



MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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Chair: K. Theoharides
Vice-Chair: J. Carroll
Secretary: A. Pappastergion
Board Members:

C. Cook
K. Cotter
P. Flanagan
J. Foti
B. Peña
H. Vitale
J. Walsh
J. Wolowicz

BOARD OF DIRECTORS' MEETING

To be Held Virtually on June 24, 2020

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

WebEx Meeting Link:

<https://mwra.webex.com/mwra/onstage/g.php?MTID=e8445e4f0ad9de5ed88998d5a20efd563>

Meeting number (access code): 129 730 2694

Meeting password: 0624

Time:

1:00 p.m.

REVISED AGENDA

- I. **APPROVAL OF MINUTES**
- II. **REPORT OF THE CHAIR**
- III. **REPORT OF THE EXECUTIVE DIRECTOR**
- IV. **WASTEWATER POLICY & OVERSIGHT COMMITTEE**

A. Contract Awards

1. Early Warning Pilot for the Resurgence of COVID-19: Biobot Analytics, Inc.
2. Purchase Order Contract to Provide Struvite, Scum, Sludge and Grit Removal Services at the Deer Island Treatment Plant: Moran Environmental Recovery, LLC, WRA-4838
3. Deer Island Eastern Seawall and Shoreline Protection Remediation – Design, Engineering Services During Construction, and Resident Engineering Services: Green International Affiliates, Inc., Contract 6723
4. Combustion Turbine Generator Maintenance, Deer Island Treatment Plant: O'Connor Corp., Contract S593

5. Electrical Equipment Testing, Deer Island Treatment Plant: American Electrical Testing, Co., Contract S596
6. Interceptor Renewal No. 7 Malden-Melrose, Sections 41/42/49/54/65, Design and Engineering Services During Construction: Kleinfelder Northeast, Inc., Contract 7216

C. Contract Amendments/Change Orders

1. Chelsea Creek Headworks Upgrade: BHD/BEC JV 2015, A Joint Venture, Contract 7161, Change Order 38

V. PERSONNEL & COMPENSATION COMMITTEE

A. Approvals

1. PCR Amendments – June 2020
2. Extension of Employment Contract Copy and Supply Clerk

VI. ADMINISTRATION, FINANCE & AUDIT COMMITTEE

A. Information

1. Delegated Authority Report – May 2020
2. FY2020 Financial Update and Summary as of May 2020

B. Approvals

1. Approval of the FY2021 Capital Improvement Program
2. Approval for Rivers School Admission to the MWRA Wastewater System

C. Contract Awards

1. Revenue Bond Consulting Engineer Services: CDM Smith, Contract F258

VII. CORRESPONDENCE TO THE BOARD

VII. OTHER BUSINESS

IX. EXECUTIVE SESSION

A. Real Estate

1. MBTA Dedham Corporate Center Station, Allied Drive, Dedham
Acceptance of Grant of Easement from MBTA: Southern Extra High
Water Pipeline, Section 111

B. Litigation

1. David Shea v. MWRA, Suffolk Superior Court, C.A. No. 2019-
1847C - Extension of Contract Term for Outside Counsel – Hirsch
Roberts Weinstein LLP
2. J. D'Amico, Inc. v. MWRA v. Green International Affiliates, Inc. &
Travelers Casualty and Surety Co., Inc., Suffolk Superior Court,
C.A. 1784-CV-04097 -Settlement Authority

X. ADJOURNMENT

MASSACHUSETTS WATER RESOURCES AUTHORITY
Meeting of the Board of Directors
May 27, 2020

Pursuant to Governor Baker's March 12, 2020 Order Suspending Certain Provisions of the Open Meeting Law the May 27, 2020 meeting of the Board of Directors of the Massachusetts Water Resources Authority was held entirely by remote participation. Vice Chair Carroll presided. Present remotely from the Board, in addition to Vice Chair Carroll, were Ms. Wolowicz and Messrs. Cook, Cotter, Flanagan, Foti, Pappastergion, Peña, Vitale and Walsh. Chair 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, Kathleen Murtagh, Director of Tunnel Redundancy, Matthew Horan, Deputy Director, Finance/Treasurer, Michael Cole, Budget Director, Fred Brandon, Director of Design and Construction, Tunnel Redundancy, and Assistant Secretaries Ria Convery and Kristin MacDougall. Joseph Favaloro and Lou Taverna, MWRA Advisory Board and Vandana Rau, EOEEA, also participated. The meeting was called to order at 1:03 p.m.

APPROVAL OF MARCH 18, 2020 and MAY 6, 2020 MINUTES

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Carroll		
Cook		
Cotter		
Flanagan		
Foti		
Pappastergion		
Peña		
Vitale		
Walsh		
Wolowicz		

Voted: to approve the minutes of the Board of Directors' meetings of March 18, 2020 and May 6, 2020 as presented and filed with the records of this meeting.

REPORT OF THE EXECUTIVE DIRECTOR

Mr. Laskey updated Board Members on the status of MWRA operations during the ongoing pandemic. He reported that staff continues to prepare for future reopening in compliance with Governor Baker’s protocols. Mr. Laskey thanked MWRA staff for their diligence in developing and enacting strategies for telework and safe field work. He also noted that MWRA is participating in a wastewater flow study related to COVID-19 tracking.

ADMINISTRATION, FINANCE & AUDIT COMMITTEE

INFORMATION

MWRA’s FY2021 Draft Final FY2021 CIP

Staff made a presentation. There was brief discussion. (ref. IV A.1)

FY2020 Third Quarter Orange Notebook

There were questions and answers. (ref. IV A.2)

Delegated Authority Report – February, March and April 2020

There was brief discussion and questions and answers. (ref. IV A.3)

FY2020 Financial Update and Summary as of April 2020

Committee Chair Vitale called for questions or discussion. Hearing none, the Chair proceeded to the next agenda item. (ref. IV A.4)

APPROVALS

Approval of Lease for Records Storage Space: 23 & 27 Production Road LLC

There was brief discussion and questions and answers.

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Carroll		
Cook		
Cotter		
Flanagan		
Foti		
Pappastergion		
Peña		

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Vitale		
Walsh		
Wolowicz		

Voted: to approve the recommendation of the Selection Committee to award lease A622 to 23 & 27 Production Road LLC; and to authorize the Executive Director, on behalf of the Authority, to execute said lease for approximately 10,000 square feet of records storage and office space at 153 Production Road, Walpole for an initial ten-year term from November 1, 2020 to October 31, 2030, for an amount not to exceed the annual rent shown in Attachment A to the May 27, 2020 Staff Summary presented to the Board and filed with the records of the meeting, plus a proportional share of real estate taxes, with two five-year options to extend each subject to Board approval. (ref. IV B.1)

CONTRACT AWARDS

MWRA FY2021 Insurance Program Renewal

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Carroll		
Cook		
Cotter		
Flanagan		
Foti		
Pappastergion		
Peña		
Vitale		
Walsh		
Wolowicz		

Voted: to approve awards to the lowest eligible and responsive proposers for insurance policies, bonds, and related broker services for MWRA's FY21 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 in the May 27, 2020 Staff Summary presented to the Board and filed with the records of the meeting, resulting in a total program amount not to exceed \$2,972,385. (rev. IV C.1)

CONTRACT AMENDMENTS/CHANGE ORDERSMain Line Adjustment Project, Fore River Railroad: J.F. White Contracting Co., contract FRR32, Change Order 3

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Carroll		
Cook		
Cotter		
Flanagan		
Foti		
Pappastergion		
Peña		
Vitale		
Walsh		
Wolowicz		

Voted: to authorize the Executive Director, on behalf of the Authority, to approve Change Order 3 to Contract FRR32, Fore River Railroad Main Line Adjustment Project, with J.F. White Contracting Co., for a lump sum amount of \$283,693.91, increasing the contract amount from \$2,393,541.58 to \$2,677,235.49, and increasing the contract term by 419 days from May 17, 2019, to July 9, 2020.

Further, voted: to authorize the Executive Director to approve additional change orders as may be needed to contract FRR32 in an amount not to exceed the aggregate of \$250,000, in accordance with the Management Policies and Procedures of the Board of Directors. (ref. IV D.1)

WASTEWATER POLICY & OVERSIGHT COMMITTEECONTRACT AWARDSWastewater Advisory Committee Contract

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Carroll		
Cook		
Cotter		
Flanagan		
Foti		
Pappastergion		
Peña		
Vitale		
Walsh		
Wolowicz		

Voted: to authorize the Executive Director, on behalf of the Authority, to execute a contract, substantially in the form attached to the May 27, 2020 Staff Summary presented to the Board and filed with the records of the meeting, with the Wastewater Advisory Committee for a term of one year, from July 1, 2020 to June 30, 2021, for a total contract cost of \$75,227.00. (ref. V A.1)

Grit and Screenings Hauling and Disposal, Deer Island Treatment Plant: W. L. French, Contract S595

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Carroll		
Cook		
Cotter		
Flanagan		
Foti		
Pappastergion		
Peña		
Vitale		
Walsh		
Wolowicz		

Voted: to approve the award of Contract S595, Grit and Screenings Hauling and Disposal, to W. L. French Excavating Corporation, and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$4,883,114.05, for a contract term of 1,096 calendar days from the Notice to Proceed. (ref. V A.2)

Extended Warranty, Service and Maintenance Agreement for the Process Instrumentation and Control System at the Deer Island Treatment Plant

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Carroll		
Cook		
Cotter		
Flanagan		
Foti		
Pappastergion		
Peña		
Vitale		
Walsh		
Wolowicz		

Voted: to approve the award of a sole source extended warranty and service contract for the Process Instrumentation and Control System at the Deer Island Treatment Plant, with ABB Automation, Inc., and authorize the Executive Director, on behalf of the Authority, to execute said contract in the amount of \$1,220,469.00, for a contract term of three years, from July 1, 2020 through June 30, 2023. (ref. V A.3)

WATER POLICY & OVERSIGHT COMMITTEE

INFORMATION

2019 Annual Water Quality Report (Consumer Confidence Report)

Committee Chair Peña called for questions or discussion. Hearing none, the Chair proceeded to the next agenda item. (ref. VI A.1)

APPROVALS

Local Water System Assistance Program – Approval of Water Loan Program Guidelines Revisions for City of Quincy

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Carroll		
Cook		

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Cotter		
Flanagan		
Foti		
Pappastergion		
Peña		
Vitale		
Walsh		
Wolowicz		

Voted: to approve a one-time exemption to the Phase 3 Program Guidelines for the Local Water System Assistance Program to waive the annual allocation restriction for the City of Quincy to allow the City to borrow up to \$4,275,600 for a water system loan as early as May 2020. The Phase 3 early borrowing representing three years: year 4 (FY21); year 9 (FY26); and year 10 (FY27). The loan distribution is contingent upon a Quincy City Council water bond authorization to meet this request. (ref. VI B.1)

CONTRACT AWARDS

Water Supply Citizens Advisory Committee Contract

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Carroll		
Cook		
Cotter		
Flanagan		
Foti		
Pappastergion		
Peña		
Vitale		
Walsh		
Wolowicz		

Voted: to authorize the Executive Director, on behalf of the Authority, to execute a contract, substantially in the form attached to the May 27, 2020 Staff Summary presented to the Board and filed with the records of the meeting, with the Water Supply Citizens Advisory Committee for a one-year period beginning July 1, 2020 to June 30, 2021, with a total contract cost of \$110,490.00. (ref. VI C.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-4834

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Carroll		
Cook		
Cotter		
Flanagan		
Foti		
Pappastergion		
Peña		
Vitale		
Walsh		
Wolowicz		

Voted: to approve the award of Purchase Order Contract WRA-4834, 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 \$1,630,911.40 for a period of one year, from July 17, 2020 through July 16, 2021. (ref. VI C.2)

Metropolitan Tunnel Redundancy Program - Preliminary Design, Geotechnical Investigation and Environmental Impact Report: CDM Smith, Inc. Contract 7159

Staff made a presentation. There were questions and answers. Upon a motion duly made and seconded, a roll call vote was taken in which the members were recorded as follows:

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Carroll		
Cook		
Cotter		
Flanagan		
Foti		
Pappastergion		
Peña		
Vitale		
Walsh		
Wolowicz		

Voted: to approve the recommendation of the Consultant Selection Committee to award Contract 7159, Metropolitan Tunnel Redundancy Program Preliminary Design, Geotechnical Investigation and Environmental Impact Report to CDM Smith, Inc. and to authorize the Executive Director, on behalf of the Authority, to execute said Contract in an amount not to exceed \$15,692,527 for a contract term of 42 months from the Notice to Proceed. (ref. VI C.3)

PERSONNEL & COMPENSATION COMMITTEE

APPROVALS

PCR Amendments – May 2020

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Carroll		
Cook		
Cotter		
Flanagan		
Foti		
Pappastergion		
Peña		
Vitale		
Walsh		
Wolowicz		

Voted: to approve the amendments to the Position Control Register (PCR) as presented, on a date to be determined by the Executive Director. (ref. VII A.1)

Appointment of Manager, Finance and Administration, Operations

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Carroll		
Cook		
Cotter		
Flanagan		
Foti		
Pappastergion		
Peña		

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Vitale		
Walsh		
Wolowicz		

Voted: to approve the appointment of Ms. Lisa Jenkins to the position of Manager, Finance & Administration (Unit 6, Grade 12), at an annual salary of \$107,322.65 commencing on a date to be determined by the Executive Director. (ref. VII A.2)

ANNUAL MEETING OF THE PERSONNEL AND COMPENSATION COMMITTEE INDEPENDENT OF MANAGEMENT

Authority Accountability and Transparency Act Compliance

The Committee Chair stated the purpose of the annual meeting and MWRA staff reviewed meeting procedures. The meeting was then called to order at 2:24 p.m. In compliance with the provisions of the above-referenced Act, MWRA management was not present during the meeting. The only MWRA staff member present at the virtual meeting was Kristin MacDougall, Assistant to the Board of Directors. There was brief discussion.

Review and Extension of Contract and Appointment for Executive Director

There was discussion.

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Carroll		
Cook		
Cotter		
Flanagan		
Foti		
Pappastergion		
Peña		
Vitale		
Walsh		
Wolowicz		

Voted: to rate the performance of Frederick A. Laskey, Executive Director, for Fiscal Year 2020 as Excellent.

Further, voted: to extend the term of the Executive Director's employment agreement and his appointment as the Executive Director by one year through June 30, 2023 and to defer any vote regarding his salary to a later date.

The meeting adjourned at 2:30 p.m.

OTHER BUSINESS

MWRA management rejoined the meeting. Staff announced the results of the vote for the Review and Extension of Contract and Appointment for Executive Director, referenced above. There was brief discussion.

ADJOURNMENT

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Carroll		
Cook		
Cotter		
Flanagan		
Foti		
Pappastergion		
Peña		
Vitale		
Walsh		
Wolowicz		

Voted: to adjourn.

Vice Chair Carroll wished all meeting participants well.

The meeting adjourned at 2:34 p.m.

Approved: June 24, 2020

Attest:

Andrew M. Pappastergion, Secretary

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: June 24, 2020
SUBJECT: Early Warning Pilot for the Resurgence of COVID-19
Biobot Analytics, Inc.



COMMITTEE: Wastewater Policy & Oversight

____ INFORMATION

X VOTE



Michele S. Gillen

Director of Administration

Steven F. Rhode, Director of Laboratory Services
Carolyn M. Fiore, Deputy Chief Operating Officer
Douglas J. Rice, Director of Procurement
Preparer/Title



David W. Coppes, P.E.

Chief Operating Officer

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to execute a sole source contract, based on terms acceptable to the Authority, to provide an Early Warning Pilot for the Resurgence of COVID-19, to Biobot Analytics, Inc. in an amount not to exceed \$200,000.00, for a contract term of six months.

DISCUSSION:

MWRA intends to pilot an early warning system for future outbreaks of COVID-19 within the area served by the MWRA sewer system. The pilot program will consist of the analysis of wastewater samples of the north and south influents to the Deer Island Treatment Plant collected three times weekly with rapid analysis, and provisions for upstream follow-up samples in order to inform public health of an increased signal for the virus that causes COVID-19.

Analysis of wastewater for the genetic signal (viral RNA) of the SARS-CoV-2 virus that causes COVID-19 is proving to be a cost effective approach to providing population level screening for outbreaks of COVID-19. The first published report of this approach came from the Netherlands, where the analysis of wastewater was able to detect the genetic signal in advance of any known cases of COVID-19 in two cities. Biobot Analytics released the first demonstration of this approach in the United States, using data from courtesy samples provided by MWRA in early March 2020¹. Subsequent studies from numerous locations around the world have demonstrated the efficacy of wastewater analyses to provide an early warning of COVID-19 outbreaks by up to seven days in advance of confirmed cases showing up in the public health data.

Biobot Analytics is a local startup created by recent graduates and faculty of the Massachusetts

¹ "Coronavirus Traces Found in Massachusetts Wastewater at Levels Far Higher Than Expected." Newsweek; 4/9/2020. <https://www.newsweek.com/coronavirus-traces-massachusetts-wastewater-levels-higher-expected-1497141>

Institute of Technology. Their business focus has been to provide wastewater based epidemiology services in order to help solve public health issues. They have demonstrated the value of wastewater testing to provide insight to problems of opioid abuse in several communities around the country, including a contract with the Massachusetts Department of Public Health to monitor for opioid use in Massachusetts. When COVID-19 began to spread around the world, they suspected that they could detect the genetic signal of the virus in wastewater. They requested courtesy samples from MWRA in early March and were quickly able to prove their hypothesis. They followed this up by requesting additional samples from MWRA while offering pro bono services to other utilities around the country in order to perfect their technique. They ultimately provided pro bono services to over 400 facilities in 43 states. The analyses of additional samples from MWRA were used to construct a baseline of results that spanned the time range from January through May. This data series tracks well with and precedes the reports of new clinically established cases by about seven days.

This pilot program will take this approach a step further by continuing the regular analyses of the wastewater and trending of the signal from the MWRA service area for the remainder of calendar 2020. MWRA will likely use the lessons learned from this pilot program to establish a long-term program through a competitive bid process for 2021 and beyond for as long as COVID-19 continues to be a public health threat. We will also use the results to evaluate a longer term program that could inform additional public health initiatives or concerns.

Procurement Process

MWRA requested and reviewed informal presentations from Biobot Analytics and three other firms regarding their current capabilities to provide these services. None of the other firms was able to demonstrate the level of experience comparable to the analyses at over 400 facilities that Biobot Analytics demonstrated. The urgent need presented by the ongoing COVID-19 pandemic calls for a continuation of the monitoring in the MWRA service area without interruption. Staff have determined that the best approach is to continue with the analyses of samples by Biobot Analytics as a sole source pilot program at this time. Staff believe that the Authority will be able to conduct a competitive procurement in the fall that will allow for the generation of comparison data between the next vendor and the pilot program data. The pilot contract will allow for the continued analyses of six samples per week as baseline data for the remainder of the calendar year, as well as thirty to forty response samples should a new outbreak in the MWRA area be detected in that time. The pilot contract will also be structured so that MWRA will only pay for those analyses that are needed for the program.


BUDGET/FISCAL IMPACT:

The cost of this program will be absorbed in the Operations Division's FY21 Current Expense Budget. It should be noted that the original cost quoted by Biobot was \$260,000; however, staff negotiated it down to \$200,000.

MBE/WBE PARTICIPATION:

Biobot Analytics, Inc. is/is not a certified Minority and Women-owned business.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 24, 2020
SUBJECT: Purchase Order Contract to provide Struvite, Scum, Sludge, and Grit Removal Services at the Deer Island Treatment Plant
Moran Environmental Recovery, LLC
WRA-4838

COMMITTEE: Wastewater Policy & Oversight


Ethan Wenger, P.E., Deputy Director, DIWWTP
David Duest, Director, DIWWTP
Preparer/Title

 INFORMATION

 X VOTE


Michele S. Gillen

Director of Administration


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

RECOMMENDATION:

To approve the award of Purchase Order Contract WRA-4838 to provide struvite, scum, sludge and grit removal services at the Deer Island Treatment Plant to the lowest responsive bidder, Moran Environmental Recovery, LLC., and to authorize the Executive Director, on behalf of the Authority, to execute said purchase order contract in an amount not to exceed \$998,210 for a period of two years, from August 1, 2020 through July 31, 2022

DISCUSSION:

Struvite is a crystallized compound forming from solubilized phosphate, ammonia and magnesium, which can form a matrix with digested sludge solids and coat pipelines or other surfaces. An example of struvite build-up can be seen in the picture on the right.

Struvite build-up is a concern because of the operational problems that it can cause. Struvite can affect process equipment and piping and can result in the loss of digester and sludge thickening capacity.



Staff have been preventing struvite build-up with the addition of ferrous and/or ferric chloride to the digesters. These chemicals bind up soluble phosphate, which reduces the risk of struvite formation. However, struvite build-up can still occur. When it does, it requires the specialized services and industrial equipment of specialty contractors, often working in confined spaces.



Staff also use these specialized services to clean severe blockages and the build-up of scum, sludge and grit in a number of other process areas of the plant. An example of struvite that has been removed can be seen in the picture to the left. While struvite build-up has only occurred in the Deer Island Residuals complex, staff have found other types of blockages in the gravity thickeners, primary clarifiers, influent channels and scum receiving wells.

Contracted services are utilized only as a last resort as MWRA staff are generally the first option in clearing these types of blockages. Deer Island utilizes MWRA vector trucks to clean some of the blockages, but contracted services are required when blockages reach a level that is beyond in-house capability or when the scum/sludge/grit material is of such a thick consistency that processing it through the plant could cause plant upset conditions or the potential for equipment damage.

Procurement Process

Bid WRA-4838 was advertised in the following publications: Boston Herald, 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 4263), and six potential bidders were solicited through the e-Portal.

On April 24, Event 4263 closed, with the following results:

BIDDER	TOTAL BID PRICE
Moran Environmental Recovery, LLC	\$998,210.00
ACV Environmental Services, Inc.	\$1,071,036.00
Clean Harbors Environmental Services, Inc.	\$1,313,580.00

The scope of services and estimated quantities for this contract includes 270 days of fieldwork, 70 days with a five-person work crew and 200 days with a three-person work crew and all necessary special cleaning equipment, to be used on an as-needed basis. In addition, bid prices were submitted for the hauling and disposal of an estimated 400 tons of solid material and 50,000 gallons of wet material during a two-year period based on previous contracts. These are estimates only and not a guaranteed commitment to the vendor; MWRA will incur costs only for the services provided and satisfactory documentation of quantities removed (e.g., weight slips from licensed landfills or disposal sites) during the two-year contract term.

The existing contract for these services was awarded to Moran Environmental Recovery, LLC, for an amount not to exceed \$901,960. A close comparison of the two contracts revealed slight decreases in the costs of the three- and five-person work crews. The increase in this year’s contract award is a result of increasing the number of three-person work estimates from 100 to 200 days. Three-person crews are required to remove grit, scum and rags from difficult to access areas in the plant. This line item increased in use in the current contract due to increase in rags (possibly due to ‘flushable’ wipes), and staff believe it is prudent to be prepared for further work in this area.

In addition, this contract includes 400 hours of off-hour work, 200 hours with a five-person crew and 200 hours with a three-person crew. These bid items will only be used if treatment processes are impacted such that crews need to be either extended beyond the normal working day or if crews need to be called in during off-hours.

Staff have reviewed Moran Environmental Recovery's bid and have determined that it meets all of the requirements of the bid specifications. Staff are satisfied with the Moran's performance on the existing and other past contracts and therefore recommend the award of this purchase order contract to Moran Environmental Recovery, LLC as the lowest responsive bidder.


BUDGET/FISCAL IMPACTS:

The FY21 Current Expense Budget includes \$300,000 for the first portion of this contract. Appropriate funding will be included in subsequent Proposed CEB requests for the remaining term of this two-year contract.

MBE/WBE PARTICIPATION:

Moran Environmental Recovery, LLC is not a certified Minority- or Women-owned business.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 24, 2020
SUBJECT: Deer Island Eastern Seawall and Shoreline Protection Remediation
Green International Affiliates, Inc.
Contract 6723

COMMITTEE: Wastewater Policy and Oversight

 INFORMATION

 X VOTE



Michele S. Gillen

Director of Administration

David Duest, Director, DITP
Richard Adams, Manager DITP Engineering Services
John Riccio, Project Manager
Preparer/Title



David W. Coppes, P.E.

Chief Operating Officer

RECOMMENDATION:

To approve the award of Contract 6723, Deer Island Treatment Plant Eastern Seawall and Shoreline Protection Remediation – Design, Engineering Services During Construction, and Resident Engineering Services to Green International Affiliates, Inc. and to authorize the Executive Director, on behalf of the Authority, to execute said contract in an amount not to exceed \$2,600,472.63, for a contract term of 64 months from the Notice to Proceed.

DISCUSSION:

Deer Island was built in several phases between 1988 and 2000 and operates 24 hours a day, 7 days a week treating wastewater from approximately 2.3 million people in 43 greater Boston communities. Deer Island is designed to treat an average of 361 million-gallons per day with a peak flow of 1.3 billion-gallons per day. Primary treatment commenced in 1995 and secondary activated sludge began in 1997. The treated wastewater effluent flows through disinfection basins, then drops vertically approximately 420 feet to the invert of the 24.5-foot diameter effluent outfall tunnel placed into service in 2000. The dechlorinated effluent is discharged in the 110-foot waters of Massachusetts Bay over the last 1.25 miles of the 9.5-mile tunnel.

The shoreline protection system at Deer Island consists of a combination of seawalls and stone revetment, which were constructed under multiple construction packages as summarized in Table 1 below.

TABLE 1 – DEER ISLAND SHORELINE PROTECTION SYSTEM SUMMARY			
Potion of Shoreline	Type of Protection	BHP Construction Package	Year Completed
North East	Revetment	Late Site Preparation & Demolition of Existing Treatment Plant (CP-043)	1997
East	Seawall (Curved Face, 2,600 L.F.)	Disinfection Facilities/Seawall (CP-204)	1996
South East	Seawall (Vertical Face, 1,700 L.F.)	Residuals Treatment Facilities – Phase I (CP-301)	1996
South	Revetment	Disinfection Facilities/Seawall (CP-204) & Western Shoreline Protection (CP-048)	1996 2000
Marine Facility ¹	Bulkhead ¹	Marine Facility at Deer Island (CP-001) ¹	1990
West	Revetment	Western Shoreline Protection (CP-048)	2000

¹ The Marine Facility is not included in the Scope of Services of this contract.

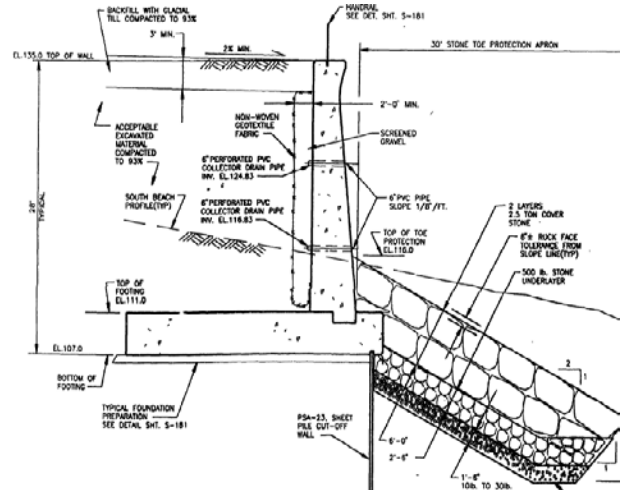


Deer Island Shoreline Protection System

The seawalls, revetments and nearby beaches were inspected annually for the first 10 years of operation and then periodically thereafter. During those inspections, stone displacement, siltation, deterioration of seawall concrete and reinforcing steel, seawall drainage system performance, and erosion of portions of the vegetated slope above the seawall were monitored and identified as potential areas requiring eventual rehabilitation. Staff recently performed an assessment of the seawall to document degradation since previous inspections and have determined that several sections of the seawall should be remediated within the next several years to avoid potential major structural repair work in the future.



Concrete deterioration and exposed reinforcing steel



Typical Seawall Section (Vertical Face)

This Contract

Contract 6723 includes preliminary and final design, engineering services during construction and resident engineering services for the rehabilitation of Deer Island's eastern seawall and alternative shoreline protection means. Preliminary studies include island-wide aerial LiDAR survey and bathymetry, inspection and testing of the two seawalls and drainage systems protecting Deer Island, subsurface investigations and hazardous material assessments, coastline inspections, drainage outfall inspection, beach studies and profiling, and evaluation of future environmental conditions accounting for climate change and sea level rise. The contract includes evaluation of alternatives for seawall structural repair, revetment design, and public access features, including granite stone displacement, public access railings and erosion of portions of the vegetated slope above the seawall. The preliminary design report will summarize all recommendations, and include discussions on cost, schedule, permitting and access.

Final design will include preparation of construction contract plans, specifications, cost estimates and bidding assistance as well as preparation of draft and final permit applications, and individual information as required by permitting agencies. Potential permits and approvals include: US Army Corps of Engineers Section 404, MassDEP Chapter 91, MassCZM Federal Consistency Determination, MassDEP 401 Water Quality Certification, National Heritage Endangered Species Program MESA Checklist, Boston Conservation Commission Notice of Intent, Massachusetts Historical Commission Project Notification Form, and Massachusetts Environmental Policy Act (MEPA), among others.

Engineering services during construction includes administration, review of contractor submittals and requests for information, assistance with change orders, and preparation of record drawings. Resident engineering services are also included in this contract and include a full-time resident engineer through construction.

The project schedule includes a 34-month design phase and a 30-month construction phase. The anticipated construction work includes structural remediation associated with the seawall, including toe-wall and footing rehabilitation, replacement of seawall railing system, seawall drainage improvements with regrading of public access areas, revetment design and stone relocation/replacement, storm water drainage outfall improvements and beach nourishment.

Procurement Process

On January 28, 2020, MWRA issued a one-step Request for Qualifications Statements/Proposals (RFQ/P) that was publically advertised in the Central Register, Boston Herald, Banner Publication and El Mundo; and directly solicited firms by e-mail. Thirty firms received copies of the RFQ/P. The RFQ/P included the following evaluation criteria and points: Cost (25 points); Qualifications and Key Personnel (25 Points); Experience/Past Performance on Similar Non-Authority Projects and Past Performance on Authority Projects (25 Points); Technical Approach, Capacity/Organization and Management Approach (20 points); MBE/WBE Participation (5 points).

On February 27, 2020, MWRA received proposals from Green International Affiliates, Inc., and GZA GeoEnvironmental, Inc. Staff contacted firms that requested a copy of the RFQ/P, but did not submit a proposal. Those firms reported a variety of factors for not submitting a proposal, including lack of qualified staff meeting key personnel requirements, and proposing on other competing RFQ/Ps. As a result, staff determined the competition was adequate, and the selection committee proceeded to evaluate the proposals received. The following table represents the cost and level of effort proposed.

Proposer	Proposed Cost	Proposed Hours
Green International Affiliates, Inc.	\$2,600,472.63	16,931
GZA GeoEnvironmental, Inc.	\$2,915,788.76	15,672
<i>Engineer's Estimate</i>	\$3,482,763.46	18,517

The Selection Committee met on March 11, 2020 to evaluate and rank the proposals. The results are presented below.

Proposer	Total Final Score	Order of Preference* Points	Ranking
Green International Affiliates, Inc.	372	7	1
GZA GeoEnvironmental, Inc.	378	8	2

*Order of Preference represents the sum of individual Selection Committee members’ rankings where the firm receiving the highest number of points is assigned a “1”; the firm receiving the next highest number of points is assigned a “2” and so on.

Green International Affiliates, Inc.'s proposal included qualified personnel who have the required experience in coastal engineering, coastal modeling, structural inspection, structural engineering, geotechnical engineering, landscape architecture, permitting, and resident engineering. Green presented a multi-disciplinary team, including sub-consultants with whom the firm has successfully worked in the past. External references on coastal projects were positive and all indicated they would rehire the firm. Green is a defendant, along with the project contractor, in an action brought by the Authority on Contract 7222, Watertown/Waltham Rehabilitation. That action is the subject of a separate staff summary, which will be presented in Executive Session for discussion on a potential resolution of the litigation. Green received positive references on other past Authority projects. Green also demonstrated a full understanding of the project requirements as evidenced by the many site-specific challenges it presented in its technical approach and the manner in which it will achieve the project goals. The proposal was presented well and the team has the capacity to successfully perform the work.

Green's proposal cost is lower than the engineer's estimate due in part to the firm's indirect cost rate, which is lower than assumed in the engineer's estimate. Additionally, while Green assumed a similar level of effort during the preliminary design phase, the firm carried a much lower level of effort during design, assuming a majority of the work and decisions would be completed during the development of the preliminary design report. Green also assumed fewer design drawings would be required. This is also evidenced by the difference in time required to complete Record Drawings. These two tasks alone make up roughly 50% of the price difference.

Staff recommend the award of Contract 6723 to Green International Affiliates, Inc. in an amount not to exceed \$2,600,472.63 and for a term of 64 months.


BUDGET/FISCAL IMPACTS:

The Draft Final FY2021 CIP includes \$2,900,000 for Contract 6723.

MBE/WBE PARTICIPATION:


The minimum MBE and WBE participation requirements for this project established at 7.18% and 5.77%, respectively. Both firms requested and were granted partial waivers of the MBE/WBE requirements after review by the Authority's Affirmative Action and Compliance Unit. Green International Affiliates, Inc. has committed 40.25% MBE and 1.34% WBE participation. Green International Affiliates, Inc. is also a certified MBE firm.

STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 24, 2020
SUBJECT: Combustion Turbine Generator Maintenance, Deer Island Treatment Plant
O'Connor Corporation
Contract S593

COMMITTEE: Wastewater Policy & Oversight

 INFORMATION
 X VOTE


Michele S. Gillen
Director of Administration

David Duest, Director, Deer Island WWTP
Richard J. Adams, Manager, Engineering Services
Phillip Szotfried, Senior Program Manager, I & C
Preparer/Title


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

RECOMMENDATION:

That the Executive Director, on the behalf of the Authority, approve the award of Contract S593, Combustion Turbine Generator Maintenance, Deer Island Treatment Plant, to the lowest responsible and eligible bidder, O'Connor Corporation, and to execute said contract in the not to exceed amount of \$1,343,847, for a contract term of 1,095 calendar days.

DISCUSSION:

The Thermal/Power Plant on Deer Island contains two 26-megawatt combustion turbine generators (CTGs) that provide back-up power for the entire Deer Island Treatment Facility. Required inspections, along with preventive maintenance of the CTGs and associated equipment, are essential to ensuring the continued safe and reliable operation of these critical systems. In the event of a sustained utility power failure, the CTGs would be needed to keep the plant operational. Complete loss of power for an extended period of time would render the pump stations inoperable, which may lead to sewage back-ups across the MWRA service area. Deer Island is required by federal and state permits to have sufficient back-up power to fully operate the treatment plant. The CTGs meet this backup permit requirement.

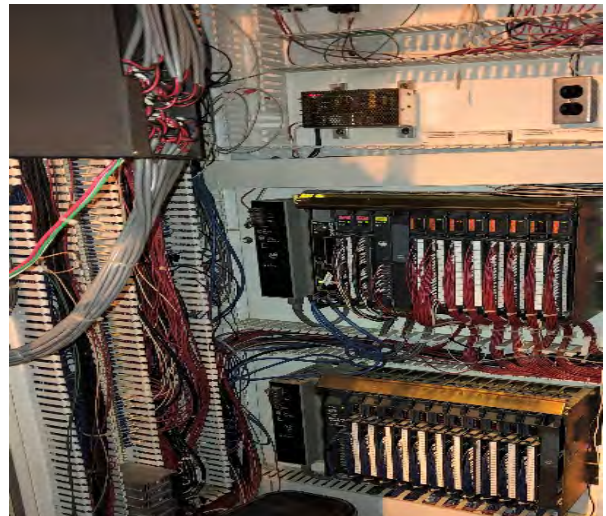
Contract S593 will provide scheduled annual inspection and maintenance services, as well as emergency and non-emergency repair services, replacement parts, and factory authorized vendor services for the equipment associated with the CTGs located in the Thermal/Power Plant on Deer Island for a period of 1,095 calendar days. Also included in this scope of work is the replacement of the demineralized water control system.

The scope of work under Contract S593 includes three annual maintenance service visits for each of the CTGs to be performed independent of each other, so that one unit will always be in service and available. Staff will also schedule the service work during periods when no significant wet-weather events are anticipated.

This Contract includes replacement of the demineralized water control system. The demineralized water system removes mineral salts from potable water to produce ultrapure water capable of meeting the original equipment manufacturer's specification for water injection, which is used for emissions control. The control system software is in need of optimization and the hardware has functioned beyond its useful life.



External



Internal

Demineralized Water Control Panel

In addition to the scope of work identified above, the contract also includes several allowance items and unit price items that will be drawn down on an as-needed basis. The allowance items include \$275,000 for replacement parts, \$125,000 for authorized factory representative services, \$10,000 for fire department services, and a combined total of \$210,650 in unit price bid items for emergency and non-emergency repair services as needed. These estimated allowances and quantities of unit price bid items were developed based upon reasonable assumptions and previous contract usage patterns. The estimated allowances and bid item quantities do not represent a firm commitment of cost or guarantee of payment to the vendor. MWRA will only pay for items and services provided.

It is critical that each CTG component be properly maintained and inspected to ensure continued reliable operation. The work associated with the maintenance of the combustion turbines is highly technical in nature. Plant personnel do not have the required expertise to perform these tasks. As such, the bidders are required to provide skilled, well-trained personnel under this contract and have previous and current contracts with similar equipment.

Contract S593 was advertised in the Boston Herald, Banner Publications and the Central Register, and Combuys the MWRA Supplier Portal, and bid in accordance Chapter 149 of Massachusetts General Laws. Bids were opened on February 13, 2020. Two bids were received. On February 18 the low bidder, O'Connor Corporation, was interviewed to confirm that it understood the scope of the specification and that their bid prices were complete and as specified. Staff were satisfied with its responses and noted O'Connor performed well as the incumbent on the past three contracts. The bid results are as follows:

BIDDERS	BID PRICE
O'Connor Corporation	\$1,343,847.00
IPC Lydon, LLC	\$1,520,859.12
<i>Engineer's Estimate</i>	<i>\$1,327,500.00</i>

O'Connor's bid price is 1.2% higher than the Engineer's Estimate. MWRA staff have been satisfied with the Contractor's past performance and noted that it carries the required experienced technical staff. The Contractor is familiar with the Deer Island facility and MWRA's procedures for accessing and performing work on Deer Island.

O'Connor's references and DCAMM certifications were checked and found to be favorable. Staff have reviewed O'Connor's bid, and have determined that it is reasonable and complete, and it meets all of the requirements of the specifications, including the payment of prevailing wages.

Staff have determined that O'Connor possesses the skill, ability, and integrity necessary to perform the work under this contract and is qualified to do so. Therefore, staff recommend the award of this contract to O'Connor Corporation as the lowest responsible and eligible bidder.

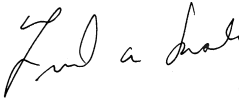
BUDGET/FISCAL IMPACT:

Funding of \$343,000 is included in Operations Division's FY21 Current Expense Budget for the first year of this contract. Any expenses above the funded amount will be absorbed within the Operations budget. Appropriate funding will be included in subsequent Proposed CEB requests for the remaining term of the contract.

MBE/WBE PARTICIPATION:

There were no MBE or 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: June 24, 2020
SUBJECT: Electrical Equipment Testing - Deer Island Treatment Plant
American Electrical Testing Company, Inc.
Contract S596

COMMITTEE: Wastewater Policy & Oversight

INFORMATION

VOTE


Michele S. Gillen

Director of Administration

David Duest, Director, Deer Island WWTP
Richard J. Adams, Manager, Engineering Services
Preparer/Title



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

RECOMMENDATION:

To approve the award of Contract S596, Electrical Equipment Testing - Deer Island Treatment Plant, to the lowest responsive bidder, American Electrical Testing Company, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the not to exceed bid amount of \$1,928,700, for a term of 1,095 calendar days from the Notice to Proceed.

DISCUSSION:

The electrical distribution system at Deer Island consists of 43 medium- and low-voltage substations, which either distribute power directly or transform (step-down or reduce voltage) and then distribute power to low-voltage process equipment critical for maintaining the overall operation of the wastewater treatment plant. A typical substation is comprised of several components including a transformer, a load-break switch, switchgear and either bus duct or cable bus. The electrical distribution system is one of the most critical systems on Deer Island. To ensure proper operation and reliability of this equipment, each substation requires extensive preventative maintenance and frequent testing because of the combination of salt-laden air and the presence of hydrogen sulfide inherent in a coastal wastewater treatment plant.

MWRA has developed a comprehensive maintenance and testing program built upon nationally recognized industry recommendations and standards. An important component of this maintenance program is a separate electrical testing contract with a firm possessing the necessary expertise to test, diagnose, troubleshoot, and recommend corrective measures for all of Deer Island's electrical distribution equipment.

Many of the testing methods employed under this contract are similar to the ones used during commissioning of the equipment to ensure that it is operating as designed and specified. Other tests may include oil analysis to identify overheating issues, infrared scanning for signs of equipment deterioration, or use of other specialized equipment. Visual inspection includes checking for damaged or loose components or signs of corrosion.



Figure 1 – Typical Electrical Substation

MWRA has contracted these specialized electrical testing services since 1999. These services are performed by specially trained electrical test technicians who are required to be certified in accordance with ANSI/NETA EIT, Standard for Certification of Electrical Testing Technicians. All test technicians are required to hold a current certification, Level III or higher. The requirement for certification is attained through a rigorous training and testing program. Each technician is required to have extensive experience in the testing of electrical equipment supplied by 15 different manufacturers to

ensure they are qualified to perform the required testing in this Contract. In addition, there is a requirement to have specialized test equipment to perform the work. This equipment must be sent out to a testing laboratory to be calibrated every six months to ensure the equipment is performing correctly. It is not practical to perform this work with MWRA staff, as it would be difficult to maintain the skill set necessary due to the fact the work is not performed on a full-time basis. In addition, a large number of staff would be required when major processes such as the Thermal Power Plant generators are shutdown to perform the tests. The contractor is required to provide up to eight technicians during these critical plant shutdowns.

Contract S596 was planned for award at the April Board of Directors Meeting, but that meeting was cancelled due to the COVID-19 pandemic. Contract S596 will replace the current three-year contract S561, which originally expired on March 5, 2020, but was extended until July 31, 2020 under Delegated Authority to continue required service until the successor contract could be awarded and executed.

The scope of work under this contract includes electrical and mechanical inspection, replacement parts, if required, and regular testing of all 43 electrical substations. Staff developed the frequency of testing based upon a number of factors that include: nationally recognized industry standards; results attained from years of previous electrical testing, which have shown that equipment in certain areas of the plant, particularly exterior locations, require more testing and attention than

others; and the age and type of equipment. The contract also includes technical assistance on an as-needed basis.

Procurement Process

Contract S596 was advertised and competitively bid as a non-professional services contract. Bids were opened on March 11, 2020 with the following results:

<i>Engineer's Estimate</i>	<i>\$1,900,000</i>
American Electrical Testing Company	\$1,928,700

The Engineer's Estimate for this work was \$1,900,000; American Electrical Testing Company's bid is 1.5% higher than this estimate. Staff performed a bid analysis and has determined that the difference was caused by the slightly lower overhead rate utilized in the Engineer's Estimate. Staff feel confident that American Electrical Testing Company's bid is within normal industry standards for this type of work.

American Electrical Testing Company has successfully performed a substantial amount of electrical testing for MWRA dating back to the Boston Harbor Project. The company has always bid aggressively and has been the lowest bidder on a number of previous electrical testing contracts, including the last contract. MWRA staff determined that its performance on these MWRA contracts over the years have been excellent and have been satisfied with the firm's performance.

References were checked and found to be favorable. Staff are of the opinion that the bid price is reasonable and complete. Staff are confident that the firm possesses the skill, ability, and integrity necessary to successfully perform the work under this contract for the price bid. Therefore, staff recommend the award of this contract to American Electrical Testing Company as the lowest responsive bidder.


BUDGET/FISCAL IMPACT:

There are sufficient funds available in the Operations Division's FY21 Current Expense Budget for the first part of this contract. Appropriate funding will be included in subsequent CEB requests for the remaining term of the contract.

MBE/WBE PARTICIPATION:

There were no MBE or WBE participation requirements established for this contract because of the limited opportunities for subcontracting.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 24, 2020
SUBJECT: Interceptor Renewal No. 7 Malden-Melrose (Sections 41/42/49/54/65)
Design and Engineering Services During
Construction Kleinfelder Northeast, Inc.
Contract 7216

COMMITTEE: Wastewater Policy & Oversight

John Colbert, P.E., Chief Engineer
Patrick Barrett, Program Manager
Preparer/Title

 INFORMATION

 X VOTE


Michele S. Gillen

Director of Administration


David W. Coppes, P.E.

Chief Operating Officer

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to award Contract 7216, Interceptor Renewal No. 7 Malden-Melrose (Sections 41/42/49/54/65) 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 an amount not to exceed \$2,559,330.59, for a contract term of seventy-two months from the Notice to Proceed.

DISCUSSION:

The MWRA's Malden-Melrose Interceptors are part of MWRA's North Metropolitan System serving the communities of Melrose and Malden and upstream communities of Stoneham, Wakefield, Everett and Revere. The sewers were constructed in multiple contracts from 1893 to 1911, and consist of sizes ranging from 12-inch round to 38 x 25 oval and materials of vitrified clay in the smaller diameters to brick in larger diameters. Recent internal inspections have revealed many structural and non-structural deficiencies in the 109 to 127-year-old sewer system.

The sewers proposed for rehabilitation include a total length of approximately 26,400 feet. The Malden-Melrose Extension Sewer includes Section 42 (3,049 LF) and Section 49 (3,888 LF) that connects to Section 41 (10,806 LF) at the intersection of West Wyoming Avenue and Pleasant Street in Melrose. Section 54 connects to the downstream end of Section 41 at the intersection of Middlesex Street and Charles Street in Malden. Section 65 (4,499 LF) connects to Section 54 (4,131 LF) at the intersection of Eastern Avenue and Bryant Street in Malden. (See Figure 1).

The sewers traverse developed and undeveloped private and public properties. Developed properties include both residential and commercial sites. Section 41 is paralleled by MWRA sewer Sections 58/64 and Sections 54 and 65 are paralleled by MWRA sewer Section 95. Manholes along

the project sewers are mostly of brick construction. Recent inspections revealed several manholes with infiltration/inflow and deteriorating mortar. The sewers have 206 public and special connections along the alignment. These connections are made at manholes and direct to the interceptors between manholes.

MWRA's initial evaluation of the Malden-Melrose Extension Sewer included physical, hydraulic, economic, and community impacts. Staff determined rehabilitation of the pipeline by Cured-in-Place Pipe (CIPP) method is the most economical rehabilitation method for the condition and capacity of the pipeline. The consultant will review/evaluate all installation methods and materials for CIPP rehabilitation.

This Contract

Contract 7216 is a 72-month professional services contract for design and engineering services during construction (30 months for design, 30 months for construction and a 12-month warranty period) for the CIPP rehabilitation of 26,400 LF of sewer interceptors of various sizes and materials and 120 associated manholes.

The scope of services requires that the consultant verify sewer conditions, locations and connections; complete survey/base mapping; evaluate traffic impacts and by-pass pumping/diversion options; obtain all required permits; determine construction control measures for residents, businesses, pedestrians; develop construction contract documents, including drawings and specifications; and provide construction administration services.

Staff will determine the required level of effort for Resident Engineering Services during final design and will procure these services separately through a competitive process.

Procurement Process

On February 12, 2020, MWRA issued a one-step Request for Qualifications Statements/Proposals (RFQ/P) that was publicly advertised in the Central Register, Boston Herald, Banner Publication and El Mundo. In addition, notice of the RFQ/P was sent directly to twenty-three engineering firms.

The RFQ/P included the following evaluation criteria and points: Cost - 25 points; Qualifications and Key Personnel - 25 points; Relevant Experience/Past Performance - 25 points; Technical Approach and Capacity/Organization and Management Approach - 20 points; and MBE and WBE Participation - 5 points.

On April 16 2020, MWRA received proposals from the following five firms: Arcadis U.S., Inc. Weston & Sampson, Hazen and Sawyer P.C., Kleinfelder Northeast, Inc., and Jacobs Engineering Inc.

The proposal costs and level of effort are presented below:

PROPOSER	PROPOSED CONTRACT COST	LEVEL OF EFFORT
Weston & Sampson	\$1,807,514	11,743 hours
Arcadis U.S., Inc.	\$2,326,952	12,743 hours
Hazen and Sawyer, P.C.	\$2,413,621	15,036 hours
Kleinfelder Northeast, Inc.	\$2,559,330	16,748 hours
<i>Engineer's Estimate</i>	<i>\$2,735,000</i>	<i>15,330 hours</i>
Jacobs Engineering	\$2,801,213	20,391 hours

The five voting members on the Selection Committee reviewed, scored and ranked the proposals as follows:

PROPOSER	TOTAL POINTS	ORDER OF PREFERENCE*	FINAL RANKING
Kleinfelder Northeast, Inc.	404	7	1
Hazen and Sawyer, P.C.	397	9	2
Arcadis U.S., Inc.	370	16	3
Jacobs Engineering	364	21	4
Weston & Sampson	344	22	5

*Order of Preference represents the sum of the individual Selection Committee members' rankings where the firm receiving the highest number of points is assigned a "1" the firm receiving the next highest number of points is assigned a "2," and so on.

Kleinfelder Northeast, Inc.'s proposal was considered the best value. Kleinfelder was ranked either first or second by all Selection Committee members and received the highest number of points in three out of five evaluation categories (Cost, Technical Approach, Capacity, Organization & Management Approach and MBE/WBE participation). The Selection Committee agreed Kleinfelder's proposal was well-organized, included an appropriate level of effort and distribution of work, as well as key personnel with good qualifications and experience. Kleinfelder has worked on similar projects of the same complexity and size and references for these projects were very good. The project team has relevant experience and its team includes the following major subconsultants: Green International Affiliates Inc. for surveying and mapping; CDW Consulting for permitting; Ellana Inc. for cost estimating and SDE for sewer inspection/dye testing.

Kleinfelder's most recent MWRA performance has been on technical assistance contracts for Chelsea and Deer Island. The project managers for those contracts reported that Kleinfelder had good to excellent performance responding to a variety of engineering tasks.

Kleinfelder's proposal provides the best value with an excellent engineering team, good subconsultant team, and strong level of effort. In addition, Kleinfelder has the lowest average cost per hour for the three top ranked firms. Kleinfelder's proposed level of effort and cost are both within 7% of the Engineer's Estimate.

Hazen and Sawyer was ranked second overall with a strong proposal. Hazen and Sawyer and its subconsultants identified good and relevant experience on past projects. However, Kleinfelder provided a slightly better overall team and an additional 1,440 hours level of effort. Hazen and Sawyer's cost was lower than the selected consultant by \$145,800, but it also had 1,440 less hours for the level of effort resulting in a higher average cost per hour than the selected consultant.

Arcadis, Jacobs Engineering and Weston & Sampson proposed the third, fourth and fifth ranked proposals respectively. The project team that Arcadis proposed is the same as on a recent successfully completed project with the Authority. Arcadis' proposed level of effort is 2,500 hours lower than the Engineer's Estimate and was thought to be insufficient to complete the scope of services. The Selection Committee concluded that the Jacobs Engineering team had good relevant past project experience and qualified personnel, but compared to other proposals its costs and level of effort were highest. The Weston & Sampson team had good relevant past project experience, but the proposed level of effort was thought to be insufficient to complete the tasks required by the scope and the overall proposal was not as strong in comparison to the others received.

Based on final rankings, and for the reasons set forth above, the Selection Committee recommends the award of this contract to Kleinfelder Northeast, Inc. for a 72-month term, and in an amount not to exceed \$2,559,330.59. In accordance with MWRA's procurement procedures, staff entered into discussions with Kleinfelder to confirm costs, level of effort and project management. Based on those discussions, staff believe Kleinfelder can successfully complete the project for the proposed cost.

BUDGET/FISCAL IMPACT:

The FY21 CIP includes a budget of \$2,600,000 for contract 7216. The contract award amount is \$2,559,330.59.

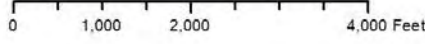
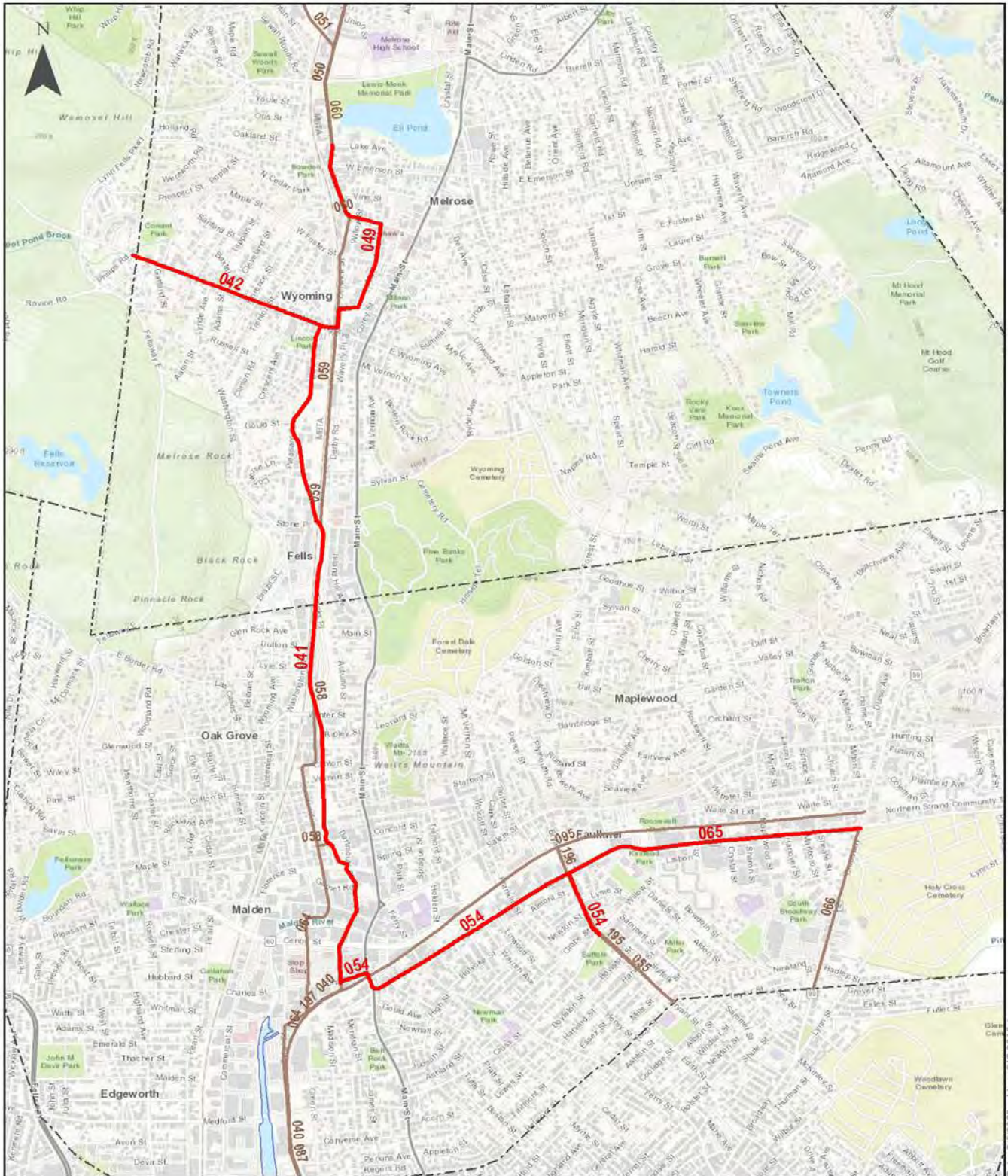
MBE/WBE/PARTICIPATION:

The minimum MBE and WBE participation requirements for this project were established at 7.18% and 5.77% respectively. Kleinfelder has committed to 37.59% MBE and 8.88% WBE participation.

ATTACHMENTS:

Figure 1- Interceptor No. 7 Renewal

MWRA SEWER SECTIONS 41, 42, 49, 54 & 65



STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: June 24, 2020
SUBJECT: Chelsea Creek Headworks Upgrade
BHD/BEC 2015, A Joint Venture
Contract 7161, Change Order 38



COMMITTEE: Wastewater Policy & Oversight

INFORMATION
 VOTE

Corinne M. Barrett, Director, Construction
Martin E. McGowan, Construction Coordinator
Preparer/Title


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

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Change Order 38 to Contract 7161, Chelsea Creek Headworks Upgrade, with BHD/BEC 2015, A Joint Venture, for an amount not to exceed \$226,853.00, increasing the contract amount from \$82,975,797.06 to \$83,202,650.06, with no increase in contract term.

Further, to authorize the Executive Director to approve additional change orders as may be needed to Contract 7161 in an amount not to exceed the aggregate of \$250,000, in accordance with the Management Policies and Procedures of the Board of Directors.

DISCUSSION:

The Chelsea Creek Headworks is one of three remote headworks facilities that provides preliminary treatment and flow control of wastewater from MWRA's Northern Service Area before reaching the Deer Island Treatment Plant. Preliminary treatment at Chelsea Creek Headworks includes grit and screenings removal, which prevents excessive wear and maintenance of equipment at the North Main Pump Station, and protects the cross harbor tunnel from filling with debris. The Chelsea Creek Headworks was constructed in the 1960s and received its last significant upgrade in 1987.

This project is a major upgrade of the entire facility and includes automation of the screenings collection and solids conveyance system, allowing the facility to be unstaffed during dry weather flow. The grit collector systems are being replaced and existing climber screens are being replaced with catenary screens. Influent and effluent sluice gates are being replaced and the gate hydraulic operating system is being replaced with electric gate actuators. Carbon adsorbers are being installed for odor control, HVAC systems are being upgraded, and redundancy is being added to

both systems. Ancillary systems including the emergency generator, fuel oil tank, and transformer are being replaced. Instrumentation and control systems are being upgraded, the communications tower is being replaced and a communications building is being added. Abatement of hazardous building materials including paint containing PCBs, flood protection measures to protect the facility to the 100-year flood elevation plus 2.5 feet, and upgrades to meet current code requirements for egress, electrical, plumbing and fire suppression are also included.

Project Update

- The first two process channels were accepted in April 2019 and November 2019, respectively. The third process channel is currently undergoing functional testing. There have been multiple failures of the new stainless steel grit collector chain in the first two channels. MWRA, the Contractor, and the chain supplier disagree as to the cause of the failure and the parties have reserved their respective rights. The Contractor continues to repair the chain as it fails. New collector chain is being manufactured with an expected delivery to the site in August.
- The new odor control fans and carbon adsorbers were placed into service in April 2020 and the new makeup air units were placed into service in May 2020.
- Hazardous material abatement is approximately 97% complete.

This Change Order

Change Order 38 consists of the following four items:

Topping Slab in Odor Control Room and Grit Bin Room

Not to Exceed \$75,000

The Contractor is required to furnish and install new grease filter mist eliminators for the new odor control system and construct a new grit bin room so that grit and screening dumpsters can be relocated from outdoors to inside the facility. These new process spaces will be constructed within the footprint of the existing compressed air system and chemical wet scrubbers. After commencement of the contract and during the demolition of the existing concrete equipment pads, the 2-inch topping slab began to break apart because it was not well adhered to the structural base slab. The topping slab is a concrete overlay used to provide a level surface for the interior floors. Since this overlay was not well bonded throughout the entire slab, it continued to crumble once it was disturbed. During design, the topping slab was intact and appeared in good condition and the Consultant assumed localized patching could be made to restore the floor. Since the Contractor was unable to find sound material to tie into, the Consultant determined the existing topping slab should be removed in its entirety. This will ensure that all new equipment will be constructed on a solid base. Once the topping slab is removed, a self-leveling mortar system will be used to fill all holes and voids. To correct this unforeseen condition, the Contractor will remove the existing 2-inch topping slab in its entirety in the new odor control room and grit bin room and resurface the structural base slab to fill existing holes and voids prior to applying the new floor coating system.



Topping Slab at Grit Bin Room



Topping Slab Crumbling in Odor Control Room

This item was identified by MWRA staff as an unforeseen condition. MWRA staff, the Consultant, and the Contractor have agreed to a not to exceed amount of \$75,000 for this additional work. The Contractor proceeded with this work at its own risk in order to proceed with the remainder of the contract work.

Odor Control Room Floor and Roof Penetrations

\$70,444

The Contractor is required to furnish and install new stainless steel exhaust air ductwork from the process spaces to the new grease filter mist eliminators located in the odor control room. This new ductwork will replace the existing ductwork that connects to the existing wet scrubbers located in this same room. This new exhaust air system includes two 60-inch x 60-inch headers from the operating floor and mezzanine level that will connect to an 84-inch diameter manifold at the inlet to the three mist eliminators. After commencement of the contract, the Contractor noted the structural drawings did not indicate new floor penetrations needed for this ductwork or the closure of the existing floor penetrations. To correct this omission, the Contractor must furnish and install two 62-inch x 62-inch floor penetrations with curbing and structural steel framing for the new exhaust air ductwork and close the two existing floor openings in the odor control room.



New and existing duct floor penetrations



Structural framing required for new penetration

The Contractor is also required to furnish and install 80-inch x 60-inch stainless steel ductwork from the outlet of the mist eliminators located in the odor control room. This new ductwork will penetrate the existing lower roof where it will connect to the 72-inch diameter fiberglass reinforced plastic ductwork to the new outdoor odor control fans and carbon adsorbers. After commencement of the contract, the Contractor noted that the roof opening was not large enough to account for the bolted flange connection on the new stainless steel ductwork. In addition, the new roof penetration did not include the curbing or structural steel framing around this opening. To correct this error, the Contractor will enlarge the roof penetration in the odor control room from 82-inch x 62-inch to 90-inch x 70-inch and to correct the omission will furnish and install curbing and structural steel framing around this opening.

These items were identified by MWRA staff as a design error and design omission and the design consultant agreed. MWRA staff, the Consultant, and the Contractor have agreed to a lump sum amount of \$70,444 for this additional work. The Contractor proceeded with this work at its own risk in order to proceed with the remainder of the contract work.

Stop Log Covers

Not to Exceed \$50,000

Under Change Order 8, the Contractor was required to furnish and install new openings in the four influent channels for the new stop logs and provide removable covers. The enlarged openings at each channel with removable covers will provide full access to easily and safely insert and remove the stop logs. The design called for a stainless steel deck plate in channel 1, which is located in the kitchen, and 12-inch thick precast concrete planks for channels 2, 3 and 4, which are located in the garage and outdoors. The concrete precast planks are designed for HS-20 loading per American Association of State Highway Transportation Officials (AASHTO) since they are subject to vehicle loading. While chipping the concrete floor slab in the garage for the new precast planks in channel 2, the Contractor broke through into the mezzanine level. Field measurements confirmed that the existing floor slab was only 10-inches thick and not 12-inches as indicated in the drawings. The removable planks were designed based on dimensions in the original 1957 record drawing set. The precast planks were already fabricated and the thickness could not be reduced and still maintain the AASHTO HS-20 loading requirement. The damaged concrete in the mezzanine level at channel 2 was restored and stainless steel framing was installed to create a seal between the mezzanine level and garage. A similar approach was ruled out for the two outdoor covers at channels 3 and 4, since they will always be exposed to the weather and would be a source of building leaks in the future. To alleviate this concern, the removable planks will be replaced with 1-inch thick stainless steel deck plates and gaskets to provide a weather tight seal. The deck plate will have underside stiffeners to meet the AASHTO HS-20 loading requirement. This new cover method only requires chipping 1-¼ inch of existing concrete for deck plate and gasket. To address this unforeseen condition, the Contractor will furnish and install two 1-inch thick stainless steel deck plates in lieu of the precast concrete planks for channels 3 and 4 and restore the concrete and install stainless steel framing in the mezzanine level at channel 2.



Contractor chipped into mezzanine level



Stainless steel plates to replace concrete planks

This item was identified by MWRA staff as an unforeseen condition. MWRA staff, the Consultant, and the Contractor have agreed to a not to exceed amount of \$50,000 for this additional work. The Contractor proceeded with this work at its own risk in order to proceed with the remainder of the contract work.

Elevator Ventilation

\$31,409

The Contractor is required to modernize the existing electric traction freight elevator. The freight elevator has a capacity of 4,000 pounds and provides access to all five levels of the facility. The modernization will be performed by a certified Elevator Subcontractor and includes a new motor, control system, automatic doors and gates, cab, platform and fixtures. After commencement of the contract, it was noted that the existing elevator hoistway, or elevator shaft, and elevator machine room do not include the proper ventilation, with integration to the new fire alarm system, as required by the Building Code and National Fire Prevention Association (NFPA). These spaces must have a means to prevent the accumulation of smoke and hot gases. These requirements are not included in the Elevator Subcontractor's scope of work since the HVAC Subcontractor provides building ventilation and the Electrical Subcontractor provides the new fire alarm system. To correct this error and comply with the Building Code and NFPA, the elevator hoistway and elevator machine room will require two motorized dampers integrated with thermostats and the Fire Alarm Control Panel (FACP). These dampers will be closed during normal operation, but must fail open upon a fire alarm, loss of utility power or temperature rise in these spaces. The Contractor will furnish and install two motorized dampers, with ductwork, louvers and controls integrated with the new FACP to provide required ventilation of the elevator hoistway and elevator machine room.

This item was identified by MWRA staff as a design error and the Consultant agreed. MWRA staff, the Consultant, and the Contractor have agreed to a lump sum amount of \$31,409 for this additional work. Work associated with this proposed change order has not begun.

Although the Contractor agrees with the pricing for the four items included in this change order, it does not agree with MWRA's determination of no increase in contract term. Therefore, MWRA

staff anticipate that Change Order 38 will be executed unilaterally; and the Contractor will likely file a subsequent claim for additional time.

Staff are compiling a list of all change order items that have resulted from an error or omission and will conduct a review at the end of the project regarding responsibility of the Design Consultant, Arcadis U.S., Inc., and the potential for any cost recovery.

CONTRACT SUMMARY:

	<u>Amount</u>	<u>Time</u>	<u>Dated</u>
Original Contract:	\$72,859,000.00	1,460 Days	11/22/16
Change Orders:			
Change Order 1	\$252,512.00	0 Days	06/29/17
Change Order 2*	\$208,431.00	0 Days	07/24/17
Change Order 3	\$1,129,740.20	0 Days	07/24/17
Change Order 4*	\$237,870.00	0 Days	10/18/17
Change Order 5	\$304,036.26	0 Days	12/21/17
Change Order 6*	\$207,226.00	0 Days	01/26/18
Change Order 7	\$1,278,783.00	0 Days	02/07/18
Change Order 8	\$937,267.00	0 Days	02/22/18
Change Order 9	\$17,321.00	0 Days	04/03/18
Change Order 10*	\$20,879.00	0 Days	04/11/18
Change Order 11*	\$200,000.00	0 Days	05/18/18
Change Order 12	\$1,000,000.00	0 Days	05/31/18
Change Order 13*	\$129,783.00	0 Days	06/12/18
Change Order 14	\$500,000.00	0 Days	06/28/18
Change Order 15*	\$24,634.00	0 Days	08/20/18
Change Order 16*	\$21,584.00	0 Days	08/24/18
Change Order 17*	\$109,065.00	0 Days	09/13/18
Change Order 18	\$395,742.00	0 Days	09/28/18
Change Order 19*	\$18,351.00	0 Days	10/26/18
Change Order 20*	\$20,123.00	0 Days	11/06/18
Change Order 21*	\$82,621.00	0 Days	11/13/18
Change Order 22	\$182,792.00	0 Days	11/19/18
Change Order 23*	\$70,125.00	0 Days	12/17/18
Change Order 24*	\$15,618.00	0 Days	01/24/19
Change Order 25*	\$149,469.00	0 Days	02/19/19
Change Order 26	\$375,000.00	0 Days	03/14/19
Change Order 27*	\$24,238.00	0 Days	05/21/19
Change Order 28*	\$213,402.00	0 Days	06/17/19
Change Order 29	\$400,000.00	0 Days	07/16/19
Change Order 30*	\$24,122.00	0 Days	08/12/19
Change Order 31*	\$164,177.00	0 Days	09/16/19
Change Order 32	\$236,588.00	0 Days	09/25/19
Change Order 33*	\$200,073.00	0 Days	11/20/19
Change Order 34	\$425,000.00	0 Days	12/09/19
Change Order 35*	\$248,039.60	0 Days	02/20/20

Change Order 36	\$144,652.00	0 Days	03/31/20
Change Order 37*	\$169,097.00	0 Days	Pending
Change Order 38	<u>\$226,853.00</u>	<u>0 Days</u>	Pending
Total of Change Orders:	\$10,343,650.06	0 Days	
Adjusted Contract:	\$83,202,650.06	1,460 Days	

*Approved under delegated authority

If Change Order 38 is approved, the cumulative value of all change orders to this contract will be \$10,343,650.06 or 14.2% of the original contract amount. Work on this contract is approximately 77% complete.

BUDGET/FISCAL IMPACT:

The FY21 Capital Improvement Program includes a budget of \$83,366,700 for Contract 7161. Including this change order for an amount not to exceed \$226,853.00, the adjusted subphase total will be \$83,202,650.06.

MBE/WBE PARTICIPATION:

The MBE/WBE participation requirements for this project were established at 3.4% and 3.8%, respectively. The Contractor has been notified that these requirements are still expected to be met.

STAFF SUMMARY

TO: Board of Director
FROM: Frederick A Laskey, Executive Director
DATE: June 24, 2020
SUBJECT: June PCR Amendments



COMMITTEE: Personnel and Compensation

INFORMATION
 VOTE

Andrea Murphy, Director of Human Resources
Preparer/Title



Michele S. Gillen
Director, Administration

RECOMMENDATION:

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

DISCUSSION:

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

June PCR Amendments

There are four PCR Amendments this month.

Organizational Change

1. Title change to one vacant position in the Administration Division, MIS Department from Technical Support Analyst Unit 6 Grade 9, to Customer Support Technician II, Unit 6 Grade 9, to more accurately reflect the responsibilities of the position.
2. Title change to one filled position in the Administration Division, MIS Department from Senior Systems Manager Unit 6 Grade 12, to Senior Program Manager, System Administration, Unit 6 Grade 13, as part of a union settlement.
3. Salary adjustment to one filled position in the Operations Division, Wastewater General Department, Area Supervisor, Unit 3 Grade 19, as part of a union settlement.
4. Title change to one filled position in the Operations Division, Deer Island Maintenance Department from Unit Supervisor, Instrumentation Unit 2 Grade 19, to Instrumentation Operations Supervisor, Unit 2 Grade 21, as part of a union settlement.

The first two amendments require approval by the Personnel and Compensation Committee. The last two amendments require Board approval after review by the Personnel and Compensation Committee.

BUDGET/FISCAL IMPACT:

The annualized budget impact of these PCR amendments will be a maximum cost of \$42,576. Staff will ensure that the cost increase associated with these PCR amendments will not result in spending over the approved FY20 and FY21 Wages and Salaries budget.

ATTACHMENTS:

Old Job Descriptions
New Job Descriptions

**MASSACHUSETTS WATER RESOURCES AUTHORITY
POSITION CONTROL REGISTER AMENDMENTS
FISCAL YEAR 2020**

PCR AMENDMENTS REQUIRING PERSONNEL & COMPENSATION COMMITTEE APPROVAL - June 24, 2020																
Number	Current PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Current/Budget Salary	Estimated		Estimated Annual		Reason For Amendment	
											New Salary		\$ Impact			
P14	Administration MIS 8610039	V	T	Technical Support Analyst	6	9	Customer Support Technician II	6	9	\$88,037	\$57,536	\$88,037	-\$30,501	-	\$0	Title change to more accurately reflect the responsibilities of the position.
P15	Administration MIS 8610085	F	T, G	Senior Systems Manager	6	12	Senior Program Manager, Systems Administration	6	13	\$129,486	\$137,578	\$137,578	\$8,092	-	\$8,092	Union settlement.
PERSONNEL & COMPENSATION COMMITTEE TOTAL=										2		TOTAL:		-\$22,409 - \$8,092		

PCR AMENDMENTS REQUIRING BOARD APPROVAL - June 24, 2020																
Number	Current PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Current/Budget Salary	Estimated		Estimated Annual		Reason For Amendment	
											New Salary		\$ Impact			
B17	Operations Wastewater General 2470006	F	S	Area Supervisor	3	19	Area Supervisor	3	19	\$61,156	\$87,551	\$87,551	\$26,395	-	\$26,395	Salary adjustment due to union settlement.
B18	Operations Deer Island Maintenance 29880109	F	T, G	Unit Supervisor (Instrumentation)	2	19	Instrumentation Operations Supervisor	2	21	\$88,154	\$96,243	\$96,243	\$8,089	-	\$8,089	Union settlement.
BOARD TOTAL =					2		TOTAL ESTIMATED COSTS:					\$34,484 - \$34,484				
GRAND TOTAL =					4		TOTAL ESTIMATED COSTS:					\$12,075 - \$42,576				

**MWRA
POSITION DESCRIPTION**



POSITION: Technical Support Analyst

PCR#:

DIVISION: Administration

DEPARTMENT: Management Information Systems (MIS)

BASIC PURPOSE:

Configures, tests and installs microcomputer hardware, software and peripheral products, for the Authority's users. Troubleshoots and diagnoses user hardware, software and peripheral problems. Assists with the evaluation, testing and certification of new and emerging microcomputer technology products. Performs component tests for hardware items to determine repair status.

SUPERVISION RECEIVED:

Works under the general supervision of the Hardware Maintenance Specialist.

SUPERVISION EXERCISED:

None

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Configures, tests and installs microcomputer hardware, software, and peripheral products for the MWRA.
- Investigates, diagnoses, tests and resolves a wide variety of microcomputer hardware, peripheral device and software problems reported by users through the Helpline or other sources.
- Leads or participates on microcomputer hardware, software, network, or peripheral device project teams to assist MWRA users with introduction to new or modified microcomputer environments.
- Configures, troubleshoots and repairs PC Security issues including virus patterns, OS Patches and application fixes and follows all established documentation and inventory procedures.

SECONDARY DUTIES:

Perform related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A four (4) year program in management science, engineering management, computer science or related fields; and
- (B) Three (3) to five (5) years' experience with Customer Support Technician duties; or
- (C) Any equivalent combination of education and/or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Knowledge of microcomputer hardware, software and peripheral operation.
- (B) Demonstrated ability to troubleshoot, diagnose and resolve PC hardware, software and peripheral device problems.
- (C) Excellent analytical and interpersonal skills.
- (D) Written and oral communication skills are required.
- (E) Knowledge of the following:
 - a.) **Operating System/Environments:** Current Microsoft Windows Desktop and Server Operating Systems, Mac OS X or later.
 - b.) **Desktop Productivity Software:** Current Microsoft Office Suite.
 - c.) **Messaging Software:** Microsoft Exchange.
 - d.) **Browser Software:** Microsoft and Google latest versions
 - e.) **Graphics/Presentation Software:** Corel Draw, PowerPoint, Visio, Adobe Suite, AutoCAD, Fast Stone and Arc Info Suite.
 - e.) **Hardware Environment:** Desktops, laptops, tablets, mobile devices, servers, multifunctional devices, auto-visual equipment and various peripherals.
 - f.) **Network:** Ethernet, TCP/IP, Wireless Networks, Active Directory and DNS concepts.

SPECIAL REQUIREMENTS:

A+ or a specific OEM Certification
Information Technology Infrastructure Library (ITIL) Foundation Certification
MCP Windows OS and Office Suite Certifications
Or the ability to obtain within 1 year

TOOLS AND EQUIPMENT USED:

Office equipment as normally associated with the use of telephone, copy, fax machines, MFDs and personal computers including word processing and other software such as LANDesk, Service Desk (Magic), HP Open View and Ghost.

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 occasionally works in various field settings and in an office environment. 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.

December 2017

**MWRA
POSITION DESCRIPTION**



POSITION: Customer Support Technician II

PCR#:

DIVISION: Administration

DEPARTMENT: Management Information Systems (MIS)

BASIC PURPOSE:

Configures tests and installs microcomputer hardware, software and peripheral products, for the MWRA users. Provides Tier 1 and Tier 2 user support, including troubleshooting hardware, software and peripheral problems. Assists with the evaluation, testing and certification of new and emerging microcomputer technology products. Assists MWRA users with the introduction to new or modified microcomputer environments.

SUPERVISION RECEIVED:

Works under the general supervision of a Customer Support Technician III. On specific IT projects may be supervised by a team lead or project manager.

SUPERVISION EXERCISED:

On Specific Projects may be leading a team of Customer Support Technician Is, vendor staff and or users when introducing new or modified microcomputer environments.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Tier 1 support for all user requests including Helpline coverage.
- Configures, tests and installs microcomputer hardware, software, and peripheral products for the MWRA.
- Participates on microcomputer hardware, software, network, or peripheral device project teams to assist MWRA users with introduction to new or modified microcomputer environments.

- Tier 2 support including troubleshooting, testing and resolving a wide variety of microcomputer hardware, peripheral device and software. This includes but is not limited to PCs, printers, telephones, mobile devices, and network equipment, along with security issues including virus patterns, OS Patches and application fixes.
- Coordinate vendor support as needed for warranty and or support services.
- Follows all established documentation and inventory procedures.

SECONDARY DUTIES:

Perform related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A four (4) year college program in management science, engineering management, computer science or related fields; and
- (B) Three (3) to five (5) years experience with Customer Support Technician duties: or
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Knowledge of microcomputer hardware, software and peripheral operation.
- (B) Demonstrated ability to troubleshoot, diagnose and resolve PC hardware, software and peripheral device problems.
- (C) Excellent analytical and interpersonal skills.
- (D) Written and oral communication skills are required.
- (E) Knowledge of the following:
 1. **Operating System/Environments:** Current Microsoft Windows Desktop and Server Operating Systems, Mac OS X.
 2. **Desktop Productivity Software:** Current Microsoft Office Suite.
 3. **Groupware/Messaging Software:** Microsoft Exchange and Internet

- Explorer.
4. **Graphics/Presentation Software:** Corel Draw, PowerPoint, Visio, Adobe Suite, AutoCAD, Fast Stone and Arc Info Suite.
 5. **Hardware Environment:** Desktops, mobile devices multifunctional devices, audio-visual equipment and various peripherals.
 6. **Network:** Ethernet, TCP/IP, Wireless Networks, Active Directory and DNS concepts;

SPECIAL REQUIREMENTS:

A+ or a specific OEM certification
ITIL Foundations Certification version 3
MCP Windows OS and Office Suite certifications
Or the ability to obtain within 1 year.

TOOLS AND EQUIPMENT USED:

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

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 occasionally works in various field settings and in an office environment. 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.

February 2016

**MWRA
POSITION DESCRIPTION**



POSITION: Senior Systems Manager
PCR#: 8610037
DIVISION: Administration & Finance
DEPARTMENT: Management Information System (MIS)

BASIC PURPOSE:

Supervises the maintenance and support activities of data networking functions on the HP-UX Itanium system. Conducts computer operations functions, including monitoring computer processing, coordinating utilization of input, output and interchangeable file media. Schedules machine utilization and oversees control functions for the Authority.

SUPERVISION RECEIVED:

Works under the general supervision of the Data Resource Manager.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Supervises the maintenance and support activities of data networking functions on the HP-UX Itanium system.
- Reviews and monitors the development and installation of HP-UX Itanium based systems provided by technical consultants engaged by the Authority.
- Performs operator maintenance on electronic media devices. Assists in the maintenance of software, operating systems and utilities.
- Conducts daily backups for systems. Schedules and generates print runs and general computer operations duties.
- Maximizes system utilization through management of resource-sharing areas, monitoring of system performance and scheduling of maintenance downtime.

- Adds/removes Authority users through security systems.
- Plans new test procedures and preventive maintenance programs on the HP-UX Itanium system. Maintains repair log for analysis/resolution and submits reports of recurring problems and system utilization.
- Cross-reference online files and supervises new data terminal testing.
- Prepares and implements budgets impacting the HP-UX Itanium system.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) Analytical and writing skills as normally attained through a four (4) year college program in computer science or related field. Advanced degree preferred; and
- (B) Technical knowledge as acquired by four (4) to seven (7) years experience in systems development and management of which at least two (2) years is required on HP-UX Itanium.
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Extensive knowledge of HP-UX Itanium operating systems.
- (B) Knowledge of network carrier systems including twisted pair, coaxial, optical fiber and microwave.
- (C) Experience with Web Sphere, and SAN's environment
- (D) Knowledge of and exposure to large scale WANs and LANs in a workstation based environment.
- (E) Excellent interpersonal, written and oral communication skills are required.

SPECIAL REQUIREMENTS:

None.

TOOLS AND EQUIPMENT USED:

Mini-computer consoles, tape and disk storage systems, various peripheral devices and office equipment as normally associated with the use of telephone, personal computers including word processing and other software, copy and fax machines.

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform 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 walk, stand, 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 occasionally works a computer center and occasionally works in various field settings. The employee regularly works near moving mechanical parts and is occasionally exposed to risk of vibration and electromagnetic radiation. The employee is occasionally exposed to risk of electrical shock. The Computer Center also uses automatically discharging chemicals to suppress fire.

The noise level in the work environment is moderate.

October 2007

**MWRA
POSITION DESCRIPTION**



POSITION: Senior Program Manager, Systems Administration

PCR#:

DIVISION: Administration

DEPARTMENT: Management Information Systems (MIS)

BASIC PURPOSE:

Responsible for planning, organizing, and managing efforts related to the implementation, optimization and maintenance of information systems including Windows Servers, databases, Exchange Mail, Active Directory, Domain Name Services (DNS) and backups. Ensures systems and data reliability, confidentiality, integrity and availability in support of business requirements. Maintains and improves system and service levels. Oversees the Systems Administration and Database group within MIS. Recommends products and services that will improve the reliability and performance of systems and applications. Defines and develops metrics for reporting against Service Level Agreements (SLAs) to maintain and improve systems and services.

SUPERVISION RECEIVED:

Works under the general supervision of the Technical Operations Manager.

SUPERVISION EXERCISED:

Exercises direct supervision of the Database and Systems Administration team and assigned technical resources.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Oversees the day-to-day activities of assigned staff including database and systems staff.
- Oversees all system management functions for operating systems supporting MWRA data processing environments.
- Assesses and prioritizes business requests for development of new systems or improvements of existing systems and makes recommendations for successful implementation.

- Develops and implements business continuity and disaster recovery procedures to ensure the integrity of assigned systems. Performs ongoing system implementation work. Oversees building business and operational plans and standard operating procedures as they relate to IT systems architecture.
- Collaborates with staff on establishing business and operational goals. Defines and develops metrics for reporting against Service Level Agreements (SLAs) to maintain and improve systems and services.
- Collaborates with Security, Architecture, and Engineering team on implementation and integration of new and existing IT projects to support changes in infrastructure.
- Oversees the support of MS Active Directory services, Organizational Units (OUs), Groups and Domain Name Services consisting of multi-site multiple servers to ensure proper operation and performance.
- Oversees Incident Response for the Database and System Administration team. Develops response and recovery plans. Ensures periodic testing of the response and recovery plans.
- Keeps abreast of the latest technologies and solutions and contributes feedback to technology discussions and meetings in evaluating technology solutions.
- Incorporates long-term system, operations and administration requirements in information systems planning documents.
- Provides technical assistance and leadership to staff in the development of projects and project plans for the group.
- Oversees backup solution administration and maintenance for all MIS supported systems. Maintains onsite backup records and logs.
- Documents and maintains Maintenance and Operations procedures for all supported systems conforming to MWRA standards.
- Develops management reports for capacity planning efforts.

OTHER DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience

- (A) A Bachelor's degree in computer science, engineering or related field; and
- (B) Seven (7) to ten (10) years implementing and administering Exchange and supporting, and maintaining Active Directory in an enterprise environment; and
- (C) At least two (2) years of supervisory or management experience; or
- (D) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Proven advanced proficiency with Microsoft Exchange. Demonstrated technical experience supporting Exchange, SMTP, email gateway products and services. Knowledge and experience with antispam measures: Sender Policy Framework (SPF), Domain Keys Identified Mail Sender (DKIM), and Domain-based Message Authentication, Reporting and Conformance (DMARC).
- (B) Proven advanced proficiency with Microsoft Active Directory, Group Policy, Kerberos, and LDAP. Demonstrated technical experience supporting Microsoft Operating Systems including Domain Name System, DHCP, Registry Editor, DFS, WINS, IIS, File Services and Certificate services.
- (C) Strong skills with Microsoft scripting languages such as VBScript and PowerShell.
- (D) Proficiency with Backup and recovery technology and methodologies.
- (E) Strong organization skills and the ability to manage multiple priorities with competing demands for resources
- (F) Ability to setup and configure communications systems hardware and software.
- (G) Strong understanding of Network Storage, SAN environment, and virtualization such as vSphere ESX/ESXi.

- (H) Ability to troubleshoot problems utilizing the OSI seven-layer model.
- (I) Excellent technical project management, interpersonal, written and oral communication skills are required.

SPECIAL REQUIREMENTS:

- Shares in on-call rotation and emergency response tasks as needed.
- Participates in occasional off-site travel, extended hours and weekend work.
- ITIL Foundation Certification in IT Service Management version 3 or 4 is required or the ability to obtain within 12 months.
- At least two of the following certifications within one year:
 - Microsoft Certified Solutions Expert (MCSE); Productivity, with Elective Exam on Microsoft Exchange
 - Microsoft Certified Solution Expert: Core Infrastructure
 - VMware Certified Advanced Professional - Data Center Administration (VCAP)
 - VMware Certified Professional - Data Center Virtualization (VCP-DCV)
 - Citrix Certified Professional –Virtualization (CCP-V)

TOOLS AND EQUIPMENT USED:

Computer systems hardware, tape and disk storage systems, various network and peripheral devices and office equipment as normally associated with the use of telephone, personal computers including word processing and other software, copy and fax machines.

PHYSICAL DEMANDS:

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

While performing the duties of this job, the employee works 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 walk; stand; 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 works in data centers, network closets and occasionally works in various field settings. The employee regularly works near moving mechanical parts, and is occasionally exposed to risk of vibration and electromagnetic radiation. The employee is occasionally exposed to risk of electrical shock. The data center also uses automatically discharging chemicals to suppress fire.

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

June 2020

**MWRA
POSITION DESCRIPTION**

POSTION: Area Supervisor

PCR#:

DIVISION: Operations

DEPARTMENT: Clinton, Metro Water General, Wastewater Operations,
Wastewater General

BASIC PURPOSE:

Supervises the operation and maintenance requirements of assigned wastewater and/or water treatment facilities.

SUPERVISION RECEIVED:

Works under general supervision of the shift manager or operations supervisor.

SUPERVISION EXCERCISED:

Exercises close supervision of operations/maintenance staff.

ESSENTIAL DUTIES AND RESPONSIBILITES:

- Supervises and instructs applicable operational/maintenance personnel as required.
- Reviews performance for compliance and efficiency to ensure safe environmentally sound, efficient uninterrupted wastewater and water transport and treatment service.
- Supervises, coordinates and participates in the operational and maintenance requirements of facilities including, chemical feed systems, grit collection systems, sludge collection, gas monitoring, operation of VFD units, emergency generators, system calibration and other related equipment as needed.
- Supervises, controls and participates in the operation of plant treatment processing units, including settling tanks, sludge and scum conditioning and transfer equipment, digestion and gas control equipment, chlorine equipment, electric generating and control equipment and other treatment plant equipment as needed.

- Supervises, coordinates and participates in the operation of all operational and support systems, including influent and effluent gates, the grit and screening systems, the air scrubbers, the boilers and ventilation systems. Operates and exercises emergency generators as needed. Communicates with other Area Supervisors, Unit Supervisors, Operations Manager and Senior Managers regarding operational, maintenance and process control conditions.
- Controls pumping equipment, disinfection systems, storage facilities, screen units and ventilation systems.
- Supervises and coordinates the cleaning, repairing and assisting in the maintaining of pumps, engines, electric generators, air compressors, vacuum pumps, water and oil circulating pumps, tests injectors for proper operating pressures, renews and repairs air starting valves, directs oil changes and changing of oil filters.
- Supervises applicable preventive maintenance and coordinate corrective maintenance with operations and maintenance personnel.
- Maintains and reviews operational records and data. Prepares and submits daily and weekly operational reports with observations and recommendations as required. Requests materials, equipment and supplies necessary for operation. Reports needs for major equipment repair to avoid serious breakdown.
- Makes regular inspections to monitor and document facility conditions.
- Monitors and operates graphic indicator-recorder panel.
- Makes necessary adjustments to operational procedures based on data interpreted from control panel to insure continuous operation of facility and maintains elevations, flow rates and velocities of flows within prescribed limits.
- Utilizes personal computers, data terminals and specialized software applications packages to perform related duties, such as work planning and scheduling, inventory maintenance, etc.
- Works with engineers in the Technical Information Center to develop and improve designs for assigned work orders. Reports modifications made to equipment.
- Prepares, edits and submits operational information as required.
- Collects and ensures quality of samples taken. Performs related laboratory analysis.
- Prepares work orders for predictive and corrective maintenance, as needed utilizing computer maintenance management systems.
- Performs supervisory responsibilities of roving field crews and operational personnel located within an operational control center (OCC) as needed.

- Operates the Process Instrumentation and Controls System (PICS), TELOG or SCADA.
- Coordinates shutdown and start-up of process equipment.
- Ensures plant cleanliness and makes rounds to ensure plant facility is maintained by staff.
- Schedules and works overtime as required.
- Needs to be available during any emergency.
- Provides training to assigned staff.
- Directs remedial action in all emergencies.
- Reviews assigned employee performance per MWRA procedures.
- Assists employee with procurement of tools, parts and materials.
- Operates motor vehicles, such as vans and pick-up trucks, to transport materials to work sites, pick up equipment, etc.
- Performs light maintenance independently or as part of a team. Light maintenance shall include but not limited to:
- Operates forklift or other light equipment that does not require a special license.
- Generates inspection lists and maintenance reporting through the Computerized Maintenance Management System.
- Inspects and troubleshoots various systems and equipment
- Installs and retrofits/new equipment related to plant systems.
- Modifies and/or aligns existing equipment to specifications.
- With proper safety training, sets up ladders, staging and rigging and utilizes hoists, jacks, dollies, lifts, etc. for proper access to job and to remove and install equipment.
- Operates portable pumping, ventilation and other equipment necessary to support and accomplish assigned tasks.
- Greases and lubricates, replaces oil reserves, minor packing adjustments and opens hatches.
- Installs safety rails, changes light bulbs and replaces HVAC filters.

- Conducts routine testing, lockout/tagout, operation (startup/shutdown) and adjustment of process equipment.
- Removes snow from immediate work area in order to perform tasks.
- Performs necessary cleanup and housekeeping for work area and other light maintenance tasks.

SECONDARY DUTIES:

- Assists employees with the preparation of injury and illness reports, safety work orders, and maintenance work order requests, reviews requests for completeness and accuracy.
- Assists in maintaining harmonious labor management relations through proper application of collective bargaining agreement provisions and established personnel policies.
- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) Basic reading, writing, mathematical, scientific and oral communication skills as normally attained through a high school diploma or GED; and
- (B) Knowledge of principles, procedures, methods, equipment and materials used in the operation, repair and maintenance of a large municipal wastewater or water treatment facility as acquired by seven (7) to nine (9) years direct experience of which three (3) must be in a supervisory capacity. Successful completion of the MWRA sponsored supervisory training program and receipt of the training certificate may be substituted for supervisory experience; and
- (C) Satisfactory completion of competency-based training program in accordance with the productivity improvement plan training program established at MWRA; or
- (D) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) A working knowledge of the methods, techniques, operations, systems, equipment, principles and practices of wastewater or water treatment.
- (B) A working knowledge of water and/or wastewater process areas.
- (C) Ability to plan, organize, direct, train and assign duties to subordinates, as obtained through successful completion of supervisory training program or an approved

substitution.

- (D) Extensive knowledge of safety practices and applications in wastewater treatment operations.
- (E) Knowledge of groundwater level monitoring and sampling procedures and proper sludge land filling operations.
- (F) Knowledge of lab procedures and analyses related to process control of secondary plant and NPDES permit requirements.
- (G) Ability to understand and apply process control techniques.
- (H) Ability to plan, organize, direct, train and assign duties to subordinates.

SPECIAL REQUIREMENTS:

- Wastewater Treatment Plant Operator's Grade 4 License and a Collections System 4 Certification.
- A valid Class D Massachusetts Motor Vehicle Operator License.
- Complete competency based training program related to **ESSENTIAL DUTIES AND RESPONSIBILITIES** as outlined above and successfully demonstrates required competencies.

TOOLS AND EQUIPMENT USED:

Office equipment as normally associated with the use of telephone, mobile radio, beeper, 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 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 more than 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 regularly works in outside weather conditions. The employee occasionally works near moving mechanic 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.

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

March 2009

**MWRA
POSITION DESCRIPTION**



POSITION: Unit Supervisor

PCR#:

DIVISION: Operations

DEPARTMENT:

BASIC PURPOSE:

Supervises daily operations and activities of assigned staff.

SUPERVISION RECEIVED:

Works under the general supervision of an Area Manager.

SUPERVISION EXERCISED:

Exercises close supervision of the assigned skilled and unskilled staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Supervises staff in the performance of a variety of maintenance and operations functions.
- Determines the daily assignments for assigned staff and distributes work accordingly.
Establishes deadlines and priorities on the basis of the maintenance schedule or emergencies.
- Follows process control procedures for an assigned area, utilizing available area computer data to monitor operations.
- Ensures operating and maintenance records and logs are properly maintained.
- Communicates with all Supervisors and Managers regarding operational, maintenance and process control conditions.
- Monitors supplies of process chemicals and reorders as necessary and assists employees with procurement of tools, parts and materials.
- Works with engineers in the Technical Information Center to develop and improve designs for assigned work orders; reports modifications made to equipment.

- Works with operations Area Supervisors to coordinate shutdown and start-up of process equipment.
- Works with appropriate management staff to develop new and improved operating practices and procedures and to coordinate efforts regarding troubleshooting and variances.
- Reviews assigned employee performance per MWRA procedures.
- Performs work in compliance with Operations Integrated Contingency Plan.
- Prepares daily and weekly job status and time utilization 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.
- Oversees, measures and where appropriate, improves assigned work crew productivity.
- Supervises assigned crews including taking disciplinary actions (issuing verbal warnings and initiating written warnings) when necessary, conducting performance reviews, and preparing regular reports, as required, on work accomplished and crew productivity.
- Works from manufacturer's manuals and specifications, blueprints, schematics and verbal instructions to install, repair, troubleshoot, inspect, check & maintain mechanical, electrical-mechanical & hydraulic systems including HVAC mechanical components not carrying refrigerant.
- Performs preventative, predictive and corrective maintenance on systems & equipment including piping not covered by the plumbing and gas fitting codes & HVAC mechanical components not carrying refrigerant.
- Performs, documents and reports results in the Maximo database of inspections and work performed.
- Assists other trades in the performance of their work, as required, or as assigned.
- Inspects plant equipment and processes of designated area regularly to determine efficiency of operation, cleanliness, maintenance requirements and adherence to safety and environmental restrictions. Periodically conduct safety inspections.
- Monitors work-in-progress and provides final check that work is completed in accordance with specifications for the job, applicable vendors specifications, trade standards, etc., and that final clean-up is satisfactory. Personally, conducts audits of completed tasks.
- Follows established safety, operating, and emergency response procedures and policies established by MWRA.

- Assists Planner/Scheduler in determining appropriate preventive maintenance and corrective maintenance priorities, schedules and estimated levels of effort to ensure that equipment performance is maximized.
- Creates efficient work schedules and monitors staff performance in order to minimize travel time and staff downtime, and maximizes staff productivity. Keeps time utilization records and continuously strives for productivity improvements.
- Identifies and monitors unit's tools, parts and material requirements and works with Planner/Scheduler to insure timely procurement and maintenance of adequate inventory levels.
- Assists maintenance crews with troubleshooting assigned work orders, and provides instruction on difficult work operations.
- Supervises and assist in the setting up of staging and rigging for access on the job installation and removal of equipment.
- Provides training to employees on a regular basis.
- 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 special license.
 - Generates inspection lists and maintenance reporting through the Computerized Maintenance Management System.
 - Inspects and troubleshoots various systems and equipment
 - Installs and retrofits/new equipment related to plant systems.
 - Modifies and/or aligns existing equipment to specifications.
 - With proper training sets up ladders, staging and rigging and utilizes hoists, jacks, dollies, lifts, etc. for proper access to job and to remove and install equipment.
 - Operates portable pumping, ventilation and other equipment necessary to support and accomplish assigned tasks.
 - Greases and lubricates, replaces oil reserves, makes minor packing adjustments and opens hatches.
 - Installs safety rails, changes light bulbs and replaces HVAC filters.

- Removes snow from immediate work area in order to perform tasks.
- Conducts routine testing, lockout/tagout, operation (startup/shutdown) and adjustment of process equipment.
- Performs necessary cleanup and housekeeping for work area and other light maintenance tasks.

SECONDARY DUTIES:

- Assists employees with preparation of injury/illness reports, safety and maintenance work orders, and assures that they keep high quality, accurate related documents and records.
- Assists in maintaining harmonious labor management relations through proper application of collective bargaining agreement provisions and established personnel policies.
- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A high school diploma or GED; and
- (B) Requires four (4) to six (6) years of related supervisory experience supervising Plumbers/Pipefitters, Electricians, Machinists, I&C specialists or M&O Specialists; or in an equivalent position, for proficiency in the following areas:
- A working knowledge of the methods, procedures and work rules relating to preventive maintenance, repair, and proper inspection of mechanical, electro-mechanical, pneumatic or hydraulic equipment
 - The ability to troubleshoot problems in the maintenance and repair of equipment serviced by M&O Specialists.
 - Successful completion of the MWRA sponsored supervisory training program and receipt of the training certificate may be substituted for supervisory experience.
- (C) Satisfactory completion of competency-based training program in accordance with the productivity improvement program as established at MWRA; or
- (D) Any equivalent combination of experience or education.

Necessary Knowledge, Skills and Abilities:

- (A) Basic reading, writing, mathematical, scientific and oral communication skills.
- (B) Ability to plan, organize, direct, train and assign duties to subordinates, as obtained through successful completion of supervisory training or an approved institution.
- (C) A working knowledge of the occupational hazards and safety practices common to the trade, and the satisfactory completion of MWRA safety training in the use of hoists, rigging, and material handling equipment.
- (D) Working knowledge of the methods, procedures and work rules relating to machine shop operations in a large industrial facility.
- (E) Ability to troubleshoot problem areas relative to complex machinist work assignments.
- (F) Utilizes personal computer, data terminals and specialized MAXIMO/Lawson software application packages to perform related duties, included but not limited to: work planning and scheduling, inventory maintenance, purchase order placement/tracking, work order reporting; time, utilization, and written work plan completion.
- (G) Ability to supervise staff effectively and to establish and maintain effective working relationships with subordinates, superiors and associates.
- (H) Ability to attain knowledge & work procedures required to perform maintenance tasks required by Reliability Centered Maintenance or similar Maintenance Management Program.
- (I) Ability to keep manual and computer-based records and write reports.
- (J) Trained in confined space entry. Capable of entering, setting up, installing and disassembling confined space equipment. Ability to work in a confined space.
- (K) Trained in CPR and First Aid.

SPECIAL REQUIREMENTS:

- A Valid Class D Vehicle Operators License.
- Must possess an electrical, plumbing or HVAC Technician's license or a Mechanical Certification from an agreed upon program or a certificate from a college or technical school in machining/metalworking or fabrication/welding (not required for Unit Supervisor, Instrumentation)
- For 29880143 DI only - Department of Public Safety Hoisting Engineer's License, 1B and 2A or the ability to obtain within one year.

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

TOOLS AND EQUIPMENT USED:

Hand tools, mobile radio, telephone, beeper, 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 occasionally is required to sit, stand and walk. The employee is frequently required to climb or balance; stoop, kneel, crouch, or crawl; taste or smell.

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

WORK ENVIRONMENT:

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

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

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

January 2019

**MWRA
POSITION DESCRIPTION**



POSITION: Instrumentation Operations Supervisor

DIVISION: Operations

DEPARTMENT: Deer Island Trade Labor Maintenance

BASIC PURPOSE:

Supervises daily operations and activities of assigned Instrumentation staff for plant-wide projects including corrective and preventative maintenance. Serves as subject matter expert resource on programmable logic controllers (PLC) and Instrumentation Devices. Follows established safety, operating, and emergency response procedures and policies established by MWRA.

SUPERVISION RECEIVED:

Works under the general supervision of an Area Manager.

SUPERVISION EXERCISED:

Exercises direct supervision of Instrumentation Specialists and Communication & Control Technicians.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Supervises staff in the performance of a variety of instrumentation functions.
- Determines the daily assignments for assigned staff and distributes work accordingly. Establishes deadlines and priorities based on the maintenance schedule or emergencies.
- Performs, documents and reports results in the Maximo database of inspections and work performed.
- Ensures operating and maintenance records and logs are properly maintained.
- Programs, configures, upgrades, edits, and troubleshoots programmable logic controllers (PLC).
- Manages all DITP off-island instrumentation and communication equipment and ensures instrumentation staff are adequately trained to support this equipment.

- Sets up, configures, and performs functional testing of instrumentation devices. Monitors instrumentation devices for proper operation.
- Provide ongoing guidance and technical support as well as annual training of all instrumentation staff on the following subjects:
 - Basic PLC – laptop connection, trouble shooting, and following logic operation.
 - Field instrument transmitter and element installation, configuration, troubleshooting and configuration device connection.
- Mentors new or promoted Instrumentation staff.
- Provides support to PICS Group, Project Engineer, and Instrumentation and Control with installation and upgrades to equipment.
- Communicates with all Supervisors and Managers regarding operational, maintenance and process control conditions. Collaborates across teams to share information on plant projects and emergencies. Attends weekly meetings of maintenance and operations managers at Deer Island.
- Works with engineers in the Technical Information Center to develop and improve designs for assigned work orders. Reports modifications made to equipment.
- Works with operations Area Supervisors or others to coordinate shutdown and start-up of process equipment.
- Performs work in compliance with Operations Integrated Contingency Plan.
- Supervises assigned crews including taking disciplinary actions (issuing verbal warnings and initiating written warnings) when necessary, conducting performance reviews, and preparing regular reports, as required, on work accomplished and crew productivity.
- Works from manufacturer's manuals and specifications, blueprints, schematics and verbal instructions to install, repair, troubleshoot, inspect, check & maintain process instrumentation and control systems.
- Prepares daily and weekly job status and time utilization to track execution of written work plan. Details include, but are not limited to, crew time productivity, material utilization and costs, and equipment utilization and costs.
- Monitors work-in-progress and provides final check that work is completed in accordance with specifications for the job, applicable vendor specifications, trade standards, etc., and the final cleanup is satisfactory. Conducts audits of completed tasks.

- Inspects plant equipment and processes of designated area regularly to determine efficiency of operation, cleanliness, maintenance requirements and adherence to safety and environmental restrictions. Periodically conducts safety inspections.
- Assists Planning/Scheduling Coordinator in determining appropriate Instrumentation preventive maintenance and corrective maintenance priorities, schedules, tasks, and estimated levels of effort to ensure that equipment performance is maximized.
- Identifies and monitors Unit's tools, parts and material requirements and works with Planning/Scheduling Coordinator to ensure timely procurement and maintenance of adequate inventory levels.
- Assists maintenance crews with troubleshooting assigned work orders, and provides instruction on difficult work operations.
- Performs light maintenance independently or as part of a team. Light maintenance shall include but is not limited to:
 - Operates light equipment not requiring a special license.
 - Generates inspection lists and maintenance reporting through the Computerized Maintenance Management System.
 - Inspects and troubleshoots various systems and equipment
 - Installs and retrofits/new equipment related to plant systems.
 - Modifies and/or aligns existing equipment to specifications.
 - Conducts routine testing, lockout/tagout, operation (startup/shutdown) and adjustment of process equipment.
 - Performs necessary cleanup and housekeeping for work area and other light maintenance tasks.
- Supervises and assists in the setting up of staging and rigging for access on the job installation and removal of equipment.

SECONDARY DUTIES:

- Assists other trades in the performance of their work, as required, or as assigned.
- Assists employees with preparation of injury/illness reports, safety and maintenance work orders, and assures that they keep high quality, accurate related documents and records.

- Assists in maintaining harmonious labor management relations through proper application of collective bargaining agreement provisions and established personnel policies.
- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A high school diploma or GED; and
- (B) Requires seven (7) to nine (9) years of related experience supervising assigned staff in specialized titles , Instrumentation Specialists, Communication and Control Technicians, and related maintenance titles; and
- (C) Successful completion of the MWRA sponsored supervisory development training program or equivalent; or
- (D) Any equivalent combination of experience or education.

Necessary Knowledge, Skills and Abilities:

- (A) Basic reading, mathematical, scientific and oral communication skills.
- (B) Solid writing skills to compose reports.
- (C) Ability to plan, organize, direct, train and assign duties to subordinates, as obtained through successful completion of supervisory training.
- (D) A working knowledge of the occupational hazards and safety practices and the satisfactory completion of applicable MWRA safety training.
- (E) Ability to troubleshoot problem areas relative to complex instrumentation and control systems work assignments.
- (F) Working knowledge of the methods, procedures and work rules relating to preventive maintenance, repair, and proper inspection of instrumentation and controls systems.
- (G) Knowledge of PLC configuration language(s) associated with PLC supplier (Allen-Bradley).
- (H) Ability to set-up and configure local, remote, hierarchical and distributive control systems; knowledge to configure Input/Output modules using various slot addressing techniques; understanding of program and data table file organization, number systems

and processor information flow; and knowledge of basic relay type instructions, timers and counters, & data manipulation instructions

- (I) Utilizes personal computer, data terminals and specialized MAXIMO/Lawson software application packages to perform related duties such as work planning and scheduling, inventory maintenance, purchase order placement/tracking, work order reporting; time, utilization, and written work plan completion.
- (J) Ability to establish and maintain effective working relationships with direct reports, supervisor, and colleagues.
- (K) Ability to learn work procedures required to perform maintenance tasks required by Reliability Centered Maintenance or similar Maintenance Management Program.
- (L) Ability to maintain written and computer-based records.
- (M) Trained in confined space entry. Capable of entering, setting up, installing and disassembling confined space equipment. Ability to work in a confined space.
- (N) Trained in CPR and First Aid.
- (O) Trained in setting up staging and rigging.

SPECIAL REQUIREMENTS:

- A Valid Massachusetts Class D Vehicle Operator's License.
- ISA Certified Control Systems Technician (CCST) Certification or within twelve months of being in the title.
- Completion of management training for time management and personnel management including harassment prevention for managers and supervisors.
- Completion of 24 hours of PLC training (applicable to Deer Island Treatment Plant) every two years.

TOOLS AND EQUIPMENT USED:

Hand tools, mobile radio, telephone, beeper, 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 occasionally is required to sit, stand and walk. The employee is frequently required to climb or balance; stoop, kneel, crouch, or crawl; taste or smell.

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

WORK ENVIRONMENT:


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

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

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

June 2020

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 24, 2020
SUBJECT: Extension of Employment Contract
Copy and Supply Clerk, Administration Division

COMMITTEE: Personnel & Compensation

INFORMATION
 VOTE

Andrea Murphy, Director, Human Resources
Preparer/Title


Michele S. Gillen
Director, Administration

RECOMMENDATION:

To approve the extension of an employment contract for Mr. Ward Merithew, Copy and Supply Clerk, Facilities Management Department, for a period of six months from July 1, 2020 to December 31, 2020, at the current hourly rate of \$15.76 per hour for an annual compensation not to exceed \$6,150.00.

DISCUSSION:

MWRA's Facilities Management Department is responsible for management of the Charlestown facility, mail service, transportation services and security at the front desk. Mr. Ward Merithew has been working at MWRA since July 2, 2018 on a part-time contract basis. Mr. Merithew provides coverage when there are gaps in staffing and provides daily administrative support. Those duties include coverage for the mailroom and front desk, stocking paper for copies and printers, distributing mail, emptying recycling bins, as well as assisting with the preparations and copying of documents and manuals for staff in the Administration Division.

BUDGET/FISCAL IMPACT:

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


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: June 24, 2020
SUBJECT: Delegated Authority Report – May 2020

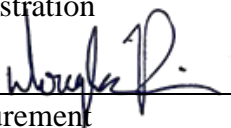


COMMITTEE: Administration, Finance & Audit

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 May 1 – 31, 2020.

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.

BACKGROUND:

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.

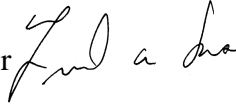
CONSTRUCTION/PROFESSIONAL SERVICES DELEGATED AUTHORITY ITEMS MAY 1 - 31, 2020

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	05/05/20	OVERHEAD DOOR MAINTENANCE DEER ISLAND TREATMENT PLANT AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER TO PROVIDE OVERHEAD DOOR MAINTENANCE SERVICES AT THE DEER ISLAND TREATMENT PLANT FOR A TERM OF 1,095 CALENDAR DAYS.	5589	AWARD	COLLINS OVERHEAD DOOR, INC.	\$201,625.00
C-2.	05/07/20	CAPITAL IMPROVEMENTS AT THE BIOSOLIDS PROCESSING FACILITY FURNISH AND INSTALL TWO SETS OF TRUNNIONS FOR THE DRYER DRUM ASSEMBLIES.	7153	6	IPC LYDON, LLC	\$63,237.51
C-3.	05/11/20	AIR COMPRESSOR SYSTEM SERVICE FINAL BALANCING CHANGE ORDER TO DECREASE THE FOLLOWING BID ITEMS TO REFLECT ACTUAL QUANTITIES USED: ROUTINE ON CALL SERVICES, EMERGENCY ON CALL SERVICES AND REPLACEMENT PARTS, DELETE REQUIREMENT TO PERFORM PREVENTIVE MAINTENANCE OF AIR COMPRESSOR SYSTEMS.	OP-361	1	COOLING & HEATING SPECIALISTS, INC.	(\$57,789.20)
C-4.	05/11/20	ELECTRICAL EQUIPMENT TESTING - DEER ISLAND TREATMENT PLANT INCREASE SCHEDULED TESTING AND SERVICES, EXTEND CONTRACT TERM BY 148 CALENDAR DAYS FROM MARCH 6, 2020 TO JULY 31, 2020.	5561	2	AMERICAN ELECTRICAL TESTING COMPANY, INC.	\$60,000.00
C-5.	05/11/20	WACHUSETT DAM LOWER GATEHOUSE INTERIM PIPE REPAIR FURNISH AND INSTALL A BULKHEAD AND DEWATER TO MITIGATE THE EXCESS LEAKAGE AT LINE 1; INSTALL PIPE SUPPORT ON DISCHARGE OF SLEEVE VALVE LOCATED IN THE SECOND CHAMBER OF THE BASEMENT OF THE WACHUSETT LOWER GATE HOUSE ON LINE 1; BLIND FLANGE VENT MODIFICATIONS.	7379	2	THIELSCH ENGINEERING, INC.	\$79,751.60
C-6.	05/11/20	SOUTHERN EXTRA HIGH PIPELINE - SECTION 111 (DEDHAM NORTH) INCREASE DIESEL FUEL, GASOLINE, LIQUID ASPHALT AND PORTLAND CEMENT ALLOWANCE; FURNISH AND INSTALL A DRAIN CATCH BASIN AND DRAIN ON DEDHAM BOULEVARD TO CONNECT THE SURFACE RUNOFF TO THE TOWN OF DEDHAM STORM WATER RETENTION BASIN.	7504	12	P. GIOCOSO AND SONS, INC.	\$133,114.39
C-7.	05/12/20	COSGROVE INTAKE AND POWER STATION UPGRADES DEMOLISH AND DISPOSE OF SIX EXISTING ROOF DRAINS AND ASSOCIATED PIPING; FURNISH AND INSTALL SIX NEW ROOF DRAINS AND REPLACE IN KIND ALL DRAIN PIPING ASSOCIATED WITH THE ROOF DRAINS; FURNISH AND INSTALL THREE LADDER-UP DEVICES FOR THE LOWER AND UPPER ROOF HATCH; FURNISH AND INSTALL 30 LINEAR FEET OF SAFETY RAILING AT FIVE LOCATIONS ON THE ROOF FOR A TOTAL OF 150 LINEAR FEET OF RAILING; FURNISH AND INSTALL TWELVE ACCESS PANELS IN THE GYPSUM CEILINGS LOCATED IN THE GARAGE BAY, BATTERY ROOM AND TWO BATHROOMS; DEMOLISH EXISTING EMERGENCY LIGHTS, BATTERY PACKS, AND ASSOCIATED CONDUIT AND WIRE THROUGHOUT THE BUILDING.	7022	4	GREENWOOD INDUSTRIES, INC.	\$99,624.78
C-8.	05/14/20	ALEWIFE BROOK PUMP STATION REHABILITATION FURNISH AND INSTALL A LEVEL ELEMENT AND TRANSMITTER AND ASSOCIATED WIRE AND CONDUIT; DEMOLITION AND REPLACEMENT OF ONE SET OF GAS SENSORS IN THE SCREEN ROOM; FURNISH AND INSTALL ONE UNINTERRUPTIBLE POWER SUPPLY FOR GAS MONITORING CONTROL CABINET; FURNISH AND INSTALL CONDUIT, WIRE, LEVEL FLOATS, AND A CONTROL PANEL; FURNISH AND INSTALL INSULATION FOR ALL DOMESTIC COLD WATER, DOMESTIC HOT WATER, AND HORIZONTAL PORTIONS OF DRAIN PIPING; CORE AND SEAL A NEW PENETRATION THROUGH THE BUILDING EXTERIOR FOR CONDENSATE DRAIN; FURNISH AND INSTALL A WATER SEAL TRAP IN THE CONDENSATE PIPING; FURNISH AND INSTALL PVC COATED RIGID CONDUIT FROM THE RELOCATED LEAK DETECTION PANEL TO THE PROGRAMMABLE LOGIC CONTROLLER.	6797	11	BARLETTA ENGINEERING CORPORATION	\$58,514.00
C-9.	05/18/20	GRIT AND SCREENINGS HAULING AND DISPOSAL INCREASE OTHER FACILITIES GRIT HAULING AND DISPOSAL; INCREASE THE LAB ANALYSIS-GRIT AND LAB ANALYSIS-SCUM; EXTEND CONTRACT TERM BY 30 CALENDAR DAYS FROM JUNE 6, 2020 TO JULY 6, 2020.	5564	1	W.L. FRENCH EXCAVATING CORPORATION	\$249,860.00
C-10.	05/27/20	PIPING RELOCATION AT THE PELLETIZING PLANT	7173	1	WALSH CONSTRUCTION	\$54,015.90

PURCHASING DELEGATED AUTHORITY ITEMS MAY 1-31, 2020

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-1.	05/05/20	REBUILD OF ONE MUFFIN MONSTER GRINDER AWARD OF A SOLE SOURCE PURCHASE ORDER FOR THE REBUILD OF ONE MUFFIN MONSTER GRINDER FOR THE SQUANTUM PUMP STATION.			JWC ENVIRONMENTAL, LLC	\$29,054.55
P-2	05/05/20	60-MONTH LEASE FOR THE DIGITAL MAILING SYSTEM AWARD OF A PURCHASE ORDER UNDER STATE CONTRACT OFF39 FOR A 60-MONTH LEASE FOR THE DIGITAL MAILING SYSTEM FOR THE CHARLESTOWN NAVY YARD AND CHELSEA FACILITY FOR THE TIME PERIOD OF JUNE 1, 2020 THROUGH MAY 31, 2025			PITNEY BOWES INC.	\$60,535.80
P-3	05/05/20	UPGRADE TO ORACLE ENVIRONMENT AWARD OF A PURCHASE ORDER UNDER STATE CONTRACT ITS64 TO UPGRADE MWRA'S ORACLE ENVIRONMENT TO ORACLE AMERICA, INC			ORACLE AMERICA, INC.	\$104,484.00
P-4	05/05/20	MAINTENANCE AND SUPPORT FOR ORACLE PROCESSOR LICENSES AWARD OF A ONE-YEAR PURCHASE ORDER UNDER STATE CONTRACT ITS64 FOR ORACLE PROCESSOR LICENSES MAINTENANCE AND SUPPORT TO ORACLE AMERICA, INC. FOR THE TIME PERIOD OF JULY 1, 2021 THROUGH JUNE 30, 2021			ORACLE AMERICA, INC.	\$188,132.61
P-5	05/07/20	24-HOUR EMERGENCY OIL SPILL RESPONSE AWARD OF A ONE-YEAR SOLE SOURCE PURCHASE ORDER CONTRACT FOR 24-HOUR EMERGENCY OIL SPILL RESPONSE			BOSTON LINE & SERVICE COMPANY, INC.	\$25,241.00
P-6	05/07/20	REPLACEMENT PARTS FOR THE ULTRAVIOLET REACTORS AWARD OF A SOLE SOURCE PURCHASE ORDER FOR REPLACEMENT PARTS FOR THE ULTRAVIOLET REACTORS AT THE JOHN J. CARROLL WATER TREATMENT PLANT			CALGON CARBON CORPORATION	\$40,321.55
P-7	05/07/20	HARDWARE AND SOFTWARE UPGRADES TO LABORATORY INSTRUMENTS AWARD OF A SOLE SOURCE PURCHASE ORDER FOR HARDWARE AND SOFTWARE UPGRADES TO LABORATORY INSTRUMENTS			AGILENT TECHNOLOGIES, INC.	\$75,543.60
P-8	05/07/20	REMOVAL OF HAZARDOUS WASTE AND OIL/WATER SEPARATOR MAINTENANCE AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE REMOVAL OF HAZARDOUS WASTE AND OIL/WATER SEPARATOR MAINTENANCE AT THE DEER ISLAND TREATMENT PLANT, SUCH AS LABORATORY, THE THERMAL/POWER PLANT AND ROUTINE MAINTENANCE PERFORMED THROUGHOUT THE FACILITY	WRA-4836		TRADEBE ENVIRONMENTAL SERVICES, LLC	\$39,102.00
P-9	05/11/20	PURCHASE OF TWO COMMERCIAL LABORATORY GLASSWARE WASHERS AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR TWO COMMERCIAL LABORATORY GLASSWARE WASHERS	WRA-4826		LANCER SALES USA, INC.	\$162,638.00
P-10	5/14/2020	MAINTENANCE AND SUPPORT FOR VMWARE VSPHERE LICENSE AWARD OF A ONE-YEAR PURCHASE ORDER UNDER STATE CONTRACT ITS58 TO THE LOWEST RESPONSIVE BIDDER FOR VMWARE VSPHERE LICENSES MAINTENANCE AND SUPPORT FOR THE TIME PERIOD OF JUNE 22, 2020 THROUGH JUNE 21, 2021	WRA-4845Q		DELL MARKETING LP	\$69,582.08
P-11	05/14/20	PURCHASE OF ONE DOCUMENT EXPRESS SOFTWARE LICENSE AWARD OF A SOLE SOURCE PURCHASE ORDER FOR ONE DOCUMENT EXPRESS SOFTWARE LICENSE			MHC SOFTWARE, LLC	\$69,720.00
P-12	05/18/20	PURCHASE OF TWO SODIUM HYPOCHLORITE RECIRCULATION PUMP AWARD OF A SOLE SOURCE PURCHASE ORDER FOR TWO SODIUM HYPOCHLORITE RECIRCULATION PUMPS FOR THE DEER ISLAND TREATMENT PLANT			AQUA SOLUTIONS, INC.	\$48,474.00
P-13	05/18/20	SUPPLY AND DELIVERY OF SODIUM HYPOCHLORITE AWARD OF A ONE-YEAR PURCHASE ORDER CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF SODIUM HYPOCHLORITE	WRA-4835		BORDEN & REMINGTON CORPORATION	\$188,645.74
P-14	05/18/20	SUPPLY AND DELIVERY OF SODIUM HYDROXIDE AWARD OF A ONE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR SUPPLY AND DELIVERY OF SODIUM HYDROXIDE FOR THE DEER ISLAND TREATMENT PLANT.	WRA-4837		UNIVAR USA, INC. BORDEN & REMINGTON CORPORATION	\$142,200.00 \$64,740.75
P-15	05/20/20	PURCHASE OF 300 LOGITECH WEBCAMS AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR 300 LOGITECH WEBCAMS			COMPUTER HUT OF NEW ENGLAND INC.	\$26,955.00
P-16	05/27/20	CONTINUOUS MONITORING OF CHLOROPHYLL AWARD OF A SOLE SOURCE PURCHASE ORDER FOR PERMIT-REQUIRED CONTINUOUS MONITORING OF CHLOROPHYLL AT THE BUOY OFF CAPE ANN FOR THE PERIOD JULY 1, 2020 TO JUNE 30, 2021.			BOWDOIN COLLEGE	\$35,000.00
P-17	05/27/20	CONTINUOUS OCEANOGRAPHIC MONITORING AWARD OF A SOLE SOURCE PURCHASE ORDER FOR PERMIT-REQUIRED CONTINUOUS OCEANOGRAPHIC MONITORING FROM THE CAPE ANN BUOY FOR THE PERIOD JULY 1, 2020 TO JUNE 30, 2021.			THE UNIVERSITY OF MAINE	\$50,000.00
P-18	05/27/20	SUPPLY AND DELIVERY OF SODIUM BISULFITE AWARD OF A ONE-YEAR SOLE SOURCE PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF SODIUM BISULFITE AT THE JOHN J. CARROLL WATER TREATMENT PLANT.			PVS CHEMICAL SOLUTIONS, INC. JCI JONES CHEMICALS, INC.	\$86,940.00 \$45,200.00

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 24, 2020
SUBJECT: FY20 Financial Update and Summary Through May 2020

COMMITTEE: Administration, Finance & Audit

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

INFORMATION
 VOTE


Thomas J. Durkin
Director, Finance

RECOMMENDATION:

For information only. This staff summary provides the preliminary financial results and variance highlights for Fiscal Year 2020 through May 2020, 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 May the year-to-date debt related savings of \$16.4 million was transferred to the Defeasance Account. This favorable variance is the result of the lower than budgeted variable rates and refunding savings. Staff executed the defeasance on June 12, 2020, which will be reflected in the year-end financial report. The impact of the FY20 defeasance is included in the Final FY21 budget and planning estimates.

The total Year-to-Date variance for the FY20 CEB is \$17.0 million, due to lower direct expenses of \$10.8 million, indirect expenses of \$5.3 million, and higher revenue of \$0.9 million. The year-end favorable variance is projected at \$41.7 million, of which \$25.3 million is related to debt service. Beyond debt service savings, staff project a surplus of approximately \$16.4 million at year-end of which \$11.8 million would be from lower direct expenses and \$5.2 million from lower indirect expenses. This is offset by \$19,000 from lower than budgeted revenues.

FY20 Current Expense Budget

The CEB expense variances through May 2020 by major budget category were:

- Lower Direct Expenses of \$10.8 million or 4.8% under budget. Spending was lower for Maintenance, Wages & Salaries, Utilities, Professional Services, Other Materials, Chemicals, Fringe Benefits, Workers Compensation, Overtime, and Training and Meetings. This is partially offset by higher spending on Other Services.

- Lower Indirect Expenses of \$5.3 million or 12.8% under budget due to lower Watershed reimbursements, and lower claim spending for Insurance.

**FY20 Budget and FY20 Actual Year-to-Date Variance by Expenditure Category
(in millions)**

	FY20 Budget YTD	FY20 Actual YTD	\$ Variance	% Variance
Direct Expenses	\$223.4	\$212.7	-\$10.8	-4.8%
Indirect Expenses	\$41.5	\$36.2	-\$5.3	-12.8%
Capital Financing	\$427.5	\$427.5	\$0.0	0.0%
Total	\$692.5	\$676.4	-\$16.1	-2.3%

Totals may not add due to rounding

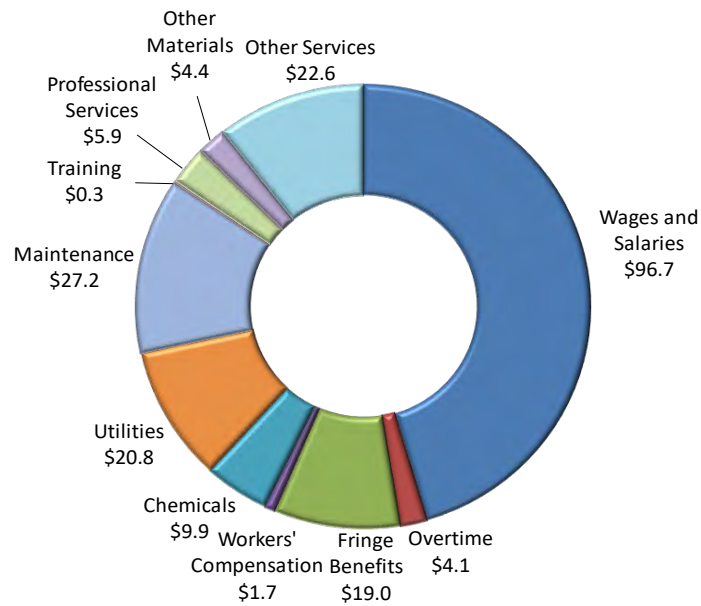
Total Revenues of \$731.9 million were \$0.9 million or 0.1% over budget due to higher Other Revenues and Other User Charges offset by lower Investment Income.

Please refer to Attachment 1 for a more detailed comparison by line item of the budget variances for the year-to-date.

Direct Expenses

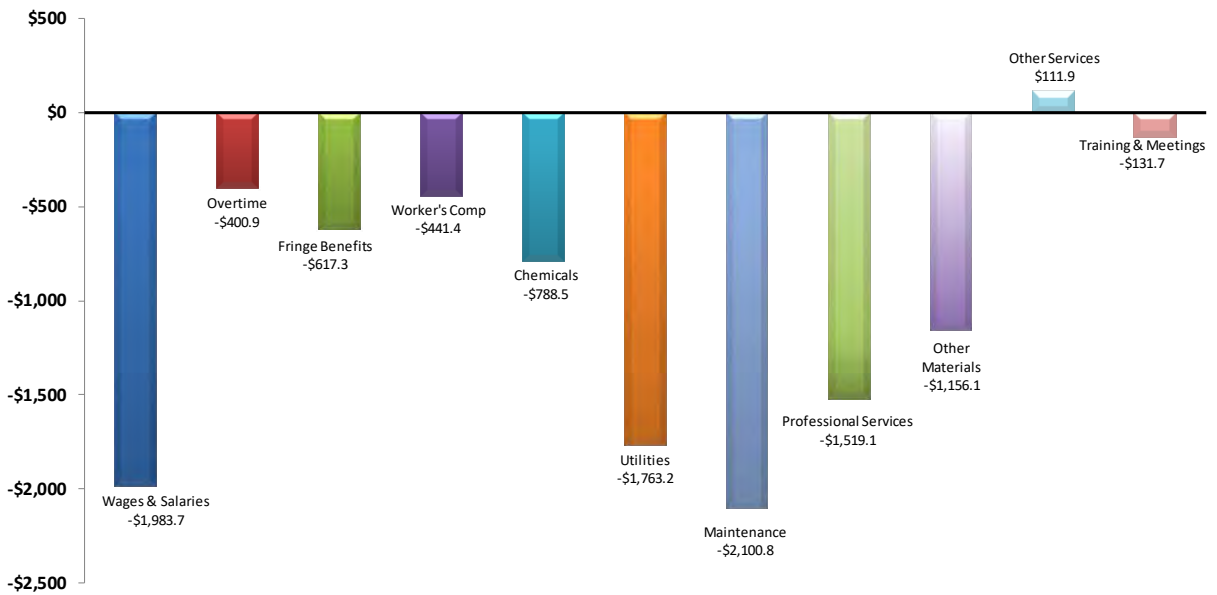
Year-to-date direct expenses totaled \$212.7 million, which was \$10.8 million or 4.8% less than budgeted.

**FY20 Year-to-Date Direct Expenses
(in millions)**



Lower than budgeted spending for Maintenance, Wages & Salaries, Utilities, Professional Services, Other Materials, Chemicals, Fringe Benefits, Worker's Compensation, Overtime, and Training & Meetings. This is partially offset by higher spending on Other Services.

**FY20 Year-to-Date Direct Expense Variance
(in thousands)**

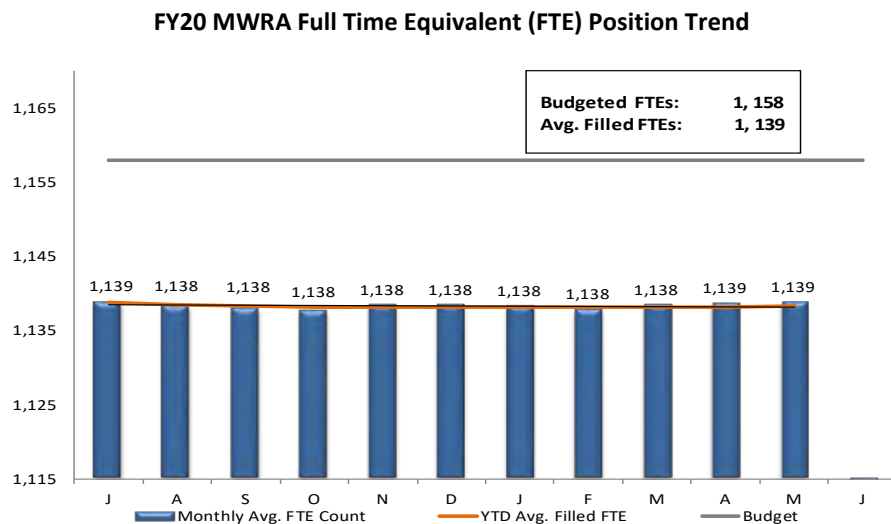


Maintenance

Maintenance was lower than budget by \$2.1 million or 7.2%, largely driven by the timing of projects. Maintenance Services were under budget by \$2.3 million driven by Plant and Machine Services (\$1.7 million), Pipeline Services (\$0.5 million), Special Equipment Services (\$0.5 million), and Electrical Services (\$0.2 million). This is partially offset by higher spending for Building and Grounds Services (\$0.6 million). Maintenance Materials are higher than budget by \$0.2 million driven by Plant & Machinery Materials (\$0.3 million), partially offset by lower spending on Computer Materials (\$0.1 million).

Wages and Salaries

Wages and Salaries are under budget by \$2.0 million or 2.0%. Through May, there were 19 fewer average FTEs (1,139 versus 1,158 budget) or 1.6% and lower average salaries for new hires versus retirees. The timing of backfilling vacant positions also contributed to Regular Pay being under budget.



Utilities

Utilities were lower than budget by \$1.8 million or 7.8%. Underspending in Electricity of \$1.9 million is driven by DITP due to new pricing from Eversource, primarily demand charges, and real time market prices for the non-block purchases under the Direct Energy contract. In addition, lower spending in Field Operations is due to lower rates for the Interval accounts. This is partially offset by Diesel Fuel overspending of \$0.1 million driven by DITP due to timing of deliveries and replenishing the inventory used during the HEEC cable installation (the outage lasted 18 days vs. the 5 days anticipated) and additional purchases due to lower pricing, partially offset by underspending primarily in Wastewater Operations due to lower pricing and less fuel needed than expected.

Professional Services

Professional Services were lower than budget by \$1.5 million or 20.4%. The overall underspending year-to-date is due to Computer Systems Consultant (\$0.8 million) in MIS and Other Professional Services (\$0.4 million) in Administration, Finance and Law, Legal Services (\$0.2 million) in Administration and Law, and Engineering (\$0.1 million) in Treatment.

Other Materials

Other Materials were lower than budget by \$1.2 million or 20.7%, driven by lower than budgeted spending for Vehicle Purchases of \$0.4 million, Computer Hardware of \$0.3 million in MIS, Vehicle Expenses of \$0.3 million, and Equipment/Furniture of \$0.2 million.

Chemicals

Chemicals were lower than budget by \$0.8 million or 7.4%. Lower than budget spending on Activated Carbon of \$0.3 million driven by DITP due to improvements and continuing steps to optimize the odor control treatment process as well as timing and FOD due to lower than expected replacement cost at NITP as well as timing; Sodium Hypochlorite of \$0.2 million driven by Wastewater Operations due to lower contract cost; Soda Ash of \$0.2 million driven by CWTP is a result of lower dosing due to high raw water alkalinity combined with lower flows; and Polymer of \$0.1 million driven by less usage primarily at DITP. This is offset by higher than budget spending on Ferric Chloride of \$0.2 million driven by DITP to keep the orthophosphate levels in the digesters at the desired target levels and Sodium Bisulfite of \$0.1 million driven by DITP due to increasing inventory. DITP flows are 1.7% lower than the budget and CWTP flows are 3.6% less than the budget through May. 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.

Fringe Benefits

Fringe Benefit spending was lower than budget by \$0.6 million or 3.1%. This is primarily driven by lower Health Insurance costs of \$0.5 million due to fewer employees and retirees participating in health insurance plans, the change to the ratio of employee contribution for past employees versus new hires that contribute at a higher percentage, and change from family to individual plans which are less costly. In addition, Paid Family Medical Leave was under budget by \$49,000 due to a delay in the start of plan contributions until October 1, 2019.

Worker's Compensation

Worker's Compensation expenses were lower than budget by \$0.4 million or 20.5%. The lower expenses were primarily due to favorable variances in compensation payments (\$287,000), medical payments (\$88,000), and administrative expenses (\$66,000).

Overtime

Overtime expenses were lower than budget by \$0.4 million or 8.8% mainly in Water Operations and Metro Maintenance by \$0.5 million, partially offset by higher spending for Deer Island (\$0.1 million) for coverage during the HEEC cable installation.

Training & Meetings

Training & Meetings expenses were lower than budget by \$0.1 million or 32.5% driven by the timing of spending as well as conferences that were postponed or cancelled.

Other Services

Other Services were higher than budget by \$0.1 million or 0.5%. Higher than budgeted spending for Sludge Pelletization of \$0.7 million is due to higher year-to-date quantities. This is partially offset by lower spending for Telecommunication Services of \$0.3 million in MIS and FOD, Other Services of \$0.2 million for a number of services, and Police Details of \$0.1 million.

Indirect Expenses

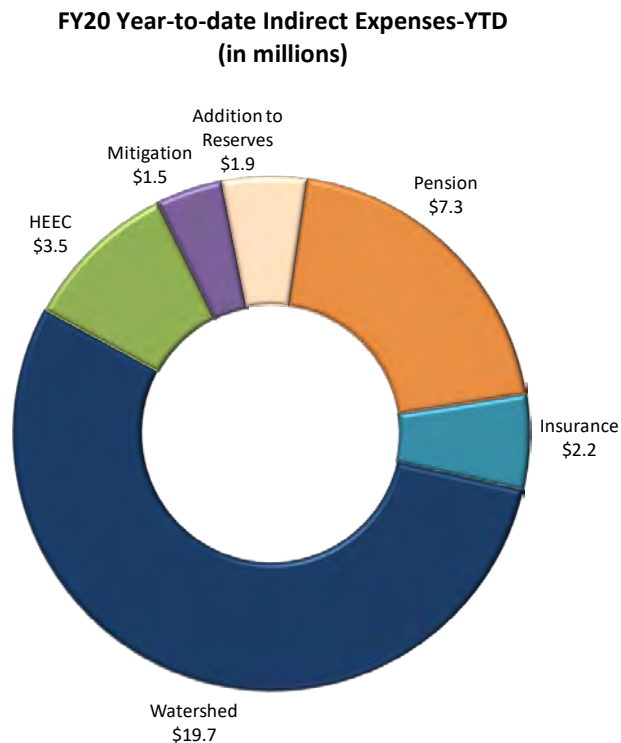
Year-to-date Indirect Expenses totaled \$36.2 million, which is \$5.3 million or 12.8% lower than budget. There are variances within the lines that comprise Indirect Expenses, including lower Watershed Reimbursements and Insurance claims. Watershed costs are lower than budget by \$5.1 million due to lower costs associated with compensation, fringe benefits, maintenance, equipment, professional services, and prior period adjustments.

FY20 Watershed Protection Actual Year-to-Date Variance

\$ in millions	YTD Budget	YTD Actual	YTD \$ Variance	YTD % Variance
Operating Expenses	16.5	13.0	-3.5	-21.0%
Major Project Expenses	1.4	1.2	-0.2	-15.1%
PILOT	7.8	7.7	-0.1	-1.7%
Subtotal	25.8	21.9	-3.8	-14.8%
Revenue offset	1.0	0.8	-0.2	-23.7%
Current fiscal year net total budget	24.8	21.2	-3.6	-14.4%
Prior year 4th quarter accrual true-up	0.0	-1.1	-1.1	
DCR Balance forward (includes FY16 credit balance)	0.0	-0.5	-0.5	
Total Budget	24.8	19.6	-5.1	-20.7%

MWRA reimburses the Commonwealth of Massachusetts Department of Conservation (DCR) and Recreation - Division of Water Supply Protection – Office of Watershed Management for expenses. The reimbursements are presented for payment quarterly in arrears. Accruals are being made monthly based on estimated expenses provided by DCR and true-up quarterly based on the quarterly invoice. MWRA's budget is based on the annual Fiscal Year Work Plan approved by the Massachusetts Water Supply Protection Trust.

The FTE count at the end of May was 135 (and 135.7 on a year-to-date basis) vs. a budget of 150.

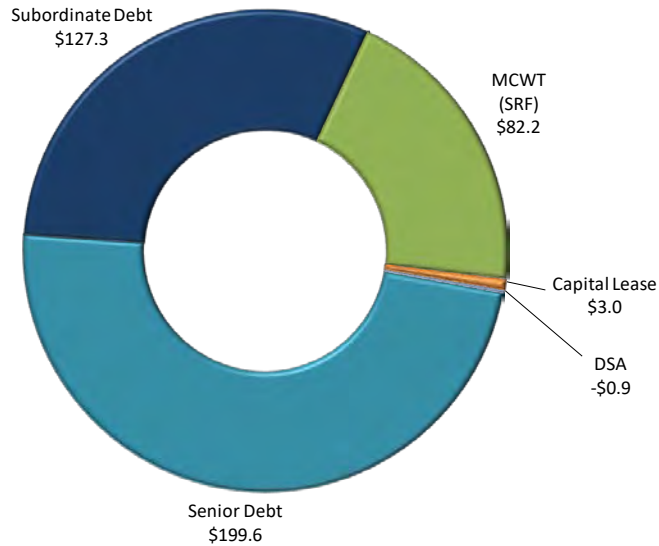


Capital Financing

Capital Financing expenses include the principal and interest payments for fixed 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, and the Chelsea Facility lease payment.

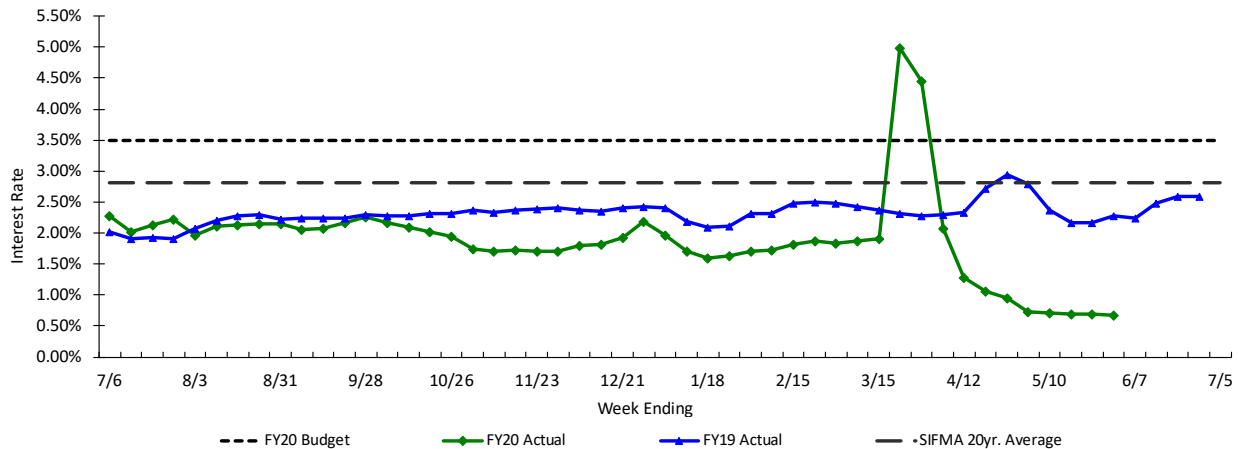
Year-to-date Capital Financing expenses for FY20 totaled \$427.5 million, which is right on budget. In May, the year-to-date debt related savings of \$16.4 million was transferred to the Defeasance Account. This favorable variance is the result of lower than budgeted variable interest rates and refunding savings. Senior debt service is over budget by \$14.7 million as a result of the 2019 Series G refunding for savings which moved expenses from the subordinate to the senior lien. This increase is offset by a decrease of \$20.7 million to the subordinate debt service expense.

**Year-to-date FY20 Capital Finance
(\$ in millions)**



The graph below reflects the FY20 actual variable rate trend by week year-to-date against the FY20 Budget.

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



Revenue & Income

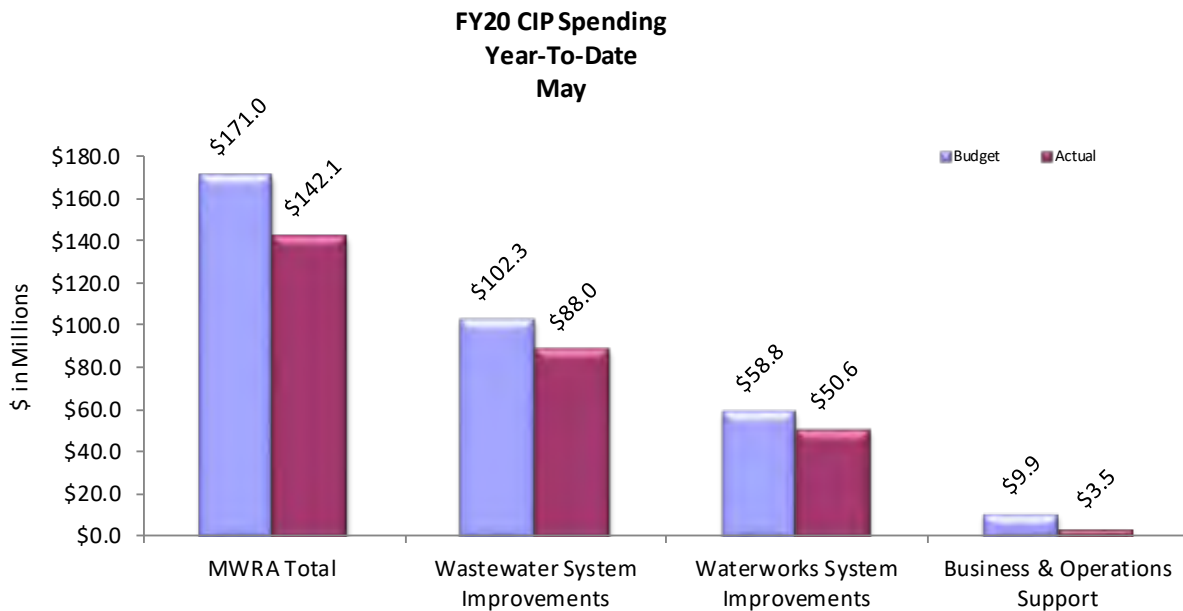
Year-to-date Revenues of \$731.9 million were over budget by \$0.9 million or 0.1%. Other User Charges were over budget by \$0.7 million or 8.6% due to Stoughton prepaying their entrance fee note. Other Revenue was favorable to budget by \$1.6 million or 28.8% due to energy revenue for RPS credits (\$0.4 million), income from the disposal of equipment (\$0.4 million), miscellaneous

revenue (\$0.3 million), Energy Rebates of (\$0.2 million) and Operating Grants (\$0.1 million). Investment Income was \$1.4 million or 9.8% under budget because of lower actual short-term and long-term interest rates of 1.83% vs. 2.27%.

FY20 Capital Improvement Program

Capital expenditures in Fiscal Year 2020 through May total \$142.1 million, \$28.9 million or 16.9% under budget.

After accounting for programs which are not directly under MWRA's control, most notably the Inflow and Infiltration (I/I) grant/loan program, the Local Water System Assistance loan program, and the community managed Combined Sewer Overflow (CSOs) projects, capital spending totaled \$101.2 million, \$32.8 million or 24.5% under budget.



Overall, CIP spending reflects the underspending in Wastewater Improvements (\$14.3 million), Waterworks (\$8.2 million) and Business and Operations Support (\$6.5 million). Major variances in Wastewater are primarily due to delay in awards for the Deer Island Primary and Secondary Clarifier Construction, Prison Point CSO Rehabilitation, Nut Island Odor Control HVAC Improvements, Dorchester Interceptor Sewer Construction, and Deer Island Motrol Center Replacement contracts, updated schedule for the Dorchester I/I Removal, vibration issue with the Winthrop Terminal Facility VFD contract, and reduction in scope and schedule change for the Clinton Valve and Pipe Replacement Project. This was partially offset by timing for community requests for grants and loans for the I/I Local Financial Assistance Program, greater than anticipated progress on the Residuals Electrical/Mechanical/Drum Dryer Replacement, Pellet Conveyance Relocation, and Chelsea Creek Headworks Upgrades Construction.

Waterworks variances are primarily due to timing of community loan requests, updated schedules for CP-3 Sections 23, 24 and 47 Rehabilitation, CP-1 Shafts 6, 8, and 9A, and Carroll Water Treatment Plant Ancillary Modifications contracts, less than anticipated consultant progress due to scope change on Section 50/57 Water and Sections 21/20/19 Sewer Design CA/RI, and paving delays for the Southern Extra High Section 111 Phase 2 Construction. This was partially offset by contractor progress on the Southern Extra High Section 111 Construction 3, timing of final work

for the Wachusett Aqueduct Pumping Station Design, and work scheduled in FY19 that was completed in FY20 for the Bellevue 2 & Turkey Hill Tanks Painting and Cosgrove Intake Roof Replacements.

FY20 Budget and FY20 Actual Year-to-Date Variance by Program
(in millions)

\$ in Millions	Budget	Actuals	\$ Var.	% Var.
Wastewater System Improvements				
Interception & Pumping	40.8	29.9	(10.9)	-26.8%
Treatment	25.9	11.6	(14.4)	-55.4%
Residuals	7.2	11.7	4.5	62.9%
CSO	2.6	1.1	(1.5)	-56.7%
Other	25.7	33.7	8.0	31.1%
Total Wastewater System Improvements	\$102.3	\$88.0	(\$14.3)	-14.0%
Waterworks System Improvements				
Drinking Water Quality Improvements	2.4	1.4	(0.9)	-40.1%
Transmission	13.8	12.3	(1.5)	-10.8%
Distribution & Pumping	28.4	24.3	(4.1)	-14.3%
Other	14.3	12.6	(1.7)	-12.1%
Total Waterworks System Improvements	\$58.8	\$50.6	(\$8.2)	-14.0%
Business & Operations Support	\$9.9	\$3.5	(\$6.5)	-65.1%
Total MWRA	\$171.0	\$142.1	(\$28.9)	-16.9%

Totals may not add due to rounding

FY20 Year-to-date Spending by Program:

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

Wastewater Treatment: Net underspending of \$14.4 million

- \$8.0 million for Deer Island Clarifier Rehabilitation Phase 2 Construction due to delay in contract award.
- \$1.2 million for Winthrop Terminal Facility VFD and Motors Replacements due to vibration issue with VFD No. 5.
- \$1.3 million for DI Motor Control Center Switchgear Replacement Construction and ESDC, \$0.7 million for Radio Repeater System Upgrade Phase 2, \$0.5 million for South System Pump Station VFD Replacement Design, and \$0.2 million for Eastern Seawall Design due to schedule shifts.
- \$0.8 million for Clinton Valves and Pipe Replacement due to project being re-scoped and updated schedule.
- \$0.4 million for Combined Heat and Power Energy Alternatives Study, \$0.3 million for Gravity Thickener Rehabilitation, \$0.1 million for Digester Tank Rehab and Pipe Replacement due to timing of work.
- \$0.2 million for less than anticipated as-needed task order work.
- \$0.3 million for HVAC Equipment Replacement Design and \$0.3 million for Expansion Joint Repair Construction 3 due to projects being re-scoped.

- This underspending was partially offset by overspending of \$0.5 million for Clinton Roofing Rehabilitation due to work scheduled in FY19 that was completed in FY20, and \$0.2 million for Gas Protection System Replacement Phase1 due to timing of work.

Interception & Pumping: Net underspending of \$10.9 million

- \$4.1 million for Prison Point CSO Rehabilitation and ESDC, \$3.4 million for Nut Island Odor Control HVAC Improvements Design/CA/RI and Construction and \$2.7 million for Dorchester Interceptor Sewer Design and Construction, and \$0.5 million for Wastewater Metering Replacement due to delay in construction awards.
- \$0.4 million for Wastewater Metering Planning/Study for less than anticipated spending including police details, and \$0.3 million for Wastewater Central Monitoring Design.
- \$0.3 million for Fuel Oil Tank Replacement design due to delay of contract award and contractor mobilization.
- \$0.2 million for Hayes Pump Station Rehab Design due to revised schedule.
- \$0.1 million for Remote Headworks and Deer Island Shaft Study due to contract time extension.
- This underspending was partially offset by overspending of \$1.1 million for Chelsea Creek Headworks Upgrades construction due to greater than anticipated contractor progress, and \$0.6 million for Sections 191 and 192 Rehabilitation due to contract award being greater than budgeted.

Other Wastewater: Net overspending of \$8.0 million

- \$8.0 million for Community I/I due to timing of community requests for grants and loans.

Business & Operations Support: Net underspending of \$6.5 million

- \$4.4 million for the timing and scheduling of MIS work, \$1.0 million for As-Needed Technical Assistance and Resident Engineering and Inspection Services due to lower than projected task order work, and \$0.6 million for Security Equipment & Installation due to timing of security initiatives, and \$0.2 million for Vehicle Purchases due to timing..

Residuals: Net overspending of \$4.5 million

- \$3.2 million for Electrical, Mechanical, and Dryer Drum Improvements due to greater than anticipated contractor progress and engineering costs and \$1.3 million for Pellet Conveyance Piping Relocation due to contractor progress.

Water Distribution and Pumping: Net underspending of \$4.1 million

- \$2.3 million for CP-3 Section 23, 24, and 47 Rehabilitation and CA/REI due to construction schedule change.
- \$1.1 million for Sections 50, 57 Water and Sections 21, 20, 19 Sewer due to reduced scope and consultants scheduled tasks being less than anticipated.
- \$1.0 million for Southern Extra High Service Section 111 Phase 2 due to paving delays
- \$0.4 million for Sections 89 & 29 Redundancy Construction due to delay in paving and \$0.4 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 Sections 25, 75, 59, and 60 Design due to boring program delayed pending receipt of base maps.

- \$0.2 million for Cathodic Protection Metro West Tunnel Shaft E & L for final work scheduled for FY20 that was completed in FY19.
- \$0.2 million for Section 53 and 99 Connections Design due to delay in contract award.
- This underspending was partially offset by overspending of \$1.7 million for Southern Extra High Section 111 Construction 3 due to contractor progress, and \$0.2 million for Section 56 Replacement/Saugus Design/CA for timing of consultant work.

Other Waterworks: Net underspending of \$1.7 million

- \$2.5 million for the Local Water System Assistance Program due to timing of community loan requests.
- \$0.3 million Steel Water Tanks Design due to updated schedule.
- \$0.2 million for DI Water Tank Painting due to credit change order.
- This underspending was partially offset by overspending of \$0.6 million Bellevue 2/Turkey Hill Water Tank Painting and Improvements, \$0.5 million for Cosgrove Intake Roof Replacement due to work scheduled in FY19 that was completed in FY20, and \$0.2 million for Carroll Water Treatment Plant SCADA Design due to consultant progress..

Combined Sewer Overflow: Net underspending of \$1.5 million

- \$1.6 million for Dorchester Inflow Removal Construction due to updated schedule partially offset by \$0.2 million for CSO Performance Assessment due to greater than anticipated consultant progress.

Waterworks Transmission: Net underspending of \$1.5 million

- \$0.8 million for CP-1 Shafts 6, 8, and 9A due to schedule change and re-bid of contract.
- \$0.5 million for Wachusett Aqueduct Sluice Gates and \$0.3 million for Wachusett Lower Gate House Pipe Replacement and \$0.3 million for Waltham Water Pipeline Design due to schedule changes.
- 0.4 million for WASM 3 MEPA/Design/CA/RI due to consultant progress being less than anticipated, \$0.1 million for Commonwealth Avenue Pumping Station Construction due to contractor behind schedule on WASM work.
- \$0.2 million for Chestnut Hill Emergency Pumping Station Design/CA due to longer than anticipated receipt of hydraulic information.
- This underspending was partially offset by overspending of \$0.6 million for Wachusett Aqueduct Pumping Station due to timing of final work, \$0.3 million for Watershed Land Acquisition due to timing of land purchases, \$0.3 million for Commonwealth Ave Pumping Station Design due to consultant progress, and \$0.2 million for Wachusett Dam Lower Gatehouse Interim Pipe Repair.

Drinking Water Quality Improvements: Net underspending of \$0.9 million

- \$0.6 for Ancillary Modifications Construction work and \$0.3 million for CP-7 Existing Facilities Construction due to updated schedules and \$0.2 million due to timing of task order work.
- This underspending was partially offset by overspending of \$0.1 million for Carroll Water Treatment Plant Emergency Generator Replacement due to greater than anticipated contractor progress.

Construction Fund Balance

The construction fund balance was \$136.9 million as of the end of May. Commercial Paper/Revolving Loan available capacity was \$222 million.

ATTACHMENTS:

Attachment 1 – Variance Summary May 2020

Attachment 2 – Current Expense Variance Explanations

Attachment 3 – Capital Improvement Program Variance Explanations

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

ATTACHMENT 1
FY20 Actuals vs. FY20 Budget

	May 2020 Year-to-Date				
	Period 11 YTD Budget	Period 11 YTD Actual	Period 11 YTD Variance	%	FY20 Approved
EXPENSES					
WAGES AND SALARIES	\$ 98,648,684	\$ 96,664,985	\$ (1,983,699)	-2.0%	\$ 109,953,483
OVERTIME	4,538,574	4,137,716	(400,858)	-8.8%	4,898,965
FRINGE BENEFITS	19,629,936	19,012,657	(617,279)	-3.1%	21,717,533
WORKERS' COMPENSATION	2,158,068	1,716,643	(441,425)	-20.5%	2,354,256
CHEMICALS	10,688,418	9,899,940	(788,478)	-7.4%	11,811,222
ENERGY AND UTILITIES	22,602,739	20,839,509	(1,763,230)	-7.8%	24,454,796
MAINTENANCE	29,270,895	27,170,068	(2,100,827)	-7.2%	32,726,954
TRAINING AND MEETINGS	405,424	273,687	(131,737)	-32.5%	504,394
PROFESSIONAL SERVICES	7,456,380	5,937,319	(1,519,061)	-20.4%	8,295,315
OTHER MATERIALS	5,593,416	4,437,364	(1,156,052)	-20.7%	6,867,239
OTHER SERVICES	22,449,195	22,561,106	111,911	0.5%	24,683,370
TOTAL DIRECT EXPENSES	\$ 223,441,729	\$ 212,650,994	\$ (10,790,733)	-4.8%	\$ 248,267,527
INSURANCE	\$ 2,410,359	\$ 2,182,307	\$ (228,052)	-9.5%	\$ 2,611,222
WATERSHED/PILOT	24,769,477	19,680,963	(5,088,514)	-20.5%	26,833,600
HEEC PAYMENT	3,530,693	3,530,691	(2)	0.0%	4,429,316
MITIGATION	1,527,340	1,524,062	(3,278)	-0.2%	1,654,618
ADDITIONS TO RESERVES	1,933,185	1,933,185	-	0.0%	2,094,284
RETIREMENT FUND	7,315,000	7,315,000	-	0.0%	7,315,000
POST EMPLOYEE BENEFITS	-	-	-	---	5,962,457
TOTAL INDIRECT EXPENSES	\$ 41,486,054	\$ 36,166,208	\$ (5,319,845)	-12.8%	\$ 50,900,497
STATE REVOLVING FUND	\$ 84,915,352	\$ 82,196,387	\$ (2,718,965)	-3.2%	\$ 92,797,294
SENIOR DEBT	184,861,598	199,576,565	14,714,967	8.0%	202,299,609
DEBT SERVICE ASSISTANCE	(890,235)	(890,235)	-	0.0%	(890,235)
CURRENT REVENUE/CAPITAL	-	-	-	---	15,200,000
SUBORDINATE MWRA DEBT	155,680,683	134,941,682	(20,739,001)	-13.3%	169,609,845
LOCAL WATER PIPELINE CP	-	-	-	---	5,846,823
CAPITAL LEASE	2,969,594	2,969,594	-	0.0%	3,217,060
DEBT PREPAYMENT	-	-	-	---	-
VARIABLE DEBT	-	(7,667,124)	(7,667,124)	---	-
DEFEASANCE ACCOUNT	-	16,410,123	16,410,123	---	5,000,000
TOTAL DEBT SERVICE	\$ 427,536,992	\$ 427,536,992	\$ -	0.0%	\$ 493,080,396
TOTAL EXPENSES	\$ 692,464,775	\$ 676,354,194	\$ (16,110,578)	-2.3%	\$ 792,248,420
REVENUE & INCOME					
RATE REVENUE	\$ 703,169,539	\$ 703,169,539	\$ -	0.0%	\$ 761,767,000
OTHER USER CHARGES	8,516,264	9,246,951	730,687	8.6%	9,216,425
OTHER REVENUE	5,415,556	6,974,146	1,558,590	28.8%	5,761,022
RATE STABILIZATION	-	-	-	---	-
INVESTMENT INCOME	13,885,803	12,519,756	(1,366,047)	-9.8%	15,503,973
TOTAL REVENUE & INCOME	\$ 730,987,162	\$ 731,910,392	\$ 923,231	0.1%	\$ 792,248,420

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY20 Budget YTD May	FY20 Actuals May	FY20 YTD Actual vs. FY20 Budget		Explanations
			\$	%	
Direct Expenses					
Wages & Salaries	98,648,684	96,664,985	(1,983,699)	-2.0%	Wages and Salaries are under budget by \$2.0 million. Year to date, there have been 19 fewer average FTEs (1,139 versus 1,158 budget), lower average new hire salaries versus retirees, the timing of backfilling vacant positions.
Overtime	4,538,574	4,137,716	(400,858)	-8.8%	Lower spending mainly in Water Operations and Metro Maintenance of (\$0.5 million) offset by higher spending for Deer Island (\$0.1 million) for coverage during the HEEC cable installation.
Fringe Benefits	19,629,936	19,012,657	(617,279)	-3.1%	Lower than budget in Health Insurance of \$453,000, 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, PFML was under budget by \$49,000 due to a delay in the start of plan contributions until 10/1/19.
Worker's Compensation	2,158,068	1,716,643	(441,425)	-20.5%	The lower expenses were due to favorable variances in Compensation Payments of \$287,000, Medical Payments of \$88,000, and Administrative Expenses of \$66,000. Due to uncertainties of when spending will happen, the budget is spread evenly throughout the year.
Chemicals	10,688,418	9,899,940	(788,478)	-7.4%	Lower than budget spending on Activated Carbon of \$336,000 driven by DITP (\$278,000) due to improvements and continuing steps to optimize the odor control treatment process as well as timing and FOD (\$58,000) due to lower than expected replacement cost at NITP as well as timing and delay replacing the chemical at DeLauri due to the pandemic; Sodium Hypochlorite of \$249,000 driven by Wastewater Operations and DITP mainly due to price; Soda Ash of \$247,000 driven by CWTP is a result of lower dosing due to high raw water alkalinity combined with lower flows; and Polymer of \$101,000 driven by less usage primarily at DITP. This is offset by higher than budget spending on Ferric Chloride of \$185,000 driven by DITP to keep the orthophosphate levels in the digesters at the desired target levels and Sodium Bisulfite of \$61,000 driven by DITP (\$57,000) due to increasing inventory. DITP flows are 1.7% lower than the budget and CWTP flows are 3.6% less than the budget through May. 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	FY20 Budget YTD May	FY20 Actuals May	FY20 YTD Actual vs. FY20 Budget		Explanations
			\$	%	
Utilities	22,602,739	20,839,509	(1,763,230)	-7.8%	Underspending in Electricity of \$1.9 million primarily at DITP (\$1.1 million) driven by new pricing from Eversource, primarily demand charges, and real time market prices for the non-block purchases under the Direct Energy contract. Also, Field Operations (\$601,000) is under budget primarily due to lower rates for Interval accounts. Diesel Fuel is overspent by \$102,000 driven by DITP (\$490,000) due to timing of deliveries and replenishing the inventory used during the HEEC cable installation (the outage lasted 18 days vs. the 5 days anticipated) and additional purchases due to lower pricing, partially offset by underspending primarily in Wastewater Operations of (\$367,000) due to lower pricing and less fuel needed than expected.
Maintenance	29,270,895	27,170,068	(2,100,827)	-7.2%	Underspending in Ongoing Maintenance by \$2.1 million is largely driven by the timing of projects. <i>Maintenance Services</i> are under budget by \$2.3 million driven by Plant and Machine Services (\$1.7 million), Pipe Services (\$0.5 million), Special Equipment Services (\$0.5 million), Electrical Services (\$0.2 million) and overspending in Building and Grounds Services by (\$0.6 million). This is offset by <i>Maintenance Materials</i> which are over budget by \$0.2 million, driven by Plant and Machine Materials (\$0.3 million), partially offset by lower spending on Computer Materials (\$0.1 million).
Training & Meetings	405,424	273,687	(131,737)	-32.5%	Lower than budget spending on Training & Meetings by \$132,000 is driven by MIS (\$34,000), Tunnel Redundancy (\$28,000), Field Operations (\$28,000), Deer Island (\$21,000), and Emergency Preparedness (\$13,000).
Professional Services	7,456,380	5,937,319	(1,519,061)	-20.4%	Lower than budget spending in Computer Systems Consultant of \$725,000 in MIS; Other Professional Services of \$421,000 in Administration, Finance, and Law; Legal Services of \$192,000 in Administration and Law; and Engineering of \$102,000 primarily in Treatment.
Other Materials	5,593,416	4,437,364	(1,156,052)	-20.7%	Driven by lower than budgeted spending for Vehicle Purchases of \$384,000 and Computer Hardware of \$309,000 in MIS primarily due to timing, \$279,000 for Vehicle Expenses and \$209,000 for Equipment/Furniture .

**ATTACHMENT 2
Current Expense Variance Explanations**

Total MWRA	FY20 Budget YTD May	FY20 Actuals May	FY20 YTD Actual vs. FY20 Budget		Explanations
			\$	%	
Other Services	22,449,195	22,561,106	111,911	0.5%	Higher than budgeted spending for Sludge Pelletization of \$716,000 due to higher year-to-date quantities, offset by lower spending for Telecommunication Services of 272,000 in MIS and FOD, Other Services of \$177,000 for a number of services, and Police Details of \$137,000.
Total Direct Expenses	223,441,729	212,650,994	(10,790,735)	-4.8%	

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY20 Budget YTD May	FY20 Actuals May	FY20 YTD Actual vs. FY20 Budget		Explanations
			\$	%	
Indirect Expenses					
Insurance	2,410,359	2,182,307	(228,052)	-9.5%	Lower claims than budgeted of \$213,000.
Watershed/PILOT	24,769,477	19,680,963	(5,088,514)	-20.5%	Lower Watershed Reimbursement of \$5.1 million includes \$1.6 million in prior period adjustments. May FY20 YTD favorable variance to budget of \$3.5 million driven by lower spending on (1) Wages & Salaries, (2) Fringe Benefits, (3) Maintenance, (4) Equipment, and (5) Professional Services.
HEEC Payment	3,530,693	3,530,691	(2)	0.0%	
Mitigation	1,527,340	1,524,062	(3,278)	-0.2%	
Addition to Reserves	1,933,185	1,933,185	-	0.0%	
Pension Expense	7,315,000	7,315,000	-	0.0%	
Post Employee Benefits	-	-	-		
Total Indirect Expenses	41,486,054	36,166,208	(5,319,846)	-12.8%	
Debt Service					
Debt Service	428,427,227	428,427,227	-	0.0%	Senior debt service is over budget by \$14.7 million as a result of the 2019 Series G refunding for savings which moved debt service expense from the subordinate to the senior lien. This increase is offset by a corresponding decrease of \$20.7 million to the subordinate debt service expense.
Debt Service Assistance	(890,235)	(890,235)	-	0.0%	
Total Debt Service Expenses	427,536,992	427,536,992	-	0.0%	
Total Expenses					
Total Expenses	692,464,775	676,354,194	(16,110,581)	-2.3%	

**ATTACHMENT 2
Current Expense Variance Explanations**

Total MWRA	FY20 Budget YTD May	FY20 Actuals May	FY20 YTD Actual vs. FY20 Budget		Explanations
			\$	%	
Revenue & Income					
Rate Revenue	703,169,539	703,169,539	-	0.0%	
Other User Charges	8,516,264	9,246,951	730,687	8.6%	\$1.1 million prepayment of entrance fee note by Stoughton.
Other Revenue	5,415,556	6,974,146	1,558,590	28.8%	Energy Revenue for RPS credit of \$491,000; Disposal of surplus materials of \$366,000; Miscellaneous Revenue of \$318,000 primarily associated with worker's compensation reimbursement for older claims; \$160,000 for Energy Rebates; and \$107,000 in grant money (Commonwealth Operating Grant for \$44,000 and DCR Aqueduct Trails Grant for \$62,000).
Investment Income	13,885,803	12,519,756	(1,366,047)	-9.8%	Investment Income is under budget due to lower than budgeted interest rates (1.83% actual vs. 2.27% budget) somewhat offset by higher than anticipated balances.
Total Revenue	730,987,162	731,910,392	923,230	0.1%	
Net Revenue in Excess of Expenses	38,522,387	55,556,198	17,033,811		

**Totals may not add up due to rounding*

**ATTACHMENT 3
FY20 CIP Year-to-Date Variance Report (\$000's)**

	FY20 Budget YTD May	FY20 Actuals YTD May	YTD Actuals vs. Budget		Explanations
			\$	%	
Wastewater					
Interception & Pumping (I&P)	\$40,833	\$29,893	(\$10,941)	-26.8%	<u>Underspending</u> Prison Point Rehab - Construction: \$3.8M, Fuel Oil Tank Replacement Construction Phase 1: \$340k, Hayes Pump Station Rehabilitation Design: \$200k, Siphon Structure Rehabilitation Design/CS/RI: \$192k, and Ward Street & Columbus Park Headworks Design/CA: \$124k (schedule shifts) Nut Island Odor Control & HVAC Improvements - Design/CA/REI and Construction: \$3.4M, and Interceptor Renewal No. 3, Dorchester Interceptor Sewer - Design, CA/RI and Construction: \$2.7M, and Wastewater Metering Asset Protection Equipment Purchases: \$537k (delay in construction awards) Prison Point Rehabilitation - Design/CA/RI: \$376k (delay in 100% Design Report review) Wastewater Meter System Planning/Study/Design: \$357k, and Wastewater Central Monitoring Design & Programming Services: \$258k (less than anticipated budgeted work) Chelsea Creek Headworks Upgrades - REI: \$333k (less than budgeted resident engineering and inspection services) Remote Headworks and Deer Island Shaft Study: \$133k (contract time extension) <u>Offset Overspending</u> Chelsea Creek Headworks Upgrades - Construction: \$1.1M, and Sections 191 & 192 Rehabilitation: \$600k (contractor progress)

**ATTACHMENT 3
FY20 CIP Year-to-Date Variance Report (\$000's)**

	FY20 Budget YTD May	FY20 Actuals YTD May	YTD Actuals vs. Budget		Explanations
			\$	%	
Treatment	\$25,911	\$11,556	(\$14,355)	-55.4%	<u>Underspending</u> Clarifier Rehab Phase 2 - Construction: \$8.0M, Radio Repeater System Upgrade Phase 2: \$667k, South System Pump Station VFD Replacement Design/ESDC/REI, \$450k, and Eastern Seawall - Design/ESDC/REI: \$218k (schedule shifts) Winthrop Terminal Facility VFD and Motors Replacements: \$1.2M (vibration issue with VFD No. 5) Combined Heat and Power Energy Alternatives Study: \$438k, Gravity Thickener Rehab: \$347k, Digester Tank Rehab and Pipe Replacement: \$344k, and Motor Control Center Switchgear Replacement Construction and ESDC/REI \$1.3M (timing of work) Clinton Valves and Pipe Replacement: \$833k, and Deer Island HVAC - Design/ESDC: \$349k (projects being re-scoped) As-Needed Design: \$528k (less than anticipated task order work) Expansion Joint Repair - Construction 3: \$289k (contract defunded with scope of work incorporated into Clarifier Rehabilitation Phase 2 Construction contract) <u>Offset Overspending</u> Clinton Roofing Rehabilitation: \$523k (work scheduled for FY19 performed in FY20) Gas Protection System Replacement - Phase 1: \$232k (pre-purchase of equipment)
Residuals	\$7,196	\$11,724	\$4,528	62.9%	<u>Overspending</u> Residuals Electrical/Mechanical/Drum Replacements: \$3.2M (contractor progress and greater than anticipated engineering costs) Pellet Conveyance Relocation: \$1.3M (contractor progress)
CSO	\$2,649	\$1,147	(\$1,502)	-56.7%	<u>Underspending</u> Dorchester Inflow Removal Construction: \$1.6M (updated schedule) <u>Offset Overspending</u> CSO Performance Assessment: \$179K (greater than anticipated consultant progress)
Other Wastewater	\$25,700	\$33,693	\$7,993	31.1%	<u>Overspending</u> I/I Local Financial Assistance: \$8.0M (timing of community requests for grants and loans)
Total Wastewater	\$102,289	\$88,013	(\$14,276)	-14.0%	

**ATTACHMENT 3
FY20 CIP Year-to-Date Variance Report (\$000's)**

	FY20 Budget YTD May	FY20 Actuals YTD May	YTD Actuals vs. Budget		Explanations
			\$	%	
Waterworks					
Drinking Water Quality Improvements	\$2,351	\$1,409	(\$942)	-40.1%	<u>Underspending</u> Carroll Water Treatment Plant Ancillary Modifications - Construction: \$623k, and Existing Facilities Modifications - CP7: \$325k (updated schedules) Technical Assistance 9 & 10: \$169k (timing of task order work)
Transmission	\$13,758	\$12,276	(\$1,481)	-10.8%	<u>Underspending</u> CP-1 Shafts 6, 8, and 9A: \$808k, Weston Aqueduct Sluice Gates - Construction: \$492k, Wachusett Lower Gatehouse Pipe Replacement - Construction: \$333k, Waltham Water Pipeline Design/CA: \$267k, and Maintenance Garage/Wash Bay/Storage Building Design/CA/RI: \$135k (schedule shifts) Commonwealth Ave Pumping Station Improvements Construction: \$119k (contractor behind schedule on WASM work) WASM 3 - MEPA/Design/CA/RI: \$423k (progress less than anticipated) Chestnut Hill Emergency Pump Station - Design/CA: \$187k (longer than anticipated receipt of hydraulic information) <u>Offset Overspending</u> Wachusett Aqueduct Pump Station - Design/ESDC/RI: \$581k (timing of final ESDC and RI services) Watershed Land Acquisition: \$259k (timing of land purchases) Commonwealth Avenue Pump Station Redundancy - Design/CA/RI: \$300k (timing of consultant work) Wachusett Dam Lower Gatehouse Interim Pipe Repair: \$181k (contractor progress)

**ATTACHMENT 3
FY20 CIP Year-to-Date Variance Report (\$000's)**

	FY20 Budget YTD May	FY20 Actuals YTD May	YTD Actuals vs. Budget		Explanations
			\$	%	
Distribution & Pumping	\$28,381	\$24,324	(\$4,057)	-14.3%	<u>Underspending</u> SEH Redundancy Pipeline Section 111 - Construction Phase 2: \$1.0M (paving delayed due to Eversource work) CP3-Sect 23,24,47, Rehabilitation and CA/RI: \$2.3M (schedule change) Sections 50 & 57 Water & 21/20/19 Sewer Rehab - Design/CA/RI: \$1.1M (reduced scope and less than anticipated consultant's scheduled tasks) Section 89 & 29 Redundancy - Design/CA: \$416k (Construction Administration and Resident Inspection services less than anticipated budgeted spending) Sections 25, 75, 59 & 60 Replacement - Design/CA: \$315k (boring program delayed pending receipt of base maps) Cathodic Protection Shafts E & L: \$212k (work scheduled for FY20 performed in FY19) Sections 53 and 99 Connections - Design/CA: \$206K (delay in award) <u>Offset Overspending</u> SEH Redundancy Pipeline Section 111 - Construction Phase 3: \$1.7M (contractor progress) Section 56 Replacement/Saugus Design/CA: \$182k, and SEH Redundancy Pipeline Phase 1 - CA/RI: \$108k (timing of consultant work)
Other Waterworks	\$14,327	\$12,595	(\$1,732)	-12.1%	<u>Underspending</u> Local Water Pipeline Financial Assistance Program: \$2.5M (timing of requests for loans) Steel Tanks Improvements - Design/CA: \$250k (schedule shift) Deer Island Water Tank Repainting: \$182k (timing of final work and pending credit change order) <u>Offset Overspending</u> Paint Bellevue II & Turkey Hill Tanks : \$577k, and Cosgrove Intake Roof Replacement: \$470k (work scheduled in FY19 performed in FY20) CWTP SCADA Upgrades - Design Programming RE: \$246k, and Generator Docking Station: \$157k (timing of work)
Total Waterworks	\$58,816	\$50,604	(\$8,212)	-14.0%	

**ATTACHMENT 3
FY20 CIP Year-to-Date Variance Report (\$000's)**


	FY20 Budget YTD May	FY20 Actuals YTD May	YTD Actuals vs. Budget		Explanations
			\$	%	
Business & Operations Support					
Total Business & Operations Support	\$9,914	\$3,462	(\$6,452)	-65.1%	<u>Underspending</u> MIS Projects: \$4.4M (timing of work) As-Needed Technical Assistance and CS/REI Services: \$1.0M (timing of task order work) Security Equipment & Installation: \$557k, and FY19-23 Vehicle Purchases, and Major Lab Instrumentation: \$284k (timing of purchases)
Total MWRA	\$171,018	\$142,078	(\$28,940)	-16.9%	

Attachment 4
FY20 Budget vs. FY20 Projection

TOTAL MWRA	FY20 Budget	FY20 Projection	Change FY20 Budget vs FY20 Projection	
			\$	%
EXPENSES				
WAGES AND SALARIES	\$ 109,953,483	\$ 106,696,553	\$ (3,256,930)	-3.0%
OVERTIME	4,898,965	4,852,878	(46,087)	-0.9%
FRINGE BENEFITS	21,717,533	20,631,657	(1,085,876)	-5.0%
WORKERS' COMPENSATION	2,354,256	2,354,256	-	0.0%
CHEMICALS	11,811,222	11,313,756	(497,466)	-4.2%
ENERGY AND UTILITIES	24,454,796	23,557,561	(897,235)	-3.7%
MAINTENANCE	32,726,954	30,501,220	(2,225,734)	-6.8%
TRAINING AND MEETINGS	504,394	349,992	(154,402)	-30.6%
PROFESSIONAL SERVICES	8,295,315	6,463,033	(1,832,282)	-22.1%
OTHER MATERIALS	6,867,239	5,695,049	(1,172,190)	-17.1%
OTHER SERVICES	24,683,370	24,675,574	(7,796)	0.0%
TOTAL DIRECT EXPENSES	\$ 248,267,527	\$ 237,091,528	\$ (11,175,999)	-4.5%
INSURANCE	\$ 2,611,222	\$ 2,511,222	(100,000)	-3.8%
WATERSHED/PILOT	26,833,600	21,735,216	(5,098,384)	-19.0%
HEEC PAYMENT	4,429,316	4,429,316	-	0.0%
MITIGATION	1,654,618	1,654,618	-	0.0%
ADDITIONS TO RESERVES	2,094,284	2,094,284	-	0.0%
RETIREMENT FUND	7,315,000	7,315,000	-	0.0%
POSTEMPLOYMENT BENEFITS	5,962,457	5,962,457	-	0.0%
TOTAL INDIRECT EXPENSES	\$ 50,900,497	\$ 45,702,113	\$ (5,198,384)	-10.2%
STATE REVOLVING FUND	\$ 92,797,295	\$ 88,126,851	(4,670,444)	-5.0%
SENIOR DEBT	202,299,609	217,019,403	14,719,794	7.3%
SUBORDINATE DEBT	169,609,844	137,964,119	(31,645,725)	-18.7%
LOCAL WATER PIPELINE CP	5,846,827	2,117,483	(3,729,344)	-63.8%
CURRENT REVENUE/CAPITAL	15,200,000	15,200,000	-	0.0%
CAPITAL LEASE	3,217,060	3,217,060	-	0.0%
DEBT PREPAYMENT	5,000,000	5,000,000	-	0.0%
DEBT SERVICE ASSISTANCE	(890,239)	(890,239)	-	0.0%
TOTAL DEBT SERVICE	\$ 493,080,395	\$ 467,754,678	\$ (25,325,718)	-5.1%
TOTAL EXPENSES	\$ 792,248,419	\$ 750,548,319	\$ (41,700,101)	-5.3%
REVENUE & INCOME				
RATE REVENUE (DSA)	\$ 761,767,000	\$ 761,767,000	-	0.00%
OTHER USER CHARGES	9,216,425	9,957,409	740,984	8.0%
OTHER REVENUE	5,761,022	7,201,278	1,440,256	25.0%
RATE STABILIZATION	-	-	-	0.0%
INVESTMENT INCOME	15,503,973	13,303,973	(2,200,000)	-14.2%
TOTAL REVENUE & INCOME	\$ 792,248,420	\$ 792,229,660	\$ (18,761)	0.0%

VARIANCE: **\$ (41,681,340)** **\$ (41,681,340)**

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 24, 2020
SUBJECT: Approval of the FY2021 Final Capital Improvement Program

COMMITTEE: Administration, Finance & Audit

INFORMATION
 VOTE

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


Thomas J. Durkin
Director, Finance

RECOMMENDATION:

To approve the FY2021 Final Capital Improvement Program with a total budget of \$266.2 million for FY2021 including \$201.0 million in project spending and \$65.2 million in community assistance.

DISCUSSION:

The Fiscal Year 2021 Final Capital Improvement Program (CIP) represents an update to the program presented to the Board in December 2020. The Final CIP includes the latest cost estimates and revised schedules that were the result of prioritizing the planned projects to support the MWRA's core operations, and meet regulatory requirements.

The FY21 Final Capital Improvement Program projects \$266.2 million spending for FY21, of which \$153.5 million supports Wastewater System Improvements, \$90.3 million supports Waterworks System Improvements, and \$22.4 million is for Business and Operations Support. The projects with significant spending include Infiltration/Inflow Local Financial Assistance, Nut Island Odor Control and HVAC Improvements, Chelsea Creek Headworks Upgrades, Prison Point Rehabilitation, Clarifier Rehabilitation Phase 2 Construction, Southern Extra High Redundancy Construction 3, Local Water System Assistance Program, and Gravity Thickener Rehabilitation.

Due to the COVID-19 pandemic, many ongoing construction contracts have been delayed due to safety procedures that were implemented and several upcoming contract schedules were pushed out a few months.

Several cost estimates have changed since the FY21 Proposed CIP based on the latest design reports and/or bid amounts. The largest of these being the Ward Street Columbus Park Design/CA which increased by \$9.8 million, Prison Point Rehabilitation increased by \$5.6 million, and Northern Extra High Service Construction 1 increased by \$5.5 million. Also, the Clarifier Rehab Phase 2 Construction cost estimate has decreased by \$11.7 million.

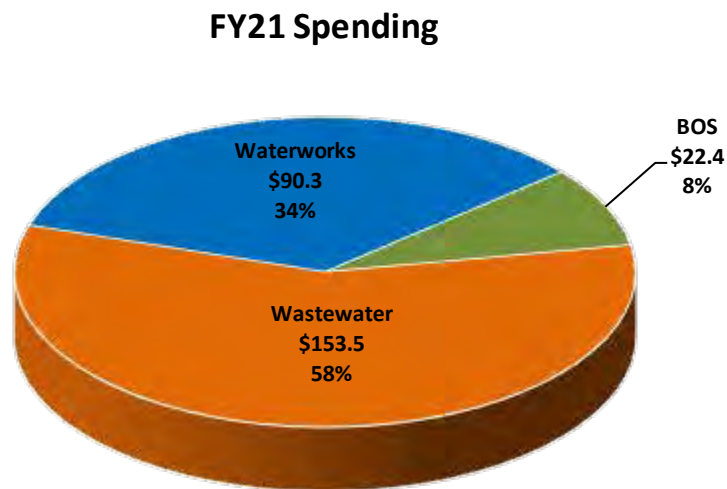
The CIP Program continues to address critical redundancy improvements for the Metropolitan Tunnel System. The FY21 Final CIP includes approximately \$1.5 billion in spending, the same as in the FY21 Proposed budget. The initial contract for Program Support Services was awarded in March 2019 with a budget of \$17.5 million and spanning over a nine-year period. The second contract, Preliminary Design and MEPA Review (Massachusetts Environmental Policy Act), for \$15.7 million was awarded in May 2020.

The FY21 Final Capital Improvement Program reaffirms MWRA’s commitment to the community financing assistance programs on both the water and wastewater sides.

Today, the Authority is better positioned to reinvest in rehabilitation and replacement of aging facilities as a result of conservative fiscal management which includes judicious control of expenses, and the fact that MWRA has implemented the practice of utilizing available funds for defeasances resulting in the reduction of debt service expense. MWRA projects an overall reduction in outstanding principal of debt during the FY19-23 cap period.

FY21 Final CIP Spending

The FY21 Final Capital Improvement Program projects \$266.2 million spending for FY21, of which \$153.5 million supports Wastewater System Improvements, \$90.3 million supports Waterworks System Improvements, and \$22.4 million is for Business and Operations Support.



The FY21 Final CIP includes \$65.2 million for community assistance programs, which are a combination of loan and partial grant programs, with net expenditures of \$32.0 million for the local Infiltration/Inflow Program and net expenditures of \$33.2 million for the Local Water Pipeline Program. In response to the COVID-19 pandemic and in an effort to ease financial hardship, member communities are able to defer loan repayments due in FY21 and FY22 which will provide them with cash flow relief and financial flexibility.

The table below lists project contracts with spending greater than approximately \$5.0 million in FY21, excluding local community assistance programs, totaling \$81.7 million and accounting for 30.7% of the total annual spending.

Project	Contract	Projected FY21 Expenditures \$s in millions
Corrosion & Odor Control	NI Odor Ctrl HVAC Imp Constr Ph 2	\$20.0
Facility Asset Protection	Chelsea Creek Upgrades - Construction	\$17.7
Local Water System Assistance Program	LWSAP Phase 3 Distributions	\$16.0
Facility Asset Protection	Prison Point Rehab - Construction	\$15.7
DI Treatment Plant Asset Protection	Clarifier Rehab Phase 2 - Construction	\$14.5
Local Water System Assistance Program	Local Water System Assistance Loans	\$11.2
I/I Local Financial Assistance	Phase X Grants	\$7.5
SEH Redundancy & Storage	Redundancy Pipeline Sect 111 - Constr 3	\$7.3
DI Treatment Plant Asset Protection	Gravity Thickener Rehab	\$6.6
I/I Local Financial Assistance	Phase XI Grants	\$6.0
Local Water System Assistance Program	Lead Service Line Replace Loans	\$5.0
Total Contracts > \$5.0 million		\$127.4
% of FY21 Spending		47.9%
Excluding Community Loan Programs		\$81.7
% of FY21 Spending		30.7%
Total Projected FY21 Spending		\$266.2

Nut Island Odor Control and HVAC Improvements - Construction Phase 2 - \$20.0 million (\$57.6 million total construction cost). Improvements to the Nut Island Headworks odor control, HVAC and energy management systems. These are the long-term improvement projects that arose following the January 2016 fire and the odor control, HVAC and energy management systems evaluation contract completed in February 2017.

Chelsea Creek Headworks Upgrade Construction - \$17.7 million (\$83.3 million total construction cost). This major rehabilitation project includes replacement/upgrade to the screens, grit collection system, grit and handling systems, odor control systems, HVAC, mechanical, plumbing and instrumentation. Solids handling systems are being automated and the building's egress and fire suppressions systems are also being upgraded.

Prison Point Rehabilitation Construction - \$15.7 million (\$41.8 million total construction cost). This rehabilitation will include upgrades to the facility including replacement of diesel pump engines, dry weather screens, wet weather screens, sluice gates, chemical tanks, updating of other facility equipment including electrical distribution and chemical disinfection systems, and repair/replacement of miscellaneous equipment. Improvement/installation of systems as appropriate for energy efficiencies, security, and fire alarm will also be included.

Southern Extra High Redundancy Section 111 Phase 3 Construction - \$7.3 million (\$20.4 million total construction cost). This is a redundancy project for MWRA's Southern Extra High service area. This project will provide redundancy to Sections 77 and 88 serving Boston, Norwood, Stoughton, and Dedham-Westwood through construction of a redundant pipeline. Phase 1 was substantially complete in September 2018. Phase 2 and Phase 3 began in October 2017 and August 2018, respectively.

Deer Island Wastewater Treatment Plant Asset Protection and Residuals:

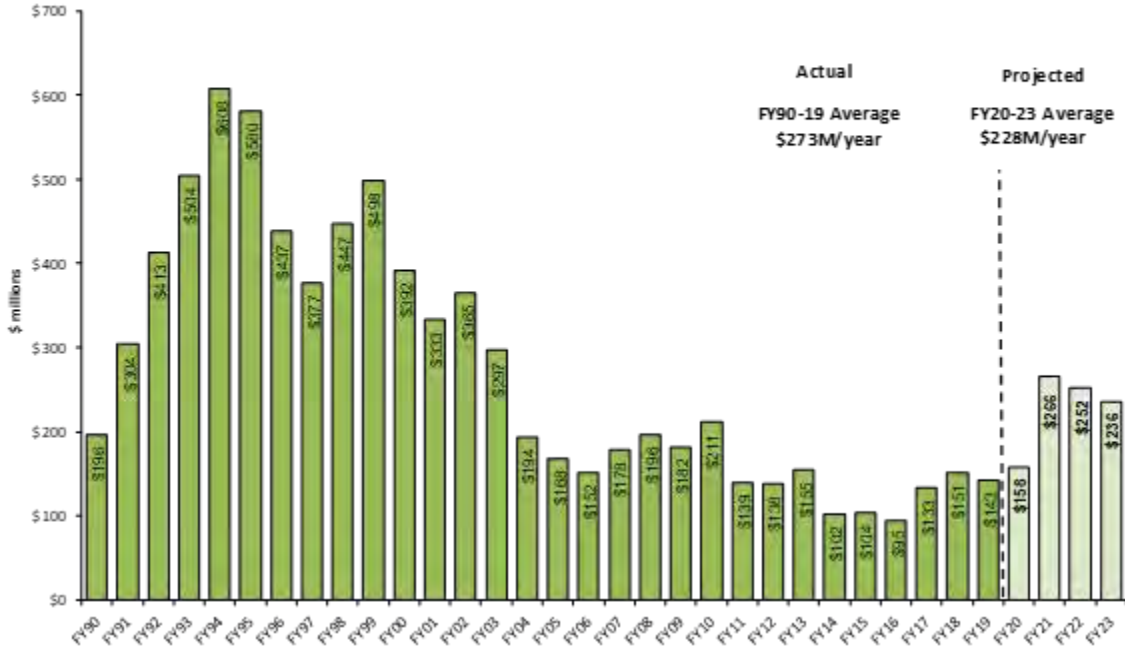
Clarifier Rehabilitation Phase 2 Construction - \$14.5 million (\$137.2 million total construction cost). This project will rehabilitate the sludge removal system in the primary tanks and the aeration/recirculation systems in the secondary tanks. The influent gates, effluent launders and aeration systems, and concrete corrosion in primary clarifiers will also be addressed and repaired.

Gravity Thickener Rehabilitation - \$6.6 million (\$19.9 million total construction cost). This project involves installing catwalks around the perimeter of several tanks, removing concrete blocks in the effluent channels, and modifying the sludge thickener roofing to improve staff access and operating efficiency.

Historical & Projected Spending

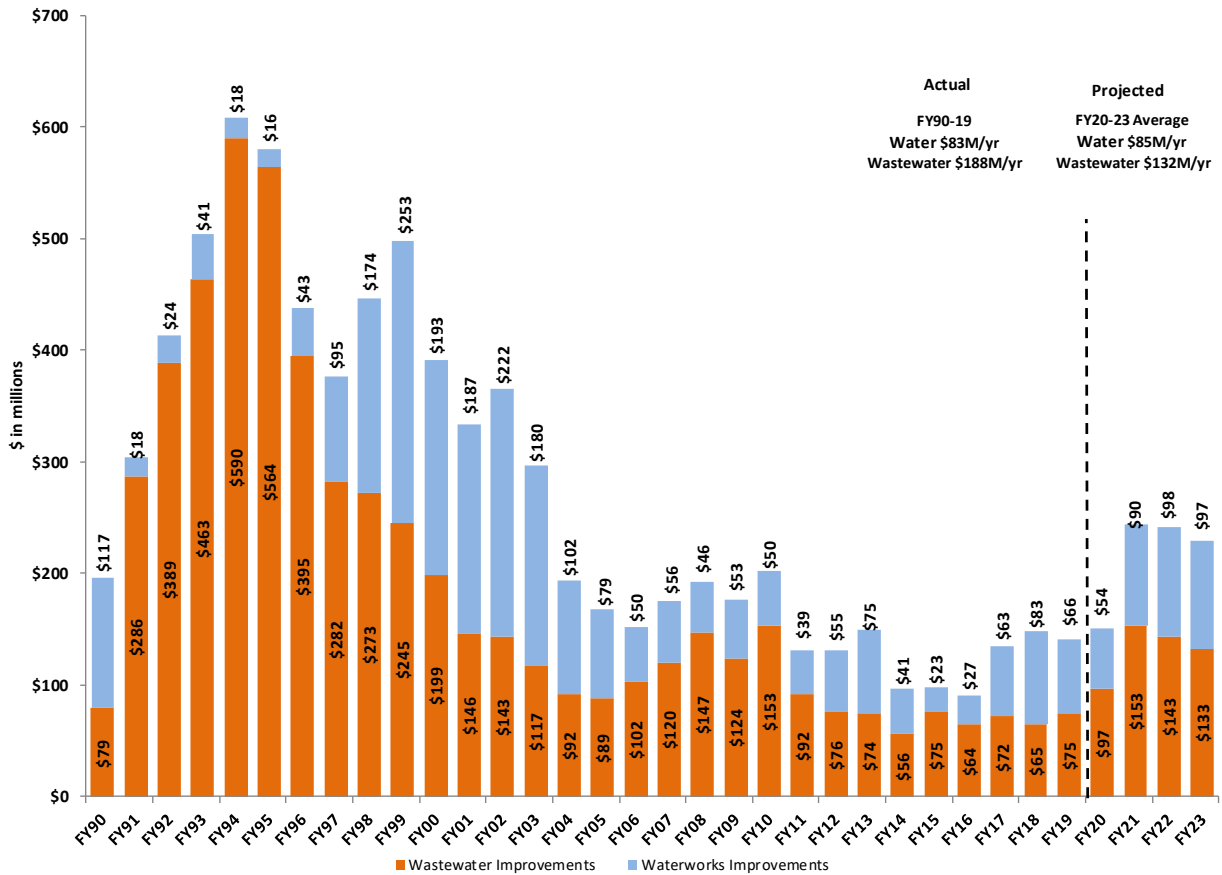
The chart below captures the historical CIP spending through FY19 and projects spending through FY23 based on the FY21 Draft Final CIP. Average annual CIP spending through FY19 was \$273 million. Average annual CIP spending for the proposed FY20-23 period is projected to be \$228 million.

Annual CIP Spending



The following chart shows the historical CIP spending from FY90 through FY19 by utility with projections through FY23. Average annual CIP spending through FY19 was \$83 million for Waterworks and \$188 million for Wastewater. Average annual CIP spending for the proposed FY20-23 period is projected to be \$85 million for Waterworks and \$132 million for Wastewater.

Annual CIP Spending by Utility



The spending projections set forth here include updates to FY21 Proposed CIP with the latest cost estimates, revised schedules, and new projects.

FY19-23 Five-Year Spending Cap

Spending during the FY19-23 timeframe is planned to be \$1.1 billion, including local community spending of \$152.0 million for the I/I loan and grant program and \$54.2 million for the water pipeline loan program. This excludes loan repayments in FY21 which were deferred to provide financial relief to member communities due to impacts of COVID-19.

Yearly projected expenditures for the FY19-23 Cap period by Division are shown below in millions:

	FY19	FY20	FY21	FY22	FY23	Total FY19-23
Wastewater System Improvements	\$74.8	\$96.6	\$153.5	\$143.4	\$132.8	\$601.1
Waterworks System Improvements	\$65.6	\$53.6	\$90.3	\$98.3	\$96.9	\$404.8
Business & Operations Support	2.4	8.0	22.4	10.2	6.3	49.4
Total MWRA	\$142.9	\$158.3	\$266.2	\$251.9	\$236.0	\$1,055.2

The FY19-23 cap cash flow totals \$905.1 million, \$79.7 million below the approved Cap of \$984.8 million after adjustments. Annual cash flows for the proposed Cap period are shown below in millions:

FY21 Draft Final		FY19	FY20	FY21	FY22	FY23	Total FY19-23
	Projected Expenditures		\$142.9	\$158.3	\$266.2	\$251.9	\$236.0
I/I Program		(39.6)	(31.5)	(32.0)	(26.6)	(22.3)	(152.0)
Water Loan Program		(13.8)	(5.8)	(33.2)	(9.7)	8.3	(54.2)
MWRA Spending		\$89.4	\$121.0	\$201.0	\$215.7	\$222.0	\$849.1
Contingency		0.0	0.0	12.1	14.2	15.1	41.5
Inflation on Unawarded Construction		0.0	0.0	1.4	5.2	8.1	14.6
Chicopee Valley Aqueduct Projects		(0.0)	0.0	0.0	0.0	0.0	(0.0)
FY21 Draft final FY19-23 Spending		\$89.4	\$121.0	\$214.5	\$235.0	\$245.2	\$905.1

The format of the Cap table has changed to account separately for MWRA spending, which excludes the local I/I grant and loan program and the local water pipeline loan spending which are both outside of MWRA's control. As in past Caps, contingency for each fiscal year is incorporated into the CIP to fund the uncertainties inherent to construction. The contingency budget is calculated as a percentage of budgeted expenditure outlays. Specifically, contingency is 7% for non-tunnel projects and 15% for tunnel projects. Inflation is added for unawarded construction contracts. Finally, the Cap excludes Chicopee Valley Aqueduct system projects.

It is important to emphasize that the majority of spending within the Wastewater and Waterworks programs is concentrated in several larger projects with significant spending in the FY19-23 timeframe. Project contracts with expenditures greater than \$15 million for the FY19-23 timeframe total \$631.7 million, which includes local community assistance programs, and accounts for nearly 60% of total spending. Large initiatives include the Clarifier Rehabilitation at Deer Island, Nut Island Odor Control HVAC Improvement, and Chelsea Creek Upgrades at \$75.3 million (\$137.2 million total cost), \$57.6 million (\$57.6 million total cost), and \$51.8 million (\$83.3 million total cost), respectively between FY19-23.

The table below highlights major project spending in the FY19-23 timeframe:

Project	Contract	Projected FY19-23 Expenditures \$s in millions
Local Water Pipeline Improvement	LWSAP Phase 3 Distributions	\$85.6
DI Treatment Plant Asset Protection	Clarifier Rehab Phase 2 - Construction	\$75.3
Local Water Pipeline Improvement	Local Water System Assistance Loans	\$59.9
Corrosion & Odor Control	NI Odor Ctrl HVAC Imp Constr Ph 2	\$57.6
Facility Asset Protection	Chelsea Creek Upgrades - Construction	\$51.8
I/I Local Financial Assistance	Phase XI Grants	\$46.5
Facility Asset Protection	Prison Point Rehab - Construction	\$41.8
I/I Local Financial Assistance	Phase X Grants	\$33.2
I/I Local Financial Assistance	Phase XII Grants	\$26.1
I/I Local Financial Assistance	Phase IX Grants	\$23.6
Local Water Pipeline Improvement	Lead Service Line Replace Loans	\$22.7
SEH Redundancy and Storage	Redundancy Pipeline Sect 111 - Constr 3	\$20.4
NIH Redundancy & Storage	Section 89 & 29 Redun Const. Phase 2	\$19.8
DI Treatment Plant Asset Protection	Gravity Thickener Rehab	\$19.5
NIH Redundancy & Storage	Section 89 & 29 Repl - Constr	\$16.7
DI Treatment Plant Asset Protection	Fire Alarm System Replacement - Construc	\$15.8
I/I Local Financial Assistance	Phase XI Loans	\$15.5
Total Contracts > \$15.0 million		\$631.7
% of FY19-23 Spending		59.9%
Excluding Community Loan Programs		\$318.6
% of FY21 Spending		30.2%
Total Projected FY19-23 Spending		\$1,055.2

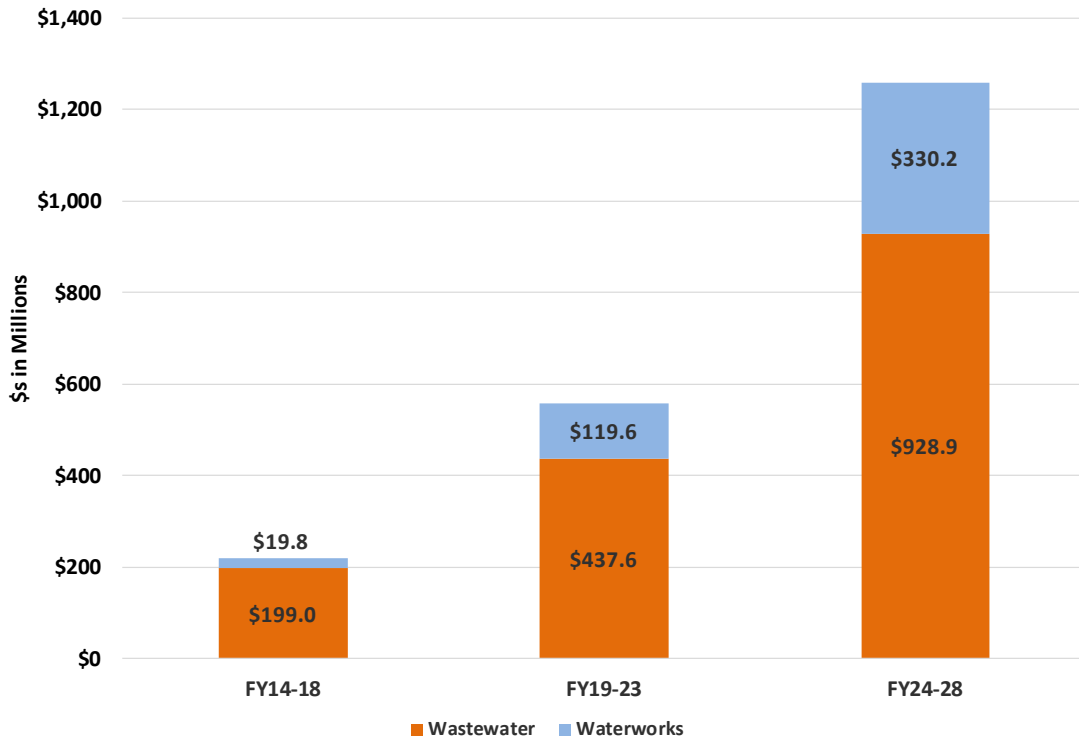
Asset Protection accounts for the largest share of capital expenditures for the FY19-23 period. The FY21 Final CIP includes \$570.5 million for asset protection initiatives, representing over 54% of total MWRA spending. Wastewater and Waterworks Asset Protection are \$437.6 million and \$119.6 million, respectively. Deer Island Treatment Plant Asset Protection alone accounts for \$193.0 million in spending. Spending for water system redundancy projects total \$206.8 million in the same FY19-23 period, accounting for 20% of total spending.

Changing nature of the CIP by Category

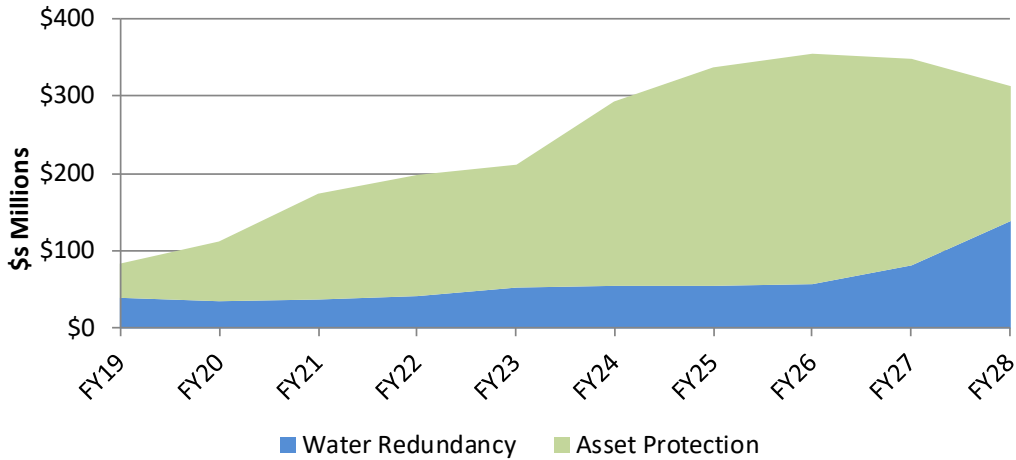
Project Category	Total Contract	FY19-23	FY24-28
Asset Protection	\$3,069.3	\$570.5	\$1,259.2
Water Redundancy	\$3,108.3	\$206.8	\$386.6
CSO	\$887.8	\$10.0	\$0.1
Other	\$1,471.8	\$267.9	\$213.3
Total	\$8,537.3	\$1,055.2	\$1,859.1
Asset Protection	36.0%	54.1%	67.7%
Water Redundancy	36.4%	19.6%	20.8%
CSO	10.4%	1.0%	0.0%
Other	17.2%	25.4%	11.5%
Total	100.0%	100.0%	100.0%

In terms of utility spending, wastewater asset protection accounts for nearly 42% of the FY19-23 projected spending at \$437.6 million of which \$193.0 million is designated for the Deer Island Wastewater Treatment Plant and \$244.6 million for headworks, pump stations, residuals facility, and pipelines. The \$120.0 million targeted for waterworks asset protection and includes \$54.3 million for water pipelines.

Asset Protection by Utility



As illustrated in the following graph, the next two waves of spending over the FY19-23 period and the FY24-28 period will be for asset protection and water redundancy. This reflects MWRA’s commitment to maintaining its physical plant and addressing the need for water system redundancy in some critical service areas. Total asset protection spending for FY19-23 is projected at \$570.5 million or 54.1% of projected spending. Similarly, water redundancy spending for FY19-23 is projected at \$206.8 million or 19.6% of projected FY19-23 spending.



FY21 New Projects

The FY21 Final CIP adds \$55.0 million in new projects of which Waterworks projects total \$50.3 million and Wastewater projects total \$4.7 million. Projected new project spending over the FY19-23 timespan is \$7.2 million.

\$ in millions		
Project	Total Contract Amount	FY19-23 Spending
Waterworks	\$50.3	\$3.3
Wastewater	\$4.7	\$3.9
Total New Projects	\$55.0	\$7.2

The top three new Waterworks projects include the Phase 2 painting of Bellevue, Park Circle and Walnut Hill Water Tanks at \$14.0 million, Cosgrove Tunnel Rehabilitation Design at \$10.0 million, and Beacon Street Line Rehabilitation at \$6.9 million. The largest new Wastewater project is a new roof at Deer Island with an estimated cost of \$2.0 million.

A complete list of new projects with cash flows and descriptions is attached as Attachment A.

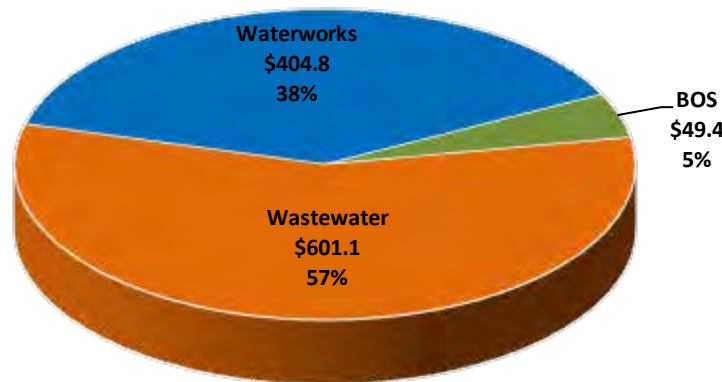
FY21 CIP Future Expenditures

The FY21 Final CIP contains future spending (beyond FY19) estimated at \$4.1 billion. The table below represents the projected spending by the major project categories:

	Future Spending Beyond FY19	FY19	FY20	FY21	FY22	FY23	Total FY19-23	Beyond 23
Wastewater System Improvements	\$1,698.3	\$74.8	\$96.6	\$153.5	\$143.4	\$132.8	\$601.1	\$1,172.0
Interception & Pumping	612.9	23.1	34.9	74.2	57.8	31.1	221.2	414.8
Treatment	810.1	10.0	17.3	38.5	56.7	78.5	201.1	619.1
Residuals	103.4	0.8	10.9	3.7	0.5	0.8	16.8	87.5
CSO	8.9	1.2	2.0	5.0	1.7	0.1	10.0	0.1
Other Wastewater	162.9	39.6	31.5	32.0	26.6	22.3	152.0	50.5
Waterworks System Improvements	\$2,352.8	\$65.6	\$53.6	\$90.3	\$98.3	\$96.9	\$404.8	\$2,013.6
Drinking Water Quality Improver	57.3	0.8	1.5	2.8	8.1	3.2	16.4	41.7
Transmission	1,785.8	9.9	13.5	25.1	39.0	42.9	130.4	1,665.4
Distribution & Pumping	538.8	36.6	26.2	24.6	31.7	44.4	163.4	412.0
Other Waterworks	(29.2)	18.4	12.5	37.9	19.5	6.4	94.6	(105.5)
Business & Operations Support	69.6	2.4	8.0	22.4	10.2	6.3	49.4	22.6
Total MWRA	\$4,120.6	\$142.9	\$158.3	\$266.2	\$251.9	\$236.0	\$1,055.2	\$3,208.3

Spending over the FY19-23 period totals \$1,055.2 million with Wastewater projects accounting for \$601.1 million of total period spending or 57% and Waterworks planned spending following at \$404.8 million or 38%. Redundancy project spending accelerates in the FY24-28 window.

FY19-23 Spending



Major Planned Contract Awards for FY21:

In Fiscal Year 2021, 74 contracts totaling \$439.1 million are projected to be awarded. The largest ten projected contract awards total \$312.1 million and account for 71.1% of expected awards and are presented in the following table.

Project	Subphase	Notice to Proceed	Total Contract Amount \$s in Millions
DI Treatment Plant Asset Protection	Clarifier Rehabilitation Phase 2 - Construction	Sep-20	\$137.2
Facility Asset Protection	Prison Point Rehab - Construction	Sep-20	\$41.8
DI Treatment Plant Asset Protection	Fire Alarm System Replacement - Construction	Jan-21	\$28.8
Facility Asset Protection	Ward St & Columbus Park Headworks Des/CA	Jul-20	\$22.0
NIH Redundancy & Storage	Section 89 & 29 Repl - Construction	Jul-20	\$21.3
New Connecting Mains-Shaft 7	CP3-Section 23,24,47, Rehabilitation	Sep-20	\$14.7
Metro Redundancy Interim Improvements	WASM 3 CP-1	Jul-20	\$13.0
Central Monitoring System	CWTP SCADA Upgrade Construction	Dec-20	\$13.0
DI Treatment Plant Asset Protection	MCC & Switchgear Replace Construction	Sep-20	\$11.2
Cathodic Protection Of Distribution Mains	Cathodic Protection Metropolitan System Des/CA	Jan-21	\$9.2
Top 10 Contracts			\$312.1
% of Total Planned Awards			71.1%
74 Contract Awards Planned			\$439.1

CIP Review and Adoption Process

In December, the MWRA transmitted the FY21 Proposed Capital Improvement Program to the Advisory Board for its review and comments.

ATTACHMENTS:

- A. New Capital Projects Added to the FY21 CIP
- B. FY21 Project Level Expenditure Forecast
- C. Overview of the FY21 Final CIP and Changes from the FY20 Final CIP

ATTACHMENT A
New Capital Projects Added to the FY21 CIP

Program	Project	Subphase	Contract Number	Total Contract Amount	NTP	SC	FY21	FY22	FY23	FY19-23	Beyond FY23	Total Expenditures
Treatment	DITP Asset Protection	DITP Roofing Replacement	7734	\$ 2,000,000	Jan-21	Jun-22	\$ 333,000	\$ 1,333,000	\$ 334,000	\$ 2,000,000	\$ -	\$ 2,000,000
Treatment	Clinton Wastewater Treatment Plant	Clinton SCADA Upgrades	7736	\$ 750,000	Jan-24	Jan-26	\$ -	\$ -	\$ -	\$ -	\$ 750,000	\$ 750,000
Treatment	Clinton Wastewater Treatment Plant	Clinton Fire Alarm Replacement	7735	\$ 900,000	Jan-21	Jul-22	\$ 142,000	\$ 568,000	\$ 190,000	\$ 900,000	\$ -	\$ 900,000
Treatment	Clinton Wastewater Treatment Plant	Clinton Landfill Cell #1 Closure	7754	\$ 1,000,000	Dec-20	Feb-22	\$ 500,000	\$ 500,000	\$ -	\$ 1,000,000	\$ -	\$ 1,000,000
Drinking Water Quality Improvements	Carroll Water Treatment Plant	Technical Assistance 11	7713	\$ 750,000	Jan-21	Dec-22	\$ 95,000	\$ 375,000	\$ 280,000	\$ 750,000	\$ -	\$ 750,000
Drinking Water Quality Improvements	Carroll Water Treatment Plant	Technical Assistance 12	7714	\$ 750,000	Jan-21	Dec-22	\$ 95,000	\$ 375,000	\$ 280,000	\$ 750,000	\$ -	\$ 750,000
Transmission	Watershed Division Capital Improvements	Quabbin Water Supply Design/CA/RI	7752	\$ 250,000	Jan-21	Jun-23	\$ 25,000	\$ 100,000	\$ 100,000	\$ 225,000	\$ 25,000	\$ 250,000

ATTACHMENT A
New Capital Projects Added to the FY21 CIP

Program	Project	Subphase	Contract Number	Total Contract Amount	NTP	SC	FY21	FY22	FY23	FY19-23	Beyond FY23	Total Expenditures
Transmission	Watershed Division Capital Improvements	Quabbin Water Supply Construction	7753	\$ 850,000	Jun-22	Jun-23	\$ -	\$ -	\$ 654,000	\$ 654,000	\$ 196,000	\$ 850,000
Drinking Water Quality Improvements	Carroll Water Treatment Plant Asset Protection	Corrosion Control Pipe Loop Study	7737	\$ 500,000	Mar-21	Mar-22		\$ 400,000	\$ 100,000	\$ 500,000	\$ -	\$ 500,000
Other Waterworks	Waterworks Facilities Asset Protection	Beacon Street Line Rehabilitation Design/Engineering Services During Construction	7729	\$ 900,000	Jun-21	Jun-26	\$ -	\$ 195,000	\$ 234,000	\$ 429,000	\$ 471,000	\$ 900,000
Other Waterworks	Waterworks Facilities Asset Protection	Beacon Street Line Rehabilitation Construction	7729	\$ 6,900,000	Jun-23	Jun-25	\$ -	\$ -	\$ -	\$ -	\$ 6,900,000	\$ 6,900,000
Other Waterworks	Waterworks Facilities Asset Protection	Beacon Street Line Rehabilitation Resident Engineering Inspection	7731	\$ 1,500,000	Jun-23	Jun-25	\$ -	\$ -	\$ -	\$ -	\$ 1,500,000	\$ 1,500,000
Other Waterworks	Waterworks Facilities Asset Protection	Cosgrove Tunnel Rehabilitation Design/ESDC	7738	\$ 10,000,000	Jul-24	Jul-29	\$ -	\$ -	\$ -	\$ -	\$ 10,000,000	\$ 10,000,000

ATTACHMENT A
New Capital Projects Added to the FY21 CIP

Program	Project	Subphase	Contract Number	Total Contract Amount	NTP	SC	FY21	FY22	FY23	FY19-23	Beyond FY23	Total Expenditures
Other Waterworks	Waterworks Facilities Asset Protection	Water Tanks Paint Phase 1 Design/ESDC Bellevue 2/Deer Island/Turkey Hill	7739	\$ 751,707	Jul-34	Jul-39	\$ -	\$ -	\$ -	\$ -	\$ 751,707	\$ 751,707
Other Waterworks	Waterworks Facilities Asset Protection	Water Tanks Paint Phase 1 Construction Bellevue 2/Turkey Hill	7740	\$ 4,079,988	Jul-36	Jul-38	\$ -	\$ -	\$ -	\$ -	\$ 4,079,988	\$ 4,079,988
Other Waterworks	Waterworks Facilities Asset Protection	Water Tank Paint Phase 1 Deer Island Construction	7748	\$ 2,678,780	Jul-36	Jul-38	\$ -	\$ -	\$ -	\$ -	\$ 2,678,780	\$ 2,678,780
Other Waterworks	Waterworks Facilities Asset Protection	Water Tanks Paint Phase 1 Construction Bellevue 2/Deer Resident Engineering/Inspection	7741	\$ 1,545,450	Jul-36	Jul-38	\$ -	\$ -	\$ -	\$ -	\$ 1,545,450	\$ 1,545,450
Other Waterworks	Waterworks Facilities Asset Protection	Water Tanks Paint Phase 2 Design/ESDC Bellevue 1/Park Circle/Walnut Hill	7742	\$ 3,296,960	Jul-37	Jul-42	\$ -	\$ -	\$ -	\$ -	\$ 3,296,960	\$ 3,296,960
Other Waterworks	Waterworks Facilities Asset Protection	Water Tanks Paint Phase 2 Construction Bellevue 1/Park Circle/Walnut Hill	7743	\$ 14,012,080	Jul-39	Jul-41	\$ -	\$ -	\$ -	\$ -	\$ 14,012,080	\$ 14,012,080

ATTACHMENT A
New Capital Projects Added to the FY21 CIP

Program	Project	Subphase	Contract Number	Total Contract Amount	NTP	SC	FY21	FY22	FY23	FY19-23	Beyond FY23	Total Expenditures
Other Waterworks	Waterworks Facilities Asset Protection	Water Tanks Paint Phase 2 REI Bellevue 1/Park Circle/Walnut Hill	7744	\$ 1,545,450	Jul-39	Jul-41	\$ -	\$ -	\$ -	\$ -	\$ 1,545,450	\$ 1,545,450
SUMMARY:												
Total Wastewater Projects				\$ 4,650,000			\$ 975,000	\$ 2,401,000	\$ 524,000	\$ 3,900,000	\$ 750,000	\$ 4,650,000
Total Waterworks Projects				\$ 50,310,415			\$ 215,000	\$ 1,445,000	\$ 1,648,000	\$ 3,308,000	\$47,002,415	\$ 50,310,415
Business & Operations Support				\$ -			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total Projects				\$ 54,960,415			\$ 1,190,000	\$ 3,846,000	\$ 2,172,000	\$ 7,208,000	\$47,752,415	\$ 54,960,415

ATTACHMENT B
FY21 Final CIP
Expenditure Forecast at Project Level

Program / Project	Total Budget	Payments through FY19	Remaining Balance	FY20	FY21	FY22	FY23	FY19-FY23	FY24-FY28	Beyond FY28
Total MWRA	8,537,294,608	4,416,666,801	4,120,627,807	158,262,859	266,164,611	251,948,108	235,957,240	1,055,237,315	1,859,101,791	1,349,193,166
Wastewater	3,834,477,125	2,136,167,100	1,698,310,025	96,628,082	153,469,740	143,405,440	132,763,775	601,117,027	1,044,734,643	127,308,331
Interception & Pumping	1,238,477,853	625,546,981	612,930,872	34,905,129	74,228,426	57,818,999	31,148,653	221,248,056	356,386,744	58,442,921
102 Quincy Pump Facilities	25,907,202	25,907,203	-							
104 Braintree-Weymouth Relief Facilities	241,414,655	227,909,193	13,505,462	341,139	417,034	417,034	417,034	1,796,812	11,913,221	
105 New Neponset Valley Relief Sewer	30,300,303	30,300,303	-							
106 Wellesley Extension Replacement Sewer	64,358,543	64,358,543	-							
107 Framingham Extension Relief Sewer	47,855,986	47,855,986	-							
127 Cummingsville Replacement Sewer	8,998,768	8,998,767	-							
130 Siphon Structure Rehabilitation	14,667,943	939,770	13,728,172	108,000	1,165,000	1,160,000	1,086,900	3,519,900	10,208,272	
131 Upper Neponset Valley Sewer System	54,174,078	54,174,078	-							
132 Corrosion & Odor Control	97,948,815	6,491,320	91,457,495	5,392,498	21,277,623	22,169,163	12,900,390	62,051,052	28,877,821	840,000
136 West Roxbury Tunnel	11,313,573	10,313,573	1,000,000						1,000,000	
137 Wastewater Central Monitoring	27,482,036	19,810,123	7,671,913	173,525	130,000	447,000	447,000	1,225,612	6,474,388	
139 South System Relief Project	4,939,244	3,439,244	1,500,000						1,500,000	
141 Wastewater Process Optimization	8,933,171	1,518,766	7,414,406	190,005	291,323	202,579		700,905	5,153,662	1,576,837
142 Wastewater Meter System - Equipment Replacement	21,937,912	6,735,572	15,202,340	1,336,211	4,487,469	556,084		7,390,970		8,822,575
143 Regional I/I Management Planning	168,987	168,987	-							
145 Facility Asset Protection	572,379,137	116,625,553	455,753,585	27,363,751	46,459,977	32,867,139	16,035,766	144,301,241	285,823,443	47,203,509
146 Deer Island Cross Harbor Tunnel	5,000,000	-	5,000,000						5,000,000	
147 Randolph Trunk Sewer Relief	697,500	-	697,500				261,563	261,563	435,937	
Treatment	1,121,328,323	311,180,929	810,147,394	17,321,281	38,487,055	56,733,997	78,483,084	201,049,559	550,032,298	69,089,680
182 Deer Island Primary and Secondary Treatment	(957,878)	(957,878)	-							
200 Deer Island Plant Optimization	33,278,599	33,278,599	-							
206 Deer Island Treatment Plant Asset Protection	1,055,309,295	261,374,854	793,934,441	16,525,880	36,365,055	53,282,741	77,764,751	192,953,845	540,906,333	69,089,680
210 Clinton Wastewater Treatment Plant	31,486,633	15,273,679	16,212,954	795,401	2,122,000	3,451,256	718,333	8,095,713	9,125,965	
211 Laboratory Services	2,211,674	2,211,674	-							
Residuals	169,280,611	65,880,427	103,400,184	10,902,544	3,711,165	517,556	795,333	16,760,002	30,934,666	56,538,921
261 Residuals	63,810,848	63,810,848	-							
271 Residuals Asset Protection	105,469,763	2,069,579	103,400,184	10,902,544	3,711,165	517,556	795,333	16,760,002	30,934,666	56,538,921

ATTACHMENT B
FY21 Final CIP
Expenditure Forecast at Project Level

Program / Project	Total Budget	Payments through FY19	Remaining Balance	FY20	FY21	FY22	FY23	FY19-FY23	FY24-FY28	Beyond FY28
CSO	912,524,459	903,592,594	8,931,863	2,039,182	5,035,054	1,701,000	71,000	10,042,416	85,611	
CSO MWRA Managed	433,534,309	433,534,308	-							
339 North Dorchester Bay	221,509,794	221,509,793	-							
347 East Boston Branch Sewer Relief	85,637,164	85,637,164	-							
348 BOS019 Storage Conduit	14,287,581	14,287,581	-							
349 Chelsea Trunk Sewer	29,779,319	29,779,319	-							
350 Union Park Detention Treatment Facility	49,583,406	49,583,406	-							
353 Upgrade Existing CSO Facilities	22,385,200	22,385,200	-							
354 Hydraulic Relief Projects	2,294,549	2,294,549	-							
355 MWR003 Gate & Siphon	4,424,219	4,424,219	-							
357 Charles River CSO Controls	3,633,077	3,633,077	-							
CSO Community Managed	423,780,126	420,017,055	3,763,070		3,763,054			3,763,054		
340 Dorchester Bay Sewer Separation (Fox Point)	55,028,985	55,028,985	-		-					
341 Dorchester Bay Sewer Separation (Commercial Point)	63,624,695	59,861,640	3,763,055		3,763,054			3,763,054		
342 Neponset River Sewer Separation	2,491,746	2,491,746	-							
343 Constitution Beach Sewer Separation	3,731,315	3,731,315	-							
344 Stony Brook Sewer Separation	44,319,314	44,319,313	-							
346 Cambridge Sewer Separation	104,552,056	104,552,054	-							
351 BWSC Floatables Controls	945,936	945,936	-							
352 Cambridge Floatables Control	1,126,708	1,126,708	-							
356 Fort Point Channel Sewer Separation	11,507,257	11,507,256	-							
358 Morrissey Boulevard Drain	32,181,035	32,181,034	-							
359 Reserved Channel Sewer Separation	70,524,212	70,524,204	-							
360 Brookline Sewer Separation	24,715,291	24,715,290	-							
361 Bulfinch Triangle Sewer Separation	9,031,576	9,031,575	-							
CSO Planning & Support	55,210,024	50,041,231	5,168,793	2,039,182	1,272,000	1,701,000	71,000	6,279,362	85,611	
324 CSO Support	55,210,024	50,041,231	5,168,793	2,039,182	1,272,000	1,701,000	71,000	6,279,362	85,611	
Other Wastewater	392,865,880	229,966,170	162,899,711	31,459,946	32,008,040	26,633,888	22,265,704	152,016,995	107,295,324	(56,763,192)
128 I/I Local Financial Assistance	392,585,004	229,685,294	162,899,711	31,459,946	32,008,040	26,633,888	22,265,704	152,016,995	107,295,324	(56,763,192)
138 Sewerage System Mapping Upgrades	280,876	280,876	-							

ATTACHMENT B
FY21 Final CIP
Expenditure Forecast at Project Level

Program / Project	Total Budget	Payments through FY19	Remaining Balance	FY20	FY21	FY22	FY23	FY19-FY23	FY24-FY28	Beyond FY28
Waterworks	4,529,816,483	2,177,062,011	2,352,754,472	53,634,266	90,300,917	98,320,406	96,859,048	404,761,390	791,754,984	1,221,884,836
Drinking Water Quality Improvements	708,070,233	650,742,643	57,327,590	1,525,203	2,818,379	8,058,000	3,205,000	16,376,852	13,450,000	28,271,000
542 Carroll Water Treatment Plant	438,651,751	423,860,462	14,791,289	724,911	2,331,379	1,700,000	785,000	6,285,328	9,250,000	
543 Quabbin Water Treatment Plant	19,972,883	19,972,879	-							
544 Norumbega Covered Storage	106,674,146	106,674,146	-							
545 Blue Hills Covered Storage	40,082,837	40,082,837	-							
550 Spot Pond Storage Facility	60,126,092	60,126,087	-							
555 Carroll Water Treatment Plant (CWTP) Asset Protection	42,562,524	26,232	42,536,292	800,292	487,000	6,358,000	2,420,000	10,091,524	4,200,000	28,271,000
Transmission	2,620,957,798	835,114,088	1,785,843,710	13,459,362	25,068,697	39,045,919	42,904,141	130,391,937	365,312,104	1,300,053,482
597 Winsor Station Pipeline Improvements	53,203,001	5,937,804	47,265,198	4	183,334	916,666		1,303,923	45,512,693	652,500
601 Sluice Gate Rehabilitation	9,158,411	9,158,411	-							
604 MetroWest Tunnel	700,184,180	697,182,355	3,001,825						3,001,822	
615 Chicopee Valley Aqueduct Redundancy	8,666,292	8,666,292	-							
616 Quabbin Transmission System	22,245,871	8,670,201	13,575,669	409,752	2,046,000	4,818,166	3,821,834	11,099,109	2,454,917	25,000
617 Sudbury/Weston Aqueduct Repairs	12,496,248	2,626,513	9,869,735		1,513,556	432,444		2,340,786	7,256,735	667,000
620 Wachusett Reservoir Spillway Improvements	9,287,460	9,287,461	-							
621 Watershed Land	29,000,000	25,020,400	3,979,600	1,259,000	1,000,000	1,000,000	720,600	6,153,600		
622 Cosgrove Tunnel Redundancy	58,592,032	57,369,222	1,222,810	1,215,598	7,212			6,574,138		
623 Dam Projects	7,022,800	3,138,730	3,884,070	214,717	643,095	1,266,029	1,714,109	3,860,935	46,120	
625 Metropolitan Tunnel Redundancy	1,506,962,677	3,716,308	1,503,246,369	1,899,999	5,985,000	8,100,000	7,700,000	23,945,340	197,424,189	1,282,137,180
628 Metropolitan Redundancy Interim Improvements	180,056,205	4,340,391	175,715,814	8,460,292	11,865,500	18,719,994	25,311,598	65,860,486	94,786,628	16,571,802
630 Watershed Division Capital Improvements	24,082,620	-	24,082,620		1,825,000	3,792,620	3,636,000	9,253,620	14,829,000	
Distribution And Pumping	1,039,780,694	500,960,664	538,820,030	26,177,588	24,561,126	31,678,312	44,392,283	163,412,487	349,729,848	62,280,870
618 Peabody Pipeline Project	1,447,968	1,429,723	18,245	18,245				388,886		
677 Valve Replacement	22,279,049	12,016,378	10,262,671	5				5	6,747,302	3,515,364
678 Boston Low Service - Pipe & Valve Rehabilitation	23,690,864	23,690,863	-							
683 Heath Hill Road Pipe Replacement	19,358,036	19,358,036	-							
689 James L. Gillis Pump Station	33,419,006	33,419,007	-							
692 NHS - Section 27 Improvements	1,668,426	123,646	1,544,780	413	1,572	12,765	12,756	27,506	1,517,274	
693 NHS - Revere & Malden Pipeline Improvements	86,011,220	30,301,065	55,710,155	627,704	1,499,963	4,427,977	10,766,630	19,062,032	36,348,616	2,039,263
702 New Connecting Mains - Shaft 7 to WASM 3	57,571,540	13,332,069	44,239,470	884,951	5,899,721	8,208,348	10,919,243	26,319,719	18,327,206	
704 Rehabilitation of Other Pump Stations	51,290,462	30,057,852	21,232,610	32,610			747,000	779,610	20,453,000	
706 NHS - New Connecting Mains from Section 91	2,360,194	2,360,194	-							
708 Northern Extra High Service - New Pipelines	40,179,812	3,632,119	36,547,693	6,008	518,275	1,000,460	1,000,000	2,524,743	33,849,651	173,297
712 Cathodic Protection of Distribution Mains	63,483,129	979,097	62,504,032	181,032	308,465	2,926,697	7,940,198	12,065,860	51,147,640	
713 Spot Pond Supply Mains Rehabilitation	66,289,309	65,489,308	800,001			600,000	200,000	800,000		
714 Southern Extra High Sections 41 & 42	3,657,243	3,657,243	-							
719 Chestnut Hill Connecting Mains	38,945,478	18,286,518	20,658,960						20,648,322	10,638

ATTACHMENT B
FY21 Final CIP
Expenditure Forecast at Project Level

Program / Project	Total Budget	Payments through FY19	Remaining Balance	FY20	FY21	FY22	FY23	FY19-FY23	FY24-FY28	Beyond FY28
720 Warren Cottage Line Rehabilitation	1,204,822	1,204,821	-							
721 Southern Spine Distribution Mains	90,584,885	36,683,101	53,901,784	739,908	851,571	886,596	763,018	3,241,093	50,422,723	237,971
722 Northern Intermediate High (NIH) Redundancy & Storage	128,729,263	66,301,551	62,427,711	7,763,839	6,083,534	7,160,400	7,160,000	45,574,169	34,249,938	10,000
723 Northern Low Service Rehabilitation - Section 8	60,945,007	4,906,661	56,038,346	557,468	1,170,890	5,617,221	3,896,188	13,193,813	44,663,830	132,749
725 Hydraulic Model Update	598,358	598,358	-							
727 Southern Extra High (SEH) Redundancy & Storage	141,242,791	42,462,225	98,780,566	15,311,158	8,227,135	470,723	496,000	38,522,428	18,113,964	56,161,588
730 Weston Aqueduct Supply Mains	80,457,223	80,402,975	54,248	54,247				54,247		
731 Lynnfield Pipeline	5,625,829	5,625,828	-							
732 Walnut St. & Fisher Hill Pipeline Rehabilitation	2,717,140	2,717,141	-							
735 Section 80 Rehabilitation	16,023,640	1,924,884	14,098,756			367,125	491,250	858,375	13,240,382	
Other Waterworks	161,007,759	190,244,616	(29,236,857)	12,472,113	37,852,715	19,538,175	6,357,624	94,580,114	63,263,032	(168,720,517)
753 Central Monitoring System	42,082,099	21,196,897	20,885,202	1,066,427	3,500,000	6,400,000	5,501,000	16,959,747	4,417,776	
763 Distribution Systems Facilities Mapping	2,798,919	1,036,368	1,762,551		231,000	654,000	298,000	1,183,000	579,551	
764 Local Water Infrastructure Rehabilitation	7,487,762	7,487,762	-							
765 Local Water System Assistance Program	-	154,098,285	(154,098,285)	5,833,612	33,179,837	9,652,758	(8,328,376)	54,162,903	4,818,815	(199,254,932)
766 Waterworks Facility Asset Protection	108,638,979	6,425,304	102,213,675	5,572,075	941,878	2,831,417	8,887,000	22,274,464	53,446,890	30,534,415
Business & Operations Support	173,001,000	103,437,690	69,563,310	8,000,511	22,393,953	10,222,262	6,334,418	49,358,897	22,612,164	
881 Equipment Purchase	42,710,891	22,819,617	19,891,274	1,678,015	2,712,226	1,850,632	2,710,500	9,914,080	10,939,899	
925 Technical Assistance	1,125,000	-	1,125,000		391,000	366,000	368,000	1,125,000		
930 MWRA Facility - Chelsea	9,812,071	9,812,071	-							
931 Business Systems Plan	24,562,103	24,562,103	-					(500)		
932 Environmental Remediation	1,478,602	1,478,602	-							
933 Capital Maintenance Planning and Development	26,384,936	15,456,644	10,928,291	2,952,069	4,569,998	2,516,225	890,000	12,184,275		
934 MWRA Facilities Management	3,070,535	370,533	2,700,002			208,000	867,000	1,075,000	1,625,002	
935 Alternative Energy Initiatives	23,699,825	18,183,712	5,516,113					(233,852)	5,516,113	
940 Application Improvement Program	18,248,577	3,156,614	15,091,962	579,697	5,366,590	3,715,676	1,045,000	10,971,446	4,385,000	
942 Information Security Program (ISP)	5,506,323	1,707,904	3,798,418	762,344	3,036,073			3,798,417		
944 Information Technology Management Program	200,000	-	200,000		160,000	40,000		200,000		
946 Information Technology Infrastructure Program	16,202,138	5,889,889	10,312,249	2,028,386	6,158,066	1,525,729	453,918	10,325,031	146,150	

ATTACHMENT C
Overview of the FY21 Final CIP and Changes from the Final FY20
CIP

Program and Project	FY20 Final				FY21 Draft Final				Change from Final FY20			
	Total Budget Amount	FY19-23	FY24-28	Beyond 28	Total Budget Amount	FY19-23	FY24-28	Beyond 28	Total Budget Amount	FY19-23	FY24-28	Beyond 28
Total MWRA	8,184,170	1,086,786	1,611,220	1,212,406	8,537,295	1,055,239	1,859,104	1,349,194	353,125	(31,551)	247,886	136,789
Wastewater	3,719,452	640,479	906,340	111,314	3,834,479	601,117	1,044,733	127,310	115,027	(39,362)	138,393	15,996
Interception & Pumping	1,193,347	195,338	337,111	58,498	1,238,479	221,249	356,386	58,444	45,132	25,911	19,275	(54)
102 Quincy Pump Facilities	25,907	-	-	-	25,907	-	-	-	-	-	-	-
104 Braintree-Weymouth Relief Facilities	240,104	1,832	10,568	-	241,415	1,797	11,913	-	1,311	(35)	1,345	-
105 New Neponset Valley Relief Sewer	30,300	-	-	-	30,300	-	-	-	-	-	-	-
106 Wellesley Extension Replacement Sewer	64,359	-	-	-	64,359	-	-	-	-	-	-	-
107 Framingham Extension Relief Sewer	47,856	-	-	-	47,856	-	-	-	-	-	-	-
127 Cummingsville Replacement Sewer	8,999	-	-	-	8,999	-	-	-	-	-	-	-
130 Siphon Structure Rehabilitation	12,127	4,478	6,709	-	14,668	3,520	10,208	-	2,541	(958)	3,499	-
131 Upper Neponset Valley Sewer	54,174	-	-	-	54,174	-	-	-	-	-	-	-
132 Corrosion & Odor Control	84,132	42,407	34,705	840	97,949	62,051	28,878	840	13,817	19,644	(5,827)	-
136 West Roxbury Tunnel	11,314	-	1,000	-	11,314	-	1,000	-	-	-	-	-
137 Wastewater Central Monitoring	27,482	1,926	5,774	-	27,482	1,226	6,474	-	-	(700)	700	-
139 South System Relief Project	4,939	-	1,500	-	4,939	-	1,500	-	-	-	-	-
141 Wastewater Process Optimization	10,327	702	6,546	1,577	8,933	701	5,154	1,577	(1,394)	(1)	(1,392)	-
142 Wastewater Meter System-Equipment	22,628	7,662	-	9,242	21,938	7,391	-	8,823	(690)	(271)	-	(419)
143 Regional I/I Management Planning	169	-	-	-	169	-	-	-	-	-	-	-
145 Facility Asset Protection	542,832	135,633	265,309	46,839	572,379	144,301	285,823	47,204	29,547	8,668	20,514	365
146 D.I. Cross Harbor Tunnel Inspection	5,000	-	5,000	-	5,000	-	5,000	-	-	-	-	-
147 Randolph Trunk Sewer Relief	698	698	-	-	698	262	436	-	-	(436)	436	-
Treatment	1,054,394	279,023	424,954	49,259	1,121,329	201,050	550,032	69,089	66,935	(77,973)	125,078	19,830
182 DI Primary and Secondary	(958)	-	-	-	(958)	-	-	-	-	-	-	-
200 DI Plant Optimization	33,279	-	-	-	33,279	-	-	-	-	-	-	-
206 DI Treatment Plant Asset Protection	993,149	273,449	418,081	49,260	1,055,309	192,954	540,906	69,090	62,160	(80,495)	122,825	19,830
210 Clinton Wastewater Treat Plant	26,712	5,574	6,873	-	31,487	8,096	9,126	-	4,775	2,522	2,253	-
211 Laboratory Services	2,212	-	-	-	2,212	-	-	-	-	-	-	-
Residuals	167,793	15,212	31,338	56,197	169,281	16,760	30,935	56,540	1,488	1,548	(403)	343
261 Residuals	63,811	-	-	-	63,811	-	-	-	-	-	-	-
271 Residuals Asset Protection	103,982	15,212	31,338	56,197	105,470	16,760	30,935	56,540	1,488	1,548	(403)	343

ATTACHMENT C
Overview of the FY21 Final CIP and Changes from the Final FY20

Program and Project	FY20 Final				FY21 Draft Final				Change from Final FY20			
	Total Budget Amount	FY19-23	FY24-28	Beyond 28	Total Budget Amount	FY19-23	FY24-28	Beyond 28	Total Budget Amount	FY19-23	FY24-28	Beyond 28
CSO	911,052	8,655	(1)	-	912,524	10,041	85	-	1,472	1,386	86	-
340 Dorchester Bay Sewer Separation (Fox Point)	55,029	-	-	-	55,029	-	-	-	-	-	-	-
341 Dorchester Bay Sewer Separation (Commercial Point)	63,625	3,763	-	-	63,625	3,763	-	-	-	-	-	-
342 Neponset River Sewer Separation	2,492	-	-	-	2,492	-	-	-	-	-	-	-
343 Constitution Beach Sewer Separation	3,731	-	-	-	3,731	-	-	-	-	-	-	-
344 Stony Brook Sewer Separation	44,319	-	-	-	44,319	-	-	-	-	-	-	-
346 Cambridge Sewer Separation	104,552	-	-	-	104,552	-	-	-	-	-	-	-
351 BWSC Floatables Controls	946	-	-	-	946	-	-	-	-	-	-	-
352 Cambridge Floatables Control	1,127	-	-	-	1,127	-	-	-	-	-	-	-
356 Fort Point Channel Sewer Separation	11,507	-	-	-	11,507	-	-	-	-	-	-	-
358 Morrissey Boulevard Drain	32,181	-	-	-	32,181	-	-	-	-	-	-	-
359 Reserved Channel Sewer Separation	70,524	-	-	-	70,524	-	-	-	-	-	-	-
360 Brookline Sewer Separation	24,715	-	-	-	24,715	-	-	-	-	-	-	-
361 Bulfinch Triangle Sewer Separation	9,032	-	-	-	9,032	-	-	-	-	-	-	-
339 North Dorchester Bay	221,510	-	-	-	221,510	-	-	-	-	-	-	-
347 East Boston Branch Sewer Relief	85,637	-	-	-	85,637	-	-	-	-	-	-	-
348 BOS019 Storage Conduit	14,288	-	-	-	14,288	-	-	-	-	-	-	-
349 Chelsea Trunk Sewer	29,779	-	-	-	29,779	-	-	-	-	-	-	-
350 Union Park Detention Treatment Facility	49,583	-	-	-	49,583	-	-	-	-	-	-	-
353 Upgrade Existing CSO Facilities	22,385	-	-	-	22,385	-	-	-	-	-	-	-
354 Hydraulic Relief Projects	2,295	-	-	-	2,295	-	-	-	-	-	-	-
355 MWR003 Gate & Siphon	4,424	-	-	-	4,424	-	-	-	-	-	-	-
357 Charles River CSO Controls	3,633	-	-	-	3,633	-	-	-	-	-	-	-
324 CSO Support	53,738	4,893	-	-	55,210	6,279	86	-	1,472	1,386	86	-
Other Wastewater	392,866	142,251	112,938	(52,640)	392,866	152,017	107,295	(56,763)	-	9,766	(5,643)	(4,123)
128 I/I Local Financial Assistance	392,585	142,251	112,938	(52,640)	392,585	152,017	107,295	(56,763)	-	9,766	(5,643)	(4,123)
138 Sewerage System Mapping Upgrade	281	-	-	-	281	-	-	-	-	-	-	-
Total Waterworks	4,299,729	398,370	688,857	1,101,095	4,529,816	404,762	791,760	1,221,888	230,087	6,392	102,903	120,793
Drinking Water Quality	704,202	12,834	13,125	28,271	708,071	16,377	13,450	28,271	3,869	3,543	325	-
542 Carroll Water Treatment Plant	436,138	3,772	9,250	-	438,652	6,285	9,250	-	2,514	2,513	-	-
543 Quabbin Water Treatment Plant	19,973	-	-	-	19,973	-	-	-	-	-	-	-
544 Norumbega Covered Storage	106,674	-	-	-	106,674	-	-	-	-	-	-	-
545 Blue Hills Covered Storage	40,083	-	-	-	40,083	-	-	-	-	-	-	-
550 Spot Pond Storage Facility	60,126	-	-	-	60,126	-	-	-	-	-	-	-
555 CWTP Asset Protection	41,208	9,062	3,875	28,271	42,563	10,092	4,200	28,271	1,355	1,030	325	-

ATTACHMENT C
Overview of the FY21 Final CIP and Changes from the Final FY20


CIP

Program and Project	FY20 Final				FY21 Draft Final				Change from Final FY20			
	Total Budget Amount	FY19-23	FY24-28	Beyond 28	Total Budget Amount	FY19-23	FY24-28	Beyond 28	Total Budget Amount	FY19-23	FY24-28	Beyond 28
Transmission	2,522,587	150,245	337,716	1,209,433	2,620,959	130,394	365,315	1,300,055	98,372	(19,851)	27,599	90,622
597 Winsor Station Pipeline	49,559	204	42,969	653	53,203	1,304	45,513	653	3,644	1,100	2,544	-
601 Sluice Gate Rehabilitation	9,158	-	-	-	9,158	-	-	-	-	-	-	-
604 MetroWest Tunnel	700,184	-	3,002	-	700,184	-	3,002	-	-	-	-	-
615 Chicopee Valley Aqueduct Redundancy	8,666	-	-	-	8,666	-	-	-	-	-	-	-
616 Quabbin Transmission System	19,032	8,168	2,172	25	22,246	11,099	2,455	25	3,214	2,931	283	-
617 Sudbury/Weston Aqueduct Repairs	11,507	1,464	7,144	667	12,496	2,341	7,257	667	989	877	113	-
620 Wachusett Reservoir Spillway Improvement	9,287	-	-	-	9,287	-	-	-	-	-	-	-
621 Watershed Land	29,000	5,600	554	-	29,000	6,154	-	-	-	554	(554)	-
622 Cosgrove/Wachusett Redundancy	59,146	7,128	-	-	58,592	6,574	-	-	(554)	(554)	-	-
623 Dam Projects	6,048	2,890	43	-	7,023	3,861	46	-	975	971	3	-
625 Metro Tunnel Redundancy	1,421,750	24,313	185,993	1,207,988	1,506,963	23,945	197,424	1,282,137	85,213	(368)	11,431	74,149
628 Metro Redundancy Interim Improvement	177,348	92,636	81,777	98	180,056	65,860	94,787	16,571	2,708	(26,776)	13,010	16,473
630 Watershed Division Capital Improvement	21,900	7,840	14,060	-	24,083	9,254	14,829	-	2,183	1,414	769	-
Distribution & Pumping	981,767	161,266	297,468	58,675	1,039,778	163,412	349,731	62,281	58,011	2,146	52,263	3,606
618 Peabody Pipeline	1,509	450	-	-	1,448	389	-	-	(61)	(61)	-	-
677 Valve Replacement	21,655	-	6,487	3,151	22,279	-	6,747	3,515	624	-	260	364
678 Boston Low Service-Pipe & Valve Rehabilitation	23,691	-	-	-	23,691	-	-	-	-	-	-	-
683 Heath Hill Road Pipe Replacement	19,358	-	-	-	19,358	-	-	-	-	-	-	-
689 James L. Gillis Pump Station Rehabilitation	33,419	-	-	-	33,419	-	-	-	-	-	-	-
692 NHS - Section 27 Improvements	1,326	27	1,175	-	1,668	28	1,517	-	342	1	342	-
693 NHS - Revere & Malden Pipeline Improvement	82,804	10,344	42,000	1,898	86,011	19,062	36,349	2,039	3,207	8,718	(5,651)	141
702 New Connect Mains-Shaft 7 to WASM 3	56,376	25,839	17,612	-	57,572	26,320	18,327	-	1,196	481	715	-
704 Rehabilitation of Other Pump Stations	50,258	1,247	18,953	-	51,290	780	20,453	-	1,032	(467)	1,500	-
706 NHS-Connecting Mains from Section 91	2,360	-	-	-	2,360	-	-	-	-	-	-	-
708 Northern Extra High Service New Pipelines	10,874	447	6,795	-	40,180	2,525	33,850	173	29,306	2,078	27,055	173
712 Cathodic Protection Of Distribution Mains	66,704	9,740	56,695	-	63,483	12,066	51,148	-	(3,221)	2,326	(5,547)	-
713 Spot Pond Supply Mains Rehabilitation	66,289	800	-	-	66,289	800	-	-	-	-	-	-
714 Southern Extra High Sections 41 & 42	3,657	-	-	-	3,657	-	-	-	-	-	-	-
719 Chestnut Hill Connecting Mains	33,827	-	15,534	6	38,945	-	20,648	11	5,118	-	5,114	5
720 Warren Cottage Line Rehabilitation	1,205	-	-	-	1,205	-	-	-	-	-	-	-
721 South Spine Distribution Mains	80,308	3,271	40,245	109	90,585	3,241	50,423	238	10,277	(30)	10,178	129
722 NIH Redundancy & Storage	121,188	41,066	31,215	11	128,729	45,574	34,250	10	7,541	4,508	3,035	(1)
723 Northern Low Service Rehabilitation Section 8	69,584	29,898	35,936	796	60,945	13,194	44,664	133	(8,639)	(16,704)	8,728	(663)
724 Northern High Service - Pipeline Rehabilitation	-	-	-	-	-	-	-	-	-	-	-	-
725 Hydraulic Model Update	598	-	-	-	598	-	-	-	-	-	-	-
727 Southern Extra High Redundancy & Storage	132,426	37,378	13,899	52,704	141,243	38,522	18,114	56,162	8,817	1,144	4,215	3,458
730 Weston Aqueduct Supply Mains	80,457	54	-	-	80,457	54	-	-	-	-	-	-
731 Lynnfield Pipeline	5,626	-	-	-	5,626	-	-	-	-	-	-	-
732 Walnut St. & Fisher Hill Pipeline Rehabilitation	2,717	-	-	-	2,717	-	-	-	-	-	-	-

**ATTACHMENT C
Overview of the FY21 Final CIP and Changes from the Final FY20**

Program and Project	FY20 Final				FY21 Draft Final				Change from Final FY20			
	Total Budget Amount	FY19-23	FY24-28	Beyond 28	Total Budget Amount	FY19-23	FY24-28	Beyond 28	Total Budget Amount	FY19-23	FY24-28	Beyond 28
733 NHS Pipeline Rehabilitation 13-18 & 48	-	-	-	-	-	-	-	-	-	-	-	-
734 Southern Extra High Pipelines-Sections 30, 39,40, & 44	-	-	-	-	-	-	-	-	-	-	-	-
735 Section 80 Rehabilitation	13,552	706	10,921	-	16,024	858	13,240	-	2,472	152	2,319	-
Other	91,173	74,025	40,548	(195,286)	161,008	94,579	63,264	(168,721)	69,835	20,554	22,716	26,565
753 Central Monitoring System	39,002	10,203	5,576	2,518	42,082	16,960	4,418	-	3,080	6,757	(1,158)	(2,518)
763 Distribution Systems Facilities Mapping	2,799	1,549	214	-	2,799	1,183	580	-	-	(366)	366	-
764 Local Water Infrastructure Renovation Assistance	7,488	-	-	-	7,488	-	-	-	-	-	-	-
765 Local Water Pipeline Improvement Loan Program	-	37,498	20,033	(197,804)	-	54,163	4,819	(199,255)	-	16,665	(15,214)	(1,451)
766 Waterworks Facility Asset Protection	41,884	24,776	14,725	-	108,639	22,274	53,447	30,534	66,755	(2,502)	38,722	30,534
Business & Operations Support	164,989	47,937	16,023	-	173,000	49,356	22,613	-	8,011	1,419	6,590	-
881 Equipment Purchase	39,090	10,453	6,780	-	42,711	9,914	10,940	-	3,621	(539)	4,160	-
925 Technical Assistance	1,125	1,125	-	-	1,125	1,125	-	-	-	-	-	-
930 MWRA Facility - Chelsea	9,812	-	-	-	9,812	-	-	-	-	-	-	-
931 Business Systems Plan	24,562	(1)	-	-	24,562	(1)	-	-	-	-	-	-
932 Environmental Remediation	1,479	-	-	-	1,479	-	-	-	-	-	-	-
933 Capital Maintenance Planning	27,587	13,386	-	-	26,385	12,184	-	-	(1,202)	(1,202)	-	-
934 MWRA Facilities Management	2,971	2,600	-	-	3,071	1,075	1,625	-	100	(1,525)	1,625	-
935 Alternative Energy Initiatives	23,364	(234)	5,181	-	23,700	(234)	5,516	-	336	-	335	-
940 Applicat Improv Program	13,093	6,290	3,911	-	18,249	10,971	4,385	-	5,156	4,681	474	-
942 Info Security Program ISP	5,506	3,798	-	-	5,506	3,798	-	-	-	-	-	-
944 Info Tech Mgmt Program	200	200	-	-	200	200	-	-	-	-	-	-
946 IT Infrastructure Program	16,202	10,321	150	-	16,202	10,325	146	-	-	4	(4)	-


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 24, 2020
SUBJECT: Approval for Rivers School Admission to the MWRA Wastewater System

COMMITTEE: Administration, Finance & Audit

 INFORMATION
 X VOTE

Carolyn M. Fiore, Deputy Chief Operating Officer
Beth Card, Director, Environmental and Regulatory Affairs
Katie Ronan, Environmental Analyst
Preparer/Title


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

RECOMMENDATION:

Pursuant to MWRA Operating Policy 04, that the Board approve of admission of the Rivers School, located on the border of Weston and Natick, to the MWRA wastewater system to discharge up to 12,000 gpd of wastewater via a connection to the Town of Natick.

DISCUSSION:

The Rivers School is an independent, coeducational preparatory day school located at 333 Winter Street in Weston Massachusetts on the municipal boundary with the Town of Natick. The school has land and buildings in both towns. Rivers School is seeking admission to the MWRA wastewater system to discharge up to 12,000 gpd via a connection to the Town of Natick wastewater system. The proposed connection is governed by MWRA Operating Policy 04 Sewer Connections Serving Property Partially Located in Non-MWRA Community (OP.04), also known as the “Sewer Straddle” policy. Pursuant to OP.04, MWRA has found that the proposed connection and associated wastewater discharges will not jeopardize the quantity or quality of service that MWRA is committed to provide to existing sewer service communities.

Rivers School currently has an onsite wastewater treatment system, but has had difficulty meeting groundwater discharge permit requirements. Evaluation conducted by the Rivers School as part of an ongoing facilities planning process has determined connecting to MWRA to be preferable to continuing to discharge wastewater onsite for environmental, economic and administrative reasons. The Town of Weston does not have sewer infrastructure in the vicinity of the site, the Town of Natick sewer system is located adjacent to the Rivers School’s campus and is an MWRA wastewater member community. As shown in *Figure 1. Rivers School Campus and Proposed Connection*, Rivers School proposes to construct sewer lines to convey wastewater flows from campus and make a connection to the Natick system in Hovey Avenue.

The wastewater collection system within the Rivers School Campus is completely separate and therefore conveys only dry weather flow. Stormwater is handled by a separate system which will

Figure 1: Rivers School Campus and Proposed Connection



not connect to the MWRA system. Wastewater from the Rivers School is generated from normal activities associated with a day school environment including restrooms, locker rooms and a cafeteria. Analysis indicates that the wastewater is domestic in nature. The Rivers School maintains two interior and one exterior grease traps, which will each be maintained in accordance with Natick Board of Health rules and regulations upon connection. The interior trap will require monthly maintenance and exterior traps will require quarterly maintenance. The Rivers School currently receives water from the Town of Weston.

Based on Title 5 of the Massachusetts Environmental Code, 20 gpd per person is used to estimate wastewater flow at day schools. With a population

of 500 students, this yields an estimate of 10,000 gpd for Rivers School. However, River's School collects wastewater flow data onsite as required by of the existing groundwater discharge permit. Analysis of data collected from 2016-2019 indicates that 2,737 gpd is a more accurate estimate of average daily flow on campus. This is due to considerable variation in the daily level of activity based on time of year and special events. For the purpose of this application, Rivers School is therefore proposing a conservative average daily flow of 3,000 gpd and a maximum daily flow of 12,000 gpd.

Community Support and Approvals

Pursuant to OP.04, the proposed connection must have support from both the community of origin and the transporting community. In this case, Weston is the community of origin and Natick is the transporting community to which Rivers School will directly connect. Wastewater flow from Natick is directed to the MWRA wastewater collection system and ultimately to Deer Island Treatment Plant. Support from Weston is documented in a May 29, 2019 letter addressed to Rivers Schools signed by the Town Manager and Town Engineer. Support from Natick is documented in

a January 7, 2020 letter addressed to The Rivers School signed by the Town Administrator and the Director of Public Works.

Sewer Connection Requirements and Annual Reporting

OP.04 requires the removal of 4:1 gallons of inflow from the transporting community system or the system of a downstream community, which can be accomplished via payment to the community. Rivers School has committed to pay a \$141,600 Sewer Infiltration and Inflow (I/I) payment to Natick. This payment was calculated by the Natick Board of Selectman base on 4:1 removal rate of 12,000 gpd at a rate of \$2.95/gallon. The payment will be placed in Natick's I/I Stabilization Account, which is annually appropriated by the Town to perform repairs and rehabilitation in the Town's collection system. The payment will be used to replace or repair 96 sewer manholes within the Natick collection system. Construction is expected to begin during summer 2020 and to be complete within a year. This work is estimated to remove 48,000 gpd of inflow from the Natick collection system. This type of manhole rehabilitation work is recognized by MassDEP guidelines as a method for addressing inflow in a sewer system and is consistent with the requirements of OP.04. In addition, over the next three years, Natick plans to remove 70,000 gpd of I/I from the municipal wastewater system. Over the years, Natick has removed over 1.4 million gpd of I/I from the system.

Pursuant to OP.04, the proposed connection requires approval from both the MWRA Advisory Board Executive Committee and the MWRA Advisory Board. Votes of approval were rendered from those entities on June 12, 2020 and June 18, 2020, respectively.

Upon approval from the MWRA Board of Directors, staff will proceed with implementation of an agreement between MWRA and the Rivers School which details the inflow removal plan described above and sets forth an annual requirement for the Rivers School to report actual flow volumes to the MWRA. Flow volumes will be restricted to a maximum of 12,000 gpd.

BUDGET/FISCAL IMPACT:

Upon approval by the MWRA Board of Directors and before the connection is made, MWRA will charge Rivers School an entrance fee of \$42,086. This entrance fee is calculated based on the new user's fair share of the cost of the sewer system in place at the time of request for admission. This fee aims to provide equitability by recovering the new user's proportional share of the sewer system's asset base that has already been paid for by existing users.

ATTACHMENTS:

Weston Letter of Support
Natick Letter of Support
Advisory Board Approval

TOWN OF WESTON



TOWN HALL,
Post Office Box 378
WESTON, MA 02493-0002
(781) 786-5020
FAX (781) 786-5029
Twitter: @TownWeston

LEON A. GAUMOND JR.
TOWN MANAGER

May 29, 2019

Frederick A Laskey, Executive Director
MWRA
Charlestown Navy Yard
100 First Ave, Building 39
Boston, MA 02129

RE: Rivers School Wastewater Connection
Weston Approval

Dear Mr. Laskey:

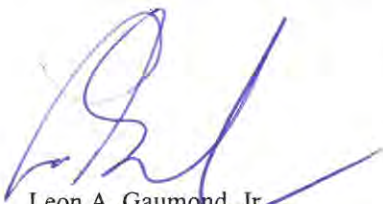
It is the purpose of this correspondence to notify the MWRA that the Town of Weston has reviewed the proposal of The Rivers School to discharge wastewater generated at its campus in Weston, Massachusetts into the MWRA wastewater system via the collection system of the Town of Natick, for conveyance, treatment and disposal. It is our understanding that connection approval is being sought under **MWRA's Policy #: OP.04 Sewer Connection Serving Property Partially in a Non-MWRA Community**. **OP.04** requires that the applicant notify the Non-MWRA Community in which the applicant is partially located, i.e. Weston, of the intentions of the applicant and gain the approval of that community. Approval by the Selectmen and the Town Engineer is required.

The applicant has provided to the Town of Weston, a copy of **OP.04** as well as a detailed design and other supporting material associated with the connection proposal. Specifically provided was:


- (1) Size and location of the building or structure to be served.
- (2) Sewer connection plans and specifications.
- (3) Estimated average daily dry and wet weather flows.
- (4) Characteristics of the wastewater.
- (5) Estimated total daily water use.
- (6) Measures taken to assure a 4/1-gallon reduction in peak inflow

The information provided was reviewed by our Town Engineer and considered by the Board of Selectmen. As a result of this review, we have concluded that the proposal would be beneficial to the environment of the Town of Weston and neighboring communities and as such, we approve of the proposal.

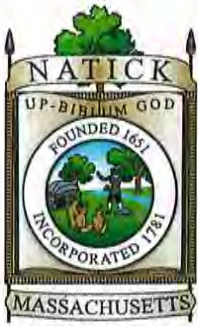
Sincerely,



Leon A. Gaumond, Jr.
Town Manager



Stephen R. Fogg, P.E.
Town Engineer



TOWN OF NATICK MASSACHUSETTS

January 7, 2020

Frederick A. Laskey, Executive Director
MWRA
Charlestown Navy Yard
100 First Avenue, Building 39
Boston, MA 02129

RE: Rivers School Wastewater Connection
Natick Approval

Dear Mr. Laskey:

It is the purpose of this correspondence to notify the MWRA that the Town of Natick has reviewed the proposal of The Rivers School to discharge wastewater generated at its campus in Weston, Massachusetts into the MWRA wastewater system via collection system of the Town of Natick, for conveyance, treatment and disposal. It is our understanding that connection approval is sought under **MWRA's Policy # OP.04 Sewer Connection Serving Property Partially in a Non-MWRA Community**. OP. 04 requires that the applicant notify the MWRA Community in which the applicant is partially located, i.e. Natick, of the intentions of the applicant and gain the approval of that community.

The applicant has provided the Town of Natick, a copy of OP.04 as well as a detailed design and other supporting material associated with the connection proposal. Specifically provided was:

1. Size and location of the building or structures to be served
2. Sewer connection plans and specifications
3. Estimated average daily dry and wet weather flows
4. Characteristics of the wastewater
5. Estimated total daily water use
6. Measures take to assure a 4/1-gallon reduction in peak inflow

The information provided was reviewed by our the Department of Pubic Works and the Town's sanitary sewer consultant. As a result of this review and the conditions agreed to by The Rivers School, we approve the proposal.

Sincerely,

Melissa A. Malone
Town Administrator

Jeremy T. Marsette, PE
Director of Public Works

Jeremy Marsette, PE
Director of Public Works
PHONE 508-647-6550
EMAIL jmarsette@natickma.org



LOCATED AT
Department of Public Works
75 West Street
Natick, Massachusetts
01760

Town of Natick • Public Works

June 8, 2020

Ben McGovern
The Rivers School
333 Winter Street
Weston MA, 02493-1040

Re: Proposed Sewer Connection

Mr. McGovern,

Regarding The Rivers School request to connect to the Natick sanitary sewer collection system the Town of Natick has a long standing requirement for the 4:1 mitigation of infiltration and inflow (I&I) for all sewer connections to the collection system. This program is funded by payment of a Sewer I&I Fee to the Town as part of the sewer connection permit. These local revenues are collected in the I&I Stabilization Fund and are annually appropriated from this fund at Town Meeting for use in performing sewer rehabilitation projects to remove infiltration and inflow. The annual appropriation of funds has consistently been \$150,000 for the past five years (given additional annual revenues from development projects the appropriation is increased).

The Town's efforts have removed over 1.4 million gallons per day of infiltration and inflow from the collection system using local funds from the Sewer I&I Fee and MWRA I/I Local Financial Assistance Program Funding. Over the next three year's we plan to remove at least 70,000 gpd, on an average daily basis (140,000 gpd during high ground water periods) of I&I from the collection system.

Based on the estimated sewer use of 12,000 gallons per day for the proposed Rivers School sewer connection a Sewer I&I Fee of \$141,600 has been calculated per the Board of Selectmen's Policy. Pursuant to MWRA OP.04, prior to connection to the MWRA Wastewater System this payment must be made to the Town. These funds will be placed in the I&I Stabilization Fund to be used to remove sewer inflow from the Town's collection system. The Town's wastewater consultant (Haley and Ward) has identified 96 sewer manholes within Natick's sewer collection system that will be included in the upcoming I&I removal project to be bid for construction in late spring of 2020. Once bid and a contract awarded, construction will begin in the summer of 2020. The consultant estimates that 48,000 gpd of sewer inflow will be removed from the system as a result of the work to be conducted on these 96 sewer manholes.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeremy Marsette". The signature is written over a horizontal line that extends across the page.

Jeremy Marsette, PE
Director of Public Works



Advocacy & Accountability

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June 18, 2020

Fred Laskey, Executive Director
Massachusetts Water Resource Authority
100 First Avenue, 3rd Floor
Boston, MA 02129

Dear Mr. Laskey:

At the regular meeting of the Advisory Board on June 18, 2020, with a quorum present, the Advisory Board, as statutorily empowered, voted unanimously on the following recommendation:

To allow the Rivers School in Weston to connect to the MWRA Wastewater System through Natick under MWRA Policy OP.04. Further conditioned that the sum of \$141,600 be placed in Natick's I/I stabilization account to replace or repair 96 sewer manholes within the Natick collection system and that the construction is completed within one year.

Staff will be available to answer any questions at next week's Board of Directors meeting.


Sincerely,

A handwritten signature in black ink that reads "Lou M. Taverna".

Lou Taverna, P.E.
Advisory Board Chairman

Cc: Beth Card
Rivers School

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 24, 2020
SUBJECT: Revenue Bond Consulting Engineer Services
CDM Smith, Inc.
Contract F258

COMMITTEE: Administration, Finance & Audit

VOTE
 INFORMATION


Michele S. Gillen
Director, Administration

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


Thomas J. Durkin
Director, Finance

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to select CDM Smith Inc. to provide revenue bond consulting engineer services in connection with the issuance of revenue bonds and to authorize the Executive Director, on behalf of the Authority, to execute said contract with CDM Smith Inc. in an amount not to exceed \$325,600 for a term of 36 months from the Notice to Proceed.

DISCUSSION:

MWRA's General Bond Resolution requires that every three years an independent engineering firm develop an Engineering and Financial Status Report. In the report, the Consulting Engineer is required to determine if the wastewater and water systems have been properly maintained over the last three years, determine if the Renewal and Replacement Reserve Fund levels are sufficient, and review the adequacy of MWRA's rates and charges. If the Consulting Engineer determines that additional maintenance is required or financial projections need to be adjusted, the report would include its recommendations. This report is an important component in MWRA's ability to sell bonds, since it provides investors with an independent review of MWRA's operational condition and financial projections.

In order to complete this report, the Consulting Engineer inspects MWRA's operating facilities and conducts interviews with key Operations Division staff. The Consulting Engineer evaluates MWRA's Capital Improvement Program, Current Expense Budget and financing plans to determine if expenditure levels are sufficient to maintain and improve the system, as well as meet the requirements of the Safe Drinking Water Act and Clean Water Act. As part of the financial component, independent projections of MWRA wholesale and estimated retail rates for the next five years are developed.

These projected rates are part of the Consulting Engineer’s assessment of whether MWRA’s projected rates and charges are within the ability of the individual Local Bodies and their customer base to afford. In addition to the engineering and financial review, the Consulting Engineer also establishes the Renewal and Replacement Reserve Fund requirement.

The General Bond Resolution requires that a final report be provided to U.S. Bank which is MWRA’s Bond Trustee within 120 days of the close of the fiscal year (October 28, 2020).

In addition to the full triennial Engineering and Financial Status Report, the Consulting Engineer provides an updated letter report, which is included in the Official Statement for each bond issuance. The letter report provides potential investors with updated five-year financial projections, and notes any significant operational changes which may impact the decision to purchase MWRA’s bonds. After the bonds have been sold, the General Bond Resolution requires that the Consulting Engineer certify that MWRA will be able to meet its senior and subordinate lien coverage requirement in the current and next fiscal year.

Procurement Process:

On April 9, 2020, MWRA issued a one-step Request for Qualification Statements and Proposals (RFQ/P) that was publically advertised in the Central Register, Boston Herald, Banner Publication and El Mundo and posted on the MWRA Supplier Portal. In addition to the MWRA’s normal advertising, 48 firms where directly solicited. To increase competition and level the playing field, the RFQ/P included an Allowance to fund the costs for a new firm to familiarize itself with MWRA. Five firms requested copies of the RFQ/P on MWRA’s procurement portal.

Only one proposal was received on May 20, 2020 from CDM Smith Inc. (CDM), which is the incumbent on this contract. Historically, MWRA has seen limited competition on this procurement due to the unique nature of the scope of work which requires detailed engineering, as well as, financial analysis expertise and experience. The detailed engineering and financial review occurs during the first four months, with the remaining term of the contract primarily focused on financial review with little to no engineering analysis required.

The Selection Committee evaluated and ranked the proposal based on the criteria contained in the RFQ/P including Cost (25 points), Qualifications and Key Personnel (25 points), Experience and Past Performance (25 points), Technical Approach (15 points), and Capacity/Organization, and Management Approach (10 points). The proposal for Consulting Engineer Services was ranked as follows:

<u>Firm</u>	<u>Total Points</u>	<u>Total Rank</u>
CDM Smith	430	5

Overall, the Selection Committee determined that CDM had a very strong proposal. The Selection Committee indicated that it believed CDM’s proposal demonstrated excellent experience and included personnel who are qualified to perform this work. CDM proposed lower hourly rates for the project manager as compared to the rates included in the last year of the current contract. Overall, CDM’s proposed weighted average hourly rate increased by approximately \$11 per hour from \$174 to \$185 over the 2017 contract rates. This increase is primarily driven by the Financial Analyst hourly

rate. The increase reflects the impact of a firm wide compensation review competed by CDM, as well as, his increased experience and level of responsibility. CDM has proposed an annual escalation of 2.5% on all hourly rates.

The proposed three year Guaranteed Maximum Price (GMP), after removal of the \$15,000 Allowance for project familiarization, is \$325,600 and includes one triennial Engineering and Financial Status Report, six Official Statement letter reports with supporting certificates related to the Securities and Exchange Commission's Rule 10b-5 and six coverage calculations. In addition to the reports, the cost proposal also includes a \$10,000 Allowance to conduct a review of rates, revenue and expenses, if necessary to comply with certain sections of MWRA's General Bond Resolution. The GMP for this contract is \$55,478 higher than the 2017 contract. This increased cost is driven by the higher hourly rates discussed above and an increase of 208 hours over the previous contract. These increased hours are focused in two areas, 24 hours is allocated to the triennial Engineering and Financial Status Report to increase the review and documentation of asset protection related to rating agency and investor focus. The remaining 184 hours is allocated to the first Official Statement letter report to allow sufficient time to address any impacts to MWRA rate projections, or market changes to financial disclosures as a result of COVID-19. Under the terms of the contract, CDM will only be paid for the actual hours worked. Under the current contract, CDM has expended only \$136,068.89 or 50.4% of the total contract amount.

The Selection Committee unanimously recommends that CDM be awarded this contract. CDM's staff possesses the required skills and the firm has sufficient capacity to meet MWRA's requirements under this contract.

BUDGET/FISCAL IMPACT:

Most of the costs associated with Revenue Bond Consulting Engineer Services are included as part of the cost of issuance and are funded from the proceeds of bond transactions. A portion of the work is funded through the CEB. The FY21 CEB has sufficient funds to pay for the work included in this contract.

MBE/WBE PARTICIPATION:

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