audit measures each gas analyzer in the CEMS against known cylinder gas concentrations. The opacity audits measure the performance of the COMS through a number of required testing protocols specified in the regulations. DITP received passing results on all the audit tests that were performed and a final report was submitted to the MaDEP. The next round of audit tests will take place in May or early June 2021.

Opacity testing for each CTG unit was successfully completed on March 16 as part of the annual regulatory requirements for emissions reporting on the CTGs and the results of this test demonstrated the units were in compliance. The test requires each CTG to be operated (one at a time) at full load for one (1) hour. During this time a certified “smoke reader” visually observes the condition of the stack exhaust and records the results.

Clinton Operations & Maintenance Report

Dewatering Building
Maintenance staff greased belt filter press #1 and #2.Maintenance replaced doctor blades on belt filter press #2.They also worked on polymer system. Staff replaced upper and lower seals on belt filter press # 2. Operations staff washed down gravity thickener #2.Staff also built temporary housing around gravity thickener #1 to de-ice collection arm. Maintenance staff checked all equipment for lubrication, proper operation and also completed PM’s on air handler in press room.

Chemical Building
Maintenance staff replaced broken drive belt for soda ash auger. They cleaned and rotated auger shaft by hand to break up hard pieces of soda ash in hopper. Staff cleaned soda ash lines from upper mixing tank to lower mixing tank. Maintenance also checked soda ash filter bags and silo hatch, cleaned both and returned to service. They also disassembled RAS Pump # 2 in preparation for installation of new pump. Maintenance and Operations staff went inside the distribution box to inspect the temporary wooden gate that was installed in April 2020.

Aeration Basins
Maintenance completed all PM’s on aeration blowers replacing all belts and changing oils.
Operations staff also cleaned PH and DO probes

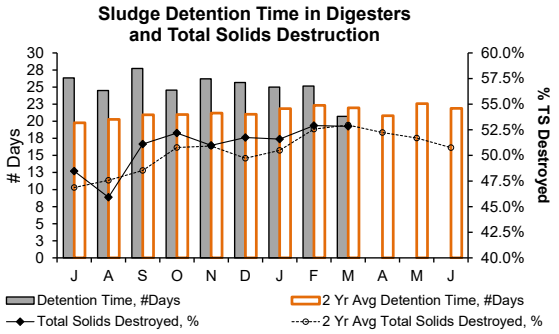
Phosphorus Building
Operations staff put PRF building on line for the season. Operations staff cleaned both CL17 chlorine analyzers. They also replaced plastic tubing for #1 and #2 polymer pumps. Facilities Specialist completed lab bench for operational tests in PRF building.

Headworks Building
Maintenance staff cleaned off both influent mechanical and manual bar racks, greased upper and lower mechanical bar rack. They also greased grit conveyor. Maintenance continues to work on #1 bucket elevator system replacing the chain, sprocket and installing new buckets. Staff installed new ultrasonic sensor for influent lift pumps.

Digester Building
Maintenance staff checked all equipment for proper operation. Staff greased all pumps and mixer. They also washed down the digester’s floating cover. Operation staff checked digester pumps, mixer and grinders for proper operation

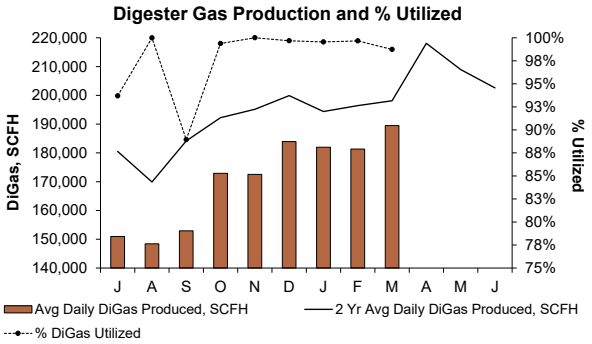
Deer Island Operations and Residuals

3rd Quarter - FY21



Total solids (TS) destruction following anaerobic sludge digestion averaged 52.4% during the 3rd Quarter, on target with the 2 year average of 52.0%. Sludge detention time in the digesters was 23.6 days, 7.1% above target, as DI operated with an average of 7.6 digesters.

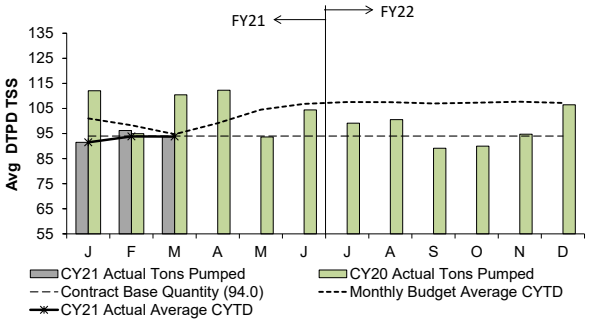
Total solids (TS) destruction is dependent on sludge detention time which is determined by primary and secondary solids production, plant flow, and the number of active digesters in operation. Solids destruction is also significantly impacted by changes in the number of digesters and the resulting shifting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



The Avg Daily DiGas Production in the 3rd Quarter was 6.1% below target with the 2 Year Avg Daily DiGas Production due to much lower-than-expected primary sludge production which breaks down more readily during anaerobic sludge digestion, and due to overall lower total sludge production. On average, 99.3% of all the DiGas produced in the quarter was utilized at the Thermal Power Plant (TPP).

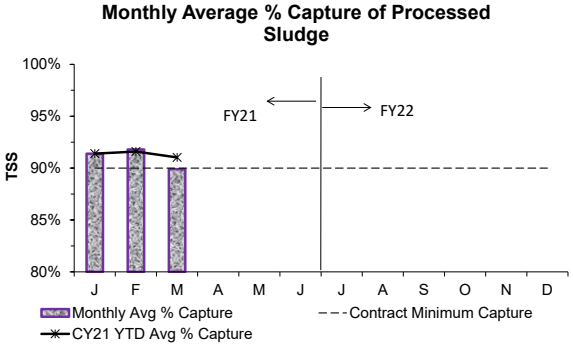
Residuals Pellet Plant

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).

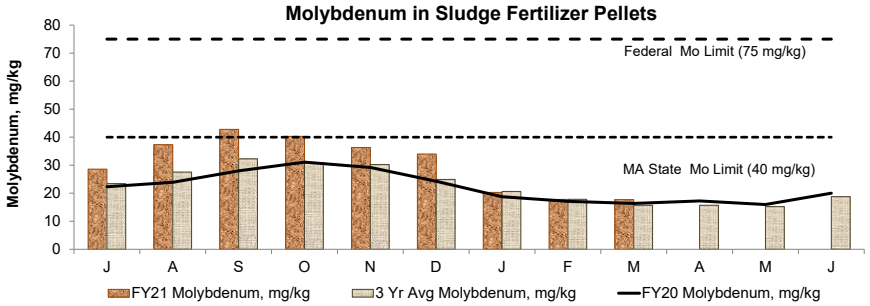


The average quantity of sludge pumped to the Biosolids Processing Facility (BPF) in the 3rd Quarter was 93.8 TSS Dry Tons Per Day (DTPD) - on target (-1.0%) with the FY21 budget of 94.7 TSS DTPD for the same period.

The CY21 average quantity of sludge pumped through March is 93.8 DTPD - 1.0% below target compared with the CY21 average budget of 94.7 DTPD during the same time 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 3rd Quarter, and CY21 average capture, was 91.03%.



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.

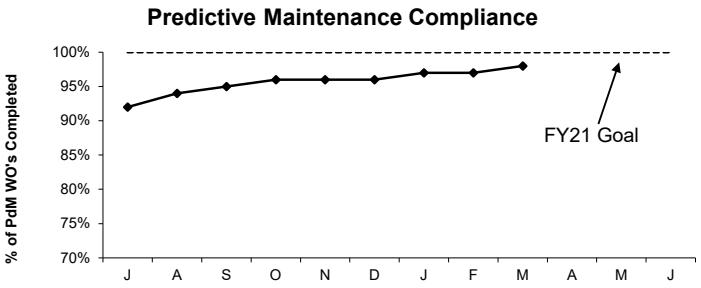
Overall, the levels have been below the DEP Type 1 limit for all three (3) metals. For Mo, the level in the MWRA sludge fertilizer pellets during the 3rd Quarter averaged 18.6 mg/kg, 3% above the 3 year average, 53% below the MA State Limit, and 75% below the Federal Limit.

Deer Island Maintenance

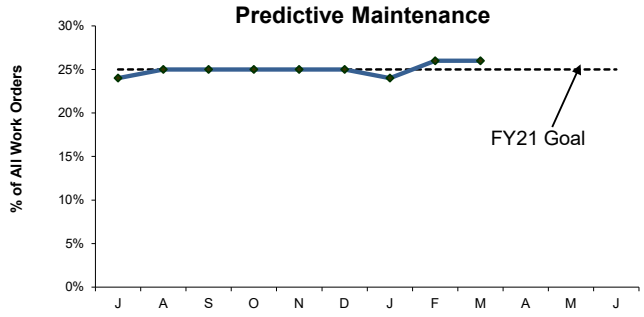
3rd Quarter - FY21

Productivity Initiatives

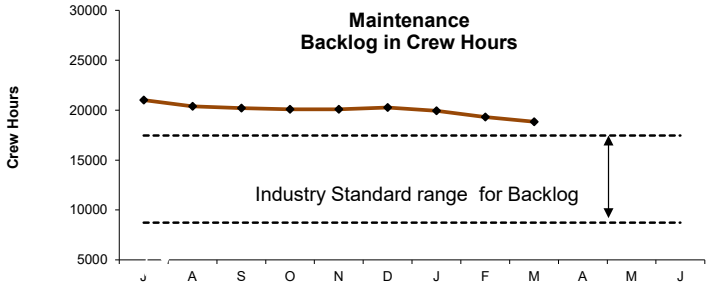
Productivity initiatives include increasing predictive maintenance compliance and increasing PdM work orders. Accomplishing these initiatives should result in a decrease in overall maintenance backlog.



Deer Island's FY21 predictive maintenance goal is 100%. DITP completed 97% of all PdM work orders this quarter. DITP is continuing with an aggressive predictive maintenance program. Due to COVID-19 and limited staffing prior to June 22, 2020, our percentage is below our goal of 100%, we anticipate meeting our goal withing the next few months.



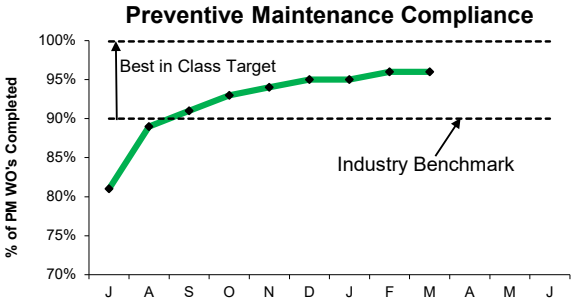
Deer Island's increased FY21 predictive maintenance goal is 25% of all work orders to be predictive. 26% of all work orders were predictive maintenance this quarter. The industry is moving toward increasing predictive maintenance work to reduce downtime and better predict when repairs are needed.



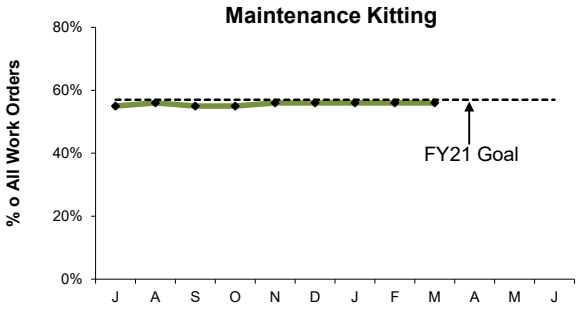
DITP's maintenance backlog at Deer Island is 18, 842 hours this quarter. DITP is at the upper end of the industry average for backlog. The industry Standard for maintenance backlog with 97 staff (currently planned staffing levels) is between 8,730 hours and 17,460 hours. Backlog is affected by five vacancies; (1) HVAC Tech, (1) I&C Tech and (3) Electricians. Management continues to monitor backlog and to ensure all critical systems and equipment are available. While our Backlog is over Industry Standards, maintenance staff has returned to regular hours and the Backlog is slowly moving towards Industry Standards.

Proactive Initiatives

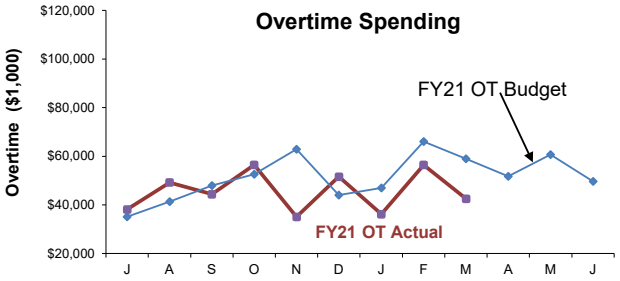
Proactive initiatives include completing 100% of all preventative maintenance tasks and increasing preventative maintenance kitting. These tasks should result in lower maintenance costs.



Deer Island's FY21 preventative maintenance goal is 100% completion of all work orders from Operations and Maintenance. DITP completed 96% of all PM work orders this quarter. Due to COVID-19 and limited staffing prior to June 22, 2020, our percentage is below our goal of 100%, we anticipate reaching our goal withing the next few months.



Deer Island's increased FY21 maintenance kitting goal is 57% of all work orders to be kitted. 56% 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.



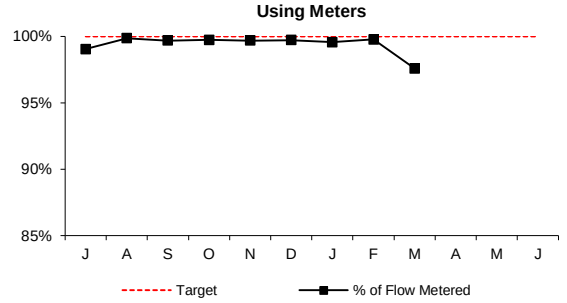
Maintenance overtime was under budget by $36K this quarter and $46k under for the year. Management continues to monitor backlog and to ensure all critical equipment and systems are available. This quarter's overtime was predominately used for High Flow Coverage, Grinder and Pump Clogging Issues, Replacing Clarifier Head Shafts/Drive Sprockets, Residuals AHU-8 Coil Replacement.

Operations Division Metering & Reliability

3rd Quarter - FY21

WATER METERS

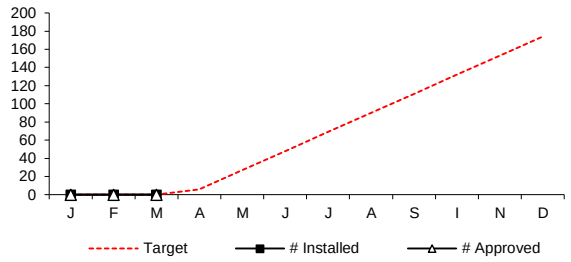
Percent of Total Revenue Water Deliveries Calculated Using Meters



The target for revenue water deliveries calculated using meters is 100%. Estimates are generated for meters that are out of service due to instrumentation problems or in-house and capital construction projects. During Q3 of FY21, 1.03% of the billed water flow was estimated. 98.97% was based on meter actuals. The meter actuals in March were lower than in previous months which drove down the quarterly average. The March anomaly was due to an extended outage at Meter 327 Newton due to construction. Meter 327 was placed back online on March 15.

WASTEWATER METERS

Wastewater Meter Replacement Project Status

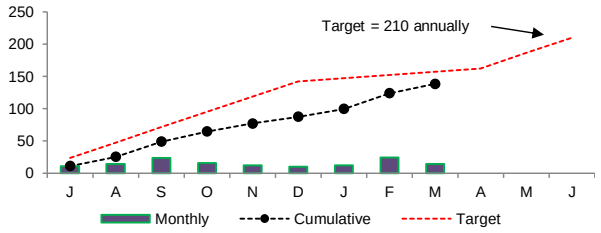


The Wastewater Meter Replacement Project was approved at the October 2020 Executive Board meeting. The project is currently in submittal review with a scheduled installation start date in April 2021. The contractor will be installing a total of 174 new meters under this project. The table above tracks the # of installed meters over the course of the year based on the current submitted schedule. The contract requires completion of installations in CY2021.

While the meters are being replaced, communities will be assessed based on a monthly average volume from the previous 3 calendar years.

WATER DISTRIBUTION SYSTEM PIPELINES

Miles Surveyed for Leaks



During the 3rd Quarter, FY21, 51.15 miles of water mains were inspected. The total inspected for the fiscal year to date is 138.54

Leak Backlog Summary

Month	J	A	S	O	N	D	J	F	M	A	M	J	Totals
Leaks Detected	2	2	5	3	1	1	5	0	0				19
Leaks Repaired	2	1	3	2	2	4	3	1	2				20
Backlog	6	7	9	10	9	6	8	7	5				n/a

During the 3rd Quarter five leaks were detected, and six were repaired. Refer to FY21 Leak Report below for details. Also, community service ranging from individual leak location to hydrant surveys were conducted for: Dedham, Malden, Medford, Melrose, Newton, Revere, Saugus and Somerville.

3rd Quarter 2021 - FY21 Leak Report

Date Detected	Location of Leaks	Repaired
07/05/20	Riverside Ave. @ Commercial St. Medford	07/08/20
07/28/20	Harvard Pilgrim Health, Wellesley	07/30/20
08/03/20	#93 Worcester Street, Wellesley	08/05/20
09/03/20	Felton St. @ Water St., Waltham	09/22/20
09/12/20	#56 Forbes Hill Rd., Quincy. Sec-22	09/12/20
09/24/20	Frontage Rd. @ Venner Rd., Arlington	09/25/20
09/24/20	#93 Worcester St., Wellesley. Sec-80	10/07/20
10/16/20	Morton St. @ Blue Hill Ave. Boston	10/23/20
10/20/20	Lee St. @ Boylston St. Brookline	11/12/20
10/30/20	#263 Brdwy. RT-1 Southbound-Saugus	11/05/20
07/20/17	Mystic Valley Parkway, Medford	12/04/20
09/02/20	Mt Vernon Ave @ E. Albion St., Somerville	12/04/20
11/06/20	#109 Broadway @ Spring St., Saugus	12/10/20
12/01/20	Second St. @ Carter St., Chelsea	12/09/21
06/17/15	Washington St. at East Dedham - Sect 78	01/14/21
01/08/21	#2 Lynnfells Pkwy/Fellsview, Stoneham	01/25/21
01/21/21	#1305 Columbus Pk Sewer Station, So. Boston	01/21/21
01/08/21	#2 Lynnfells Pkwy/Pond St., Stoneham	02/22/21
01/14/21	West St. @ Pierce St. Hyde Park	03/02/21
01/14/21	Vose Ave. @ Pleasant St. Hyde Park	03/02/21

Date Detected	Location of Leaks/Unrepaired
06/08/15	Allandale Rd. @ Grove St., Brookline, Sect 78, located acoustically. Not surfacing. No redundancy.
07/01/16	241 Forest St. Winchester, Sect 89, leaking blow off valve. Not surfacing. Need redundant NIH pipeline to enable isolation.
12/04/16	1025 W Roxbury Pkwy, Brookline, Sect 95, located acoustically. Not surfacing. Leaking blow off valve. No redundancy.
12/04/16	710 Ashland St/Summer St. Lynn, Sect 91. Not surfacing. Leaking emergency connection valve Between MWRA and 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.

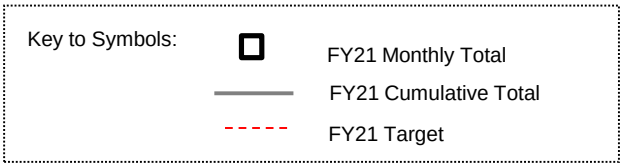
Water Distribution System Valves

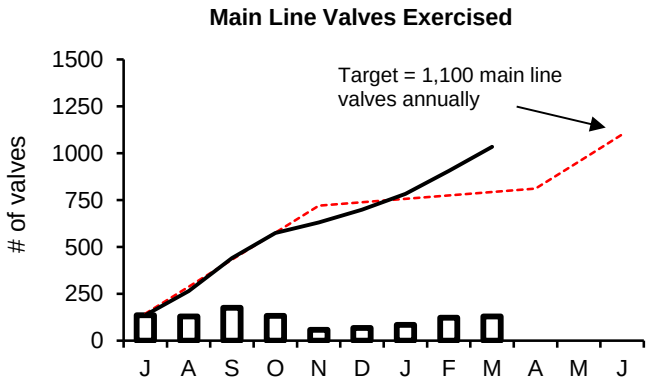
3rd Quarter - FY21

Background

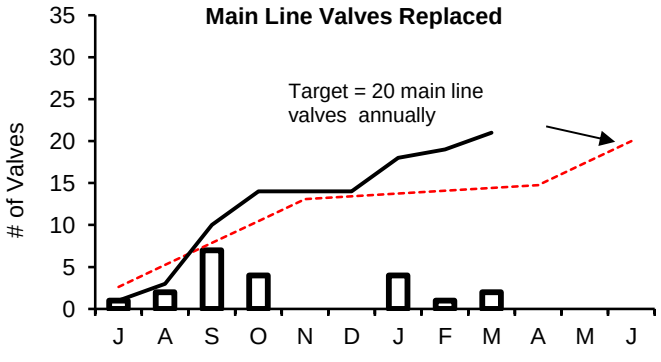
Valves are exercised, rehabilitated, or replaced in order to improve their operating condition. This work occurs year round. Valve replacements occur in roadway locations during the normal construction season, and in off-road locations during the winter season. Valve exercising can occur year round but 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	
		FY21 to Date	FY21 Targets
Main Line Valves	2,159	97.0%	95%
Blow-Off Valves	1,317	98.5%	95%
Air Release Valves	1,380	95.2%	95%
Control Valves	49	100.0%	95%

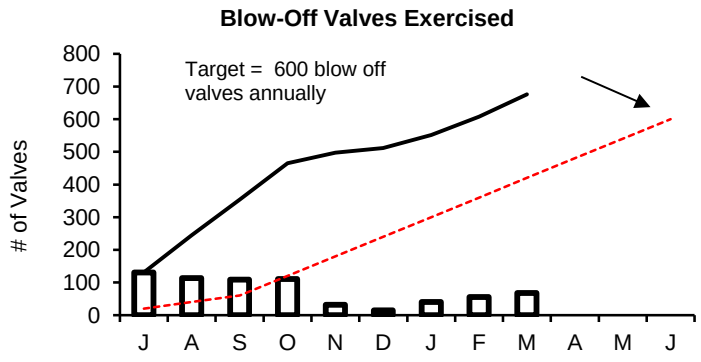




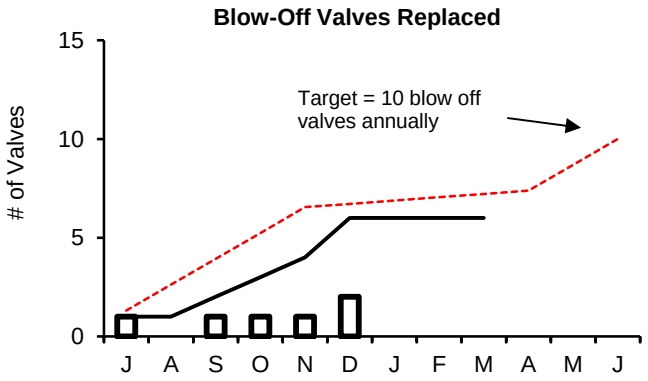
During the 3rd Quarter of FY21, 336 main line valves were exercised. The total exercised for the fiscal year to date is 1,034.



During the 3rd Quarter of FY21, there were seven main line valves replaced. The total replaced for the fiscal year to date is 21.



During the 3rd Quarter of FY21, 164 blow off valves were exercised. The total exercised for the fiscal year to date is 676.



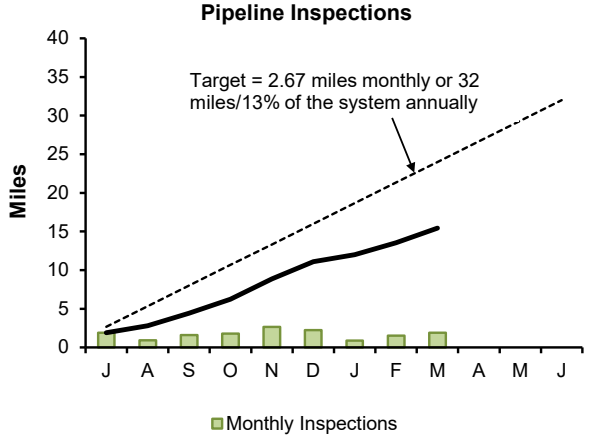
During the 3rd Quarter of FY21, there were no blow off valves replaced. The total replaced for the fiscal year to date is six.

Wastewater Pipeline and Structure Inspections and Maintenance

3rd Quarter - FY21

Inspections

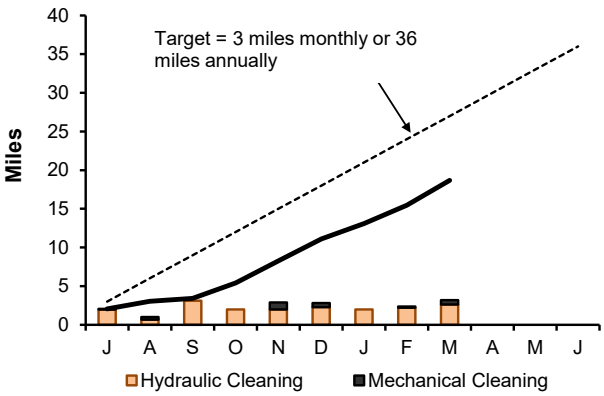
Pipeline Inspections



Staff internally inspected 4.33 miles of MWRA sewer pipe during this quarter.The year to date total is 15.44 miles. No Community Assistance was provided. Shortcomings for the quarter were a direct result of staffing availability, and equipment issues.

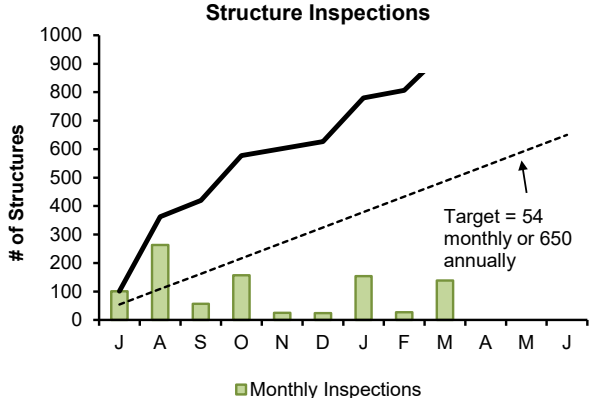
Maintenance

Pipeline Cleaning



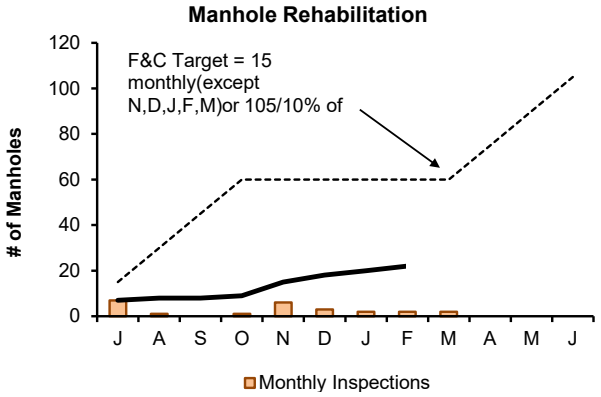
Staff cleaned 7.57 miles of MWRA sewer pipe, and removed 26 yards of grit. The year to date total is 18.68 miles. No Community Assistance was provided. Shortcomings for the quarter were a direct result of staffing availability.

Structure Inspections



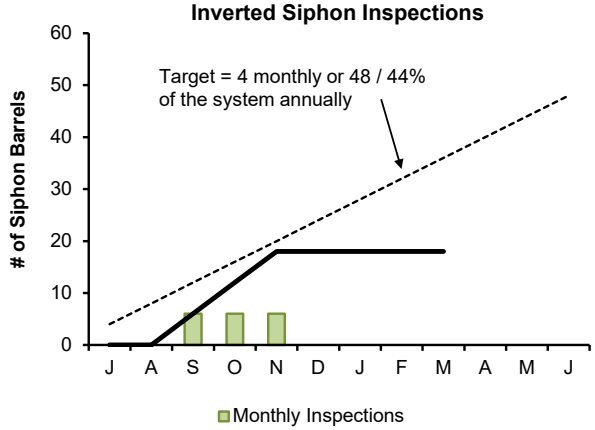
Staff inspected the 36 CSO structures and performed 283 other additional manhole/structure inspections during this quarter. The year to date total is 945 inspections.

Manhole Rehabilitation



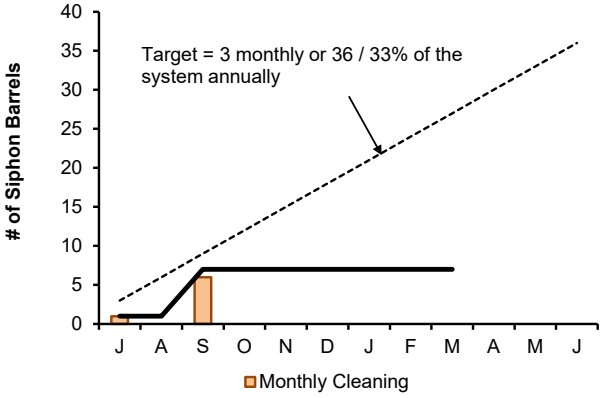
Staff replaced 7 frame and cover replacement this quarter.The year to date total is 25. Shortcomings for the quarter were a direct results of staffing availabilty.

Inverted Siphon Inspections



Staff did not perform any siphon barrel inspections this quarter. The year total is 18 inspections. Shortcomings for the quarter were a direct result of staffing availability, and equipment issues.

Inverted Siphon Cleaning

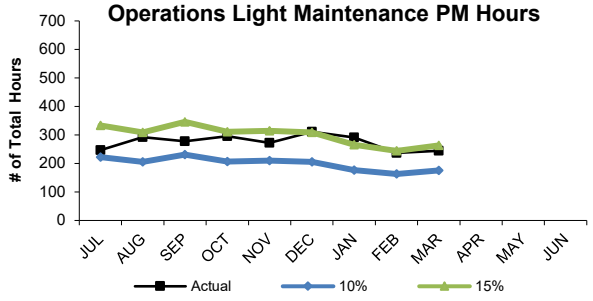


Staff did not clean any siphon barrel this quarter. Shortcomings for the quarter were a direct results of staffing availability.

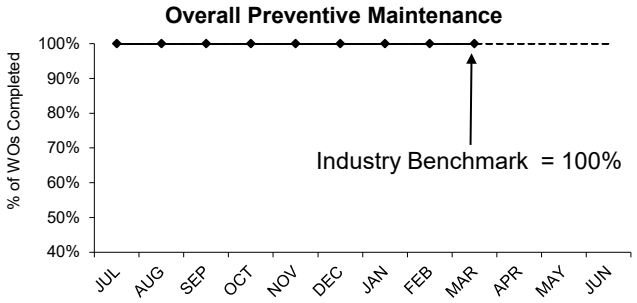
Field Operations' Metropolitan Equipment & Facility Maintenance

3rd Quarter - FY21

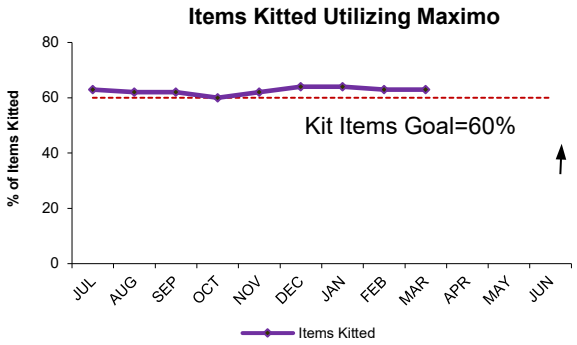
Several maintenance and productivity initiatives are in progress. The goal for the Overall PM completion and the Operator PM completion was raised to 100% for Fiscal Year 2010. The Operator PM and kitting initiatives frees up maintenance staff to perform corrective maintenance and project work, thus reducing maintenance spending. Backlog and overtime metrics monitor the success of these maintenance initiatives.



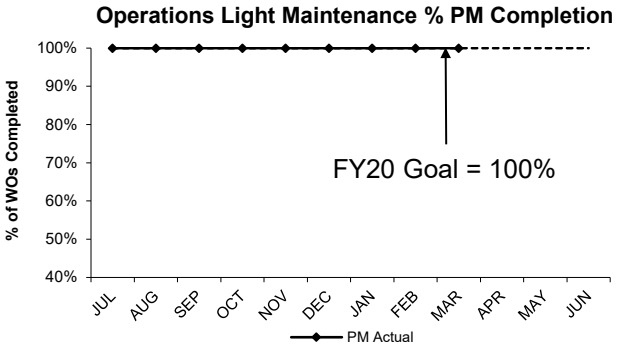
Operations staff averaged 257 hours per month of preventive maintenance during the 3rd Quarter, an average of 15% of the total PM hours for the 3rd Quarter, which is within the industry benchmark of 10% to 15%.



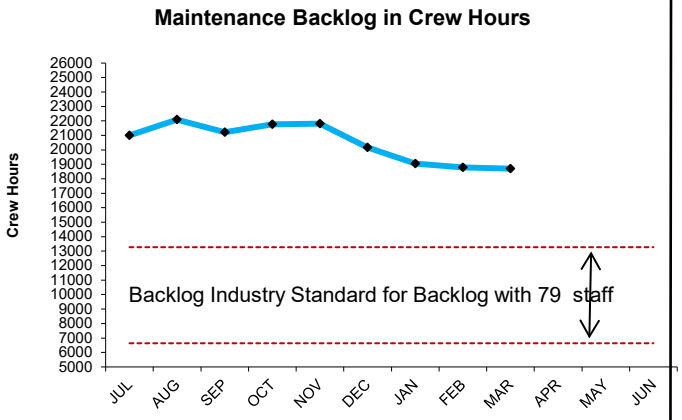
The Field Operations Department (FOD) preventive maintenance goal for FY21 is 100% of all PM work orders. Staff completed 100% of all PM work orders in the 3rd Quarter.



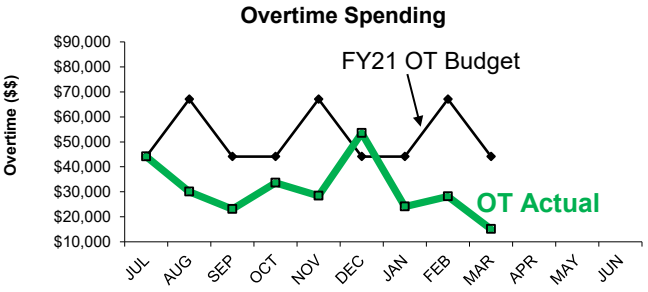
Operations' FY21 maintenance kitting goal has been set at 60% of all work orders to be kitted. Kitting is the staging of parts or material neccesary to complete maintenance work. In the 3rd Quarter, 63% of all applicable work orders were kitted. This resulted in more wrench time and increased productivity.



Wastewater Operations complete light maintenance PM's which frees up maintenance staff to perform corrective maintenance. Operations' FY21 PM goal is completion of 100% of all PM work orders assigned. Operations completed 100% of PM work orders in the 3rd Quarter.



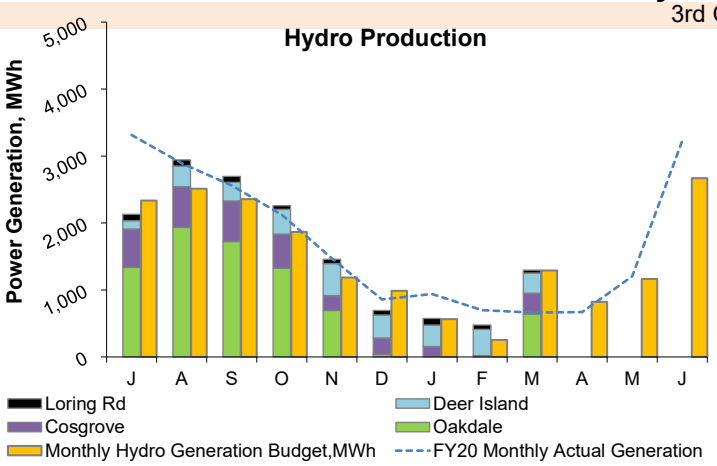
The 3rd Quarter backlog average is 18,849 hours. Management's goal is to continue to control overtime and still stay within the industry benchmark of 6,636 to 13,275 hours. The increase is due to the previous reductionstaffing levels due to COVID19.



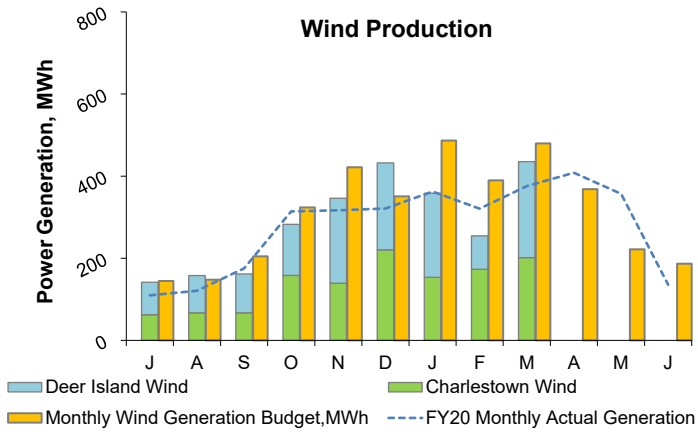
Maintenance overtime was $29k under budget on average, per month, for the 3rd Quarter. Overtime was used for critical maintenance repairs and wet weather events. The overtime budget for FY21 is $466k and is $186k under budget for the fiscal year.

Renewable Electricity Generation: Savings and Revenue

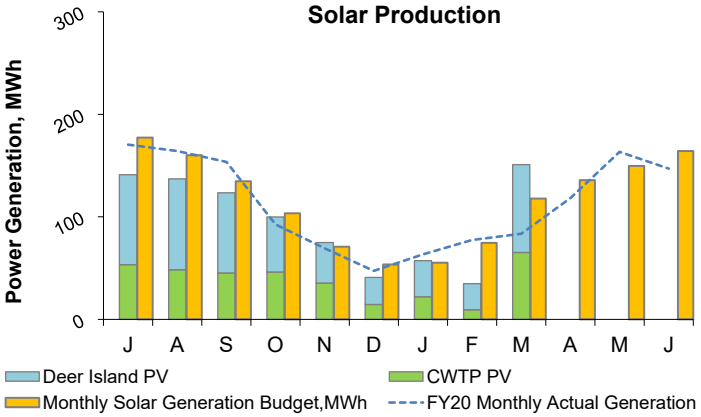
3rd Quarter - FY21



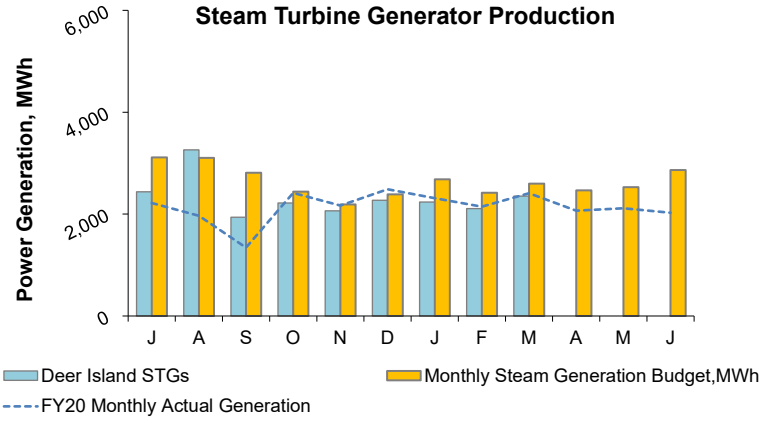
In Quarter 3 of FY21, the renewable energy produced from all hydro turbines totaled 2,448 MWh; 16% above budget[3]. The total savings and revenue[2] to date in FY21 (actuals through Feruary[1]) is $461,115 ; 3% above budget[3]. The savings and revenue value does not include RPS REC revenue (see next page).



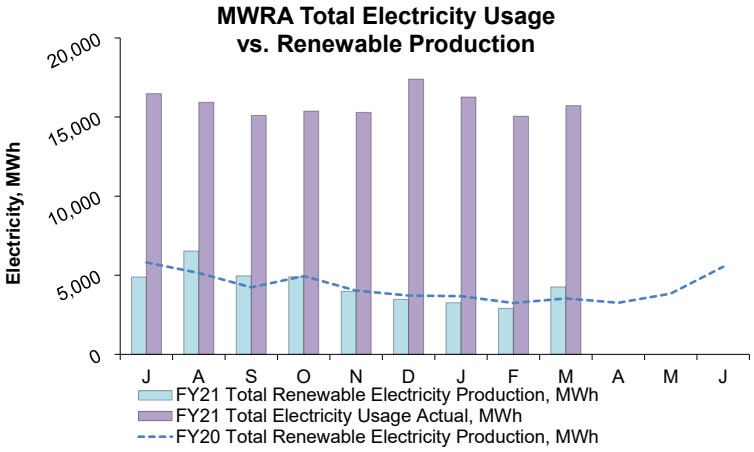
In Quarter 3 of FY21, the renewable energy produced from all wind turbines totaled 1,048 MWh; 23% below budget[3]. The total savings and revenue[2] to date in FY21 (actuals through February) is $303,940 ,17% below budget[3]. The savings and revenue value does not include RPS REC revenue (see next page).

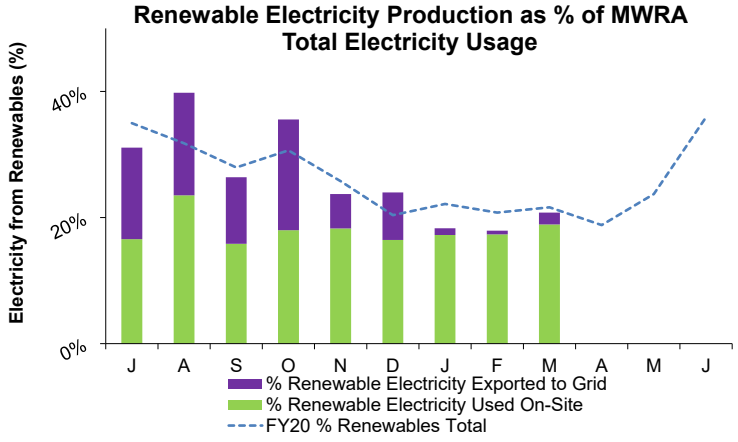


In Quarter 3 of FY21, the renewable energy produced from all solar PV systems totaled 243 MWh; 2% below budget[3]. The total savings and revenue[2] to date in FY21 (actuals through February[1]) is $86,039 , 20% below budget[3]. The savings and revenue value does not include RPS REC revenue (see next page).



In Quarter 3 of FY21, the renewable energy produced from all steam turbine generators totaled 6,697 MWh; 13% below budget[3]. The total savings and revenue[2] to date in FY21 (actuals through February[1]) is $1,645,670 , 22% below budget[3]. The savings and revenue value does not include RPS REC revenue (see next page).





In Quarter 3 of FY 21, MWRA's electricity generation by renewable resources totaled 10,436 MWh. MWRA's total electricity usage was approximately 37,082 MWh. 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.
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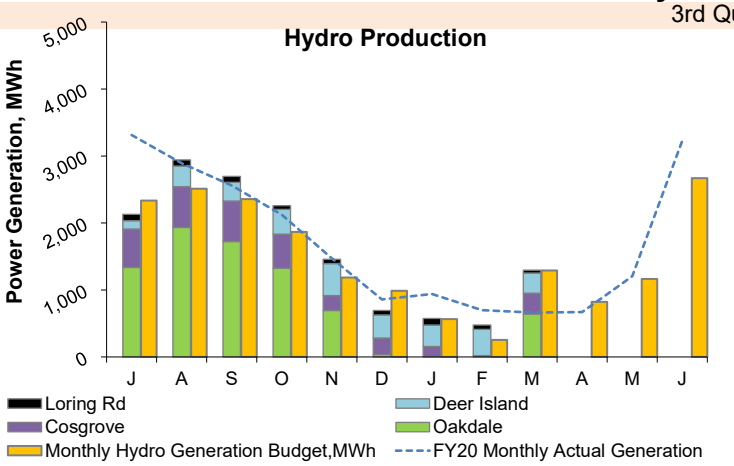
Renewable Electricity Generation: Savings and Revenue

3rd Quarter - FY21



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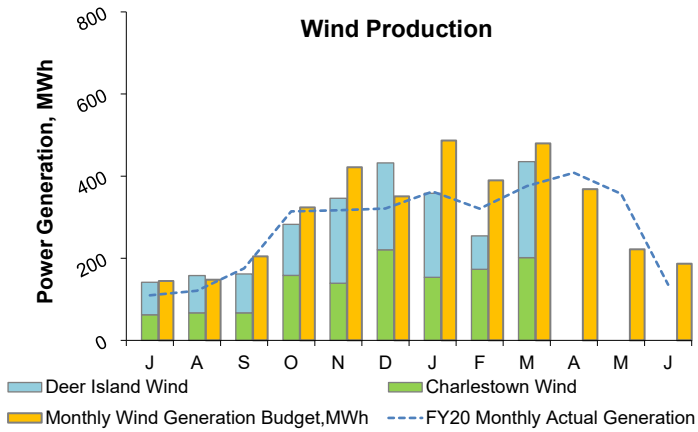

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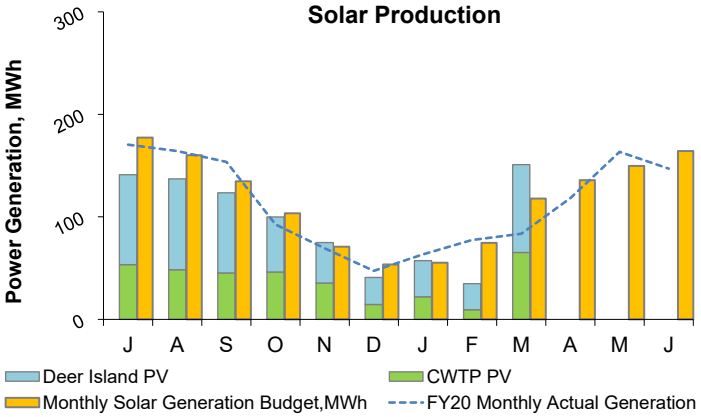

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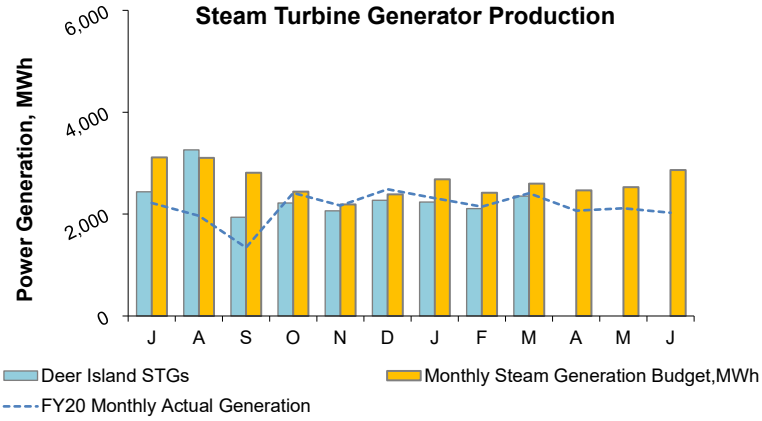

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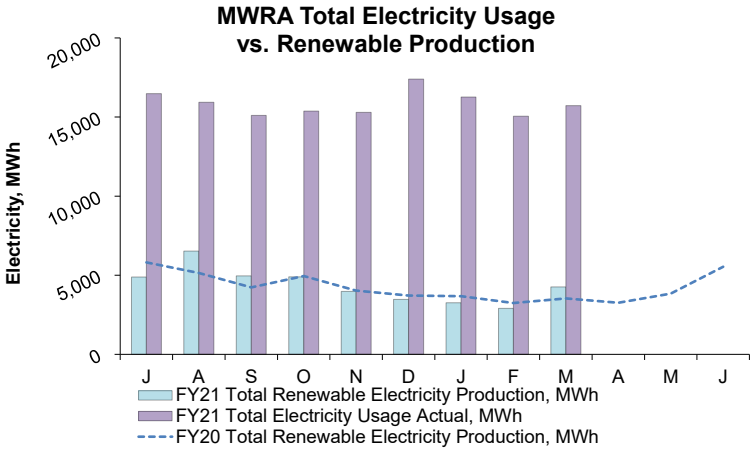

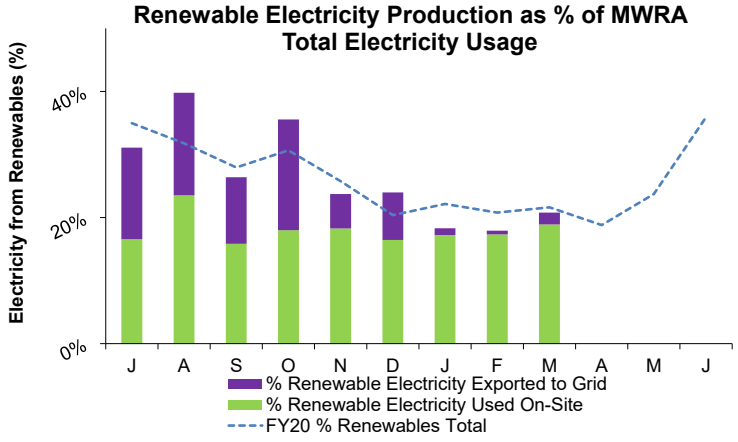

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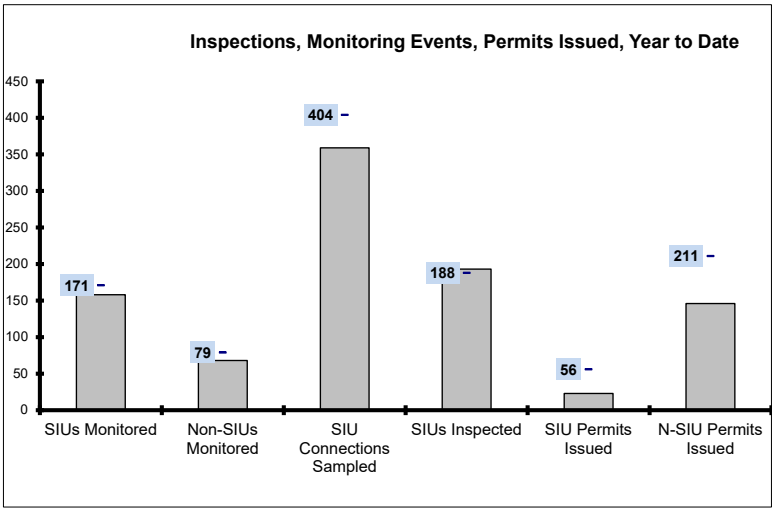
Toxic Reduction and Control

3rd Quarter - FY21



EPA Required SIU Monitoring Events
for FY21: 171
YTD : **158**

Required Non-SIU Monitoring Events
for FY21: 79
YTD : **68**

SIU Connections to be Sampled
For FY21: 404
YTD: **359**

EPA Required SIU Inspections
for FY21: 188
YTD: **193**

SIU Permits due to Expire
In FY21: 56
YTD: **23**

Non-SIU Permits due to Expire
for FY21: 211
YTD: **146**

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.

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; 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, increased inspections leading to permit category changes requiring additional monitoring events.

SIU and Non-SIU permits are issued with durations of two to five years, depending on the category of industry, varying the number of permits that expire in a given year.

Number of Days to Issue a Permit

	0 to 120		121 to 180		181 or more		Permits Issued	
	SIU	Non-SIU	SIU	Non-SIU	SIU	Non-SIU	SIU	Non-SIU
Jul	1	4	0	4	0	3	1	11
Aug	2	15	0	1	0	1	2	17
Sep	1	20	0	3	0	1	1	24
Oct	2	15	0	1	0	2	2	18
Nov	2	17	0	1	0	1	2	19
Dec	3	9	0	0	0	1	3	10
Jan	5	12	1	2	0	1	6	15
Feb	0	11	1	1	0	0	1	12
Mar	5	15	0	2	0	3	5	20
Apr							0	0
May							0	0
Jun							0	0
% YTD	91%	81%	9%	10%	0%	9%	23	146

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.

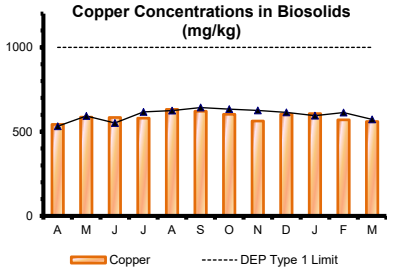
So far, in this fiscal year, 23 SIU permits have been issued with a 91% rate of issuances within 120 days.

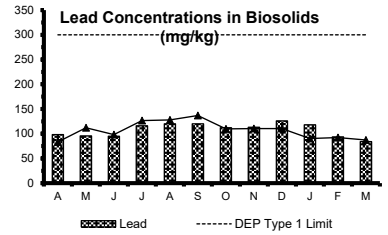
In the third quarter of FY21, 59 permits were issued, 12 of which were SIUs. Ten of the 12 SIU permits were issued within the 120-day timeframe - the other two were issued late, but within the 180-day timeframe.

Of the 47 non-SIU permits issued in the quarter, nine were issued late.

Among the reasons for late issuances included: obtaining critical data for permit processing; project delays and/or COVID related delays in hotel operations, new start-ups, septage hauling and construction dewatering. Some of these translated to late payment of the relevant permit charges and hence, permits issued late.

For the Clinton Sewer Service area, no SIU permit was issued in the third quarter of the fiscal year. None have been issued for the year.





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
3rd Quarter – FY21

Western Water Operations and Maintenance

Carroll Water Treatment: Staff completed annual maintenance on side A, including replacement of the sodium hypochlorite piping inside the tanks, and continued work on the lead pipe study project.

Wachusett Dam Crest Gate: Contractor support completed the rebuild and reinstallation of the hydraulic cylinders to restore the gate to operation on 1/13. The gate was used to release water to reach the target reservoir elevation for the winter. Maintenance installed new diverters on gate to extend the cascade of water over the gate to minimize the impact on the hydraulic lines.

Oakdale Power Station: After the ice breakup on Wachusett Reservoir, a transfer from the Quabbin Reservoir was initiated to return Wachusett Reservoir to its normal operating band.

Metro Water Operations and Maintenance

Valve Program: Valve operations to support in-house work included providing isolations at the Lynnfield Pumping Station, the IPS, the Columbus Park Headworks, the Spot Pond Pumping Station and Section 44. Staff also supported CIP Contractors by isolating a portion of Section 77, Section 113, and the Comm Avenue West Pump Station, and LOTO of WASM 16. Other work included supporting internal leak detection on Section 22 under the Neponset River. Staff also isolated a portion of Section 30 for a BWSC sewer repair, and activated an emergency connection for a Norwood leak repair.

Water Pipeline Program: Staff completed the replacement of three new valve at the IPS in Weymouth and a valve supplying the Lynnfield Pump Station. Staff repaired five leaks during the quarter, two on Section 70, two on Section 44 and a service line at Columbus Park Headworks. To support the repairs on Section 44, Pipe and Valve staff deployed and operated a Mobile Pumping Unit. Additional work included a seepage repair project at Chestnut Hill Dam.

Operations Engineering

Staff provided community assistance for: Norwood pipe repair on University Ave; troubleshooting Revere water main breaks; Brookline water main breaks; and Medford discolored water complaints.

Staff developed the scope for carbon replacement at NIHW and Union Park CSO Facility and procured carbon replacement for Chelsea Screen House. Staff procured inspections for 14 water storage tanks; and finalized scope for inspection services for NIHW outfalls. Staff coordinated the repair of Section 44 leaks requiring Mobile Pump Unit operation, and on-going contract development for the cleaning of Norumbega Storage Facility.

Wastewater Operations & Maintenance

Remote Headworks Upgrades: Operations staff continued to work with Engineering & Construction staff and the contractor on the Chelsea Creek project. All channels are now in service and the contractor has replaced the chain in all channels.

- Hayes PS Rehabilitation: Operations continued to work with engineering staff on the conceptual design for rehabilitation, including the bypass pumping system required for construction.

Nut Island Headworks Odor Control & HVAC Improvements: There were three temporary shutdowns in January to allow the contractor to tie in new ductwork. The contractor continued to perform work on the odor control system and the replacement of the four emergency spillway gates.

IPS: Three new isolation valves were installed on the water system by the MWRA Valve crew so that the water line could be controlled at the parking lot of the facility instead of at the Pellet Plant.

Ward Street and Columbus Park Headworks Upgrade: A kickoff meeting was held with Operations, Engineering, Public Affairs, and Affirmative Action to discuss the schedule, responsibilities, reporting and Covid safety practices.

Training: Management is currently working with Training staff to make sure staff receive the training hours needed to renew their licenses in December 2021 even with coronavirus disruptions. Operations staff attended virtual training for the new odor control fans at the Chelsea Creek headworks in February. Operations and Process Control staff met to examine the possibility of Operations staff reviewing previous activations to learn/train for CSO facility wet weather operations.

Metro Equipment and Facility Maintenance

MWRA plumbers re-piped the recirculation piping for the #1 Odor Control pump at the Ward Street Headworks. MWRA electricians working with machinists, mechanics and grounds crews removed the existing Variable Frequency Drive for Pump #3 and replaced it with a new modern version at the Framingham Pump Station. MWRA HVAC Technicians replaced the motor for #6 Odor Control Fan at the DeLauri Pump Station. Odor Control fan #3 was tripping off line periodically at the Intermediate Pump Station. MWRA electricians and HVAC Technicians found a short deep in the Motor Control Center: a new one was purchased and installed. The Spring Street Pump Station cooling water line to the #1 Diesel drive pump corroded in sections and needed repair. MWRA plumbers/ welder replaced the bad sections with new. Columbus Park Headworks Channel #3 was worn and in need of a complete overhaul. MWRA mechanics, welders and machinists worked together replacing rails, chain, flytes, sprockets and shoes.

Metering

Pandemic Response: Meter Data began tracking how the COVID response has affected demand. In general, most residential communities saw demand increases as the stay at home order was in effect, with some communities seeing a 20+% increase over the summer. Each community experienced an overall increase or very slight decrease in demand in 2020 with the exception of Boston

which saw significantly lower demand. Other communities that saw decreases had a large transient college campus populations. Boston continues to experience a greater effect of the shifts in COVID usage trends compared to more residential communities.

Staff reached out to the following communities to alert them to observed flow changes compared to their historical usage; Nahant, Rutland-Holden Sewer district, and Somerville.

Staff assisted the Rutland-Holden sewer district and DCR with an assessment of the Station D sewer flow monitoring station, performing several temporary metering assessments. Further analysis will include an inspection and potential CFD analysis of the flow nozzle.

Metering Staff assisted Saugus with an assessment of their water meters, coordinating with MWRA valve crews to systematically shut off all seven Saugus meters while measuring flow through the other six meters to observe any changes in flow. To date, no anomalies have been found. This assessment will conclude in April.

Wastewater upgrade project: Installations began in April of 2021 and the current project Substantial Completion Date is October 2021.

TRAC

Compliance and Enforcement: TRAC issued one Notice of Noncompliance, 74 Notices of Violation, one Ruling, and one Return to Permit Letter. TRAC issued just over 700 Dental Discharges Permit invoices in March, off-cycle from all of TRAC's other industrial permits

Inspections and Permitting:TRAC issued 76 8(m) Permits allowing companies to work within MWRA easements or other property. Permits issued this quarter were issued in an average of 102 days.

TRAC monitored the septage receiving sites 30 times, and conducted inspection at 29 new and 177 existing gasoline/oil separators. TRAC staff conducted 41 Annual SIU Inspections and 348 other inspections. Other inspections include inspections for enforcement, permit renewal, NSIU, follow-up, temporary construction dewatering sites, group/combined permit audits, out-of-business facility reviews, and surveys.

Monitoring: TRAC completed 405 SIU monitoring events, including 52 first time events; 64 NSIU monitoring events, including 28 first time events; and 141 other events including Clinton NPDES sampling, Clinton Local Limits sampling, Metropolitan Local Limits sampling, Cosgrove and Oakdale NPDES sampling, and CSO Hypochlorite Tank chemical sampling.

Environmental Quality-Water

As part of CWTP half-plant reactivation processes, staff conducted potability sampling at the CWTP Tank A overflow weir and Shaft 4 (following flush of the Upper Hultman Aqueduct). All results met compliance requirements and the tank and aqueduct were subsequently reactivated.

Training & Regulatory Assistance: Staff trained drinking water samplers from Wellesley, Bedford, Lynnfield, and Peabody, and five new MWRA staff on proper coliform sampling and chlorine residual measurement. Staff held two meetings with a community to discuss issues associated with their DEP sanitary survey.

Sampling Projects: Staff provided sampling support to Framingham for clearance sampling associated with the cleaning of two of their storage tanks. Staff provided support to Watertown and Revere to help determine if water leaking was finished water or ground water. Supported BWSC with a special Optimal Water Quality Parameter sampling in January. Results, determined to be typical, were communicated to DEP. Staff commenced sampling of a pipe loop project at CWTP to study lead levels in tap water using community lead service lines with various corrosion control treatments.

Environmental/Chemical Contract Management: Staff continued to provide weekly updates on bulk chemical supply conditions and the pandemic. All chemical inventories continue to be at acceptable levels and vendors are not experiencing issues with manufacture, distribution or transport.

Facilitated removal and appropriate disposal of 600 gallons of sediment-laden sodium bisulfite from the heel of tank 1 at CWTP to prevent potential chemical feed pump strainer blockages.

Environmental Quality-Wastewater

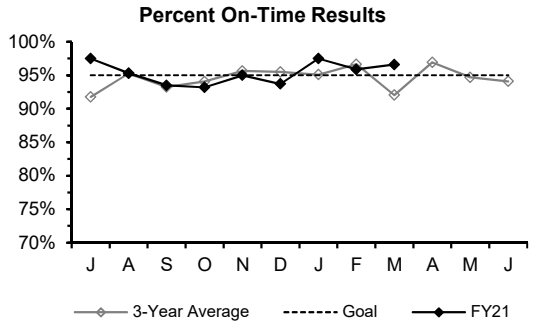
Ambient Monitoring: Consultants conducted the first two surveys of the 2021 field season, with modifications imposed by COVID-19 safety protocols. Completed sample analysis from 2020 monitoring and analyzed data for an annual monitoring workshop in March. MWRA's proposed changes to the Ambient Monitoring Plan were approved by EPA. Completed four reports on required Ambient Monitoring in 2019 and 2020, and one on validation of the permit-required Massachusetts Bay eutrophication model.

Harbor/CSO Receiving Water Monitoring: Biweekly harborwide monitoring continued, under COVID-19 safety protocols. 2021 CSO receiving water sampling began in late March.

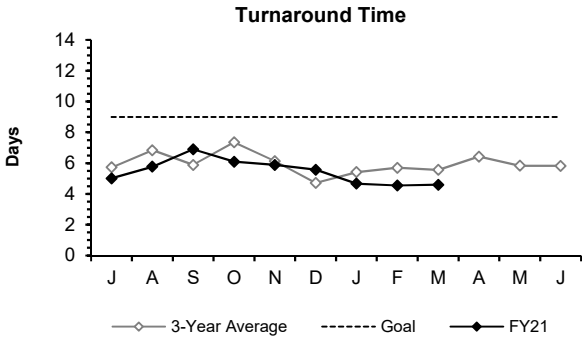
Coordination with other MWRA Departments: Staff continued to work with Engineering & Construction and the DCOO on the receiving water quality analysis portion of the CSO Post-Construction Monitoring & Performance Assessment project: participated in community CSO coordination meetings with Cambridge, Somerville, and BWSC. With MIS, trained wastewater operations field staff on use of SSO data collection application.

Laboratory Services

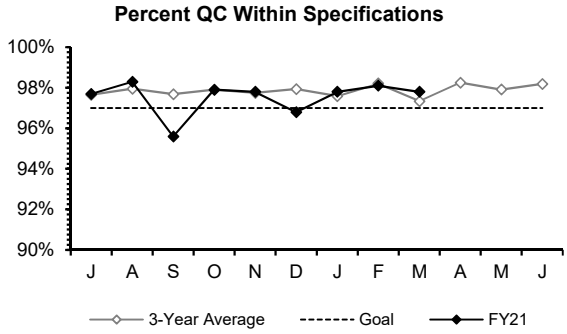
3rd Quarter - FY21



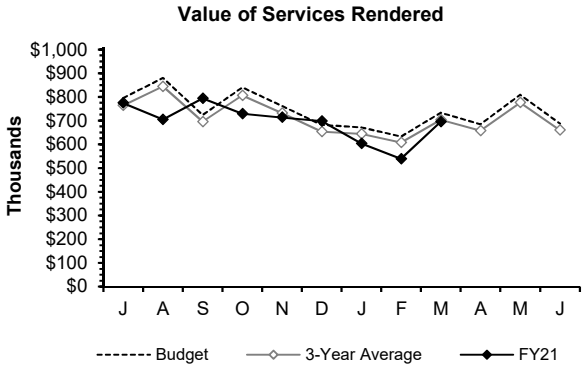
The Percent On-Time measurement met the 95% goal.



Turnaround Time meets the 9-day goal.



Percent of QC tests meeting specifications meets the 97% goal YTD.



Value of Services Rendered is running slightly below the annual budget projection YTD.

Highlights:

Performance: Year to date average Turnaround Time, Percent on time and Percent QC within Specification all met targets. Value of Services Rendered is running slightly below the three year average.

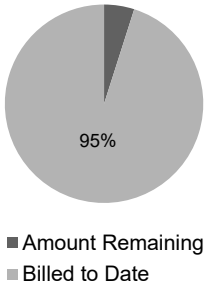
School Lead Program: During the 3rd quarter of FY21 , MWRA's lab completed 84 lead and copper tests from 16 schools and childcare facilities in 6 communities. Since 2016, MWRA's Laboratory has conducted over 38,500 tests from 511 schools and daycares in 44 communities.

COVID-19 Testing: The wastewater pilot project continued throughout the 3rd quarter. Sample results are posted on MWRA.com as they are received.

CONSTRUCTION PROGRAMS

Projects In Construction
3rd Quarter – FY21

Money



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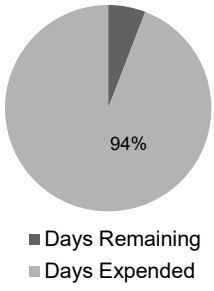


Southern Extra High Pipeline Section 111

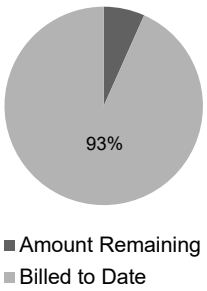
Project Summary: This project consists of 6,800 linear feet of 36-inch water main in Dedham and Westwood and includes pipe jackings at the Dedham Corporate MBTA Station and at the MassDOT Route 95 East Street Rotary.

Contract Amount: $21,051,717.80 *Contract Duration:* 1,025 Days

Notice to Proceed: 10-Aug-2018 *Contract Completion:* 31-May-2021

Status and Issues: During March, the Contractor raised castings and graded and installed the base coat for the permanent patch at Meter 330, they paved sidewalks, installed berm and loamed and seeded the grass plot in Harvard Street, Dedham.

Money



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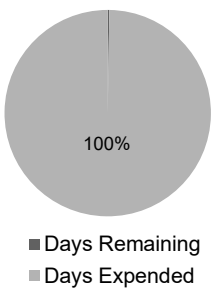


Chelsea Creek Headworks Upgrade

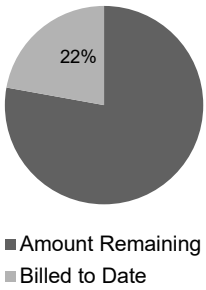
Project Summary: This project involves a major upgrade to the entire facility including: automation of screening collection & solids conveyance, replacement of the odor control, HVAC and electrical systems.

Contract Amount: $84,833,539.06 *Contract Duration:* 1,594 Days

Notice to Proceed: 22-Nov-2016 *Contract Completion:* 4-Apr-2021

Status and Issues: As of March, the Contractor Worked on security, lighting, communications, and fire systems throughout the headworks. They continued demolishing the existing conduits on the Operating and Mezzanine levels. They successfully tested the new FACP with Chelsea Fire in attendance. Modernization of the freight elevator continued with the Installation of a new motor and new buffer springs in the elevator shaft pit.

Money



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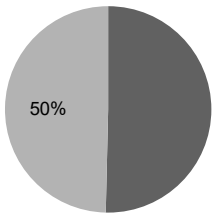


Dorchester Interceptor Sewer

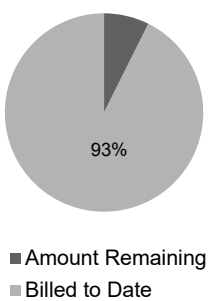
Project Summary: MWRA's Dorchester Interceptor conveys flows to MWRA's Columbus Park Connection and Headworks in South Boston

Contract Amount: $4,707,485 *Contract Duration:* 540 Days

Notice to Proceed: 6-Jul-2020 *Contract Completion:* 29-Dec-2021

Status and Issues: As of March, the Contractor removed the tops of the existing SMH's and replaced them with precast concrete riser sections to allow liner access. They also vacuum excavated two test pits at the unknown pipe penetrations through the sewer on Butler Street and fused the HDPE bypass pipe along the DCR path adjacent to Granite Street.

Money



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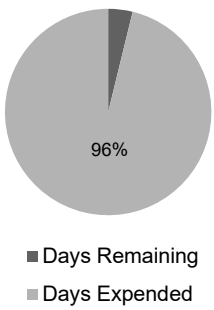


Commonwealth Ave Pump Station Improvements

Project Summary: This project will provide a new connection to the station from two low service pipelines in Commonwealth A venue and add low service pumps so that the City of Newton can be supplied in the event of a City Tunnel failure.

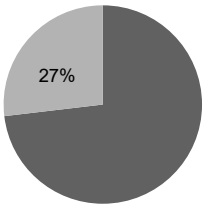
Contract Amount: $7,899,655.10 *Contract Duration:* 760 Days

Notice to Proceed: 28-Feb-2019 *Contract Completion:* 29-Mar-2021

Status and Issues: Substantial Completion for this contract was achieved on March 29th. The Contractor has continued working on punchlist items. Milestones include the 30-day acceptance test for the west building SCADA. In addition, they demobilized the remaining temporary fence panels and removed the remaining stored material from the site.

Projects In Construction
3rd Quarter – FY21

Money



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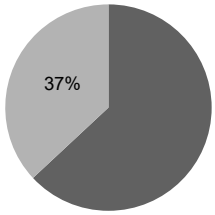


Nut Island Odor Control and HVAC

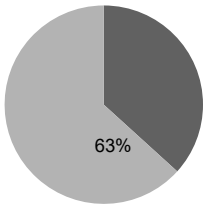
Project Summary: This project will provide upgrades to the odor control system, heating, ventilation and air conditioning system and other equipment.

Contract Amount: $58,115,295.10 *Contract Duration:* 1,034 Days

Notice to Proceed: 12-Feb-2020 *Contract Completion:* 12-Dec-2022

Status and Issues: As of March, the Contractor set the new sodium hydroxide storage tanks on their equipment pads and set the new sodium hydroxide chemical feed pumps on their equipment pads. They began forming the new sodium hypochlorite containment wall in the Odor Control Room as well as the installation of the new double containment chemical fill pipe.

Money



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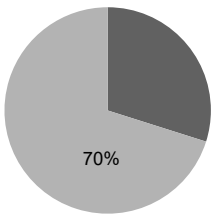


Chemical Tank Relining & Pipe Replacement

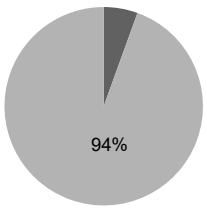
Project Summary: This project involves replacing the chlorobutyl rubber linings in 3 sodium hypochlorite and 2 sodium bisulfite storage tanks and assorted gravity thickener overflow piping at Deer Island.

Contract Amount: $8,680743 *Contract Duration:* 850 Days

Notice to Proceed: 13-Aug-19 *Contract Completion:* 10-Dec-21

Status and Issues: During March the Contractor remobilized after the Winter shutdown. They commenced hydro blasting the Sodium Hypochlorite Tank 2 rubber liner in order to remove it.

Money



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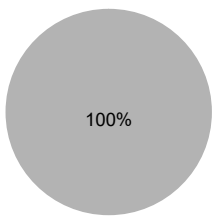


Winthrop Terminal VFD and Motor

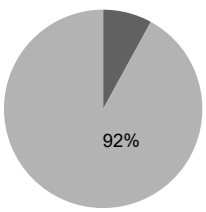
Project Summary: This project involves the replacement of 6, 600-HP motors, VFDs and associated electrical components in the Winthrop Terminal Facility.

Contract Amount: $11,950,754 *Contract Duration:* 1,549 Days

Notice to Proceed: 16-Jun-2016 *Contract Completion:* 12-Sep-20

Status and Issues: As of March, the VFD/Motor No 1 installation is on-going.

Money



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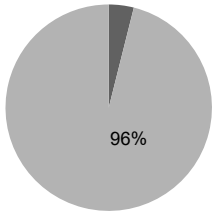


Gravity Thickener Rehabilitation

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: $20,052,650.20 *Contract Duration:* 1,098 Days

Notice to Proceed: 11-May-2018 *Contract Completion:* 13-May-2021

Status and Issues: As of March, the Contractor completed coating work on GT-5, they installed approximately 80% of the GT-5 mechanism, and the FRP roof installation. They removed approximately 250,000 gallons of the 308,000 gallons of sludge from DiStor 1 tank.

CSO CONTROL PROGRAM
3rd Quarter – FY21

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 is conducting a multi-year CSO post-construction monitoring program and performance assessment that will culminate in a report to EPA and DEP in December 2021 verifying whether the court-ordered LTCP levels of CSO control are attained. Of the $912.5 million budget in the FY21 CIP for the CSO Control Program, **approximately $6.1 million remain to be spent**, as described below.

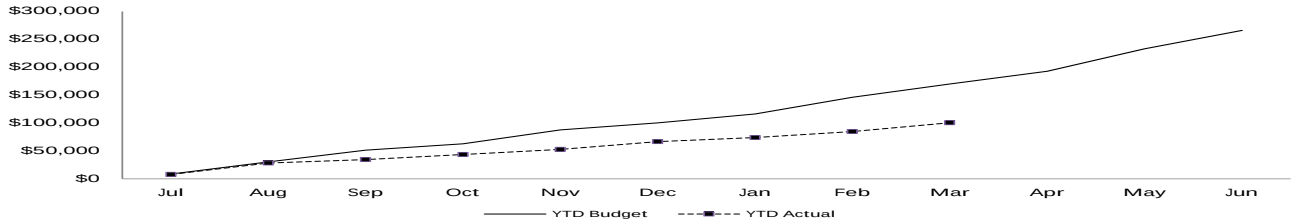
Project/Item	Status as of March 31, 2021
BWSC Dorchester Interceptor Inflow Removal	The CSO MOU/FAA with BWSC included $5.4 million for additional inflow removal from BWSC's Dorchester Interceptor system as part of the South Dorchester Bay Sewer Separation project, of which MWRA transferred $1.7 million to the BWSC CSO account and $1.6 million of that was withdrawn by BWSC to fund related design and construction work. On May 17, 2017, MWRA's Board of Directors authorized removing the remaining $3.76 million from the MOU/FAA (which ended on June 30, 2017) and including this amount in a separate, 4-year financial assistance agreement with BWSC effective July 1, 2017. The new agreement limits MWRA financial assistance to reimbursement of the eligible costs of BWSC construction work reviewed and approved by MWRA, up to $3.76 million. BWSC has awarded and issued Notice to Proceed with one construction contract for inflow removal in Dorchester in the amount of $1.58 million**,** and expects the contract to be complete by June 30, 2021 when the Dorchester agreement ends. **BWSC has requested that the remaining $2.18 million in the Dorchester agreement be transferred into a proposed new agreement by which BWSC would construct sewer separation and other CSO improvements in East Boston. On April 14, 2021, the MWRA Board of Directors authorized the proposed East Boston agreement in the amount of $2.18 million for a term of two years, from July 1, 2021 through June 30, 2023.**
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. **MWRA recently completed final eligibility review of the Cambridge construction contracts and expects to issue a final eligibility certification this spring.**
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 is in design and expects to award the construction contract in the fall of 2021.
MWRA CSO Performance Assessment – Contract 7572	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 of which approximately $4.3 million has been spent. 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, also parties to the variances, have implemented notification systems for their own outfalls. · AECOM continues to make progress with Amendment 2 work that includes 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, and MWRA is designing a replacement for the interceptor connection at Outfall CHE008 - 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 is designing replacement of the leaky tide gate on the Somerville-Marginal CSO Facility outfall and has modified the operational protocol for closing the facility'Aås influent gates at the end of each storm. **More recent work includes BWSC's ongoing construction of East Boston sewer separation Contract 2 and its completion of design of Contract 3.** · **AECOM recently updated the MWRA hydraulic model to Q1-2021 system conditions in part to produce an updated Typical Year CSO performance assessment relative to the LTCP activation and volume goals. The updated assessment shows attainment of the goals at 70 of 86 discharge locations active in the late 1980's when MWRA assumed responsibility for system-wide CSO control, including outfalls that have been closed. MWRA forecasts attainment at an additional six outfalls with scheduled completion after 2021 of recently recommended MWRA and community CSO improvements. At 10 discharge locations, MWRA and the CSO communities continue to identify and evaluate alternatives to further reduce discharges.** · **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 has distributed a draft Water Quality Assessment Report to EPA, DEP, the CSO communities, Charles River Watershed Association, and Mystic River Watershed Association for review and comment.**

CIP Expenditures
3rd Quarter – FY21

FY21 Capital Improvement Program Expenditure Variances through March by Program ($ in thousands)				
Program	FY21 Budget Through March	FY21 Actual Through March	Variance Amount	Variance Percent
Wastewater	$98,784	$70,917	($27,867)	-28%
Waterworks	$58,603	$27,412	($31,191)	-53%
Business and Operations Support	$12,501	$2,140	($10,361)	-83%
Total	$169,888	$100,469	($69,419)	-41%

Project underspending within Wastewater was due to Channel 4 work being delayed, Covid-19 delays and time extension for the Chelsea Creek Headworks Upgrades, delay in construction award for the Prison Point CSO Rehabilitation and DI Primary & Secondary Clarifier Rehab contracts, updated schedule for Dorchester I/I Removal work, delays in equipment delivery and Covid-19 shutdown for Nut Island Odor Control & HVAC Construction, work anticipated in FY21 that was completed in FY20 for the Pellet Pipe Relocation and the Residuals Mechanical/Electrical/Dryer Drum Replacements, delay in award and software training for the Wastewater Metering contract, and start-up and snow delays as well as winter moratorium for the Dorchester Interceptor Sewer, and timing of community repayments due to less than anticipated communities deferring their loan repayments. This underspending was partially offset by contractor progress for the Winthrop Terminal Facility (WTF) VFD Replacement, Gas Protection System Replacement Phase 1, and DI Gravity Thickener Rehabilitation contracts. Project underspending in Waterworks was due to timing of community repayments due to less than anticipated communities deferring their loan repayments, updated schedules for CP-3 Sections 23, 24, and 47 Rehab, and Section 89 & 29 Replacement, delay in award and repair clamps issue for CP-1 Shafts 6, 8, and 9A, timing of consultant work for the Tunnel Preliminary Design & MEPA Review, and delay in slide gate fabrication and updated schedule for Weston Aqueduct Sluice Gate. This underspending was partially offset by contractor progress for WASM 3 CP-1, SEH Section 111 Construction 2, Commonwealth Avenue Pumping Station Rehabilitation, and consultant progress for Section 56 Replacement/Saugus River Design/CA.

Budget vs. Actual CIP Expenditures
($ in thousands)
Total FY21 CIP Budget of $265,774



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 3/27/21	$247.4 million
Unused capacity under the debt cap:	$1.63 billion
Estimated date for exhausting construction fund without new borrowing:	Aug-21
Estimated date for debt cap increase to support new borrowing:	Not anticipated at this time
Commercial paper/Revolving loan outstanding: Commercial paper capacity / Revolving Loan	$128 million $350 million
Budgeted FY21 Cash Flow Expectancy*:	$203 million

* Cash based spending is discounted for construction retainage.

DRINKING WATER QUALITY AND SUPPLY

Source Water – Microbial Results and UV Absorbance

3rd Quarter – FY21

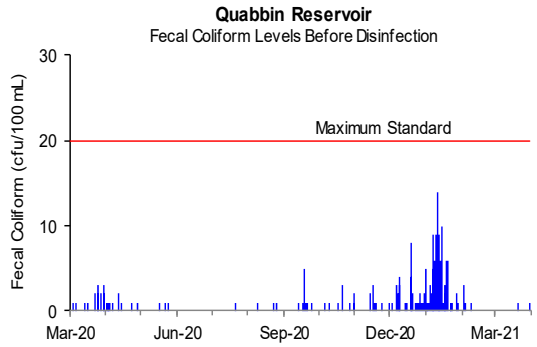
Source Water – Microbial Results

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 FY21 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.**

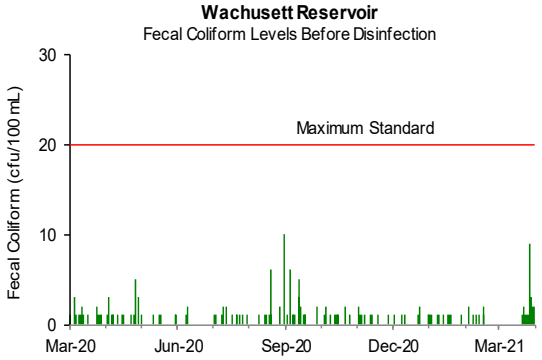


Sample Site: Wachusett Reservoir

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 3rd Quarter were below 20 cfu/100mL. **For the current six-month period, 0.0% of the samples exceeded a count of 20 cfu/100mL.**

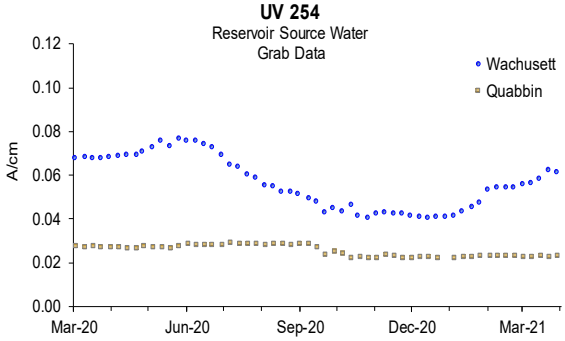


Source Water – UV Absorbance

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

Quabbin Reservoir UV-254 levels averaged 0.023 A/cm for the quarter.

Wachusett Reservoir UV-254 levels averaged 0.053 A/cm for the quarter.



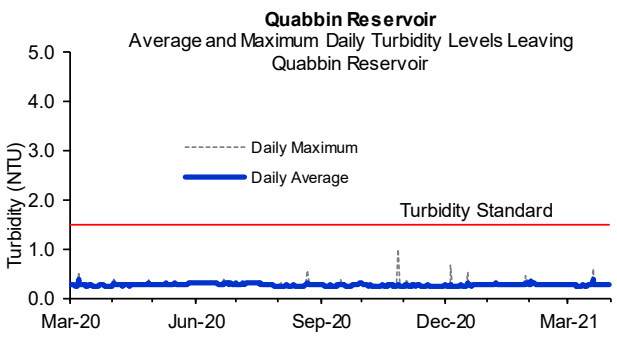
Source Water – Turbidity

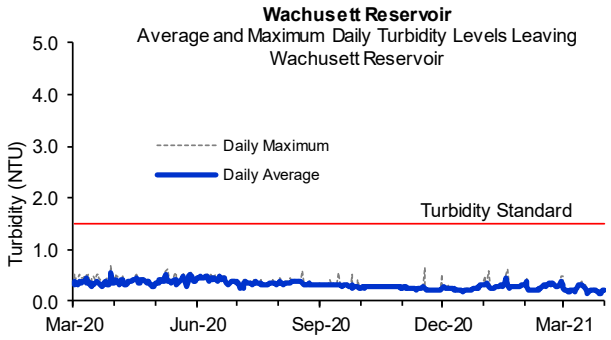
3rd Quarter – FY21

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.



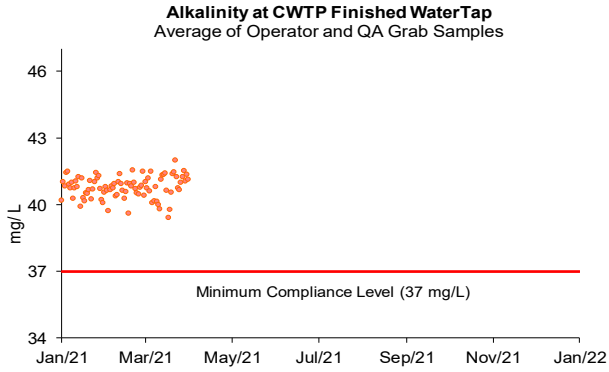


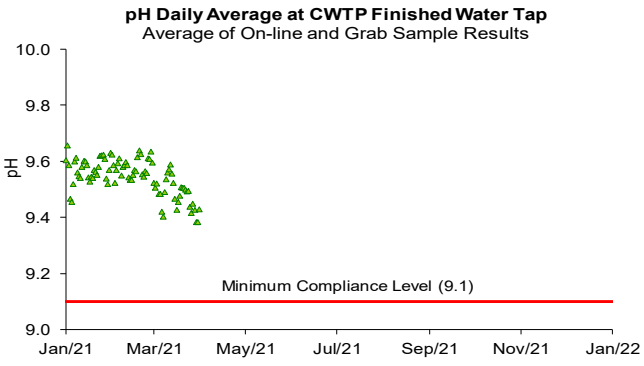
Treated Water – pH and Alkalinity Compliance

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 three weeks during February and March. Distribution system sample pH ranged from 9.4 to 9.7 and alkalinity ranged from 39 to 42 mg/L. No sample results were below DEP limits for this quarter.





Treated Water – Disinfection Effectiveness

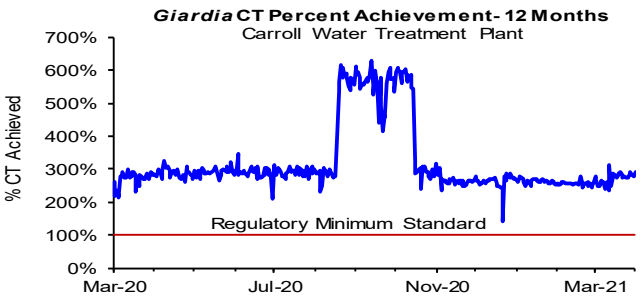
3rd Quarter – FY21

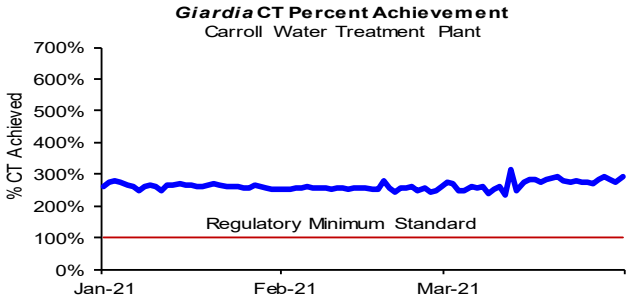
At the Carroll Water Treatment Plant (CWTP), MWRA meets the required 99.9% (3-log) inactivation of *Giardia* using ozone (reported as CT: concentration of disinfectant x contact time) and the required 99% (2-log) inactivation of *Cryptosporidium* using UV (reported as IT: intensity of UV x time). MWRA 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:

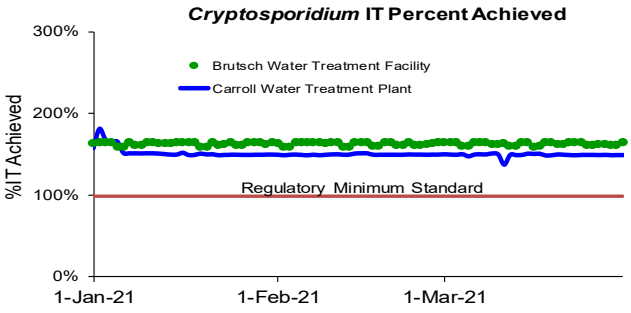
- Ozone dose at the CWTP varied between 1.3 to 1.9 mg/L for the quarter.
- *Giardia* CT was maintained above 100% at all times the plant was providing water into the distribution system this quarter, as well as every day for the last fiscal year.
- *Cryptosporidium* IT was maintained above 100% for the quarter. Off-spec water was less than 5%.
- The ozone dose was proactively raised in 2020 from mid August to mid October in response to elevated reservoir total coliform levels. This is visible in the top left graph.
- 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.

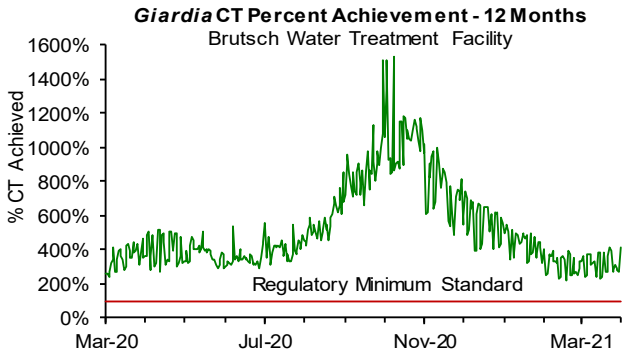


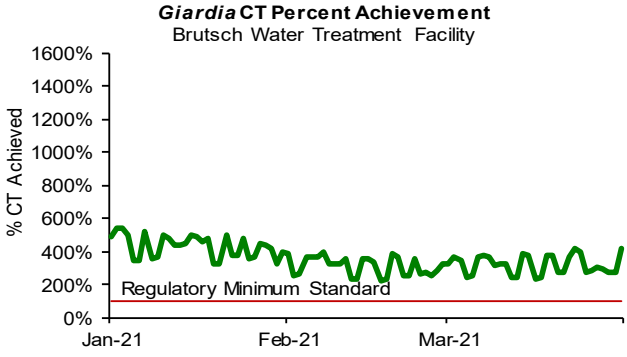


Quabbin Reservoir (CVA Supply) at: Brutsch Water Treatment Facility

- 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 1.2 to 1.3 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%.







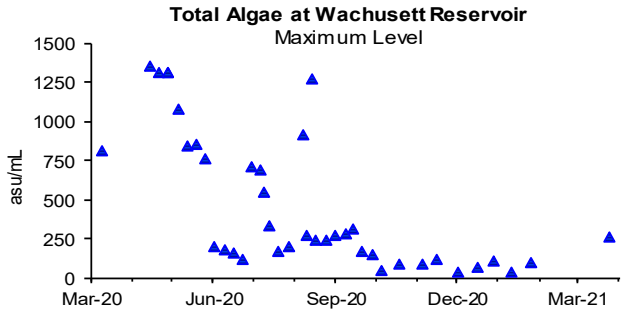
Source Water - Algae

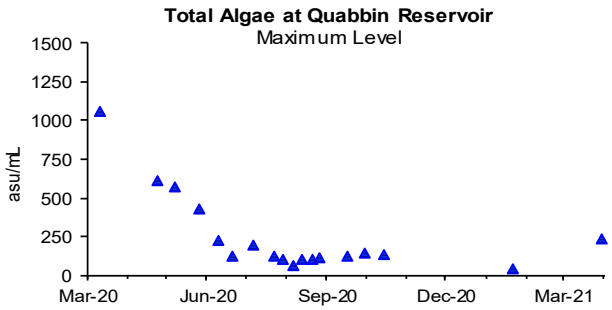
3rd Quarter – FY21

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 3rd quarter, no taste and odor complaints which may be related to algae were reported from the local water departments. There were no samples collected during February as significant ice cover on the reservoir prevented safe algae sampling.



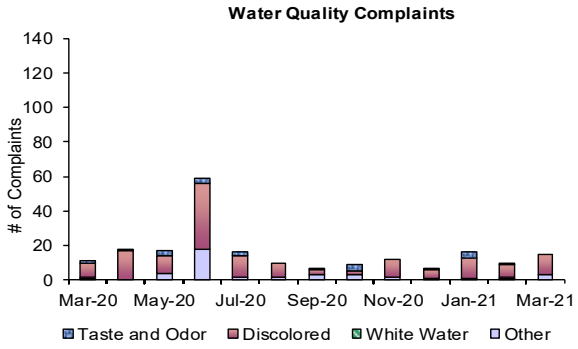


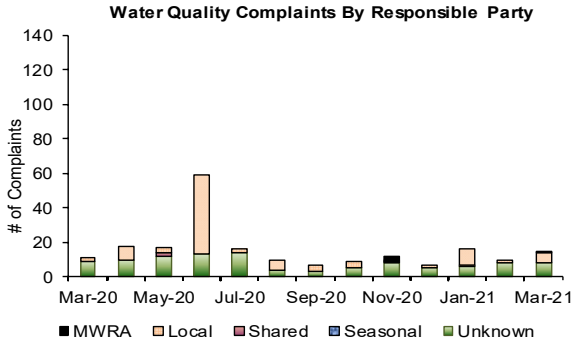
Drinking Water Quality Customer Complaints: Taste, Odor, or Appearance

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 41 complaints during the quarter compared to 48 complaints from 3rd Quarter of FY20. Of these complaints, 31 were for "discolored water", 4 were for "taste and odor", 1 was for 'white water', and 5 were for "other". Of these complaints, 17 were local community issues, 1 was MWRA related, 1 was a shared MWRA/community issue, 1 was seasonal in nature, and 22 were unknown in origin.





Bacteria & Chlorine Residual Results for Communities in MWRA Testing Program

3rd Quarter – FY21

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 3rd Quarter, one of the 6,2301 samples (0.02% system-wide) submitted to MWRA labs for analysis tested positive (Woburn - March). None of the 1863 MWRA locations or Community/MWRA Shared samples (0.0%) tested positive for total coliform. No samples tested positive for *E.coli*. Only 0.1% of the Fully Served community samples had chlorine residuals lower than 0.2 mg/L for the quarter.

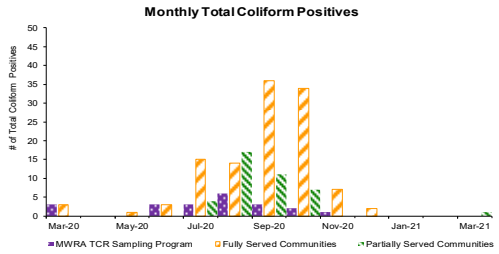
NOTES:

a) MWRA total coliform and chlorine residual results include data from community locations. In most cases these community results are indicative of MWRA water as it enters the community system; however, some are strongly influenced by local pipe conditions. Residuals in the MWRA system are typically between 1.0 and 2.8 mg/L.

b) The number of samples collected depends on the population served and the number of repeat samples required.

c) These communities are partially supplied, and may mix their chlorinated supply with MWRA chloraminated supply.

d) Part of the Chicopee Valley Aqueduct System. Free chlorine system.



			Total Coliform # Samples (b)	Total Coliform # (%) Positive	*E.coli* # Positive	Assessment Required
MWRA		MWRA Locations	330	0 (0%)	0	
	a	Shared Community/MWRA sites	1533	0 (0%)	0	
		Total: MWRA	1863	0 (0%)	0	
Fully Served		ARLINGTON	155	0 (0%)	0	
		BELMONT	104	0 (0%)	0	
		BOSTON	765	0 (0%)	0	
		BROOKLINE	224	0 (0%)	0	
		CHELSEA	156	0 (0%)	0	
		DEER ISLAND	52	0 (0%)	0	
		EVERETT	169	0 (0%)	0	
		FRAMINGHAM	234	0 (0%)	0	
		LEXINGTON	117	0 (0%)	0	
		LYNNFIELD	18	0 (0%)	0	
		MALDEN	234	0 (0%)	0	
		MARBLEHEAD	72	0 (0%)	0	
		MARLBOROUGH	126	0 (0%)	0	
		MEDFORD	192	0 (0%)	0	
		MELROSE	117	0 (0%)	0	
		MILTON	102	0 (0%)	0	
		NAHANT	30	0 (0%)	0	
		NEWTON	276	0 (0%)	0	
		NORTHBOROUGH	48	0 (0%)	0	
		NORWOOD	99	0 (0%)	0	
		QUINCY	338	0 (0%)	0	
		READING	120	0 (0%)	0	
		REVERE	180	0 (0%)	0	
		SAUGUS	104	0 (0%)	0	
		SOMERVILLE	252	0 (0%)	0	
		SOUTHBOROUGH	30	0 (0%)	0	
		STONEHAM	84	0 (0%)	0	
		SWAMPSCOTT	57	0 (0%)	0	
		WALTHAM	216	0 (0%)	0	
		WATERTOWN	130	0 (0%)	0	
		WESTON	45	0 (0%)	0	
		WINTHROP	72	0 (0%)	0	
		Total: Fully Served	*4918*	*0 (0.0%)*		
Partially Served	c	BEDFORD	57	0 (0%)	0	
		CANTON	90	0 (0%)	0	
		NEEDHAM	123	0 (0%)	0	
		PEABODY	207	0 (0%)	0	
		WAKEFIELD	128	0 (0%)	0	
		WELLESLEY	114	0 (0%)	0	
		WILMINGTON	84	0 (0%)	0	
		WINCHESTER	91	0 (0%)	0	
		WOBURN	198	1 (0.51%)	0	No
		CHICOPEE	186	0 (0%)	0	
	d	SOUTH HADLEY FD1	60	0 (0%)	0	
CVA		WILBRAHAM	45	0 (0%)	0	
		Total: CVA & Partially Served	*1383*	*1 (0.07%)*		
		Total: Community Samples	*6301*	*1 (0.02%)*		

Chlorine Residuals in Fully Served Communities

	2020										2021		
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
% <0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.3	0.2	0.3	0.1	0.0	0.0	0.0
% <0.2	0.2	0.2	0.3	0.4	0.5	0.4	1.0	1.1	1.4	0.4	0.2	0.1	0.0
% <0.5	1.1	1.6	1.3	1.5	2.2	2.9	4.1	5.1	3.7	2.5	1.9	0.8	0.2
% <1.0	3.5	4.6	4.0	4.3	6.5	8.4	10.7	12.2	9.3	5.3	3.6	2.5	1.5
% ≥1.0	96.5	95.4	96.0	95.7	93.6	91.6	89.4	87.8	90.7	94.7	96.5	97.6	98.5

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

3rd Quarter – FY21

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.

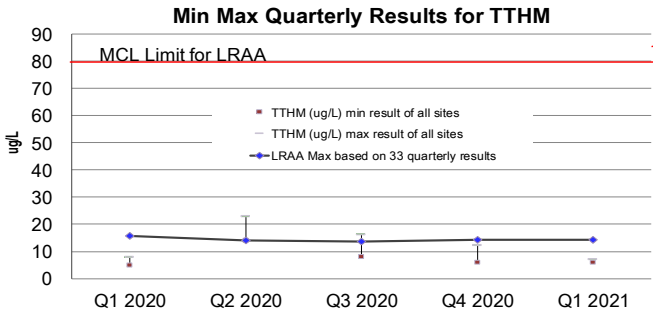
The locational running annual average calculated quarterly at each individual sampling location must be below the Total HAA5 or Total TTHM MCL standard. The charts below show the highest and lowest single values for all sites, and the LRAA of the highest location each quarter.

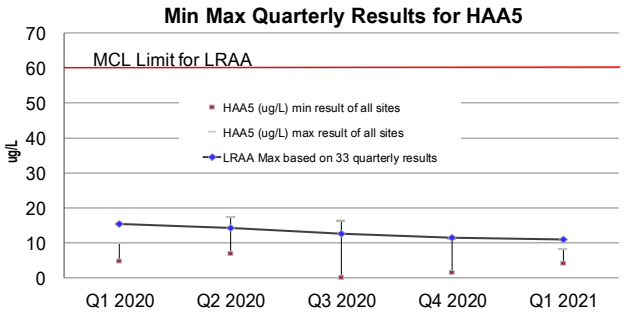
Partially served and CVA communities are responsible for their own compliance monitoring and reporting, and must be contacted directly for their individual results. The chart below combines data for all three CVA communities data (Chicopee, Wilbraham and South Hadley FD1). Each community is regulated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

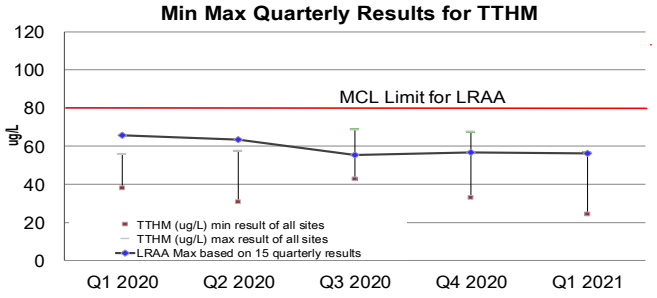
The LRAA for TTHMs and HAA5s for MWRA's Compliance Program (represented as the line in the top two graphs below) remain below current standards. The Max LRAA in the quarter for TTHMs = 14.2 ug/L; HAA5s = 10.9 ug/L. The current RAA for Bromate = 0.0 µg/L No LRAA exceedances or violations occurred this 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.

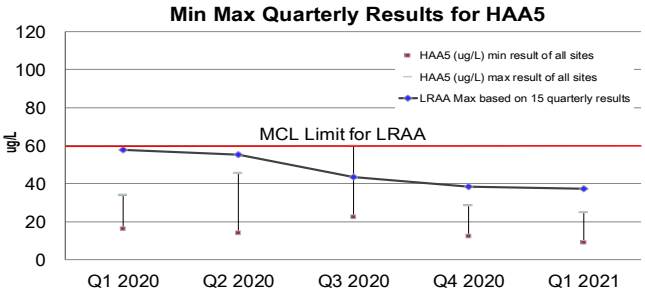
MetroBoston Disinfection By-Products





CVA Disinfection By-Products (Combined Results)





Water Supply and Source Water Management

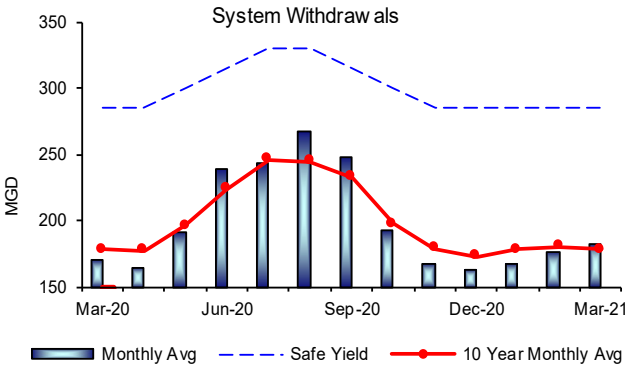
3rd Quarter – FY21

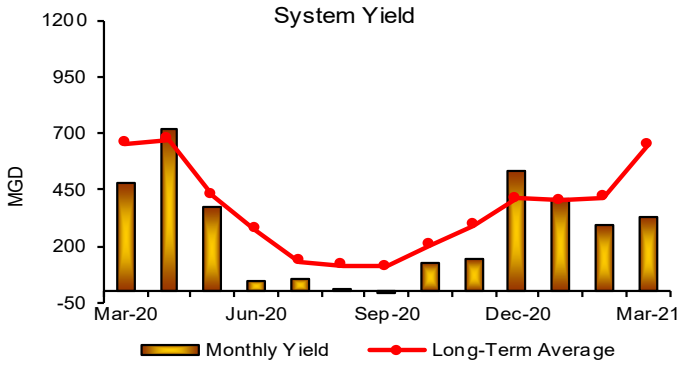
Background

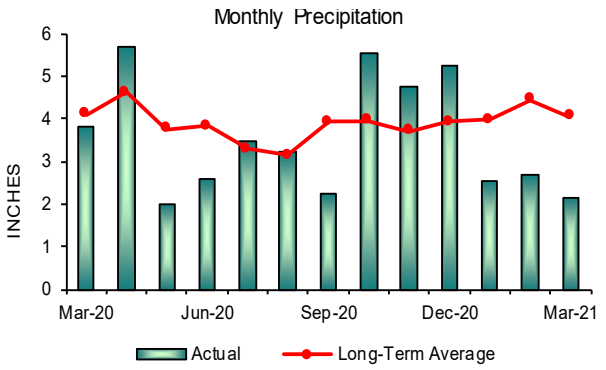
A reliable supply of water in MWRA's reservoirs depends on adequate precipitation during the year and seasonal hydrologic inputs from watersheds that surround the reservoirs. Demand for water typically increases with higher summer temperatures and then decreases as temperatures decline. Quabbin Reservoir 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.

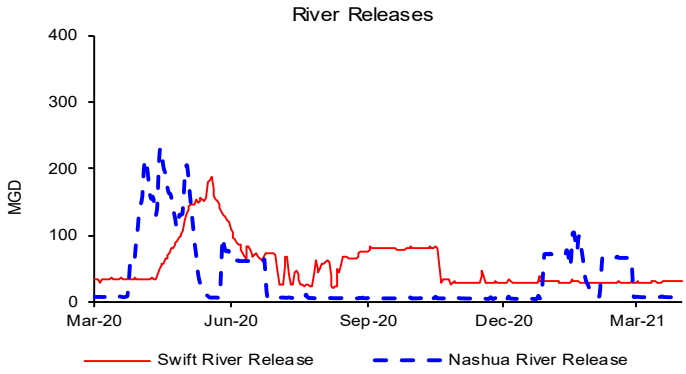
Outcome

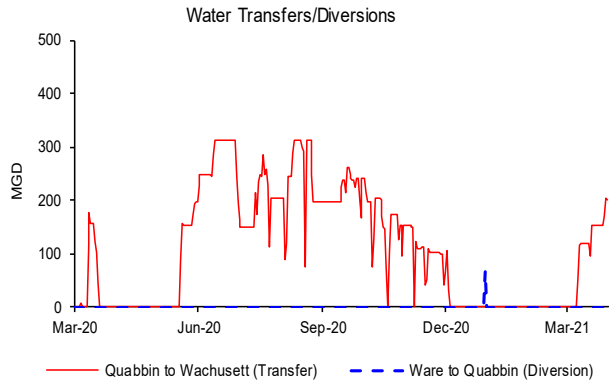
The volume of the Quabbin Reservoir was at 93.3% as of March 31, 2021; a 2.60 % increase for the quarter, which represents a gain of more than 11 billion gallons of storage and an increase in elevation of 1.47'. System Withdrawal, Yield and Precipitation were below their respective long term quarterly averages. Quabbin is in Normal Operating Range for this time of year.

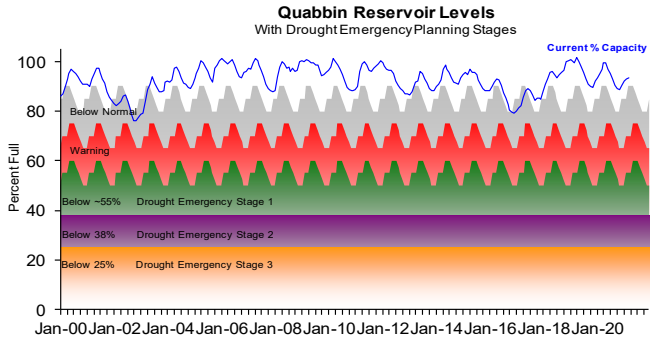












WASTEWATER QUALITY

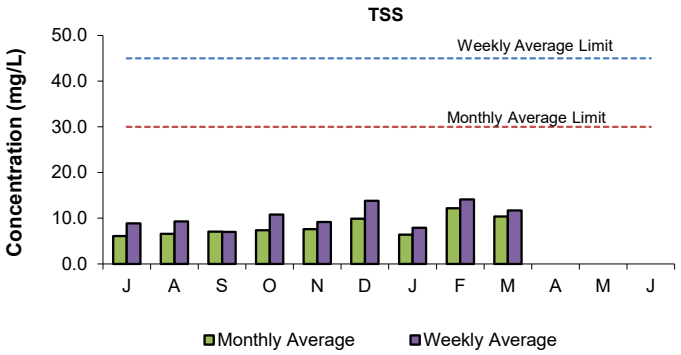
NPDES Permit Compliance: Deer Island Treatment Plant

3rd Quarter - FY21

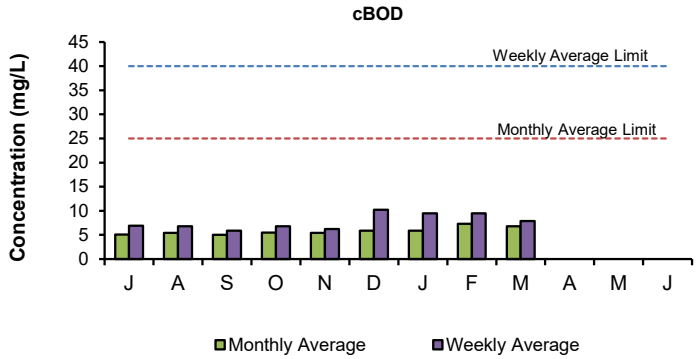
NPDES Permit Limits

Effluent Characteristics		*Units*	*Limits*	*January*	*February*	*March*	*3rd Quarter Violations*	*FY21 YTD Violations*
Dry Day Flow (365 Day Average):		mgd	436	266.7	265.0	265.0	0	0
cBOD:	Monthly Average	mg/L	25	5.9	7.3	6.8	0	0
	Weekly Average	mg/L	40	9.5	9.5	7.9	0	0
TSS:	Monthly Average	mg/L	30	6.4	12.2	10.4	0	0
	Weekly Average	mg/L	45	7.9	14.1	11.7	0	0
TCR:	Monthly Average	ug/L	456	0.5	0.0	0.0	0	0
	Daily Maximum	ug/L	631	16.7	0.0	0.0	0	0
Fecal Coliform:	Daily Geometric Mean	col/100mL	14000	16.0	46.0	8.0	0	0
	Weekly Geometric Mean	col/100mL	14000	7.0	7.0	6.0	0	0
	% of Samples >14000	%	10	0.0	0.0	0.0	0	0
	Consecutive Samples >14000	#	3	0	0	0	0	0
pH:		SU	6.0-9.0	6.4-6.9	6.5-7.0	6.3-6.8	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	100	50	100	0	0
	Inland Silverside	%	≥1.5	100	100	100	0	0

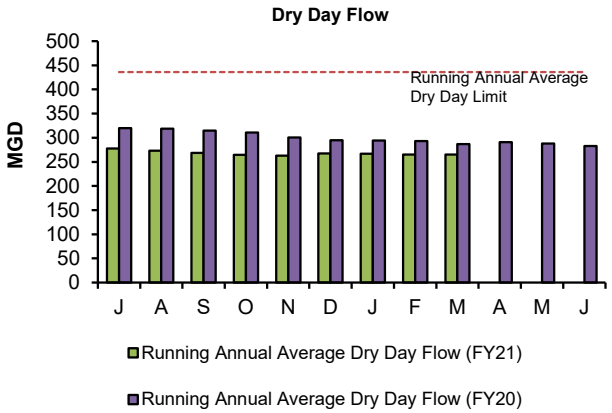
There have been no permit violations in FY21 to date at the Deer Island Treatment Plant (DITP).



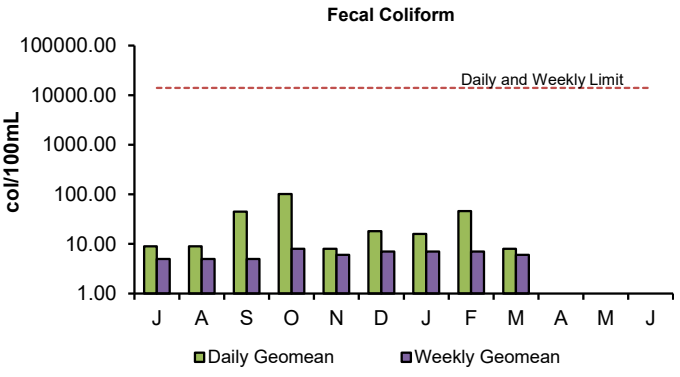
Total Suspended Solids (TSS) in the effluent is a measure of the amount of solids that remain suspended after treatment. All TSS measurements for the 3rd Quarter were within permit limits.



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 3rd 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 3rd 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 3rd Quarter, all permit conditions for fecal coliform were met.

NPDES Permit Compliance: Clinton Wastewater Treatment Plant

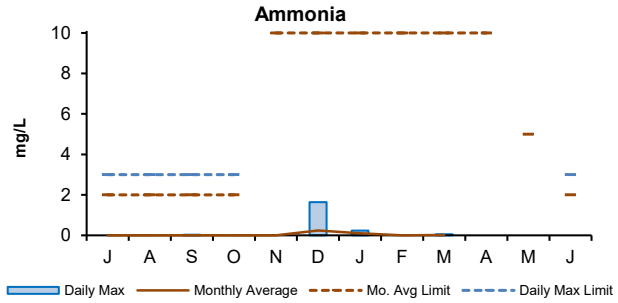
3rd Quarter - FY21

NPDES Permit Limits

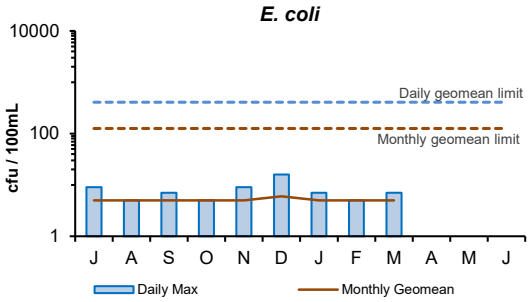
Effluent Characteristics		*Units*	*Limits*	*January*	*February*	*March*	*3rd Quarter Violations*	*FY21 YTD Violations*
Flow:	12-month Rolling Average:	mgd	3.01	2.36	2.36	2.36	0	0
BOD:	Monthly Average:	mg/L	20	2.00	2.30	1.20	0	0
	Weekly Average:	mg/L	20	4.40	2.60	1.90	0	0
TSS:	Monthly Average:	mg/L	20	3.80	4.20	2.60	0	0
	Weekly Average:	mg/L	20	6.50	4.70	3.50	0	0
pH:		SU	6.5-8.3	7.3-7.6	7.3-7.5	7.2-7.6	0	0
Dissolved Oxygen:	Daily Average Minimum:	mg/L	6	10.10	10.50	10.20	0	0
E. Coli:	Monthly Geometric Mean:	cfu/100mL	126	5	5	5	0	0
	Daily Geometric Mean:	cfu/100mL	409	7	5	7	0	0
TCR:	Monthly Average:	ug/L	17.6	0.00	0.00	0.00	0	0
	Daily Maximum:	ug/L	30.4	0.00	0.00	0.00	0	0
Copper:	Monthly Average:	ug/L	11.6	8.56	8.50	8.42	0	0
	Daily Maximum:	ug/L	14.0	8.56	8.50	8.98	0	0
Total Ammonia Nitrogen: November 1st - March 31st	Monthly Average:	mg/L	10.0	0.10	0.00	0.02	0	0
	Daily Maximum:	mg/L	35.2	0.23	0.00	0.05	0	0
Total Phosphorus: November 1st - March 31st	Monthly Average:	ug/L	1000	159	310	113	0	0
	Daily Maximum:	ug/L	RPT	205	432	240	0	0
Acute Toxicity+:	Daily Minimum:	%	≥100	N/A	N/A	>100	0	0
Chronic Toxicity+:	Daily Minimum:	%	≥62.5	N/A	N/A	100	0	1

There has been one permit violation in FY21 at the Clinton Treatment Plant.
1st Quarter: There was one permit violation in the first quarter. The quarterly chronic toxicity result of 25% was below the minimum permit limit of 62.5%.
2nd Quarter: There were no permit violations in the 2nd Quarter.
3rd Quarter: There were no permit violations in the 3rd Quarter.

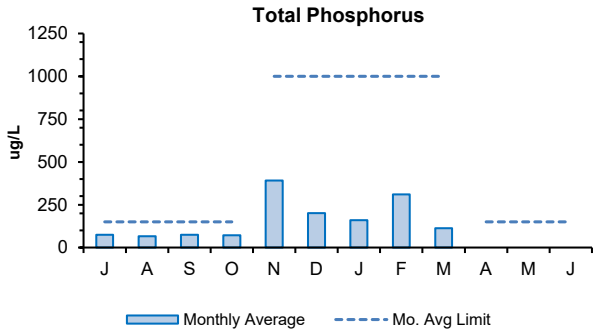
+ Toxicity testing at the Clinton Treatment Plant is conducted on a quarterly basis.



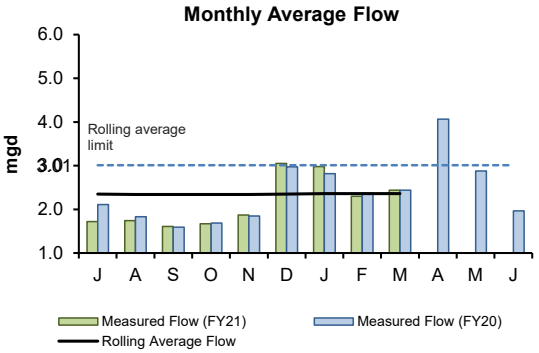
The 3rd Quarter's monthly average and daily maximum concentrations of ammonia were below the permit limits. The monthly average and daily maximum limits for the 3rd Quarter are 2.0 and 3.0 mg/L respectively. The permit limits are most stringent from June to October when warm weather conditions are most conducive to potential eutrophication.



E. coli is an indicator for the possible presence of pathogens. There were no violations of permit limits in the 3rd 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 3rd Quarter's monthly average concentrations for total phosphorus were below permit limits.

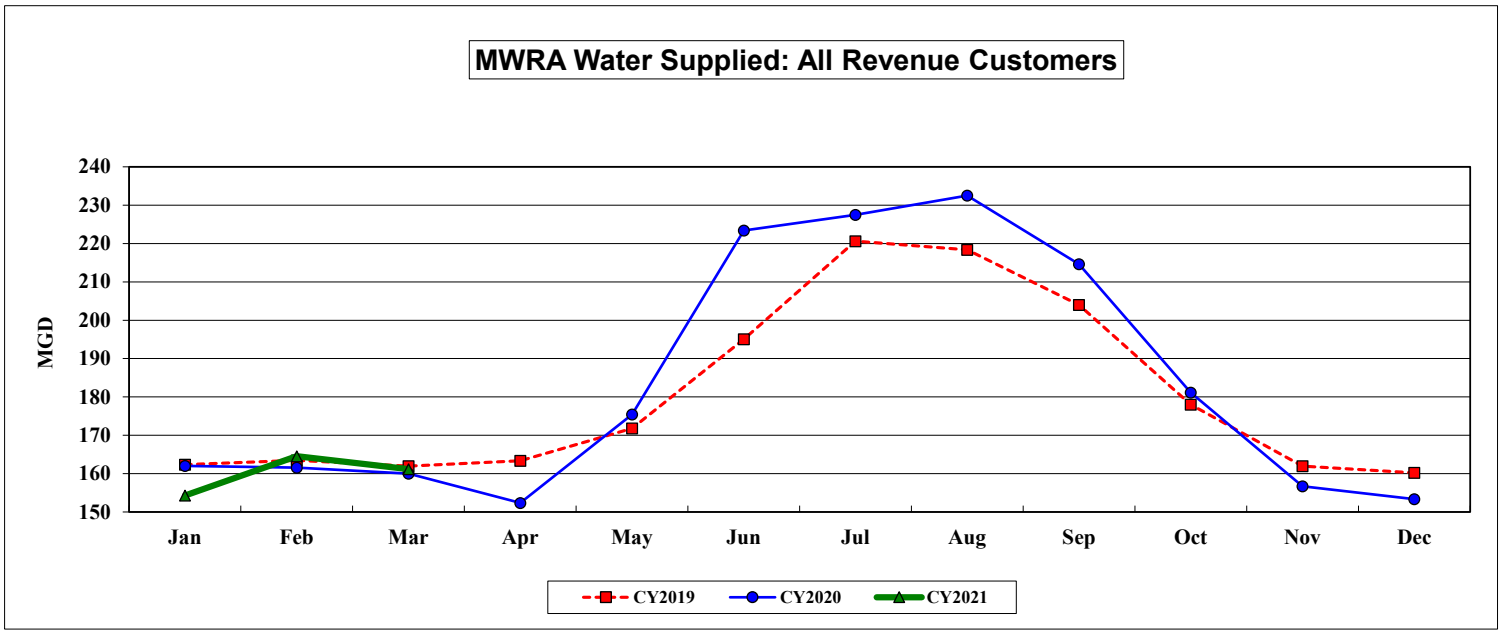


The graph depicts the rolling annual average monthly flow, measured in million gallons per day, exiting the plant.
The 12-month rolling average flows during the 3rd Quarter were below the permit limit.

COMMUNITY FLOWS AND PROGRAMS

Customer Water Use

3rd Quarter - FY21



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	248.011	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	161.187	183.462
CY2021	154.285	164.543	161.154	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	159.842	159.842

The March 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.

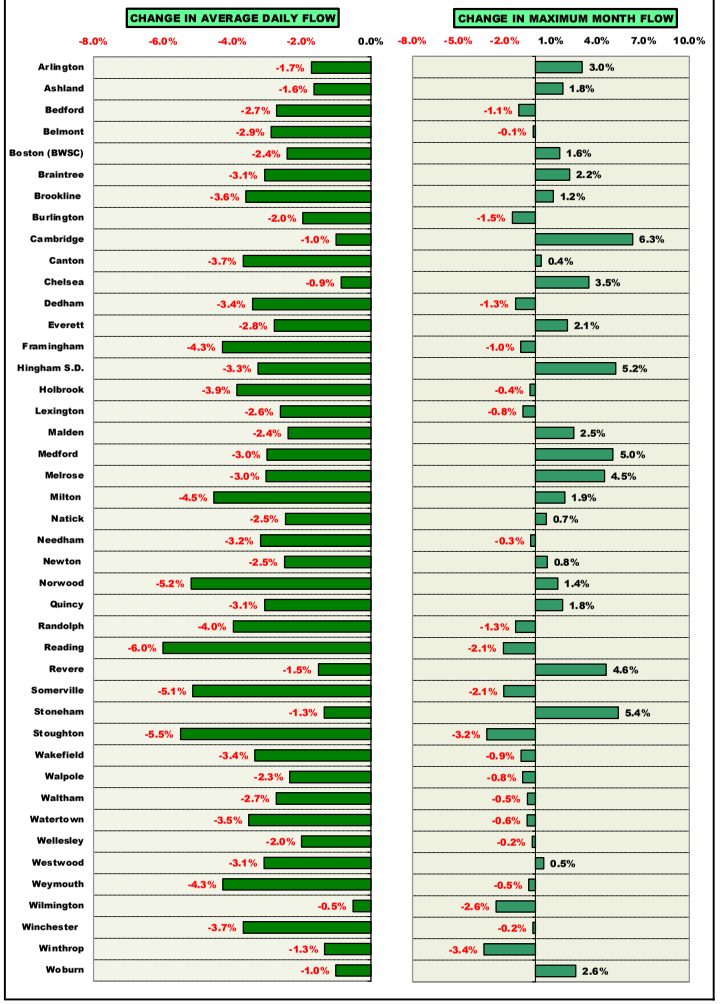
MWRA customers used an average of 159.8 mgd in the 3rd quarter (Jan-Mar 2021) of FY2021. This is a decrease of 1.3 mgd or 0.01% compared to the 3rd quarter of FY2020.

Community Wastewater Flows

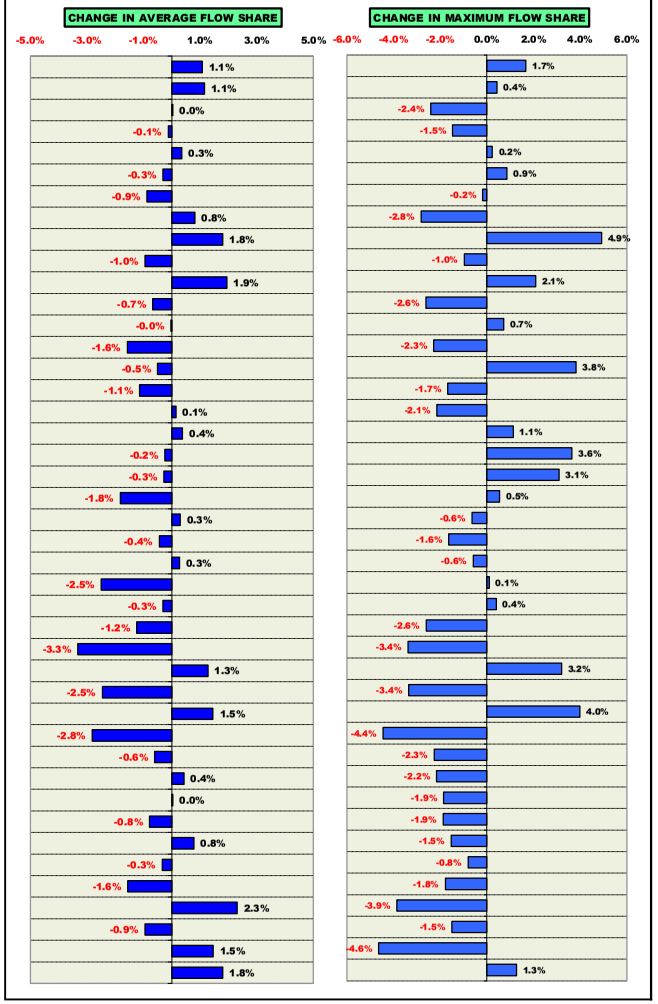
3rd Quarter - FY21

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

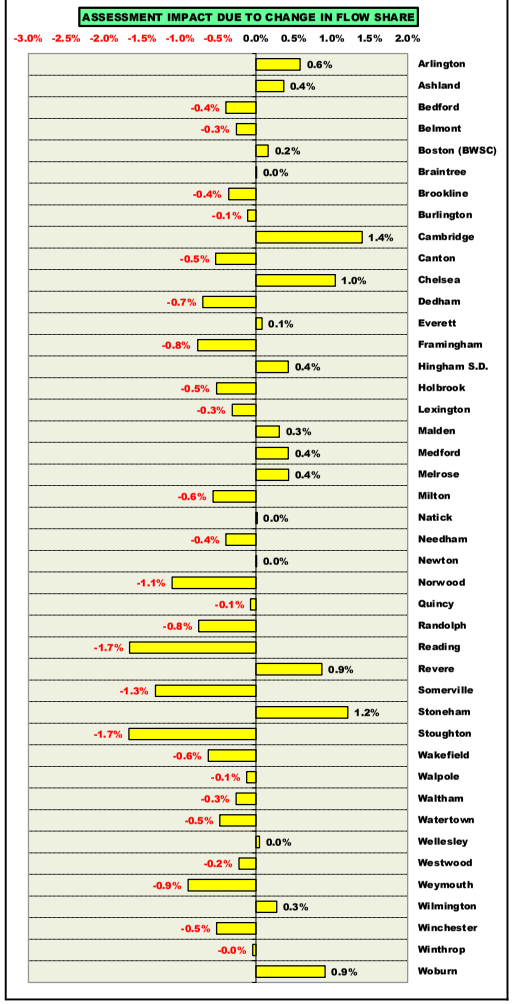
The flow components of FY2023 sewer assessments will be calculated using a 3-year average of CY2019 to CY2021 wastewater flows compared to FY2022 assessments that will use a 3-year average of CY2018 to CY2020 wastewater flows.



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 smoothes the impact of year-to-year changes in community flow share, but does not eliminate the long-term impact of changes in each community's relative contribution to the total flow.

[2] Based on actual flows for 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-March 2021 estimate based on the average of the three prior years.

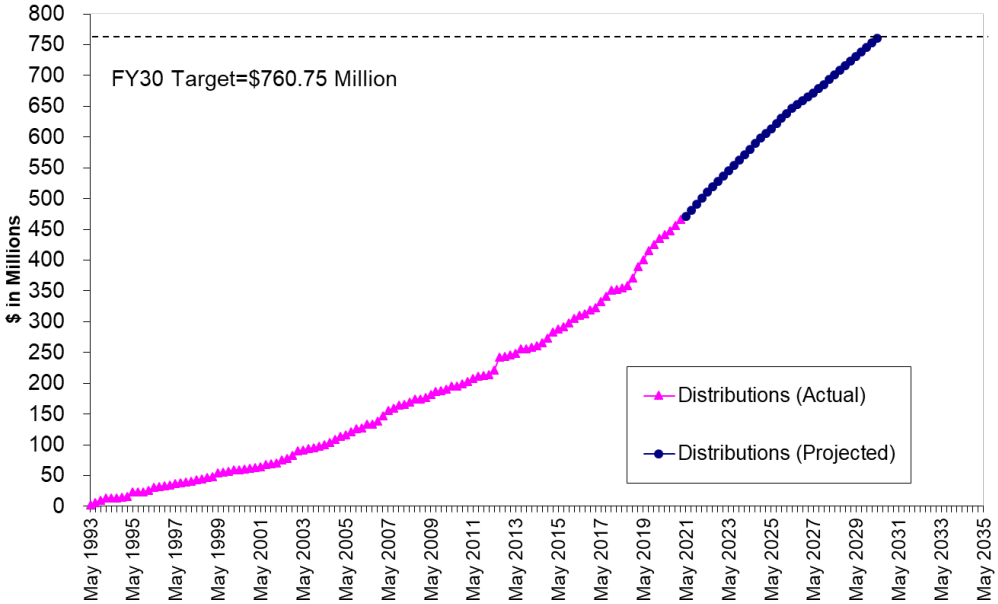
[3] Flow data is preliminary and subject to change pending additional MWRA and community review.

[4] Represents ONLY the impact on the total BASE assessment resulting from the changes in average and maximum wastewater FLOW SHARES.

Infiltration/Inflow Local Financial Assistance Program

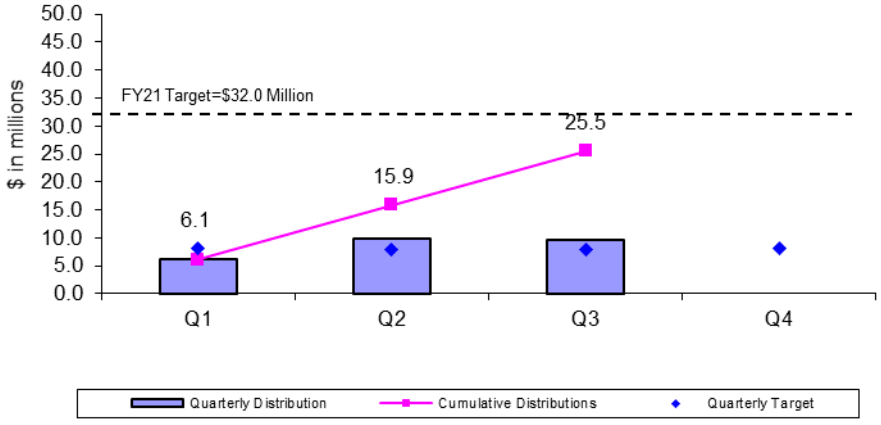
MWRA's Infiltration/Inflow (I/I) Local Financial Assistance Program provides $760.75 million in grants and interest-free loans (average of about $20 million per year from FY93 through FY30) to member sewer communities to perform I/I reduction and sewer system rehabilitation projects within their locally-owned 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 3rd Quarter of FY21, $9.6 million in financial assistance (grants and interest-free loans) was distributed to fund local sewer rehabilitation projects in Ashland, Braintree, Canton, Dedham, Everett, Reading, Stoughton, Waltham and Winthrop. Total grant/loan distribution for FY21 is $25.5 million. From FY93 through the 3rd Quarter of FY21, all 43 member sewer communities have participated in the program and $467 million has been distributed to fund 625 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.

FY21 Quarterly Distributions of Sewer Grant/Loans



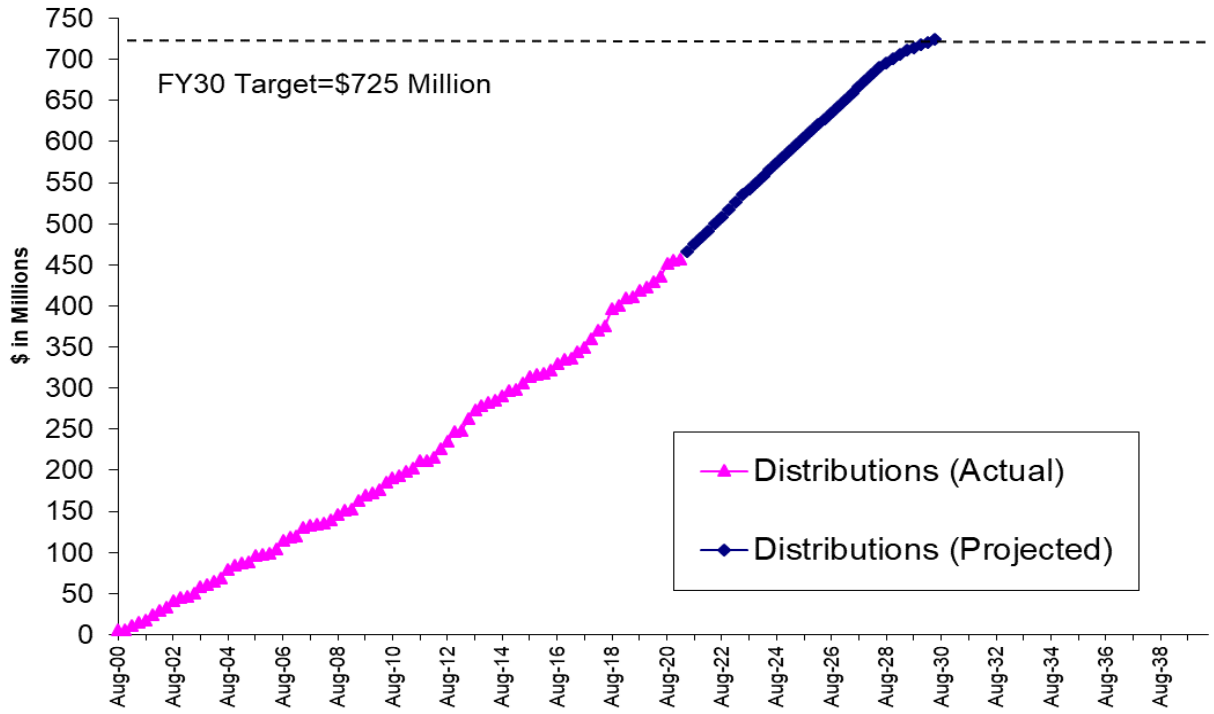
Community Support Programs

3rd Quarter – FY21

Local Water System Assistance Program

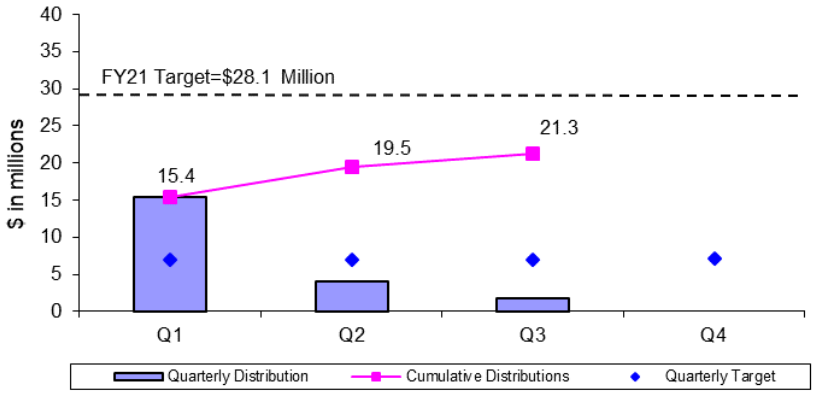
MWRA's Local Water System Assistance Programs (LWSAP) provides $725 million in interest-free loans (an average of about $24 million per year from FY01 through FY30) to member water communities to perform water main rehabilitation projects within their locally-owned water distribution systems. There have 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 3rd Quarter of FY21, $1.8 million in interest-free loans was distributed to fund local water projects in Everett and Weston. Total loan distribution for FY21 is $21.3 million. From FY01 through the 3rd Quarter of FY21, $458 million has been distributed to fund 480 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.

FY21 Quarterly Distributions of Water Loans



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.

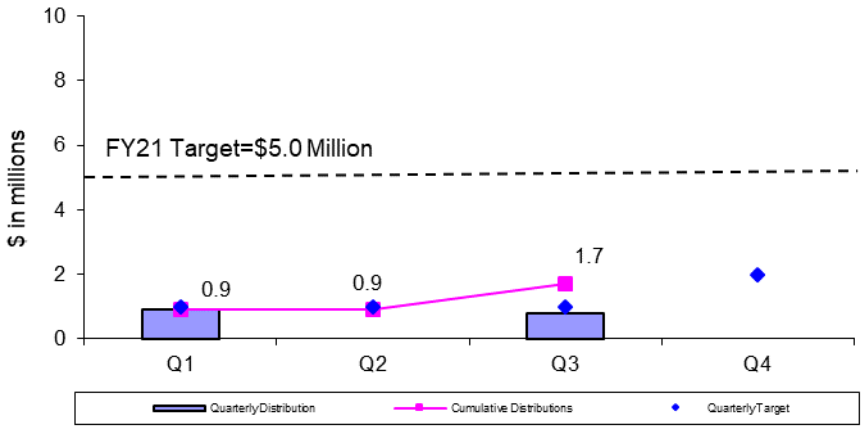
FY20 was the fourth year of the Lead Loan Program - MWRA made eight Lead Loans.

FY21 is the fifth year of the Lead Loan Program – MWRA made one Lead Loan on the 3rd quarter of FY21.

Summary of Lead Loans:

Winthrop in FY21	$0.8 Million
Chelsea in FY21	$0.3 Million
Winchester in FY21	$0.6 Million
Everett in FY20	$0.5 Million
Marlborough in FY20	$1.0 Million
Winchester in FY20	$0.6 Million
Winthrop in FY20	$0.7 Million
Weston in FY20	$0.2 Million
Everett in FY20	$1.0 Million
Somerville in FY20	$0.9 Million
Chelsea in FY20	$0.3 Million
Marlborough in FY19	$1.0 Million
Winthrop in FY19	$0.5 Million
Chelsea in FY19	$0.1 Million
Everett in FY19	$1.0 Million
Needham in FY18	$1.0 Million
Winchester in FY18	$0.5 Million
Revere in FY18	$0.2 Million
Winthrop in FY18	$0.3 Million
Marlborough in FY18	$1.0 Million
Newton in FY17	$4.0 Million
Quincy in FY17	$1.5 Million
Winchester in FY17	$0.5 Million
TOTAL	$18.4 Million

FY21 Quarterly Distributions of Lead Service Line Replacement Loans

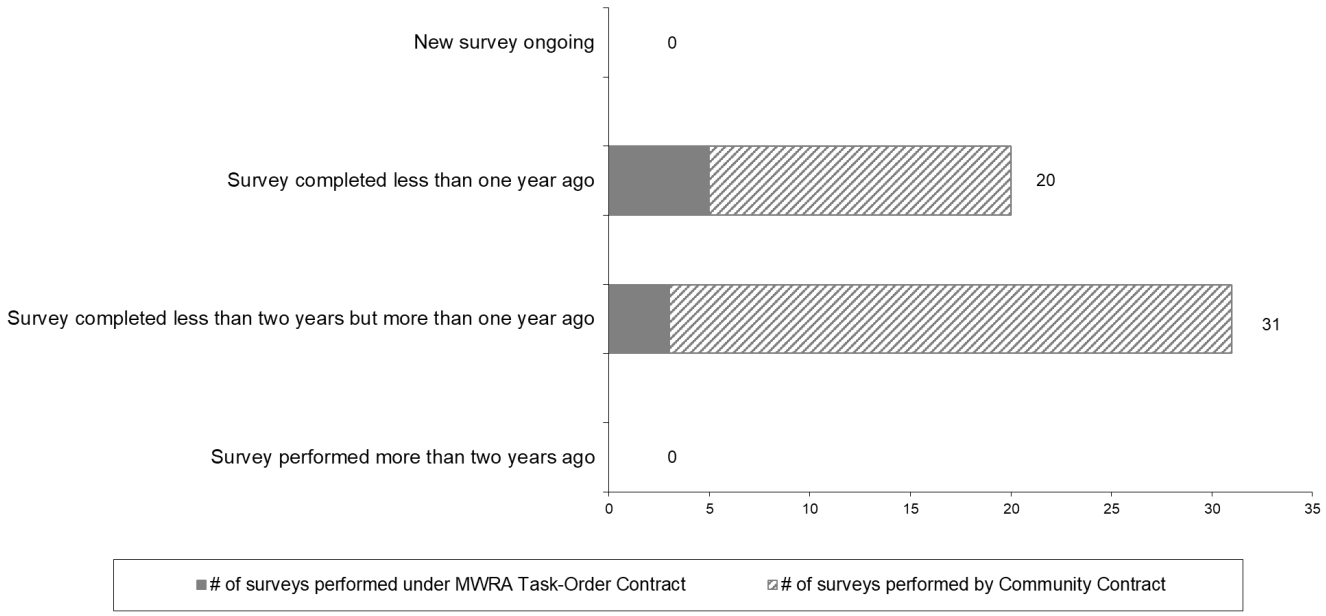


Community Support Programs

3rd Quarter – FY21

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 3rd Quarter of FY21, 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, toilet leak detection dye tabs, and instructions), 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	50,616	18,526	24,061		93,203
Low-Flow Fixtures (showerheads and faucet aerators)	10,000	416	576	831		1,823
Toilet Leak Detection Dye Tablets	_____	864	279	573		1,716

BUSINESS SERVICES

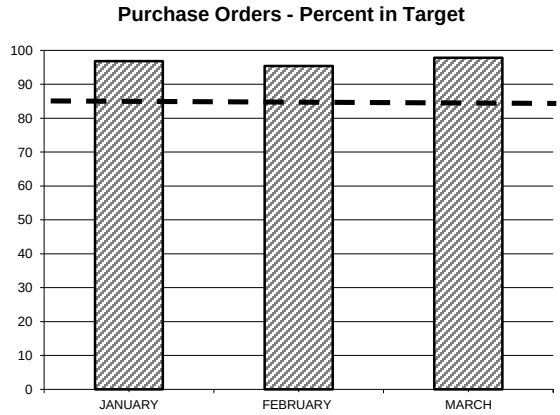
Procurement: Purchasing and Contracts

3rd Quarter - FY21

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

Outcome: Processed 97% of purchase orders within target; Average Processing Time was 3.77 days vs 4.32 days in Quarter 3 of FY20. Processed 47% (8 of 17) of contracts within target timeframes; Average Processing Time was 204 days vs. 198 days in Qtr 3 of FY20.

Purchasing



	No.	TARGET	PERCENT IN TARGET
$0 - $500	644	3 DAYS	94.8%
$500 - $2K	658	7 DAYS	98.3%
$2K - $5K	445	10 DAYS	97.9%
$5K - $10K	55	25 DAYS	98.1%
$10K - $25K	54	30 DAYS	88.8%
$25K - $50K	18	60 DAYS	83.3%
Over $50K	15	90 DAYS	93.3%

The Purchasing Unit processed 1889 purchase orders, 129 less than the 2018 processed in Qtr 3 of FY20 for a total value of $6,056,680 versus a dollar value of $10,904,790 in Qtr 3 of FY20.

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

Contracts, Change Orders and Amendments

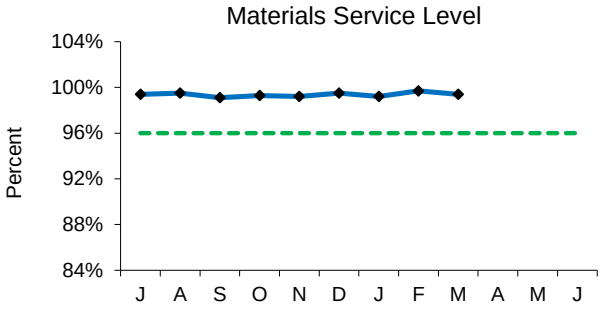
Procurement processed seventeen contracts with a value of $50,041,329 and thirteen amendments with a value of $966,302. Twenty one change orders were executed during the period. The dollar value of all non-credit change orders during Q3 FY21 was $2,402,847 and the value of credit change orders was ($621,016).

Nine contracts were not processed within the target timeframes. One contract was not processed within the target timeframe due to delays associated with the verification of the contractor's references. Several contracts were delayed due to changes to the specifications to address the newly developed COVID-19 health and safety standards.
A fourth contract was delayed due to required scope revisions necessitated by the newly developed COVID-19 health and safety standards in addition to the need to revise drawings. A fifth contract was not processed within the target timeframe due to the extended time required to approve the lengthy scope of work in addition to delays in vendor selection due to COVID-19 circumstances. A sixth contract was delayed due to delays by the consultant providing the necessary contract documents from its sub-consultants. Another contract was delayed due to delays in receiving signed E-tables from the consultant. An eighth contract was delayed due to the decision to put the project on hold due to COVID-19 circumstances. In addition, the scope was revised which contributed to further delays. The final contract was not processed within the target timeframe due to delays associated with scope revisions along with a time extension due to COVID-19 circumstances.

Staff reviewed 32 proposed change orders and 25 draft change orders.

Materials Management

3rd Quarter - FY21



The service level is the percentage of stock requests filled. The goal is to maintain a service level of 96%. Staff issued 7,998 (99.5%) of the 8,039 items requested in Q3 from the inventory locations for a total dollar value of $1,602,554.

Inventory Value - All Sites

Inventory goals focus on:

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

The FY21 goal is to reduce consumable inventory from the July '20 base level ($8.8 million) by 2.0% (approximately $176,369), to $8.6 million by June 30, 2021 (see chart below).

Items added to inventory this quarter include:

- Deer Island – gaskets, level switches, scanner cables, scanner flames, circuit breakers, alarm modules, USB cables and bushing drives for I&C; overload heater, circuit breakers, thermostats, interface modules and seals for Maintenance; toner cartridges for Lab; headsets webcams and disinfectant spray for entire plant.
- Chelsea – toners for MIS; hydraulic filters, diesel injectors and fuel filters for Fleet Service; degreasers, LED lamps and chopper pump for Work Coordination; blades and filters for FOD.
- Southboro – toner cartridges for Administration; chainsaw chain for Grounds Maintenance.

Property Pass Program:

- Ten audits were conducted during Q3.
- Scrap revenue received for Q3 amounted to $13,139. Year to date revenue received amounted to $43,386.
- Revenue received from online auctions held during Q3 amounted to $96,984. Year to date revenue received amounted to $242,447.

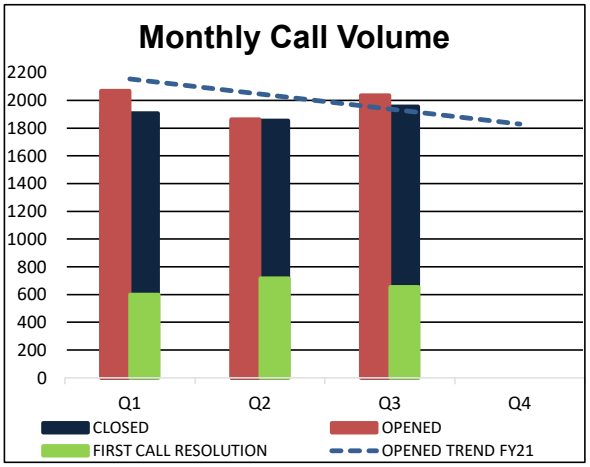
Items	Base Value July-20	Current Value w/o Cumulative New Adds	Reduction / Increase To Base
Consumable Inventory Value	8,818,459	8,717,246	-101,213
Spare Parts Inventory Value	8,797,946	9,093,642	295,696
Total Inventory Value	17,616,405	17,810,888	194,483

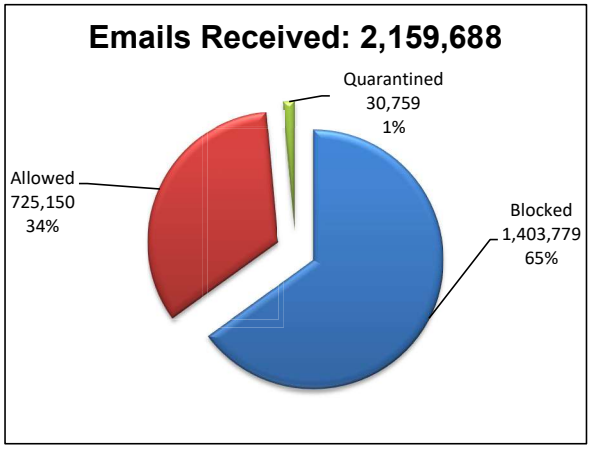
Note: New adds are items added at an inventory location for the first time for the purpose of servicing a group/department to meet their business needs/objectives.

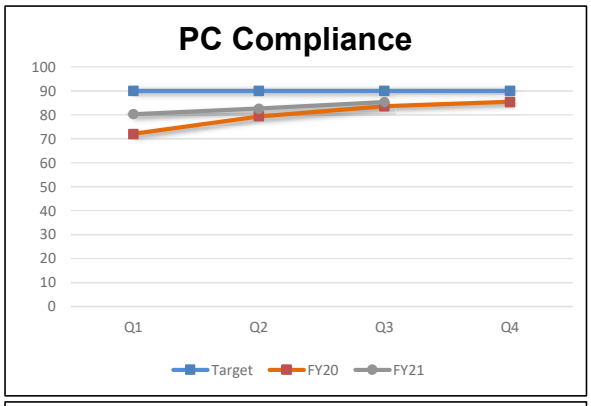
MIS Program

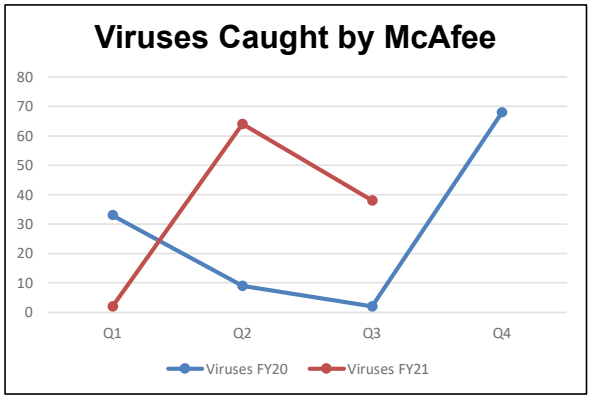
Third Quarter – FY21

Numbers & Statistics









Project Updates

Infrastructure & Security

AWIA Risk and Resiliency Assessment: Remediation work continued this quarter to resolve any identified vulnerabilities from the AWIA RRA; at the end of the quarter, 64% of the identified tasks were "Completed"; 3% were "In Progress"; and 33% were identified as longer term projects.

WiFi Expansion: The wireless expansion project is complete. Wireless access for MWRA mobile devices is now available in Chelsea, Charlestown Navy Yard and Southboro.

PBX (Telephone System) Upgrade: Bid was posted; identification and installation of replacement cabling for new VoIP phone system started.

Digital Signage: Installed proof of concept in the Chelsea Maintenance building. Refinement of scope and required products ongoing.

Cyber Security: The following was completed in Q2:

- Password security improvements were completed and job aid developed.
- Rollout of multi-factor authentication (MFA) to teleworkers completed.
- Cyber Security training continues. At the end of the quarter 95% of 900+ employees had started or completed their assignments. An additional 260 non-computer using employees will be trained in Q4.
- Updates to security infrastructure were installed with a focus on Microsoft Exchange

Other Software & Custom Applications

ECM/Electronic Document Management: Contract signed. Began collecting hardware and software installation requirements. Started Legacy Records' Management data migration analysis. Scheduled preliminary MIS Team kickoff meeting.

Legacy Contract Management: The remaining Contract types in the unsupported custom legacy Contracts Management system have been implemented in the Infor Lawson Contracts Management and Strategic Sourcing systems. These contracts were the smaller or rarer, lower-priority contract types (i.e. Railroad and Leak Detection).

Visitor Management: Multiple vendor installation and configuration meetings held. Database connection and email functions working. Basic configurations complete and a user demo has been scheduled in April to facilitate final business decisions.

Learning Management System: Project kickoff meeting was held with both HR and MIS training staff and MIS Application Support staff. Training sessions for the project team began in late March and will finish in early April.

COVID Self-Certification: Final testing and user documentation completed for both the web screen and the telephone call-in systems. Go-Live is planned for early April.

Discoverer to SAP-BO: Proof of Concept was completed successfully. Scope being drafted for migration of all remaining relevant Discoverer Workbooks.

Library, Record Center, & Training

Library: undertook 15 research requests, supplied 18 books for circulation, provided 15 articles, and 119 standards. The MWRA Library Portal supported 432 end-user searches. Research topics included NPDES Permit –fecal coliform colonies, historic value of fens gatehouse, crane/hoist manufacturing and installation research, and history of Mystic/Tufts University Reservoir.

Record Center (RC): The Record Center added 165 new boxes, handled 230 total boxes, and shredded eleven-65 gallon bins of confidential documentation on-site. Scanning paper analysis for building consolidation underway. The RC manager attended 3 RCB virtual meetings. Requested searches included city tunnel extensions and business related items dealing with agreements between city Marlboro and the MDC.

Training: In Q3, 49 online IT lessons were taken (66 YTD), by 10 employees (22 YTD), spanning 59 hours (92 YTD). The Intranet IT Training pages were updated to identify new LinkedIn Learning recommended IT classes and announce Learning Management System is coming soon.

Legal Matters

3rd Quarter - FY21

PROJECT ASSISTANCE

Real Estate, Contract, Environmental and Other Support:

- **8(m) Permits:** Reviewed one hundred and four (104) 8(m) permits. Reviewed Direct Connect Permit 20 09 186DC - Fens Gatehouse.

- **Real Property:** Reviewed Chelsea Lease relative to option to purchase 2 Griffin Way property in Chelsea and reviewed property rights chain of title documents and title certification for the 2 Griffin Way property. Reviewed survey for Sudbury Aqueduct in area of 251 Grant Avenue and 693 Beacon Street in Newton. Recorded Order of Conditions DEP 059-1486 (Quincy) related to Braintree-Weymouth Pump Station Improvements – MWRA Contract 7435 at the Norfolk County Registry of Deeds. Recorded release of easements by MWRA related to certain easements burdening Alta Langwood, LLC's property in Stoneham and release of easements by Alta Langwood, LLC for certain easements burdening MWRA's Spot Pond Covered Storage property in Stoneham at Middlesex South Registry of Deeds. Reviewed existing water preservation restriction language related to a parcel of land in Hubbardston, MA (W-001230). Reviewed MBTA license (MBTA 16712) for MWRA's Walnut Hill project in Somerville (MWRA Contract 7483 – Walnut St. Bridge Pipe Restraint Replacement). Reviewed and signed certificate as to title for project site required as part of application for state financial assistance offered through drinking water state revolving fund (DWSRF) - 6691 - related to MWRA's Northern Intermediate High Water Pipeline Section 89 Replacement Project – MWRA Contract No. 7117. Reviewed MWRA's property rights for Chelsea Headworks. MWRA's property rights in the location of Poplar Street in Somerville relative to work being performed by the City of Somerville, and MWRA's property rights in the area of its Carroll Water Treatment Plant in Marlborough relative to the City of Marlborough's proposed installation of emergency water pumps at its Cedar Hill Pump Station. Reviewed title report for 251 Grant Avenue and 693 Beacon Street in the City of Newton relative to the Sudbury Aqueduct property rights in that location. Reviewed MWRA's property rights related to storm drains in Moakley Park and Pleasure Bay area in South Boston, MWRA's property rights for Commercial Point site in Dorchester, property rights for the Hultman Aqueduct in Weston related to proposed development, property rights in the area of MWRA's Southborough facilities, and property rights in the area of MWRA's shaft 7 relative to work being performed by Boston College, and MWRA's Deer Island property interests in the area of the fishing pier parking lot. Reviewed property rights, title documents and processes for acquisition of property interests to support MWRA's Tunnel Redundancy Program.

- **NPDES:** Reviewed co-permittee language in POTW NPDES permits and comments and dilution requirements relative to DITP's NPDES permit.

- **Boston Harbor Case:** Reviewed Court requirements relative to reservation of space for Secondary Battery D.

- **Water Supply Agreements:** Reviewed water supply agreement between MWRA and the Town of Burlington.

- **Legislation:** Reviewed Governor's amendments in Senate Bill 30 to Senate Bill 9 (An Act creating a next-generation roadmap for Massachusetts Climate Policy) relative to sections 56-60.

- **Public Records Requests:** During the months of January, February and March MWRA received and responded to one hundred eighty-nine (189) public records requests.

LABOR, EMPLOYMENT AND ADMINISTRATIVE

New Matters
Four demands for arbitration were filed.

Significant Developments

The state Department of Labor Relations reversed a hearing officer's decision previously dismissing as untimely a prohibited practice charge filed by MOSES regarding MWRA's implementation of the employee contribution toward the Paid Family and Medical Leave state program. The case has been placed in abeyance pending resolution of another case regarding the Commonwealth's implementation of the contribution.

Matters Concluded

Received a dismissal from the MCAD affirming lack of probable cause of a charge of discrimination on the basis of age after review of a written appeal.

LITIGATION/CLAIMS

New lawsuits/claims:

Claim: A motor vehicle accident claim and demand from Ziola Granados, and her two minor children, was received in March 2021.

Janet DiGregorio et al. v. Griffin Way, LLC, Suffolk Superior Court C.A. 20-02429-K: On March 30, 2021, defendant Griffin Way, LLC served a Motion For Leave to File a Third Party Complaint against MWRA in a personal injury lawsuit.

Significant Developments

(Former employee) v. MWRA, C.A. No.19-CV- 01847 Plaintiff's counsel conducted depositions of MWRA staff during the last week of February and in March, and the parties attended mediation at the end of March.

MWRA v. NEL Corp., Dewberry, et al., Suffolk Superior Court C.A. No. 18-CV 01156-BLS1: After attending mediation during the months of January and February, and subject to Board approval, the parties reached a settlement in the above litigation, which arose out of the Section 4 Webster Avenue Pipe and Utility Bridge Replacement Project. The settlement was approved by MWRA's Board of Directors at its March 17, 2021 meeting. It is expected that the parties will executed a formal Settlement Agreement and file a Stipulation of Dismissal with the court within the next 60 days.

Closed Cases: There are no closed cases to report.
Closed Claims: There are no closed claims to report.

Subpoenas During the Third Quarter of FY 2021, no subpoenas were received and no subpoenas were pending at the end of the Third Quarter FY 2021.

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 March 2021	As of Dec 2020	As of Sept 2020
Construction/Contract/Bid Protest (other than BHP)	1	1	2
Tort/Labor/Employment	4	3	3
Environmental/Regulatory/Other	2	2	2
Eminent Domain/Real Estate	0	0	0
Total	**7**	**6**	**7**
Other Litigation matters (restraining orders, etc.)	2	2	2
Total – all pending lawsuits	**9**	**8**	**9**
Claims not in suit: 1. Granados MVA Claim	1	0	0
Bankruptcy	1	1	1
Wage Garnishment	2	2	2
TRAC/Adjudicatory Appeals	0	0	0
Subpoenas	0	0	0
TOTAL – ALL LITIGATION MATTERS	**13**	**11**	**12**

TRAC/MISC.

New Appeals: There are no new appeals in the 3rd Quarter FY 2021.

Settlement by Agreement of Parties There are no Settlement by Agreement of Parties in the 3rd Quarter FY21.

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 3rd Quarter FY 2021.

Final Decisions There are no Final Decisions issued in the 3rd Quarter FY 2021.

INTERNAL AUDIT AND CONTRACT AUDIT ACTIVITIES
3rd Quarter - FY21

Highlights

During the 3rd quarter FY21, Internal Audit (IA) completed a review of Overhead Crane Inspections to determine if the MWRA is complying with OSHA and industry standards inspection requirements. IA noted certain cranes were overdue for their annual inspection. IA has provided several recommendations relating to crane asset management, crane inspection management and safety compliance. Support to staff continues on the Return to Work Guidance and an internal review of safety training is progressing.

In addition, IA completed preliminary reviews of 3 professional service contracts, a review of costs incurred on the new HEEC cable as the project nears preparation of the tariff filing. IA issued 35 indirect cost rate letters to professional service consultants while a review of incurred costs for two of them is in process. Management advisory services included support on the MWRA's leases and an ongoing investigation related to the cost of office supplies relative to the state contract.

Status of Recommendations

During FY21, 8 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
Fleet Services Process Review (6/30/18)	1	4	5
Fuel Use & Mileage Tracking (12/31/18)	3	5	8
Asset Tracking – Fleet Data Verification (8/21/19)	2	14	16
Fleet Services Non-Plated Equipment Inspections (3/30/20)	9	6	15
Total Recommendations	*15*	*29*	*44*

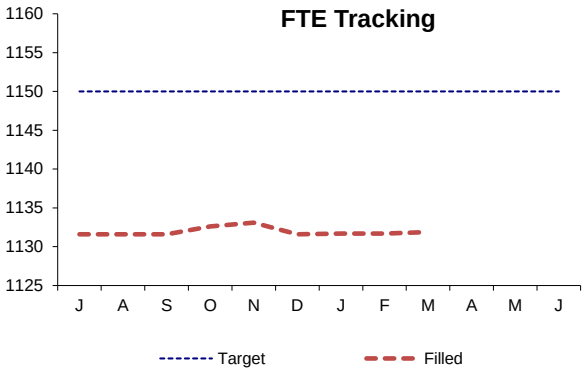
Cost Savings

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.

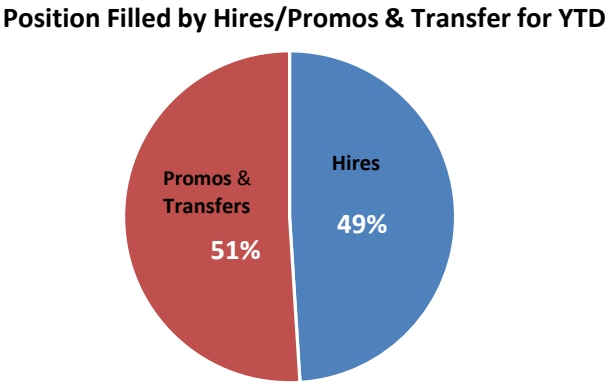
Cost Savings	FY17	FY18	FY19	FY20	FY21 Q3	TOTALS
Consultants	$272,431	$118,782	$262,384	$643,845	**$516,829**	$1,814,271
Contractors & Vendors	$3,037,712	$1,323,156	$3,152,884	$2,097,729	**$1,467,023**	$11,078,505
Internal Audits	$224,178	$204,202	$210,063	$212,517	**$160,171**	$1,011,131
Total	**$3,534,321**	**$1,646,140**	**$3,625,331**	**$2,954,091**	**$2,144,023**	**$13,903,907**

OTHER MANAGEMENT

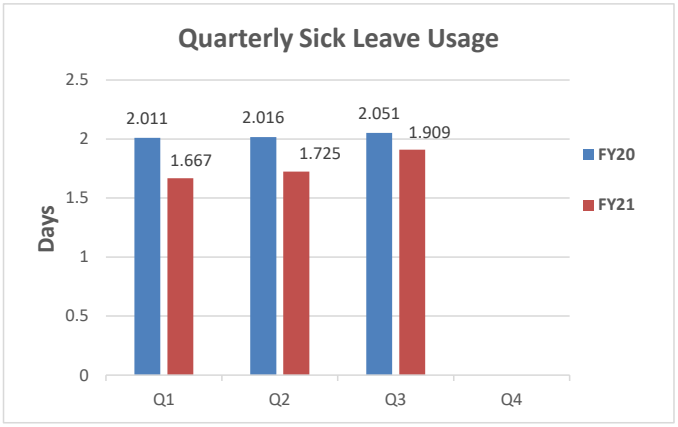
Workforce Management
3rd Quarter - FY21



FY21 Target for FTE's = 1150
FTE's as of March 2020 = 1131.9
Tunnel Redundancy as of March 2020 = 9.0



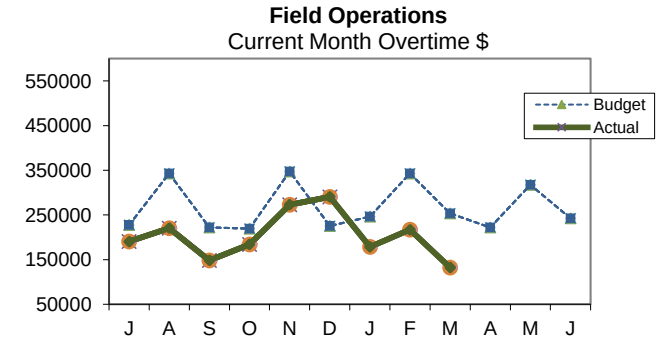
	Pr/Trns	Hires	Total
FY19	112 (60%)	76 (40%)	188
FY20	84 (59%)	58 (41%)	142
FY21	54 (51%)	52 (49%)	106



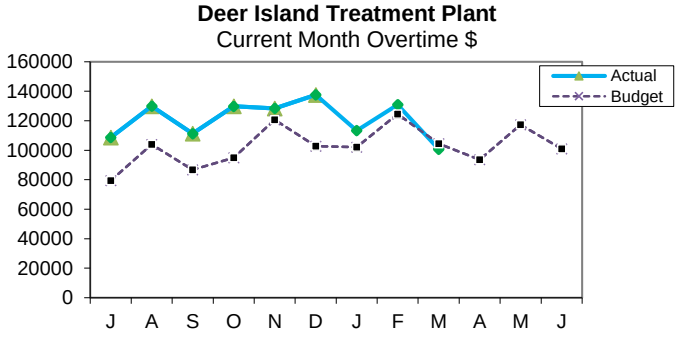
	Number of Employees	YTD (usage to date)	Annualized Total	Annual FMLA %	FY20
Admin	139	4.08	5.44	14.5%	6.48
Aff. Action	7	2.56	3.42	0.0%	6.42
Executive	4	2.62	3.42	0.0%	1.81
Finance	35	2.56	3.02	0.0%	4.09
Internal Audit	7	0.76	1.95	0.0%	5.08
Law	13	4.27	1.77	12.0%	6.71
OEP	4	0.83	1.48	0.0%	1.00
Operations	923	5.77	0.79	20.8%	7.27
Tunnel Redundancy	9	1.12	0.42	9.0%	4.93
Public Affairs	11	0.80	0.31	0.0%	7.96
MWRA Avg	**1152**	**3.53**	**7.07**	**19.7%**	**6.94**

Sick leave usage in 3rd Quarter of FY21 is lower than usage in the 3rd Quarter of FY20.

Percent of sick leave usage for FY21 attributable to Family and Medical Leave Act (FMLA) is 19.7%



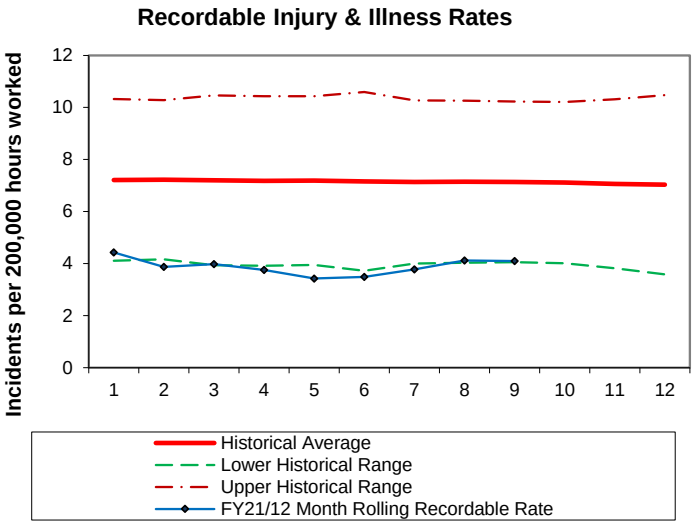
Total Overtime for Field Operations for the third quarter of FY21 was $528k which is ($313k) under budget. Emergency overtime was $227k, which is ($221k) under budget. Snow Removal totaled $92k, Rain Events totaled $88k and Emergency Maintenance was $32k. Coverage overtime was $170k which is $18k over budget, reflecting the quarter's shift coverage requirements. Planned overtime was $131k, which is ($107k) under budget with combined spending of $36k for all Maintenance, $12k for Telecom Oversight & $54k for Half Plant.

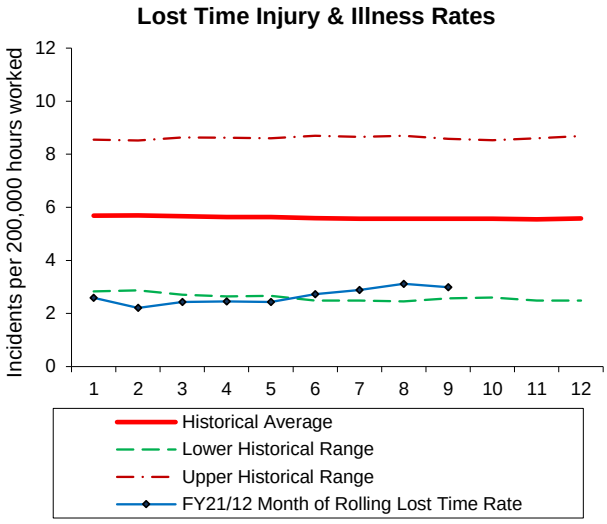


Deer Island's total overtime expenditure for the third quarter was $345K, which was $14K or 4.2% over budget. In the third quarter, Deer Island experienced higher than anticipated shift coverage of $66K. This was offset by lower than anticipated planned/unplanned overtime of ($43K) and storm coverage of ($9K). YTD Deer Island's overtime spending is $1.1M, which is $171K or 18.6% over budget due to higher than anticipated shift coverage of $158K; and storm coverage of $19K. This is offset by lower planned/unplanned overtime of ($6K). During October, Eversource conducted 4 days of annual maintenance on the HEEC cable which accounted for $27K of the overspending for the year. COVID-19 related OT has accounted for $70K of the overspending for the fiscal year.

Workplace Safety

3rd Quarter - FY21





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 FY21. 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

	3rd Quarter Information		
	New	Closed	Open Claims
Lost Time	2	14	52
Medical Only	17	12	25
Report Only	14	14	
	QYTD		FYTD
Regular Duty Returns	3		10
Light Duty Returns	0		0
Indemnity payments as of March 31 2021 included in open claims listed			23

COMMENTS:

Regular Duty Returns

Jan	3	Employees returned to full duty/no restrictions
Feb	0	Employees returned to full duty/no restrictions
March	0	Employees returned to full duty/no restrictions

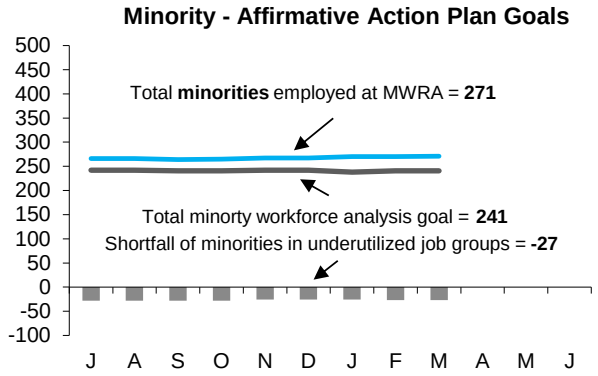
Light Duty Returns

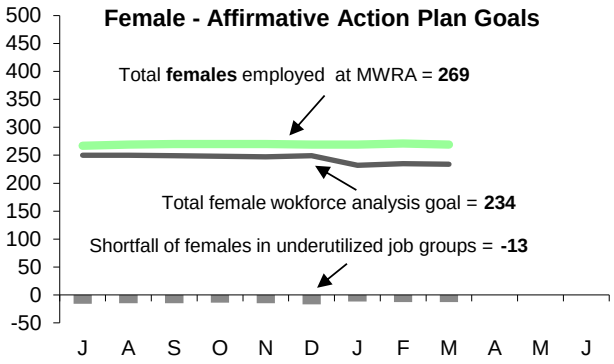
Jan	N/A
Feb	N/A
March	N/A

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

3rd Quarter - FY21





Highlights:

At the end of Q3 FY21, 5 job groups or a total of 27 positions are underutilized by minorities as compared to 5 job groups for a total of 28 positions at the end of Q3 FY20; for females 4 job groups or a total of 13 positions are underutilized by females as compared to 8 job groups or a total of 19 positions at the end of Q3 FY20. During Q2, 5 minorities and 4 females were hired. During this same period 1 minority and 2 females were terminated.

Underutilized Job Groups - Workforce Representation

Job Group	Employees as of 3/31/2021	Minorities as of 3/31/2021	Achievement Level	Minority Over or Under Underutilized	Females As of 3/31/2021	Achievement Level	Female Over or Under Underutilized
Administrator A	23	3	1	2	12	6	6
Administrator B	24	0	7	-7	6	5	1
Clerical A	30	10	6	4	27	23	4
Clerical B	24	8	7	1	4	7	-3
Engineer A	84	25	19	6	21	20	1
Engineer B	60	20	16	4	13	9	4
Craft A	112	16	21	-5	0	4	-4
Craft B	141	22	19	3	3	3	0
Laborer	73	22	17	5	5	3	2
Management A	93	22	29	-7	33	19	14
Management B	43	11	9	2	9	10	-1
Operator A	65	4	9	-5	2	2	0
Operator B	69	21	9	12	3	2	1
Professional A	29	4	7	-3	19	13	6
Professional B	172	51	41	10	82	73	9
Para Professional	49	15	10	5	22	22	0
Technical A	55	15	13	2	7	12	-5
Technical B	6	2	1	1	1	1	0
Total	**1152**	**271**	**241**	**57/-27**	**269**	**234**	**48/-13**

AACU Candidate Referrals for Underutilized Positions

Job Group	Title	# of Vac	Requisition Int. / Ext.	Promotions /Transfers	AACU Ref. External	Position Status
Administrative B	Dep Dir Design&Constr Tunnel	1	Int./Ext.	0	0	NH = WM
Administrative B	Deputy Director, MIS	1	Int./Ext.	0	0	NH = WM
Craft A	Fencing Foreman	1	Int.	1	0	Promo = WM
Craft A	Trades Foreman (Licensed)	1	Int.	1	0	Promo = BM
Craft A	Foreman Shaft 8 Lower Garage	1	Int.	1	0	Promo = WM
Craft A	Unit Supervisor - HVAC	1	Int.	1	0	Promo = WM
Management A	MGR, Human Resources Operations	1	Int.	1	0	Promo = WF
Management A	Manager, Emergency Planning	1	Int./Ext.	0	0	NH = WM
Management B	Area Manager, Secondary	1	Int.	1	0	Promo = BM
Management B	Project Manager	1	Int.Ext.	1	0	Promo = WM
Operators A	Area Supervisor - Water	1	Int./Ext.		0	NH = WM
Operators A	Area Supervisor - Wastewater	1	Int./Ext.	1	0	Promo = WM
Technical A	Communication & Control Tech	1	Int./Ext.	1	0	Promo = AM

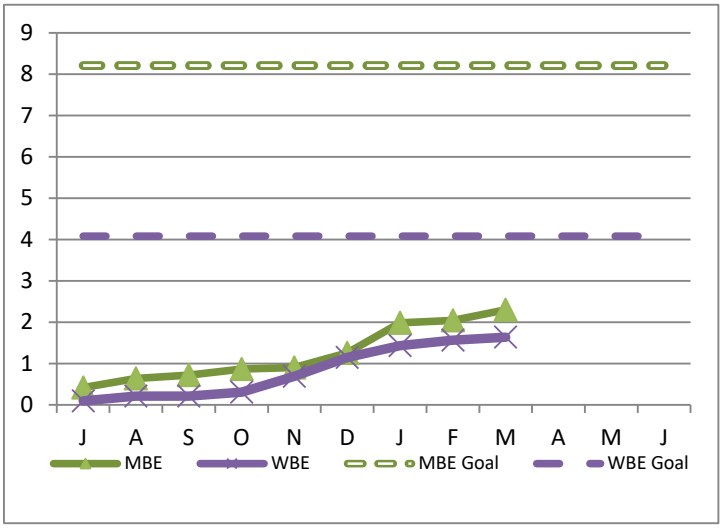
MBE/WBE Expenditures

3rd Quarter - FY21

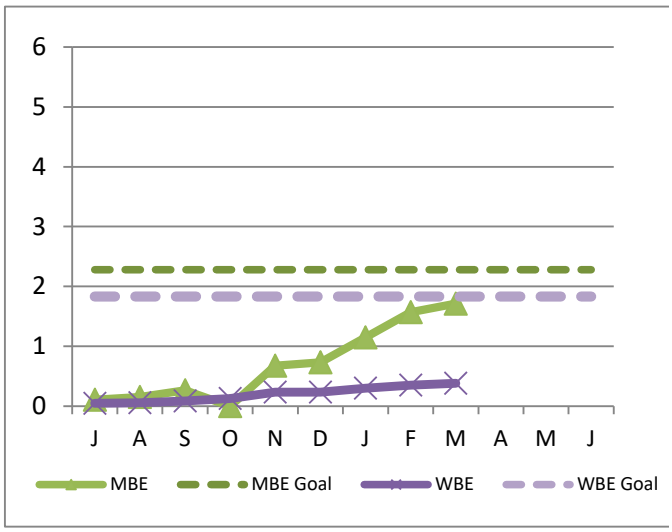
MBE/WBE targets are determined based on annual MWRA expenditure forecasts in the procurement categories noted below. The goals for FY21 are based on 85% of the total construction and 75% of the total professional projected spending for the year. Certain projects have been excluded from the goals as they have no MBE/WBE spending goals.

MBE/WBE percentages are the results from a 2002 Availability Analysis, and MassDEP's Availability Analysis. As a result of the Availability Analyses, the category of Non-Professional Services is included in Goods/Services. Consistent with contractor reporting requirements, MBE/WBE expenditure data is available through March.

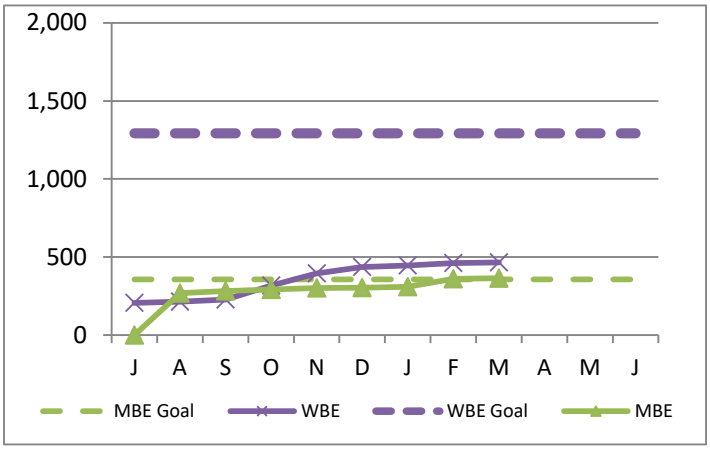
Construction



Professional Services



Goods/Services



FY21 spending and percentage of goals achieved, as well as FY20 performance are as follows:

MBE					WBE			
FY21 YTD		FY20			FY21 YTD		FY20	
Amount	Percent	Amount	Percent		Amount	Percent	Amount	Percent
2,299,780	28.0%	3,641,145	45.6%	Construction	1,636,467	40.1%	2,446,388	61.7%
1,713,498	75.2%	2,322,007	111.9%	Prof Svcs	382,869	20.9%	942,850	56.6%
364,505	102.2%	340,656	94.1%	Goods/Svcs	465,353	36.0%	993,375	81.3%
4,377,783	40.4%	6,303,808	60.5%	**Totals**	2,484,689	34.5%	4,382,613	63.9%

FY21 MBE/WBE dollar totals do not include MBE and WBE payments to prime contractors and consultants.

MWRA FY21 CEB Expenses
3rd Quarter - FY21

As of March 2021, total expenses are $554.7 million, $8.3 million or 1.5% lower than budget, and total revenue is $594.3 million, $541k over budget, for a net variance of $8.8 million.

Expenses –

Direct Expenses are $174.2 million, $8.9 million or 4.9% under budget.

- **Wages & Salaries** are under budget by $4.1 million or 5.0%. Regular pay is also $4.1 million under budget, due to lower head count, and timing of backfilling positions. YTD through March, the average Full Time Equivalent (FTE) positions was 1,139, twenty-four fewer than the 1,163 FTE's budgeted.
- **Utilities** expenses are $1.0 million under budget or 6.0%, primarily due to under spending for Electricity of $966k of which $625k is from Deer Island and $240k is from Water Operations, both due to favorable pricing and lower demand. Lower flows at Deer Island (7.1% under budget) contributed to lower electricity demand and as a result, purchased power at Deer Island was 2.2% under budget. Water Operations is under budget primarily due to lower rates and quantity.
- **Professional Services** expenses are $883k under budget or 13.8%, primarily due to under spending for Computer Systems Consultants of $957k due to timing of several MIS projects, Engineering services of $389k, and Legal expenses of $151k, partially offset by overspending on Lab Testing and Analysis of $543k due to the Biobot engagement.
- **Other Services** expenses are $884k under budget or 4.8%, primarily due to under spending for Sludge Pelletization of $796k due to lower YTD quantities, Grit Screen Removal of $111k also due to lower YTD quantities, and Telecommunications of $93k, partially offset by higher spending of $251k for Other Services.
- **Maintenance** expenses are $840k under budget or 3.5%, primarily due to the timing of projects.
- **Overtime** expenses are $565k under budget or 14.9%, primarily due to reduced need for emergency and planned overtime for maintenance in Field Operations, partially offset by higher spending on DI for shift coverage including Covid-19 coverage and unplanned maintenance including HEEC maintenance.

Indirect Expenses are $43.9 million, $632k over budget or 1.5%. The HEEC cable costs totaled $8.5 million through March, $3.1 million above budget as revised costs for the new HEEC Cable associated with FY20 were recognized in November. Watershed Reimbursements were $1.6 million under budget reflecting lower operating costs and combined with Pension Expense which was $1.0 million below budget partially offset HEEC overspending. The pension contribution requirement was revised in response to the most recent actuarial valuation report's funding schedule which reduced pension expense by $1.0 million for FY21.

Debt Service Expenses totaled $336.6 million, matching budget after the transfer of $11.3 million to the defeasance account. The transfer was funded by lower than budget variable interest expense of $7.4 million due to lower interest rates combined with lower SRF spending of $3.6 million due to bond issue timing.

Revenue and Income –

Total Revenue and Income is $594.3 million, or $541k over budget. Other Revenue of $6.3 million was over budget by $1.1 million, reflecting higher energy revenue of $463k, income from the disposal of equipment of $281k, and miscellaneous revenue of $163k. This revenue gain was reduced by lower investment income. Investment income totaled $3.1 million, $635k under budget due to lower than budgeted interest rates (0.49% vs 0.71%) partially offset by higher than budgeted average balances.

	Mar 2021 Year-to-Date			
	Period 9 YTD Budget	Period 9 YTD Actual	Period 9 YTD Variance	%
EXPENSES				
WAGES AND SALARIES	$ 81,406,459	$ 77,332,636	$ (4,073,823)	-5.0%
OVERTIME	3,796,046	3,231,462	(564,584)	-14.9%
FRINGE BENEFITS	16,500,240	16,163,709	(336,531)	-2.0%
WORKERS' COMPENSATION	1,857,491	1,490,888	(366,603)	-19.7%
CHEMICALS	9,068,455	8,704,539	(363,916)	-4.0%
ENERGY AND UTILITIES	17,594,028	16,544,396	(1,049,632)	-6.0%
MAINTENANCE	24,057,122	23,217,402	(839,720)	-3.5%
TRAINING AND MEETINGS	289,029	128,295	(160,734)	-55.6%
PROFESSIONAL SERVICES	6,402,671	5,520,164	(882,507)	-13.8%
OTHER MATERIALS	3,732,166	4,317,889	585,723	15.7%
OTHER SERVICES	18,458,374	17,574,521	(883,853)	-4.8%
TOTAL DIRECT EXPENSES	**$ 183,162,081**	**$ 174,225,901**	$ (8,936,174)	**-4.9%**
INSURANCE	$ 2,294,414	$ 2,453,793	$ 159,379	6.9%
WATERSHED/PILOT	21,897,253	20,330,023	(1,567,230)	-7.2%
HEEC PAYMENT	5,411,400	8,483,942	3,072,542	56.8%
MITIGATION	1,269,258	1,237,044	(32,214)	-2.5%
ADDITIONS TO RESERVES	1,361,308	1,361,308	-	0.0%
RETIREMENT FUND	11,000,000	10,000,000	(1,000,000)	-9.1%
POST EMPLOYEE BENEFITS	-	-	-	---
TOTAL INDIRECT EXPENSES	**$ 43,233,633**	**$ 43,866,110**	$ 632,477	**1.5%**
STATE REVOLVING FUND	$ 70,331,239	$ 66,771,953	$ (3,559,286)	-5.1%
SENIOR DEBT	191,128,587	190,774,371	(354,216)	-0.2%
DEBT SERVICE ASSISTANCE	-	-	-	---
CURRENT REVENUE/CAPITAL	-	-	-	---
SUBORDINATE MWRA DEBT	72,746,900	72,746,900	-	0.0%
LOCAL WATER PIPELINE CP	-	-	-	---
CAPITAL LEASE	2,412,795	2,412,795	-	0.0%
VARIABLE DEBT	-	(7,374,605)	(7,374,605)	---
DEFEASANCE ACCOUNT	-	11,288,106	11,288,106	---
DEBT PREPAYMENT	-	-	-	---
TOTAL DEBT SERVICE	**$ 336,619,521**	**$ 336,619,521**	**$ -**	**0.0%**
TOTAL EXPENSES	**$ 563,015,235**	**$ 554,711,532**	**$ (8,303,697)**	**-1.5%**
REVENUE & INCOME				
RATE REVENUE	$ 577,038,750	$ 577,038,750	$ -	0.0%
OTHER USER CHARGES	6,678,180	6,782,813	104,633	1.6%
OTHER REVENUE	5,187,243	6,259,033	1,071,790	20.7%
RATE STABILIZATION	1,125,000	1,125,000	-	0.0%
INVESTMENT INCOME	3,753,820	3,118,666	(635,154)	-16.9%
TOTAL REVENUE & INCOME	**$ 593,782,993**	**$ 594,324,262**	**$ 541,268**	**0.1%**

Cost of Debt
3rd Quarter – FY21

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 ($3.44 billion)	3.38%
Variable Debt ($330.7million)	0.50%
SRF Debt ($843.7 million)	1.57%
Weighted Average Debt Cost ($4.62 billion)	2.84%

Most Recent Senior Fixed Debt Issue
August 2020

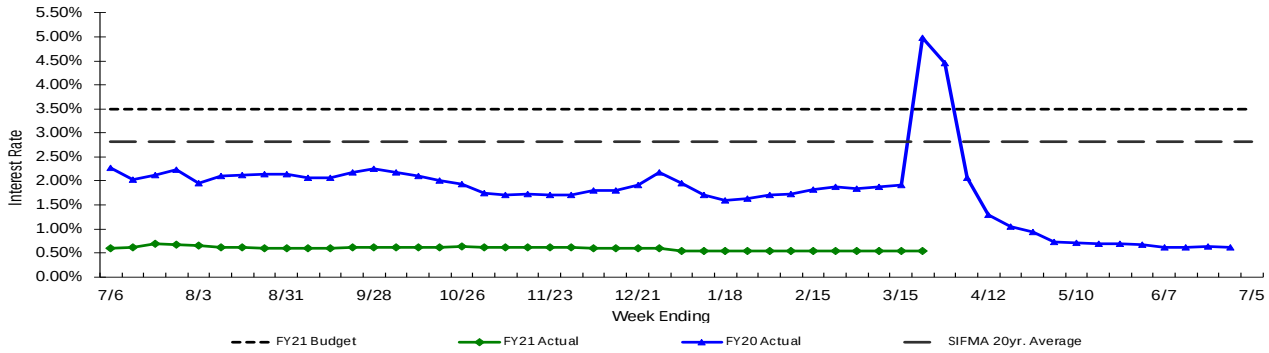
2020 Series B ($160.0 million) 2.33 %

Bond Deal	1995B	1996A	1997D	1998AB	2000A	2000D	2002B	2002J	2003D	2004A	2004B	2005A	2006AB	2007AB
Rate	5.34%	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%
Avg Life	20.5 yrs	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

Bond Deal	2009AB	2010AB	2011B	2011C	2012AB	2013A	2014D-F	2016BC	2016D	2017BC	2018BC	2019BC	2019EFG	2020B
Rate	4.32%	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%
Avg Life	15.4 yrs	16.4 yrs	18.8 yrs	16.5 yrs	17.9 yrs	9.9 yrs	15.1 yrs	17.4 yrs	18.8yrs	11.2 yrs	11.7yrs	11.9yrs	9.73 yrs.	15.6 yrs

Weekly Average Variable Interest Rates vs. Budget

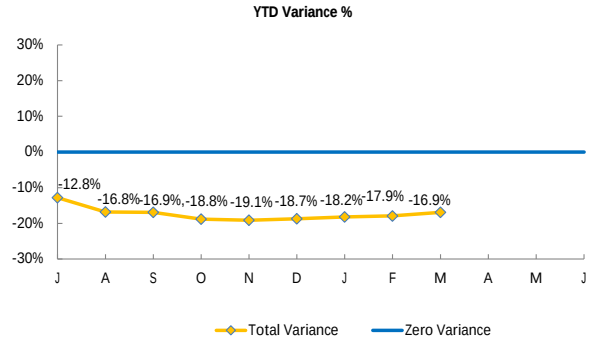
MWRA currently has ten variable rate debt issues with $596.6 million outstanding, excluding commercial paper. Of the ten outstanding series, four have portions which have been swapped to fixed rate. Variable rate debt has been less expensive than fixed rate debt in recent years as short-term rates have remained lower than long-term rates on MWRA debt issues. In March, the SIFMA rate ranged from 0.05% to 0.03% 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

3rd Quarter – FY21

Year To Date



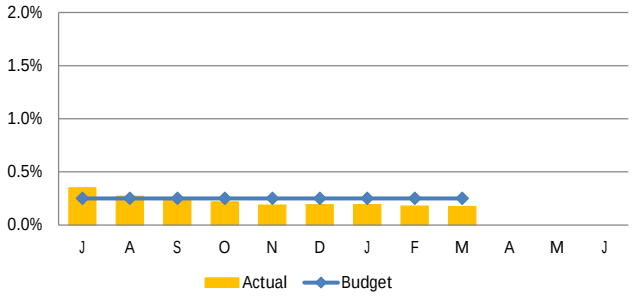
	YTD BUDGET VARIANCE ($000)			
	BALANCES IMPACT	RATES IMPACT	TOTAL	%
Combined Reserves	$20	($265)	(244)	-39.7%
Construction	$188	($90)	98	32.9%
Debt Service	$39	($35)	4	1.6%
Debt Service Reserves	($2)	($362)	(364)	-19.8%
Operating	$5	$2	7	2.5%
Revenue	$53	($66)	(14)	-6.1%
Redemption	$6	($129)	(123)	-48.9%
Total Variance	$309	($945)	($635)	-16.9%

YTD Average Balances Budgeted vs. Actual

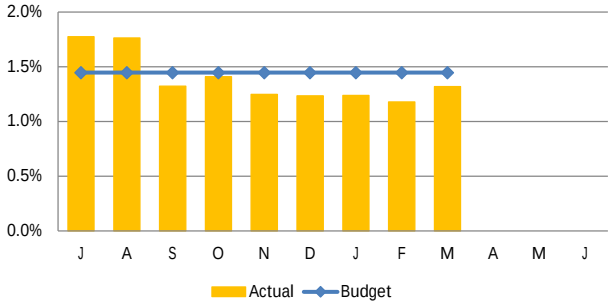
YTD Average Interest Rate Budgeted vs. Actual

Monthly

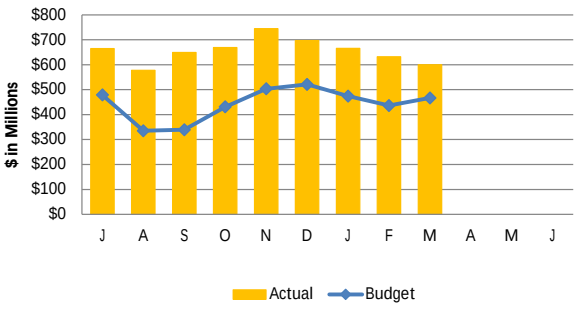
Short -Term Interest Rates



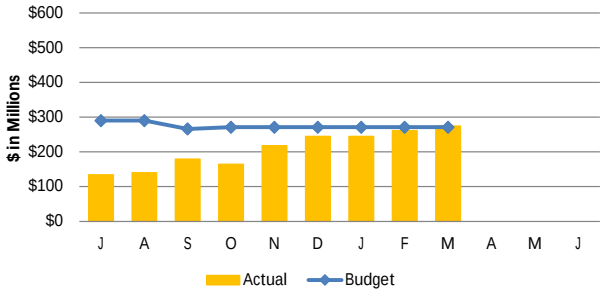
Long -Term Interest Rates



Short-Term Average Balances



Long-Term Average Balances



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 14, 2021
SUBJECT: Delegated Authority Report – April 2021

COMMITTEE: Administration, Finance & Audit

X INFORMATION
___ VOTE

Michele S. Gillen
Director, Administration

Linda Grasso, Admin. Systems Coordinator
Barbara Aylward, Administrator A & F
Preparer/Title

Douglas J. Rice
Director of Procurement

RECOMMENDATION:

For information only. Attached is a listing of actions taken by the Executive Director under delegated authority for the period April 1 – 30, 2021.

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 APRIL 1 - 30, 2021

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	04/20/21	**GRAVITY THICKENER UPGRADE DEER ISLAND TREATMENT PLANT** FURNISH AND INSTALL A 12-INCH INSERTION VALVE AT DIGESTED SLUDGE AND GAS STORAGE TANK 1; REMOVE CONCRETE AT THE LAUNDER WALL AT GRAVITY THICKENER 5.	7428	12	WALSH CONSTRUCTION COMPANY II, LLC	$38,649.03
C-2.	04/21/21	**MISCELLANEOUS FENCING INSTALLATIONS AND REPAIRS** AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR MISCELLANEOUS FENCING INSTALLATIONS AND REPAIRS FOR A TERM OF 730 CALENDAR DAYS.	6760Z	AWARD	RAD CORP.	$568,100.00
C-3.	04/29/21	**PHASE 10 SEWER MANHOLE REHABILITATION** AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR PHASE 10 SEWER MANHOLE REHABILITATION FOR A TERM OF 180 CALENDAR DAYS.	OP-423	AWARD	GREEN MOUNTAIN PIPELINE SERVICES, LLC	$222,800.00
C-4.	04/29/21	**QUABBIN AQUEDUCT SHAFT 2 REPAIRS** AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR QUABBIN AQUEDUCT SHAFT 2 REPAIRS FOR A TERM OF 270 CALENDAR DAYS.	7198	AWARD	UNIFIED CONTRACTING, INC.	$789,000.00

PURCHASING DELEGATED AUTHORITY ITEMS APRIL 1 - 30, 2021

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-1.	04/16/21	**PURCHASE OF A ONE-YEAR SUBSCRIPTION RENEWAL OF THE RSTUDIO SERVER PRO AND CONNECT LICENSE** Award of a purchase order under state contract ITS58 to the lowest responsive bidder for a one-year purchase order contract for the subscription renewal of the RStudio Server Pro and Connect license for the period May 3, 2021 through May 2, 2022.	WRA-4948Q		Insight Public Sector, Inc.	$26,699.45
P-2	04/16/21	**REPAIR OF ONE SODIUM HYPOCHLORITE STORAGE TANK** Award of a purchase order to the lowest responsive bidder for the Repair of One Sodium Hypochlorite Storage Tank at the Deer Island Treatment Plant.	WRA-4943		American Fiberglass Tank Repair	$29,500.00
P-3	04/16/21	**ONE-YEAR OF MAINTENANCE AND SUPPORT FOR IVANTI ENTERPRISE MANAGEMENT SUITE** Award of a one-year purchase order under state contract ITS58 to the lowest responsive bidder for a one-year purchase order contract for maintenance and support for Ivanti Enterprise Management Suite licenses for the period May 21, 2021 through May 20, 2022.	WRA-4951Q		Insight Public Sector, Inc.	$62,988.18
P-4	04/16/21	**PURCHASE OF ONE FALK GEAR REDUCER** Award of a purchase order to the lowest responsive bidder for one Falk gear reducer at the new Neponset Pump Station.	WRA-4932		Bearing Distributors, Inc.	$74,030.00
P-5	04/16/21	**PURCHASE OF ONE SPARE MUFFIN MONSTER GRINDER** Award of a sole source purchase order for one spare Muffin Monster Grinder for use in MWRA's wastewater treatment plants, headworks and pumpiing stations.			JWC Environmental, LLC	$83,741.00
P-6	04/16/21	**AQUATIC INVASIVE MACROPHYTE SURVEY AND WATER QUALITY ANALYSIS** Award of a purchase order to the lowest responsive bidder for an aquatic invasive macrophyte survey and water quality analysis.	WRA-4939		ESS Group, Inc.	$87,500.00
P-7	04/16/21	**AQUATIC INVASIVE PLANTS MONITORING AND CONTROL** Award of a purchase order to the lowest responsive bidder to provide aquatic invasive plant monitoring and control at the Chestnut Hill Reservoir.	WRA-4940		Solitude Lake Management, LLC	$90,300.00
P-8	04/20/21	**ANALYSIS OF CYANOBACTERIA IN RESERVOIR AND FINISHED DRINKING WATER SAMPLES** Award of a one-year purchase order contract to the lowest responsive bidder for the Analysis of Cyanbacteria in Reservoir and Finished Drinking Water Samples.	WRA-4952Q		Eurofins Eaton Analytical, Inc.	$28,230.00
P-9	04/20/21	**INVASIVE PLANT CONTROL** Award of a purchase order contract to the lowest responsive bidder to provide invasive plant control at the Ware River Shaft 8 Intake Pool.	WRA-4938Q		Davey Resource Group, Inc.	$41,000.00
P-10	4/20/2021	**CRYPTOSPORIDIUM AND GIARDIA TESTING** Award of a two-year purchase order contract to the lowest responsive bidder for Cryptosporidium and Giardia testing weekly at the Cosgrove Intake and biweekly at Chicopee Valley.	WRA-4927Q		EMSL Analytical, Inc.	$47,310.00
P-11	04/20/21	**QUALITY ASSURANCE/QUALITY CONTROL DIVING SERVICES** Award of a purchase order to the lowest responsive bidder for the for Quality Assurance/Quality Control Diving Services for the MWRA's invasive Aquatic Plant Control Contractor at the Wachusett and Sudbury Reservoirs.	WRA-4936Q		Fathom Resources, LLC	$53,917.46
P-12	04/21/21	**PURCHASE OF FIFTY HEWLETT PACKARD PROBOOK LAPTOPS** Award of a purchase order under state contract ITC47 to the lowest responsive bidder for Fifty Hewlett Packard ProBook Laptops to support the additional staff required to work from home and the migration of teleworkers to MWRA-issued hardware.	WRA-4962Q		Firstworld USA, Inc.	$42,025.50
P-13	04/29/21	**DIVER ASSISTED SUCTION HARVESTING OF INVASIVE AQUATIC PLANTS** Award of a purchase order to the lowest responsive bidder for Diver Assisted Suction Harvesting of invasive plants at the Sudbury Reservoir.	WRA-4945Q		AE Commercial Diving Services, Inc.	$35,000.00
P-14	04/29/21	**ORACLE PROCESSOR LICENSES MAINTENANCE AND SUPPORT** Award of a one-year purchase order under state contract ITS64 for Oracle processor licenses maintenance and support for the period of July 1, 2021 through June 30, 2022.			Oracle America, Inc.	$195,657.89

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: FY21 Financial Update and Summary Through April 2021

COMMITTEE: Administration, Finance & Audit

_X_ INFORMATION
___ VOTE

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

Thomas J. Durkin
Director, Finance

RECOMMENDATION:

For information only. This staff summary provides financial results and variance highlights for Fiscal Year 2021 through April 2021, comparing actual spending to the budget.

DISCUSSION:

MWRA is continuing the practice of setting aside favorable Capital Finance variances into the Defeasance Account with the intention of using 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 April the year-to-date debt related savings of $14.7 million was transferred to the Defeasance Account. This is the result of the lower than budgeted variable interest rates, timing of the SRF transaction, and lower than anticipated Senior Debt issuances.

The total Year-to-Date variance for the FY21 CEB is $11.0 million, due to lower direct expenses of $11.4 million, higher indirect expenses of $0.8 million; and higher revenue of $0.4 million. The year-end favorable variance is projected at $37.0 million, of which $27.4 million is related to debt service. Beyond debt service savings, staff project a surplus of approximately $9.6 million at year-end of which $10.5 million would be from lower direct expenses, offset by higher indirect expenses of $0.8 million and lower revenue of $0.1 million. Please note, these amounts may not add due to rounding.

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.

FY21 Current Expense Budget

The CEB expense variances through April 2021 by major budget category were:

- Lower Direct Expenses of $11.4 million or 5.6% under budget. Spending was lower for Wages & Salaries, Maintenance, Utilities, Professional Services, Other Services, Fringe Benefits, Overtime, Chemicals, Worker's Compensation, Training and Meetings, and Other Materials.

Higher Indirect Expenses of $0.8 million or 1.8% over budget due primarily to the updated HEEC capacity and service charge, partially offset by lower Watershed Reimbursements and Pension expense.

FY21 Budget and FY21 Actual Variance by Expenditure Category
(in millions)

	FY21 Budget YTD	FY21 Actual YTD	$ Variance	% Variance
Direct Expenses	$203.4	$192.1	-$11.4	-5.6%
Indirect Expenses	$45.8	$46.6	$0.8	1.8%
Capital Financing	$373.7	$373.7	$0.0	0.0%
Total	**$622.9**	**$612.4**	**-$10.6**	**-1.7%**

Totals may not add due to rounding

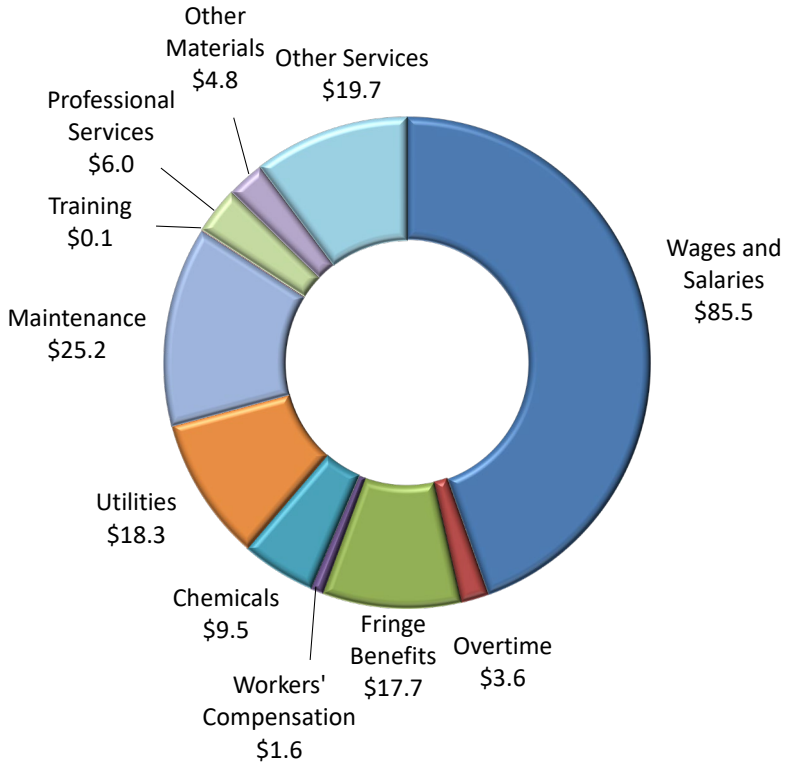
Total Revenues of $655.8 million were $0.4 million or 0.1% higher than budget due to higher Other Revenue, partially offset by lower Investment Income.

Please refer to Attachment 1 for a more detailed comparison by line item of the budget variances for FY21.

Direct Expenses

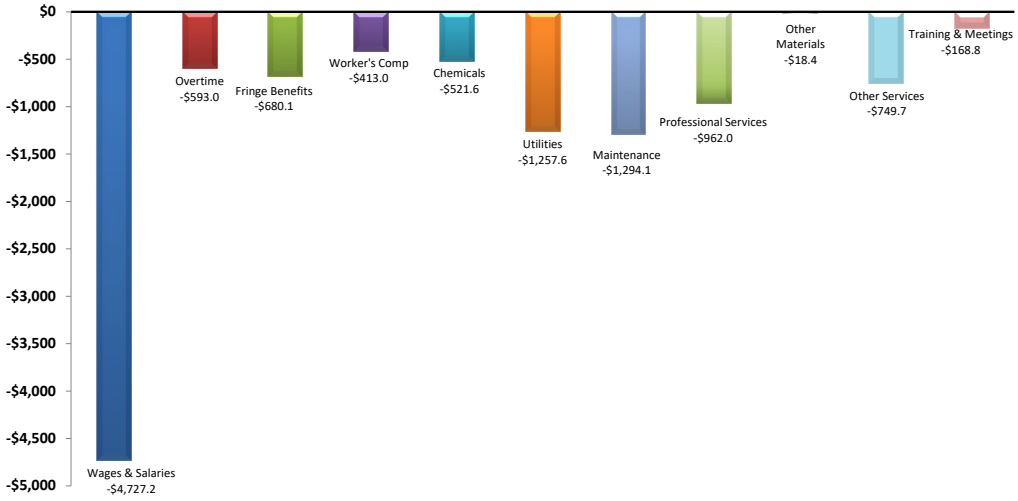
FY21 direct expenses through April totaled $192.1 million, which was $11.4 million or 5.6% less than budgeted.

FY21 Direct Expenses
millions)



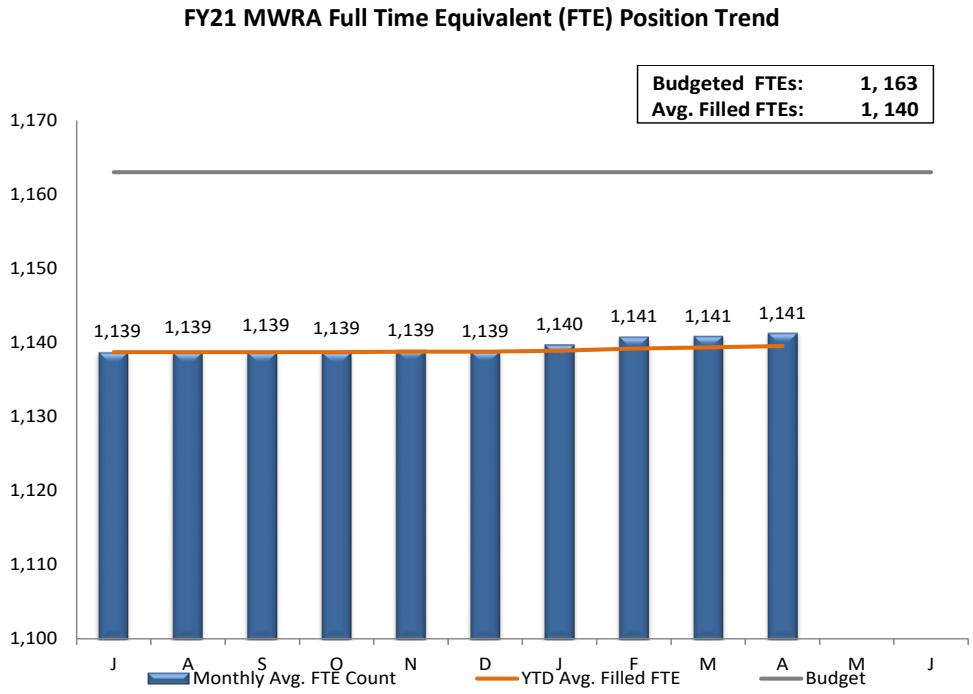
The budget variance is due to lower spending for Wages & Salaries, Maintenance, Utilities, Professional Services, Other Services, Fringe Benefits, Overtime, Chemicals, Worker's Compensation, Training and Meetings, and Other Materials.

FY21 Direct Expense Variance
(in thousands)



Wages and Salaries

Wages and Salaries are under budget by $4.7 million or 5.2%. Through April, there were 23 fewer average FTEs (1,140 versus 1,163 budget) or 2.0% 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 lower than budget by $1.3 million or 4.9%, largely driven by the timing of projects. Maintenance Materials were under budget by ($678,000) driven by HVAC Materials ($404,000) due to timing of purchases including condensing units, air conditioning back-ups, and exhaust fans and Plant and Machinery Materials ($318,000) due to timing of materials including rolling stock, booster pumps, and LED lighting upgrades. Maintenance Services are under budget by $616,000 driven by lower Building & Grounds Services ($869,000) and Electrical Services ($327,000) primarily due to underspending on service contracts, and Special Equipment Services ($273,000), partially offset by higher Plant and Machinery Services ($837,000) due to the timing and additional work for several contracts.

Utilities

Utilities were less than budget by $1.3 million or 6.4%. The budget variance is due to underspending in Electricity of $1.2 million primarily at Deer Island ($766,000) driven primarily by lower pricing associated with real time energy and ancillary pricing has been lower under the Direct Energy contract. This was offset by higher usage. Also, lower spending in Water Operations of $280,000 is due to lower rates and quantity. Diesel Fuel is under budget by $98,000 primarily due to lower pricing and timing of deliveries.

Professional Services

Professional Services were lower than budget by $1.0 million or 13.8%. The overall underspending is due to lower than budgeted spending in Computer Systems Consultant of $1.0 million in MIS primarily due to timing delays of projects including Website Redesign, PIMS Power Builder, Landesk, and Crystal Report Writer; Engineering of $383,000 primarily in Field Operations; and Legal Services of $166,000 in Law and Administration. This is partially offset by higher Lab and Testing Analysis of $426,000 in Operations driven by the Biobot contract.

Other Services

Other Services were lower than budget by $0.8 million or 3.7%. The budget variance is due to lower than budgeted spending for Sludge Pelletization of $744,000 due to lower year-to-date quantities and Grit and Screening Removal of $162,000 due to lower quantities. This is partially offset by greater than budgeted spending in Other Services of $345,000 primarily in Water Operations due to the Brookline water pipeline break.

Fringe Benefits

Fringe Benefit spending was lower than budget by $0.7 million or 3.7%. This is primarily driven by lower Health Insurance costs of $597,000, 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 that are less expensive

Overtime

Overtime expenses were lower than budget by $0.6 million or 14.3% primarily in Field Operations ($642,000) mainly for emergency and planned overtime; and Engineering & Construction ($115,000). This was partially offset by higher spending for Deer Island ($184,000) for shift coverage including Covid-19 coverage and unplanned maintenance including HEEC.

Chemicals

Chemicals were lower than budget by $0.5 million or 5.2%. Lower than budget spending on Sodium Hypochlorite of $255,000 is driven by Field Operations due to lower dosing at the Carroll Water Treatment Plant; Activated Carbon of $118,000 driven by Deer Island due to the timing of deliveries; Sodium Bisulfite of $115,000 driven by Wastewater Treatment; Soda Ash of $78,000 driven by Water Operations due to source water showing fluctuations in alkalinity affecting the dose and Clinton Wastewater Treatment Plant due to timing of deliveries; and Polymer of $73,000 driven by Deer Island due to less usage for centrifuge operations. This is offset by higher than budget spending on Carbon Dioxide of $158,000 driven by Water Operations due to the force majeure surcharge and higher dose to meet the pH target; and Hydrogen Peroxide of $88,000 driven by Deer Island due to higher H2S gas levels. Deer Island flows are 8.9% lower than the budget and CWTP flows are 0.26% higher than the budget through April. It is important to note that Chemical variances are also based on deliveries which in general reflect the usage patterns and timing.

Worker's Compensation

Worker's Compensation expenses were lower than budget by $0.4 million or 20.2%. The lower expenses were primarily due to favorable variances in compensation payments ($424,000), administrative expenses ($11,000), partially offset by higher medical payments ($22,000). This reflects fewer accidents and reduced severity of those accidents. Due to the uncertainties of when spending will happen, the budget is spread evenly throughout the year.

Training and Meetings

Training and Meetings expenses were lower than budget by $0.2 million or 56.3% driven by the timing of spending as well as conferences that were postponed or canceled due to the pandemic.

Other Materials

Other Materials were lower than budget by $18,000 or 0.4% driven by lower than budgeted spending of $249,000 for Other Materials primarily due to lower quantity of gravel needed at the Clinton landfill, $159,000 for Vehicle Expense primarily due to less driving and lower fuel prices, and Equipment/Furniture of $140,000. This was partially offset by Computer Hardware of $355,000 in MIS and $158,000 for Health/SafetyMaterials both driven by purchases made in response to Covid-19, and $167,000 for Vehicle Purchases/Replacements due to timing.

Indirect Expenses

Indirect Expenses totaled $46.6 million, which is $0.8 million or 1.8% greater than budget. The variance is primarily driven by the cost for the new HEEC cable ($3.1 million), partially offset by lower spending on Watershed Reimbursement ($1.4 million) and Pension Expense ($1.0 million). Based on the latest information from HEEC, MWRA will owe HEEC additional costs related to FY20, and we expect to make that payment by June 2021. Because we are now aware of this liability, we accrued for it starting in November. This is partially offset by lower Pension expense ($1.0 million). After approval of the FY21 Current Expense Budget, the retirement system received a new Public Employee Retirement Administration Commission approved required contribution. The required contribution was reduced from $11.0 million to $10.0 million.

Based on FY21 operating activity only, the Watershed Division is $2.3 million or 15.3% under budget through April. This is driven by lower spending on Wages and Salaries, Maintenance, Fringe Benefits, and Equipment. When factoring in the FY20 balance forward ($959,000) which was paid during Q1 of FY21, and the lower PILOT payment ($132,000), Watershed Reimbursement is $1.4 million or 6.2% below budget through April.

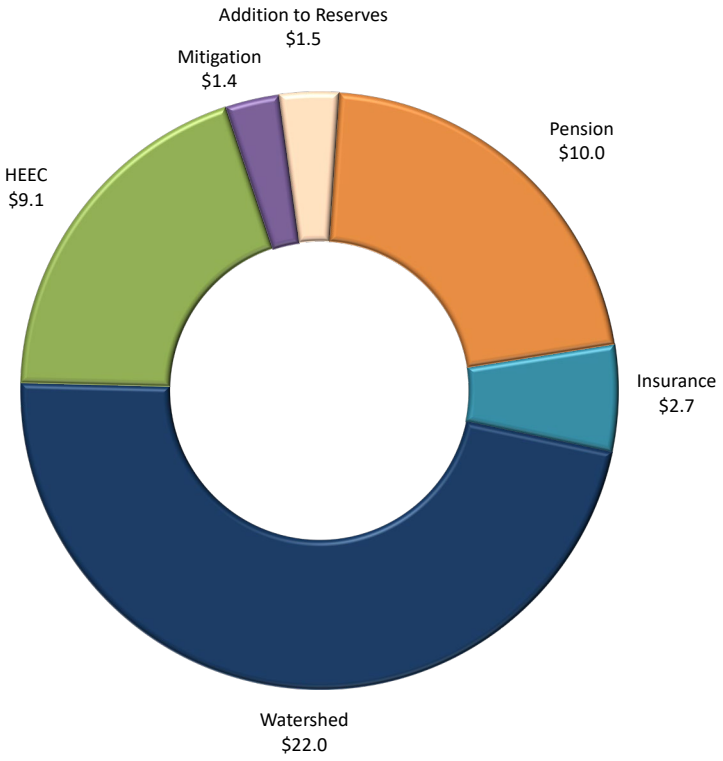
FY21 Watershed Protection Variance

$ in millions	YTD Budget	YTD Actual	YTD $ Variance	YTD % Variance
Operating Expenses	15.9	13.3	-2.6	-16.4%
Operating Revenues - Offset	1.0	0.7	-0.3	-32.6%
FY21 Operating Totals	**14.9**	**12.6**	**-2.3**	**-15.3%**
DCR Balance Forward (FY20 4th quarter accrual true-up)	0.0	1.0	1.0	
FY21 Adjusted Operating Totals	**14.9**	**13.6**	**-1.3**	**-8.8%**
PILOT	8.5	8.4	-0.1	-1.2%
Total Watershed Reimbursement	**23.4**	**22.0**	**-1.4**	**-6.1%**

Totals may not add due to rounding

MWRA reimburses the Commonwealth of Massachusetts Department of Conservation (DCR) and Recreation - Division of Water Supply Protection – Office of Watershed Management for expenses. The reimbursements are presented for payment monthly in arears. Accruals are being made monthly based on estimated expenses provided by DCR and trued-up monthly based on the monthly invoice. MWRA's budget is based on the annual Fiscal Year Work Plan approved by the Massachusetts Water Supply Protection Trust. The FTE count at the end of April was 134 (and 133.2 on a year-to-date basis) vs. a budget of 150.

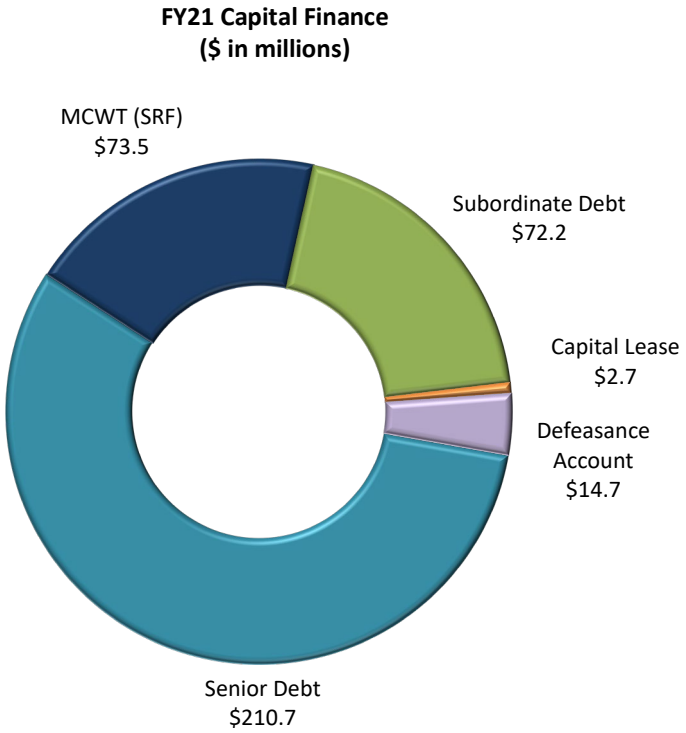
FY21 Indirect Expenses
(in millions)



Capital Financing

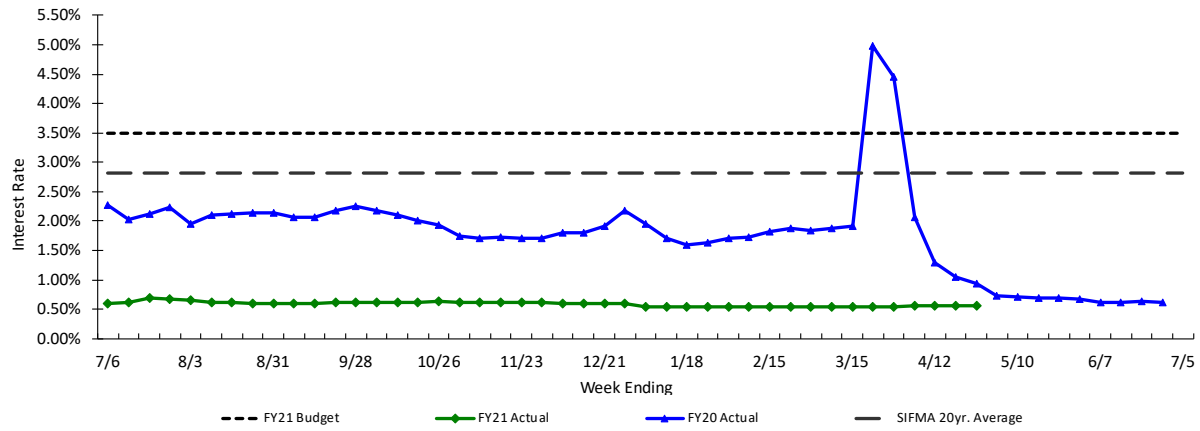
Capital Financing expenses include the principal and interest payments for fixed senior debt, the variable subordinate debt, the Massachusetts Clean Water Trust (SRF) obligation, the commercial paper program for the local water pipeline projects, current revenue for capital, Optional Debt Prepayment,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

Year-to-date Capital Financing expenses for FY21 totaled $373.7 million, which is right on budget. In April, the year-to-date debt related savings of $14.7 million was transferred to the Defeasance Account. This is the result of the lower than budgeted variable interest rates, timing of the SRF transaction, and lower than anticipated Senior Debt due to the timing of borrowings.



The graph below reflects the FY21 actual variable rate trend by week against the FY21 Budget.

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



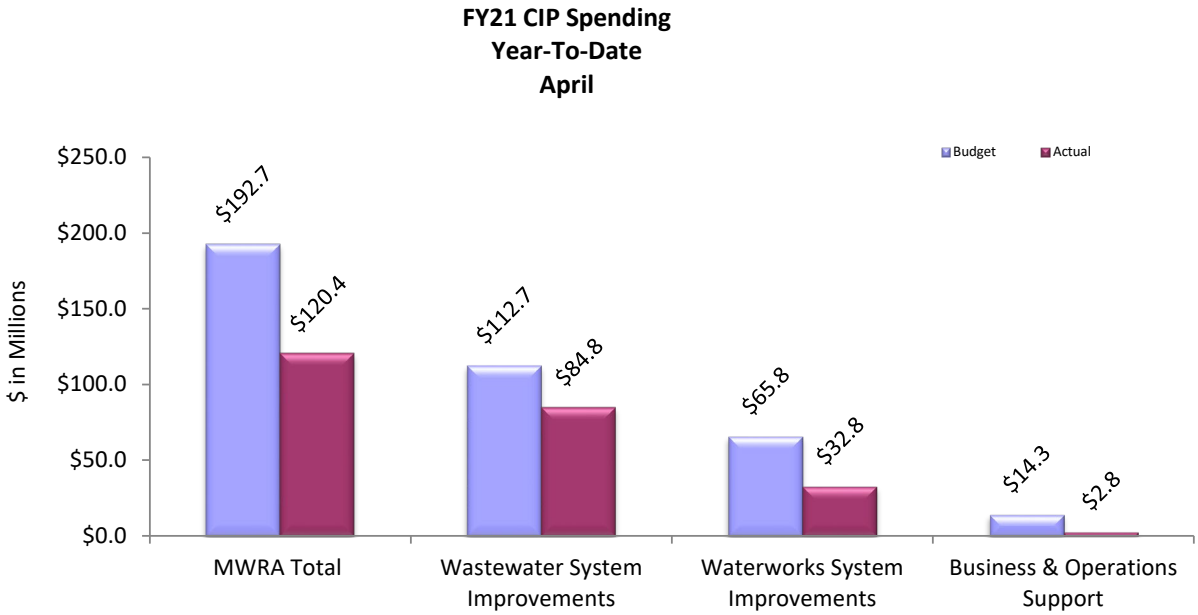
Revenue and Income

Revenues of $655.8 million were $386,000 or 0.1% over budget. Other Revenue was $1.0 million or 18.3% over budget due to Energy Revenue of $462,000, Disposal of surplus materials of $296,000, Miscellaneous Revenue of $84,000 primarily associated with worker's compensation reimbursement for older claims; $73,000 for permit fees; and $68,000 in grant money. In addition, Other User Charges were over the budget by $85,000 primarily due to the entrance fee payments from the Rivers School in Weston and Crescent Ridge Dairy in Sharon. This was partially offset by lower Investment Income of $702,000 or 16.9% due to lower than budgeted interest rates (0.48% vs. 0.70%), partially offset by higher than budgeted average balances.

FY21 Capital Improvement Program

Capital expenditures in Fiscal Year 2021 through April total $120.4 million, $72.4 million or 37.5% 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 $84.0 million, $56.4 million or 40.2% under budget.



Overall, CIP spending reflects the underspending in Wastewater Improvements ($27.9 million), Waterworks ($33.0 million), and Business and Operations Support ($11.5 million). Major variances in Wastewater are primarily due to updated schedules for Prison Point Rehabilitation, Deer Island Primary and Secondary Clarifier Phase 2 Rehabilitation, Dorchester Infiltration/Inflow Removal, and DI Motor Control Center and Switchgear Replacement, work being behind schedule and Covid-19 delays for the Chelsea Headworks Upgrades Construction and a time extension, delay in equipment delivery and Covid-19 shutdown for Nut Island Odor Control and HVAC Improvements, work anticipated in FY21 that was completed in FY20 for the Pellet Conveyance Piping project, and delays in NTP and snow as well as winter moratorium for the Dorchester Interceptor Sewer. This was partially offset by timing of community requests for grants and loans for the I/I Local Financial Assistance Program, contractor progress for Deer Island Winthrop Terminal Facility VFD Replacement – Construction and Gravity Thickener Rehabilitation.

Waterworks variances are primarily due to less than anticipated communities deferring their loan repayments for the Water Loan Program, updated schedules for CP-3 Sections 23, 24,and 47 Rehab, NIH Section 89 & 29 Replacement, and Carroll Water Treatment Plant SCADA Upgrades, delay in award of CP-1 Shafts 6, 8, and 9A, timing of consultant work for the Tunnel Preliminary Design and MEPA Review, later than anticipated award for River Road Improvements, and delay

in slide gate fabrication and updated schedule for Weston Aqueduct Sluice Gate contracts. This was partially offset by contractor progress on the WASM 3 Rehabilitation CP-1, Southern Extra High Section 111 Construction 2, Section 56 Replacement/Saugus River - Design/CA, and Commonwealth Avenue Pumping Station Construction contracts.

FY21 Budget and FY21 Actual Variance by Program
(in millions)

$ in Millions	Budget	Actuals	$ Var.	% Var.
Wastewater System Improvements				
Interception & Pumping	57.9	38.1	(19.7)	-34.1%
Treatment	24.5	15.5	(9.0)	-36.6%
Residuals	3.7	1.4	(2.3)	-62.1%
CSO	3.7	1.2	(2.5)	-68.6%
Other	22.9	28.6	5.6	24.6%
Total Wastewater System Improvements	**$112.7**	**$84.8**	**($27.9)**	**-24.8%**
Waterworks System Improvements				
Drinking Water Quality Improvements	2.0	1.3	(0.7)	-35.0%
Transmission	16.3	12.8	(3.4)	-21.1%
Distribution & Pumping	17.9	10.1	(7.8)	-43.5%
Other	29.6	8.5	(21.1)	-71.2%
Total Waterworks System Improvements	**$65.8**	**$32.8**	**($33.0)**	**-50.2%**
Business & Operations Support	**$14.3**	**$2.8**	**($11.5)**	**-80.3%**
Total MWRA	**$192.7**	**$120.4**	**($72.4)**	**-37.5%**

Totals may not add due to rounding

FY21 Spending by Program:

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

Other Waterworks: Net underspending of $21.1 million

- $19.1 million for Local Financial Assistance due to timing of community repayments due to less than anticipated communities deferring their loan repayments.
- $2.0 million for Carroll Water Treatment Plant SCADA Design and Construction due to updated schedule for the SCADA Construction.
- This underspending was partially offset by overspending of $0.3 million for Cosgrove Intake Roof Replacement, $0.2 million for Bellevue 2/Turkey Hill Tanks Painting, and $0.1 million for Gillis Pumping Station/Cottage Farm CSO Roof Replacement due to FY20 planned work that was completed in FY21.

Interception & Pumping: Net underspending of $19.7 million

- $10.5 million for Prison Point Rehabilitation Construction due to updated schedule.
- $2.8 million for Chelsea Creek Upgrade Construction and Resident Engineering Inspection due to work behind schedule, Covid-19 delays, and time extension.
- $2.4 million for Wastewater Metering Construction due to delay in award and software training, and $0.6 million for Wastewater Metering Planning/Design due to time extension through the construction installation and warranty period.

- $1.8 million for Nut Island Odor Control and HVAC Construction due to delays in equipment delivery and Covid-19 shut down.
- $0.9 million for Dorchester Interceptor Sewer Construction and CA/RI due to Notice to Proceed and snow delays as well as winter moratorium.
- $0.4 million for Prison Point Design/CA/REI due to delay in construction award.
- This underspending was partially offset by overspending of $0.4 million for Interceptor Renewal 7, Malden & Melrose - Study/Design/CA due to consultant progress.

Business & Operations Support: Net underspending of $11.5 million

- $2.8 million for As-Needed Technical Assistance and Resident Engineering and Inspection Services due to lower than projected task order work, $1.6 million for Lawson Upgrade, $1.3 million for Cabling, $1.0 million for SANS Storage, $0.8 million for MAXIMO Interface Enhancements and Upgrades, and $0.6 million for Enterprise Content Management due to schedule changes $0.6 million for Security Equipment & Installation due to timing of physical security initiatives, and $0.4 million for Vehicle Purchases due to timing.

Wastewater Treatment: Net underspending of $9.0 million

- $7.7 million for Clarifier Rehabilitation Phase 2 - Construction, Design and REI due to updated schedules.
- $1.3 million for MCC Switchgear Replacement - Design/ESDC/REI and Construction due to updated construction schedule.
- $1.0 million for less than anticipated as-needed task order work.
- $0.4 million for Miscellaneous VFD Replacements FY19-FY23 due to timing of work.
- This underspending was partially offset by overspending of $2.3 million for Winthrop Terminal Facility VFD Replacement – Construction, $0.9 million for Gravity Thickener Rehabilitation, and $0.3 million for Gas Protection System Replacement Phase 1 due to contractor progress, and $0.3 million for CHP Alternatives Study due to timing of work.

Water Distribution and Pumping: Net underspending of $7.8 million

- $3.2 million for Sections 23, 24, 47 Rehabilitation and CA/RI, and $2.8 million for Section 89/29 Replacement – Construction, ESDC and RE/RI Services due to schedule changes.
- $0.8 million for SEH Redundancy Pipeline Section 111 - Construction Phase 3 due to timing of final work.
- $0.6 million for Sections 50/57 Water due to contract scope reduction.
- $0.3 million for NIH Section 89 and 29 Design/CA/RI due to less than anticipated contract administration/resident inspection budgeted spending.
- $0.3 million for NEH Improvements Design & ESDC due to contract award later than anticipated and updated schedule.
- This underspending was partially offset by overspending of $0.5 million for Section 56 Replacement/Saugus River - Design/CA due to consultant progress, and $0.3 million for Southern Extra High Section 111 Construction 2 due to contractor progress.

Other Wastewater: Net underspending of $5.6 million

- $5.6 million for Community I/I Financial Assistance due to timing of community requests for grants and loans.

Waterworks Transmission: Net underspending of $3.4 million

- $1.6 million for Tunnel Preliminary Design and MEPA Review and $0.2 million for Program Support Services due to timing of consultant work.
- $1.4 million for CP-1 Shafts 6, 8, and 9A due to award of contract later than anticipated and repair clamps issue.
- $1.0 million for River Road Improvements due to award later than anticipated.
- This underspending was partially offset by overspending of $4.4 million for WASM 3 Rehabilitation, CP-1 and $0.3 million for Commonwealth Avenue Pumping Station Construction due to contractor progress.

Combined Sewer Overflow: Net underspending of $2.5 million

- $2.6 million for Dorchester Inflow Removal Construction due to updated schedules partially offset by $0.2 million for CSO Performance Assessment due to greater than anticipated consultant progress.

Residuals: Net underspending of $2.3 million

- $1.7 million for Pellet Conveyance Piping Relocation and $0.6 million for Residuals Mechanical/Electrical/Dryer Drum Replacements due to work anticipated in FY21 completed in FY20.

Drinking Water Quality Improvements: Net underspending of $0.7 million

- $0.6 million for updated schedules for CP-7 Existing Facilities Modifications, and Carroll Water Treatment Planr Parapet Wall Repairs.

Construction Fund Balance

The construction fund balance was $239.3 million as of the end of April. Commercial Paper/Revolving Loan available capacity was $222 million.

ATTACHMENTS:

Attachment 1 – Variance Summary April 2021
Attachment 2 – Current Expense Variance Explanations
Attachment 3 – Capital Improvement Program Variance Explanations
Attachment 4 – Year-End Current Expense Projections vs. Budget

ATTACHMENT 1
FY21 Actuals vs. FY21 Budget

	Apr 2021 Year-to-Date				
	Period 10 YTD Budget	Period 10 YTD Actual	Period 10 YTD Variance	%	FY21 Approved
EXPENSES					
WAGES AND SALARIES	$ 90,253,348	$ 85,526,167	$ (4,727,181)	-5.2%	$ 112,919,298
OVERTIME	4,149,539	3,556,553	(592,986)	-14.3%	5,019,295
FRINGE BENEFITS	18,347,035	17,666,968	(680,067)	-3.7%	22,402,224
WORKERS' COMPENSATION	2,048,003	1,634,965	(413,038)	-20.2%	2,476,655
CHEMICALS	9,987,019	9,465,439	(521,580)	-5.2%	12,091,255
ENERGY AND UTILITIES	19,540,901	18,283,256	(1,257,645)	-6.4%	24,200,847
MAINTENANCE	26,528,564	25,234,475	(1,294,089)	-4.9%	32,618,569
TRAINING AND MEETINGS	299,545	130,787	(168,758)	-56.3%	405,264
PROFESSIONAL SERVICES	6,988,456	6,026,418	(962,038)	-13.8%	8,377,283
OTHER MATERIALS	4,815,060	4,796,630	(18,430)	-0.4%	6,706,916
OTHER SERVICES	20,486,101	19,736,435	(749,666)	-3.7%	24,983,777
TOTAL DIRECT EXPENSES	**$ 203,443,571**	**$ 192,058,093**	**$ (11,385,477)**	**-5.6%**	**$ 252,201,383**
INSURANCE	$ 2,529,738	$ 2,707,837	$ 178,099	7.0%	$ 3,059,218
WATERSHED/PILOT	23,405,568	21,957,522	(1,448,046)	-6.2%	26,422,138
HEEC PAYMENT	5,966,415	9,095,759	3,129,344	52.4%	7,215,200
MITIGATION	1,399,438	1,366,125	(33,313)	-2.4%	1,692,344
ADDITIONS TO RESERVES	1,500,929	1,500,929	-	0.0%	1,815,077
RETIREMENT FUND	11,000,000	10,000,000	(1,000,000)	-9.1%	11,000,000
POST EMPLOYEE BENEFITS	-	-	-	---	6,065,490
TOTAL INDIRECT EXPENSES	**$ 45,802,088**	**$ 46,628,172**	**$ 826,085**	**1.8%**	**$ 57,269,467**
STATE REVOLVING FUND	$ 78,786,600	$ 73,505,964	$ (5,280,636)	-6.7%	$ 97,811,162
SENIOR DEBT	211,929,300	210,668,122	(1,261,178)	-0.6%	258,730,904
DEBT SERVICE ASSISTANCE	-	-	-	---	-
CURRENT REVENUE/CAPITAL	-	-	-	---	16,200,000
SUBORDINATE MWRA DEBT	80,322,404	80,322,404	-	0.0%	96,339,598
LOCAL WATER PIPELINE CP	-	-	-	---	5,686,864
CAPITAL LEASE	2,660,261	2,660,261	-	0.0%	3,217,060
VARIABLE DEBT	-	(8,134,198)	(8,134,198)	---	-
DEFEASANCE ACCOUNT	-	14,676,012	14,676,012	---	-
DEBT PREPAYMENT	-	-	-	---	3,900,000
TOTAL DEBT SERVICE	**$ 373,698,565**	**$ 373,698,565**	**$ -**	**0.0%**	**$ 481,885,588**
TOTAL EXPENSES	**$ 622,944,224**	**$ 612,384,830**	**$ (10,559,392)**	**-1.7%**	**$ 791,356,438**
REVENUE & INCOME					
RATE REVENUE	$ 636,222,212	$ 636,222,212	$ -	0.0%	$ 769,385,000
OTHER USER CHARGES	8,286,555	8,371,925	85,370	1.0%	9,208,367
OTHER REVENUE	5,477,073	6,480,060	1,002,987	18.3%	6,095,403
RATE STABILIZATION	1,240,385	1,240,385	-	0.0%	1,500,000
INVESTMENT INCOME	4,153,878	3,451,630	(702,248)	-16.9%	5,167,668
TOTAL REVENUE & INCOME	**$ 655,380,103**	**$ 655,766,212**	**$ 386,109**	**0.1%**	**$ 791,356,438**

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY21 Budget YTD April	FY21 Actuals April	FY21 YTD Actual vs. FY21 Budget		Explanations
			$	%	
Direct Expenses					
Wages & Salaries	90,253,348	85,526,167	(4,727,181)	-5.2%	Wages and Salaries are under budget by $4.7 million. Year to date, there have been 23 fewer average FTEs (1,140 versus 1,163 budget), lower average new hire salaries versus retirees, the timing of backfilling vacant positions.
Overtime	4,149,539	3,556,553	(592,986)	-14.3%	Lower spending mainly in Field Operations ($642,000) primarily in planned and emergency overtime. Also, Engineering & Construction ($115,000), offset by higher spending for Deer Island ($184,000) for shift coverage including Covid-19 coverage and unplanned maintenance including HEEC.
Fringe Benefits	18,347,035	17,666,968	(680,067)	-3.7%	Lower than budget in **Health Insurance** of $597,000, due to fewer than budgeted participants in health insurance plans, increased contribution by external new hires vs. lower contribution rates of staff retiring, and the shift from family to individual plans which are less expensive. In addition, **Medicare** was under budget by $62,000, partially offset by **Unemployment Insurance** which is over budget by $20,000.due to unemployment fraud charges that are being disputed..
Worker's Compensation	2,048,004	1,634,965	(413,039)	-20.2%	The lower expenses were due to favorable variances in **Compensation Payments** of $424,000 and **Administrative Expenses** of $11,000, partially offset by **Medical Payments** of $22,000. These lower payments reflect fewer accidents to date. Due to uncertainties of when spending will happen, the budget is spread evenly throughout the year.
Chemicals	9,987,019	9,465,439	(521,580)	-5.2%	Lower than budget spending on **Sodium Hypochlorite** of $255,000 driven by Field Operations due to lower dosing at JCWTP; **Activated Carbon** of $118,000 driven by DITP due to timing of deliveries; **Sodium Bisulfite** of $115,000 driven by Wastewater Treatment; **Soda Ash** of $78,000 driven by Water Operations due to source water showing fluctuations in alkalinity, affecting the dose and Clinton Wastewater Treatment Plant due to timing of deliveries, and **Polymer** of $73,000 driven by DITP due to less usage for centrifuge operations. This is offset by higher than budget spending on **Carbon Dioxide** of $158,000 driven by Water Operations due to the force majeure surcharge and higher dose to meet pH target**;** and **Hydrogen Peroxide** of $88,000 driven by DITP due to higher H2S gas levels. DITP flows are 8.9% lower than the budget and CWTP flows are 0.26% higher than the budget through April. It is important to note that Chemical variances are also based on deliveries which in general reflect the usage patterns. However, the timing of deliveries is an important factor.

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY21 Budget YTD April	FY21 Actuals April	FY21 YTD Actual vs. FY21 Budget		Explanations
			$	%	
Utilities	19,540,901	18,283,256	(1,257,645)	-6.4%	Underspending in **Electricity** of $1.2 million primarily at DITP ($0.8 million) driven primarily by lower pricing associated with real time energy and ancillary pricing has been lower under the Direct Energy contract. This was offset by higher usage. Also, Water Operations ($0.3 million) is under budget primarily due to lower rates and quantity. Diesel Fuel is under budget by $0.1 million due to lower pricing and timing of deliveries.
Maintenance	26,528,565	25,234,475	(1,294,090)	-4.9%	Underspending in **Ongoing Maintenance** by $1.3 million is largely driven by the timing of projects. Maintenance Materials which are under budget by ($0.7 million), driven by **HVAC Materials** ($0.4 million) due to timing of purchases including condensing units, air conditioning back-ups and exhaust fans. **Plant & Machinery Materials** ($0.3 million) primarily due to timing of materials including rolling stock, booster pumps, and LED lighting upgrades, **Electrical Materials** ($0.2 million) primarily due to lower spending on emergency lighting due to backlog of materials on hand, and **Special Equipment Materials** ($0.1 million), partially offset by **Warehouse inventory** ($0.4 million) and **Automotive Materials** ($0.1 million). Also, *Maintenance Services* are under budget by $0.6 million driven by **Building & Grounds Services** ($0.9 million), and **Electrical Services** ($0.3 million), primarily due to underspending on service contracts, **Special Equipment Services** ($0.3 million), and **Pipe Services** ($0.2 million), partially offset by **Plant and Machinery Service**s ($0.8 million) driven by timing and more work than snticipated for several contracts including DITP painting and coatings and cryogenics contracts, and **Computer Softwar**e **Licenses** ($0.3 million).
Training & Meetings	299,545	130,787	(168,758)	-56.3%	Lower than budget spending on **Training & Meetings** by $169,000 is driven by MIS ($45,000), Field Operations ($31,000), DI ($21,000), Engineering & Construction ($10,000), and Procurement ($9,000) primarily due to timing and conferences that were postponed or canceled.
Professional Services	6,988,456	6,026,417	(962,039)	-13.8%	Lower than budget spending in **Computer Systems Consultant** of $1.0 million in MIS primarily due to timing delays of projects including Website Redesign, PIMS Power Builder, Landesk, and Crystal Report Writer; **Engineering** of $383,000 primarily in Field Operations; **Legal Services** of $166,000 in Law and Administration; partially offset by **Lab and Testing Analysis** of $426,000 in Operations due to the Biobot contract.
Other Materials	4,815,060	4,796,630	(18,430)	-0.4%	Driven by lower than budgeted spending of $248,000 for **Other Materials** primarily due to lower quantity of gravel needed at the Clinton landfill, and $159,000 for **Vehicle Expense** primarily due to less driving and lower fuel price, and **Equipment/Furniture** of $140,000, partially offset by **Computer Hardware** of $355,000 in MIS, $158,000 for **Health/Safety Materials** both driven by purchases due to Covid-19, and $167,000 for **Vehicle Purchases/Replacements** due to timing.

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY21 Budget YTD April	FY21 Actuals April	FY21 YTD Actual vs. FY21 Budget		Explanations
			$	%	
Other Services	20,486,099	19,736,435	(749,664)	-3.7%	Lower than budgeted spending for **Sludge Pelletization** of $744,000 due to lower year-to-date quantities; and **Grit & Screening Removal** of 162,000 also due to lower quantities, partially offset by higher than budgeted spending for **Other Services** of $345,000 primarily in Water Operations due to the Brookline water pipeline break.
Total Direct Expenses	**203,443,571**	**192,058,092**	**(11,385,479)**	**-5.6%**	

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY21 Budget YTD April	FY21 Actuals April	FY21 YTD Actual vs. FY21 Budget		Explanations
			$	%	
Indirect Expenses					
Insurance	2,529,738	2,707,837	178,099	7.0%	Higher premiums received for property and excess general liability ($309,000) offset by Lower Payments/Claims costs ($131,000).
Watershed/PILOT	23,405,568	21,957,522	(1,448,046)	-6.2%	Watershed costs are lower than budget by $1.4 million due to lower costs associated with Wages and Salaries, Maintenance, Fringe Benefits, Equipment, and Professional Services, and partially offset by a prior period adjustment.
HEEC Payment	5,966,415	9,095,759	3,129,344	52.4%	Increase is due to updated cost for HEEC capacity and service charge.
Mitigation	1,399,438	1,366,126	(33,312)	-2.4%	
Addition to Reserves	1,500,929	1,500,929	-	0.0%	
Pension Expense	11,000,000	10,000,000	(1,000,000)	-9.1%	After approval of the FY21 CEB, the retirement system received a new PERAC approved required contribution. The required deposit was reduced from $11.0 million to $10.0 million.
Post Employee Benefits	-	-	-		
Total Indirect Expenses	**45,802,088**	**46,628,173**	**826,085**	**1.8%**	
Debt Service					
Debt Service	373,698,565	373,698,565	-	0.0%	$14.7 million was transferred to the defeaseance account reflecting lower than budgeted interest expenses of $8.1 million due to lower interest rates and lower SRF spending of $5.3 million as a result of timing, and lower than anticipated Senior Debt of $1.3 million.
Debt Service Assistance	-	-	-		
Total Debt Service Expenses	**373,698,565**	**373,698,565**	**-**	**0.0%**	
Total Expenses	**622,944,224**	**612,384,830**	**(10,559,394)**	**-1.7%**	

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY21 Budget YTD April	FY21 Actuals April	FY21 YTD Actual vs. FY21 Budget		Explanations
			$	%	
Revenue & Income					
Rate Revenue	636,222,212	636,222,212	-	0.0%	
Other User Charges	8,286,555	8,371,925	85,370	1.0%	Rivers School in Weston entrance fee of $42,000 and Crescent Ridge Dairy in Sharon of $34,000, and other user charges of $10,000.
Other Revenue	5,477,073	6,480,060	1,002,987	18.3%	Energy Revenue of $462,000; Disposal of surplus materials of $296,000; Miscellaneous Revenue of $84,000 primarily associated with worker's compensation reimbursement for older claims; ($68,000) in grant money, and $73,000 for permit fees.
Rate Stabilization	1,240,385	1,240,385	-	0.0%	HEEC Reserve.
Investment Income	4,153,879	3,451,630	(702,249)	-16.9%	Investment Income is under budget due to lower than budgeted interest rates (0.48% actual vs. 0.70% budget) partially offset by higher than budgeted average balances.
Total Revenue	**655,380,104**	**655,766,212**	**386,108**	**0.06%**	
Net Revenue in Excess of Expenses	**32,435,880**	**43,381,382**	**10,945,502**		

ATTACHMENT 3
FY21 CIP Year-to-Date Variance Report ($000's)

	FY21 Budget YTD April	FY21 Actuals YTD April	YTD Actuals vs. Budget		Explanations
			$	%	
Wastewater					
Interception & Pumping (I&P)	$57,867	$38,133	($19,734)	-34.1%	Underspending Prison Point Rehabilitation - Construction; $10.5M (updated schedule) Chelsea Creek Headworks Upgrades - Construction and REI: $2.8M (delay in work, Covid-19 delays, and time extension) Wastewater Meter System Equipment Replacement: $2.4M (delay in award and software training) Nut Island Odor Control & HVAC Improvements Phase 2 - Construction: $1.8M (delays in equipment delivery and Covid-19 shutdown) Interceptor Renewal No. 3, Dorchester Interceptor Sewer - Construction and CA/RI: $933k (notice-to-proceed and snow delays as well as winter moratorium) Ward Street & Columbus Park Headworks - Design/CA: $849k (awarded later than anticipated) Wastewater Meter System Planning/Study/Design: $616k (due to time extension through construction installation and warranty period) Prison Point Rehabilitation - Design/CA/RI: $429k (delay in construction award) Hayes Pump Station Rehab - Design: $165k (award less than budgeted) Offset Overspending Interceptor Renewal 7, Malden & Melrose - Study/Design/CA: $368k (consultant progress)
Treatment	$24,473	$15,521	($8,952)	-36.6%	Underspending Clarifier Rehabilitation Phase 2 - Construction $7.2M, Design: $203k, and REI: $336k, DI Dystor Membrane Replacements: $571k, South System Pump Station (SSPS) VFD Replacement - Design/ESDC/REI: $427k, Screw Pump Replacement: $400k, Landfill Cell No. 1 Closure: $167k, HVAC Design/ESDC: $150k, and DITP Roofing Replacement: $111k (updated schedules) MCC Switchgear Replacement - Design/ESDC/REI and Construction: $1.3M (updated construction schedule) As-Needed Design: $999k (less than anticipated task order work) Miscellaneous VFD Replacements FY19-FY23: $400k (timing of work) Offset Overspending Winthrop Terminal Facility (WTF) VFD Replacement - Construction: $2.3M, Gravity Thickener Rehabilitation: $943k, and Gas Protection System Replacement - Phase 1: $340k (contractor progress) CHP Alternatives Study: $346k (timing of work) Radio Repeater System Upgrade - Phase 1: $138k (work anticipated in FY20 completed in FY21)

ATTACHMENT 3
FY21 CIP Year-to-Date Variance Report ($000's)

	FY21 Budget YTD April	FY21 Actuals YTD April	YTD Actuals vs. Budget		Explanations
			$	%	
Residuals	$3,711	$1,406	($2,305)	-62.1%	Underspending Pellet Conveyance Relocation: $1.7M, and Residuals Mechanical/Electrical/Dryer Drum Replacements: $568k (work anticipated in FY21 completed in FY20)
CSO	$3,682	$1,155	($2,527)	-68.6%	Underspending Dorchester Inflow Removal Construction: $2.6M (updated schedules) Offset Overspending CSO Performance Assessment: $153k (consultant progress)
Other Wastewater	$22,917	$28,552	$5,635	24.6%	Overspending I/I Local Financial Assistance: $5.6M (timing of community requests for grants and loans partially offset by less than anticipated communities deferring loan repayments)
Total Wastewater	**$112,651**	**$84,767**	**($27,884)**	**-24.8%**	

ATTACHMENT 3
FY21 CIP Year-to-Date Variance Report ($000's)

	FY21 Budget YTD April	FY21 Actuals YTD April	YTD Actuals vs. Budget		Explanations
			$	%	
Waterworks					
Drinking Water Quality Improvements	$2,026	$1,317	($709)	-35.0%	Underspending CP-7 Existing Facilities Modifications: $525k (updated schedule) CWTP Parapet Wall Repairs: $118k (updated schedule)
Transmission	$16,275	$12,839	($3,435)	-21.1%	Underspending Metropolitan Tunnel Redundancy Preliminary Design & MEPA Review: $1.6M, and Program Support Services: $184k (timing of consultant work) CP-1 Shafts 6, 8, and 9A: $1.4M (contract award later than originally anticipated and repair clamps issue) River Road Improvements-Wachusett: $1.0M, and Maintenance Garage/Wash Bay/Storage Building - Design/CA/RI: $203k (contract awards later than originally anticipated) Weston Aqueduct Sluice Gates - Construction: $851k(delay in slide gate fabrication and updated schedule) WASM/SPSM West PRV - Construction: $568k, Wachusett Lower Gatehouse Pipe Replacement - Construction: $332k, Sudbury/Foss Dam Improvements - Construction: $213k, and Wachusett Lower Gatehouse Building Rehabilitation - Construction: $183k (updated schedules) Watershed Land: $558k (timing of purchases) Offset Overspending WASM 3 Rehabilitation, CP-1: $4.4M, and Commonwealth Ave Pump Station Improvements - Construction: $291k (contractor progress)

ATTACHMENT 3
FY21 CIP Year-to-Date Variance Report ($000's)

	FY21 Budget YTD April	FY21 Actuals YTD April	YTD Actuals vs. Budget		Explanations
			$	%	
Distribution & Pumping	$17,903	$10,107	($7,796)	-43.5%	Underspending CP3-Sections 23, 24, 47 Rehabilitation and CA/RI: $3.2M, and Section 89/29 Replacement - Construction, ESDC and RE/RI Services: $2.8M (updated schedules) SEH Redundancy Pipeline Section 111 - Construction Phase 3: $784k (timing of final work) Sections 50 & 57 Water Rehabilitation - Design/ESDC; $595k (contract scope reduction) Section 89/29 Redundancy -Design/CA/RI: $334k (Construction Administration and Resident Inspection services less than anticipated budgeted spending) NEH Improvements Design & ESDC: $327k (contract awarded later than originally anticipated and updated schedule) Offset Overspending Section 56 Replacement/Saugus River - Design/CA: $471K (consultant progress) SEH Redundancy Pipeline Section 111 - Construction Phase 2: $312k (contractor progress)
Other Waterworks	$29,599	$8,524	($21,075)	-71.2%	Underspending Local Water Pipeline Financial Assistance Program: $19.0M (primarily due timing of community repayments due to less than anticipated communities deferring their loan repayments) CWTP SCADA Upgrades - Design Programming RE: $716k and Construction: $1.3M (updated schedule for SCADA Construction) Steel Tank Improvements - Design/CA: $314k (contract awarded later than originally anticipated) Masonry/Structural Repairs Bellevue 1/Arlington Heights - Design/ESDC: $165k (updated schedule) Offset Overspending Cosgrove Intake Roof Replacement: $266k, Bellevue 2/Turkey Hill Tanks Painting: $177k, and Gillis Pump Station/Cottage Farm CSO Roof Replacements: $141k (FY20 planned work completed in FY21)
Total Waterworks	**$65,802**	**$32,786**	**($33,016)**	**-50.2%**	
Business & Operations Support					

ATTACHMENT 3
FY21 CIP Year-to-Date Variance Report ($000's)

	FY21 Budget YTD April	FY21 Actuals YTD April	YTD Actuals vs. Budget		Explanations
			$	%	
Total Business & Operations Support	**$14,258**	**$2,802**	**($11,456)**	**-80.3%**	Underspending As-Needed Technical Assistance and CS/REI Services: $2.8M (lower than projected task order work) Lawson Upgrade: $1.6M, Cabling: $1.3M, SANS Storage: $1.0M, MAXIMO Interface Enhancements and Upgrades: $771k, Enterprise Content Management: $613k, Core Switches: $500k, Disaster Recovery: $318k, Instrumentation & Controls IT: $310k, and Telephone System Upgrade: $298k (schedule changes) Security Equipment & Installation: $584k (timing of physical security initiatives) FY19-23 Vehicle Purchases: $372k (due to timing)
Total MWRA	**$192,711**	**$120,355**	**($72,356)**	**-37.5%**	

Attachment 4
FY21 Budget vs. FY21 Projection

TOTAL MWRA	FY21 Budget	FY21 Projection	Change FY21 Budget vs FY21 Projection	
			$	%
EXPENSES				
WAGES AND SALARIES	$ 112,919,297	$ 107,989,029	$ (4,930,268)	-4.4%
OVERTIME	5,019,296	4,489,934	(529,362)	-10.5%
FRINGE BENEFITS	22,402,224	21,676,008	(726,216)	-3.2%
WORKERS' COMPENSATION	2,476,655	2,127,167	(349,488)	-14.1%
CHEMICALS	12,091,255	11,582,380	(508,875)	-4.2%
ENERGY AND UTILITIES	24,200,846	23,091,134	(1,109,712)	-4.6%
MAINTENANCE	32,618,569	32,092,117	(526,453)	-1.6%
TRAINING AND MEETINGS	405,264	220,148	(185,116)	-45.7%
PROFESSIONAL SERVICES	8,377,283	7,523,757	(853,526)	-10.2%
OTHER MATERIALS	6,706,916	6,646,576	(60,340)	-0.9%
OTHER SERVICES	24,983,777	24,272,660	(711,117)	-2.8%
TOTAL DIRECT EXPENSES	**$ 252,201,383**	**$ 241,710,910**	**$ (10,490,472)**	**-4.2%**
INSURANCE	$ 3,059,218	$ 3,274,058	214,840	7.0%
WATERSHED/PILOT	26,422,138	24,833,965	(1,588,173)	-6.0%
HEEC PAYMENT	7,215,200	10,431,993	3,216,793	44.6%
MITIGATION	1,692,344	1,652,058	(40,286)	-2.4%
ADDITIONS TO RESERVES	1,815,077	1,815,077	-	0.0%
RETIREMENT FUND	11,000,000	10,000,000	(1,000,000)	-9.1%
POSTEMPLOYMENT BENEFITS	6,065,490	6,065,490	-	0.0%
TOTAL INDIRECT EXPENSES	**$ 57,269,467**	**$ 58,072,641**	**$ 803,174**	**1.4%**
STATE REVOLVING FUND	$ 97,811,162	$ 88,657,490	(9,153,672)	-9.4%
SENIOR DEBT	258,730,904	255,429,061	(3,301,843)	-1.3%
SUBORDINATE DEBT	96,339,599	86,537,398	(9,802,201)	-10.2%
LOCAL WATER PIPELINE CP	5,686,864	545,023	(5,141,841)	-90.4%
CURRENT REVENUE/CAPITAL	16,200,000	16,200,000	-	0.0%
CAPITAL LEASE	3,217,060	3,217,060	-	0.0%
DEBT PREPAYMENT	3,900,000	3,900,000	-	0.0%
TOTAL DEBT SERVICE	**$ 481,885,588**	**$ 454,486,031**	**$ (27,399,557)**	**-5.7%**
TOTAL EXPENSES	**$ 791,356,438**	**$ 754,269,583**	**$ (37,086,855)**	**-4.7%**
REVENUE & INCOME				
RATE REVENUE	$ 769,385,000	$ 769,385,000	-	0.00%
OTHER USER CHARGES	9,208,367	9,253,367	45,000	0.5%
OTHER REVENUE	6,095,403	6,818,283	722,879	11.9%
RATE STABILIZATION	1,500,000	1,500,000	-	0.0%
INVESTMENT INCOME	5,167,668	4,341,478	(826,190)	-16.0%
TOTAL REVENUE & INCOME	**$ 791,356,438**	**$ 791,298,127**	**$ (58,311)**	**0.0%**
VARIANCE:		**$ (37,028,544)**	**$ (37,028,544)**	

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: Bond Defeasance of Future Debt Service

COMMITTEE: Administration, Finance & Audit

X VOTE
INFORMATION

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

Thomas J. Durkin
Director of Finance

Consistent with MWRA's multi-year rates management strategy, MWRA staff are recommending the execution of an approximately $30.1 million defeasance in June 2021 to reduce future year rate increases. The $30.1 million in available funds is derived from the use of $26.1 million of the FY21 surplus, the $3.9 million Debt Prepayment included in the FY21 CEB and $90,704 surplus funds from FY20. These funds will be used to prepay debt service coming due in FY22 through FY26 ($26.0 million in principal and $4.1 million in interest).

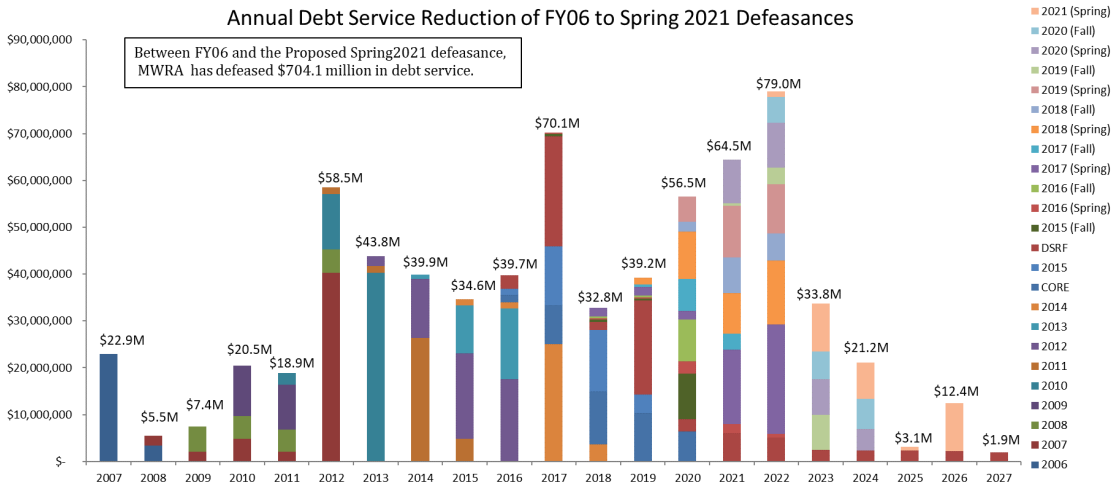
RECOMMENDATION:

To authorize the Executive Director or his designee, on behalf of the Authority, to enter into, execute and deliver all necessary agreements and other instruments and to take such other actions necessary to effectuate the redemption and defeasance of an aggregate principal amount of $26,010,000 of outstanding MWRA senior bonds including to cause the escrow of cash and/or securities in an amount necessary to fund such redemption and defeasance, in order to reduce the debt service requirement by $30,081,000 in the FY22 through FY26 timeframe.

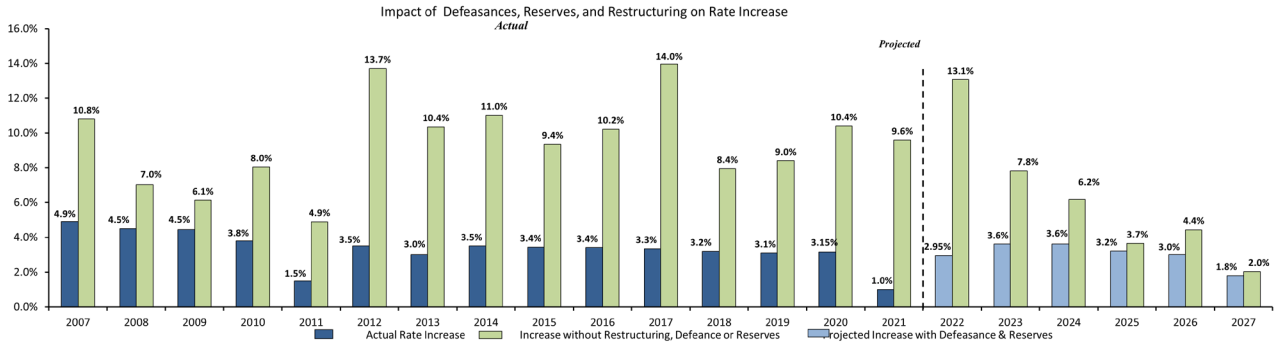
DISCUSSION:

Since FY12, the MWRA has utilized the budgetary defeasance account strategy to set aside surplus funds associated with the capital finance budget to defease outstanding debt. In order to mitigate rate increases, staff reflected the impact of a $15.0 million defeasance in the Proposed FY21 CEB comprised of the projected FY21 surplus as well as the FY21 CEB Debt Prepayment. Now, based on current year-end projections, the proposed defeasance has increased to approximately $30.1 million, consisting of $26.1 million from the projected FY21 surplus, $3.9 million of FY21 Debt Prepayment and $90,704 remaining from FY20 for even greater debt service reductions in future years.

MWRA's ongoing use of defeasances has had a significant impact in lowering future debt service payments and limiting annual rate revenue increases. From 2006 through this proposed transaction, MWRA has defeased $704.1 million in debt service to reduce future year rate revenue requirements. The following chart details the multi-year impact of those defeasances.



The application of these defeasances has had a significant impact on rate increases. The chart below shows the estimated rate increase without the application of the defeasances.



Staff reviewed all bonds available to be defeased, and have identified the maturities of the bonds in the following table as the most advantageous defeasance candidates.

Series	Maturity	Call Date	Principal	Defeasance Cost[1]
2013A	August 1, 2025	August 1, 2023	$ 285,000	$ 307,800
2013A	August 1, 2026	August 1, 2023	$ 355,000	$ 383,400
2017B	August 1, 2026	August 1, 2026	$ 2,345,000	$ 2,931,250
2017C	August 1, 2023	August 1, 2023	$ 9,000,000	$ 9,900,000
2017C	August 1, 2026	August 1, 2026	$ 3,500,000	$ 4,375,000
2018B	August 1, 2024	August 1, 2024	$ 3,190,000	$ 3,572,800
2018B	August 1, 2026	August 1, 2025	$ 3,510,000	$ 4,212,000
2020B	August 1, 2024	August 1, 2024	$ 3,825,000	$ 4,398,750
		Total	**$ 26,010,000**	**$ 30,081,000**

(1) Defeasance costs is only anticipated funds from surplus and does not included current year deposits. Assumes no interest earned on escrow

The following table details the annual budget savings by fiscal year for the proposed FY21 spring defeasance.

Budget Reduction by Fiscal Year					Total CEB
2022	2023	2024	2025	2026	Savings
$ 1,262,200	$ 10,262,200	$ 7,827,200	$ 778,350	$ 10,191,950	$ 30,321,900

The proposed defeasance reduces debt service by a total of $30.3 million between FY22 and FY26. The total debt service reduction attributable to the defeasance is approximately $240,900 higher than the defeasance cost because both the 2013 Series A and 2018 Series B bonds are callable prior to their maturity date. The payment of these bonds on the call date will yield interest savings, as a result of paying off the bonds prior to maturity without interest accruing. Since 2006, MWRA has avoided $35.7 million in interest by defeasing callable bonds.

The funds will be utilized to purchase governmental securities in an amount sufficient to make all future interest and principal payments on the bonds to be defeased, offset by the interest earned on the securities.

The governmental securities purchased will be deposited with an escrow agent (bond trustee). Once established, an escrow is irrevocable, replacing any future debt service payments due for the bonds being escrowed, and therefore reducing the rate revenue requirement. Establishing an escrow reduces debt service requirements for each fiscal year from the time it is executed until the defeased bonds mature.

Establishing an escrow to defease debt requires that MWRA's bond counsel draft an agreement to this effect and an independent verification agent must certify that the funds in the escrow are sufficient to pay the remaining debt service. Bonds that are escrowed to maturity are not included in the MWRA's debt cap or debt service coverage calculations. Staff will continue to monitor market conditions and the maturities available to be defeased to ensure that the bonds selected provide MWRA with the highest available debt service savings.

BUDGET/FISCAL IMPACT:

The defeasance of these bonds will decrease the FY22 through FY26 debt service requirement by $30.1 million. The cost associated with bond counsel and financial advisory services will be paid out of the Treasury Department's professional services budget.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: Conveyance of 12 Cleverly Court, Quincy

COMMITTEE: Administration, Finance & Audit

_____ INFORMATION
__X__ VOTE

Michele S. Gillen
Director, Administration

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to execute an agreement with the City of Quincy, subject to terms and in a form acceptable to the Authority, for the conveyance of an approximately 1.8-acre parcel of land at 12 Cleverly Court, Quincy, to the City of Quincy for park, recreation and open space purposes and to file the necessary legislation and execute other such documents necessary to effectuate such a conveyance.

DISCUSSION:

MWRA's policy for the Disposition of Real Property requires for property acquired by the MWRA since 1985 it must first be declared as surplus with the Board's approval and conveyed to another entity with Board approval. The MWRA Enabling Act requires legislative approval of the conveyance of the parcel.

The approximately 1.8-acre parcel at 12 Cleverly Court was originally acquired in 1987 as part of the much larger acquisition of the former Fore River Shipyard to be used as staging and laydown for the Boston Harbor Project. Upon completion of that project, MWRA began to surplus and dispose of portions of the property, retaining certain lands for long-term use, including those associated with the Pelletizing Facility and Fore River Railroad.

On May 12, 2004, the Board declared the parcel at 12 Cleverly Court surplus to MWRA needs. In 2005, staff conducted a competitive procurement process to sell the parcel and received 6 proposals. At the time, both the neighbors and the City of Quincy objected to the density of the proposed developments and staff halted the disposition process. Between then and now, the parcel has sat vacant or for several years was used for office trailers and a laydown construction area by J.F. White (through an 8(m) permit that included a fee) as the firm undertook the Fore River Bridge replacement project. That agreement ended in June 2019.

MWRA still does not have a need for the property and the City of Quincy has requested the parcel be conveyed to it, for nominal consideration, for park, recreation and open space purposes. Staff believe this to be a good public use of the property and recommend this conveyance, subject to terms acceptable to the Authority including that limit the use of that parcel to park and recreation uses only. The property is currently assessed by the City of Quincy at $298,000.

BUDGET/FISCAL IMPACT:

There is no budgetary impact.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: Memorandum of Understanding Between MWRA and BWSC for Reimbursement for Health and Safety Training

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COMMITTEE: Administration, Finance and Audit

_____ INFORMATION
_X_ VOTE

Matthew Dam, Manager, Occupational Health & Safety
Preparer/Title

Michele S. Gillen
Director, Administration

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to execute a Memorandum of Understanding with the Boston Water and Sewer Commission, substantially in the form attached, for MWRA to reimburse the Commission for half the cost of shared health and safety training in the amount of $46,034.50.

DISCUSSION:

On March 9, 2018, Governor Baker signed a bill that amends M.G.L. c. 149 §6 ½, which updated employee safety requirements in public sector workplaces. Since that time, the Authority's Occupational Health and Safety Department has been evaluating ways to strengthen the OSHA knowledge within the Safety and Training Departments. In discussions with the Massachusetts Department of Labor Standards, MWRA learned that it would benefit from OSHA specific classes taught by an OSHA Training Institute Center.

At the same time, the Boston Water and Sewer Commission (BWSC) performed an assessment of its training program and identified areas in which BWSC and its employees could benefit from additional training. It was determined that due to the amount of OSHA regulations, coupled with the lack of OSHA certifications possessed by safety and training staff, BWSC would benefit greatly from OSHA certified trainings.

BWSC performed the procurement process and contracted with the OSHA Education Center at The University of Texas at Arlington (UTA) to teach 11 classes that met the requirements for dual Specialist in Safety and Health and Certified Safety and Health Official certifications for up to twenty seats in each class. UTA is the top-ranked OSHA Training Institute Education Center in the country. The Center provides OSHA prescribed professional and regulatory instruction through

educators with decades of real-world experience and leadership that upholds the highest quality standards to ensure students have training and support services required to protect workers, reduce losses, and realize the profitability of a safe and healthful work environment.

In order to limit the overall burden on the training budget, BWSC staff inquired whether the MWRA would be interested in a 50/50 cost sharing for the training where MWRA would enroll up to ten of its employees in the dual certification program. MWRA accepted the invitation. Nine of the eleven classes that comprise the dual certification program have been completed; and remaining two classes will be completed by mid-June. The total cost of the program is $92,069.00. Under the proposed Memorandum of Understanding MWRA will reimburse BWSC for its 50% share ($46,034.50) of the costs of the training program.

BUDGET/FISCAL IMPACT:

MWRA will reimburse BWSC for 50% of the training cost. There are sufficient funds in the FY21 Current Expense Budget to cover this cost.

ATTACHMENTS:

Attachment 1: Proposed Memorandum of Understanding Between the Boston Water and Sewer Commission and the Massachusetts Water Resources Authority for Reimbursement for Training and Educational Services Provided by the OSHA Education Center at the University of Texas at Arlington, Division for Enterprise Development

MEMORANDUM OF UNDERSTANDING BETWEEN THE BOSTON WATER AND SEWER COMMISSION AND THE MASSACHUSETTS WATER RESOURCES AUTHORITY FOR REIMBURSEMENT FOR TRAINING AND EDUCATIONAL SERVICES PROVIDED BY THE OSHA EDUCATION CENTER AT THE UNIVERSITY OF TEXAS AT ARLINGTON, DIVISION FOR ENTERPRISE DEVELOPMENT

This Memorandum of Understanding (the "MOU") is made this ___ day of _____ 2021 by and between the Boston Water and Sewer Commission (the "BWSC") with its principal place of business at 980 Harrison Avenue, Boston, Massachusetts 02119 and Massachusetts Water Resources Authority ("MWRA"), with its principal place of business at Charlestown Navy Yard, 100 First Avenue, Boston, Massachusetts 02129.

WHEREAS, BWSC is a body politic and corporate and political subdivision of the Commonwealth of Massachusetts created by Chapter 436 of the Acts of 1977 and is responsible for the operation and maintenance of the water and sewer systems within the City of Boston;

WHEREAS, MWRA is a Massachusetts public authority established by an act of the Legislature in 1984 to provide wholesale water and sewer services to 3.1 million people and more than 5,500 large industrial users in 61 metropolitan Boston communities;

WHEREAS, the University of Texas at Arlington, Division for Enterprise Development ("UTA") is a public research university in Arlington, Texas providing OSHA-prescribed professional and regulatory instruction;

WHEREAS, on October 3, 2019, BWSC and UTA entered into an Agreement whereby UTA was to provide classroom instruction and specialized training to up to twenty (20) participants for Specialist in Safety and Health ("SSH") and Certified Safety and Health Official ("CSHO") Certificates at a total cost of $92,069.00;

WHEREAS, the MWRA accepted BWSC's invitation to split the cost 50/50 and agreed to pay $46,034.50 to have up to ten (10) of their employees enroll and participate in each of the eleven classes comprising said dual SSH/CSHO Program; and

WHEREAS, to date, nine of the eleven classes comprising said Program have been successfully completed by BWSC and MWRA participants and paid for by BWSC to UTA, with the final class scheduled to conclude on June 16, 2021.

NOW, THEREFORE, MWRA agrees that it will reimburse BWSC the amount of $46,034.50 on or before June 30, 2021, comprising the full amount of its financial obligation under this MOU.

Indemnification:
Each party agrees, to the extent allowed by law, to indemnify and hold the other party, its trustees, officers, employees, and agents harmless with respect to any and all actions, claims, liability, costs and expenses arising out of or in connection with the negligent or intentional acts or omissions of the indemnifying party, its trustees, officers, employees, and agents, with respect to the activities described in this MOU. This provision shall survive the termination of this MOU.

Confidential Information:
BWSC and MWRA understand that both organizations are public agencies subject to G.L. c. 4, § 7(26), the Public Records Law, and that most papers, statistical tabulations, documentary materials, or data, regardless of physical form or characteristics, received by each agency are subject to public inspection unless specifically exempt from disclosure. BWSC and MWRA agree to apply this chapter and related sections to the maximum extent practicable under Massachusetts law.

Entire Understanding and Amendments:
This MOU is the final understanding between BWSC and MWRA with respect to these educational services, superseding and replacing all prior communications both written and oral. Should any part of this MOU, for any reason, be declared invalid, such decision shall not affect the validity of any remaining provisions of this MOU, and such remaining provisions shall remain in full force and effect as if this MOU had been executed with the invalid provision eliminated. No amendment to this MOU shall be effective unless it is signed by duly authorized representatives of the parties.

Counterparts:
This MOU may be executed in counterparts, each of which will be deemed to be an original copy of this MOU and, when taken together, will be deemed to constitute one and the same MOU. A copy or PDF version of this MOU shall be treated as an original.

The parties have caused this MOU to be executed by their duly authorized signatories effective as of the date first above written.

Signed:

_____	_____
Henry F. Vitale, Executive Director Boston Water and Sewer Commission	**Frederick A. Laskey**, Executive Director Massachusetts Water Resources Authority
_____	_____
Date	**Date**

Approved as to Form:

_____
Janis DiLoreto Smith
BWSC General Counsel

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: Purchase Order Contract for Professional Services to Design and Engineer the Requirements for the Managed Security Services Contract
Rutter Networking Technologies
Bid WRA-4961Q, State Contact ITS74ProjServ

COMMITTEE: Administration, Finance, & Audit

___ INFORMATION
_X_ VOTE

Paula Weadick, MIS Director
David Stokes, Sr. Program Manager, IS Security
Douglas J. Rice, Director, Procurement
Preparer/Title

Michele S. Gillen
Director, Administration

RECOMMENDATION:

To approve the award of a purchase order contract for Professional Services to Design and Engineer the Requirements for the Managed Security Services Contract to the lowest responsive bidder under Bid WRA-4961Q, Rutter Network Technologies, and authorize the Executive Director to execute said purchase order in the bid amount of $140,000.

DISCUSSION:

Since 2003, MWRA has contracted cyber security monitoring services, also known as Managed Security Services as part of its Defense-in-Depth strategy that includes multi-layered defenses and cyber security protections. The current contract for those services will expire on July 4, 2022. In advance of procuring a new Managed Security Services contractor, it is necessary to design a new cyber security infrastructure that is consistent with current cyber security threats and technologies. This contract is for those design and engineering services.

This procurement is even more important now than back in September 2020, given some of the significant cyber security incidents and trends of the past six months, which will inform the deliverables of this design services engagement:

- 200% increase in phishing attacks during 2020, partly due to exploitation of the COVID-19 pandemic.
- The "SolarWinds" supply chain attacks (attributed to Russia), especially targeting U.S. Government agencies. The fallout from which continues to be experienced by the entire computing world.

- The Hafnium attacks on Microsoft Exchange (with alleged ties to the Chinese government).
- The Darkside ransomware attack on Colonial Pipeline (with investigation of possible ties to the Russian government).
- The growing number and severity of water sector attacks (like Oldsmar, FL) from both insiders and external threat actors.
- Future changes in MWRA's computing strategy of providing a single user experience regardless of staff location, due primarily to MWRA's "Future of Work" effort.

Since September, staff have continued to research and evaluate security technologies and have noticed a shift in the cyber security market in the following areas:

1. The ongoing move of security solutions that had been previously offered on premise to cloud-based services
2. Stronger emphasis on Detection and Response services, incorporating more robust and faster intelligence about cyber threats
3. Tighter integration between cyber security components, specifically with expanded automation capabilities

This contract provides a consultant to assist with recommending technologies and scheduling future MWRA cyber security improvements while providing insight into managed security service providers that are capable of supporting the future ecosystem. Specifically, the consultant will first provide a detailed five-year plan, with estimated costs and outlined yearly improvements that will continue to expand and strengthen MWRA's cyber security defenses. Secondly, it provides bid-ready specifications as the basis for a new scope of services for utilization into MWRA's next Managed Security Services contract scheduled for competitive bid this fall.

Procurement Process:

Under Bid WRA-4961Q, utilizing MWRA's e-procurement system (Event 4622), staff directly solicited the five vendors listed on State Contract ITS74ProjServ which provides for Cyber Security IT Project Services.

On April 29, 2021, Event 4622 closed with the following results:

BIDDERS	**AMOUNT**
Rutter Networking Technologies	**$140,000**
Janus Software Inc.	$363,330

Staff have reviewed Rutter Networking Technologies' bid and have determined that the bid meets all of the requirements of the specifications.

Staff recommend the award of this purchase order to Rutter Networking Technologies as the lowest responsive bidder.

BUDGET/FISCAL IMPACT:

There are sufficient funds for this purchase order included in the FY21 Current Expense Budget.

MBE/WBE PARTICIPATION:

Rutter Networking Technologies is not a certified Minority- or Women-owned Business.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: Task Order Appraisal Services
Colliers International Valuation and Advisory Services, LLC
Contract 608TA

COMMITTEE: Administration, Finance & Audit

____ INFORMATION
__X__ VOTE

Lisa Grollman, Project Manager
Preparer/Title

Michele S. Gillen
Director of Administration

On April 14, 2021, the Board of Directors voted to award contract 607TA, Task Order Appraisal Services to Foster Appraisal & Consulting Co., Inc., the sole proposer for that procurement. Staff informed the Board at that time, that due to anticipated additional property acquisitions for the Metropolitan Tunnel Redundancy Project and the need to have a second, independent appraiser available, another RFQ/P was issued to seek a second task-order appraisal contract, Contract 608TA.

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to award Contract 608TA to Colliers International Valuation and Advisory Services, LLC to provide appraisal services and to authorize the Executive Director, on behalf of the Authority, to execute a contract in an amount not to exceed $100,000 for a term of three years from the Notice to Proceed.

DISCUSSION:

MWRA staff use property appraisals to establish value when acquiring property in support of Board-approved capital construction projects, in the disposition of surplus MWRA property, and for negotiation of leases, permits and license fees and to conduct market studies, as needed. The purpose of this procurement is to make appraisal services available on an as-needed basis for projects that arise.

In January 2021, the Authority issued a Request for Qualification Statements and Proposals (RFQ/P) for two task-order appraisal contracts, each for an amount not-to exceed $100,000 and each for a term of three years. In April of 2021, the Board of Directors approved the award of a contract to the sole proposal received through this procurement, Contract 607TA. Due to additional property acquisition support anticipated for the Metropolitan Tunnel Redundancy Project and the need to have a second, independent appraiser available, staff issued another RFQ/P to seek a second task-order appraisal contract, Contract 608TA.

Procurement Process:

The procurement process utilized a one-step RFQ/P, which was issued March 31, 2021. The RFQ/P was publically advertised in the Goods and Services, Boston Herald, Banner Publication, and El Mundo. In addition, 215 firms received notice of the RFQ/P via the MWRA Supplier Portal and 16 other firms who routinely provide appraisal services to other public entities in Massachusetts were also notified by email. Nine firms requested a copy of the RFQ/P. Three proposals were received on April 23, 2021. One proposal from Kennedy Appraisers was deemed non-responsive, as it lacked the required information for evaluation. CBRE, Inc. ("CBRE") and Colliers International Valuation and Advisory Services, LLC ("Colliers) each submitted a proposal. The Selection Committee reviewed CBRE's and Colliers' proposals for Contract 608TA.

The Selection Committee evaluated and ranked the proposals based on the criteria contained in the RFQ/P (Cost - 30 points; Qualifications and Key Personnel - 25 points; Experience and Past Performance - 20 points; Technical Approach - 20 points; and Capacity, Organization, and Management Approach - 5 points).

The proposals were scored and ranked as follows:

Firm	Total Points	Total Order of Preference	Final Rank
Colliers	400.5	5	1
CBRE	292	10	2

For the cost criterion, proposers submitted Single Hourly Rates by job classification for each year of the contract. Both proposers' hourly rates remained constant over the three-year term. The hourly rates are as follows:

Firm	Principal/Senior Appraiser	Staff Appraiser	Support
CBRE	$300-450	NA	NA
Colliers	$250	$150	$75

Colliers proposes using a range of staff from a low of $75/hour for support staff to $250 per hour for senior appraisers. CBRE proposes using only senior appraisers and principals at a higher rate of $300-$450 per hour.

Additionally, as part of the cost analysis, the RFQ/P required that proposers submit a cost estimate for three sample appraisal scenarios representing residential, commercial and industrial valuation problems. The summary by firm for total hours and costs for all three samples as well as an average number of hours and costs per appraisal are as follows:

Firm	Total Hours (3 samples)	Total Cost (3 samples)	Average Hours Per Appraisal	Average Cost Per Appraisal
CBRE	39	$17,478	13	$5,826
Colliers	106	$15,100	35	$5,033

The Committee concurred that the sample appraisals illustrated that CBRE's average price per appraisal of $5,826 is higher than Colliers's price of $5,033; although CBRE's average level of effort in terms of hours per appraisal was much lower - 13 hours per appraisal versus 35 hours. Based on the proposed lower hourly rates and sample problems, the Committee ranked Colliers more favorably than CBRE with respect to the cost criterion.

Overall, Colliers was ranked first. Colliers is a full service international real estate firm with a range of staff experienced in complex real estate assignments, easement valuation, market studies, consulting, litigation support and brokerage. Additionally, Colliers submitted a thorough and responsive proposal. Further, Colliers has performed favorably as one of MWRA's current task order appraisers, completing a market study of the Charlestown rental market and easement assignments for water and sewer projects. The team includes experienced members and received strong recommendations for comparable work in Massachusetts from the MBTA, the City of Boston, and National Grid. References indicated that Colliers was responsive, detailed-oriented, thorough, reliable, timely, on budget, and produced quality work. References noted, however, that the recent retirement of a notable appraiser previously on the team may result in a capacity issue in the short-term. Despite this issue, Colliers's experience, comparable work assignments, recommendations and comprehensive responses to the RFQ/P resulted in the Committee's highest ranking of the firm.

CBRE is also an international real estate firm with broad experience in appraisals, eminent domain market studies and complex transactions, but provided a less comprehensive and responsive proposal. For example, the proposal included a resume for the lead appraiser, but only abbreviated information of the other team members. Likewise, the proposal contained no mid-range managers or support staff, which the Committee deemed a weakness, particularly combined with the high hourly rates. References included two law firms; both giving CBRE strong recommendations in terms of litigation support. Moreover, the City of Boston favorably recommended CBRE for eminent domain acquisitions. Of importance, in the technical approach, CBRE did not directly answer questions about the firm's proposed appraisal methodology nor did it provide customized responses to the sample appraisal questions. Rather, CBRE provided lengthy, redacted appraisal reports for prior projects that the firm deemed comparable to the RFQ/P samples. These factors, combined with the higher overall cost proposal, resulted in CBRE being ranked second.

Based upon the above, the Selection Committee recommends Colliers International Valuation and Advisory Services, LLC be awarded Contract 608TA for appraisal services.

BUDGET/FISCAL IMPACT:

The FY21 CIP includes $100,000 for Appraisal Services. Contract 608TA will be used on an as-needed basis and costs incurred to perform services will be charged to the specific project under the FY21 CIP.

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
DATE: May 26, 2021
SUBJECT: MWRA FY22 Insurance Program Renewal

COMMITTEE: Administration, Finance & Audit

____ INFORMATION
_X_ VOTE

Michele S. Gillen
Director of Administration

Paul F. Whelan, Risk Manager
Douglas J. Rice, Director of Procurement
Preparer/Title

Thomas J. Durkin
Director of Finance

MWRA's Insurance Program is renewed on an annual basis at the beginning of each fiscal year. Annual renewals are required due to the insurance industry's reluctance to provide firm pricing for more than a one-year period. Staff conducted a full competitive bid process for all lines of coverage in an effort to obtain the most competitive pricing. All policies expire on June 30, 2021, except the Treasurer's Bond which renews in January. Premium increases were received for all coverages reflecting current insurance marketplace conditions which, when combined with other program costs, results in an 18% increase over the FY21 program. This year's recommended program renewal totals $3,621,106.

RECOMMENDATION:

To approve awards to the lowest eligible and responsive proposers for insurance policies, bonds, and related broker services for MWRA's FY22 Insurance Program, and to authorize the Executive Director, on behalf of the Authority, to execute contracts for broker services, for the terms, premiums, and fees described below, and incorporated by reference for the record, resulting in a total program amount not to exceed $3,621,106:

(1) Workers' Compensation Excess Policy with Safety National Casualty Corporation, submitted by broker Willis Tower Watson Northeast Inc. (Willis), for the period beginning July 1, 2021, through June 30, 2022, with a $25 million limit and a $1 million self-insured retention, for a premium of $239,280;

(2) Property Policy (including Boiler & Machinery coverage) with Factory Mutual Insurance Co. (FM Global), for the period beginning July 1, 2021, through June 30, 2022, with various limits of coverage and a $2.5 million self-insured retention, resulting in a FY22 premium of $1,951,604;

(3) General Liability Policy (including Automobile Liability, Marine Liability, Wharfingers, Limited Pollution, and Employment Practice Liability) with Lexington Insurance Company and Berkshire Hathaway Specialty Insurance, submitted by broker, Optisure Risk Partners, LLC d/b/a Richards Robinson Sheppard (Richards Robinson Sheppard), for the period beginning July 1, 2021 through June 30, 2022, with a combined $25 million limit and a $2.5 million self-insured retention, for a combined premium of $538,772;

(4) Excess General Liability Policies with insurance companies to be determined and submitted by broker Richards Robinson Sheppard, for the period beginning July 1, 2021, through June 30, 2022, providing a combined total of $75 million of excess liability coverage for a total combined premium not to exceed $700,000;

(5) Public Official's Liability Policy with AIG Specialty Insurance, submitted by broker Arthur J. Gallagher Risk Management Services Inc. (Arthur J. Gallagher), for the period beginning July 1, 2021 through June 30, 2022, with a $5 million limit and a $1 million self-insured retention, for a premium of $109,501, including broker commission;

(6) Fiduciary Liability Policy with Chubb/ACE USA Insurance Co., submitted by broker Arthur J. Gallagher, for the period beginning July 1, 2021, through June 30, 2022, with a $5 million limit and a $1 million self-insured retention, for a premium of $8,897, including broker commission;

(7) Public Official's/Crime Bond with Great American Insurance Co., submitted by broker Richards Robinson Sheppard, for the period beginning July 1, 2021, through June 30, 2022, with a $1 million limit and a $25,000 deductible for a premium of $5,302;

(8) Treasurer's Bond with a $1 million limit with an insurance company to be determined in an amount not to exceed $2,500, with a one-year term beginning January 2022; and

(9) Broker contracts with Richards Robinson Sheppard for an amount of $45,000, Willis Towers Watson Northeast Inc., for an amount of $20,250 and Arthur J. Gallagher for the commissions included within the policy premiums, from notice of award through June 30, 2022.

DISCUSSION:

MWRA's insurance program consists of various types of coverage including: Excess Workers' Compensation, Property (including Boiler and Machinery coverage), General Liability, Excess Liability, Public Official's Liability, Fiduciary Liability, Public Official's/Crime Bond, and Treasurer's Bond. The Excess Workers' Compensation policy is required by state statute and is a prerequisite for MWRA to operate as a self-insured entity for Workers' Compensation benefits. Insurance coverage required by MWRA's Enabling Act includes Public Official's/Crime Bond and Treasurer's Bond which serve to protect the Authority against losses due to fraudulent or

dishonest acts, failure to perform duties faithfully or improper accounting of monies or property by employees. Other policies are maintained in order to protect MWRA assets and limit MWRA's financial exposure to loss. In addition, policies are maintained to comply with covenants contained within MWRA's General Revenue Bond Resolution. All policies under the current program (except Treasurer's Bond) expire on June 30, 2021, and require renewal.

MWRA's insurance program is renewed on an annual basis due to the reluctance on the part of insurance companies to provide pricing for more than a one-year term. For FY22, staff conducted a full competitive process for all lines of coverage in an effort to obtain the most competitive pricing and coverage available. Staff anticipated moderate increases in rates and premiums on all lines of coverage for FY22 based on current insurance market conditions.

Insurance companies across all lines of coverage have seen increased losses and risk exposures leading to an increased level of uncertainty and risk. "Hard market" conditions continue to persist resulting in limited capacity, restrictive coverage and premium increases. MWRA's incumbent property insurance carrier, FM Global, continues to recover from two years (2017 and 2018) of back to back unfavorable loss ratios which has contributed to the unavailability of its Membership Credit and has resulted in upward pressure on insurance rates. Additionally, underwriters in the general liability category continue to limit and diversify their risk exposures thereby reducing the number of companies willing to offer certain coverages. These market conditions, when combined with variables specific to MWRA, such as the increased replacement value of insured property due to inflation, increased flood exposure due to sea level rise, increased estimated payrolls, and MWRA's existing competitively priced program, caused staff to anticipated moderate increases in the overall FY22 insurance program renewal cost.

This year, staff again made an effort to attract multi-year policies, but none were received. Premiums for General Liability and Property coverages continue to increase sharply due to the above referenced market conditions. MWRA's Insurance Consultant, KFDA Advisors, reports seeing similar trending across its client base. Broker Fees remain stable with flat or small increases. Overall, the cost of the insurance program recommended for FY22, including all policies and broker fees, is $3,621,106, an increase of 18% from the expiring FY21 program.

Procurement Process:

In February, staff began the procurement process by advertising a Request for Letters of Interest from insurance brokers and direct writers.[1] In addition, staff sent direct solicitations to 19 brokers that were known to staff as having an interest in or participation in previous MWRA insurance procurements. In response to the solicitation, six brokers and one direct writer submitted Letters of Interest listing their requested insurance markets. Staff, with the assistance of MWRA's Insurance Consultant, reviewed all requests and assigned more than 50 insurance companies to the brokers. A Request for Qualifications/Proposals, including technical specifications and rating data, was sent to all participants along with their market assignments. One request for additional time for preparation of proposal was received and the due date was extended once. On May 4, 2021, MWRA received five proposals.

[1] A direct writer is an insurance company that deals directly with customers and does not require a broker.

Proposals varied with respect to the lines of coverage offered. As shown on the attached table, while multiple proposals/options were received for Excess Workers Compensation, General Liability, Property and Public Officials, the other policies had only one proposal. This response is similar to previous years and not surprising due to the competitive pricing of MWRA's current program. The proposals were reviewed and ranked by KFDA Advisors for adherence to MWRA's technical specifications. The approvals requested herein represent those recommended by MWRA's Insurance Consultant for each line of coverage sought. The attached table provides a summary of all lines of coverage with the limits, deductibles, and premiums comparing the expiring FY21 premiums with the proposed FY22 premiums. A brief summary of each line of coverage is provided below.

Workers' Compensation Excess – Two proposals were received for this coverage. The first proposal, from USI Insurance Services, included a quote from Travelers Insurance Company for a premium of $563,403 for a policy with a $500,000 self-retention and a limit of $25 million. This cost represents a 125% increase over the existing policy and was the only quote received with the same expiring retention level of $500,000. A second proposal was received from the incumbent broker, Willis Towers Watson Northeast Inc., with a policy from the incumbent carrier, Safety National Casualty Co, with two options for renewal. The first option includes a retention level of $750,000 per occurrence with an additional $250,000 annual aggregate to apply above the $750,000 retention level, for a premium of $288,298. The second option includes a $1 million retention level with no annual aggregate component, for a premium of $239,280.

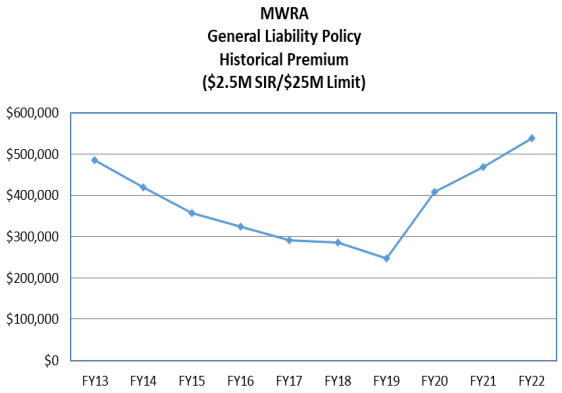
Staff reviewed the proposals with KFDA and reviewed MWRA's historical workers compensation claim data from the past ten years and have concluded that the most cost effective approach for MWRA, at this time, is to increase the self-retention level from the current $500,000. The premium savings in purchasing a policy with a higher self-retention level is justified under the current market conditions and MWRA's historical loss data. Staff also surveyed other entities for comparison purposes and found higher retention levels in place at similar agencies. (MassPort $1 million – BWSC $750,000 – DC Water - $1 million). Staff and KFDA reviewed the two options received from Safety National Casualty Co. and determined that the best alternative for the MWRA was to select the policy with the $1 million retention level per occurrence, for a premium of $239,280. Staff recommend the purchase of the policy from Safety National Casualty Co. with a $1 million per occurrence self-insured retention and $25 million limit through broker, Willis Towers Watson Northeast Inc., for the specified premium above and an associated broker fee of $20,250.

Property Insurance (including Boiler & Machinery) – Two proposals were received for this line of coverage. One from direct writer, FM Global, the incumbent provider and one from broker Richard Robinson Sheppard with AEGIS Insurance Company. The FM Global proposal contained various policy options with a $2.5 and $5.0 million self-retention levels with limits ranging from $200 million to $300 million in coverage. FM Global's proposal also included reduced limits of coverage for some exposures including a reduced flood limit for certain high-risk MWRA facilities and a reduced limit for damages arising from communicable disease. The option shown on the attached table and recommended by staff includes a policy limit of $300 million with a $2.5 million self-retention for a total premium of $1,951,604. This premium is based on a fixed rate applied to

MWRA's Total Insured Value (TIV). The fixed rate offered by FM Global increased from 4.1 cents per $100 TIV to 4.9 cents per $100 TIV, an increase of approximately 19.5%. The second proposal from AEGIS Insurance Company submitted through brokers Richard Robinson Sheppard, was substantially higher at $2,691,084, including an associated broker fee of $100,000.

Such rate increases are not unique to MWRA and are reflective of current market conditions for property coverage. MWRA's Insurance Consultant has seen similar increased renewal rates with other clients. FM Global also submitted pricing options with a higher self-retention level of $5 million. These options were not cost effective since they exposed the Authority to an additional $2.5 million of risk exposure in return for relatively small annual premium savings that would quickly evaporate with just one claim in excess of the $2.5 million level.

General Liability – Two proposals were received for the General Liability coverage. One from incumbent broker Richards Robinson Sheppard, which included a combined quote from Lexington Insurance Co, with a limit of $10 million and a quote from Berkshire Hathaway Specialty Co. with the next $15 million. This combined proposal offered $25 million in coverage with a $2.5 self-retention for a combined premium of $538,772 (including applicable surplus lines charges), with an associated broker fee of $45,000. This reflects a 15% increase over the expiring policy and is recommended. The second proposal was received from broker, USI Insurance Services Inc., with AEGIS Insurance Services LLC, for a $25 million policy coverage for a premium of $519,800 (including surplus lines charges) and an associated broker fee of $75,000 (an option for $35 million coverage for $696,520 was also included). The AEGIS proposals are based on a claims-made form policy and the coverage afforded was lacking in a number of ways. KFDA, reviewed the policy forms submitted and identified a number of areas where the policy fell short of the specifications. After reviewing both coverage forms, it was determined that the Lexington occurrence based proposal provided broader coverage and clarity and is preferred. The chart at right provides Historical Premium costs for this coverage over the past ten years and illustrates the cyclical nature of the insurance marketplace. Staff recommend the acceptance of the proposal from Richards Robinson Sheppard with an associated broker fee of $45,000, which also includes services for placement of the Excess Liability policies outlined below.



Excess General Liability – The recommended broker for the above General Liability coverage, Richards Robinson Sheppard, will be directed to solicit quotes from various insurance companies for the additional excess layers of liability coverage.[2] The companies and final premium costs for the additional $75 million of excess liability coverage will not be available in time for this Board meeting. In order to keep all insurance-related items together in one staff summary, staff are recommending a not to exceed amount of $700,000 for this item. This amount represents an increase of about 23% over last year's premium and is based on the underlying general liability policy premium outlined above and current market conditions.

Public Official's Liability – One proposal was received for this line of coverage with the specified $5 million limit and $1 million self-retention, from National Union Fire Insurance Company of Pittsburgh, PA (AIG), submitted through Arthur J. Gallagher, for a premium of $109,501. This represents an increase of $8,988 or 9% from the expiring FY21 policy and reflects an increasing level of claim activity in the area of Employment Practice Liability including discrimination and sexual harassment exposures. Options for higher limits and self-retentions were also provided by this carrier however, none were deemed more feasible than the current levels based on premium savings and MWRA historical losses in this area. Staff recommend the placement of this coverage with AIG for the specified premium, which includes broker commission.

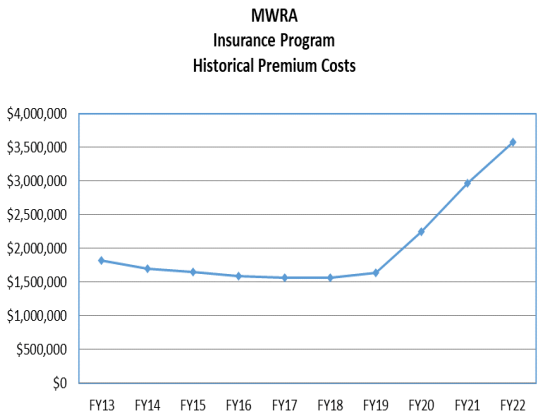
Fiduciary Liability – One proposal was received for this line of coverage with the specified $5 million limit and $1 million self-retention, from the incumbent, Chubb/ACE USA, submitted through Arthur J. Gallagher, for a premium of $8,897. This is $445 or 5% higher than the existing FY21 policy. Staff recommend the placement of this coverage with Chubb/ACE USA for the specified premium, which includes broker commission.

Public Official's/Crime Bond – One proposal was received for this line of coverage with the specified $1 million limit, from incumbent, Great American Insurance Company, submitted through Richards Robinson Sheppard, for a premium of $5,302. This is $482 or 10% higher than the existing FY21 policy. Staff recommend the placement of this coverage with Great American Insurance Company for the specified premium.

Treasurer's Bond – The Treasurer's Bond is required by the MWRA Enabling Act and is written in the name of the person holding the position of Treasurer. This bond is off-cycle from the rest of the insurance program and does not expire until January 2022. To keep all insurance program approvals consolidated in one staff summary, staff included a not-to-exceed amount of $2,500 for the renewal of this bond upon its expiration. The broker fee associated with renewal of this bond is included in the FY22 broker scope of services.

[2] Excess Liability policies cannot be purchased until the underlying General Liability policy is first established.

Staff recommend the renewal of MWRA's insurance program for FY22, with the various coverages, limits and self-insured retention levels from various brokers and insurance companies as outlined above and as included in the attached table. If approved, the FY22 total insurance cost will be $3,621,106. The chart provides MWRA's Insurance Program Historical Premium Costs for the past 10 fiscal years.



BUDGET/FISCAL IMPACT:

The Draft Final FY22 CEB includes $3.9 million for the total cost of maintaining MWRA's insurance program, consisting of premiums and fees and for payment of estimated claims and damages in FY22. The budget contains sufficient funds for the renewal of the insurance program outlined above.

MBE/WBE PARTICIPATION:

There were no minimum MBE and WBE participation requirements established for this procurement, as the nature of the services provided do not allow for subcontracting.

ATTACHMENT:

Insurance Program Proposals

MWRA FY22 INSURANCE PROPOSALS

		EXPIRING FY21			PROPOSED FY22		
Item #	Coverage	Deductible/ Limit	FY21 Premium	Current (FY21) Insurance Co. (Broker)	**FY22 Bids (See Note 1)**	**FY22 Insurance Co. (Broker)**	**Notes**
1	Excess Workers Comp.	$500K / $25M	242,163	Safety National Casualty Corp (Willis)	563,403	Travelers (USI)	Recommended bid has $1M SIR vs $500K.
		$750K/$25M *			288,298	Safety National Casualty Corp. (Willis)	Current $500k SIR level not offered by incumbent.
		$1M /$25M			**239,280**	**Safety National Casualty Corp. (Willis)**	One bid at $500k level more than doubled (125%).
						(Plus Broker Fee of $20,250)	$1M SIR level recommended based on cost and review of actual loss data from last ten years.
		* Includes an additional $250K Annual Aggregate Deductible.					Other agencies have SIR greater than $500k . . . Massport $1M, BWSC $750K, DC Water $1M
2	Property Insurance	$2.5M / $300M	1,605,150	FM Global (No Broker)	**1,951,604**	**FM Global (No Broker)**	FY22 bid based on 19.5% increase in rate applied
	(including Boiler & Machinery)	$2.5M /$200M			1,882,713	FM Global (No Broker)	to a 2% increase in Total insured Value.
		$5M /$300M			1,798,527	FM Global (No Broker)	No FM Global Member Credit available.
		$5M /$200M			1,759,266	FM Global (No Broker)	AEGIS bid significantly higher with limitations. FM Global additional options not feasable.
		$2.5M /$300M			2,615,616	AEGIS (Richards Robinson Sheppard) (Includes $100K Broker Fee)	
3	General Liability (Incl., Auto, Marine, Wharfingers, Limited Pollution and Employment Practice Liability)	$2.5M/$25M	468,537	Lexington Insurance Co. and Berkshire Hathaway Specialty Ins. (Richards Robinson Sheppard)	**538,772**	**Lexington Insurance Co. and Berkshire Hathaway Specialty Ins. (Richards Robinson Sheppard)** (Plus 45k broker Fee)	Premium increase of $70,235 or 15%. Price increase reflects current market conditions. AEGIS policies are Claims-Made vs Occurrence. Occurrence Form preferred.
		$2.5M/$25M			519,800	AEGIS Insurance Services USI) (Plus 75k broker Fee)	Premiums include Surplus Lines charge of 4%. Broker Fee for AEGIS would be 30k higher.
		$2.5M/$35M			696,520	AEGIS Insurance Services (USI)	
4	Excess Liability	$25M/$75M	567,033	Allied World, Great American, Berkshire Hathaway & Crum Forster (Richards Robinson Sheppard)	**700,000**	**To Be Determined. (Richards Robinson Sheppard)**	Premium shown is not-to-exceed amount. Coverage is based on the General Liability policy above which must be finalized first. Amount represents a 23% increase over last year.
5	Public Official's Liability	$1M / $5M	100,513	National Union (AIG) (Arthur J. Gallagher)	**109,501**	**National Union (AIG) (Arthur J. Gallagher)**	Premium increase of $8,988 (or 9%). No other bids received for this coverage. Bid amount includes broker commission.
		$2.5M /$5M			86,122	National Union (AIG)	Optional higher retention and limit options
		$1M / $10M			199,415	National Union (AIG)	not feasable.
		$2.5M/$10M			156,463	National Union (AIG)	
6	Fiduciary Liability	$1M / $5M	8,452	Chubb/ACE (Arthur J. Gallagher)	**8,897**	**Chubb/ACE (Arthur J. Gallagher)**	Premium increase of $445 (or 5%). Bid amount includes broker commission.
7	Public Official's/Crime Bond	$25K / $1M	4,820	Great American (Richards Robinson Sheppard)	**5,302**	**Great American (Richards Robinson Sheppard)**	Premium increase of $482 (or 10%).
8	Treasurer's Bond	$0/$1M	2,500	Travelers Casualty & Surety (Richards Robinson Sheppard)	**2,500**	**To Be Determined. (Richards Robinson Sheppard)**	Renews in January 2022. Amount shown is not-to-exceed amount.
9	Broker Fees -Various		65,250	Various	**65,250**	**Various - See Note 2**	Broker Fees - No increase.
	Total Program Cost		$ 3,064,418		**$ 3,621,106**		Total program increase of 18%

Note 1: **Proposed for approval shown in bold.**

Note 2: Broker Fees are $45,000 for Richards Robinson Sheppard and $20,250 for Willis Towers Watson Northeast Inc.
Arthur J. Gallagher's commission for Public Official and Fiduciary Policies are included in premiums shown.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: Update on Section 79 Water Main Break, Melrose

COMMITTEE: Water Policy & Oversight

X INFORMATION
_____ VOTE

Valerie Moran, P.E., Director, Waterworks
Cori Barrett, Director, Construction
Preparer/Title

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

RECOMMENDATION:

For information only.

DISCUSSION:

On Tuesday, April 27, 2021, MWRA's Section 79, a 20-inch cast iron pipeline in the Fells Service Area had a major break. This water main is the primary supply to Wakefield meter 172, which is the sole supply to Wakefield's Linden Street Pumping Station. It is located on Vinton Street in Melrose, parallel to and eventually crossing MBTA commuter rail lines, and continues through Messenger Playground, Belmont Street and ends on Greenwood Street at the Melrose/Wakefield line.

The break occurred at approximately 7:50 p.m. on Vinton Street, 375 feet from the Lynn Fells Parkway. An MWRA valve crew was working on Lynn Fells Parkway filling a portion of MWRA Section 70 and was able to isolate the water main quickly. The rupture of pipe caused significant damage to Vinton Street, buckling the road and damaging Melrose's sewer main as well as MWRA Section 79.

Lynn Fells Parkway at Vinton 4/27/21


Vinton Street 4/28/21

A portion of both Vinton Street and Lynn Fells Parkway had to be shut down and traffic rerouted. A MWRA pipeline crew was called in to clear debris and open the Lynn Fells Parkway to traffic as soon as possible. It was clear that Vinton Street could not be reopened until the damage to the utilities and the roadway were repaired.

RJV Construction Corporation in Canton was contacted to perform emergency repairs to MWRA's Section 79 water main. A site meeting was held with RJV staff on Wednesday morning, April 28, to assess the post-break roadway conditions and investigate potential scope of emergency repairs. Of immediate concern was safe roadway access for the residents of the four houses impacted on Vinton Street, since homeowners' vehicles were unable to exit their driveways. RJV mobilized equipment to the site by mid-morning to remove the damaged asphalt paving and grade the roadway for temporary access for homeowners. This activity was completed on Wednesday, April 28, and homeowners were able to move their vehicles.

Also on Wednesday April 28, staff developed a scope of work for the Contractor to remove and replace up to 350 linear feet of MWRA's 20-inch cast iron water main with new 20-inch ductile iron pipe within Vinton Street. The scope also includes repair or replacement of other damaged utilities such as local water, sewer, and drainage piping and structures. In addition, the work includes removal and replacement of granite curbing, concrete sidewalks, traffic signal loops, and furnishing and installing full width curb to curb paving in Vinton Street and patching and mill and overlay in the Fellsway, pavement markings, and traffic management including signage and police details. All work will be performed in compliance with the Commonwealth's Covid-19 Guidelines and Procedures and Massachusetts prevailing wage rates.

In addition to the water main break within Vinton Street, a leak was discovered at the interconnection between MWRA's Section 70 (36-inch steel pipe) and Section 79 (20-inch cast iron pipe) within the Lynn Fells Parkway. Investigation and repair of this leak is included in the Contractor's scope of work. Work includes traffic management, excavation, shoring, leak repair, and roadway restoration.

A Purchase Order was issued to RJV with a not-to-exceed amount of $750,000 and a contract duration of 90 calendar days. All work will be completed by July 26, 2021 with the exception of permanent paving. The city of Melrose has requested that the temporary pavement be allowed to settle over a winter season prior to the installation of permanent pavement.

Sequence of Events

Tuesday morning, April 27, at the intersection of Vinton Street and Lynn Fells Parkway, MWRA valve crews were utilizing a gate valve to fill a portion of MWRA section 70. This line was isolated and dewatered the previous week to allow pipeline staff to complete a blow-off retrofit project located at 736 Lynn Fells Parkway. Adjacent to the filling activities, Barletta Heavy began excavating an existing bridge abutment for a MBTA bridge replacement project.

That afternoon, the Town of Wakefield had a significant break at its Linden Street Pumping Station. It was reported that during an inspection of the station an operator heard loud banging of the pipes and then witnessed the casing of one of their cast iron pumps rupture. The pump station was not in use. Wakefield staff quickly shut down their piping, but could not get a tight shut down and requested MWRA assistance. Wakefield subsequently informed MWRA that its station had significant damage to both equipment and building support systems.

The cause of MWRA's pipe break and the break at the Linden Street Pumping Station has not been determined. MWRA staff have reviewed hydraulic data and the timing of pump and valve operations. The only pressure sensors in the service area with enough sensitivity to record transient pressure surges are on MWRA's SCADA system at the Gillis and Spot Pond Pump Stations. Prior

to the break in Wakefield, there was a three to four psi fluctuation in suction pressure at the Spot Pond Pumping station, but flows at the station remained steady. This fluctuation does not necessarily indicate a water hammer or surge on MWRA's system. These sensors registered more significant pressure transients, 20 to 25 psi, at the time of shutdown of Wakefield's break. Later in the evening when Section 79 broke, data indicated normal operation and a cause was not determined. Listed below is an approximate timeline of system hydraulics and events on April 27.

1. Spot Pond Pumping Station is pumping from the Fells Service Area to the Northern Intermediate High Service Area.
2. At 9:25 a.m., MWRA valve crews began filling a portion of MWRA section 70.
3. At 1:50 p.m., Wakefield experienced a rupture at its Linden Street Pumping Station. A MWRA valve crew was sent to aid Wakefield with isolating its pumping station and to isolate MWRA's Wakefield meter 172.
4. At 7:50 p.m., the break on Section 79 occurred.

MWRA staff met with Wakefield's DPW staff to discuss what happened at its station and potential causes for the rupture. Wakefield staff indicated they were not conducting work in the area and their pump station was not in operation. Wakefield staff suggested a shared responsibility for the break at their pump station and questioned if MWRA would contribute to repairs. The available hydraulic data, however, does not provide a conclusion of what caused their break or the subsequent break in MWRA's system.

Wakefield's pump station is over 60 years old and has two of three original cast iron pumps with new motors and VFDs. The third pump in the station has been decommissioned. Wakefield has struggled to obtain a tight shutdown of their old valves and has requested MWRA assistance in working them.

Linden Street Pump Station Wakefield 4/27/21

Cracked section of Section 79

The Contractor's construction progress to date includes removal of pavement and grading of roadway, cleaning and televising drainage system, removal and replacement of sewer piping and manhole, installation of 12-inch gate valve on city of Melrose water main, and installation of temporary water services for residents of Vinton Street. The Contractor began removal and replacement of the damaged sections of MWRA's 20-inch water main and the city's adjacent 12-inch water main. The failure of the cast iron pipeline was at a location where the pipe was constructed in ledge and a significant amount of blast rock was found in the pipe bedding. The

water main repair approach is to replace all pipe in areas of ledge and evaluate the condition of the remaining pipe once it is uncovered. Staff will present an update on the progress of work at the Board Meeting.

BUDGET/FISCAL IMPACT:

The costs related to this incident are being calculated for the repair, staff overtime and equipment. Subject to cost recovery, the costs will be absorbed in FY21 Current Expense Budget.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: One-Year Purchase Order Contract for the Supply and Delivery of Sodium Hypochlorite
Univar USA, Inc.
Bid WRA-4965

COMMITTEE: Water Policy & Oversight

____ INFORMATION
_X_ VOTE

Michele S. Gillen
Director of Administration

Valerie Moran, P.E., Director, Waterworks
Douglas J. Rice, Director of Procurement
Preparer/Title

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

RECOMMENDATION:

To approve the award of Purchase Order Contract WRA-4965, a one-year contract for the supply and delivery of sodium hypochlorite, to the lowest responsive bidder, Univar USA, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said purchase order contract in an amount not to exceed $1,702,344 for a period of one year, from July 17, 2021 through July 16, 2022.

DISCUSSION:

MWRA uses sodium hypochlorite at 15% solution at the John J. Carroll Water Treatment Plant in combination with aqua ammonia to form monochloramines for secondary disinfection. Monochloramines provide a stable and persistent disinfectant residual throughout MWRA's entire water distribution system. Staff estimate that approximately 1,910,000 gallons will be required during this one-year contract period.

MWRA also uses sodium hypochlorite for primary disinfection at the William A. Brutsch Water Treatment Facility. At Brutsch, MWRA uses sodium hypochlorite at 11% solution because it is less prone to degradation over long periods of storage. The product of degradation is gas bubbles, which can block the supply of chemical by positive displacement pumps, which in turn reduces process reliability. Since this facility is unstaffed for 16 hours each day, the lower concentration hypochlorite is used to reduce the risk of an interruption in water treatment while unstaffed. Based upon reasonable assumptions and historic usage, staff estimate that approximately 48,000 gallons of sodium hypochlorite will be used at Brutsch during the one-year contract term. The anticipated usage is an estimate only. MWRA will only pay for the chemical that is received.

Procurement Process

Bid WRA-4965 was advertised in the following publications: the Boston Herald, the Goods and Services Bulletin, El Mundo, and Banner Publications. In addition, bids were made available for public downloading on MWRA's e-procurement system (Event 4632) and four potential bidders were solicited through the e-Portal.

On April 20, 2021, Event 4632 closed, with the following results:

Univar USA, Inc.	Estimated Gallons	Percent Solution	Unit Price Per Gallon	Extended Bid Price
Brutsch Facility	**48,000**	**11% Solution**	**$1.563**	**$75,024**
Carroll Plant	**1,910,000**	**15% Solution**	**$0.852**	**$1,627,320**
			Total Bid	**$1,702,344**
Borden & Remington Corporation	Estimated Gallons	Percent Solution	Unit Price Per Gallon	Extended Bid Price
Brutsch Facility	48,000	11% Solution	NO BID	NO BID
Carroll Plant	1,910,000	15% Solution	$0.9548	$1,823,668
			Total Bid	$1,823,668
Kuehne Chemical Company, Inc.	Estimated Gallons	Percent Solution	Unit Price Per Gallon	Extended Bid Price
Brutsch Facility	48,000	11% Solution	$2.00	$96,000
Carroll Plant	1,910,000	15% Solution	$1.00	$1,910,000
			Total Bid	$2,006,000

Under the current contract with Univar, which will expire on July 16, 2021, MWRA is paying a fixed price of $0.765 for the Carroll Plant and $1.427 for the Brutsch Facility. The new bid prices represent a $0.087 per-gallon increase at the Carroll Plant and a $0.136 per-gallon increase at Brutsch.

Sodium hypochlorite is manufactured from two different products in approximately equal parts, chlorine and caustic soda. On April 14, 2021, a representative from Borden & Remington stated that the caustic soda market declined late last year and has held steady since that time. However, chlorine is currently in short supply and suppliers have incurred dramatic price increases recently, resulting in higher bleach prices. The representative also stated that all of the chlorine/bleach suppliers have announced increases that are expected to continue through the second quarter of 2021.

Staff reviewed the current bids and determined that Univar met all of the requirements of the bid specifications. Therefore, staff recommend the award of this purchase order to Univar USA, Inc., as the lowest responsive bidder.

BUDGET/FISCAL IMPACT:

There are sufficient funds included in the Proposed FY22 Current Expense Budget. Appropriate funding will be included in subsequent Proposed CEB requests for the remaining term of the contract.

MBE/WBE PARTICIPATION:

Univar USA, Inc. is not a certified Minority- or Women-owned business.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: Water System Hydraulic Model
CDM Smith Inc.
Contract 7613

COMMITTEE: Water Policy & Oversight

____ INFORMATION
_X_ VOTE

Michele S. Gillen
Director of Administration

John P. Colbert, P.E., Chief Engineer
Renie A. Jesanis, Project Manager
Preparer/Title

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

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to award Contract 7613, Water System Hydraulic Model, to CDM Smith Inc. and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the amount of $788,467.00 for a contract term of 36 months from the Notice to Proceed.

DISCUSSION:

The water system hydraulic model has been a useful tool to develop water supply plans, emergency operating procedures and plans for outages, determine water age, plan redundancy projects, evaluate alternatives for design projects and perform master planning.

The current water system hydraulic model was created in 1999, using the software H2Onet by MWHSoft, Inc., and later converted to Infowater, a software product by Innovyze. The existing model includes the MWRA water system east of the Norumbega Covered Reservoir, also called the Metropolitan system. The Norumbega Covered Reservoir supplies the eastern portion of the MetroWest Tunnel and Hultman Aqueduct, which supplies Shaft 5 of the City Tunnel, Weston Aqueduct Supply Mains (WASMs), the Loring Road Covered Reservoir and Section 80. The Metropolitan System consist of approximately 284 miles of distribution mains east of Shaft 5, twelve storage tanks, twelve pump stations, nine tunnel shafts and approximately 150 community meters. There are seven water distribution pressure zones.

The existing hydraulic system model is comprised of six components: reservoirs, tanks, pumping stations, valves (pressure reducing and throttling), pipes and junction nodes. Junction nodes are used to connect pipes at pipe interconnections or to signify changes in pipe characteristics, including diameter, material and installation date.

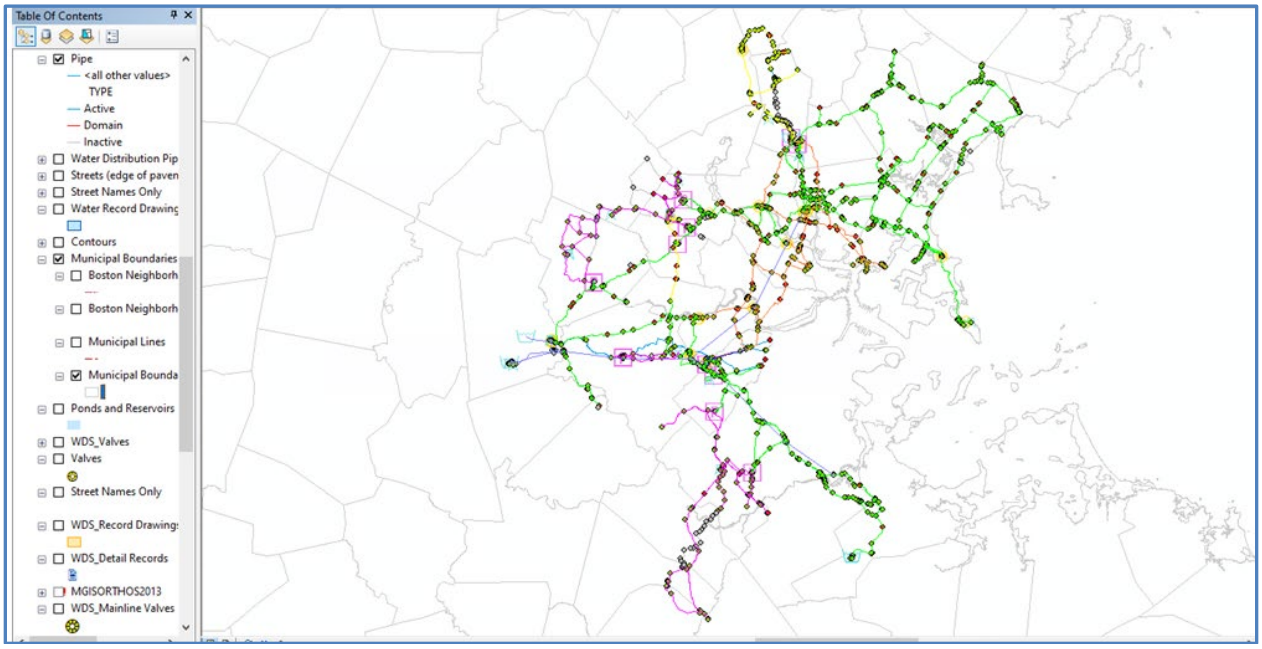


Figure 1: Overview of the MWRA Water System Hydraulic Model

This Contract:

The goal of this project is to improve and update MWRA's modeling capabilities to accurately analyze and predict the current and future operating conditions of its water transmission and distribution system. Staff perform model updates when there is a change in system configuration and when system improvements are completed. However, a full system update and calibration has not been performed since the current model was created in 1999. Improvements in the modeling configuration, software and calibration of the model will improve the accuracy of the model for future system analysis.

To reduce model maintenance and data storage redundancy, the model will include integration between its modeling software and MWRA's GIS system, which is updated as water construction projects are completed. The model integration will save time for staff to manually enter all water pipeline changes into the model and will provide an automatic one-to-one match with MWRA's GIS system when changes are made.

The scope of the contract is to evaluate and recommend a new water hydraulic model software, input all water distribution pipelines from the GIS model and all other water system features, develop and incorporate updated system demands and diurnal flows from historical data, execute a full hydraulic model calibration by comparing meter data with model data, and provide staff training on the new model. Upon turnover of the updated model to MWRA, staff will complete all future model updates and complete hydraulic model runs to support operations and design activities.

Procurement Process:

On March 8, 2021, MWRA issued a one-step Request for Qualifications Statements/Proposals

(RFQ/P) that was publicly advertised in the Central Register, the Boston Herald, the Banner Publications, and El Mundo. In addition, 166 firms received notice of the RFQ/P via the MWRA Supplier Portal. The solicitation was also e-mailed directly to one additional firm. Nineteen firms requested the RFQ/P documents. Nineteen firms requested the RFQ/P documents.

The RFQ/P included the following evaluation criteria: Cost – 25 Points; Qualifications and Key Personnel – 25 points; Experience/Past Performance on Similar Non-MWRA Projects and Past Performance on MWRA Projects - 25 points; Technical Approach - 20 points; Capacity/Organization and Management Approach- 5 points.

On April 9, 2021, MWRA received proposals from three firms: Brown and Caldwell, CDM Smith, and Hazen and Sawyer, P.C. The proposed costs and levels of effort are listed below:

Proposer	Proposed Cost	Level of Effort
Brown and Caldwell	$789,919.16	4,098 hours
CDM Smith Inc.	$788,467.00	3,550 hours
Hazen and Sawyer, P.C.	$588,049.22	2,626 hours
Engineers Estimate	*$712,750.00*	*2,730 hours*

The five voting members of the Selection Committee met on April 30, 2021 and reviewed, scored, and ranked the proposals as follows:

Proposer	Total Points	*Order of Preference/ Total Score	Final Ranking
CDM Smith Inc.	451	5	1
Brown and Caldwell	365.25	12	2
Hazen and Sawyer, P.C.	351	13	3

CDM was unanimously ranked first by the Selection Committee. The Selection Committee was in agreement that CDM's proposal presented an appropriate level of effort for the project. The cost proposed is 10% greater than the Engineer's Estimate, but provided for a level of effort that is 30% higher than the Engineer's Estimate. The greater level of effort is attributed to additional effort and hours to develop the new hydraulic model including evaluation of new software and model modifications and improvements. Further, CDM proposed a lower average cost per hour than used in the Engineer's Estimate.

CDM's proposed team has excellent qualifications, relevant experience and capacity with locally based staff. Also, CDM's project team is currently working on several major modeling efforts on MWRA projects. Of importance, the past performance on MWRA projects has been excellent. MWRA experience includes the Low Service PRV Improvements project, the Metropolitan Water Tunnel Program, the Spot Pond Covered Storage and Pump Station Design and the Sudbury Aqueduct Pressurization and Connections Review. Additionally, the existing water system hydraulic model was developed by CDM in 1999 and some of the same CDM staff are proposed to work on this contract. Moreover, CDM received excellent references on Boston Water and Sewer Commission's Water Distribution System Study and South Central Connecticut Water Authority's System Operational Optimization Study. Finally, Committee members were in

agreement that CDM's technical approach was very good and provided a high level of technical detail and addressed all aspects of the scope of services.

Brown and Caldwell was ranked second. Brown and Caldwell proposed a slightly higher cost proposal than CDM, and the highest level of effort among all the proposers. The Selection Committee agreed that the members of the project team met the qualifications stated in the scope of services; however, they were considered the least experienced team when compared with the other proposers. Although the firm's overall references for past MWRA and non-MWRA projects were rated very good, the Selection Committee found the firm's technical approach to be non-specific to the requirements of this project.

Hazen and Sawyer was ranked third. The firm proposed the lowest overall cost and level of effort, with a cost 18% lower than the Engineer's Estimate. The Selection Committee raised concerns about the firm's ability to complete the work with the level of effort proposed. Additionally, the Committee found that its project team was not as experienced as the other proposers on past hydraulic modeling projects and their technical approach did not show a good understanding of the project's requirements.

Based on the final rankings, the Selection Committee recommends the award of this contract to CDM Smith Inc. in an amount not to exceed $788,467.00. In accordance with MWRA's procurement procedures, staff entered into discussions with the firm to confirm costs, level of effort, and project management. Based on those discussions, staff are of the opinion that CDM Smith Inc. can complete the project's scope of services for the proposed cost.

BUDGET/FISCAL IMPACT:

The FY21 CIP includes a budget of $500,000 for Contract 7613. The contract award amount is $788,467 or $288,467 over budget. This amount will be absorbed within the five-year CIP spending cap.

MBE/WBE PARTICIPATION:

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

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: Northern Intermediate High Section 89 Replacement Pipeline
P. Gioioso & Sons, Inc.
Contract 7117

COMMITTEE: Water Policy & Oversight

____ INFORMATION
_X_ VOTE

Michele S. Gillen
Director of Administration

Patrick T. Barrett, Program Manager
John Colbert, P.E., Chief Engineer
Preparer/Title

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

RECOMMENDATION:

To approve the award of Contract 7117, Northern Intermediate High Section 89 Replacement Pipeline, to the lowest responsible and eligible bidder, P. Gioioso & Sons, Inc. and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of $32,619,000, for a contract term of 1475 calendar days from the Notice to Proceed.

DISCUSSION

MWRA's Northern Intermediate High (NIH) pressure zone has supplied water to the communities of Reading, Stoneham, Wakefield, Wilmington, Winchester, and Woburn through a single 48-inch diameter pipeline, fed by the Gillis and Spot Pond Pumping Stations in Stoneham. MWRA recently completed the NIH Redundancy Project with the installation and activation of the new Section 110 pipeline through the communities of Stoneham, Reading and Woburn. Section 110 provides full pipeline redundancy for the water supply to the NIH communities. Activation of the new Section 110 pipeline has allowed MWRA to proceed with design and construction for the replacement of Section 89, which has previously been the single spine transmission line to the NIH communities. Section 89 was installed in the 1970s and is made of a material called pre-stressed concrete cylinder pipe (PCCP), a section of which has been susceptible to catastrophic failure. See Figure 1, for the new

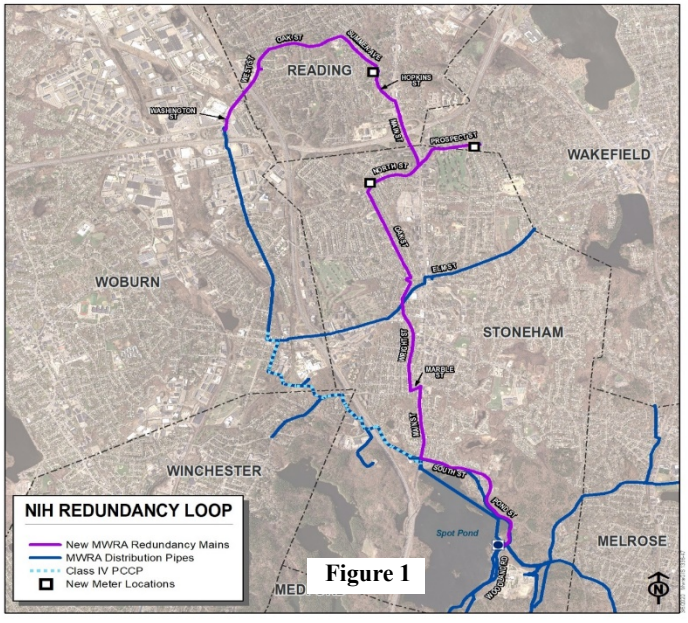


Figure 1

redundancy loop and PCCP main to be replaced. With redundant water supply in place, MWRA is now able to proceed with the replacement of the vulnerable portions of Section 89 with ductile iron pipe.

This contract will include replacement of a 10,500-foot portion of PCCP with class IV reinforcing wire, replacement of line valves and appurtenances on the existing ductile iron portion of Section 89, and abandonment of the 118-year old, 24-inch diameter cast iron Section 29 pipeline. See Figure 2 attached below.

The Board of Directors, at the April 14, 2021 meeting, approved an amendment to Contract 7116 for the additional design and engineering services during construction and awarded Contract 7633 for resident engineering services. Stantec Consulting Services Inc. will provide engineering services for these contracts.

Procurement Process

Contract 7117 was advertised in the Boston Herald, El Mundo, Banner Publications, the Central Register, COMMBUYS and bid utilizing MWRA's e-procurement system (Event 4554-6) in accordance with Massachusetts General Laws, Chapter 30. Six bids were received and opened on March 31, 2021. The bid results are as follows:

Bidders	Bid Amount
Engineer's Estimate	*$30,345,745*
P. Gioioso & Sons, Inc.	$32,619,000
Albanese D&S, Inc.	$34,430,000
RJV Construction Corp.	$37,154,000
Baltazar Contractors Inc.	$37,320,000
Revoli Construction Co., Inc.	$38,815,000
Barletta Heavy Division Inc.	$54,142,000

The lowest bid from P. Gioioso & Sons is 7.5% higher than the Engineer's Estimate. The two lowest bids are within 5.5% of each other, an indication of the reasonableness of the low bid.

MWRA staff met with representatives of P. Gioioso & Sons and confirmed that the bid price reflects all work as described in the contract documents. The higher cost over the Engineer's Estimate is directly related to the current volatile construction industry material supply costs.

References for P. Gioioso & Sons were checked and found to be favorable. P. Gioioso & Sons recently completed two phases of MWRA's Section 111 - Southern Extra High Redundancy Project, (the Boston and Dedham sections, valued at $11.7 million and $18.6 million, respectively) in 2018 and in 2020. Staff report the Contractor's performance on these projects was very good.

P. Gioioso & Sons recently began working on a $26 million Corridor Improvement Project for MassDOT in Newton and Needham. The work primarily consists of drainage, roadway and bridge improvements, but also includes 5,300 feet of 20-inch water main replacement. The performance has been reported as very good with no major issues occurring on this project to date. In 2018, P. Gioioso & Sons completed a $7 million drain, sewer, and water main project in Salem. Individuals from the city of Salem were contacted for reference checks and spoke highly of P. Gioioso & Sons and would consider working with the company again in the future.

Staff reviewed OSHA records for P. Gioioso & Sons. The firm received twelve OSHA citations in the past five years, which relate to six separate incidents. Consequently, in 2019, P. Gioioso & Sons revised its Standard of Operations Procedures, which included the implementation of a three-step plan consisting of identification, inspection and training to increase awareness of construction safety issues. Since the implementation of these safety improvements in 2019, P. Gioioso & Sons has not received any OSHA violations or citations.

MWRA staff concluded P. Gioioso & Sons, Inc. possesses the skill, ability, and qualifications necessary to perform the work under this contract. P. Gioioso & Sons has the available capacity to complete this contract along with its other ongoing work. Staff have determined that the bid price is reasonable, complete and includes the payment of prevailing wage rates, as required. Therefore, staff recommend Contract 7117 be awarded to P. Gioioso & Sons, Inc. as the lowest responsible and eligible bidder.

BUDGET/FISCAL IMPACT:

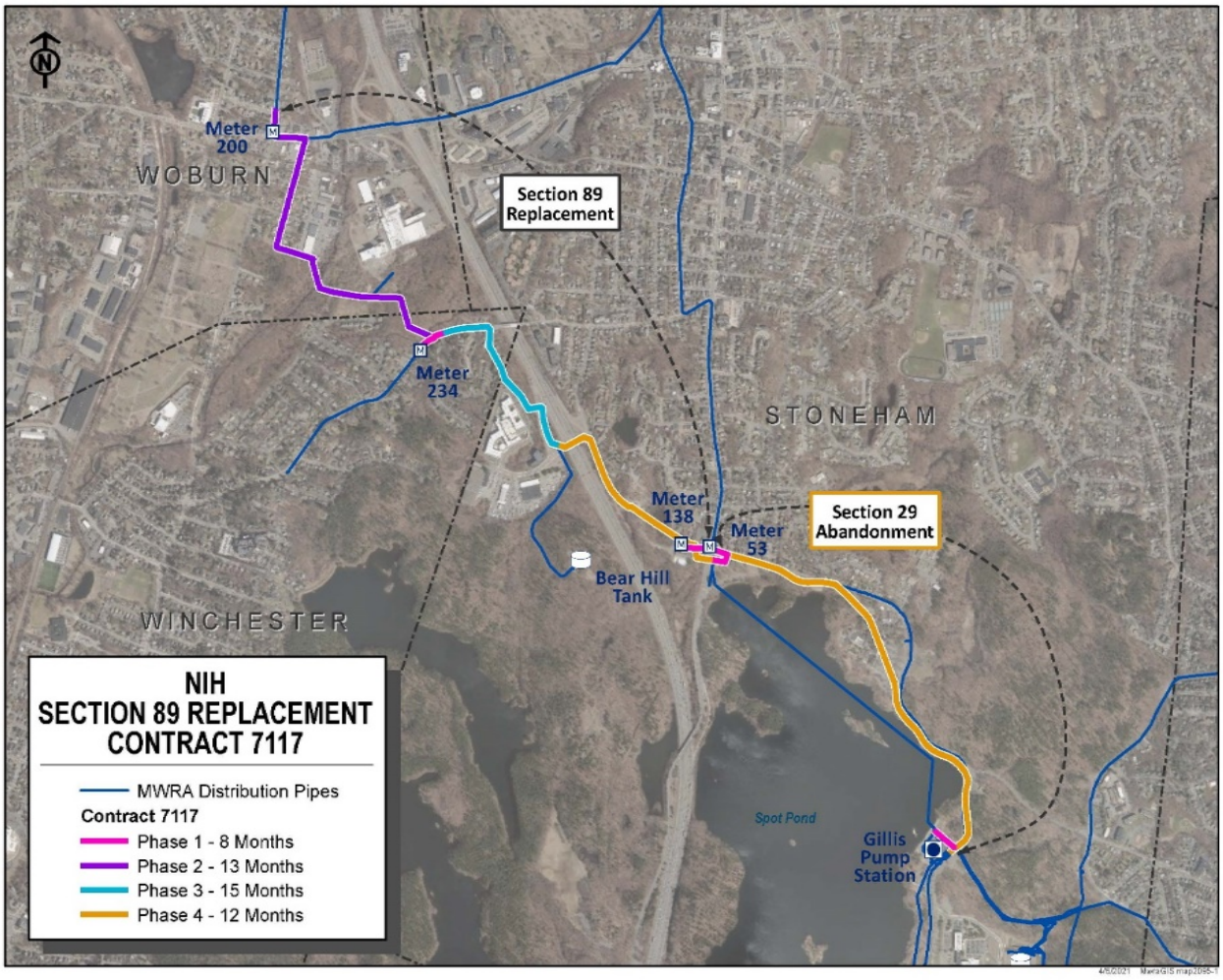
The FY21 CIP includes a budget of $21,300,000 for Contract 7117. The award amount is $32,619,000, or $11,319,000 greater than budgeted. This amount will be absorbed within the five-year CIP budget cap. The budget estimate was updated to $32,619,000 in the FY22 Draft Final CIP.

MBE/WBE/PARTICIPATION:

The D/MBE and D/WBE participation requirements for this project were established at 4.2% and 4.5%, respectively. AACU reviewed the bids and determined that P. Gioioso & Sons, Inc.'s bid is responsive to these requirements.

ATTACHMENT:

Figure 2- NIH Section 89 Replacement


Meter 200
WOBURN
Section 89 Replacement
Meter 234
STONEHAM
Meter 138
Meter 53
Section 29 Abandonment
Bear Hill Tank
WINCHESTER
Spot Pond
Gillis Pump Station
NIH
SECTION 89 REPLACEMENT
CONTRACT 7117
MWRA Distribution Pipes
Contract 7117
Phase 1 - 8 Months
Phase 2 - 13 Months
Phase 3 - 15 Months
Phase 4 - 12 Months

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: Low Service Pressure Reducing Valve Improvements - Boston/Medford
RJV Construction Corporation
Contract 7563

COMMITTEE: Water Policy & Oversight

____ INFORMATION
_X_ VOTE

Michele S. Gillen
Director of Administration

John P. Colbert, P.E., Chief Engineer
Renie A. Jesanis, Project Manager
Preparer/Title

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

RECOMMENDATION:

To approve the award of Contract 7563, Low Service Pressure Reducing Valve Improvements – Boston/Medford to the lowest responsible and eligible bidder, RJV Construction Corporation, and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of $11,326,000, with a contract term of 24 months from the Notice to Proceed.

DISCUSSION:

On May 30, 2018, the Board approved the award of Contract 7575 to CDM Smith Inc. to provide Design and Engineering Services During Construction for the replacement of pressure reducing valves (PRVs) to increase the flow of water to MWRA's Northern Low Service area. The Project was developed as an interim improvement to enhance MWRA's emergency response to a failure of the Metropolitan Tunnel system until a redundant tunnel is constructed. The Project is to 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 to increase the supply from the Northern Low Service System and reduce the need to pump non-potable water out of the Spot Pond Reservoir in an emergency. The new larger pressure reducing valves at Nonantum Road and Mystic Valley Parkway will be designed to be controlled remotely through SCADA. The Northern Low Service pipelines would operate at increased grade lines to supply additional flow to the Spot Pond Pumping Station and Storage Facility and the Gillis Pumping Station in an emergency condition with the tunnel system out of service.

Figure 1: Interior of Nonantum Road PRV Vault

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

Figure 2: Interior Mystic Valley Parkway PRV Vault

Construction at both sites is limited to between September 15 and May 15 to ensure adequate water supply and pressure is maintained during periods of high water demand. Work that does not require a water shutdown may proceed during the summer demand period. Work will be sequential, starting at the Mystic Valley Parkway PRV vault, followed by the Nonantum Road PRV vault. The construction duration is 24 months.

Procurement Process:

Contract 7563 was advertised in the Boston Herald, El Mundo, Banner Publications, the Central Register, COMMBUYS and on the MWRA Supplier Portal, and bid in accordance with Massachusetts General Laws, Chapter 30. Bids were received on May 5, 2021, with the following results:

Contractor	Bid Amount
RJV Construction Corporation	$11,326,000
Albanese D&S Inc.	$11,834,000
R. Zoppo Corporation	$12,344,000
GVC Construction Inc.	$12,524,464
P. Gioioso & Sons Inc.	$14,312,534
WES Construction Corporation	$15,858,000
Engineers Estimate	*$11,200,000*

RJV's bid is the lowest at $11,326,000, which is $126,000 or 1.1% above the Engineer's Estimate. The major differences between the Engineer's Estimate and RJV's bid is primarily attributable to higher material costs, caused by market fluctuations. RJV stated that a majority of the work will be self-performed.

MWRA staff reviewed RJV's bid in detail and discussed the major bid items with the company. Based on the bid review and subsequent discussions with representatives from the company, staff are satisfied that RJV understands the full scope of work and can perform the work for the bid price, which includes the payment of prevailing wages. RJV has successfully completed contracts as general contractor of similar size and complexity. Also, RJV has been in business for nearly 40 years, performing underground utility contracts with a specialization in water and wastewater projects. Additionally, OSHA records were reviewed and RJV has a strong safety record.

RJV has an excellent history of working with MWRA on large diameter valve and steel-pipe projects. Recent and relevant MWRA work includes Southern Extra High Section 111 Pipe Installation (7,000 feet of new 36-inch pipe, with large diameter valves) and Northern Extra High Section 36 Pipe Replacement (replacement of 6,000 feet of 24-inch and 36-inch pipe). RJV has been responsive on these MWRA projects and its team has strong communication skills.

An external reference check was made for work completed on water and sewer replacement projects for Boston Water and Sewer Commission. RJV received an excellent review and is considered one of its best contractors.

Staff are of the opinion that RJV possesses the skill, ability, and integrity necessary to perform the work under this contract and is qualified to do so. Staff recommend the award of this contract to RJV Construction Corporation as the lowest responsible and eligible bidder.

BUDGET/FISCAL IMPACT:

The FY21 CIP includes a budget of $7,115,598 for Contract 7563. The contract award amount is $11,326,000, or $4,210,402 over budget. This amount will be absorbed within the five-year CIP spending cap. The FY22 Draft Final CIP includes a budget of $11,200,000.

MBE/WBE PARTICIPATION:

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

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: Low Service Pressure Reducing Valve Improvements - Boston/Medford
Design and Engineering Services During Construction
CDM Smith Inc.
Contract 7575, Amendment 1

COMMITTEE: Water Policy & Oversight

____ INFORMATION
_X_ VOTE

John P. Colbert, P.E., Chief Engineer
Renie A. Jesanis, Project Manager
Preparer/Title

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

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Amendment 1 to Contract 7575, Low Service Pressure Reducing Valve Improvements - Boston/Medford, Design and Engineering Services During Construction, with CDM Smith Inc., extending the contract term by fourteen months from March 1, 2023 to May 1, 2024 with no increase in the contract amount.

DISCUSSION:

On May 30, 2018, the Board approved the award of Contract 7575 to CDM Smith Inc. to provide Design and Engineering Services During Construction for the replacement of pressure reducing valves (PRVs) to increase the flow of water to MWRA's Northern Low Service area. The Project was developed as an interim improvement to enhance MWRA's emergency response to a failure of the Metropolitan Tunnel system until a redundant tunnel is constructed. The Project is to 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 to increase the supply from the Northern Low Service System and reduce the need to pump non-potable water out of the Spot Pond Reservoir in an emergency. The new larger pressure reducing valves at Nonantum Road and Mystic Valley Parkway will be designed to be controlled remotely through SCADA. The Northern Low Service pipelines would operate at increased grade lines to supply additional flow to the Spot Pond Pumping Station and Storage Facility and the Gillis Pumping Station in an emergency condition with the tunnel system out of service. Additionally, a new master meter will be constructed at the Mystic Valley Parkway pressure reducing valves and the existing master meter located near the Nonantum Road pressure reducing valves will be upgraded to accommodate the increased flow.

This Amendment

Proposed Amendment 1 will increase the contract term by 14 months from March 1, 2023 to May

1, 2024 with no increase in the contract amount. This amendment includes engineering support for an additional 14 months to account for delays associated with permit approval and design improvements.

The permit from the Department of Conservation and Recreations (DCR) for proposed borings at Nonantum Road was delayed. The permit issued by DCR did not allow hazardous material testing of the boring soils. Soil test data on hazardous materials from borings is used to determine the hazardous soils disposal type that is specified in the construction contract. After six months of discussion and negotiations with DCR with no progress, it was decided to move forward with the boring using the issued permit with no hazardous material testing. The construction contract will include assumed soil types and quantities for disposal.

Additional time was also required to coordinate and analyze the service pressure impacts to the Medford and Somerville water systems to determine if additional community pressure reducing valves (PRVs) should be added by this contract. The evaluation determined that no additional community PRVs are required. This effort resulted in a three-month schedule delay.

To limit the shutdown time of the WASM 4 pipeline, the location of the Nonantum Road vault location was moved. This new location allows complete construction of the new vault with only a short shutdown to tie into the WASM 4 pipeline. The additional time required to accommodate the revised design layout and obtain approval from DCR for the new location resulted in a three-month schedule delay.

After preliminary design, it was determined that the larger PRVs required a larger vault than originally anticipated. As a result, the vault design was changed from precast, which is not available at the size required, to monolithic cast-in-place concrete. This additional design effort resulted in a two-month schedule delay.

CONTRACT SUMMARY:

	AMOUNT	TIME	DATED
Original Contract:	$2,676,038.37	57 Months	06/01/18
Proposed Amendment 1:	$0	14 Months	Pending
Adjusted Contract Amount	$2,676,038.37	71 Months	

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

BUDGET/FISCAL IMPACT:

Amendment 1 is a time extension only and has no budgetary impact.

MBE/WBE PARTICIPATION:

The minimum MBE and WBE participation requirements for this Contract were 7.18% and 5.77%, respectively. CDM Smith has committed to 15.79% MBE and 7.61% WBE participation, which will remain unchanged by this amendment.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 26, 2021
SUBJECT: John J. Carroll Water Treatment Plant Sodium Hypochlorite System Modifications
Harding & Smith, LLC
Contract 7085H, Change Order 2

COMMITTEE: Water Policy & Oversight

____ INFORMATION
__X__ 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 2 to Contract 7085H, John J. Carroll Water Treatment Plant Sodium Hypochlorite System Modifications, with Harding & Smith, LLC for a not-to-exceed amount of $312,750.00, increasing the contract amount from $1,410,034.00 to $1,722,784.00, and extending the contract term by 241 calendar days from June 11, 2021 to February 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 hypochlorite for over 15 years. The CPVC pipe will be upgraded to fused Polyvinylidene fluoride (PVDF) pipe that has better chemical resistance to sodium hypochlorite. The PVDF fused joints have better resistance to failures than the CPVC glued joints. Sodium hypochlorite piping at Deer Island Treatment Plant has already been changed from CPVC to PVDF due to the superior performance of PVDF. The existing feed pumps have been in operation since plant start up in 2005. They have also experienced failures and must be replaced. Construction will be sequenced to allow replacement of the pipe and pumps without adversely impacting disinfection operations. Some work will be done during winter maintenance periods when each half of the plant (A- or B-side) is shut down in turn.

This Change Order

Change Order 2 consists of the following four items:

Extend the Contract Time by 210 Calendar Days — Not to Exceed $175,000

The Contract required work in the chlorine contact tanks to be completed while the tanks are off line during the winter maintenance shutdowns. The work started in November 2020 in the B-side of the plant. The actual start of the work was delayed because the specified pipe had a longer lead time than originally quoted by manufacturers during the design phase, in part due to COVID 19. The Contractor then suffered a COVID shut down that further delayed the work an additional week. The Contractor worked with MWRA to develop a recovery schedule and despite these two delays staff and the Contractor were of the opinion that the work could be completed on time, albeit with little to no time to spare. However, as the work progressed, and during coring of the walls, the Contractor hit an unanticipated conduit. This resulted in suspension of the coring operation until the damaged conduit could be investigated. The conduit issue resulted in additional work (detailed below) and lost time which necessitated the rescheduling of the B-side work for that half of the plant until next year's winter maintenance period. Therefore, the Contractor is entitled to additional time to complete this work.

This item was identified by MWRA staff as an unforeseen condition. MWRA staff and the Contractor have agreed to a not-to-exceed amount of $175,000 for costs associated with this work and to extend the contract term by 210 calendar days from June 11, 2021 to January 7, 2022.

Extend the Contract Time by 31 Calendar Days — Not to Exceed $25,000

During testing of completed piping on the A-side it was determined that a valve station that was installed, as designed, could not provide the required carrier water flow of 35 gpm. The existing valve station consisted of 1.5-inch PVDF piping for the carrier water, but the new design called for one-inch piping, which proved inadequate to supply the required flow.

To avoid extending the winter maintenance shutdown, a temporary replacement was made using 1.5-inch CPVC piping for a section of the one-inch PVDF. Larger diameter PVDF piping was not used in the repair as the material was not available off the shelf. This temporary repair resulted in an acceptable carrier water flow to provide adequate hypochlorite mixing and a return to full plant operation. While this was a good short term solution, the remaining undersized PVDF and temporary CPVC piping will still need to be replaced in the next winter shutdown period. This time extension is only necessary for the A-side valve station because the B-side valve station work is underway.

The corrective work cannot be done during full plant operation. Therefore, another time extension is required to include this work in the second winter maintenance period. This will require an additional 31 calendar day time extension from January 7, 2022 to February 7, 2022.

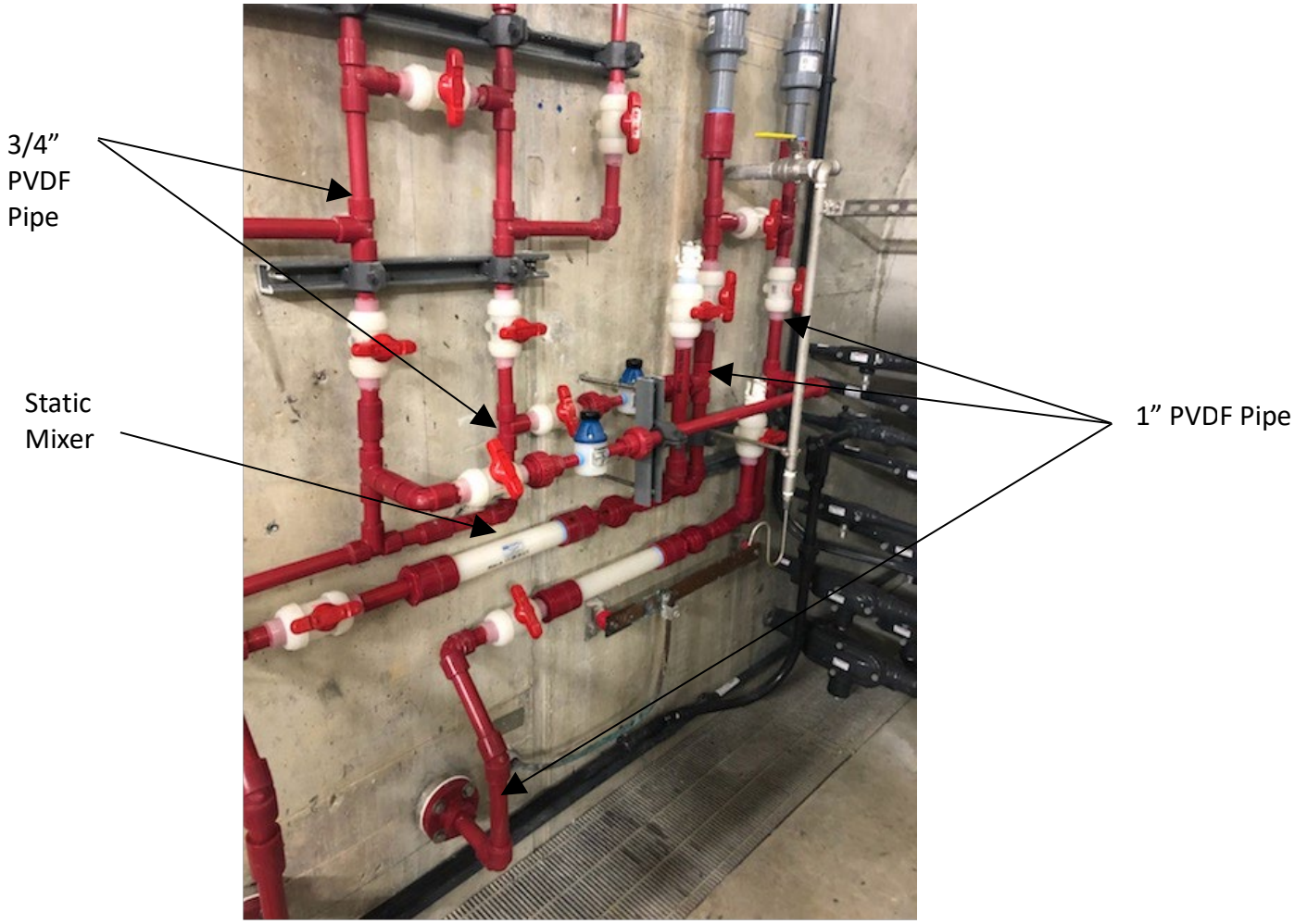
This item was identified by MWRA staff as a design error. MWRA staff, the Consultant, and the Contractor have agreed to a not-to-exceed amount of $25,000 for the allowable other direct costs,

such as the cost for the Contractor's trailers, associated with this work. Costs associated with this delay other than allowable other direct costs are broken out into a separate item.

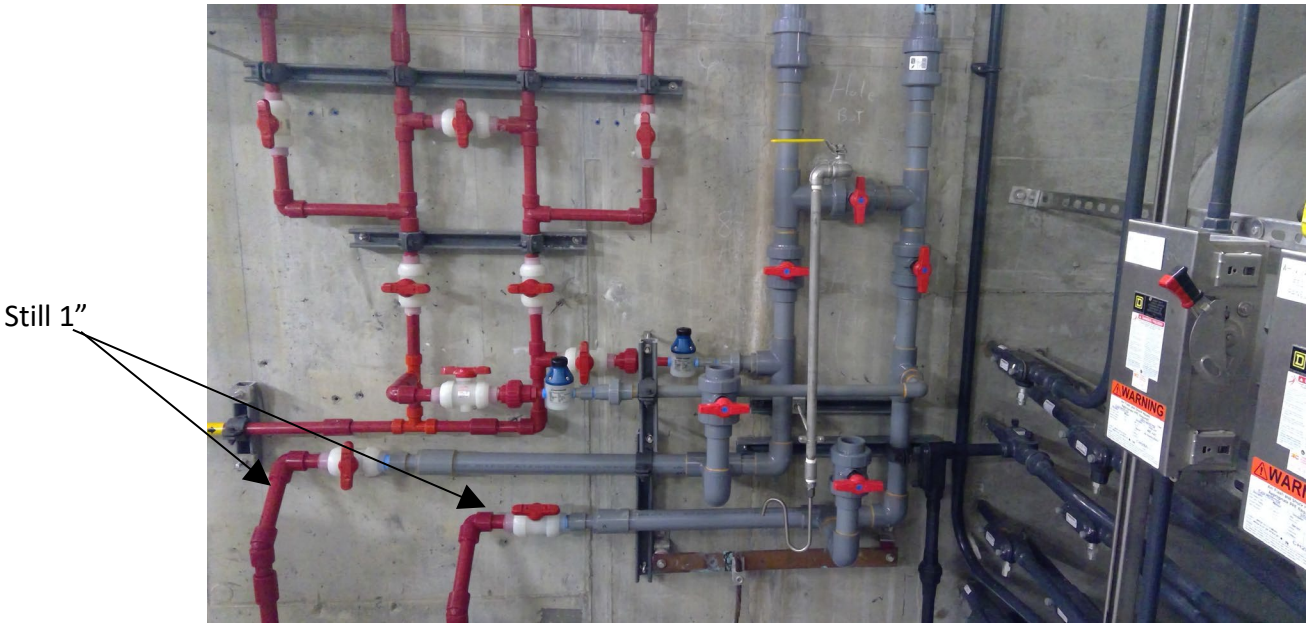
Resolve Carrier Water Lines Low Flow — Not to Exceed $90,000

In connection with the 31-day time extension, there are associated costs for the additional installation and materials for the installation of temporary CPVC piping and the replacement of the one-inch PVDF with 1.5-inch PVDF carrier piping.

The B-side valve station fabrication had just started when this was discovered. Therefore, the change in piping for the B-side does not require re-work, but does require additional piping to be provided by the Contractor. The B-side ultraviolet valve station will be installed during the first half plant period of the 2021/2022 winter maintenance period. The A-side valve station will be reconfigured during the second half-plant period.



PVDF Piping as Designed (A-Side UV Room Valve Station)

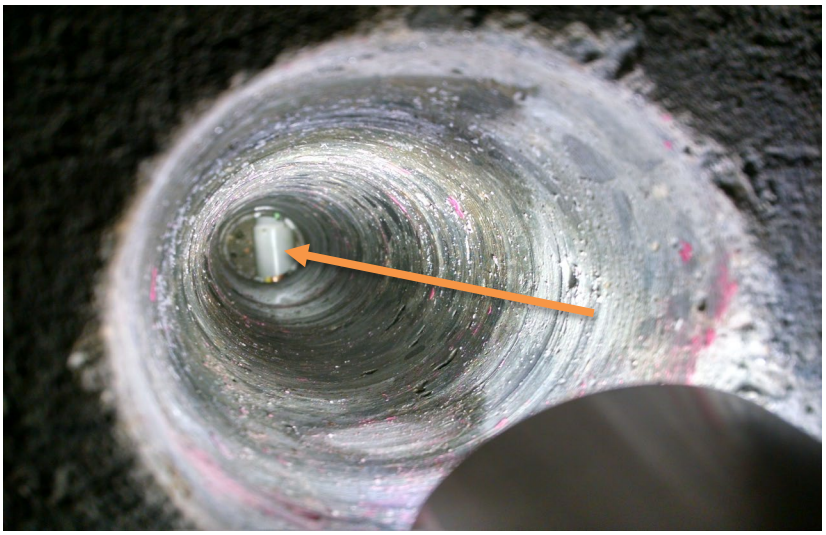


Temporary 1.5-inch CPVC Piping (A-Side UV Room Valve Station)

This item was identified by MWRA staff as a design error. MWRA staff, the Consultant, and the Contractor have agreed to a not to exceed amount of $90,000 for this work. The Contractor proceeded with this work at its own risk in order to complete the remainder of the contract work.

Repair Damaged Conduit, Furnish and Install PVC-Coated Rigid Steel Conduit $22,750

During coring operations, an unforeseen ¾-inch PVC conduit was encountered approximately 18 inches into a 33-inch thick concrete wall. The ¾-inch PVC conduit was broken and the ground wire was cut. After investigation, it was determined the conduit and wire were for an electric unit heater located in the UV room. Given the location of the PVC conduit, it was determined that it could not be repaired in place. As a result, it is necessary to install new surface mounted ¾-inch PVC-coated rigid steel conduit and wire in the UV room.



Conduit Encountered Approximately 18 Inches Into Core

This item was identified by MWRA staff as an unforeseen condition. MWRA staff and the Contractor have agreed to a lump sum amount of $22,750 for this additional work. The Contractor proceeded with this work at its own risk in order to complete the remainder of the contract work.

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	241 Days	Pending
Total Change Orders	$315,954.00	241 Days	
Adjusted Contract:	$1,722,784.00	476 Days	

*Approved under delegated authority

If Change Order 2 is approved, the cumulative total value of all change orders to this contract will be $315,954.00 or 22.5% of the original contract amount. Work on this project is approximately 35% complete.

BUDGET/FISCAL IMPACT:

The FY21 CIP includes a budget of $856,000 for Contract 7085H. Including this change order for $312,750, the adjusted contract total is $1,722,784, or $866,784 greater than budget. This amount will be absorbed within the five-year CIP spending cap.

MBE/WBE PARTICIPATION:

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