



MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

BOARD OF DIRECTORS' MEETING

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

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

To be Held on Wednesday, June 23, 2021

Location: 100 First Avenue, 2nd Floor
Charlestown Navy Yard
Boston, MA 02120

Time: 12:00 p.m.

Also to be Held Virtually

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

WebEx Meeting Link for Attendees (Registration Required):

<https://mwra.webex.com/mwra/onstage/g.php?MTID=ece86a6160e3cc5953993b2a80097809d>

Event number: 173 879 1796 **Event password:** 62321

AGENDA - Revised (2)

- I. **APPROVAL OF MINUTES**
- II. **REPORT OF THE CHAIR**
- III. **REPORT OF THE EXECUTIVE DIRECTOR**
- IV. **ADMINISTRATION, FINANCE AND AUDIT**
 - A. **Information**
 1. Delegated Authority Report – May 2021
 2. FY2021 Financial Update and Summary as of May 2021
 - B. **Approvals**
 1. FY2022 Capital Improvement Program
 2. Final FY2022 Current Expense Budget
 3. Final FY2022 Water and Sewer Assessments
 - C. **Contract Awards**
 1. Investment Banking Services: Contract F263

IV. ADMINISTRATION, FINANCE AND AUDIT (Continued)

C. Contract Awards (Continued)

2. Maximo Lawson Interface Enhancements: Starboard Consulting, LLC, Contract 7649

V. WASTEWATER POLICY AND OVERSIGHT

A. Contract Awards

1. Wastewater Advisory Committee Contract
2. Deer Island Treatment Plant Odor Control Wet Scrubbers and Mist Eliminators Replacement: Carbon Filtration Systems, Inc., Contract WRA-4950
3. Deer Island Treatment Plant Centrifuge Services: Alfa Laval, Inc., Contract S601

B. Contract Amendments/Change Orders

1. Chelsea Creek Headworks Upgrade: Contract 7161, BHD/BEC JV 2015, A Joint Venture, Change Order 47
2. Nut Island Headworks Odor Control and HVAC Improvements: Hazen and Sawyer, P.C., Contract 7517, Amendment 3

VI. WATER POLICY AND OVERSIGHT

A. Information

1. Green Forestry Certification

B. Contract Awards

1. Water Supply Citizens Advisory Committee Contract
2. Low Service PRV Improvements Resident Engineering and Inspection Services: CDM Smith Inc., Contract 7674

VII. PERSONNEL AND COMPENSATION

A. Information

1. Diversity, Equity, and Inclusion Workgroup Update

B. Approvals

1. PCR Amendments – June 2021
2. Appointment of Manager, Wastewater Operations

VII. PERSONNEL AND COMPENSATION (Continued)

B. Approvals (continued)

3. Appointment of Associate General Counsel, Environmental and Energy
4. FY22 Non-Union Compensation and Extension of Employment Contract, Director Tunnel Redundancy Program

VIII. CORRESPONDENCE TO THE BOARD

IX. OTHER BUSINESS

X. EXECUTIVE SESSION

- i. Approval of May 26, 2021 Executive Session Minutes
 - A. Real Estate
 1. Watershed Land Acquisition Approval
 2. Wachusett Watershed Railroad
 - B. Litigation
 1. U.S. v. M.D.C., et al., USDC No. 85-0489-RGS

XI. ADJOURNMENT

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Board of Directors

May 26, 2021

Pursuant to Governor Baker's March 12, 2020 Order Suspending Certain Provisions of the Open Meeting Law the May 26, 2021 meeting of the Board of Directors of the Massachusetts Water Resources Authority was conducted by remote participation. Chair Theoharides presided. Present remotely from the Board, in addition to Chair Theoharides, were Ms. Wolowicz and Messrs. Carroll, Cook, Foti, Pappastergion, Peña, Vitale, and P. Walsh. Messrs. Flanagan and J. Walsh were 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; Patterson Riley, Special Assistant, Affirmative Action; Andrea Murphy, Director, Human Resources; Matthew Dam, Manager, Occupational Health and Safety; Paula Weadick, Director, MIS; Lisa Grollman, Real Property Project Manager; Valerie Moran, Director, Waterworks; Cori Barrett, Director, Construction; Lisa Hamilton, Assistant Director, Engineering; John Colbert, Chief Engineer; Patrick Barrett, Program Manager, Engineering and Construction; and, Assistant Secretaries Ria Convery and Kristin MacDougall. Vandana Rao, EOEAA, and Louis Taverna, Joseph Favaloro, Matt Romero, James Guidod, and Elena Proakis Ellis, MWRA Advisory Board, also participated. The meeting was called to order at 1:08 pm. All motions were individually made and presented for discussion and deliberation. After any discussion and deliberation, motions for which there were no objections or separate vote were then consolidated for one omnibus roll call vote. Agenda items IV and V B.1 were voted by individual roll call vote.

APPROVAL OF APRIL 14, 2021 MINUTES

A motion was duly made and seconded to approve the minutes of the Board of Directors' meeting of April 14, 2021.

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

REPORT OF THE CHAIR

Secretary Theoharides provided updates on PFAS, the Massachusetts Drought Management Task Force, Climate Change Resiliency and a partnered hydrologic modelling study with Cornell University, USGS and Tufts University to predict the potential impacts of future droughts and floods. The Secretary also noted that Bethany Card, former MWRA Director of Environmental and Regulatory Affairs, had been appointed as EEA Undersecretary. (ref. II)

Documents used for this meeting, referenced above, can be found here:

<https://www.mwra.com/monthly/bod/boardmaterials/2021/OS-2021-04-14%20Board%20Materials.pdf>

REPORT OF THE EXECUTIVE DIRECTOR

Mr. Laskey updated Board Members on MWRA's telework policies and Open Meeting Law legislation. There was brief discussion about future in-person and hybrid remote Board of Directors meetings. Mr. Laskey then provided updates on employee safety protocols and the release of the Annual Water Quality Report. Finally, Mr. Laskey announced that MWRA has received MassDEP's Public Water System award for 2020, a Platinum Peak Performance Award from National Association of Clean Water Agencies (NACWA) for the Deer Island Treatment Plant, a NACWA Silver Peak Performance Award for the Clinton Treatment Plant, and two awards from the Government Finance Officers Association. (ref. III)

FY 2022 BUDGET HEARINGSAdvisory Board Integrated Comments and Recommendations on The MWRA's Proposed FY 2022 Capital Expense Budget and Current Expense Budget

MWRA Advisory Board staff gave a presentation. There was discussion and questions and answers.

A motion was duly made and seconded to adopt the MWRA Advisory Board recommendation with respect to the Watershed Legislation.

Hearing no further discussion or objections, Chair Theoharides called for a roll call vote.

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

Yes

No

Abstain

Theoharides

Carroll

Cook

Foti

Pappastergion

Peña

Vitale

P. Walsh

Wolowicz

(ref. IV)

There was additional discussion and questions and answers. (Mr. Cook left the meeting during the discussion.)

Hearing no further discussion or objections, Chair Theoharides proceeded to the Personnel and Compensation agenda items.

PERSONNEL AND COMPENSATION

APPROVALS

Approval of Juneteenth Holiday

A motion was duly made and seconded that Juneteenth Independence Day be established as an observed holiday at the Massachusetts Water Resources Authority.

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

Hearing no further discussion or objections, Chair Theoharides referred the motion to an omnibus roll call vote. (ref. V A.1)

PCR Amendments – May 2021

A motion was duly made and seconded to approve amendments to the Position Control Register as presented and filed with the records of the meeting.

Staff provided a verbal summary.

Hearing no further discussion or objections, Chair Theoharides referred the motion to an omnibus roll call vote. (ref. V A.2)

Appointment of Director of Western Operations

There was brief discussion.

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

Staff provided a verbal summary.

Hearing no further discussion or objections, Chair Theoharides referred the motion to an omnibus roll call vote. (ref. V A.3)

Appointment of Director of SCADA, Metering & Monitoring

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

Staff provided a verbal summary.

Hearing no discussion or objections, Chair Theoharides referred the motion to an omnibus roll call vote. (ref. V A.4)

Appointment of Director, Environmental and Regulatory Affairs

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

Staff provided a verbal summary.

Hearing no discussion or objections, Chair Theoharides referred the motion to an omnibus roll call vote. (ref. V A.5)

Appointment of Program Manager, SCADA Tech

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

Staff provided a verbal summary.

Hearing no discussion or objections, Chair Theoharides referred the motion to an omnibus roll call vote. (ref. V A.6)

Appointment of Program Manager, Engineering and Construction

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

Staff provided a verbal summary.

Hearing no discussion or objections, Chair Theoharides referred the motion to an omnibus roll call vote. (ref. V A.7)

Appointment of Program Manager, Electrical

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

Staff provided a verbal summary.

Hearing no discussion or objections, Chair Theoharides referred the motion to an omnibus roll call vote. (ref. V A.8)

ANNUAL MEETING OF THE PERSONNEL AND COMPENSATION COMMITTEE INDEPENDENT OF MANAGEMENT

Authority Accountability and Transparency Act Compliance

The Annual Meeting of the Personnel and Compensation Committee Independent of Management was held virtually, in accordance with Massachusetts General Law Chapter 29, Section 29K (the Authority Accountability and Transparency Act), for the purpose of generally reviewing and comparing salaries and benefits of private sector companies, charitable institutions and state agencies with those of MWRA's "executives," which include the Executive Director, Chief Operating Officer, Director of Finance and General Counsel. In accordance with the Act, no Authority employee with management responsibilities was present to advise, participate in or influence any discussions which

the Board undertook. Chair Theoharides presided. Present remotely from the Board, in addition to Chair Theoharides, were Ms. Wolowicz and Messrs. Carroll, Foti, Pappastergion, Peña, Vitale, and P. Walsh. Messrs. Cook, Flanagan and J. Walsh were absent. With the exceptions of Kristin MacDougall, Assistant to the Board of Directors, and Michael Curtis, IT Asset Management Analyst, MIS, no MWRA staff were present or participated remotely. The meeting remained open to the public. The meeting was called to order at 2:25pm.

MWRA Board members briefly reviewed salaries and benefits. There was discussion. The performance of Mr. Laskey along with the extension of his contract and appointment and compensation was also reviewed and discussed.

A motion was duly made and seconded to rate the performance of MWRA Executive Director Frederick A. Laskey as exceptional and stellar; further, to extend the term of the Executive Director's employment agreement and his appointment as the Executive Director by one year through June 30, 2024; further, to increase the Executive Director's salary by 3% effective July 1, 2021; and further, to award the Executive Director an additional week of vacation based on the language of the Authority's vacation policy.

There was brief discussion. Hearing no further discussion or objections, Chair Theoharides called for a roll call vote.

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

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

(ref. V B.1)

A motion was duly made and seconded to increase the Division Directors' salaries by 3% effective July 1, 2021. There was brief discussion. Hearing no further discussion or objections, Chair Theoharides called for a roll call vote.

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Theoharides		
Carroll		
Foti		
Pappastergion		
Peña		
Vitale		

Yes

No

Abstain

P. Walsh

Wolowicz

(ref. V B.1)

The Annual Meeting of the Personnel and Compensation Committee Independent of Management adjourned, and the virtual MWRA Board of Directors Meeting reopened to MWRA staff at 3:00pm. (Mr. Vitale left the meeting and Mr. Foti served as Administration, Finance and Audit Committee Chair.)

OTHER BUSINESS

Chair Theoharides announced the results of the Executive Director's performance review. There was brief discussion.

ADMINISTRATION, FINANCE AND AUDIT INFORMATION

FY2021 Third Quarter Orange Notebook

Staff provided a verbal summary.

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

Delegated Authority Report – April 2021

Acting Committee Chair Foti called for any questions or discussion.

Hearing none, Mr. Foti proceeded to the next agenda item. (ref. VI A.2)

FY21 Financial Update and Summary as of April 2021

Staff provided a verbal summary.

Acting Committee Chair Foti called for any questions or discussion.

Hearing none, Mr. Foti proceeded to the next agenda item. (ref. VI A.3)

APPROVALS

Bond Defeasance of Future Debt Service

A motion was duly made and seconded to authorize the Executive Director or his designee, on behalf of the Authority, to enter into, execute and deliver all necessary agreements and other instruments and to take such other actions necessary to effectuate the redemption and defeasance of an aggregate principal amount of \$26,010,000 of outstanding MWRA senior bonds including to cause the escrow of cash and/or securities in an amount necessary to fund such redemption and defeasance, in order to reduce the debt service requirement by \$30,081,000 in the FY22 through FY26 timeframe.

Staff provided a verbal summary.

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

Conveyance of 12 Cleverly Court, Quincy

A motion was duly made and to authorize the Executive Director, on behalf of the Authority, to execute an agreement with the City of Quincy, subject to terms and in a form acceptable to the Authority, for the conveyance of an approximately 1.8-acre parcel of land at 12 Cleverly Court, Quincy, to the City of Quincy for park, recreation and open space purposes and to file the necessary legislation and execute other such documents necessary to effectuate such a conveyance.

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

Hearing no further questions or objections, Chair Theoharides referred the motion to an omnibus roll call vote. (ref. VI B.2)

Memorandum of Understanding between MWRA and BWSC for Reimbursement for Health and Safety Training

A motion was duly made and seconded to authorize the Executive Director, on behalf of the Authority, to execute a Memorandum of Understanding with the Boston Water and Sewer Commission, substantially in the form attached to the Staff Summary presented to the Board and filed with the records of this meeting, for MWRA to reimburse the Commission, for half the cost of shared health and safety training, in the amount of \$46,034.50.

Staff provided a verbal summary.

Hearing no questions or objections, Chair Theoharides referred the motion to an omnibus roll call vote. (ref. VI B.3)

CONTRACT AWARDS

Managed Security Services: Purchase Order for Design and Engineering Services, Rutter Networking Technologies, Bid WRA-4961Q, State Contact ITS74ProjServ

A motion was duly made and seconded to approve the award of a purchase order contract for Professional Services to Design and Engineer the Requirements for the Managed Security Services Contract to the lowest responsive bidder under Bid WRA-4961Q, Rutter Network Technologies, and authorize the Executive Director to execute said purchase order in the bid amount of \$140,000.

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

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

Task Order Appraisal Services: Colliers International Valuation and Advisory Services, LLC, Contract 608TA

A motion was duly made and seconded to approve the recommendation of the Consultant Selection Committee to award Contract 608TA to Colliers International Valuation and Advisory Services, LLC to provide appraisal services and to authorize the Executive Director, on behalf of the Authority, to execute a contract in an amount not to exceed \$100,000 for a term of three years from the Notice to Proceed.

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

MWRA FY22 Insurance Program Renewal

A motion was duly made and seconded to approve the awards to the lowest eligible and responsive proposers for insurance policies, bonds, and related broker services for MWRA's FY22 Insurance Program, and to authorize the Executive Director, on behalf of the Authority, to execute contracts for broker services, for the terms, premiums, and fees as described in the May 26, 2021 Staff Summary presented to the Board and filed with the records of the meeting, including as detailed in the recommendation section of said Staff Summary and incorporated by reference for the record, resulting in a total program amount not to exceed \$3,621,106.

Staff provided a verbal summary.

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

WATER POLICY AND OVERSIGHT INFORMATION

Update on Section 79 Water Main Break – Melrose

Staff gave a presentation. There was brief discussion.

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

CONTRACT AWARDS

Supply and Delivery of Sodium Hypochlorite for the John J. Carroll Water Treatment Plant and the William A. Brutsch Treatment Facility: Univar USA, Inc., Bid WRA-4965

A motion was duly made and seconded to approve the award of Purchase Order Contract WRA-4965, a one-year contract for the supply and delivery of sodium hypochlorite, to the lowest responsive bidder, Univar USA, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said purchase order contract in an amount not to exceed \$1,702,344 for a period of one year, from July 17, 2021 through July 16, 2022.

Staff provided a verbal summary.

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

Water System Hydraulic Model: CDM Smith Inc., Contract 7613

A motion was duly made and seconded to approve the recommendation of the Consultant Selection Committee to award Contract 7613, Water System Hydraulic Model, to CDM Smith Inc. and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the amount of \$788,467.00 for a contract term of 36 months from the Notice to Proceed.

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

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

Northern Intermediate High Section 89 Replacement Pipeline: P. Gioioso and Sons Inc., Contract 7117

A motion was duly made and seconded to approve the award of Contract 7117, Northern Intermediate High Section 89 Replacement Pipeline, to the lowest responsible and eligible bidder, P. Gioioso & Sons, Inc. and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$32,619,000, for a contract term of 1475 calendar days from the Notice to Proceed.

Staff gave a presentation. There was brief discussion and questions and answers.

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

Low Service Pressure Reducing Valve Improvements - Boston/Medford: RJV Construction Corporation, Contract 7563

A motion was duly made and seconded to award of Contract 7563, Low Service Pressure Reducing Valve Improvements – Boston/Medford to the lowest responsible and eligible bidder, RJV Construction Corporation, and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$11,326,000, with a contract term of 24 months from the Notice to Proceed.

Staff gave a presentation.

Hearing no questions or objections, Chair Theoharides referred the motion to an omnibus roll call vote. (ref. VII B.4)

CONTRACT AMENDMENTS/CHANGE ORDERS

Low Service Pressure Reducing Valve Improvements–Boston/Medford, Design and Engineering Services During Construction: CDM Smith Inc., Contract 7575, Amendment

1

A motion was duly made and seconded to authorize the Executive Director, on behalf of the Authority, to approve Amendment 1 to Contract 7575, Low Service Pressure

Reducing Valve Improvements–Boston/Medford, Design and Engineering Services During Construction, with CDM Smith Inc., extending the contract term by fourteen months from March 1, 2023 to May 1, 2024 with no increase in the contract amount.

Staff provided a verbal summary.

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

John J. Carroll Water Treatment Plant Sodium Hypochlorite System Modifications: Harding & Smith, LLC, Contact 7085H, Change Order 2

A motion was duly made and seconded to authorize the Executive Director, on behalf of the Authority, to approve Change Order 2 to Contract 7085H, John J. Carroll Water Treatment Plant Sodium Hypochlorite System Modifications, with Harding & Smith, LLC for a not-to-exceed amount of \$312,750.00, increasing the contract amount from \$1,410,034.00 to \$1,722,784.00, and extending the contract term by 241 calendar days from June 11, 2021 to February 7, 2022.

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

Staff provided a verbal summary.

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

OMNIBUS ROLL CALL VOTE

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

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Theoharides		
Carroll		
Foti		
Pappastergion		
Peña		
P. Walsh		
Wolowicz		

Voted: that Juneteenth Independence Day be established as an observed holiday at the Massachusetts Water Resources Authority; (ref. V A.1)

Further, voted: to approve amendments to the Position Control Register as presented and filed with the records of this meeting; (ref. V A.2)

Further, voted: to approve the appointment of Mr. Eben Nash to the position of Director, Western Operations (Non-Union, Grade 15) in the Operations Division, at the recommended annual salary of \$149,968 commencing on a date to be determined by the Executive Director; (ref. V A.3)

Further, voted: to approve the appointment of Mr. Ethan Wenger to the position of Director, SCADA, Meter and Monitoring (Non-Union, Grade 15), in the Operations Division at the recommended annual salary of \$149,968, commencing on a date to be determined by the Executive Director; (ref. V A.4)

Further, voted: to approve the appointment of Rebecca Weidman to the position of Director, Environmental and Regulatory Affairs, (Non-Union, Grade 16), in the Operations Division at the recommended annual salary of \$151,000, commencing on a date to be determined by the Executive Director; (ref. V A.5)

Further, voted: to approve the appointment of Mr. Carl Chin to the position of Program Manager, SCADA (Unit 9, Grade 29) at an annual salary of \$128,958.93, commencing on a date to be determined by the Executive Director; (ref. V A.6)

Further, voted: to approve the appointment of Ms. Kathleen Pearson to the position of Program Manager (Unit 9, Grade 29) in the Engineering & Construction Department, at an annual salary of \$128,958.93, commencing on a date to be determined by the Executive Director; (ref. V A.7)

Further, voted: to approve the appointment of Mr. Timothy McAleer to the position of Program Manager, Electrical (Unit 9, Grade 29) in the Engineering & Construction Department at an annual salary of \$128,958.93, commencing on a date to be determined by the Executive Director; (ref. V A.8)

Further, voted: to authorize the Executive Director or his designee, on behalf of the Authority, to enter into, execute and deliver all necessary agreements and other instruments and to take such other actions necessary to effectuate the redemption and defeasance of an aggregate principal amount of \$26,010,000 of outstanding MWRA senior bonds including to cause the escrow of cash and/or securities in an amount necessary to fund such redemption and defeasance, in order to reduce the debt service requirement by \$30,081,000 in the FY22 through FY26 timeframe. (ref. VI B.1)

Further, voted: to authorize the Executive Director, on behalf of the Authority, to execute an agreement with the City of Quincy, subject to terms and in a form acceptable to the Authority, for the conveyance of an approximately 1.8-acre parcel of land at 12 Cleverly Court, Quincy, to the City of Quincy for park, recreation and open space purposes and to file the necessary legislation and execute other such documents necessary to effectuate such a conveyance; (ref. VI B.2)

Further, voted: to authorize the Executive Director, on behalf of the Authority, to execute a Memorandum of Understanding with the Boston Water and Sewer Commission, substantially in the form attached to the Staff Summary presented to the Board and filed with the records of this meeting, for MWRA to reimburse the Commission,

for half the cost of shared health and safety training, in the amount of \$46,034.50; (ref. VI B.3)

Further, voted: to approve the award of a purchase order contract for Professional Services to Design and Engineer the Requirements for the Managed Security Services Contract to the lowest responsive bidder under Bid WRA-4961Q, Rutter Network Technologies, and authorize the Executive Director to execute said purchase order in the bid amount of \$140,000; (ref. VI C.1)

Further, voted: to approve the recommendation of the Consultant Selection Committee to award Contract 608TA to Colliers International Valuation and Advisory Services, LLC to provide appraisal services and to authorize the Executive Director, on behalf of the Authority, to execute a contract in an amount not to exceed \$100,000 for a term of three years from the Notice to Proceed; (ref. VI C.2)

Further, voted: to approve the awards to the lowest eligible and responsive proposers for insurance policies, bonds, and related broker services for MWRA's FY22 Insurance Program, and to authorize the Executive Director, on behalf of the Authority, to execute contracts for broker services, for the terms, premiums, and fees as described in the May 26, 2021 Staff Summary presented to the Board and filed with the records of the meeting, including as detailed in the recommendation section of said Staff Summary and incorporated by reference for the record, resulting in a total program amount not to exceed \$3,621,106; (ref. VI C.3)

Further, voted: to approve the award of Purchase Order Contract WRA-4965, a one-year contract for the supply and delivery of sodium hypochlorite, to the lowest responsive bidder, Univar USA, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said purchase order contract in an amount not to exceed \$1,702,344 for a period of one year, from July 17, 2021 through July 16, 2022; (ref. VII B.1)

Further, voted: to approve the recommendation of the Consultant Selection Committee to award Contract 7613, Water System Hydraulic Model, to CDM Smith Inc. and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the amount of \$788,467.00 for a contract term of 36 months from the Notice to Proceed; (ref. VII B.2)

Further, voted: to approve the award of Contract 7117, Northern Intermediate High Section 89 Replacement Pipeline, to the lowest responsible and eligible bidder, P. Gioioso & Sons, Inc. and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$32,619,000, for a contract term of 1475 calendar days from the Notice to Proceed; (ref. VII B.3)

Further, voted: to award of Contract 7563, Low Service Pressure Reducing Valve Improvements – Boston/Medford to the lowest responsible and eligible bidder, RJV Construction Corporation, and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$11,326,000, with a contract term of 24 months from the Notice to Proceed; (ref. VII B.4)

Further, voted: to authorize the Executive Director, on behalf of the Authority, to approve Amendment 1 to Contract 7575, Low Service Pressure Reducing Valve Improvements–Boston/Medford, Design and Engineering Services During Construction, with CDM Smith Inc., extending the contract term by fourteen months from March 1, 2023 to May 1, 2024 with no increase in the contract amount; (ref. VII C.1)

Further, voted: to authorize the Executive Director, on behalf of the Authority, to approve Change Order 2 to Contract 7085H, John J. Carroll Water Treatment Plant Sodium Hypochlorite System Modifications, with Harding & Smith, LLC for a not-to-exceed amount of \$312,750.00, increasing the contract amount from \$1,410,034.00 to \$1,722,784.00, and extending the contract term by 241 calendar days from June 11, 2021 to February 7, 2022; further, voted: to authorize the Executive Director to approve additional change orders as may be needed to Contract 7085H in an amount not to exceed the aggregate of \$250,000, and 180 days in accordance with the Management policies and Procedures of the Board of Directors. (ref. VII C.2)

EXECUTIVE SESSION

Chair Theoharides moved that the Board enter Executive Session to discuss collective bargaining since discussion in Open Session may have a detrimental effect upon the negotiating position of the Authority; further, to not return to Open Session and to adjourn the meeting from Executive Session.

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

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Theoharides		
Carroll		
Foti		
Pappastergion		
Peña		
P. Walsh		
Wolowicz		

Voted: to enter Executive Session to discuss collective bargaining and to adjourn the meeting from Executive Session.

*** EXECUTIVE SESSION ***

The meeting entered Executive Session at 3:27pm.

*** RETURN TO OPEN SESSION***

The meeting returned to Open Session at 3:33pm to hear MWRA's FY2022 Draft Final Budget Hearings Presentation, and then to adjourn.

FY2022 BUDGET HEARINGS

Staff gave a verbal summary. There was brief discussion.

The meeting adjourned at 3:38pm.

Approved: June 23, 2021

Attest:

Andrew M. Pappastergion, Secretary

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director *Frederick A. Laskey*
DATE: June 23, 2021
SUBJECT: Delegated Authority Report – May 2021

COMMITTEE: Administration, Finance & Audit

INFORMATION
 VOTE

Michele S. Gillen
Michele S. Gillen
Director of Administration

Linda Grasso, Admin. Systems Coordinator
Barbara Aylward, Administrator A & F
Preparer/Title

Douglas J. Rice
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, 2021.

This report is broken down into three sections:

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

DISCUSSION:

The Board of Directors' Management Policies and Procedures, as amended by the Board's vote on February 21, 2018, delegate authority to the Executive Director to approve the following:

Construction Contract Awards:

Up to \$1 million if the award is to the lowest bidder.

Change Orders:

Up to 25% of the original contract amount or \$250,000, whichever is less, where the change increases the contract amount, and for a term not exceeding an aggregate of six months; and for any amount and for any term, where the change decreases the contract amount. The delegations for cost increases and time can be restored by Board vote.

Professional Service Contract Awards:

Up to \$100,000 and one year with a firm; or up to \$50,000 and one year with an individual.

Non-Professional Service Contract Awards:

Up to \$250,000 if a competitive procurement process has been conducted, or up to \$100,000 if a procurement process other than a competitive process has been conducted.

Purchase or Lease of Equipment, Materials or Supplies:

Up to \$1 million if the award is to the lowest bidder.

Amendments:

Up to 25% of the original contract amount or \$250,000, whichever is less, and for a term not exceeding an aggregate of six months.

Amendments to the Position Control Register:

Amendments which result only in a change in cost center.

BUDGET/FISCAL IMPACT:

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


CONSTRUCTION/PROFESSIONAL SERVICES DELEGATED AUTHORITY ITEMS MAY 1 - 31, 2021

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	05/12/21	METROPOLITAN OPERATIONS PAVING FINAL BALANCING CHANGE ORDER TO DECREASE THE FOLLOWING BID ITEMS TO REFLECT ACTUAL QUANTITIES USED: PAVEMENT CUTTING, FULL DEPTH EXCAVATION REMOVAL AND DISPOSAL OF EXISTING PAVEMENT, COLD PLANNING, GRADING, SHAPING AND COMPACTING, CONTROL DENSITY FILL, DENSE GRADED CRUSHED STONE SUB-BASE, CAST IN PLACE CONCRETE, BINDER COURSE, TOP COAT, RAISING AND SETTING GRANITE CURB, BITUMINOUS CONCRETE BERM CURB, PAINTED TRAFFIC MARKINGS, RESETTING CASTINGS, INFRA-RED TREATMENT, CRACK SEALING & FILLING, POLICE SERVICES, PERMIT SERVICES, PRICE ADJUSTMENTS, ON CALL NIGHT WORK, ON CALL EMERGENCY WORK.	OP-354	4	SUNSHINE PAVING CORPORATION	(\$310,485.87)
C-2	05/12/21	FIRE ALARM SYSTEM SERVICE METRO BOSTON AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR FIRE ALARM SERVICES AT FACILITIES IN METRO BOSTON FOR A TERM OF 730 DAYS.	OP-422	AWARD	SULLIVAN & McLAUGHLIN COMPANIES, INC.	\$334,455.00
C-3.	05/17/21	ELECTRICAL EQUIPMENT TESTING FINAL BALANCING CHANGE ORDER TO DECREASE THE FOLLOWING BID ITEMS TO REFLECT ACTUAL QUANTITIES USED: SCHEDULED TESTING AND SERVICES, NON-SCHEDULED SERVICES, UNSPECIFIED MAINTENANCE/REPAIR, REPLACEMENT PARTS.	S561	3	AMERICAN ELECTRICAL TESTING COMPANY, INC.	(\$301,225.93)
C-4.	05/17/21	SOUTHERN EXTRA HIGH PIPELINE - SECTION 111 - DEDHAM SOUTH REIMBURSEMENT FOR COVID-19 COSTS.	7505	8	RJV CONSTRUCTION CORP.	\$60,000.00
C-5.	05/17/21	KEY PROJECT WORK CREW SERVICES AT DEER ISLAND AND NUT ISLAND AWARD OF CONTRACT TO A NON-PROFIT, DEPARTMENT OF CHILDREN AND FAMILIES APPROVED ORGANIZATION TO PERFORM ADDITIONAL LANDSCAPING AND PUBLIC ACCESS AREA CLEANING SERVICES AT DEER ISLAND AND NUT ISLAND FOR A TERM OF SEVEN MONTHS.	OP-434	AWARD	ROCA, INC.	\$50,000.00
C-6.	05/20/21	COMBUSTION TURBINE GENERATOR PERFORM THREE ADDITIONAL MOBILIZATIONS AT DEER ISLAND.	S549	2	O'CONNOR CORPORATION	\$73,693.31
C-7.	05/24/21	DEER ISLAND TREATMENT PLANT MAINTENANCE COATING DELETE 64 PATCH PLATES FROM THE CONTRACT; PROVIDE NEAR WHITE METAL BLAST CLEAN IN LIEU OF WHITE METAL BLAST CLEAN FOR SIX CARBON ADSORBERS AND FOUR DIGESTER OVERFLOW BOXES.	S583	3	SOEP PAINTING, CORP.	(\$158,797.28)
C-8.	05/24/21	REHABILITATION OF WASM 3 SECTIONS W11/W12/W16/51 INSTALL NEW STEEL WELDED OUTLETS AT TWO EXISTING PIPELINE LOCATIONS.	6544	1	ALBANESE D&S, INC.	\$50,000.00

PURCHASING DELEGATED AUTHORITY ITEMS May 1 - 31, 2021

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-1.	05/04/21	MAINTENANCE AND SUPPORT OF FORCEPOINT TRITON AP-WEB SOFTWARE Award of a one-year purchase order under State Contract ITS58 to the lowest responsive bidder for maintenance and support of Forcepoint software for the time period May 29, 2021 through May 28, 2022.	WRA-4956		CDW-G LLC	\$38,180.00
P-2	05/04/21	PROVIDE ENVIRONMENTAL SERVICES FOR THE MIS DATA CENTER AND OPERATIONS CONTROL CENTER Award of a three-year purchase order to the lowest responsive bidder to provide environmental services for the MIS Data Center and Operations Control Center for the time period May 8, 2021 through May 7, 2024.	WRA-4953		Electronic Environments Company, LLC	\$92,955.00
P-3	05/11/21	MAINTENANCE AND SUPPORT FOR PROCESS INFORMATION SOFTWARE Award of a sole source purchase order for one-year of maintenance and support of process Information Software for the time period of July 1, 2021 through June 30, 2022.			OSI Software, Inc.	\$84,450.00
P-4	05/11/21	PROVIDE ONSITE COVID-19 TESTING FOR MWRA EMPLOYEES Award of a critical needs purchase order to provide onsite COVID-19 Testing Service for MWRA employees at the Chelea, Deer Island, or Sothborough Facilities.		1	Transformative Healthcare, LLC	\$125,000.00
P-5	05/13/21	SUPPLY AND DELIVERY OF CONCRETE PRODUCTS Award of a one-year purchase order to the lowest responsive bidder for the supply and delivery of concrete products throughout the water distribution system as needed.	WRA-4954		Aggregate Industries	\$77,845.00
P-6	05/13/21	SUPPLY AND DELIVERY OF SODIUM HYDROXIDE Award of a one-year purchase order to the lowest responsive bidder for the supply and delivery of sodium hydroxide at the Deer Island Treatment Plant.	WRA-4958		Borden & Remington Corporation	\$167,892.75
P-7	05/17/21	SUPPLY AND DELIVERY OF A WATER QUALITY AND SEDIMENT ANALYSIS HIGH DOSE ALUM TREATMENT PLAN Award of a purchase order to the lowest responsive bidder for the supply and delivery of a water quality and sediment analysis high dose alum treatment plan at the Chestnut Hill Reservoir.	WRA-4949		Solitude Lake Management, Inc.	\$110,450.00
P-8	05/20/21	MAINTENANCE AND SUPPORT OF EIGHT VMWARE VSPHERE 7 ENTERPRICE LICENSES Award of a purchase order under State Contract ITS58 to the lowest responsive bidder for eight VMware vSphere Enterprise licenses and one-year of maintenance and support.	WRA-4969Q		Dell Marketing LP	\$29,375.20
P-9	05/20/21	MAINTENANCE, TECHNICAL ASSISTANCE AND SUPPORT OF THE ARC GEOGRAPHIC INFORMATION SYSTEM Award of a one-year purchase order under State Contract ITS65 for maintenance, technical assistance and support of the ARC Geographic Information System the for the time period July 1, 2021 through June 30, 2022			Environmental Systems Research Institute, Inc.	\$49,950.00
P-10	5/20/2021	REPLACEMENT OF ACTIVATED CARBON Award of a purchase order contract to the lowest responsive bidder for the replacement of activated carbon at the Union Park CSO Facility.	WRA-4960		Carbon Activated Corporation	\$50,700.00
P-11	05/20/21	RENEWAL AND PLATINUM SUPPORT OF 1200 PROOFPOINT ENTERPRISE LICENSES AND 1200 CYBER SECURITY TRAINING SUBSCRIPTIONS Award of a one-year purchase order under State Contract ITS58 to the lowest responsive bidder to renew 1200 Proofpoint Enterprise subscription licenses and support and 1200 Cyber Security training subscription for the time period June 12, 2021 through June 11, 2022.	WRA-4968Q		Insight Public Sector, Inc.	\$64,224.00

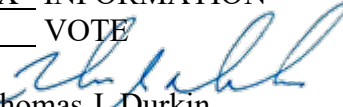
STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 23, 2021
SUBJECT: FY21 Financial Update and Summary Through May 2021

COMMITTEE: Administration, Finance & Audit

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

X INFORMATION
 VOTE


Thomas J. Durkin
Director, Finance

RECOMMENDATION:

For information only. This staff summary provides financial results and variance highlights for Fiscal Year 2021 through May 2021, comparing actual spending to the budget.

DISCUSSION:

MWRA is continuing the practice of setting aside favorable Capital Finance variances into the Defeasance Account with the intention of using these funds to defease debt and provide rate relief in future years. Targeted defeasances are a critical component of the Authority's multi-year rate management strategy. As such, in May the year-to-date debt related savings of \$18.9 million was transferred to the Defeasance Account. This is the result of the lower than budgeted variable interest rates, timing of the SRF transaction, and lower than anticipated Senior Debt issuances.

The total Year-to-Date variance for the FY21 CEB is \$13.3 million, due to lower direct expenses of \$13.0 million, higher indirect expenses of \$0.3 million; and higher revenue of \$0.7 million. The year-end favorable variance is projected at \$37.0 million, of which \$27.4 million is related to debt service. Beyond debt service savings, staff project a surplus of approximately \$9.6 million at year-end of which \$10.5 million would be from lower direct expenses, offset by higher indirect expenses of \$0.8 million and lower revenue of \$0.1 million. Please note, these amounts may not add due to rounding.

FY21 Current Expense Budget

The CEB expense variances through May 2021 by major budget category were:

- Lower Direct Expenses of \$13.0 million or 5.7% under budget. Spending was lower for Wages & Salaries, Utilities, Professional Services, Other Services, Maintenance, Overtime, Worker's Compensation, Fringe Benefits, Chemicals, and Training and Meetings. Spending was higher than budget for Other Materials.

- Higher Indirect Expenses of \$0.3 million or 0.5% over budget due primarily to the updated HEEC capacity and service charge, partially offset by lower Watershed Reimbursements and Pension expense.

FY21 Budget and FY21 Actual Variance by Expenditure Category
(in millions)

	FY21 Budget YTD	FY21 Actual YTD	\$ Variance	% Variance
Direct Expenses	\$226.7	\$213.7	-\$13.0	-5.7%
Indirect Expenses	\$48.6	\$48.9	\$0.3	0.5%
Capital Financing	\$418.7	\$418.7	\$0.0	0.0%
Total	\$694.0	\$681.3	-\$12.7	-1.8%

Totals may not add due to rounding

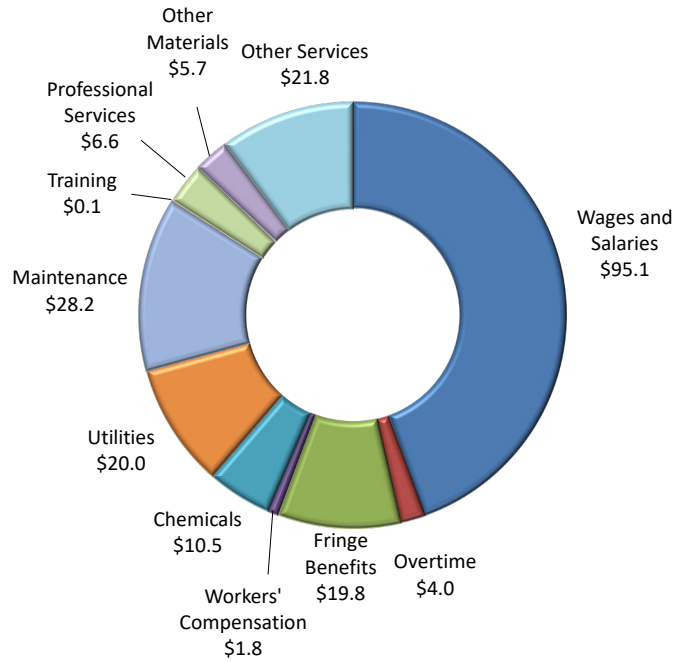
Total Revenues of \$731.1 million were \$0.7 million or 0.1% higher than budget due to higher Other Revenue, partially offset by lower Investment Income.

Please refer to Attachment 1 for a more detailed comparison by line item of the budget variances for FY21.

Direct Expenses

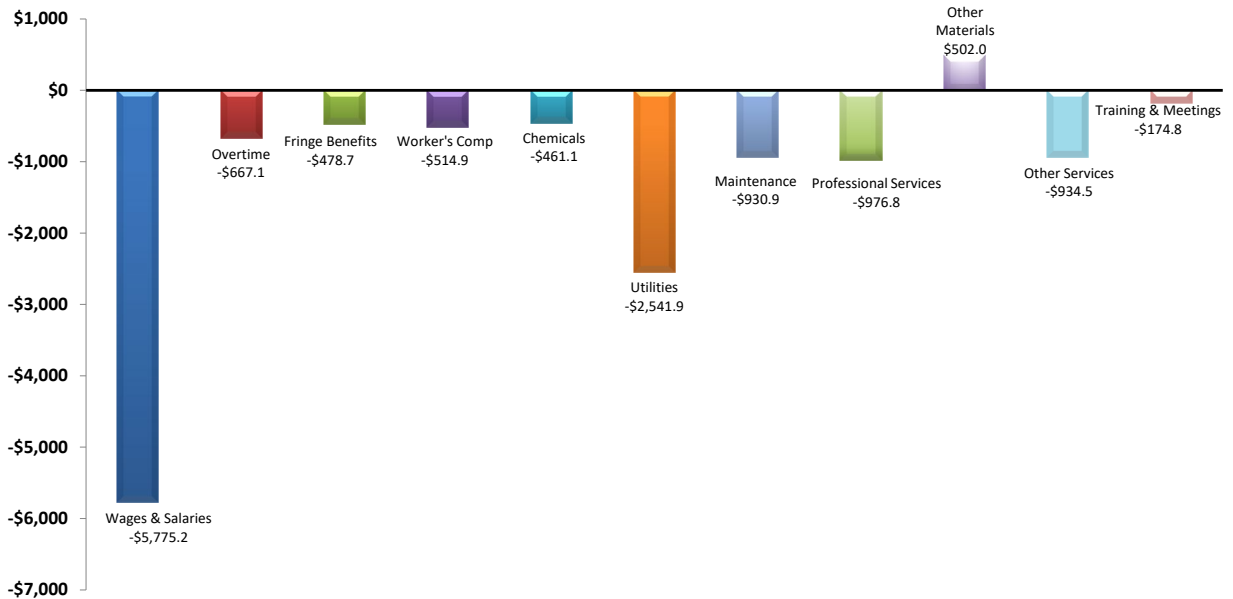
FY21 direct expenses through May totaled \$213.7 million, which was \$13.0 million or 5.7% less than budgeted.

**FY21 Direct Expenses
(in millions)**



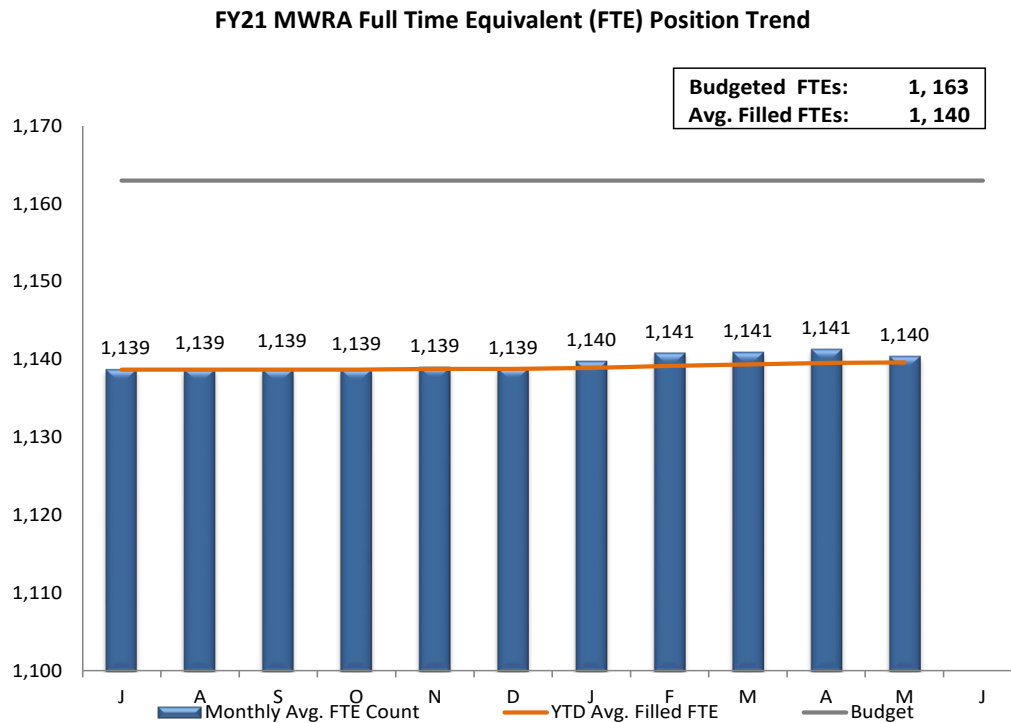
The budget variance is due to lower spending for Wages & Salaries, Utilities, Professional Services, Other Services, Maintenance, Overtime, Worker’s Compensation, Fringe Benefits, Chemicals, and Training and Meetings. Spending was higher than budget for Other Materials.

**FY21 Direct Expense Variance
(in thousands)**



Wages and Salaries

Wages and Salaries are under budget by \$5.8 million or 5.7%. Through May, there were 23 fewer average FTEs (1,140 versus 1,163 budget) or 2.0% and lower average salaries for new hires versus retirees. The timing of backfilling vacant positions also contributed to Regular Pay being under budget.



Utilities

Utilities were less than budget by \$2.5 million or 11.3%. The budget variance is due to underspending in Electricity of \$1.3 million primarily at DITP (\$765,000) driven primarily by lower pricing associated with real time energy and ancillary pricing has been lower under the Direct Energy contract. This was offset by higher usage. Also, lower spending in Water Operations of \$349,000 is due to lower rates and quantity. Diesel Fuel is under budget by \$1.3 million due to a delay of purchase in order to inspect the tanks. Delivery is now expected in the Fall.

Professional Services

Professional Services were lower than budget by \$1.0 million or 12.9%. The overall underspending is due to lower than budgeted spending in Computer Systems Consultant of \$1.1 million in MIS primarily due to timing delays of projects including Website Redesign, PIMS Power Builder, Landesk, and Crystal Report Writer; Engineering of \$379,000 primarily in Field Operations; and Legal Services of \$192,000 in Law and Administration. This is partially offset by higher Lab and Testing Analysis of \$474,000 in Operations driven by the Biobot contract.

Other Services

Other Services were lower than budget by \$0.9 million or 4.1%. The budget variance is due to lower than budgeted spending for Sludge Pelletization of \$899,000 and Grit and Screening Removal of \$142,000, both due to lower than expected year-to-date quantities. This is partially offset by greater than budgeted spending in Other Services of \$230,000 primarily in Water Operations due to the Brookline water pipeline break.

Maintenance

Maintenance was lower than budget by \$0.9 million or 3.2%, largely driven by the timing of projects. Maintenance Materials were under budget by \$885,000 driven by Plant & Machinery Materials (\$521,000) due to timing of materials including rolling stock, booster pumps, and LED lighting upgrades, and HVAC Materials (\$380,000) due to timing of purchases including condensing units, air conditioning back-ups, and exhaust fans. Maintenance Services are under budget by (\$46,000) driven by lower Building & Grounds Services (\$842,000), Special Equipment Services (\$414,000), and Electrical Services (\$398,000) primarily due to underspending on service contracts, partially offset by higher Plant and Machinery Services (\$1.2 million) due to timing and additional work for several contracts and Pipe Services (\$282,000).

Overtime

Overtime expenses were lower than budget by \$0.7 million or 14.4% primarily in Field Operations (\$717,000) mainly for emergency and planned overtime; and Engineering & Construction (\$121,000). This was partially offset by higher spending for Deer Island (\$198,000) for shift coverage including Covid-19 coverage and unplanned maintenance including HEEC.

Worker's Compensation

Worker's Compensation expenses were lower than budget by \$0.5 million or 22.5%. The lower expenses were primarily due to favorable variances in compensation payments (\$546,000) and administrative expenses (\$3,000), partially offset by higher medical payments (\$34,000). This reflects fewer accidents and reduced severity of those accidents. Due to the uncertainties of when spending will happen, the budget is spread evenly throughout the year

Fringe Benefits

Fringe Benefit spending was lower than budget by \$0.5 million or 2.4%. This is primarily driven by lower Health Insurance costs of \$383,000, due to fewer than budgeted participants in health insurance plans, increased contribution by external new hires vs. lower contribution rates of staff retiring, and the shift from family to individual plans that are less expensive

Chemicals

Chemicals were lower than budget by \$0.5 million or 4.2%. Lower than budget spending on Sodium Hypochlorite of \$288,000 is driven by Field Operations due to lower dosing at the Carroll Water Treatment Plant and lower usage at DITP based on lower flows; Sodium Bisulfite of \$131,000 driven by Wastewater Treatment Plant; and Polymer of \$72,000 driven by DITP due to less usage for centrifuge operations. DITP flows are 8.9% lower than the budget and CWTP flows are 0.95% higher 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 and timing.

Training and Meetings

Training and Meetings expenses were lower than budget by \$0.2 million or 55.1% driven by the timing of spending as well as conferences that were postponed or canceled due to the pandemic.

Other Materials

Other Materials were higher than budget by \$0.5 million or 9.7% driven by Computer Hardware of \$521,000 in MIS driven by purchases to support telework and Vehicle Purchases/Replacements of \$385,000 due to timing of spending. This was partially offset by lower than budgeted spending of \$287,000 for Other Materials primarily due to lower quantity of gravel needed at the Clinton landfill and Vehicle Expense of \$151,000 primarily due to less driving because of vehicle staging as well as less use of plows and sanders due to last winter being mild.

Indirect Expenses

Indirect Expenses totaled \$48.9 million, which is \$0.3 million or 0.5% greater than budget. The variance is primarily driven by the cost for the new HEEC cable (\$3.0 million), partially offset by lower spending on Watershed Reimbursement (\$1.7 million) and Pension Expense (\$1.0 million). Based on the latest information from HEEC, MWRA will owe HEEC additional costs related to FY20, and we expect to make that payment by June 2021. Because we are now aware of this liability, we accrued for it starting in November. This is partially offset by lower Pension expense (\$1.0 million). After approval of the FY21 Current Expense Budget, the retirement system received a new Public Employee Retirement Administration Commission approved required contribution. The required contribution was reduced from \$11.0 million to \$10.0 million.

Based on FY21 operating activity only, the Watershed Division is \$2.5 million or 15.2% under budget through May. This is driven by lower spending on Wages and Salaries, Maintenance, Fringe Benefits, Equipment, and Professional Services. When factoring in the FY20 balance forward (\$959,000) which was paid during Q1 of FY21, and the lower PILOT payment (\$132,000), Watershed Reimbursement is \$1.7 million or 6.7% below budget through May.

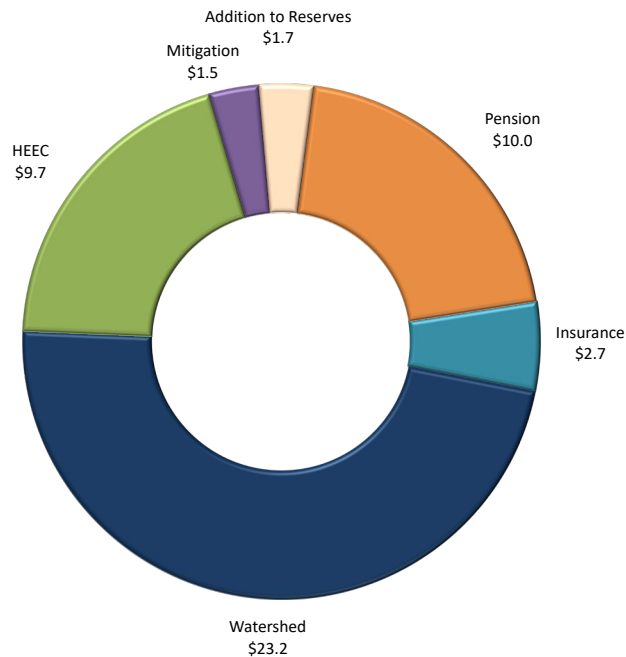
FY21 Watershed Protection Variance

\$ in millions	YTD Budget	YTD Actual	YTD \$ Variance	YTD % Variance
Operating Expenses	17.5	14.7	-2.8	-16.2%
Operating Revenues - Offset	1.1	0.8	-0.4	-31.6%
FY21 Operating Totals	16.4	13.9	-2.5	-15.2%
DCR Balance Forward (FY20 4th quarter accrual true-up)	0.0	1.0	1.0	
FY21 Adjusted Operating Totals	16.4	14.9	-1.5	-9.4%
PILOT	8.5	8.4	-0.1	-1.6%
Total Watershed Reimbursement	24.9	23.2	-1.7	-6.7%

Totals may not add due to rounding

MWRA reimburses the Commonwealth of Massachusetts Department of Conservation (DCR) and Recreation - Division of Water Supply Protection – Office of Watershed Management for expenses. The reimbursements are presented for payment monthly in arrears. Accruals are being made monthly based on estimated expenses provided by DCR and trued-up monthly based on the monthly invoice. MWRA’s budget is based on the annual Fiscal Year Work Plan approved by the Massachusetts Water Supply Protection Trust. The FTE count at the end of May was 134 (and 133.3 on a year-to-date basis) vs. a budget of 150.

**FY21 Indirect Expenses
(in millions)**

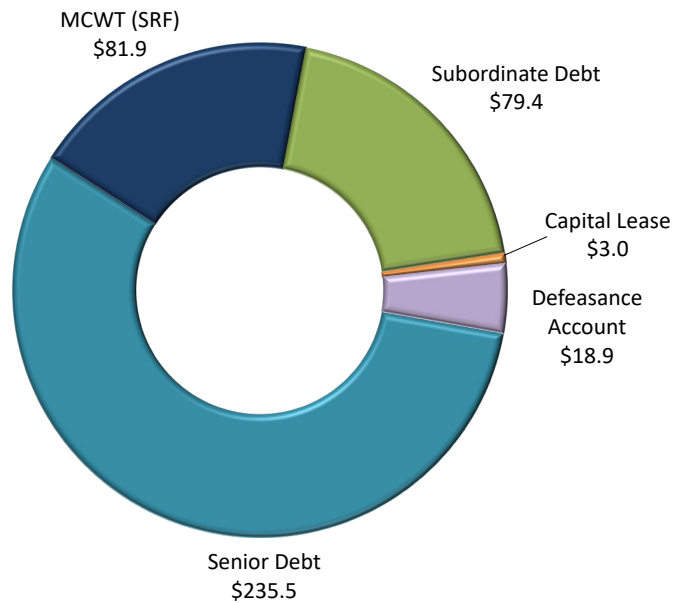


Capital Financing

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

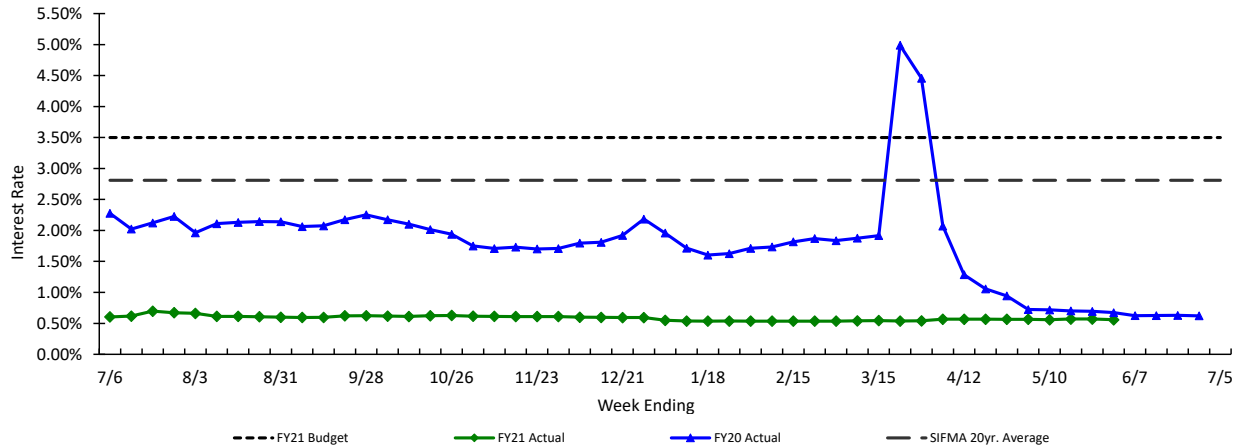
Year-to-date Capital Financing expenses for FY21 totaled \$418.7 million, which is right on budget. In May, the year-to-date debt related savings of \$18.9 million was transferred to the Defeasance Account. This is the result of the lower than budgeted variable interest rates, timing of the SRF transaction, and lower than anticipated Senior Debt due to the timing of borrowings.

FY21 Capital Finance
(\$ in millions)



The graph below reflects the FY21 actual variable rate trend by week against the FY21 Budget.

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



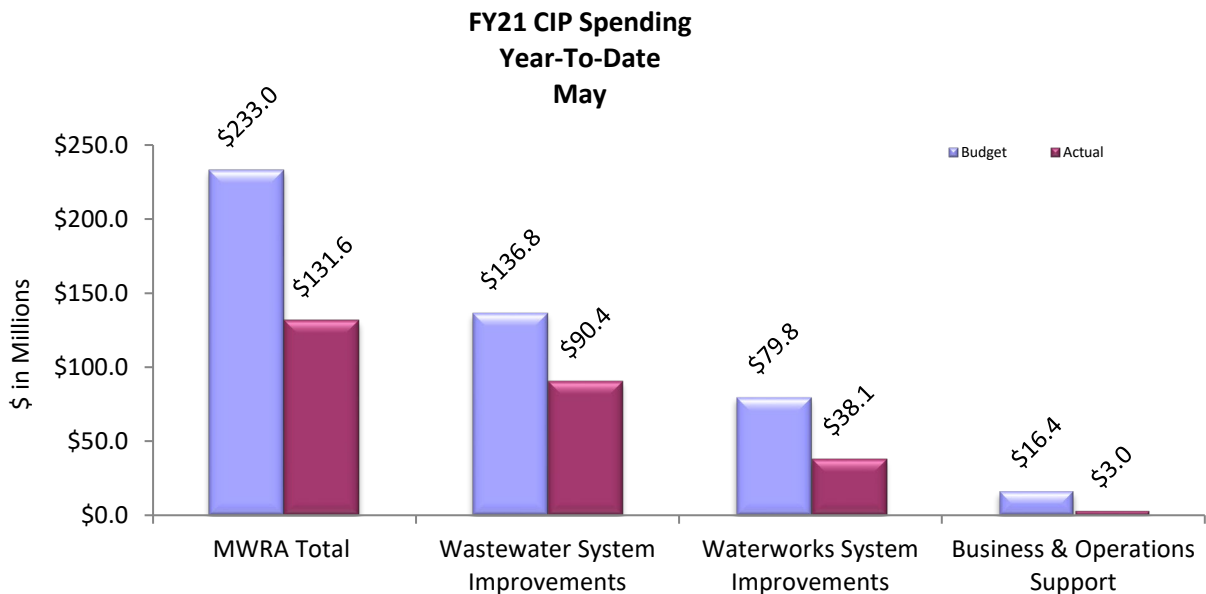
Revenue and Income

Revenues of \$731.1 million were \$651,000 or 0.1% over budget. Other Revenue was \$1.4 million or 23.9% over budget due to Energy Revenue of \$676,000, Disposal of surplus materials of \$304,000, Miscellaneous Revenue of \$194,000 primarily associated with worker's compensation reimbursement for older claims; \$96,000 for permit fees; and \$68,000 in grant money. In addition, Other User Charges were over the budget by \$95,000 primarily due to the entrance fee payments from the Rivers School in Weston and Crescent Ridge Dairy in Sharon. This was partially offset by lower Investment Income of \$804,000 or 17.2% due to lower than budgeted interest rates (0.48% vs. 0.70%), partially offset by higher than budgeted average balances.

FY21 Capital Improvement Program

Capital expenditures in Fiscal Year 2021 through May total \$131.6 million, \$101.4 million or 43.5% under budget.

After accounting for programs which are not directly under MWRA's control, most notably the Inflow and Infiltration (I/I) grant/loan program, the Local Water System Assistance loan program, and the community managed Combined Sewer Overflow (CSOs) projects, capital spending totaled \$92.4 million, \$72.5 million or 43.9% under budget.



Overall, CIP spending reflects the underspending in Wastewater Improvements (\$46.3 million), Waterworks (\$41.7 million), and Business and Operations Support (\$13.4 million). Major variances in Wastewater are primarily due to updated schedules for Prison Point Rehabilitation, Deer Island Primary and Secondary Clarifier Phase 2 Rehabilitation, Dorchester Infiltration/Inflow Removal, and DI Motor Control Center and Switchgear Replacement, work being behind schedule and Covid-19 delays for the Chelsea Headworks Upgrades Construction and a time extension, delay in equipment delivery and Covid-19 shutdown for Nut Island Odor Control and HVAC Improvements, work anticipated in FY21 that was completed in FY20 for the Pellet Conveyance Piping project, and delay in NTP and as well as winter moratorium for the Dorchester Interceptor Sewer, and less than anticipated communities deferring their loan repayments for the I/I Local Financial Assistance Program. This was partially offset by contractor progress for Deer Island Winthrop Terminal Facility VFD Replacement – Construction and Gravity Thickener Rehabilitation.

Waterworks variances are primarily due to less than anticipated communities deferring their loan repayments for the Water Loan Program, updated schedules for CP-3 Sections 23, 24, and 47 Rehabilitation, NIH Section 89 & 29 Replacement, and Carroll Water Treatment Plant SCADA Upgrades, delay in award of CP-1 Shafts 6, 8, and 9A, timing of consultant work for the Tunnel Preliminary Design and MEPA Review, later than anticipated award for River Road

Improvements, and delay in slide gate fabrication and updated schedule for Weston Aqueduct Sluice Gate contracts. This was partially offset by contractor progress on the WASM 3 Rehabilitation CP-1, Southern Extra High Section 111 Construction 2, Section 56 Replacement/Saugus River - Design/CA, and Commonwealth Avenue Pumping Station Construction contracts.

FY21 Budget and FY21 Actual Variance by Program
(in millions)

\$ in Millions	Budget	Actuals	\$ Var.	% Var.
Wastewater System Improvements				
Interception & Pumping	65.6	41.6	(24.0)	-36.6%
Treatment	31.3	17.0	(14.3)	-45.7%
Residuals	3.7	1.4	(2.3)	-61.3%
CSO	4.1	1.2	(2.9)	-69.7%
Other	32.0	29.1	(2.9)	-9.0%
Total Wastewater System Improvements	\$136.8	\$90.4	(\$46.3)	-33.9%
Waterworks System Improvements				
Drinking Water Quality Improvements	2.4	1.6	(0.8)	-33.5%
Transmission	19.5	15.3	(4.2)	-21.4%
Distribution & Pumping	21.1	10.4	(10.7)	-50.6%
Other	36.9	10.8	(26.1)	-70.6%
Total Waterworks System Improvements	\$79.8	\$38.1	(\$41.7)	-52.2%
Business & Operations Support	\$16.4	\$3.0	(\$13.4)	-81.4%
Total MWRA	\$233.0	\$131.6	(\$101.4)	-43.5%

Totals may not add due to rounding

FY21 Spending by Program:

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

Other Waterworks: Net underspending of \$26.1 million

- \$23.1 million for Local Financial Assistance due to timing of community repayments due to less than anticipated communities deferring their loan repayments.
- \$2.7 million for Carroll Water Treatment Plant SCADA Design and Construction due to updated schedule for the SCADA Construction.
- This underspending was partially offset by overspending of \$0.3 million for Cosgrove Intake Roof Replacement, \$0.2 million for Bellevue 2/Turkey Hill Tanks Painting, and \$0.1 million for Gillis Pumping Station/Cottage Farm CSO Roof Replacement due to FY20 planned work that was completed in FY21.

Interception and Pumping: Net underspending of \$24.0 million

- \$13.1 million for Prison Point Rehabilitation Construction due to updated schedule.
- \$2.9 million for Chelsea Creek Headworks Upgrades Construction and Resident Engineering Inspection due to work behind schedule, Covid-19 delays, and time extension.

- \$2.9 million for Wastewater Metering Construction due to delay in award and software training, and \$0.7 million for Wastewater Metering Planning/Design due to time extension through the construction installation and warranty period.
- \$1.7 million for Nut Island Odor Control and HVAC Construction due to delays in equipment delivery and Covid-19 shut down.
- \$0.5 million for Dorchester Interceptor Sewer Construction and CA/RI due to Notice to Proceed as well as winter moratorium.
- \$0.5 million for Prison Point Design/CA/REI due to delay in construction award.
- This underspending was partially offset by overspending of \$0.3 million for Interceptor Renewal 7, Malden & Melrose - Study/Design/CA due to consultant progress.

Wastewater Treatment: Net underspending of \$14.3 million

- \$11.6 million for Clarifier Rehabilitation Phase 2 - Construction, Design and REI due to updated schedules.
- \$1.8 million for MCC Switchgear Replacement - Design/ESDC/REI and Construction due to updated construction schedule.
- \$1.0 million for less than anticipated as-needed task order work.
- \$0.5 million for Miscellaneous VFD Replacements FY19-FY23 due to timing of work.
- This underspending was partially offset by overspending of \$2.3 million for Winthrop Terminal Facility (WTF) VFD Replacement – Construction, \$1.2 million for Gravity Thickener Rehabilitation, and \$0.3 million for Gas Protection System Replacement Phase 1 due to contractor progress, and \$0.4 million for CHP Alternatives Study due to timing of work.

Business and Operations Support: Net underspending of \$13.4 million

- \$3.0 million for As-Needed Technical Assistance and Resident Engineering and Inspection Services due to lower than projected task order work, \$1.8 million for Lawson Upgrade, \$1.7 million for Cabling, \$1.0 million for SANS Storage, \$1.0 million for MAXIMO Interface Enhancements and Upgrades, and \$0.7 million for Enterprise Content Management due to schedule changes, \$0.6 million for Security Equipment & Installation due to timing of physical security initiatives, and \$0.8 million for Vehicle Purchases due to timing.

Water Distribution and Pumping: Net underspending of \$10.7 million

- \$3.8 million for Sections 23, 24, 47 Rehabilitation and CA/RI, and \$3.4 million for Section 89/29 Replacement – Construction, ESDC and RE/RI Services due to schedule changes.
- \$2.1 million for SEH Redundancy Pipeline Section 111 - Construction Phase 3 due to timing of final work.
- \$0.8 million for Sections 50/57 Water due to contract scope reduction.
- \$0.4 million for NEH Improvements Design & ESDC due to contract award later than anticipated and updated schedule.
- \$0.3 million for NIH Section 89 and 29 Design/CA/RI due to less than anticipated construction administration/resident inspection budgeted spending.
- This underspending was partially offset by overspending of \$0.5 million for Section 56 Replacement/Saugus River - Design/CA due to consultant progress, and \$0.3 million for Southern Extra High Section 111 Construction 2 due to contractor progress.

Waterworks Transmission: Net underspending of \$4.2 million

- \$1.9 million for Tunnel Preliminary Design & MEPA Review and \$0.2 million for Program Support Services due to timing of consultant work.
- \$1.3 million for CP-1 Shafts 6, 8, and 9A due to award of contract later than anticipated and repair clamps issue.
- \$0.5 million for River Road Improvements due to award later than anticipated.
- This underspending was partially offset by overspending of \$4.4 million for WASM 3 Rehabilitation, CP-1 and \$0.4 million for Commonwealth Avenue Pumping Station Construction due to contractor progress.

Other Wastewater: Net underspending of \$2.9 million

- \$2.9 million for Community I/I Financial Assistance due to timing of community repayments due to less than anticipated communities deferring loan repayments.

Combined Sewer Overflow: Net underspending of \$2.9 million

- \$2.9 million for Dorchester Inflow Removal Construction due to updated schedules partially offset by \$0.1 million for CSO Performance Assessment due to greater than anticipated consultant progress.

Residuals: Net underspending of \$2.3 million

- \$1.7 million for Pellet Conveyance Piping Relocation and \$0.6 million for Residuals Mechanical/Electrical/Dryer Drum Replacements due to work anticipated in FY21 completed in FY20.

Drinking Water Quality Improvements: Net underspending of \$0.8 million

- \$0.6 million for updated schedules for CP-7 Existing Facilities Modifications, and Carroll Water Treatment Plant Parapet Wall Repairs.

Construction Fund Balance

The construction fund balance was \$216.2 million as of the end of May. Commercial Paper/Revolving Loan available capacity was \$222 million.

ATTACHMENTS:

Attachment 1 – Variance Summary May 2021

Attachment 2 – Current Expense Variance Explanations

Attachment 3 – Capital Improvement Program Variance Explanations

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

ATTACHMENT 1
FY21 Actuals vs. FY21 Budget

	May 2021 Year-to-Date				
	Period 11 YTD Budget	Period 11 YTD Actual	Period 11 YTD Variance	%	FY21 Approved
<u>EXPENSES</u>					
WAGES AND SALARIES	\$ 100,921,420	\$ 95,146,231	\$ (5,775,189)	-5.7%	\$ 112,919,298
OVERTIME	4,637,366	3,970,259	(667,107)	-14.4%	5,019,295
FRINGE BENEFITS	20,292,494	19,813,807	(478,687)	-2.4%	22,402,224
WORKERS' COMPENSATION	2,286,143	1,771,286	(514,857)	-22.5%	2,476,655
CHEMICALS	10,976,301	10,515,159	(461,142)	-4.2%	12,091,255
ENERGY AND UTILITIES	22,503,466	19,961,606	(2,541,860)	-11.3%	24,200,847
MAINTENANCE	29,179,795	28,248,942	(930,853)	-3.2%	32,618,569
TRAINING AND MEETINGS	317,138	142,316	(174,822)	-55.1%	405,264
PROFESSIONAL SERVICES	7,599,525	6,622,728	(976,797)	-12.9%	8,377,283
OTHER MATERIALS	5,199,250	5,701,203	501,953	9.7%	6,706,916
OTHER SERVICES	22,743,176	21,808,641	(934,535)	-4.1%	24,983,777
TOTAL DIRECT EXPENSES	\$ 226,656,074	\$ 213,702,178	\$ (12,953,897)	-5.7%	\$ 252,201,383
INSURANCE	\$ 2,823,894	\$ 2,738,521	\$ (85,373)	-3.0%	\$ 3,059,218
WATERSHED/PILOT	24,913,883	23,248,146	(1,665,737)	-6.7%	26,422,138
HEEC PAYMENT	6,660,185	9,707,576	3,047,391	45.8%	7,215,200
MITIGATION	1,562,164	1,524,977	(37,187)	-2.4%	1,692,344
ADDITIONS TO RESERVES	1,675,456	1,675,456	-	0.0%	1,815,077
RETIREMENT FUND	11,000,000	10,000,000	(1,000,000)	-9.1%	11,000,000
POST EMPLOYEE BENEFITS	-	-	-	---	6,065,490
TOTAL INDIRECT EXPENSES	\$ 48,635,582	\$ 48,894,676	\$ 259,094	0.5%	\$ 57,269,467
STATE REVOLVING FUND	\$ 89,355,801	\$ 81,923,477	\$ (7,432,324)	-8.3%	\$ 97,811,162
SENIOR DEBT	237,930,191	235,535,311	(2,394,880)	-1.0%	258,730,904
DEBT SERVICE ASSISTANCE	-	-	-	---	-
CURRENT REVENUE/CAPITAL	-	-	-	---	16,200,000
SUBORDINATE MWRA DEBT	88,468,681	88,468,681	-	0.0%	96,339,598
LOCAL WATER PIPELINE CP	-	-	-	---	5,686,864
CAPITAL LEASE	2,969,594	2,969,594	-	0.0%	3,217,060
VARIABLE DEBT	-	(9,090,104)	(9,090,104)	---	-
DEFEASANCE ACCOUNT	-	18,917,308	18,917,308	---	-
DEBT PREPAYMENT	-	-	-	---	3,900,000
TOTAL DEBT SERVICE	\$ 418,724,267	\$ 418,724,267	\$ -	0.0%	\$ 481,885,588
TOTAL EXPENSES	\$ 694,015,923	\$ 681,321,121	\$ (12,694,803)	-1.8%	\$ 791,356,438
<u>REVENUE & INCOME</u>					
RATE REVENUE	\$ 710,201,538	\$ 710,201,538	\$ -	0.0%	\$ 769,385,000
OTHER USER CHARGES	8,495,314	8,589,931	94,617	1.1%	9,208,367
OTHER REVENUE	5,685,494	7,046,533	1,361,039	23.9%	6,095,403
RATE STABILIZATION	1,384,615	1,384,615	-	0.0%	1,500,000
INVESTMENT INCOME	4,675,004	3,870,847	(804,157)	-17.2%	5,167,668
TOTAL REVENUE & INCOME	\$ 730,441,965	\$ 731,093,465	\$ 651,499	0.1%	\$ 791,356,438

**ATTACHMENT 2
Current Expense Variance Explanations**

Total MWRA	FY21 Budget YTD May	FY21 Actuals May	FY21 YTD Actual vs. FY21 Budget		Explanations
			\$	%	
Direct Expenses					
Wages & Salaries	100,921,420	95,146,231	(5,775,189)	-5.7%	Wages and Salaries are under budget by \$5.7 million. Year to date, there have been 23 fewer average FTEs (1,140 versus 1,163 budget), lower average new hire salaries versus retirees, the timing of backfilling vacant positions.
Overtime	4,637,366	3,970,259	(667,107)	-14.4%	Lower spending mainly in Field Operations (\$717,000) primarily in planned and emergency overtime. Also, Engineering & Construction (\$121,000), offset by higher spending for Deer Island (\$198,000) for shift coverage including Covid-19 coverage and unplanned maintenance including HEEC.
Fringe Benefits	20,292,494	19,813,807	(478,687)	-2.4%	Lower than budget in Health Insurance of \$383,000, due to fewer than budgeted participants in health insurance plans, increased contribution by external new hires vs. lower contribution rates of staff retiring, and the shift from family to individual plans which are less expensive. In addition, Medicare was under budget by \$72,000.
Worker's Compensation	2,286,143	1,771,286	(514,857)	-22.5%	The lower expenses were due to favorable variances in Compensation Payments of \$546,000 and Administrative Expenses of \$3,000, partially offset by Medical Payments of \$34,000. These lower payments reflect fewer accidents to date. Due to uncertainties of when spending will happen, the budget is spread evenly throughout the year.
Chemicals	10,976,301	10,515,159	(461,142)	-4.2%	Lower than budget spending on Sodium Hypochlorite of \$288,000 driven by Field Operations due to lower dosing at JCWTP and lower usage at DITP based on lower flows; Sodium Bisulfite of \$131,000 driven by Wastewater Treatment; Polymer of \$72,000 driven by DITP due to less usage for centrifuge operations, and Soda Ash of \$38,000 driven by Clinton Wastewater Treatment Plant due to timing of deliveries. This is offset by higher than budget spending on Carbon Dioxide of \$188,000 driven by Water Operations due to the force majeure surcharge and higher dose to meet pH target; and Hydrogen Peroxide of \$65,000 driven by DITP due to higher H2S gas levels. DITP flows are 8.1% lower than the budget and CWTP flows are 0.95% higher 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.
Utilities	22,503,466	19,961,606	(2,541,860)	-11.3%	Underspending in Electricity of \$1.3 million primarily at DITP (\$0.8 million) driven primarily by lower pricing associated with real time energy and ancillary pricing has been lower under the Direct Energy contract. This was offset by higher usage. Also, Water Operations (\$0.3 million) is under budget primarily due to lower rates and quantity. Diesel Fuel is under budget by \$1.3 million due to delay of purchase in order to inspect the tanks. Delivery now expected in the Fall.

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY21 Budget YTD May	FY21 Actuals May	FY21 YTD Actual vs. FY21 Budget		Explanations
			\$	%	
Maintenance	29,179,795	28,248,942	(930,853)	-3.2%	Underspending in Ongoing Maintenance by \$931,000 is largely driven by the timing of projects. Maintenance Materials which are under budget by (\$0.9 million), driven by Plant & Machinery Materials (\$0.5 million) primarily due to timing of materials including rolling stock, booster pumps, and LED lighting upgrades, HVAC Materials (\$0.4 million) due to timing of purchases including condensing units, air conditioning back-ups and exhaust fans, Electrical Materials (\$0.3 million) primarily due to lower spending on emergency lighting due to backlog of materials on hand, and Special Equipment Materials (\$0.1 million), partially offset by Warehouse Inventory (\$0.5 million) and Automotive Materials (\$0.1 million). Also, <i>Maintenance Services</i> are under budget by \$46,000 driven by Building & Grounds Services (\$0.8 million), and Electrical Services (\$0.4 million), primarily due to underspending on service contracts, Special Equipment Services (\$0.4 million), partially offset by Plant and Machinery Services (\$0.8 million) driven by timing and more work than anticipated for several contracts including DITP painting and coatings and cryogenics contracts, Pipe Services (\$0.3 million) and Computer Software Licenses (\$0.2 million).
Training & Meetings	317,138	142,316	(174,822)	-55.1%	Lower than budget spending on Training & Meetings by \$175,000 is driven by MIS (\$40,000), Field Operations (\$23,000), DI (\$27,000), Water Redundancy (\$12,000), Engineering & Construction (\$12,000), and Procurement (\$9,000) primarily due to timing and conferences that were postponed or canceled.
Professional Services	7,599,525	6,622,728	(976,797)	-12.9%	Lower than budget spending in Computer Systems Consultant of \$1.1 million in MIS primarily due to timing delays of projects including Website Redesign, PIMS Power Builder, Landesk, and Crystal Report Writer; Engineering of \$379,000 primarily in Field Operations; Legal Services of \$192,000 in Law and Administration; partially offset by Lab and Testing Analysis of \$474,000 in Operations due to the Biobot contract.
Other Materials	5,199,250	5,701,203	501,953	9.7%	Driven by higher than budgeted spending for Computer Hardware of \$521,000 in MIS, \$155,000 for Health/Safety Materials both driven by purchases due to Covid-19, and \$385,000 for Vehicle Purchases/Replacements due to timing \$287,000, timing of Postage of \$175,000 for CCR mailings, partially offset for Other Materials of \$287,000 primarily due to lower quantity of gravel needed at the Clinton landfill, \$151,000 for Vehicle Expense primarily due to less driving when vehicles were staged at various locations and last winter being mild, and Equipment/Furniture of \$107,000.

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY21 Budget YTD May	FY21 Actuals May	FY21 YTD Actual vs. FY21 Budget		Explanations
			\$	%	
Other Services	22,743,176	21,808,641	(934,535)	-4.1%	Lower than budgeted spending for Sludge Pelletization of \$899,000 due to lower year-to-date quantities; and Grit & Screening Removal of 142,000 also due to lower quantities, partially offset by higher than budgeted spending for Other Services of \$230,000 primarily in Water Operations due to the Brookline water pipeline break.
Total Direct Expenses	226,656,074	213,702,178	(12,953,896)	-5.7%	

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY21 Budget YTD May	FY21 Actuals May	FY21 YTD Actual vs. FY21 Budget		Explanations
			\$	%	
Indirect Expenses					
Insurance	2,823,894	2,738,521	(85,373)	-3.0%	Higher premiums received for property and excess general liability (\$339,000) offset by Lower Payments/Claims costs (\$425,000).
Watershed/PILOT	24,913,883	23,248,147	(1,665,736)	-6.7%	Watershed costs are lower than budget by \$1.7 million due to lower costs associated with Wages and Salaries, Maintenance, Fringe Benefits, Equipment, and Professional Services, and partially offset by a prior period adjustment.
HEEC Payment	6,660,185	9,707,576	3,047,391	45.8%	Increase is due to updated cost for HEEC capacity and service charge.
Mitigation	1,562,164	1,524,977	(37,187)	-2.4%	
Addition to Reserves	1,675,456	1,675,456	-	0.0%	
Pension Expense	11,000,000	10,000,000	(1,000,000)	-9.1%	After approval of the FY21 CEB, the retirement system received a new PERAC approved required contribution. The required deposit was reduced from \$11.0 million to \$10.0 million.
Post Employee Benefits	-	-	-		
Total Indirect Expenses	48,635,582	48,894,677	259,095	0.5%	
Debt Service					
Debt Service	418,724,267	418,724,267	-	0.0%	\$18.9 million was transferred to the defeasance account reflecting lower than budgeted interest expenses of \$9.1 million due to lower interest rates and lower SRF spending of \$7.4 million as a result of timing, and lower than anticipated Senior Debt of \$2.4 million due to the timing of borrowings.
Debt Service Assistance	-	-	-		
Total Debt Service Expenses	418,724,267	418,724,267	-	0.0%	
Total Expenses	694,015,923	681,321,122	(12,694,801)	-1.8%	

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY21 Budget YTD May	FY21 Actuals May	FY21 YTD Actual vs. FY21 Budget		Explanations
			\$	%	
Revenue & Income					
Rate Revenue	710,201,538	710,201,539	1	0.0%	
Other User Charges	8,495,314	8,589,931	94,617	1.1%	Rivers School in Weston entrance fee of \$42,000 and Crescent Ridge Dairy in Sharon of \$34,000, and other user charges of \$19,000.
Other Revenue	5,685,494	7,046,533	1,361,039	23.9%	Energy Revenue of \$676,000; Disposal of surplus materials of \$304,000; Miscellaneous Revenue of \$194,000 primarily associated with worker's compensation reimbursement for older claims; \$96,000 for permit fees; and \$68,000 in grant money.
Rate Stabilization	1,384,615	1,384,615	-	0.0%	HEEC Reserve.
Investment Income	4,675,004	3,870,847	(804,157)	-17.2%	Investment Income is under budget due to lower than budgeted interest rates (0.48% actual vs. 0.70% budget) partially offset by higher than budgeted average balances.
Total Revenue	730,441,965	731,093,465	651,500	0.09%	
Net Revenue in Excess of Expenses	36,426,042	49,772,343	13,346,301		

**ATTACHMENT 3
FY21 CIP Year-to-Date Variance Report (\$000's)**

	FY21 Budget YTD May	FY21 Actuals YTD May	YTD Actuals vs. Budget		Explanations
			\$	%	
Wastewater					
Interception & Pumping (I&P)	\$65,649	\$41,619	(\$24,031)	-36.6%	<u>Underspending</u> Prison Point Rehabilitation - Construction; \$13.1M, and Remote Headworks Shaft Access Improvements - Construction: \$875k (updated schedules) Chelsea Creek Headworks Upgrades - Construction and REI: \$2.9M (delay in work, Covid-19 delays, and time extension) Wastewater Meter System Equipment Replacement: \$2.9M (delay in award and software training) Nut Island Odor Control & HVAC Improvements Phase 2 - Construction: \$1.7M (delays in equipment delivery and Covid-19 shutdown) Interceptor Renewal No. 3, Dorchester Interceptor Sewer - Construction and CA/RI: \$537k (delayed notice-to-proceed as well as winter moratorium) Ward Street & Columbus Park Headworks - Design/CA: \$1.3M (awarded later than anticipated) Wastewater Meter System Planning/Study/Design: \$657k (due to time extension through construction installation and warranty period) Prison Point Rehabilitation - Design/CA/RI: \$473k (delay in construction award) Hayes Pump Station Rehab - Design: \$166k (award less than budgeted) <u>Offset Overspending</u> Interceptor Renewal 7, Malden & Melrose - Study/Design/CA: \$269k (consultant progress)

**ATTACHMENT 3
FY21 CIP Year-to-Date Variance Report (\$000's)**

	FY21 Budget YTD May	FY21 Actuals YTD May	YTD Actuals vs. Budget		Explanations
			\$	%	
Treatment	\$31,297	\$17,001	(\$14,295)	-45.7%	<u>Underspending</u> Clarifier Rehabilitation Phase 2 - Construction: \$10.9M, REI: \$504k, and Design: \$225k, DI Dystor Membrane Replacements: \$857k, South System Pump Station (SSPS) VFD Replacement - Design/ESDC/REI: \$683k, Screw Pump Replacement: \$560k, Landfill Cell No. 1 Closure: \$333k, Digester Cover Replacement: \$240k, HVAC Design/ESDC: \$225k, and DITP Roofing Replacement: \$222k (updated schedules) Motor Control Center and Switchgear Replacement - Design/ESDC/REI and Construction: \$1.8M (updated construction schedule) As-Needed Design: \$1.0M (less than anticipated task order work) Miscellaneous VFD Replacements FY19-FY23: \$500k (timing of work) <u>Offset Overspending</u> Winthrop Terminal Facility (WTF) VFD Replacement - Construction: \$2.3M, Gravity Thickener Rehabilitation: \$1.2M, and Gas Protection System Replacement - Phase 1: \$310k (contractor progress) CHP Alternatives Study: \$388k (timing of work) Radio Repeater System Upgrade - Phase 1: \$138k (work anticipated in FY20 completed in FY21)
Residuals	\$3,711	\$1,436	(\$2,275)	-61.3%	<u>Underspending</u> Pellet Conveyance Relocation: \$1.7M, and Residuals Mechanical/Electrical/Dryer Drum Replacements: \$568k (work anticipated in FY21 completed in FY20)
CSO	\$4,107	\$1,242	(\$2,864)	-69.7%	<u>Underspending</u> Dorchester Inflow Removal Construction: \$2.9M (updated schedules) <u>Offset Overspending</u> CSO Performance Assessment: \$140k (consultant progress)
Other Wastewater	\$32,008	\$29,143	(\$2,865)	-9.0%	<u>Underspending</u> I/I Local Financial Assistance: \$2.9M (timing of community repayments due to less than anticipated communities deferring loan repayments)
Total Wastewater	\$136,772	\$90,441	(\$46,331)	-33.9%	

**ATTACHMENT 3
FY21 CIP Year-to-Date Variance Report (\$000's)**

	FY21 Budget YTD May	FY21 Actuals YTD May	YTD Actuals vs. Budget		Explanations
			\$	%	
Waterworks					
Drinking Water Quality Improvements	\$2,395	\$1,592	(\$803)	-33.5%	<u>Underspending</u> CP-7 Existing Facilities Modifications: \$600k (updated schedule) CWTP Parapet Wall Repairs: \$177k (updated schedule)
Transmission	\$19,463	\$15,295	(\$4,168)	-21.4%	<u>Underspending</u> Metropolitan Tunnel Redundancy Preliminary Design & MEPA Review: \$1.9M, and Program Support Services: \$144k (timing of consultant work) CP-1 Shafts 6, 8, and 9A: \$1.3M (contract award later than originally anticipated and repair clamps issue) River Road Improvements-Wachusett: \$453k, and Maintenance Garage/Wash Bay/Storage Building - Design/CA/RI: \$236k (contract awards later than originally anticipated) Weston Aqueduct Sluice Gates - Construction: \$839k (delay in slide gate fabrication and updated schedule) WASM/SPSM West PRV - Construction: \$852k, Wachusett Lower Gatehouse Pipe Replacement - Construction: \$664k, Sudbury/Foss Dam Improvements - Construction: \$267k, and Wachusett Lower Gatehouse Building Rehabilitation - Construction: \$367k (updated schedules) Watershed Land: \$558k (timing of purchases) <u>Offset Overspending</u> WASM 3 Rehabilitation, CP-1: \$4.4M, and Commonwealth Ave Pump Station Improvements - Construction: \$423k (contractor progress)

**ATTACHMENT 3
FY21 CIP Year-to-Date Variance Report (\$000's)**

	FY21 Budget YTD May	FY21 Actuals YTD May	YTD Actuals vs. Budget		Explanations
			\$	%	
Distribution & Pumping	\$21,075	\$10,412	(\$10,663)	-50.6%	<u>Underspending</u> CP3-Sections 23, 24, 47 Rehabilitation and CA/RI: \$3.8M, Section 89/29 Replacement - Construction, ESDC and RE/RI Services: \$3.4M, and Cathodic Protection Metro System - Design/CA: \$206k (updated schedules) SEH Redundancy Pipeline Section 111 - Construction Phase 3: \$2.1M (timing of final work) Sections 50 & 57 Water Rehabilitation - Design/ESDC; \$759k (contract scope reduction) Section 89/29 Redundancy -Design/CA/RI: \$334k, and Revere & Malden Pipeline Improvements Redundancy Pipeline Phase 1 - Design/CA/RI: \$231k (Construction Administration and Resident Inspection services less than anticipated budgeted spending) NEH Improvements Design & ESDC: \$355k (contract awarded later than originally anticipated and updated schedule) Sections 53 and 99 Connections - Design/CA: \$219k (project was off to a slow start as a result of COVID furloughs with consultant last spring) <u>Offset Overspending</u> Section 56 Replacement/Saugus River - Design/CA: \$473K (consultant progress) SEH Redundancy Pipeline Section 111 - Construction Phase 2: \$312k (contractor progress)
Other Waterworks	\$36,898	\$10,846	(\$26,052)	-70.6%	<u>Underspending</u> Local Water Pipeline Financial Assistance Program: \$23.1M (timing of community repayments due to less than anticipated communities deferring their loan repayments) CWTP SCADA Upgrades - Design Programming RE: \$784k and Construction: \$1.9M (updated schedule for SCADA Construction) Steel Tank Improvements - Design/CA: \$336k (contract awarded later than originally anticipated) Masonry/Structural Repairs Bellevue 1/Arlington Heights - Design/ESDC: \$229k (updated schedule) <u>Offset Overspending</u> Cosgrove Intake Roof Replacement: \$266k, Bellevue 2/Turkey Hill Tanks Painting: \$177k, and Gillis Pump Station/Cottage Farm CSO Roof Replacements: \$141k (FY20 planned work completed in FY21)
Total Waterworks	\$79,832	\$38,145	(\$41,686)	-52.2%	

**ATTACHMENT 3
FY21 CIP Year-to-Date Variance Report (\$000's)**

	FY21 Budget YTD May	FY21 Actuals YTD May	YTD Actuals vs. Budget		Explanations
			\$	%	
Business & Operations Support					
Total Business & Operations Support	\$16,415	\$3,049	(\$13,366)	-81.4%	<u>Underspending</u> As-Needed Technical Assistance and CS/REI Services: \$3.0M (lower than projected task order work) Lawson Upgrade: \$1.8M, Cabling: \$1.7M, SANS Storage: \$1.0M, MAXIMO Interface Enhancements and Upgrades: \$993k, Enterprise Content Management: \$713k, Core Switches: \$500k, Disaster Recovery: \$366k, Instrumentation & Controls IT: \$310k, and Telephone System Upgrade: \$298k (schedule changes) Security Equipment & Installation: \$599k (timing of physical security initiatives) FY19-23 Vehicle Purchases: \$772k (due to timing)
Total MWRA	\$233,019	\$131,636	(\$101,383)	-43.5%	


Attachment 4
FY21 Budget vs. FY21 Projection

TOTAL MWRA	FY21 Budget	FY21 Projection	Change FY21 Budget vs FY21 Projection	
			\$	%
EXPENSES				
WAGES AND SALARIES	\$ 112,919,297	\$ 107,989,029	\$ (4,930,268)	-4.4%
OVERTIME	5,019,296	4,489,934	(529,362)	-10.5%
FRINGE BENEFITS	22,402,224	21,676,008	(726,216)	-3.2%
WORKERS' COMPENSATION	2,476,655	2,127,167	(349,488)	-14.1%
CHEMICALS	12,091,255	11,582,380	(508,875)	-4.2%
ENERGY AND UTILITIES	24,200,846	23,091,134	(1,109,712)	-4.6%
MAINTENANCE	32,618,569	32,092,117	(526,453)	-1.6%
TRAINING AND MEETINGS	405,264	220,148	(185,116)	-45.7%
PROFESSIONAL SERVICES	8,377,283	7,523,757	(853,526)	-10.2%
OTHER MATERIALS	6,706,916	6,646,576	(60,340)	-0.9%
OTHER SERVICES	24,983,777	24,272,660	(711,117)	-2.8%
TOTAL DIRECT EXPENSES	\$ 252,201,383	\$ 241,710,910	\$ (10,490,472)	-4.2%
INSURANCE	\$ 3,059,218	\$ 3,274,058	214,840	7.0%
WATERSHED/PILOT	26,422,138	24,833,965	(1,588,173)	-6.0%
HEEC PAYMENT	7,215,200	10,431,993	3,216,793	44.6%
MITIGATION	1,692,344	1,652,058	(40,286)	-2.4%
ADDITIONS TO RESERVES	1,815,077	1,815,077	-	0.0%
RETIREMENT FUND	11,000,000	10,000,000	(1,000,000)	-9.1%
POSTEMPLOYMENT BENEFITS	6,065,490	6,065,490	-	0.0%
TOTAL INDIRECT EXPENSES	\$ 57,269,467	\$ 58,072,641	\$ 803,174	1.4%
STATE REVOLVING FUND	\$ 97,811,162	\$ 88,657,490	(9,153,672)	-9.4%
SENIOR DEBT	258,730,904	255,429,061	(3,301,843)	-1.3%
SUBORDINATE DEBT	96,339,599	86,537,398	(9,802,201)	-10.2%
LOCAL WATER PIPELINE CP	5,686,864	545,023	(5,141,841)	-90.4%
CURRENT REVENUE/CAPITAL	16,200,000	16,200,000	-	0.0%
CAPITAL LEASE	3,217,060	3,217,060	-	0.0%
DEBT PREPAYMENT	3,900,000	3,900,000	-	0.0%
TOTAL DEBT SERVICE	\$ 481,885,588	\$ 454,486,031	\$ (27,399,557)	-5.7%
TOTAL EXPENSES	\$ 791,356,438	\$ 754,269,583	\$ (37,086,855)	-4.7%
REVENUE & INCOME				
RATE REVENUE	\$ 769,385,000	\$ 769,385,000	-	0.00%
OTHER USER CHARGES	9,208,367	9,253,367	45,000	0.5%
OTHER REVENUE	6,095,403	6,818,283	722,879	11.9%
RATE STABILIZATION	1,500,000	1,500,000	-	0.0%
INVESTMENT INCOME	5,167,668	4,341,478	(826,190)	-16.0%
TOTAL REVENUE & INCOME	\$ 791,356,438	\$ 791,298,127	\$ (58,311)	0.0%

VARIANCE:

\$ (37,028,544) \$ (37,028,544)


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 23, 2021
SUBJECT: FY22 Final Capital Improvement Program

COMMITTEE: Administration, Finance & Audit

 INFORMATION
 X VOTE

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


Thomas J. Durkin
Director, Finance

RECOMMENDATION:

To approve the FY22 Final Capital Improvement Program with a total budget of \$207.8 million for FY22 including \$164.8 million in project spending and \$43.0 million in community assistance.

DISCUSSION:

The Fiscal Year 2022 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 FY22 Final Capital Improvement Program projects \$207.8 million in spending for FY22, of which \$109.9 million supports Wastewater System Improvements, \$75.0 million supports Waterworks System Improvements, and \$22.9 million is for Business and Operations Support. The projects with significant spending include Local Water System Assistance Program, Nut Island Odor Control and HVAC Improvements, Prison Point Rehabilitation, NIH Section 89 & 29 Construction, Infiltration/Inflow Local Financial Assistance, Metropolitan Tunnel Preliminary Design and Massachusetts Environmental Policy Act (MEPA) Review, and WASM CP-1.

Several cost estimates have changed since the FY22 Proposed CIP based on the latest design reports and/or bid amounts. The largest of these being the Combined Heat and Power Plant at Deer Island and the South System Pump Station VFD Replacement Construction which each increased by \$12.0 million. The Clarifier Rehabilitation Phase 2 Construction, also at Deer Island, cost estimate increased by \$11.8 million.

The CIP Program continues to address critical redundancy improvements for the Metropolitan Tunnel System. The FY22 Final CIP includes approximately \$1.5 billion in spending, the same as in the FY22 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

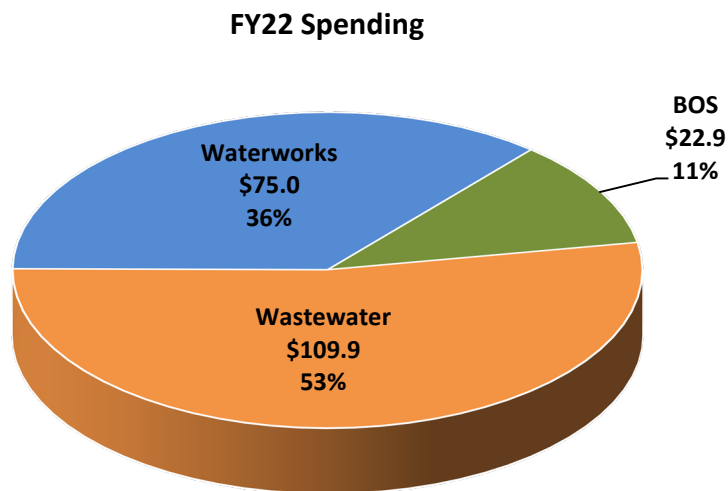
contract, Preliminary Design and MEPA Review (Massachusetts Environmental Policy Act), for \$15.7 million was awarded in May 2020 with projected spending through FY24.

The FY22 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 indebtedness during the FY19-23 cap period.

FY22 Final CIP Spending

The FY22 Final Capital Improvement Program projects \$207.8 million spending for FY22, of which \$109.9 million supports Wastewater System Improvements, \$75.0 million supports Waterworks System Improvements, and \$22.9 million is for Business and Operations Support.



The FY22 Final CIP includes \$43.0 million for community assistance programs, which are a combination of loan and partial grant programs, with net expenditures of \$25.1 million for the local Infiltration/Inflow Program and net expenditures of \$17.9 million for the Local Water Pipeline Program.

The table below lists project contracts with spending greater than approximately \$2.5 million in FY22, excluding local community assistance programs, totaling \$75.8 million and accounting for 36.5% of the total annual spending.

Project	Subphase	FY22 \$s in Millions
Corrosion & Odor Control	Nut Island Odor Control HVAC Improvement Construction Phase 2	\$22.9
Facility Asset Protection	Prison Point Rehabilitation - Construction	10.0
NIH Redundancy & Storage	Section 89 & 29 Replacement - Construction	8.2
Metro Tunnel Redundancy	Preliminary Design & Massachusetts Environmental Policy Act (MEPA) Review	6.2
Metro Redundancy Interim Improvements	WASM 3 CP-1	5.2
Deer Island Treatment Plant Asset Protection	Motor Control Center & Switchgear Replacement Construction	4.5
Facility Asset Protection	Ward St & Columbus Park Headworks Design/Construction Admin	4.3
Deer Island Treatment Plant Asset Protection	Clarifier Rehabilitation Phase 2 - Construction	3.8
Central Monitoring System	Carroll Water Treatment Plant SCADA Upgrade Construction	2.8
Deer Island Treatment Plant Asset Protection	Fire Alarm System Replacement - Construction	2.8
IT Infrastructure Program	Cabling	2.7
Braintree-Weymouth Relief	B/W Improvements - Construction	2.5
	Total Contracts > \$2.5 million (ex Loan Programs)	\$75.8
	% of FY22 Spending	36.5%
	Other Project Spending	\$132.0
	Total FY22 Spending	\$207.8

Nut Island Odor Control and HVAC Improvements - Construction Phase 2 - \$22.9 million (\$58.9 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.

Prison Point Rehabilitation Construction - \$10.0 million (\$42.5 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.

NIH Redundancy and Storage Section 89 and 29 Construction - \$8.2 million (\$32.6 million total construction cost). This contract will include replacement of a 10,500-foot portion of PCCP with class IV reinforcing wire, replacement of line valves and appurtenances on the existing ductile iron portion of Section 89, and abandonment of the 118-year old, 24-inch diameter cast iron Section 29 pipeline.

Metropolitan Tunnel Redundancy, Preliminary Design and Massachusetts Environmental Policy Act (MEPA) Review - \$6.2 million (\$15.7 million total construction cost). The Preliminary Design Engineering contract includes the preliminary geotechnical investigation (deep rock borings), evaluation of preliminary tunnel alignment and shaft site alternatives, preliminary design, preliminary contract packaging, preparation of the required MEPA filings and development of a comprehensive list of the environmental permits needed.

Metropolitan Redundancy Interim Improvements, WASM 3 CP-1 - \$5.2 million (\$19.5 million total construction cost). This first construction contract includes rehabilitation of approximately 13,800 feet of 56-inch and 60-inch diameter water main in Arlington, Somerville and Medford. The rehabilitation will consist of cleaning and internal cement mortar lining the pipe

and adding valves for better operational flexibility. In addition, two old 36-inch valves are being removed to eliminate reduced sections of pipe.

Motor Control Center and Switchgear Replacement Construction - \$4.5 million (\$11.2 million total construction cost). On-going program to replace obsolete Motor Control Centers and electrical switchgear. The design scope was revised to include replacement of switchgear in the Admin/Lab building. Construction is scheduled for FY21-FY24.

Ward Street and Columbus Park Headworks Design/Construction Administration - \$4.3 million (\$29.0 million total contract cost). This contract provides design and engineering services during construction for the upgrade of the Ward Street and Columbus Park Headworks. The upgrade will include replacement and automation of all solids handling equipment, including screens, grit collection systems, and solids conveyance systems; replacement of all influent and effluent gates and stop planks; odor control and HVAC systems; instrumentation and control systems; and repair of the concrete surfaces of the headworks channels, settling basins, and influent and effluent shafts.

Clarifier Rehabilitation Phase 2 Construction - \$3.8 million (\$149.0 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.

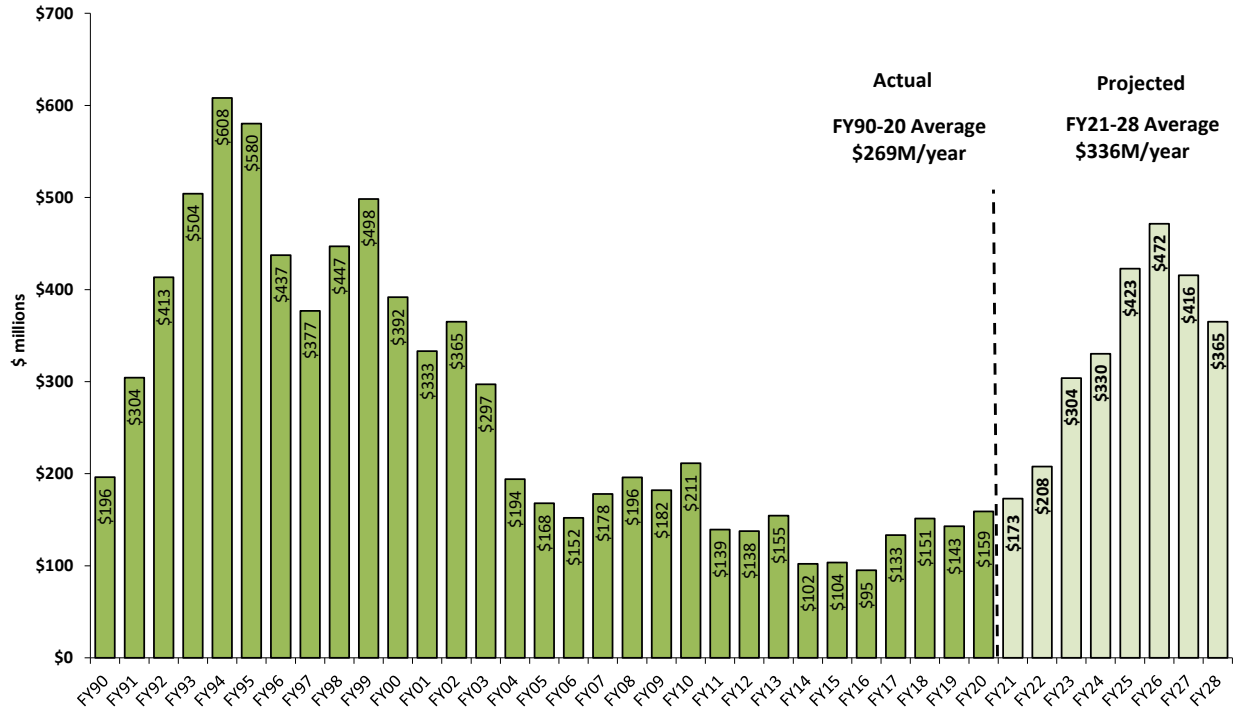
Fire Alarm System Replacement - \$2.8 million (\$28.8 million total construction cost) Project will replace obsolete fire alarm monitoring & control systems. Design awarded October 2015; construction phase to commence in FY21 and approximately every 20 years thereafter.

Carroll Water Treatment SCADA Upgrade Construction - \$2.8 million (\$14.0 million total construction cost). This project includes the replacement of PLC's nearing their end of life with an updated PLC platform. New PLC's will provide enhanced security capabilities, continued vendors support and future reliability. Project will also include standardizing PLC logic and HMI graphics, and upgrading aging field instrumentation.

Historical and Projected Spending

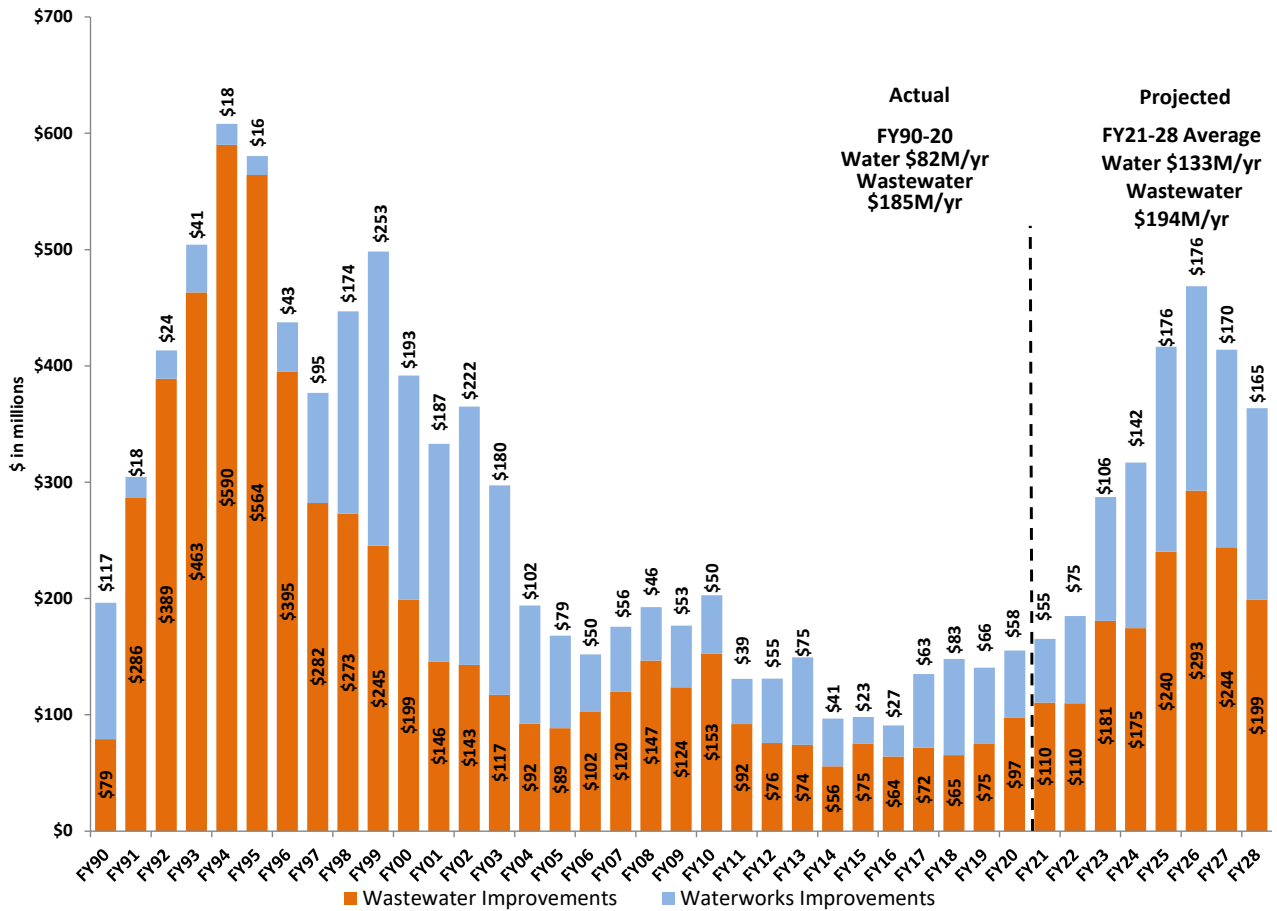
The chart below captures the historical CIP spending through FY20 and projects spending through FY28 based on the FY22 Final CIP. Average annual CIP spending through FY20 was \$269 million. Average annual CIP spending for the FY21-28 period is projected to be \$336 million.

Annual CIP Spending



The following chart shows the historical CIP spending from FY90 through FY20 by utility, with projections through FY28. Average annual CIP spending through FY20 was \$82 million for Waterworks and \$185 million for Wastewater. Average annual CIP spending for the FY21-28 period is projected to be \$133 million for Waterworks and \$194 million for Wastewater.

Annual CIP Spending by Utility



The spending projections set forth here include updates to FY22 Proposed CIP with the latest cost estimates, revised schedules, and new projects.

FY19-23 Expenditures and Five-Year Spending Cap

Spending during the FY19-23 timeframe is planned to be \$986.5 million, including local community spending of \$158.4 million for the I/I loan and grant program and \$55.1 million for the water pipeline loan program.

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	\$97.2	\$110.5	\$109.9	\$180.7	\$573.2
Waterworks System Improvements	\$65.6	\$58.1	\$54.8	\$75.0	\$106.4	\$359.9
Business & Operations Support	\$2.4	\$3.7	\$7.6	\$22.9	\$16.8	\$53.4
Total MWRA	\$142.9	\$159.0	\$172.9	\$207.8	\$303.9	\$986.5

The FY19-23 cap cash flow totals \$809.8 million, \$175.0 million below the approved Cap of \$984.8 million and \$78.2 million under the FY22 Proposed CAP calculation. Annual cash flows for the proposed Cap period are shown below in millions:

FY22 Final		FY19	FY20	FY21	FY22	FY23	Total FY19-23
	Projected Expenditures		\$142.9	\$159.0	\$172.9	\$207.8	\$303.9
I/I Program		(39.6)	(35.2)	(34.8)	(25.1)	(23.6)	(158.4)
Water Loan Program		(13.8)	(11.4)	(16.4)	(17.9)	4.4	(55.1)
MWRA Spending		\$89.4	\$112.3	\$121.7	\$164.7	\$284.8	\$773.0
Contingency		0.0	0.0	0.0	9.7	18.7	28.5
Inflation on Unawarded Construction		0.0	0.0	0.0	1.2	7.2	8.4
Chicopee Valley Aqueduct Projects		0.0	0.0	0.0	0.0	0.0	0.0
FY22 Final FY19-23 Spending		\$89.4	\$112.3	\$121.7	\$175.7	\$310.7	\$809.8

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 \$10 million for the FY19-23 timeframe total \$377.3 million, which excludes local community assistance programs, and accounts for slightly over 38% of total spending. Large initiatives include, Nut Island Odor Control HVAC Improvement at \$58.9 million (\$58.9 million total cost), Chelsea Creek Upgrades at \$53.2 million (\$84.8 million total cost), Clarifier Rehab at Deer Island \$42.8 million (\$149.0 million total cost), and Prison Point Rehabilitation at \$38.0 million (\$42.5 million total cost).

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

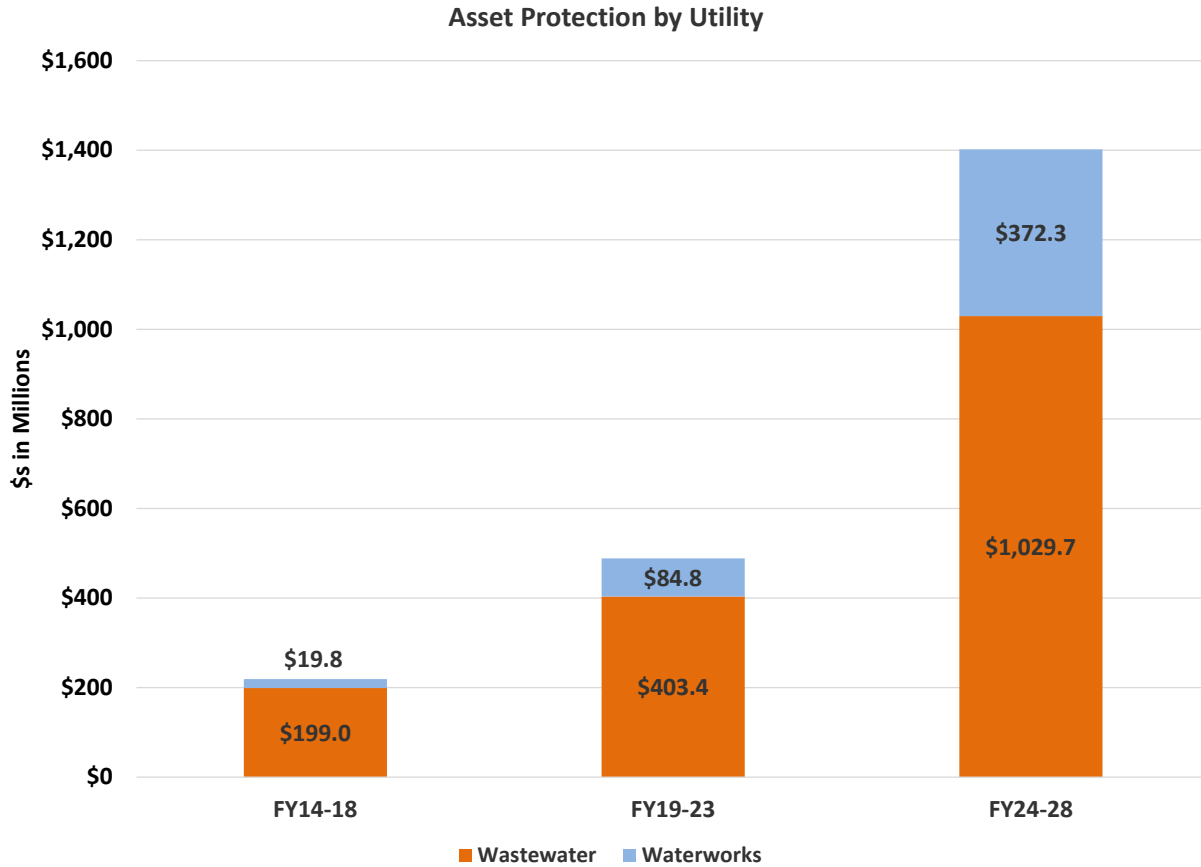
Project	Subphase	FY19-23 Spending \$s in Millions
Corrosion & Odor Control	Nut Island Odor Control HVAC Improvement Construction Phase 2	\$58.9
Facility Asset Protection	Chelsea Creek Upgrades - Construction	53.2
Deer Island Treatment Plant Asset Protection	Clarifier Rehab Phase 2 - Construction	42.8
Facility Asset Protection	Prison Point Rehabilitation - Construction	38.0
SEH Redundancy & Storage	Redundancy Pipeline Section 111 - Construction 3	20.2
Deer Island Treatment Plant Asset Protection	Gravity Thickener Rehabilitation	19.8
NIH Redundancy & Storage	Section 89 & 29 Redundancy Construction Phase 2	19.8
NIH Redundancy & Storage	Section 89 & 29 Replacement - Construction	16.3
Metro Redundancy Interim Improvement	WASM 3 CP-1	15.7
Metro Tunnel Redundancy	Preliminary Design & Massachusetts Environmental Policy Act (MEPA) Review	14.4
SEH Redundancy & Storage	Redundancy Pipeline Sect 111 - Construction 2	13.9
Facility Asset Protection	Ward St & Columbus Park Headworks Design/Construction Admin	11.5
Metro Redundancy Interim Improvement	WASM/Spot Pond Supply Mains West Pressure Reducing Valve Construction	11.2
Residuals Asset Protection	Residual Electric Machine Drum Replacement	10.6
Deer Island Treatment Plant Asset Protection	Fire Alarm System Replacement - Construction	10.6
Central Monitoring System	Carroll Water Treatment Plant SCADA Upgrade Construction	10.3
Metro Redundancy Interim Improvement	Waltham Water Pipeline Construction	10.2
	Top Spending Subphase FY19-23 (ex Loan Programs)	\$377.3
	% of 19-23 Spending	38.2%
	Remaining FY19-23 Spending	\$609.2
	Total Projected FY19-23 Spending	\$986.5

Asset Protection accounts for the largest share of capital expenditures for the FY19-23 period. The FY22 Final CIP includes \$501.8 million for asset protection initiatives, representing nearly 51% of total MWRA spending. Wastewater and Waterworks Asset Protection are \$403.4 million and \$84.8 million, respectively. Deer Island Treatment Plant Asset Protection alone accounts for \$145.5 million of Asset Protection spending. Spending for water system redundancy projects total \$198.6 million in the same FY19-23 period, accounting for 20% of total spending.

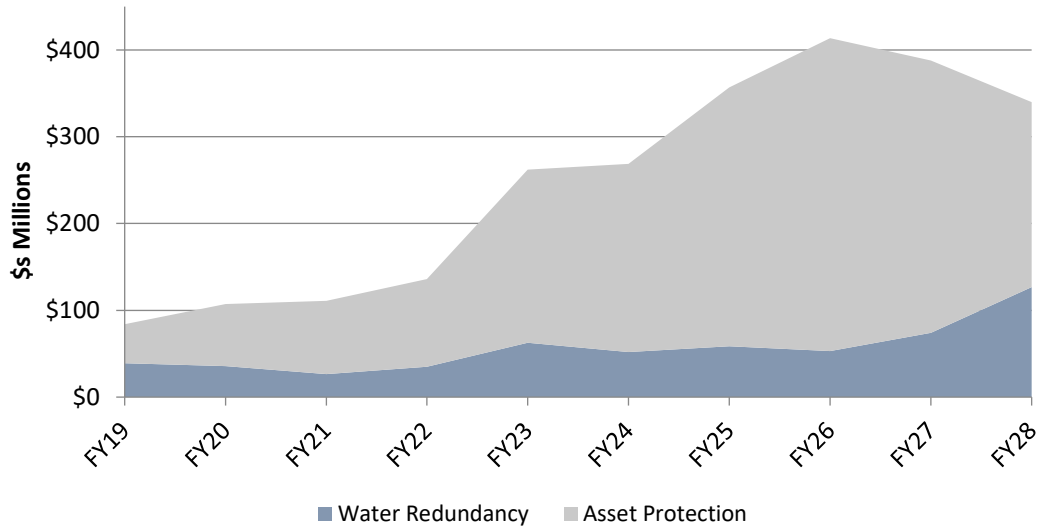
Changing nature of the CIP by Category

Project Category	Total Contract	FY14-18	FY19-23	FY24-28
Asset Protection	\$3,192.0	\$222.8	\$501.8	\$1,402.4
Water Redundancy	\$3,064.8	\$174.6	\$198.6	\$364.6
CSO	\$888.5	\$64.7	\$10.6	\$0.1
Other	\$1,477.7	\$123.5	\$275.6	\$238.0
Total	\$8,622.9	\$585.6	\$986.5	\$2,005.2
Asset Protection	37.0%	38.0%	50.9%	69.9%
Water Redundancy	35.5%	29.8%	20.1%	18.2%
CSO	10.3%	11.0%	1.1%	0.0%
Other	17.1%	21.1%	27.9%	11.9%
Total	100.0%	100.0%	100.0%	100.0%

In terms of utility spending, wastewater asset protection accounts for nearly 41% of the FY19-23 projected spending at \$403.4 million of which \$145.5 million is designated for the Deer Island Wastewater Treatment Plant and \$257.9 million for headworks, pump stations, residuals facility, and pipelines. The \$84.8 million targeted for waterworks asset protection includes \$38.1 million for water pipelines.



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 \$501.8 million or 50.9% of projected spending. Similarly, water redundancy spending for FY19-23 is projected at \$198.6 million or 20.1% of projected FY19-23 spending. For the FY24-28 spending window, total asset protection is projected at \$1.4 billion or 69.9% of projected spending. Similarly, water redundancy spending for FY24-28 is projected at \$364.6 million or 18.2% of projected FY24-28 spending.



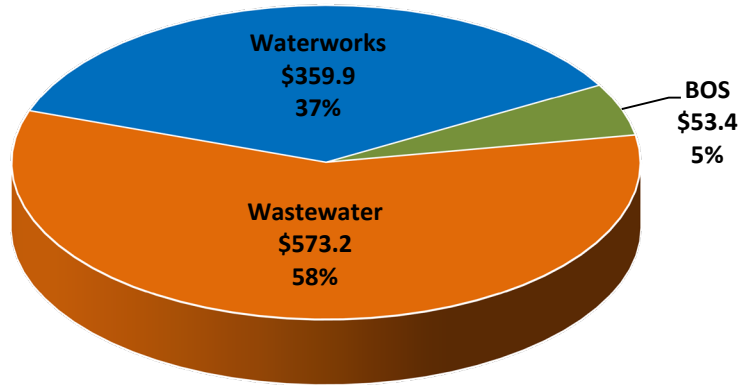
FY22 CIP Future Expenditures

The FY22 Final CIP contains future spending (beyond FY20) estimated at \$4.0 billion. The table below represents the projected spending by the major project categories:

	Future Spending Beyond FY20	FY19	FY20	FY21	FY22	FY23	Total FY19-23	Beyond 23
Wastewater System Improvements	\$1,715.5	\$74.8	\$97.2	\$110.5	\$109.9	\$180.7	\$573.2	\$1,314.4
Interception & Pumping	595.4	23.1	33.1	53.1	52.4	71.8	233.6	418.1
Treatment	892.8	10.0	14.2	18.0	28.0	83.8	154.0	763.1
Residuals	91.3	0.8	13.4	1.6	0.1	0.7	16.6	88.8
CSO	8.3	1.2	1.3	2.9	4.3	0.9	10.6	0.1
Other Wastewater	127.7	39.6	35.2	34.8	25.1	23.6	158.4	44.2
Waterworks System Improvements	\$2,258.6	\$65.6	\$58.1	\$54.8	\$75.0	\$106.4	\$359.9	\$2,022.3
Drinking Water Quality Improvements	56.9	0.8	1.5	2.2	3.2	5.8	13.5	45.7
Transmission	1,714.8	9.9	12.8	21.4	29.2	55.5	128.9	1,608.6
Distribution & Pumping	525.6	36.6	26.6	13.3	19.1	34.6	130.3	458.5
Other Waterworks	(38.7)	18.4	17.0	17.9	23.5	10.5	87.2	(90.5)
Business & Operations Support	\$73.1	\$2.4	\$3.7	\$7.6	\$22.9	\$16.8	\$53.4	\$25.9
Total MWRA	\$4,047.2	\$142.9	\$159.0	\$172.9	\$207.8	\$303.9	\$986.5	\$3,362.6

Spending over the FY19-23 period totals \$986.5 million with Wastewater projects accounting for \$573.2 million of total period spending or 58% and Waterworks planned spending following at \$359.9 million or 37%. Spending beyond FY23 totals \$3.4 billion, including \$1.3 billion for Wastewater projects and \$2.0 billion for Waterworks projects. Beyond FY23 spending is evenly split between Redundancy and Asset Protection initiatives with projected spending of \$1.7 billion each. Beyond FY23 spending for the Metro Tunnel Redundancy project is estimated at \$1.5 billion. Redundancy project spending accelerates in the FY24-28 window.

FY19-23 Spending



Major Planned Contract Awards for FY22:

In Fiscal Year 2022, 80 contracts totaling \$420.0 million are projected to be awarded. The largest ten projected contract awards total \$298.5 million and account for 71.1% of expected awards and are presented in the following table.

Project	Subphase	Notice to Proceed	Total Contract Amount \$ in Millions
Deer Island Treatment Plant Asset Protection	Clarifier Rehab Phase 2 - Construction	Mar-22	\$149.0
Facility Asset Protection	Prison Point Rehab - Construction	Jul-21	42.5
Deer Island Treatment Plant Asset Protection	Fire Alarm System Replacement - Construction	Oct-21	28.8
New Connect Mains-Shaft 7	CP3-Sect 23,24,47, Rehabilitation	Feb-22	14.7
Central Monitoring System	Carroll Water Treatment Plant SCADA Upgrade Construction	Sep-21	14.0
Metro Redundancy Interim Improvement	Waltham Water Pipeline Construction	Feb-22	13.8
Deer Island Treatment Plant Asset Protection	Motor Control Center & Switchgear Replacement Construction	Aug-21	11.2
Braintree-Weymouth Relief	Braintree/Weymouth Improvements - Construction	Sep-21	8.8
Siphon Structure Rehabilitation	Construction	May-22	8.3
Application Improvement Program	Lawson Upgrade	Oct-21	7.6
Top Ten Contracts			\$298.5
% of Total Planned Awards			71.1%
80 Contract Awards Planned			\$420.0

Of the 80 planned contract awards for FY22, 36 are for Waterworks, 33 Wastewater and 11 Business and Operation Services with associated dollar awards of \$92.8 million, \$308.2 million, and \$19.0 million, respectively. Deer Island's Clarifier Rehabilitation Phase 2 Construction is the largest planned award at \$149.0 million.

CIP Review and Adoption Process

In December, the MWRA transmitted the FY22 Proposed Capital Improvement Program to the Advisory Board for its review and comments.

ATTACHMENTS:

- A. FY22 Project Level Expenditure Forecast
- B. Overview of the FY22 Final CIP and Changes from the FY21 Final CIP

ATTACHMENT A
FY22 Final CIP
Expenditure Forecast at Project Level
\$000s

Program / Project Name	Total Program/Project Amount	Spending through FY20	Remaining Balance	FY21	FY22	FY23	FY19-FY23	FY24-FY28	Beyond FY28
Total MWRA	8,622,864	4,575,688	4,047,176	172,866	207,762	303,929	986,482	2,005,226	1,357,394
Wastewater	3,948,852	2,233,401	1,715,451	110,487	109,856	180,742	573,169	1,150,130	164,235
Interception & Pumping	1,254,099	658,651	595,448	53,139	52,404	71,768	233,562	342,824	75,312
102 Quincy Pump Facilities	25,907	25,907	completed project						
104 Braintree-Weymouth Relief Facilities	242,386	228,390	13,995	470	3,117	5,807	10,080	4,601	
105 New Neponset Valley Relief Sewer	30,300	30,300	completed project						
106 Wellesley Extension Replacement Sewer	64,359	64,359	completed project						
107 Framingham Extension Relief Sewer	47,856	47,856	completed project						
127 Cummingsville Replacement Sewer	8,999	8,999	completed project						
130 Siphon Structure Rehabilitation	19,023	1,015	18,008	1,425	975	6,038	8,513	9,570	
131 Upper Neponset Valley Sewer System	54,174	54,174	completed project						
132 Corrosion & Odor Control	100,175	11,725	88,450	20,948	24,761	13,160	64,414	28,741	840
136 West Roxbury Tunnel	11,314	10,314	1,000					1,000	
137 Wastewater Central Monitoring	27,482	19,913	7,569	130	40	447	747	6,953	
139 South System Relief Project	4,939	3,439	1,500					1,500	
141 Wastewater Process Optimization	8,310	1,721	6,589	281	200		701	4,531	1,577
142 Wastewater Meter System - Equipment Replacement	21,938	7,838	14,100	1,962	2,533	478	7,087		9,126
143 Regional I/I Management & Planning	169	169	completed project						
145 Facility Asset Protection	581,071	142,532	438,539	27,923	20,777	45,838	142,020	280,232	63,769
146 Deer Island Cross Harbor Tunnel	5,000	-	5,000					5,000	
147 Randolph Trunk Sewer Relief	698	-	698					698	
Treatment	1,218,236	325,426	892,810	17,978	27,986	83,767	154,000	672,878	90,201
182 Deer Island Primary and Secondary Treatment	(958)	(958)	completed project						
200 Deer Island Plant Optimization	33,279	33,279	completed project						
206 Deer Island Treatment Plant Asset Protection	1,150,209	274,838	875,372	17,714	25,771	79,539	145,502	662,147	90,201
210 Clinton Wastewater Treat Plant	33,494	16,056	17,438	264	2,215	4,228	8,498	10,731	
211 Laboratory Services	2,212	2,212	completed project						
Residuals	170,503	79,249	91,254	1,625	56	733	16,616	23,114	65,726
261 Residuals	63,811	63,811	completed project						
271 Residuals Asset Protection	106,692	15,438	91,254	1,625	56	733	16,616	23,114	65,726

ATTACHMENT A
FY22 Final CIP
Expenditure Forecast at Project Level
\$000s

Program / Project Name	Total Program/Project Amount	Spending through FY20	Remaining Balance	FY21	FY22	FY23	FY19-FY23	FY24-FY28	Beyond FY28
CSO	913,147	904,869	8,278	2,931	4,297	905	10,607	144	
CSO MWRA Managed	434,157	433,534	623		523	100	623		
339 North Dorchester Bay	221,510	221,510	completed project						
347 East Boston Branch Sewer Relief	85,637	85,637	completed project						
348 BOS019 Storage Conduit	14,288	14,288	completed project						
349 Chelsea Trunk Sewer	30,402	29,779	623		523	100	623		
350 Union Park Detention Treatment Facility	49,583	49,583	completed project						
353 Upgrade Existing CSO Facilities	22,385	22,385	completed project						
354 Hydraulic Relief Projects	2,295	2,295	completed project						
355 MWR003 Gate & Siphon	4,424	4,424	completed project						
357 Charles River CSO Controls	3,633	3,633	completed project						
CSO Community Managed	423,780	420,017	3,763	1,581	1,454	727	3,763		
340 Dorchester Bay Sewer Separation (Fox Point)	55,029	55,029	completed project						
341 Dorchester Bay Sewer Separation (Commercial Point)	61,443	59,862	1,581	1,581			1,581		
342 Neponset River Sewer Separation	2,492	2,492	completed project						
343 Constitution Beach Sewer Separation	3,731	3,731	completed project						
344 Stony Brook Sewer Separation	44,319	44,319	completed project						
346 Cambridge Sewer Separation	104,552	104,552	completed project						
351 BWSC Floatables Controls	946	946	completed project						
352 Cambridge Floatables Control	1,127	1,127	completed project						
356 Fort Point Channel Sewer Separation	11,507	11,507	completed project						
358 Morrissey Boulevard Drain	32,181	32,181	completed project						
359 Reserved Channel Sewer Separation	70,524	70,524	completed project						
360 Brookline Sewer Separation	24,715	24,715	completed project						
361 Bulfinch Triangle Sewer Separation	9,032	9,032	completed project						
362 East Boston CSO Control	2,182	-	2,182		1,454	727	2,182		
324 CSO Support	55,210	51,318	3,892	1,350	2,320	78	6,221	144	
Other Wastewater	392,866	265,205	127,661	34,814	25,114	23,568	158,383	111,170	(67,004)
128 I/I Local Financial Assistance	392,585	264,924	127,661	34,814	25,114	23,568	158,383	111,170	(67,004)
138 Sewerage System Mapping Upgrades	281	281	completed project						

ATTACHMENT A
FY22 Final CIP
Expenditure Forecast at Project Level
\$000s

Program / Project Name	Total Program/Project Amount	Spending through FY20	Remaining Balance	FY21	FY22	FY23	FY19-FY23	FY24-FY28	Beyond FY28
Waterworks	4,493,700	2,235,116	2,258,584	54,829	75,012	106,404	359,945	829,181	1,193,158
Drinking Water Quality Improvements	709,234	652,292	56,942	2,207	3,222	5,778	13,526	17,464	28,271
542 Carroll Water Treatment Plant (CWTP)	438,843	424,567	14,277	2,226	2,019	782	6,477	9,250	
543 Quabbin Water Treatment Plant	19,973	19,973	completed project						
544 Norumbega Covered Storage Facility	106,674	106,674	completed project						
545 Blue Hills Covered Storage	40,083	40,083	completed project						
550 Spot Pond Covered Storage Facility	60,126	60,126	completed project						
555 Carroll Water Treatment Plant (CWTP) Asset Protection	43,535	869	42,666	(18)	1,203	4,996	7,050	8,214	28,271
Transmission	2,562,767	847,962	1,714,805	21,414	29,222	55,533	128,931	321,697	1,286,939
597 Winsor Station Pipeline	52,770	5,938	46,833		789		993	45,391	653
601 Sluice Gate Rehabilitation	9,158	9,158	completed project						
604 MetroWest Tunnel	700,184	697,182	3,002					3,002	
615 Chicopee Valley Aqueduct Redundancy	8,666	8,666	completed project						
616 Quabbin Transmission System	21,598	9,175	12,423	506	2,874	5,121	9,009	3,897	25
617 Sudbury/Weston Aqueduct Repairs	12,958	2,627	10,331	1,497	912		2,804	7,255	667
620 Wachusett Reservoir Spillway Improvements	9,287	9,287	completed project						
621 Watershed Land	29,000	26,029	2,971	943	1,028	1,000	6,154		
622 Cosgrove Tunnel Redundancy	58,628	58,619	9	9			6,610		
623 Dam Projects	7,223	3,259	3,964	324	160	2,956	3,583	525	
625 Metropolitan Tunnel Redundancy	1,500,218	5,410	1,494,807	5,985	8,300	6,700	22,939	188,228	1,285,594
628 Metropolitan Redundancy Interim Improvements	129,526	12,611	116,916	10,996	13,533	35,513	69,815	56,874	
630 Watershed Division Capital Improvements	23,550	-	23,550	1,156	1,626	4,243	7,025	16,525	
Distribution And Pumping	1,053,153	527,592	525,561	13,313	19,118	34,631	130,296	395,511	62,989
618 Peabody Pipeline Project	1,448	1,448	completed project				389		
677 Valve Replacement	22,249	12,016	10,233					6,747	3,485
678 Boston Low Service - Pipe & Valve Rehabilitation	23,691	23,691	completed project						
683 Heath Hill Road Pipe Replacement	19,358	19,358	completed project						
689 James L. Gillis Pump Station Rehabilitation	33,419	33,419	completed project						
692 Northern High Service (NHS) - Section 27 Improvements	1,665	124	1,541	1	14	13	28	1,514	
693 NHS - Revere & Malden Pipeline Improvements	85,985	31,010	54,974	1,830	1,204	4,397	9,880	45,350	2,193
702 New Connecting Mains - Shaft 7 to WASM 3	60,694	13,982	46,712	1,365	3,366	10,758	16,546	31,224	
704 Rehab of Other Pump Stations	51,290	30,090	21,200			747	780	20,453	
706 NHS - Connecting Mains from Section 91	2,360	2,360	completed project						
708 Northern Extra High Service (NEH) - New Pipelines	42,467	3,632	38,835	235	1,604	3,600	5,440	33,000	395

ATTACHMENT A
FY22 Final CIP
Expenditure Forecast at Project Level
\$000s

Program / Project Name	Total Program/Project Amount	Spending through FY20	Remaining Balance	FY21	FY22	FY23	FY19-FY23	FY24-FY28	Beyond FY28
712 Cathodic Protection Of Distribution Mains	61,586	1,160	60,426		1,024	2,900	4,815	56,502	
713 Spot Pond Supply Mains Rehabilitation	66,534	65,489	1,045	4	241	300	545	500	
714 Southern Extra High Sections 41 & 42	3,657	3,657	completed project						
719 Chestnut Hill Connecting Mains	38,886	18,287	20,599					20,590	9
720 Warren Cottage Line Rehabilitation	1,205	1,205	completed project						
721 Southern Spine Distribution Mains	89,798	37,471	52,327	704	443	651	2,587	50,302	226
722 Northern Intermediate High (NIH) Redundancy & Storage	140,130	73,739	66,391	1,605	9,107	9,084	44,640	46,585	10
723 Northern Low Service Rehabilitation - Section 8	60,834	5,350	55,484	998	1,313	1,194	5,901	51,290	688
725 Hydraulic Model Update	598	598	completed project						
727 Southern Extra High (SEH) Redundancy & Storage	140,513	58,833	81,680	6,571	495	496	37,951	18,136	55,981
730 Weston Aqueduct Supply Mains (WASM)	80,457	80,403	54		54		54		
731 Lynnfield Pipeline	5,626	5,626	completed project						
732 Walnut St. & Fisher Hill Pipeline Rehabilitation	2,717	2,717	completed project						
735 Section 80 Rehabilitation	15,985	1,925	14,060		251	491	742	13,318	
Other Waterworks	168,547	207,270	(38,724)	17,894	23,450	10,463	87,192	94,509	(185,040)
753 Central Monitoring System	43,729	22,250	21,479	462	3,646	9,301	14,954	8,070	
763 Distribution Systems Facilities Mapping	2,799	1,036	1,763		500	385	885	878	
764 Local Water Infrastructure Rehab	7,488	7,488	completed project						
765 Local Water System Assistance Program	-	165,539	(165,539)	16,372	17,909	(4,443)	55,104	20,215	(215,592)
766 Waterworks Facility Asset Protection	114,531	10,957	103,574	1,060	1,395	5,220	16,249	65,347	30,552
Business & Operations Support	180,312	107,171	73,142	7,550	22,895	16,783	53,368	25,914	
881 Equipment Purchase	41,106	24,011	17,094	1,774	3,197	2,967	10,092	9,157	
925 Technical Assistance	1,350	-	1,350		450	449	899	451	
930 MWRA Facility - Chelsea	9,812	9,812	completed project						
931 Business Systems Plan	24,562	24,562	completed project						
932 Environmental Remediation	1,479	1,479	completed project						
933 Capital Maintenance Planning/Development	26,869	17,238	9,631	4,323	3,884	1,425	12,669		
934 MWRA Facilities Management & Planning	5,071	371	4,700		1,408	1,667	3,075	1,625	
935 Alternative Energy Initiatives	23,684	18,184	5,500				(234)	5,500	
940 Applications Improvements Program	20,227	3,191	17,036	548	5,479	5,091	11,417	5,918	
942 Information Security Program (ISP)	7,976	1,988	5,988	4	2,584	1,700	4,568	1,700	
944 Information Technology Management Program	200	-	200	40	160		200		
946 IT Infrastructure Program	17,977	6,335	11,642	861	5,733	3,484	10,683	1,563	

ATTACHMENT B
Overview of the Final FY22 CIP and Changes from the Final FY21 CIP

Program and Project	FY21 Final			
	Total Budget Amount	FY19-23	FY24-28	Beyond 28
Total MWRA	8,537,295	1,055,235	1,859,106	1,349,195
Wastewater	3,834,479	601,117	1,044,733	127,310
Interception & Pumping	1,238,479	221,249	356,386	58,444
102 Quincy Pump Facilities	25,907	-	-	-
104 Braintree-Weymouth Relief Facilities	241,415	1,797	11,913	-
105 New Neponset Valley Relief Sewer	30,300	-	-	-
106 Wellesley Extension Replacement Sewer	64,359	-	-	-
107 Framingham Extension Relief Sewer	47,856	-	-	-
127 Cummingsville Replacement Sewer	8,999	-	-	-
130 Siphon Structure Rehabilitation	14,668	3,520	10,208	-
131 Upper Neponset Valley Sewer	54,174	-	-	-
132 Corrosion & Odor Control	97,949	62,051	28,878	840
136 West Roxbury Tunnel	11,314	-	1,000	-
137 Wastewater Central Monitoring	27,482	1,226	6,474	-
139 South System Relief Project	4,939	-	1,500	-
141 Wastewater Process Optimization	8,933	701	5,154	1,577
142 Wastewater Meter System-Equipment	21,938	7,391	-	8,823
143 Regional I/I Management Planning	169	-	-	-
145 Facility Asset Protection	572,379	144,301	285,823	47,204
146 D.I. Cross Harbor Tunnel Inspection	5,000	-	5,000	-
147 Randolph Trunk Sewer Relief	698	262	436	-
Treatment	1,121,329	201,050	550,032	69,089
182 DI Primary and Secondary	(958)	-	-	-
200 DI Plant Optimization	33,279	-	-	-
206 DI Treatment Plant Asset Protection	1,055,309	192,954	540,906	69,090
210 Clinton Wastewater Treat Plant	31,487	8,096	9,126	-
211 Laboratory Services	2,212	-	-	-
Residuals	169,281	16,760	30,935	56,540
261 Residuals	63,811	-	-	-
271 Residuals Asset Protection	105,470	16,760	30,935	56,540

Total Budget Amount	FY22 Final		
	FY19-23	FY24-28	Beyond 28
8,622,865	986,484	2,005,230	1,357,395
3,948,852	573,167	1,150,131	164,234
1,254,100	233,562	342,826	75,312
25,907	-	-	-
242,386	10,080	4,601	-
30,300	-	-	-
64,359	-	-	-
47,856	-	-	-
8,999	-	-	-
19,023	8,513	9,570	-
54,174	-	-	-
100,175	64,414	28,741	840
11,314	-	1,000	-
27,482	747	6,953	-
4,939	-	1,500	-
8,310	701	4,531	1,577
21,938	7,087	-	9,126
169	-	-	-
581,071	142,020	280,232	63,769
5,000	-	5,000	-
698	-	698	-
1,218,236	154,000	672,878	90,200
(958)	-	-	-
33,279	-	-	-
1,150,209	145,502	662,147	90,201
33,494	8,498	10,731	-
2,212	-	-	-
170,503	16,616	23,114	65,726
63,811	-	-	-
106,692	16,616	23,114	65,726

Total Budget Amount	Change from Final FY21		
	FY19-23	FY24-28	Beyond 28
85,568	(68,752)	146,125	8,197
114,373	(27,950)	105,398	36,924
15,621	12,313	(13,560)	16,868
-	-	-	-
971	8,283	(7,312)	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
4,355	4,993	(638)	-
-	-	-	-
2,226	2,363	(137)	-
-	-	-	-
-	(479)	479	-
-	-	-	-
(623)	-	(623)	-
-	(304)	-	303
-	-	-	-
8,692	(2,281)	(5,591)	16,565
-	-	-	-
-	(262)	262	-
96,907	(47,050)	122,846	21,111
-	-	-	-
-	-	-	-
94,900	(47,452)	121,241	21,111
2,007	402	1,605	-
-	-	-	-
1,222	(144)	(7,821)	9,186
-	-	-	-
1,222	(144)	(7,821)	9,186

ATTACHMENT B
Overview of the Final FY22 CIP and Changes from the Final FY21 CIP

Program and Project	FY21 Final				FY22 Final				Change from Final FY21			
	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	912,524	10,041	85	-	913,147	10,606	143	-	623	565	58	-
324 CSO Support	55,210	6,279	86	-	55,210	6,221	144	-	-	(58)	58	-
339 North Dorchester Bay	221,510	-	-	-	221,510	-	-	-	-	-	-	-
340 Dorchester Bay Sewer Separation (Fox Point)	55,029	-	-	-	55,029	-	-	-	-	-	-	-
341 Dorchester Bay Sewer Separation (Commercial Point)	63,625	3,763	-	-	61,443	1,581	-	-	(2,182)	(2,182)	-	-
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	-	-	-	-	-	-	-
347 East Boston Branch Sewer Relief	85,637	-	-	-	85,637	-	-	-	-	-	-	-
348 BOS019 Storage Conduit	14,288	-	-	-	14,288	-	-	-	-	-	-	-
349 Chelsea Trunk Sewer	29,779	-	-	-	30,402	623	-	-	623	623	-	-
350 Union Park Detention Treatment Facility	49,583	-	-	-	49,583	-	-	-	-	-	-	-
351 BWSC Floatables Controls	946	-	-	-	946	-	-	-	-	-	-	-
352 Cambridge Floatables Control	1,127	-	-	-	1,127	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-
356 Fort Point Channel Sewer Separation	11,507	-	-	-	11,507	-	-	-	-	-	-	-
357 Charles River CSO Controls	3,633	-	-	-	3,633	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-
362 East Boston CSO Control	-	-	-	-	2,182	2,182	-	-	2,182	2,182	-	-
Other Wastewater	392,866	152,017	107,295	(56,763)	392,866	158,383	111,170	(67,004)	-	6,366	3,875	(10,241)
128 I/I Local Financial Assistance	392,585	152,017	107,295	(56,763)	392,585	158,383	111,170	(67,004)	-	6,366	3,875	(10,241)
138 Sewerage System Mapping Upgrade	281	-	-	-	281	-	-	-	-	-	-	-
Total Waterworks	4,529,816	404,762	791,760	1,221,888	4,493,700	359,949	829,185	1,193,161	(36,116)	(44,813)	37,425	(28,727)
Drinking Water Quality	708,071	16,377	13,450	28,271	709,234	13,527	17,464	28,271	1,163	(2,850)	4,014	-
542 Carroll Water Treatment Plant	438,652	6,285	9,250	-	438,843	6,477	9,250	-	191	192	-	-
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	42,563	10,092	4,200	28,271	43,535	7,050	8,214	28,271	972	(3,042)	4,014	-

ATTACHMENT B
Overview of the Final FY22 CIP and Changes from the Final FY21 CIP

Program and Project	FY21 Final				FY22 Final				Change from Final FY21			
	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	2,620,959	130,394	365,315	1,300,055	2,562,768	128,934	321,699	1,286,941	(58,191)	(1,460)	(43,616)	(13,114)
597 Winsor Station Pipeline	53,203	1,304	45,513	653	52,770	993	45,391	653	(433)	(311)	(122)	-
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	22,246	11,099	2,455	25	21,598	9,009	3,897	25	(648)	(2,090)	1,442	-
617 Sudbury/Weston Aqueduct Repairs	12,496	2,341	7,257	667	12,958	2,804	7,255	667	462	463	(2)	-
620 Wachusett Reservoir Spillway Improvement	9,287	-	-	-	9,287	-	-	-	-	-	-	-
621 Watershed Land	29,000	6,154	-	-	29,000	6,154	-	-	-	-	-	-
622 Cosgrove/Wachusett Redundancy	58,592	6,574	-	-	58,628	6,610	-	-	36	36	-	-
623 Dam Projects	7,023	3,861	46	-	7,223	3,583	525	-	200	(278)	479	-
625 Metro Tunnel Redundancy	1,506,963	23,945	197,424	1,282,137	1,500,218	22,939	188,228	1,285,594	(6,745)	(1,006)	(9,196)	3,457
628 Metro Redundancy Interim Improvement	180,056	65,860	94,787	16,571	129,526	69,815	56,874	-	(50,530)	3,955	(37,913)	(16,571)
630 Watershed Division Capital Improvement	24,083	9,254	14,829	-	23,550	7,025	16,525	-	(533)	(2,229)	1,696	-
Distribution & Pumping	1,039,778	163,412	349,731	62,281	1,053,151	130,297	395,512	62,987	13,373	(33,115)	45,781	706
618 Peabody Pipeline	1,448	389	-	-	1,448	389	-	-	-	-	-	-
677 Valve Replacement	22,279	-	6,747	3,515	22,249	-	6,747	3,485	(30)	-	-	(30)
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	1,668	28	1,517	-	1,665	28	1,514	-	(3)	-	(3)	-
693 NHS - Revere & Malden Pipeline Improvement	86,011	19,062	36,349	2,039	85,985	9,880	45,350	2,193	(26)	(9,182)	9,001	154
702 New Connect Mains-Shaft 7 to WASM 3	57,572	26,320	18,327	-	60,694	16,546	31,224	-	3,122	(9,774)	12,897	-
704 Rehabilitation of Other Pump Stations	51,290	780	20,453	-	51,290	780	20,453	-	-	-	-	-
706 NHS-Connecting Mains from Section 91	2,360	-	-	-	2,360	-	-	-	-	-	-	-
708 Northern Extra High Service New Pipelines	40,180	2,525	33,850	173	42,467	5,440	33,000	395	2,287	2,915	(850)	222
712 Cathodic Protection Of Distrubution Mains	63,483	12,066	51,148	-	61,586	4,815	56,502	-	(1,897)	(7,251)	5,354	-
713 Spot Pond Supply Mains Rehabilitation	66,289	800	-	-	66,534	545	500	-	245	(255)	500	-
714 Southern Extra High Sections 41 & 42	3,657	-	-	-	3,657	-	-	-	-	-	-	-
719 Chestnut Hill Connecting Mains	38,945	-	20,648	11	38,886	-	20,590	9	(59)	-	(58)	(2)
720 Warren Cottage Line Rehabilitation	1,205	-	-	-	1,205	-	-	-	-	-	-	-
721 South Spine Distribution Mains	90,585	3,241	50,423	238	89,798	2,587	50,302	226	(787)	(654)	(121)	(12)
722 NIH Redundancy & Storage	128,729	45,574	34,250	10	140,130	44,640	46,585	10	11,401	(934)	12,335	-
723 Northern Low Service Rehabilitation Section 8	60,945	13,194	44,664	133	60,834	5,901	51,290	688	(111)	(7,293)	6,626	555
724 Northern High Service - Pipeline Rehabilitation	-	-	-	-	-	-	-	-	-	-	-	-
725 Hydraulic Model Update	598	-	-	-	598	-	-	-	-	-	-	-
727 Southern Extra High Redundancy & Storage	141,243	38,522	18,114	56,162	140,513	37,951	18,136	55,981	(730)	(571)	22	(181)
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 B
Overview of the Final FY22 CIP and Changes from the Final FY21 CIP

Program and Project	FY21 Final				FY22 Final				Change from Final FY21			
	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	16,024	858	13,240	-	15,985	742	13,318	-	(39)	(116)	78	-
Other	161,008	94,579	63,264	(168,721)	168,547	87,191	94,510	(185,040)	7,539	(7,388)	31,246	(16,319)
753 Central Monitoring System	42,082	16,960	4,418	-	43,729	14,954	8,070	-	1,647	(2,006)	3,652	-
763 Distribution Systems Facilities Mapping	2,799	1,183	580	-	2,799	885	878	-	-	(298)	298	-
764 Local water infrastructure rehabilitation Assistance	7,488	-	-	-	7,488	-	-	-	-	-	-	-
765 Local Water Pipeline Improvement Loan Program	-	54,163	4,819	(199,255)	-	55,104	20,215	(215,592)	-	941	15,396	(16,337)
766 Waterworks Facility Asset Protection	108,639	22,274	53,447	30,534	114,531	16,249	65,347	30,552	5,892	(6,025)	11,900	18
Business & Operations Support	173,000	49,356	22,613	-	180,313	53,368	25,914	-	7,311	4,011	3,302	-
881 Equipment Purchase	42,711	9,914	10,940	-	41,106	10,092	9,157	-	(1,605)	178	(1,783)	-
925 Technical Assistance	1,125	1,125	-	-	1,350	899	451	-	225	(226)	451	-
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	26,385	12,184	-	-	26,869	12,669	-	-	484	485	-	-
934 MWRA Facilities Management	3,071	1,075	1,625	-	5,071	3,075	1,625	-	2,000	2,000	-	-
935 Alternative Energy Initiatives	23,700	(234)	5,516	-	23,684	(234)	5,500	-	(16)	-	(16)	-
940 Applicat Improv Program	18,249	10,971	4,385	-	20,227	11,417	5,918	-	1,978	446	1,533	-
942 Info Security Program ISP	5,506	3,798	-	-	7,976	4,568	1,700	-	2,470	770	1,700	-
944 Info Tech Mgmt Program	200	200	-	-	200	200	-	-	-	-	-	-
946 IT Infrastructure Program	16,202	10,325	146	-	17,977	10,683	1,563	-	1,775	358	1,417	-

STAFF SUMMARY

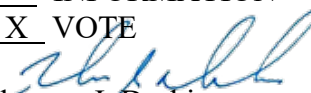
TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: June 23, 2021
SUBJECT: Final FY22 Current Expense Budget



COMMITTEE Administration, Finance & Audit

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

 INFORMATION
 X VOTE



Thomas J. Durkin
Director, Finance

The Proposed FY22 Current Expense Budget (CEB) submitted to the Advisory Board at the February 2021 Board meeting included a 3.6% combined assessment increase.

MWRA received the Advisory Board comments and recommendations in May 2021, which recommended a combined assessment increase of 2.95% representing a \$4.8 million reduction to the Proposed FY22 Rate Revenue Requirement. At the same time, the Authority updated the Proposed Budget with the latest information, incorporated the majority of the Advisory Board recommendations and was able to achieve a 2.95% combined assessment increase.

As every year, the main focus is on next year's budget, but always with the goal of continuing to utilize MWRA's multi-year rate management strategy to provide sustainable, and predictable assessment increases to its member communities. To achieve this goal again this year, MWRA has continued to employ conservative budgeting and fiscal discipline which includes controlled spending and use of historical variable rate assumptions. The combination of these measures resulted in assessments increase projections below 3.6% for the next several years.

RECOMMENDATION:

1. To adopt the Final FY22 Current Expense Budget (CEB) set forth in Attachments A and B, with current revenue and expense of \$812,997,202.
2. To adopt the Final FY22 Operating Budget (Trustee's Budget) set forth in Attachment C.

DISCUSSION:

This staff summary presents the Final FY22 CEB. Discussions and materials will be provided outlining changes to the budget since the transmittal of the FY22 Proposed CEB in February 2021. In working with the MWRA Advisory Board, staff revisited all major line items of the budget and evaluated options to reduce the Rate Revenue Requirement to 2.95%.

For a line item comparison between the Proposed FY22 CEB and the Final FY22 CEB, please refer to Attachment A.

Summary

The Final FY22 Budget recommends a combined increase in rates and charges of 2.95%. Total expenses are \$813.0 million, an increase of \$21.6 million or 2.7% from the FY21 Budget. Capital Financing costs remain the largest component of the CEB and account for 61.1% of total expenses. The Final FY22 Budget assumes an offset of \$1.3 million for Debt Service Assistance (DSA) received in May 2021.

Total expenses include \$496.5 million for Capital Financing costs and \$316.5 million for operating expenses, of which \$259.8 million is for Direct Expenses and \$56.7 million is for Indirect Expenses. The \$21.6 million increase in total expenses is mainly due to higher Capital Financing costs of \$14.6 million and higher Direct Expenses of \$7.6 million, offset by lower Indirect Expenses of \$0.6 million.

The Final FY22 Budget revenues, excluding rate revenue, total \$20.9 million, a decrease of \$1.1 million or 4.8% from the FY21 Budget. The Final FY22 Budget for non-rate revenue includes \$15.7 million in Other User Charges and Other Revenue, \$4.0 million for Investment Income, and \$1.3 million of Rate Stabilization Reserves. The Final FY22 Rate Revenue Requirement is \$792.1 million, an increase of \$22.7 million or 2.95% over the FY21 Budget.

Table 1 on the following page provides a comparison of the Final FY22 CEB to the Approved FY21 CEB by major categories. Additional detail by line item is provided in Attachment A.

Table 1					
MWRA Current Expense Budget					
FY22 Final Budget versus FY21 Approved Budget					
(\$ in Millions)	FY21 Approved Budget	FY22 Final Budget	\$ Change	% Change	
Directs	\$ 252.2	\$ 259.8	\$ 7.6	3.0%	
Indirects	57.3	56.7	(0.6)	-1.1%	
Sub-Total Operating Expenses	\$ 309.5	\$ 316.5	\$ 7.0	2.3%	
Capital Financing (before Offsets)	481.9	497.8	15.9	3.3%	
Offsets: Bond Redemption ¹	-	-	-	0.0%	
Variable Debt Savings	-	-	-	0.0%	
Debt Service Assistance	-	(1.3)	(1.3)	-100.0%	
Sub-Total Capital Financing	\$ 481.9	\$ 496.5	\$ 14.6	3.0%	
Total Expenses	\$ 791.4	\$ 813.0	\$ 21.6	2.7%	
Investment Income	\$ 5.2	\$ 4.0	\$ (1.2)	-23.3%	
Non-Rate Revenue	15.3	15.7	0.4	2.6%	
Rate Stabilization ¹	1.5	1.3	(0.3)	-16.7%	
Sub-Total Non-Rate Revenue	\$ 22.0	\$ 20.9	\$ (1.1)	-4.8%	
Rate Revenue	769.4	792.1	22.7	3.0%	
Total Revenue & Income	\$ 791.4	\$ 813.0	\$ 21.6	2.7%	
FY22 Rate Revenue Increase			2.95%		
Combined Use of Reserves	\$ 1.5	\$ 1.3			

¹ MWRA has two reserve funds (Bond Redemption and Rate Stabilization) which can be used at the discretion of the Authority to manage the rate revenue requirement. Use of the Bond Redemption Fund reduces total expenses and the Rate Stabilization Fund increases total revenue. Under the terms of the General Bond Resolution the annual use of Rate Stabilization funds cannot exceed 10% of the year's senior debt service. Bond Redemption funds can be used only to retire or prepay outstanding debt. There is no annual limit on the amount of Bond Redemption funds used in a year, however the use is tied to the bonds' maturity dates and it is utility specific.

EXPENSES:

Direct Expenses

FY22 Direct Expenses total \$259.8 million, an increase of \$7.6 million, or 3.0% from the FY21 Budget.

FY22 Final Current Expense Budget MWRA Direct Expenses by Line Item					
LINE ITEM	FY21 Approved Budget	FY22 Final Budget	Change FY22 to FY21		
WAGES & SALARIES	\$ 112,919,297	\$ 116,680,341	\$ 3,761,044	3.3%	
OVERTIME	\$ 5,019,296	\$ 5,156,681	137,385	2.7%	
FRINGE BENEFITS	\$ 22,402,224	\$ 23,253,137	850,913	3.8%	
WORKERS' COMPENSATION	\$ 2,476,655	\$ 2,614,159	137,504	5.6%	
CHEMICALS	\$ 12,091,255	\$ 12,202,286	111,031	0.9%	
UTILITIES	\$ 24,200,846	\$ 24,749,865	549,019	2.3%	
MAINTENANCE	\$ 32,618,569	\$ 32,442,381	(176,188)	-0.5%	
TRAINING & MEETINGS	\$ 405,264	\$ 473,994	68,730	17.0%	
PROFESSIONAL SERVICES	\$ 8,377,283	\$ 8,773,258	395,975	4.7%	
OTHER MATERIALS	\$ 6,706,916	\$ 8,334,774	1,627,858	24.3%	
OTHER SERVICES	24,983,777	25,129,236	145,459	0.6%	
TOTAL	\$ 252,201,383	\$ 259,810,111	\$ 7,608,728	3.0%	

- Wages and Salaries* – The budget includes \$116.7 million for Wages and Salaries versus \$112.9 million in the FY21 Budget, an increase of \$3.8 million or 3.3%. Regular Pay makes up \$114.9 million or 98.5% of the total Wages and Salaries. The FY22 Budget funds 1,167 FTEs, four more than the FY21 Budget. Three of the additional FTEs represent the fourth year of hiring to support the Metropolitan Tunnel Redundancy capital project, bringing that staff to a total of 16, and the addition of one position to Occupational Health and Safety. As always, new hires and backfilling of vacant positions will be managed at the agency level and addressed on a case-by-case basis by senior management. A vacancy adjustment (reduction) of \$2.1 million is factored in to the FY22 Final Budget.
- Overtime* – The budget includes \$5.2 million for Overtime, an increase of \$137,000 or 2.7% as compared to the FY21 Budget mainly due to wage increases and recent trends in planned overtime for off-hours maintenance, emergency, and planned projects that include construction.
- Fringe Benefits* – The budget includes \$23.3 million for Fringe Benefits, an increase of \$851,000 or 3.8% from the FY21 Budget. Health Insurance premiums total \$19.7

million, an increase of \$759,000 or 4.0% from the FY21 Budget largely due to an increase in the health plans rates and utilization.

- *Workers' Compensation* – The budget includes \$2.6 million for Workers' Compensation, an increase of \$138,000 or 5.6% from the FY21 Budget and is based on a three-year average of actual payments (now excludes reserve adjustments).
- *Chemicals* – The budget includes \$12.2 million for Chemicals, an increase of \$111,000 or 0.9% over the FY21 Budget. Higher prices drove the budget increase, partially offset by lower volumes for some chemicals. Carbon Dioxide increased by \$112,000 or 50.1% due to a force majeure surcharge that is due to the uncertainty surrounding the opening of the vendor's chemical plant. Sodium Hypochlorite increased by \$99,000 or 3.1% due to updated bid price and Soda Ash increased by \$81,000 or 2.4% due to new contract pricing. This is partially offset by Activated Carbon which was reduced by \$87,000 or 17.4% from the FY21 Budget due to lower quantity. The FY22 Budget does not include any funding for the new Deer Island National Pollutant Discharge Elimination System (NPDES) permit, which is projected to have more stringent requirements for enterococcus treatment compliance.
- *Utilities* – The budget includes \$24.7 million for Utilities, which is an increase of \$549,000 or 2.3% from the FY21 Budget. The budget funds \$18.8 million for Electricity; \$2.6 million for Diesel Fuel; \$2.6 million for Water; and \$704,000 for Natural Gas. The change to Utilities is driven by Electricity, which has increased by \$529,000 or 2.9% from the FY21 Budget and is driven by updated pricing.
- *Maintenance* – The budget includes \$32.4 million for Maintenance projects, a decrease of \$176,000 or 0.5% from the FY21 Budget. The Operations Division's budget decrease of \$1.1 million or 3.9% from FY21 is primarily due to a \$1.3 million or 18.9% reduction to Plant and Machinery Services as a result of the early completion of the Deer Island painting and coatings project in the spring of FY21. The decrease is partially offset by increases in Computer Software and License Upgrades in MIS of \$770,000 or 26.7% for Autocad and Windows 10 Enterprise Software Assurance, budgeted at \$360,000 and \$314,000 respectively; Electrical Services of \$291,000 or 20.0% for diesel generator maintenance and rehab at the John Carroll Water Treatment Plant; and Building and Ground Services of \$182,000 or 4.0% primarily for the Shaft 8 Retaining Wall and CVA Intake Building Repointing projects in Water Operations.
- *Training and Meetings* – The budget includes \$474,000 for Training and Meetings, an increase of \$69,000 or 17.0% from the FY21 Budget. The increase is mainly due to Information Learning Management and LinkedIn Learning Solutions in MIS, for \$37,000 and \$32,000 respectively.
- *Professional Services* – The budget includes \$8.8 million for Professional Services, an increase of \$396,000 or 4.7% over the FY21 Budget. The increase is driven by Lab & Testing Analysis of \$242,000 or 14.6% for the Biobot contract as well as Other Services of \$145,000 or 10.8% for remediation services for underground storage tanks.

- *Other Materials* – The budget includes \$8.3 million for Other Materials, an increase of \$1.6 million or 24.3% from the FY21 Budget. The increase is largely driven by \$2.1 million in costs associated with the staff relocation from the Charlestown Navy Yard, partially offset by a reduction to Computer Hardware of \$197,000 and Equipment/Furniture of \$141,000, both of which are based on anticipated needs.
- *Other Services* – The budget includes \$25.1 million for Other Services, an increase of \$145,000 or 0.6% from the FY21 Budget. The budget includes funding of \$14.5 million for Sludge Pelletization, \$4.2 million for Space/Lease Rentals and related lease costs for the Charlestown Navy Yard and Chelsea Facilities, \$1.9 million for Voice and Data costs, \$1.3 million for Grit and Screenings removal, and \$1.2 million for Other Services. The overall increase is driven by Sludge Pelletization of \$82,000 or 0.6% due mainly to the projected cost increase of the NEFCo contract extension, partially offset by reduced sludge quantities based on historical trends. Also, Health/Safety costs increased by \$60,000 or 38.6% based on departmental needs.

Indirect Expenses

Indirect Expenses for FY22 total \$56.7 million, a decrease of \$0.6 million or 1.1% from the FY21 Budget. Below are the highlights of major changes:

- The budget includes \$3.9 million for Insurance, an increase of \$884,000 or 28.9% from the FY21 Budget. This reflects increased premiums due to insurance market conditions. Claim payments are based on a 5-year average.
- The budget includes \$26.7 million for the Watershed Management budget, an increase of \$309,000 or 1.2% over the FY21 Budget. The budget includes \$17.9 million for reimbursement of operating expenses net of revenues, and \$8.8 million for Payment in Lieu of Taxes (PILOT). A vacancy adjustment of \$1.5 million has been applied to reflect the actual timing of hiring. The year-over-year increase is primarily due to the PILOT payments increasing by \$305,000 or 3.6% over FY21.
- The budget includes \$7.0 million for the Harbor Energy Electric Company (HEEC), a decrease of \$223,000 or 3.1% from the FY21 Budget. The budget reflects the latest cost estimates, but the final costs will be determined by the Department of Public Utilities (DPU).
- The budget includes \$1.7 million for Mitigation payments to the City of Quincy and Town of Winthrop in accordance with mitigation agreements, which expire in FY25.
- Funding for the Operating Reserve for FY22 is \$1.4 million. The Operating Reserve balance is in compliance with MWRA General Bond Resolution which requires a balance of one-sixth of annual operating expenses. Based on the FY22 Final Budget, the required balance is \$47.3 million versus the \$45.9 million required in FY21.

- The budget includes \$11.2 million for the Retirement Fund which is level to planning estimates, but an increase of \$205,000 or 1.9% over the FY21 budget. The increase reflects the impact of lower than forecasted investment returns in 2018 and the reduction of the projected rate of return of the Fund from 7.10% to 6.90%. MWRA's pension fund is at the 88.2% funding level and projected to be fully funded by June 30, 2030.
- The Authority has complied with the GASB 45, *Accounting and Financial Reporting by Employers for Postemployment Benefits Other than Pensions (OPEB)*, by disclosing this liability in the year-end Financial Statements. As part of the multi-year strategy to address its unfunded liabilities for OPEB and pension holistically, the Board approved a plan to pay down the pension liability and upon reaching full funding, move to address the OPEB obligation. To maximize the benefits in terms of returns and accounting treatment, an irrevocable OPEB Trust was established with Board approval and funding started on April 23, 2015. The OPEB Trust balance was \$50.2 million as of December 31, 2020. Starting in FY18, GASB 75 is the governing regulation for employee OPEB contributions. The final \$4.7 million budget is based on 50% of the contribution determined in the January 1, 2020 actuarial report.

Capital Financing

As a result of the Authority's Capital Improvement Program, capital financing as a percent of total expenses (before offsets) has increased steadily from 36% in 1990 to 61.1% in FY22 Current Expense Budget. Much of this debt service is for completed projects, primarily the Boston Harbor Project, the Integrated Water Supply Improvement Program, and the Combined Sewer Overflow (CSO) projects. MWRA's capital spending, from its inception, has been dominated by projects mandated by court ordered or regulatory requirements, which in total have accounted for ~72% of capital spending to date. Going forward, the majority of spending will be focused on asset protection and water redundancy initiatives.

The Authority has actively managed its debt structure to take advantage of favorable interest rates. Tools used by MWRA to lower borrowing costs and manage rates include current and advanced refunding of outstanding debt, maximizing the use of the subsidized State Revolving Fund (SRF) debt, issuance of variable rate debt, swap agreements, and the use of surplus revenues to defease debt. MWRA also uses tax exempt commercial paper to minimize the financing cost of construction in process

The FY22 Final Budget capital financing costs total \$496.5 million and remains the largest portion of the MWRA's budget.

The FY22 Final Budget includes a defeasance of \$30.1 million in June 2021 which will reduce debt by approximately \$1.3 million in FY22, \$10.3 million in FY23, \$7.8 million in FY24, \$0.8 million in FY25, and \$10.2 million in FY26.

The FY22 Final Budget assumes a 3.50% interest rate for variable rate debt which is the same as the FY21 rate. The Authority's variable rate debt assumption is comprised of three separate

elements: the interest rate for the daily and weekly series; liquidity fees for the Standby Bond Purchase Agreement, Letter of Credit, and Direct Purchase providers; and remarketing fees. While MWRA continues to experience low interest rates, they are not reflective of historical averages and there is some uncertainty as to which direction interest rates are heading in light of current market conditions.

The FY22 Final Budget capital financing costs increased by \$14.6 million or 3.0% compared to the FY21 Budget. This increase in the MWRA's debt service is the result of projected FY22 borrowings and the structure of the existing debt, partially offset by the impact of the projected defeasance.

The FY22 capital financing budget includes:

- \$245.0 million in principal and interest payments on MWRA's senior fixed rate bonds. This amount includes \$7.4 million to support issuances of \$125.0 million in December 2021 and \$3.0 million to support issuances of \$100.0 million of new money in June 2022;
- \$125.0 million in principal and interest payments on subordinate bonds;
- \$95.7 million in principal and interest payments on SRF loans. This amount includes \$5.9 million to support an issuance of \$65.0 million 2022;
- \$17.2 million to fund ongoing capital projects with current revenue and to meet coverage requirements;
- \$5.6 million in debt prepayment;
- \$6.1 million to fund the interest expense related to the Local Water Pipeline Assistance Program;
- \$3.2 million for the Chelsea Lease; and
- \$1.3 million offset to Debt Service for the Debt Service Assistance received in FY21.

Revenue

FY22 non-rate revenue totals \$20.9 million, which is a decrease of \$1.1 million or 4.8% versus the FY21 Budget. The FY22 non-rate revenue budget includes:

- \$9.2 million in Other User Charges, including \$5.3 million for the Chicopee Valley Aqueduct (CVA) communities, \$2.0 million for Deer Island water usage, \$208,000 for entrance fees from member communities, and \$500,000 for the Commonwealth's partial reimbursement for Clinton Wastewater Treatment Plant expenses. Other User Charges are \$15,000 or 0.2% higher than the FY21 Budget.

- \$6.5 million in Other Revenue, an increase of \$384,000 from the FY21 Budget. Other Revenue includes \$2.3 million from the sale of the Authority's Renewable Portfolio Credits, revenue from participating in load response programs, and the sale of generated power to the grid. Energy related revenue decreased \$293,000 reflecting decreased power sales revenue and reduced pricing for Renewable Portfolio Credits. The balance of Other Revenue includes \$2.7 million in permit fees and penalties, an increase of \$259,000 over the FY21 Budget.
- \$4.0 million in Investment Income, a decrease of \$1.2 million or 23.3% from the FY21 Budget. The lower assumption reflects lower long and short-term interest rate assumptions as a result of market conditions.

The Rate Revenue Requirement for FY22 is \$792.1 million, an increase \$22.7 million or 2.95% over the FY21 Budget. The Rate Revenue Requirement is the difference between total expenses of \$813.0 million, less non-rate revenue of \$20.9 million.

Planning Estimates and Future Rate Projections

MWRA's planning estimates are projections based on a series of assumptions about future spending (operating and capital), interest rates, inflation, and other factors. MWRA uses the planning estimates to model and project what future rate increases might be based upon these assumptions, as well as to test the impact of changes to assumptions on future rate increases. The planning estimates are not predictions of what rate increases will be but rather they provide the context and framework for guiding MWRA financial policy and management decision making that ultimately determine the level of actual rate increases on an annual basis. Historically, the planning estimates were based on conservative financial assumptions. Conservative projections of future rate increases benefit the MWRA by providing assurance to all stakeholders, including the rating agencies that MWRA anticipates raising revenues sufficient to pay for its operations and outstanding debt obligations now and over the long-term. Additionally, conservative forecasts of rate revenue requirements enable member communities to adequately plan and budget for future payments to MWRA.

Table 3 below presents the combined estimated future rate increases and household charges based on the Final FY22 Budget. The planning estimates shown below assume no Debt Service Assistance from the Commonwealth or use of Bond Redemption reserves through FY26. It does, however, assume the use of Rate Stabilization (HEEC reserve) through FY26.

Table 3

Rates & Budget Projections					
Final FY22 CEB	FY2022	FY2023	FY2024	FY2025	FY2026
Total Rate Revenue (\$000)	\$ 792,084	\$ 820,128	\$ 848,308	\$ 876,332	\$ 903,530
Rate Revenue Change from Prior Year (\$000)	\$ 22,699	\$ 28,044	\$ 28,180	\$ 28,024	\$ 27,198
Rate Revenue Increase	2.95%	3.5%	3.4%	3.3%	3.1%
Use of Reserves (\$000)	\$ 1,250	\$ 980	\$ 800	\$ 575	\$ 425

Estimated Household Bill

Based on annual water usage of 61,000 gallons	\$1,256	\$1,312	\$1,369	\$1,429	\$1,490
Based on annual water usage of 90,000 gallons	\$1,854	\$1,935	\$2,020	\$2,108	\$2,198

CEB Review and Adoption Process

In February, the MWRA transmitted the Proposed FY22 Budget to the Advisory Board for its review and comments. MWRA staff have worked closely with MWRA Advisory Board staff in an effort to review the budget and reduce the rate revenue requirement from 3.6% in the FY22 Proposed Budget to 2.95% in the FY22 Final Budget.

ATTACHMENTS:

- Attachment A FY22 Final Budget vs. FY22 Proposed Budget vs. FY21 Approved Budget
- Attachment B FY22 Final Direct Expense Budget by Division
- Attachment C FY22 Final Operating Budget (Trustee’s Budget)
- Attachment D FY22 Final Budget vs. FY21 Projections
- Attachment E MWRA Responses to Advisory Board’s FY22 Integrated CIP and CEB
Comments and Recommendations

ATTACHMENT A

FY22 Final Budget vs. FY22 Proposed Budget vs. FY21 Approved Budget

TOTAL MWRA	FY21 Approved Budget	FY22 Proposed Budget	FY22 Final Budget	Change FY22 Final Budget vs FY21 Approved Budget		Change FY22 Final Budget vs FY22 Proposed Budget	
				\$	%	\$	%
EXPENSES							
WAGES AND SALARIES	\$ 112,919,297	\$ 117,613,852	\$ 116,680,341	\$ 3,761,044	3.3%	\$ (933,511)	-0.8%
OVERTIME	5,019,296	5,218,335	5,156,681	137,385	2.7%	(61,654)	-1.2%
FRINGE BENEFITS	22,402,224	23,388,645	23,253,137	850,913	3.8%	(135,508)	-0.6%
WORKERS' COMPENSATION	2,476,655	2,242,524	2,614,159	137,504	5.6%	371,635	16.6%
CHEMICALS	12,091,255	12,103,438	12,202,286	111,031	0.9%	98,848	0.8%
ENERGY AND UTILITIES	24,200,846	23,902,322	24,749,865	549,019	2.3%	847,543	3.5%
MAINTENANCE	32,618,569	33,913,280	32,442,381	(176,188)	-0.5%	(1,470,899)	-4.3%
TRAINING AND MEETINGS	405,264	498,394	473,994	68,730	17.0%	(24,400)	-4.9%
PROFESSIONAL SERVICES	8,377,283	9,019,258	8,773,258	395,975	4.7%	(246,000)	-2.7%
OTHER MATERIALS	6,706,916	6,629,774	8,334,774	1,627,858	24.3%	1,705,000	25.7%
OTHER SERVICES	24,983,777	25,461,720	25,129,236	145,459	0.6%	(332,484)	-1.3%
TOTAL DIRECT EXPENSES	\$ 252,201,383	\$ 259,991,541	\$ 259,810,111	\$ 7,608,728	3.0%	\$ (181,430)	-0.1%
INSURANCE	\$ 3,059,218	\$ 3,543,600	\$ 3,943,600	\$ 884,382	28.9%	\$ 400,000	11.3%
WATERSHED/PILOT/DEBT	26,422,138	27,267,370	\$ 26,731,490	309,352	1.2%	(535,880)	-2.0%
HEEC PAYMENT	7,215,200	6,976,041	\$ 6,991,953	(223,247)	-3.1%	15,912	0.2%
MITIGATION	1,692,344	1,693,359	\$ 1,693,360	1,016	0.1%	1	0.0%
ADDITIONS TO RESERVES	1,815,077	1,373,566	\$ 1,412,647	(402,430)	-22.2%	39,080	2.8%
RETIREMENT FUND	11,000,000	11,205,000	\$ 11,205,000	205,000	1.9%	-	0.0%
POSTEMPLOYMENT BENEFITS	6,065,490	4,673,624	\$ 4,673,624	(1,391,867)	-22.9%	(1)	0.0%
TOTAL INDIRECT EXPENSES	\$ 57,269,467	\$ 56,732,561	\$ 56,651,673	\$ (617,794)	-1.1%	\$ (80,888)	-0.1%
STATE REVOLVING FUND	\$ 97,811,162	\$ 97,143,496	\$ 95,673,399	\$ (2,137,762)	-2.2%	\$ (1,470,097)	-1.5%
SENIOR DEBT	258,730,904	246,694,483	244,957,128	(13,773,775)	-5.3%	(1,737,355)	-0.7%
SUBORDINATE DEBT	96,339,599	125,046,217	125,046,217	28,706,619	29.8%	-	0.0%
LOCAL WATER PIPELINE CP	5,686,864	6,120,127	6,120,127	433,263	7.6%	-	0.0%
CURRENT REVENUE/CAPITAL	16,200,000	17,200,000	17,200,000	1,000,000	6.2%	-	0.0%
CAPITAL LEASE	3,217,060	3,217,060	3,217,060	-	0.0%	-	0.0%
DEBT PREPAYMENT	3,900,000	6,215,000	5,609,355	1,709,355	43.8%	(605,645)	-9.7%
DEBT SERVICE ASSISTANCE	-	-	(1,287,870)	(1,287,870)	0.0%	(1,287,870)	0.0%
TOTAL DEBT SERVICE	\$ 481,885,588	\$ 501,636,383	\$ 496,535,417	\$ 14,649,829	3.0%	\$ (5,100,966)	-1.0%
TOTAL EXPENSES	\$ 791,356,438	\$ 818,360,485	\$ 812,997,202	\$ 21,640,764	2.7%	\$ (5,363,284)	-0.7%
REVENUE & INCOME							
RATE REVENUE	\$ 769,385,000	\$ 796,891,000	\$ 792,084,000	\$ 22,699,000	2.95%	\$ (4,807,000)	-0.6%
OTHER USER CHARGES	9,208,367	9,249,066	9,222,884	14,517	0.2%	(26,182)	-0.3%
OTHER REVENUE	6,095,403	6,456,202	6,479,202	383,798	6.3%	23,000	0.4%
RATE STABILIZATION	1,500,000	2,000,000	1,250,000	(250,000)	-16.7%	(750,000)	-37.5%
INVESTMENT INCOME	5,167,668	3,764,218	3,961,116	(1,206,552)	-23.3%	196,898	5.2%
TOTAL REVENUE & INCOME	\$ 791,356,438	\$ 818,360,485	\$ 812,997,202	\$ 21,640,764	2.7%	\$ (5,363,284)	-0.7%
Rate Revenue Increase over FY21			3.60%			2.95%	

ATTACHMENT B

FY22 Final Direct Expense Budget by Division

Division	FY21 Approved Budget	FY22 Final Budget	Change FY22 Final Budget vs. FY21 Approved Budget	
			\$	%
Executive	\$1,514,888	\$1,539,803	\$24,915	1.6%
Emergency Preparedness	2,884,515	3,108,556	\$224,041	7.8%
Administration	53,222,021	57,559,261	\$4,337,240	8.1%
Finance	4,386,943	4,633,604	\$246,661	5.6%
Law	2,209,372	1,928,940	-\$280,432	-12.7%
Affirmative Action	704,901	709,242	\$4,341	0.6%
Internal Audit	730,622	751,390	\$20,768	2.8%
Public Affairs	1,119,525	1,223,495	\$103,970	9.3%
Operations/Planning	185,428,595	188,355,820	\$2,927,224	1.6%
Total Authority	\$252,201,383	\$259,810,111	\$7,608,728	3.0%

ATTACHMENT C

**Massachusetts Water Resources Authority
Fiscal Year 2022 Operating Budget for Filing with the Trustee
Pursuant to Section 712 of General Bond Resolution Adopted January 24, 1990**

(\$000s)

Projected Monthly Deposits:

Fund	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Operating	\$22,178	\$27,723	\$22,178	\$22,178	\$27,723	\$22,178	\$22,178	\$27,723	\$22,178	\$22,178	\$27,723	\$22,178	\$288,318
Debt Service & Coverage	38,195	47,744	38,195	38,195	47,744	38,195	38,195	47,744	38,195	38,195	47,744	38,195	496,535
Debt Service Reserve	---	---	---	---	---	---	---	---	---	---	---	---	0
CORE	---	---	---	---	---	---	---	---	---	---	---	---	0
Commonwealth Obligations	---	---	4,482	---	---	4,482	---	---	13,287	---	---	4,482	26,731
Operating Reserve	109	136	109	109	136	109	109	136	109	109	136	109	1,413
Insurance Reserve	---	---	---	---	---	---	---	---	---	---	---	---	0
Renewal & Replacement Reserve	---	---	---	---	---	---	---	---	---	---	---	---	0
Rate Stabilization Reserve	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	<u>\$60,482</u>	<u>\$75,602</u>	<u>\$64,964</u>	<u>\$60,482</u>	<u>\$75,602</u>	<u>\$64,964</u>	<u>\$60,482</u>	<u>\$75,602</u>	<u>\$73,769</u>	<u>\$60,482</u>	<u>\$75,602</u>	<u>\$64,964</u>	<u>\$812,997</u>

Attachment D

FY22 Final Budget vs. FY21 Projections


TOTAL MWRA	FY21 Projection	FY22 Final Budget	Change	% Change
EXPENSES				
WAGES AND SALARIES	\$ 107,989,029	\$ 116,680,341	\$ 8,691,312	8.0%
OVERTIME	4,489,934	5,156,681	666,747	14.8%
FRINGE BENEFITS	21,676,008	23,253,137	1,577,129	7.3%
WORKERS' COMPENSATION	2,127,167	2,614,159	486,992	22.9%
CHEMICALS	11,582,380	12,202,286	619,906	5.4%
ENERGY AND UTILITIES	23,091,134	24,749,865	1,658,731	7.2%
MAINTENANCE	32,092,117	32,442,381	350,264	1.1%
TRAINING AND MEETINGS	220,148	473,994	253,845	115.3%
PROFESSIONAL SERVICES	7,523,757	8,773,258	1,249,501	16.6%
OTHER MATERIALS	6,646,576	8,334,774	1,688,198	25.4%
OTHER SERVICES	24,272,660	25,129,236	856,576	3.5%
TOTAL DIRECT EXPENSES	\$ 241,710,910	\$ 259,810,111	\$ 18,099,201	7.5%
INSURANCE	\$ 3,274,058	\$ 3,943,600	\$ 669,542	20.4%
WATERSHED/PILOT/DEBT	24,833,965	26,731,490	1,897,525	7.6%
HEEC PAYMENT	10,431,993	6,991,953	(3,440,040)	-33.0%
MITIGATION	1,652,058	1,693,360	41,302	2.5%
ADDITIONS TO RESERVES	1,815,077	1,412,647	(402,430)	-22.2%
RETIREMENT FUND	10,000,000	11,205,000	1,205,000	12.1%
POSTEMPLOYMENT BENEFITS	6,065,490	4,673,624	(1,391,867)	-22.9%
TOTAL INDIRECT EXPENSES	\$ 58,072,641	\$ 56,651,673	\$ (1,420,968)	-2.4%
STATE REVOLVING FUND	\$ 88,657,490	\$ 95,673,399	\$ 7,015,910	7.9%
SENIOR DEBT	255,429,061	244,957,128	(10,471,933)	-4.1%
SUBORDINATE DEBT	86,537,398	125,046,217	38,508,819	44.5%
LOCAL WATER PIPELINE CP	545,023	6,120,127	5,575,104	1022.9%
CURRENT REVENUE/CAPITAL	16,200,000	17,200,000	1,000,000	6.2%
CAPITAL LEASE	3,217,060	3,217,060	-	0.0%
DEBT PREPAYMENT	3,900,000	5,609,355	1,709,355	43.8%
DEBT SERVICE ASSISTANCE	-	(1,287,870)	(1,287,870)	0.0%
TOTAL DEBT SERVICE	\$ 454,486,031	\$ 496,535,417	\$ 42,049,386	9.3%
TOTAL EXPENSES	\$ 754,269,583	\$ 812,997,202	\$ 58,727,619	7.8%
REVENUE & INCOME				
RATE REVENUE	\$ 769,385,000	\$ 792,084,000	\$ 22,699,000	3.0%
OTHER USER CHARGES	9,253,367	9,222,884	(30,483)	-0.3%
OTHER REVENUE	6,818,283	6,479,202	(339,081)	-5.0%
RATE STABILIZATION	1,500,000	1,250,000	(250,000)	-16.7%
INVESTMENT INCOME	4,341,478	3,961,116	(380,362)	-8.8%
TOTAL REVENUE & INCOME	\$ 791,298,127	\$ 812,997,202	\$ 21,699,075	2.7%

ATTACHMENT E

MWRA's Responses to the Advisory Board's FY2022 Integrated CIP and CEB Recommendations and Comments

Advisory Board Recommendations	MWRA Responses
<p>The Advisory Board recommends reducing the FY22 Rate Revenue Requirement by \$4,793,940 resulting in a combined wholesale assessment increase of 2.95%.</p>	<p>Agree.</p>
<p>2. The Advisory Board recommends that the Authority reduce its Wages and Salaries line item by \$250,000 (equivalent of 2.5 FTE).</p>	<p>Agree in large part. MWRA Staff have reduced the FY22 Proposed Wages and Salaries by \$933,511. Staff have included a vacancy adjustment of \$2.1 million to reflect historic and likely hiring delays.</p>
<p>3. The Advisory Board recommends that the Authority reduce the Watershed Reimbursement line item by \$761,000 to represent an additional vacancy rate of 7 FTEs for the Division of Water Supply Protection.</p>	<p>Agree.</p>
<p>4. The Advisory Board recommends that the Authority place \$761,000 from the FY21 surplus in the Revenue Fund to be made available for additional staffing expenses beyond DWSP's FY22 funded levels if needed. If unused, the Advisory Board recommends that the MWRA use the \$761,000 be used for defeasance.</p>	<p>Agree.</p>
<p>5. The Advisory Board recommends that the Authority reduce the FY22 proposed budget request by \$1,162,500 for Capital Financing through the tools available to the Treasurer, including defeasance, refunding or a reduction in the optional debt payment.</p>	<p>Agree.</p>
<p>6. The Advisory Board recommends that the Authority continue to work with the Advisory Board and the Water Supply Trust to aggressively fill the vacancies in the Division of Water Supply Protection.</p>	<p>Agree.</p>
<p>7. The Advisory Board recommends that the MWRA Board of Directors direct Authority staff to communicate their concerns over the proposed changes to the MWRA Board of Directors composition with the Governor's office and the House/Senate conference committees, urging them to keep the MWRA Board of Directors as it is currently composed.</p>	<p>MWRA Staff have no comment.</p>

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 23, 2021
SUBJECT: Final FY22 Water and Sewer Assessments

COMMITTEE: Administration, Finance & Audit

INFORMATION
 VOTE

Michael Cole, Budget Director
Leo Norton, Asst. Mgr, Rates, Revenue and Finance
Preparer/Title


Thomas J. Durkin
Director of Finance

The Proposed FY22 Current Expense Budget (CEB) was submitted to the Advisory Board at the February 2021 Board meeting and included a 3.6% combined assessment increase.

MWRA's long-term goal has been to provide sustainable and predictable assessments to its member communities. In the past few years, the Advisory Board challenged MWRA to limit the assessment increases at a level less than 4%. MWRA has continuously been successful in achieving this goal by utilizing a multi-year rates management strategy, which includes controlled spending, the use of historical variable rate assumptions, and the practice of targeted debt defeasance.

Consistent with the FY22 Final Budget, the combined assessment increase of 2.95% includes a 2.66% increase for sewer assessments and a 3.49% increase for water assessments.

RECOMMENDATION:

To adopt the following effective July 1, 2021:

- 1) Water system assessments of \$277,415,068 and sewer system assessments of \$514,668,932 for FY22.
- 2) FY22 sewer assessments of \$500,000 for the Town of Clinton and \$443,883 for the Lancaster Sewer District.
- 3) FY22 charge to the City of Worcester of \$190,780 representing approximately 7.9% of the direct operating expenses for the Clinton Wastewater Treatment Plant.
- 4) FY22 water assessments of \$3,600,383 for the City of Chicopee, \$797,235 for South Hadley Fire District #1, and \$872,559 for the Town of Wilbraham.
- 5) A wholesale water rate of \$4,387.28 per million gallons.
- 6) A retail sewer rate of \$7,784.31 per million gallons.

DISCUSSION:

The Final FY22 Current Expense Budget includes a Rate Revenue Requirement of \$792,084,000, an increase of 2.95% over the FY21 requirement.

	Rate Revenue Requirement		Change from FY21	
	FY22 Final	FY21 Approved	Dollars	Percent
Water	\$277,415,068	\$268,071,397	\$ 9,343,671	3.49%
Sewer	\$514,668,932	\$501,313,603	\$13,355,329	2.66%
Total	\$792,084,000	\$769,385,000	\$22,699,000	2.95%

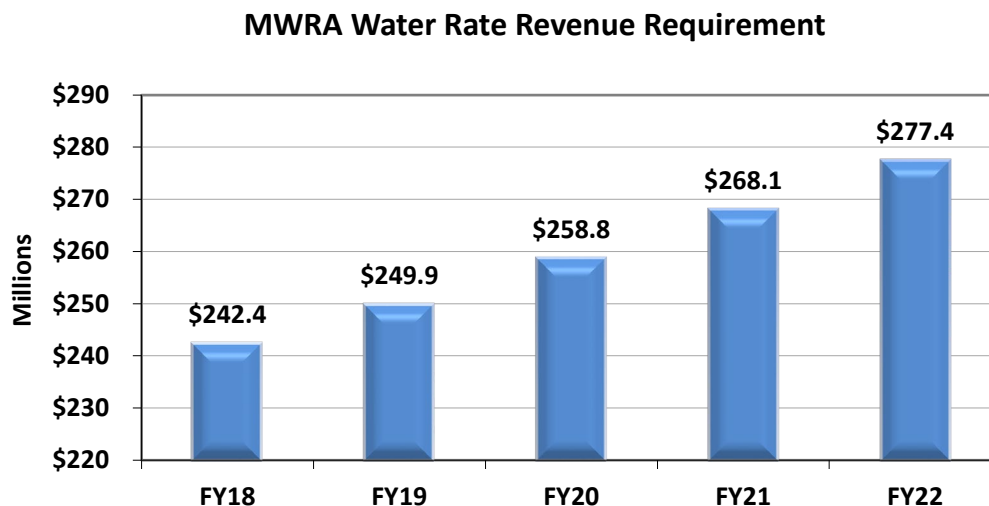
Attachment 1 details the FY22 wholesale water and sewer charges for each MWRA community.

The estimated annual impact of the FY22 assessment increase on the MWRA portion of the average household bill for water and sewer service in a fully served MWRA community that uses close to the system average of 61,000 gallons of water per year is approximately \$16.

Water Assessments

MWRA calculates water assessments for customer communities by apportioning the water rate revenue requirement according to each community’s share of total water use for the most recent calendar year. FY22 water assessments are based on each community's share of CY20 water use of 63.232 billion gallons, a 1.9% increase compared to CY19 water use of 62.045 billion gallons. Changes in FY22 water assessments for customer communities compared to FY21 assessments will vary considerably, depending on each community's use of water and how that use factors into their share of the water system in CY20 compared to CY19. This is particularly true for communities that receive only part of their water from MWRA.

The graph below illustrates the water Rate Revenue Requirement for the past 5 years. The changes from FY21 to FY22 are primarily the result of increased debt service related to water system rehabilitation and improvements.

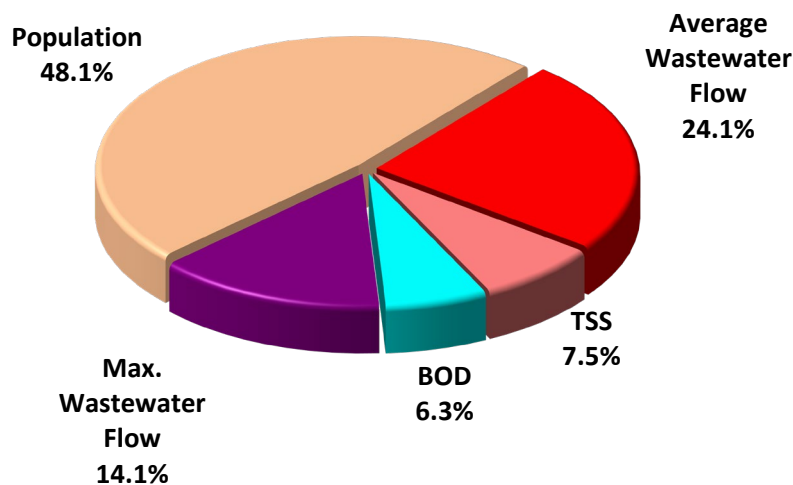


Sewer Assessments

MWRA allocates sewer assessments based on each community's share of the following allocation parameters: annual wastewater flow, maximum month flow, strength of flow, census population, and sewer population.

On average, approximately 52% of a community's FY22 sewer assessment is based on each community's share of wastewater flow and strength of flow (total suspended solids or TSS and biochemical oxygen demand or BOD), and approximately 48% is based on population as illustrated in the next graph.

Allocation of MWRA Sewer Utility Assessment

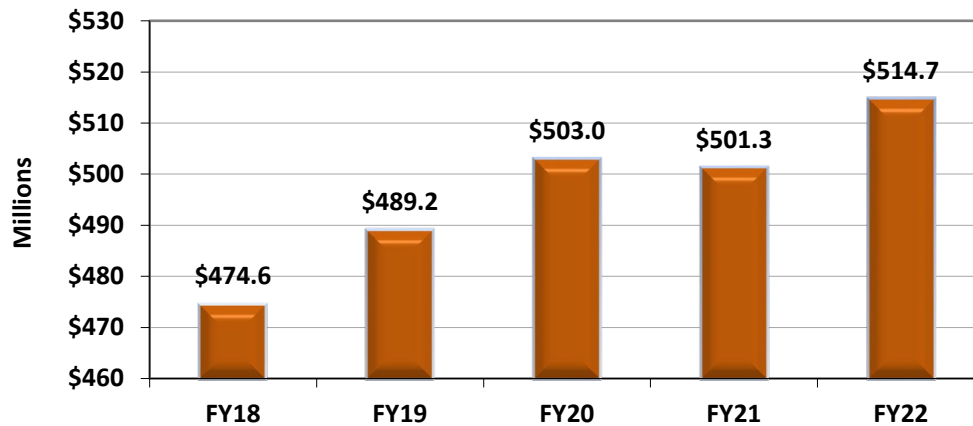


The population component of the FY22 assessments were calculated using the most recent (July 2019) community population estimates from the U.S. Census Bureau, as well as the percentage of total population receiving municipal sewer service as reported by each MWRA community.

The flow component of the FY22 assessments were calculated using the average of CY18, CY19 and CY20 wastewater flows and strength of flows.

The following graph illustrates the sewer Rate Revenue Requirement for the past 5 years. As with the water utility, the annual changes continue to be primarily the result of increased debt service related to system rehabilitation and improvements.

MWRA Sewer Rate Revenue Requirement



Clinton Sewer Service Area Assessments

FY22 operating and maintenance (O&M) and capital expenses attributable to the Clinton Wastewater Treatment Plant are \$4,325,096, a decrease of 7.5% from FY21 expenses. This includes a 10.7% decrease in operating costs, and a 0.6% increase in capital expenses.

In accordance with the agreement that allows the City of Worcester to take water from the Wachusett watershed, Worcester is charged approximately 7.9% of the direct operating expenses for the Clinton Wastewater Treatment Plant. FY22 direct operating expenses for the plant total \$2,411,585, resulting in an FY22 charge of \$190,780 for the City of Worcester. Worcester has been paying this annual charge to MWRA or its predecessors since 1914.

The Town of Clinton and the Lancaster Sewer District are allocated proportional shares of the remaining expenses based on annual metered wastewater flow to the Clinton Plant. Based on FY22 expenses and CY20 wastewater flows, Lancaster’s FY22 charge is \$443,883, an increase of 2.3% from FY21.

The FY22 charge for the Town of Clinton is \$3,714,081. However, pursuant to Chapter 307, Section 8 of the Acts of 1987, Clinton is only liable for the first \$500,000 of its share of O&M and capital costs.

Attachment 2 details the expenses and corresponding charges for the Clinton Sewer Service Area.

CVA Water Assessments

Based on the Final FY22 CIP and CEB for the Chicopee Valley Aqueduct (CVA) water system, the FY22 system assessment is \$5,270,177, a decrease of 0.2% from FY21 assessments.

MWRA’s CVA water assessment methodology allocates CVA assessments to the three communities served by the CVA system based on their share of prior calendar year water use. Based on CY20 water use, FY22 assessments are as follows:

- City of Chicopee: \$3,600,383 (-2.9%)

- South Hadley Fire District #1: \$ 797,235 (+4.0%)
- Town of Wilbraham: \$ 872,559 (+7.9%)

As with the metropolitan water system, changes in FY22 water assessments for each CVA community compared to FY21 assessments vary depending on their water use and how that use factors into their share of the CVA water system in CY20 compared to CY19.

Attachment 3 details the expenses and corresponding assessments for the CVA Water Service Area.

Wholesale Water Rate

MWRA’s wholesale water rate per million gallons is applied to customers purchasing MWRA water on a pay-as-you-go basis (including customers with emergency agreements). The wholesale water rate for FY22 is \$4,387.28 per million gallons. The FY22 CEB includes revenue of \$149,581 from these customers.

Retail Sewer Rate

MWRA provides direct retail sewer service to Regis College in Weston and the New England Center for Children in Southborough. In accordance with MWRA Policy #OP.11, “Admission of New Community to MWRA Sewer System and Other Requests for Sewer Service to Locations Outside MWRA Sewer Service Area”, both entities are charged a modified per million gallon “retail” rate that captures both sanitary and non-sanitary flows. Based on FY22 sewer assessments, the FY22 retail sewer rate will be \$7,784.31 per million gallons. The Final FY22 CEB includes revenue of \$44,516 from these customers.

ATTACHMENTS:

1. FY22 Water and Sewer Assessments
2. Clinton Wastewater Treatment Plant Sewer User Charge Determination
3. Chicopee Valley Aqueduct System Assessment

MWRA Fully Served Water and Sewer Customers	Final FY21 Water Assessment	Final FY22 Water Assessment	Percent Change from FY21	Final FY21 Sewer Assessment	Final FY22 Sewer Assessment	Percent Change from FY21	Final FY21 Combined Assessment	Final FY22 Combined Assessment	Dollar Change from FY21	Percent Change from FY21
ARLINGTON	5,627,090	5,958,052	5.9%	8,872,540	9,124,432	2.8%	\$14,499,630	\$15,082,484	\$582,854	4.0%
BELMONT	3,040,437	3,321,668	9.2%	5,332,639	5,482,714	2.8%	8,373,076	8,804,382	431,306	5.2%
BOSTON (BWSC)	97,981,545	93,962,296	-4.1%	145,976,286	148,872,321	2.0%	243,957,831	242,834,617	(1,123,214)	-0.5%
BROOKLINE	7,543,434	8,011,141	6.2%	13,249,272	13,660,245	3.1%	20,792,706	21,671,386	878,680	4.2%
CHELSEA	5,158,804	5,460,223	5.8%	8,585,318	8,986,504	4.7%	13,744,122	14,446,727	702,605	5.1%
EVERETT	5,958,067	6,272,641	5.3%	9,529,946	9,618,364	0.9%	15,488,013	15,891,005	402,992	2.6%
FRAMINGHAM	8,834,401	9,287,668	5.1%	13,209,393	13,764,605	4.2%	22,043,794	23,052,273	1,008,479	4.6%
LEXINGTON	8,006,399	8,743,912	9.2%	7,922,359	8,177,213	3.2%	15,928,758	16,921,125	992,367	6.2%
MALDEN	7,980,333	8,378,155	5.0%	13,376,032	13,820,322	3.3%	21,356,365	22,198,477	842,112	3.9%
MEDFORD	6,872,249	7,360,071	7.1%	12,312,099	12,538,844	1.8%	19,184,348	19,898,915	714,567	3.7%
MELROSE	3,105,038	3,511,330	13.1%	6,642,072	6,842,727	3.0%	9,747,110	10,354,057	606,947	6.2%
MILTON	3,524,251	3,884,900	10.2%	5,780,577	5,910,238	2.2%	9,304,828	9,795,138	490,310	5.3%
NEWTON	13,532,097	13,717,608	1.4%	21,895,848	22,344,621	2.0%	35,427,945	36,062,229	634,284	1.8%
NORWOOD	4,246,016	4,409,127	3.8%	8,188,530	8,482,434	3.6%	12,434,546	12,891,561	457,015	3.7%
QUINCY	12,401,474	13,440,835	8.4%	20,972,691	21,473,437	2.4%	33,374,165	34,914,272	1,540,107	4.6%
READING	2,399,752	2,831,288	18.0%	5,250,778	5,376,119	2.4%	7,650,530	8,207,407	556,877	7.3%
REVERE	5,591,863	5,756,009	2.9%	10,748,405	11,066,469	3.0%	16,340,268	16,822,478	482,210	3.0%
SOMERVILLE	8,711,112	8,973,256	3.0%	16,822,763	17,020,189	1.2%	25,533,875	25,993,445	459,570	1.8%
STONEHAM	2,870,605	3,561,396	24.1%	4,988,619	5,585,497	12.0%	7,859,224	9,146,893	1,287,669	16.4%
WALTHAM	10,046,663	10,338,346	2.9%	13,972,854	14,299,920	2.3%	24,019,517	24,638,266	618,749	2.6%
WATERTOWN	3,935,832	4,166,126	5.9%	6,648,177	6,806,903	2.4%	10,584,009	10,973,029	389,020	3.7%
WINTHROP	1,958,437	2,074,166	5.9%	3,714,891	3,831,735	3.1%	5,673,328	5,905,901	232,573	4.1%
TOTAL	\$229,325,899	\$233,420,214	1.8%	\$363,992,089	\$373,085,853	2.5%	\$593,317,988	\$606,506,067	\$13,188,079	2.2%

MWRA Sewer and Partial Water Customers	Final FY21 Water Assessment	Final FY22 Water Assessment	Percent Change from FY21	Final FY21 Sewer Assessment	Final FY22 Sewer Assessment	Percent Change from FY21	Final FY21 Combined Assessment	Final FY22 Combined Assessment	Dollar Change from FY21	Percent Change from FY21
CANTON	1,626,637	1,507,385	-7.3%	4,599,635	4,765,395	3.6%	\$6,226,272	\$6,272,780	\$46,508	0.7%
NEEDHAM	1,122,902	1,670,433	48.8%	6,399,895	6,614,690	3.4%	7,522,797	8,285,123	762,326	10.1%
STOUGHTON	141,002	167,480	18.8%	5,226,978	5,434,313	4.0%	5,367,980	5,601,793	233,813	4.4%
WAKEFIELD	2,874,557	2,825,130	-1.7%	6,577,299	6,748,184	2.6%	9,451,856	9,573,314	121,458	1.3%
WELLESLEY	1,835,381	2,301,709	25.4%	5,955,781	6,082,193	2.1%	7,791,162	8,383,902	592,740	7.6%
WILMINGTON	599,456	1,098,672	83.3%	2,953,524	3,013,693	2.0%	3,552,980	4,112,365	559,385	15.7%
WINCHESTER	1,835,487	2,093,282	14.0%	4,440,715	4,535,279	2.1%	6,276,202	6,628,561	352,359	5.6%
WOBBURN	4,199,480	4,936,119	17.5%	9,434,265	9,490,135	0.6%	13,633,745	14,426,254	792,509	5.8%
TOTAL	\$14,234,902	\$16,600,210	16.6%	\$45,588,092	46,683,882	2.4%	\$59,822,994	\$63,284,092	\$3,461,098	5.8%

MWRA Sewer-only Customers	Final FY21 Water Assessment	Final FY22 Water Assessment	Percent Change from FY21	Final FY21 Sewer Assessment	Final FY22 Sewer Assessment	Percent Change from FY21	Final FY21 Combined Assessment	Final FY22 Combined Assessment	Dollar Change from FY21	Percent Change from FY21
ASHLAND				2,675,100	2,752,284	2.9%	\$2,675,100	\$2,752,284	\$77,184	2.9%
BEDFORD				3,563,964	3,616,974	1.5%	3,563,964	3,616,974	53,010	1.5%
BRAINTREE				10,046,123	10,463,134	4.2%	10,046,123	10,463,134	417,011	4.2%
BURLINGTON				5,969,600	6,168,357	3.3%	5,969,600	6,168,357	198,757	3.3%
CAMBRIDGE				26,630,300	27,759,220	4.2%	26,630,300	27,759,220	1,128,920	4.2%
DEDHAM				5,877,037	6,076,744	3.4%	5,877,037	6,076,744	199,707	3.4%
HINGHAM SEWER DISTRICT				2,005,219	2,061,694	2.8%	2,005,219	2,061,694	56,475	2.8%
HOLBROOK				1,816,238	1,883,097	3.7%	1,816,238	1,883,097	66,859	3.7%
NATICK				5,916,657	6,126,567	3.5%	5,916,657	6,126,567	209,910	3.5%
RANDOLPH				6,743,289	6,830,622	1.3%	6,743,289	6,830,622	87,333	1.3%
WALPOLE				4,125,676	4,280,744	3.8%	4,125,676	4,280,744	155,068	3.8%
WESTWOOD				3,121,245	3,247,430	4.0%	3,121,245	3,247,430	126,185	4.0%
WEYMOUTH				13,242,974	13,632,330	2.9%	13,242,974	13,632,330	389,356	2.9%
TOTAL				\$91,733,422	\$94,899,197	3.5%	\$91,733,422	\$94,899,197	\$3,165,775	3.5%

MWRA Water-only Customers	Final FY21 Water Assessment	Final FY22 Water Assessment	Percent Change from FY21	Final FY21 Sewer Assessment	Final FY22 Sewer Assessment	Percent Change from FY21	Final FY21 Combined Assessment	Final FY22 Combined Assessment	Dollar Change from FY21	Percent Change from FY21
LYNNFIELD WATER DISTRICT	764,867	861,938	12.7%				\$764,867	\$861,938	\$97,071	12.7%
MARBLEHEAD	2,664,131	3,092,888	16.1%				2,664,131	3,092,888	428,757	16.1%
NAHANT	514,383	533,340	3.7%				514,383	533,340	18,957	3.7%
SAUGUS	4,465,635	4,860,987	8.9%				4,465,635	4,860,987	395,352	8.9%
SOUTHBOROUGH	1,003,016	1,232,930	22.9%				1,003,016	1,232,930	229,914	22.9%
SWAMPSCOTT	2,342,440	2,581,317	10.2%				2,342,440	2,581,317	238,877	10.2%
WESTON	2,395,031	2,837,540	18.5%				2,395,031	2,837,540	442,509	18.5%
TOTAL	\$14,149,503	\$16,000,940	13.1%				\$14,149,503	\$16,000,940	\$1,851,437	13.1%

MWRA Partial Water-only Customers	Final FY21 Water Assessment	Final FY22 Water Assessment	Percent Change from FY21	Final FY21 Sewer Assessment	Final FY22 Sewer Assessment	Percent Change from FY21	Final FY21 Combined Assessment	Final FY22 Combined Assessment	Dollar Change from FY21	Percent Change from FY21
DEDHAM-WESTWOOD WATER DISTRICT	1,037,861.00	620,024.00	-40.3%				\$1,037,861	\$620,024	(\$417,837)	-40.3%
LYNN (LWSC)	396,099	125,688	-68.3%				396,099	125,688	(270,411)	-68.3%
MARLBOROUGH	6,194,747	6,589,994	6.4%				6,194,747	6,589,994	395,247	6.4%
NORTHBOROUGH	1,422,346	1,760,228	23.8%				1,422,346	1,760,228	337,882	23.8%
PEABODY	1,310,040	2,297,770	75.4%				1,310,040	2,297,770	987,730	75.4%
TOTAL	\$10,361,093	\$11,393,704	10.0%				\$10,361,093	\$11,393,704	\$1,032,611	10.0%
SYSTEMS TOTAL	\$268,071,397	\$277,415,068	3.49%	\$501,313,603	\$514,668,932	2.66%	\$769,385,000	\$792,084,000	\$22,699,000	2.95%

Massachusetts Water Resources Authority
Clinton Wastewater Treatment Plant
Sewer User Charge Determination

BUDGETED EXPENSES: Final FY22	
Clinton Direct Operating Expenses:	\$2,411,585
MWRA Support Allocation:	590,470
Subtotal O&M Expenses:	\$3,002,055
Total Debt Service Expenses:	\$1,323,041
Total Clinton Service Area Expenses	\$4,325,096
Less Revenue (City of Worcester Payment)	-190,780
Clinton WWTP Rate Revenue Requirement:	\$4,134,316

WASTEWATER FLOW and FLOW SHARES:	CY2020		
	Town of Clinton Flow	Lancaster Sewer District Flow	Total Wastewater Flow
Average Daily Flow (MGD)	2.103	0.238	2.340
Average Flow (MG/YR)	767.413	86.830	854.243
Proportional Share of Flow	89.84%	10.16%	100.0%

Sewer User Charge Determination

TOWN OF CLINTON	
O&M Expenses	\$3,002,055
Less Revenue (City of Worcester Payment)	-190,780
O&M Expenses to be Recovered	\$2,811,275
Clinton's Share of Flow	89.84%
Clinton's Share of O&M Costs	\$2,525,521
Total Clinton O&M Charge	\$2,525,521
Debt Service Costs to be Recovered	\$1,323,041
Clinton's Share of Wastewater Flow	89.84%
Total Clinton Debt Service Charge	\$1,188,560
Total Clinton O&M and Debt Service Charge	\$3,714,081
Less MWRA Water Ratepayer Subsidy	-3,214,081
Billable Charge to the Town of Clinton as per CH. 307, Section 8 The Acts of 1987	\$500,000

LANCASTER SEWER DISTRICT	
O&M Expenses	\$3,002,055
Less Revenue (City of Worcester Payment)	-190,780
O&M Expenses to be Recovered	\$2,811,275
Lancaster's Share of Flow	10.16%
Lancaster's Share of O&M Costs	\$285,754
Total Lancaster Sewer District O&M Charge	\$285,754
Debt Service Costs to be Recovered	\$1,323,041
Lancaster's Share of Wastewater Flow	10.16%
Total Lancaster Sewer District Debt Service Charge	\$134,481
Total Lancaster O&M and Debt Service Charge	\$420,235
Billable Charge to Lancaster Sewer District	\$420,235

Clinton WWTP Charges and Payment Schedule

Sewer Customer	Billable Charges	Change from Prior Year	
		Change	%
Town of Clinton (billable)	\$500,000	\$0	0.0%
Lancaster Sewer District (before adj.)	\$420,235		
Lancaster Sewer District (prior yr. adj.)	\$23,648		
Lancaster Sewer District (billable)	\$443,883	\$10,112	2.3%
Total Billable Sewer Use Charges	\$943,883		
City of Worcester	\$190,780	\$214,711	-11.1%

Payment 1 on or before Sept 15, 2021	Payment 2 on or before Nov 15, 2021	Payment 3 on or before Feb 15, 2022	Payment 4 on or before May 15, 2022
\$125,000	\$125,000	\$125,000	\$125,000
\$110,971	\$110,971	\$110,971	\$110,971
\$235,971	\$235,971	\$235,971	\$235,971
\$0	\$0	\$190,780	\$0

Massachusetts Water Resources Authority

Chicopee Valley Aqueduct Water System Assessment

Final FY2022 Budget and Assessments

CVA Operating Budget	FY21	FY22
CVA Cost Center Expenses	\$965,147	\$955,678
Allocated Waterworks Expenses	152,731	151,498
Allocated Watershed/PILOT	482,312	463,776
Allocated Watershed Land Acquisition	29,675	28,792
Allocated MWRA Indirect Expenses	650,516	661,503
SUBTOTAL OPERATING BUDGET	\$2,280,381	\$2,261,246

Change from Prior Year	
Dollars	Percent
-\$9,469	-1.0%
-1,233	-0.8%
-18,536	-3.8%
-883	-3.0%
10,987	1.7%
-\$19,135	-0.8%

CVA Capital Budget	FY21	FY22
Capital Expenses	\$3,099,516	\$3,048,338
TOTAL CVA BUDGET	\$5,379,897	\$5,309,585

Change from Prior Year	
Dollars	Percent
-\$51,178	-1.7%
-\$70,313	-1.3%

BASE COMMUNITY ASSESSMENT	FY21 ¹	FY22 ²
Chicopee	\$3,776,791	\$3,628,248
South Hadley Fire District #1	780,962	803,078
Wilbraham	822,145	878,258
CVA BASE SYSTEM ASSESSMENT	\$5,379,897	\$5,309,585

Change from Prior Year	
Dollars	Percent
-\$148,542	-3.9%
22,116	2.8%
56,113	6.8%
-\$70,313	-1.3%

PRIOR PERIOD ADJUSTMENTS	FY21 ³	FY22 ³
Chicopee	-\$69,385	-\$27,865
South Hadley Fire District #1	-14,354	-5,844
Wilbraham	-13,802	-5,699
TOTAL ADJUSTMENTS	-\$97,540	-\$39,408

Change from Prior Year	
Dollars	Percent
\$41,520	-59.8%
8,510	-59.3%
8,103	-58.7%
\$58,132	-59.6%

ADJUSTED ASSESSMENT	FY21	FY22
Chicopee	\$3,707,406	\$3,600,383
South Hadley Fire District #1	766,608	797,235
Wilbraham	808,343	872,559
ADJUSTED ASSESSMENT	\$5,282,357	\$5,270,177

Change from Prior Year	
Dollars	Percent
-\$107,023	-2.9%
30,627	4.0%
64,216	7.9%
-\$12,180	-0.23%

¹ Based on CY2019 water use and before prior period adjustments.

² Based on CY2020 water use and before prior period adjustments.

³ Prior period adjustment to account for budget to actual expenses.


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: June 23, 2021
SUBJECT: Investment Banking Services
MWRA Contract F263




COMMITTEE: Administration, Finance & Audit

X 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 the following investment banking firms to serve as underwriters for fixed rate bond issues and to authorize the Executive Director, on behalf of the Authority, to enter into agreements with the selected firms; and further to approve the recommendation of the Consultant Selection Committee that Citigroup Global Markets, Inc., as first ranked, serve as senior manager for the next fixed rate bond transaction and, for subsequent transactions, it is the intent to assign senior managers in rotation based on the Selection Committee's ranking order, provided there are no material changes to the firm or in markets conditions.

Senior Managers:

Citigroup Global Markets, Inc.
Bank of America Securities Inc.
Barclays Capital Inc.
Jefferies LLC
Morgan Stanley & Co., Inc.

Co-Managers:

Goldman Sachs & Co.	Samuel A. Ramirez & Co., Inc.
UBS Financial Services Inc.	RBC Capital Markets
JP Morgan Securities Inc.	

Selling Group:

Academy Securities, Inc.	American Veterans Group
Blaylock Van, LLC	Cabrera Capital Markets, LLC
Drexel Hamilton, LLC	Estrada Hinojosa & Co., Inc.
Hilltop Securities Inc.	Janney Montgomery Scott, LLC
Mesirow Financial, Inc.	Mischler Financial Group, Inc.
Raymond James & Associates, Inc.	Robert W. Baird & Co., Inc.
Siebert Williams Shank & Co., LLC	U.S. Bancorp Investment, Inc.
Wells Fargo Securities	

DISCUSSION:

MWRA requires investment bankers to provide underwriting services for the bonds issued to fund its multi-billion dollar capital program. The firms selected to provide investment banking services will sell MWRA's debt issuance to a variety of investors including both retail and institutional investors. Beyond selling MWRA bonds to investors, selected firms will also provide recommendations on the structure and timing of a transaction. In order to effectively sell a bond transaction, MWRA requires a well-rounded team of underwriters to serve as senior managers, co-managers and participate in the selling group.

The senior manager has the largest role in a bond transaction. This firm will recommend the structure for bond issues, propose initial interest rates, assist with investor relations, receive and track orders and, if necessary, underwrite unsold bonds. Assisting with investor relations has become more important as MWRA looks to attract Environmental, Social and Governance (ESG) funds to invest in its green bonds. The senior manager represents all the members of the underwriting team in negotiations with MWRA. Typically one senior manager will be designated to manage each sale and in that role will receive orders from the other underwriters, from institutional investors placing group orders and from its own clients. The designated senior manager also apportions the bonds to the other underwriters. The senior manager assumes the largest share of underwriting risk in a bond transaction. Senior managers are compensated through two mechanisms; first, they receive a portion of the underwriting fee from the proceeds for selling the bonds, which have averaged \$3.60 per bond for the last five years, and second, they receive commissions from the investors on bonds they sell.

A co-manager's role in an underwriting is to provide suggestions on pricing and to sell bonds. Co-managers are compensated through a smaller portion of the underwriting fee and commissions on bonds they sell. Co-managers have a smaller financial liability should all the bonds not be placed with new bondholders.

The selling group is compensated by commissions on the bonds they sell and potentially a portion of the underwriting fee. The selling group does not have any responsibility to support the transaction if all of the bonds cannot be placed with investors. The purpose of the selling group is to diversify the underwriting team and provide additional distribution networks for MWRA bonds.

Procurement Process:

The procurement process to select investment banking firms, utilized a one step Request for Qualification Statements and Proposals (RFQ/P), which was issued on April 7, 2021. In addition to the standard procurement advertising requirements, which included Goods & Services, the Boston Herald, the Banner Publication and El Mundo, copies of the advertisement were sent directly to thirty-one firms to encourage competition and 81 firms received notice of the RFQ/P via the MWRA Supplier Portal. Forty-five firms requested the RFQ/P and twenty-five firms submitted proposals on May 7, 2021 and are listed alphabetically as follows:

Proposers:

Academy Securities, Inc.	JP Morgan Securities Inc.
American Veterans Group	Mesirow Financial, Inc.
Bank of America Securities Inc.	Mischler Financial Group, Inc.
Barclays Capital Inc.	Morgan Stanley & Co., Inc.
Blaylock Van, LLC	Raymond James & Associates, Inc.
Cabrera Capital Markets, LLC	RBC Capital Markets
Citigroup Global Markets, Inc.	Robert W. Baird & Co, Inc.
Drexel Hamilton, LLC	Samuel A. Ramirez & Co., Inc.
Estrada Hinojosa & Co., Inc.	Siebert Williams Shank & Co., LLC
Goldman Sachs & Co.	U.S. Bancorp Investment, Inc.
Hilltop Securities Inc.	UBS Financial Services Inc.
Janney Montgomery Scott, LLC	Wells Fargo Securities
Jefferies LLC	

As part of the procurement process, proposers seeking selection as senior managers and/or co-managers are required to provide MWRA with Statements of Certification and Disclosures in accordance with the Municipal Securities Rule Making Board Rule G-17 entitled “Conduct of Municipal Securities and Municipal Advisory Activities”. A separate Disclosure Panel comprised of staff from the Law Division and Procurement Department reviewed the information provided by the proposing firms, and determined, after seeking several clarifications, that no proposer disclosed any conflict, or appearance of a conflict, that would preclude the firm from consideration by the selection committee.

The Selection Committee evaluated and ranked the proposal based on the criteria contained in the RFQ/P including Qualifications and Key Personnel (25 points), Capacity to Underwrite Tax-Exempt Debt (20 points), Similar Experience/Past Performance (20 points), Understanding of Authority’s Capital Financing Needs and Program (20 Points), and Underwriting Approach (15 points). The Selection Committee conducted a detailed review of each member’s top ten firms, which resulted in fifteen firms being discussed in detail. The discussions included a review of references and a presentation from PFM, MWRA’s Financial Advisor. The Selection Committee’s results were as follows:

Firm	Rank	Ranking Points	Total Points
Citigroup Global Markets, Inc.	1	6	476
Bank of America Securities Inc.	2	9	460
Barclays Capital Inc.	3	22	419
Jefferies LLC	4	25	419
Morgan Stanley & Co., Inc.	5	26	409
Goldman Sachs & Co.	6	32	404
Samuel A. Ramirez & Co., Inc.	7	36	393
UBS Financial Services Inc.	8	39	387
RBC Capital Markets	9	42	371
JP Morgan Securities Inc.	10	49	355
Raymond James & Associates, Inc.	11	57	309
Wells Fargo Securities	12	61	321
Hilltop Securities Inc.	13	74	275
Robert W. Baird & Co., Inc.	14	82	254
Siebert Williams Shank & Co., LLC	15	85	259

Based on the results listed above, the Selection Committee recommends that the firms ranked 1 through 5 be designated as senior managers; and as provided in the RFQ/P, that Citigroup Global Markets, Inc., as first ranked, serve as the senior manager on MWRA's next bond transaction. For subsequent transactions, staff will follow the Selection Committee's ranking order when assigning a senior manager, barring any unforeseen changes to market or business conditions. The firms selected to serve as senior managers provided written submissions which contained a clear understanding of MWRA's unique capital financing needs. The recommended firms all have strong past performance records with MWRA or other municipal issuers, are over the required \$100 million capacity to underwrite large debt issuances, and all have a highly effective institutional sales force.

The Selection Committee recommended that the firms ranked 6 through 10 serve as co-managers. These firms will broaden the markets in which MWRA's bonds can be sold including both retail and institutional investors.

Following the ranking of senior managers and co-managers, the Selection Committee determined that the remaining proposers would be identified as part of the selling group in order to provide greater diversity and broader market access, including local markets, for the sale of MWRA bonds. The Selection Committee recommends all the remaining firms be included in the selling group.


BUDGET/FISCAL IMPACT:

As described above, the costs of investment banking services are included in the cost of issuance of bond transactions.

MBE/WBE PARTICIPATION:

There were no MBE/WBE participation requirements established for this contract due to the limited opportunities for subcontracting. However it was noted that two of the twenty-five proposers are certified by the Commonwealth's Supplier Diversity Office, one as minority owned (Cabrera Capital Markets, LLC) and one as a minority and woman owned business (Siebert Williams Shank & Co., LLC). Both firms were selected as participants in the Selling Group.


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 23, 2021
SUBJECT: Maximo Lawson Interface Enhancements
Starboard Consulting, LLC
Contract 7649

COMMITTEE: Administration, Finance & Audit

INFORMATION
 VOTE

Michael Farmer, Project Manager
Paula Weadick., Director, MIS
Preparer/Title


Michele S. Gillen
Director of Administration

Contract 7649 will provide for enhancement to MWRA's existing Computerized Maintenance Management System, Maximo, and its interface to our current ERP System, Lawson. The recommended enhancements apply to 18 touchpoints, five reports, clean-up of some transactions, and will provide updated technology and increased functionality.

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to award Contract 7649, Maximo Lawson Interface Enhancements, to Starboard Consulting, LLC, and to authorize the Executive Director, on behalf of the Authority, to execute said contract in an amount not to exceed \$1,184,000, for a contract term of 18 months from the Notice to Proceed.

DISCUSSION:

MWRA acquired Maximo through a competitive bid process in 1994 in support of the Deer Island Treatment Plant's maintenance management program, which was being developed in parallel with the construction of the plant. Upon successful implementation, MWRA expanded the use of Maximo to Field Operations and Vehicle Maintenance Management in 1998, and standardized on Maximo as the maintenance management software application for the Authority. In 2015, through a competitive bid process, Maximo was upgraded to version 7.6.x and the Deer Island, Field Operations and Vehicle Maintenance Management systems were consolidated to a single, multi-site system supporting Deer Island, Field Operations, Vehicle Maintenance Management, Clinton Advanced Wastewater Treatment Plan and MIS.

The Lawson system is responsible for inventory, staffing information, and procurement. Integration between the Maximo and Lawson systems is essential for maintenance management and calculation of total cost of ownership, and therefore, needs to be 100% accurate.

This Contract:

Maximo is a Computerized Maintenance Management System (CMMS) currently used for managing asset lifecycle and maintenance activities for MWRA's water, wastewater, fleet and IT assets. It also tracks costs, including original asset cost, spare parts, consumables used in maintenance, and staff support hours to realize the total cost of ownership of an asset. MWRA is presently managing more than 126,200 pieces of equipment that generate approximately 6,340 work orders a month.

Since Lawson is the system of record for all procurement, accounts payable and staffing information, Maximo relies heavily on the synchronization of this information for tracking costs. During the Maximo upgrade and consolidation process that started in 2015, numerous touchpoints were developed for the interface between Maximo and Lawson. Based on the MWRA staff experience with the interface over the past few years, staff have recommendations to build upon the existing interface to streamline process flows, enhance functionality, and add data validation for optimal performance and transaction integrity.

Staff have identified 18 touchpoints where improvements can be made, resulting in increased effectiveness of the transactions in a shorter time. Examples of some of these touchpoints are the Maximo Work Order touchpoint, which triggers a Lawson event for picking materials from the warehouse and the Lawson Item touchpoint that triggers an inventory update in Maximo.

On occasion one of these touchpoints can fail due to inputting a wrong value either in Lawson or Maximo. This creates a failed transaction that requires manual intervention in order to resolve the issue. Resolving an issue could be anything from updating the database for an item that was classified incorrectly to updating GL Account code information. In either case, the transaction must then be manually reprocessed. If not corrected the transactions are placed in a queue and the Lawson and Maximo systems drift out of sync. In addition to implementing enhancements in the interface to address these issues, the consultant will also review and recover the failed transactions in the queue in order to ensure data integrity between the Maximo and Lawson Systems.

These interface touchpoints were developed using a third party software product, TRM Rules Manager, because at the time IBM had no way to accomplish this task without recompiling and redeploying source code. However, IBM has now implemented a simple scripting tool that can be used to develop and modify touchpoints more easily and efficiently without the need to recompile code or third party tools.

Procurement Process

On March 2, 2021, MWRA issued a one-step Request for Qualifications Statements/Proposals (RFQ/P) that was publicly advertised in Goods and Services, the Boston Herald, Banner Publications and El Mundo. In addition, ten candidate firms were directly notified, and 290 more firms received notice of the RFQ/P via the MWRA Supplier Portal. The RFQ/P documents were requested by 20 firms.

On April 14, 2021, MWRA received three proposals from California Creative Solutions Inc. d/b/a CCS Global Tech, Starboard Consulting, LLC and ZPro Solutions Inc.

The proposal costs compared to the Staff Estimate are presented below:

<u>Proposer Teams</u>	<u>Cost</u>
Starboard Consulting, LLC	\$1,184,000
CCS Global Tech	\$718,508
<i>Staff Estimate</i>	\$501,200
ZPro Solutions Inc.	\$397,900

Two of the three proposals exceeded the Staff Estimate in the areas of implementation and testing. Staff underestimated the level of effort required to rewrite the touchpoints using native IBM scripting tools.

Five criteria were used to evaluate each of the proposals: Cost (25 points); Technical Approach (25 points); Qualifications and Key Personnel (20 points); Experience/Past Performance on Similar Non-Authority Projects and Past Performance on Authority Projects (15 points); and Capacity/Organization and Management Approach (15 points).

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

<u>Proposer</u>	<u>Total Points</u>	<u>Order of Preference*</u>	<u>Final Ranking</u>
Starboard	366	8	1
CCS	376	9	2
Zpro	317	13	3

*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.

Starboard submitted the highest cost and most detailed proposal. Starboard will re-write existing touchpoints and develop new interfaces using native IBM scripting tools. Using native IBM scripting tools will simplify future upgrades. Starboard's proposal was the only one that states all interface rules using TRM Rules Manager for these touchpoints will be removed, a preference of the RFP's scope of services. Starboard has experience removing TRM Rules Manager. Starboard's proposal included five dedicated resources, two of which have experience with Maximo/Lawson integrations. Starboard also had excellent references and highly experienced and qualified key personnel.

Second-ranked CCS partnered with TRM on its proposal. CCS also proposed a thoughtful and competitive proposal with a well-developed project approach. However, CCS's technical approach included the exclusive use of the TRM's Rules Manager product, which the RFP's scope of services sought to remove. The scoring reflected this fact. The proposal from CCS included three dedicated staff and supplemental staff with Infor Lawson integration experience.

Third-ranked ZPro presented the lowest cost proposal; however, the committee members did not agree that ZPro had sufficiently demonstrated an understanding of the scope of services. The firm's proposal lacked detail, and there were questions about the size of the firm and whether it had the capacity to perform the work.

The Selection Committee determined Starboard submitted an excellent proposal with a highly qualified team, proven experience on relevant projects for water and wastewater clients, a detailed technical approach reflecting the Authority's stated preference to move away from TRM's Rules Manager product, and presented the overall best value for the Authority. Having five dedicated resources to re-write the touchpoints will help ensure that the project is completed on time.

Based on final rankings and the reasons set forth above, the Selection Committee recommends award of this contract to Starboard Consulting, LLC in an amount not to exceed \$1,184,000.


BUDGET/FISCAL IMPACT:

The FY21 CIP includes a budget of \$655,000 for Contract 7649. The award amount is \$1,184,000, or \$529,000 over budget. This amount will be absorbed in the FY19-23 CIP Spending Cap.

MBE/WBE PARTICIPATION:

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

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 23, 2021
SUBJECT: Wastewater Advisory Committee Contract

COMMITTEE: Wastewater Policy & Oversight

Carolyn M. Fiore, Deputy Chief Operating Officer
Wendy Leo, Senior Program Manager
Katherine Ronan, Environmental Analyst
Preparer/Title

INFORMATION
 VOTE


Sean Navin
Director, Intergovernmental Affairs

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to execute a contract, substantially in the form attached hereto, with the Wastewater Advisory Committee for a term of one year, from July 1, 2021 to June 30, 2022, for a total contract cost of \$77,798.

DISCUSSION:

In addition to the critical oversight functions of the Advisory Board, many of MWRA's policy decisions are made with advice and support from two standing citizens' advisory committees, the Wastewater Advisory Committee (WAC) and the Water Supply Citizens Advisory Committee (WSCAC). A separate staff summary presented at this meeting recommends authorization for the Executive Director to execute a similar contract with WSCAC for FY22.

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

The proposed FY21 WAC contract is 3.41% higher than FY21 contract. Health insurance increased by 6%, while hourly salary and other reimbursable expense items increased by 3%. Health insurance is budgeted at 80% reimbursement for the Executive Director only, not to exceed \$11,096, with an optional health insurance buy-out program similar to that offered to MWRA employees who do not use MWRA's health insurance benefit. Office space and support services for WAC are provided by MWRA at the Charlestown Navy Yard Headquarters. The proposed total FY22 WAC funding is \$77,798.

WAC's monthly meetings are geared towards engendering discussion and facilitating timely recommendations to MWRA's Board of Directors and staff on wastewater policies, projects, and program initiatives directly related to MWRA, and public concerns. Current topics of interest to WAC include operations and maintenance, combined sewer overflows, green energy, PFAS, treatment technologies, climate change, and wastewater/water policy and funding initiatives in Massachusetts.

WAC elects its chair and employs an Executive Director (selected by WAC's membership with the concurrence and approval of MWRA's Public Affairs Department). WAC's current chair is Karen Lachmayr and WAC's current Executive Director is Andreae Downs. Pursuant to the terms of the attached contract, WAC's members are approved by MWRA's Board of Directors.

BUDGET/FISCAL IMPACT:

Sufficient funds for the WAC contract are included in the Draft Final FY22 Current Expense Budget.

ATTACHMENT:

Agreement between Massachusetts Water Resources Authority and Wastewater Advisory Committee.

AGREEMENT
BETWEEN
MASSACHUSETTS WATER RESOURCES AUTHORITY
AND
WASTEWATER ADVISORY COMMITTEE

This Agreement (“Agreement”) is by and between the Massachusetts Water Resources Authority (“Authority”), a body politic and corporate and a public instrumentality of the commonwealth, created by Chapter 372 of the Acts of 1984, with offices at Building 39, Charlestown Navy Yard, Charlestown, Massachusetts 02129 and the Wastewater Advisory Committee (“WAC”) a body created by the Authority’s Board of Directors (“Board”) (collectively “Parties”).

WHEREAS, the WAC was created to offer independent advice to the Board and to the professional staff of the Authority, regarding wastewater programs and policies directly related to the Authority;

WHEREAS, the WAC will (i) review and comment to the Authority on wastewater reports and related proposed documents, and (ii) offer independent commentary and advice on current and proposed wastewater program and policy directions to further Authority objectives;

WHEREAS, the WAC membership is designed to reflect the knowledge and interest of major affected constituencies, including engineering, construction, business/industry, planning, academic research, and environmental advocacy;

WHEREAS, the Authority desires the WAC to advise the Authority in wastewater planning, and

WHEREAS, the WAC desires to have a role advising the Authority on such matters.

NOW, THEREFORE, for the consideration of mutual promises contained herein, the Authority and WAC agree as follows:

ARTICLE 1. EFFECTIVE DATE

This Agreement shall be effective from July 1, 2021 through June 30, 2022, inclusive.

ARTICLE 2. COMPENSATION, BUDGET, PAYMENT, AND EXPENSES

2.1 The Authority shall make funds available as follows:

(a) Executive Director Salary.

In order to minimize the WAC's expenses and for the WAC's convenience, the Authority shall make direct payments to the WAC for the WAC Executive Director salary. Such payments shall not exceed \$65,028 from July 1, 2021 through June 30, 2022, inclusive. The hourly salary rate (inclusive of payroll taxes) shall be \$44.94 with annual total hours of 1,447 (average 30 hours per week for 49 weeks).

(b) Reimbursable expenses.

The Authority shall reimburse the WAC for 80% of the non-employer-sponsored health insurance for the WAC Executive Director (not to exceed \$11,096), and for stationery, payroll services expenses, bank expenses, and for mileage costs, public transportation costs, highway tolls and parking expenses for meeting attendance by WAC's Executive Director and membership, and for other miscellaneous expenses of the WAC staff approved by the Authority on a case-by-case basis. Such expenses will be reimbursed when submitted to the Public Affairs Unit. Mileage costs will be reimbursed at the prevailing Authority rate per mile.

The percentage rate for reimbursement of health insurance costs shall be changed to that of Authority staff if the Group Insurance Commission changes the rate.

Health insurance buy-out: The WAC Executive Director may elect a monetary allowance in lieu of reimbursement of health insurance costs, provided he or she has health insurance coverage through another employer-sponsored plan that meets Internal Revenue Service "minimum value" criteria, throughout that six-month period. The amount of the allowance will be \$1000 to waive family coverage or \$700 for waiving individual coverage. The WAC Executive Director is responsible for any withholding taxes on these payments with WAC being responsible for the employer share of payroll taxes.

The total annual expense reimbursement to WAC, excluding health insurance reimbursements or buy-out, shall not exceed \$1,674.00.

(c) Non-reimbursable expenses.

The following expenses are not reimbursable: meals, entertainment, room and board expenses, fines, fees, or costs assessed as a result of improper or illegal actions on the part of the member, such as parking tickets or speeding fines.

ARTICLE 3. RESPONSIBILITIES OF THE AUTHORITY AND WAC.

- (a) The WAC shall employ an Executive Director who is prohibited from being a member of the WAC while serving his or her term as a paid employee. The Authority Public Affairs Office must concur with and approve the selection of the WAC Executive Director by the WAC. The duties of the Executive Director shall be in accordance with the job description prepared by the WAC, and on file with the Authority.
- (b) The WAC shall submit weekly statements to the Authority requesting payment for expenses listed in Article 2. Such requests shall be supplemented or accompanied by time sheets, travel and expense vouchers, and by such other supporting data as may be required by the Authority.
- (c) The WAC shall maintain accounts, records, documents, and other evidence directly pertinent to performance of work under this Agreement. The parties and their duly authorized representatives shall have access to such records, documents, and other evidence for the purpose of inspection, audit, and copying.
- (d) The Authority or its duly authorized agent shall have the right at any and all reasonable times, to examine and audit WAC's records, documents and other evidence.
- (e) This Agreement is subject to the laws dealing with the expenditures of public funds, including Chapter 12A of the Massachusetts General Laws.
- (f) The parties shall agree to any reasonable modifications or changes in this contract that may be required by the Commonwealth of Massachusetts or any of its agencies.
- (g) The WAC acknowledges that the Authority is a state agency for purposes of Chapter 268A of the General Laws (the Massachusetts Conflict of Interest Law) and understands that for the purposes of that law, WAC staff and members are special state employees.
- (h) The WAC shall be responsible for compliance with all applicable provisions and requirements of the Massachusetts Open Meeting Law.

ARTICLE 4. RESPONSIBILITIES OF THE WAC STAFF.

4.1 The WAC staff shall be responsible for the following tasks:

- (a) aiding the WAC in its tasks under Article 6, educating the public, and acting as liaison with the Authority and its staff;
- (b) maintaining financial records, minutes of the WAC meetings, and other WAC records;
- (c) providing to the Authority copies of the notices for and minutes of all meetings of WAC and of all WAC correspondence relative to Authority projects and proposals as soon as such materials are available; and

(d) administering and maintaining compliance by all its members and staff with the provisions of the Massachusetts Conflict of Interest Law including, without limitation, those mandatory provisions relating to: (i) annual distribution to members and staff of the State Ethics Commission's (SEC) Summary of Law and maintenance and archiving of acknowledgements of receipt of the Summary of Law from all members and staff, and (ii) compliance by members and staff with the SEC's bi-annual educational training exercises.

ARTICLE 5. MEMBERSHIP, MEETINGS, TERMS.

5.1 the WAC membership, meetings and terms shall be as follows:

- (a) the WAC will have a maximum of twenty (20) members ("Members") approved by the Board. (Alternates or designees are prohibited);
- (b) the WAC shall meet once per month and maintain records of its meetings;
- (c) to the extent reasonable, Members will meet as a committee of the whole, without resort to subcommittees;
- (d) members will elect their chairman.
- (e) members' terms will be three (3) years; members may succeed themselves.
- (f) members unable to maintain reasonable participation in the committee's work will be expected to resign. The Authority's Public Affairs Unit, in consultation with the WAC chairman, will nominate a replacement for Board approval.

ARTICLE 6. WAC TASKS.

The WAC shall undertake the following tasks:

6.1 Wastewater Policies and Programs Review.

Advise the Authority staff and Board. Participate in review and evaluation of wastewater management plans (e.g., local limits, I/I, CSO), reports and new ideas for programs. Provide comments, information, advice, recommendations and guidance as to the direction, intent and execution of wastewater planning and policy directly related to MWRA.

6.2 Outreach and Education.

Strive to increase citizen participation and education by providing assistance in outreach to various groups regarding the Authority's wastewater programs and state wastewater resource policies. Review programs and explain plans and policies to organizations and citizens.

6.3 Working Group Representation.

When possible, provide a representative on Authority working groups, comprising MWRA staff and consultants, related to wastewater programs and policy, including the Advisory Board and its subcommittees and the Water Supply Citizens Advisory Committee.

6.4 Recommendations on Long Term Public Involvement.

Provide to the Authority staff and Board, proposals for continued effective and efficient long term public involvement in wastewater programs.

6.5 Recommendations and Discussion Documents.

The WAC staff shall be responsible for providing to the Authority's staff, Board, and others, recommendation and discussion documents on wastewater programs and policy. Documents may be in the form of minutes of WAC meetings, memoranda, letters, reports, presentations and discussions as appropriate.

ARTICLE 7. MISCELLANEOUS REQUIREMENTS.

7.1 Nondiscrimination and Equal Employment Opportunity

The WAC agrees to comply with the Authority's policy regarding non-discrimination and affirmative action.

ARTICLE 8. GENERAL PROVISIONS.

8.1 Termination of Contract.

(a) This Agreement may be terminated in writing, at any time, in whole or in part, by the Authority for its convenience or in the event of substantial failure by the WAC to fulfill its obligations, or for violation of any of the covenants and stipulations of this Agreement.

(b) If termination is effected by the Authority an equitable adjustment shall be made providing for payment to the WAC for services rendered and expenses incurred prior to the termination.

(c) No termination hereunder may be effected unless the terminating party gives the other party:

- (1) not less than forty-five days' written notice delivered by certified mail, return receipt requested, of intent to terminate; and
- (2) an opportunity for consultation with the other party prior to termination, or
- (3) by mutual agreement of the parties.

8.2 Assignability.

The WAC shall not assign or transfer this Agreement or delegate its responsibility for the performance of services under this agreement.

8.3 Integration Clause.

This Agreement integrates and supersedes all prior negotiations, representations, or agreements.

8.4 Amendment.

This Agreement may be amended only by a writing executed by each of the parties.

8.5 Severability of Provisions.

If any provision of this Agreement shall, to any extent, be held invalid or unenforceable, the remainder of this Agreement shall not be deemed affected thereby.

8.6 Massachusetts Law to Govern.

All parties to this Agreement agree that this Agreement shall be governed by and enforced in accordance with the laws of the Commonwealth of Massachusetts.

8.7 Duplicate Originals.

This Agreement may be signed in more than one identical counterpart, each of which shall be deemed to be an original hereof.

8.8 Notices.

Communications shall be deemed to have been made when mailed postage prepaid or delivered among:

Executive Director
Wastewater Advisory Committee
c/o MWRA
100 First Avenue
Charlestown Navy Yard
Boston, MA 02129

Executive Director
Massachusetts Water Resources Authority
Charlestown Navy Yard
100 First Avenue
Boston, MA 02129

Director of Public Affairs
Massachusetts Water Resources Authority
Charlestown Navy Yard
100 First Avenue
Boston, MA 02129

IN WITNESS WHEREOF, this Agreement is executed as of this ____th day of
June, 2021.

FOR; WASTEWATER ADVISORY COMMITTEE

By: _____
Karen Lachmayr, Chair

FOR: MASSACHUSETTS WATER RESOURCES AUTHORITY

By: _____
Frederick A. Laskey, Executive Director

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director *Frederick A. Laskey*
DATE: June 23, 2021
SUBJECT: Removal, Disposal, and Replacement of Odor Control Wet Scrubber Plastic Packing Media and Mist Eliminators at the Deer Island Treatment Plant
Carbon Filtration Systems, Inc.
Bid WRA-4950

COMMITTEE: Wastewater Policy & Oversight

 INFORMATION

 X VOTE

Michele S. Gillen

Michele S. Gillen

Director of Administration

Lisa Wong, Manager, Process Control
David F. Duest, Director, Deer Island
Douglas J. Rice, Director of Procurement
Preparer/Title

David W. Coppes

David W. Coppes, P.E.

Chief Operating Officer

RECOMMENDATION:

To approve the award of Purchase Order Contract WRA-4950 for the removal, disposal, and replacement of scrubber plastic packing media and mist eliminators at the Deer Island Treatment Plant to the lowest responsive bidder, Carbon Filtration Systems, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said purchase order contract in an amount not to exceed \$325,000, for a contract term of nine months from the Notice to Proceed.

DISCUSSION:

The Deer Island Treatment Plant operates odor control wet scrubbers to remove odorous compounds from process air prior to release to the atmosphere in accordance with the requirements of its Title V air permit. These scrubbers utilize plastic media as part of the removal process and a mist eliminator to remove contaminants that evolve as droplets, both of which must be periodically replaced to maintain treatment efficiency.

Separate odor control trains are provided for each facility's process air flow stream. Wet scrubbers are used in the East Odor Control, West Odor Control, and Residuals Odor Control Facilities. Each odor control train consists of packed spiral updraft wet scrubbers followed by carbon absorbers for removal of hydrogen sulfide and volatile organic compounds. Process air from the wastewater treatment areas is drawn through the wet scrubbers using centrifugal exhaust fans; the air is then blown through heating coils



West Odor Control Exhaust Stack



West Odor Control Wet Scrubber

and carbon adsorbers before being discharged through the exhaust stack to the atmosphere. Wet scrubbers can be bypassed, using only carbon adsorption for odor control if conditions allow.

Wet scrubbers are designed primarily to remove hydrogen sulfide using a combination of sodium hypochlorite and sodium hydroxide. This contract will cover all eleven operating wet scrubbers. There are five scrubbers located in the East Odor Control Facility. Each of those scrubbers contains 1,131 cubic feet of plastic media. There are four scrubbers in the West Odor Control Facility; two contain 785 cubic feet of plastic media, and two contain 1,131 cubic feet of plastic media. In addition, there are two scrubbers located in the Residuals Odor Control Facility. Each of those scrubbers contains 1,131 cubic feet of plastic media. Each scrubber also contains a single mist eliminator.

After years of operation, the plastic media in the scrubbers degrade through exposure to chemicals, making the media brittle. The media breaks apart over time and can clog the wet scrubber recirculation pumps and misters, causing equipment downtime. Also over time, the wet scrubber plastic media and the mist eliminators become encrusted with sulfur deposits, reducing treatment efficiency. Staff regularly inspect the condition of the wet scrubber media and the mist eliminators. Additionally, staff continually monitor wet scrubber treatment efficiency. Based on the media conditions observed during recent visual inspections, the wet scrubber treatment efficiencies, and the age of the scrubber media and mist eliminators, staff recommend change out of media and the mist eliminators at this time. The existing media ranges in age from 6 to 13 years, having been replaced under separate contracts in 2008, 2010, and 2014.

Procurement Process

Bid WRA-4950 was advertised in the following publications: the Boston Herald, the Goods and Services Bulletin, El Mundo, and Banner Publications. In addition, bids were made available for public downloading on MWRA’s e-procurement system (Event 4602) and six potential bidders were solicited through the e-Portal.

On April 21, 2021, Event 4602 closed with the following results:

<u>BIDDERS</u>	<u>AMOUNT</u>
Munters Corporation	\$186,340.00
Carbon Filtration Systems, Inc.	\$325,000.00
ACV Environmental	\$351,802.95
RVT Process Equipment	\$634,292.50

Staff reviewed the bid from Munters Corporation and determined it to be nonresponsive. The bid submitted by Munters included the materials for packing media and mist eliminators only, and did not include the installation portion of the scope.

Staff have reviewed Carbon Filtration Systems, Inc.'s bid and have determined that it meets all of the requirements of the bid specifications. Therefore, staff recommend the award of this purchase order contract to Carbon Filtration Systems, Inc. as the lowest responsive bidder.

BUDGET/FISCAL IMPACT:

There are sufficient funds available for this contract in the proposed FY22 Current Expense Budget.

MBE/WBE PARTICIPATION:

Carbon Filtration Systems, Inc. is not a certified Minority- or Women-owned business.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: June 23, 2021
SUBJECT: Centrifuge Services, Deer Island Treatment Plant
Alfa Laval, Inc.
Contract S601



COMMITTEE: Wastewater Policy & Oversight

 INFORMATION

 X VOTE



Michele S. Gillen

Director of Administration

David F. Duest, Director, Deer Island
Richard J. Adams, Manager Engineering, Deer Island
Paul Pisano, Program Manager
Preparer/Title



David W. Coppes, P.E.

Chief Operating Officer

RECOMMENDATION:

To approve the award of Contract S601, Centrifuge Services, Deer Island Treatment Plant, to the lowest responsive bidder, Alfa Laval, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$599,150, for a contract term of 1095 calendar days from the Notice to Proceed.

DISCUSSION:

Contract S601 will provide for maintenance and technical support services as required for six Alfa Laval PM95000 centrifuge units located in the Centrifuge Thickening Building at the Deer Island Treatment Plant. There are a total of sixteen centrifuges (Figure 1) installed on Deer Island. On average six centrifuges operate continuously, with as few as four units or as many as nine units, depending on secondary waste sludge quantities. Centrifuges provide waste secondary sludge and scum thickening with the aid of polymers to help thicken the mixture. Waste sludge and scum coming out of secondary goes into the centrifuges at roughly 0.15 % total solids, and is thickened to 5.5% total solids for introduction into the anaerobic digesters.

The PM95000 units, manufactured by Alfa Laval, were installed under the Boston Harbor Project in 1998. Preventive maintenance and service to these centrifuges are essential to ensure continued operational reliability and optimum performance. Monthly preventive maintenance is currently performed by MWRA staff. However, in accordance with the manufacturer's recommended maintenance schedule, after approximately 25,000 run hours, these centrifuge units require a more extensive servicing utilizing highly specialized equipment. This service is complex, invasive and requires a specialized skill set that only centrifuge experts can provide. Staff determine when the units require servicing based on a unit's operating hours, reduced operational performance, or in the remote instance of an unexpected failure. In general, centrifuges are sent out for this specialized servicing every five to seven years.



Figure 1 - Centrifuge Units

Contract S601 is a three-year service contract that will provide complete servicing for six centrifuge units. MWRA staff will continue to perform monthly routine preventive maintenance on these units and the associated ancillary systems. The contract includes allowances for repair and technical support services to assist Deer Island maintenance staff on an as-needed basis to address unique or unforeseen circumstances. The contract also includes an allowance for replacement parts.

Under this contract, MWRA staff will remove each of the six centrifuge rotating assemblies from its frame and place it onto a flatbed trailer truck for shipment to the offsite servicing facility where the work will be completed. Upon completion of the work, the units will be shipped back to Deer Island and MWRA staff will then reinstall the equipment.

Procurement Process

Contract S601 was publically advertised in the Boston Herald, Banner Publications, El Mundo, the Goods and Services Bulletin, COMMBUYS and bid as a non-professional services contract. In addition, bids were made available for public downloading on MWRA’s e-procurement system (Event 4566-4). A remote pre-bid meeting was held on February 26, 2021.

Bids were received and opened on March 10, 2021 with the following results:

<u>Bidder</u>	<u>Bid Amount</u>
Alfa Laval, Inc.	\$599,150.00
Engineer's Estimate	\$612,250.00
Franzenburg Centrifuge	\$616,000.00
Sentrimax Centrifuges Inc.,	\$635,281.00

The Engineer’s Estimate was prepared utilizing cost criteria from three previously awarded centrifuge contracts. To date all maintenance services contracts, which have been competitively bid, have been awarded to Alfa Laval, Inc.

References were checked and found to be favorable. Staff have also reported complete satisfaction with Alfa Laval’s past performance on previous MWRA contracts. Staff are of the opinion that Alfa Laval possesses the skill, ability and integrity necessary to successfully complete the work under this contract. Therefore, staff recommend the award of this contract to Alfa Laval, Inc. as the lowest responsible and eligible bidder.

BUDGET/FISCAL IMPACT:

The proposed FY22 Current Expense Budget includes \$160,000 for the first year of this contract. Appropriate funding for the remaining years of the contract will be included in subsequent CEB requests.

MBE/WBE PARTICIPATION:

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

STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: June 23, 2021
SUBJECT: Chelsea Creek Headworks Upgrade
BHD/BEC 2015, A Joint Venture
Contract 7161, Change Order 47



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 47 to Contract 7161, Chelsea Creek Headworks Upgrade, with BHD/BEC 2015, A Joint Venture for a lump sum amount of \$72,769.00, increasing the contract amount from \$85,081,020.06 to \$85,153,789.06, 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 contract expired on April 4, 2021. The Contractor has requested a declaration of Substantial Completion. Staff are not in agreement and are currently reviewing the Contractor's claims of schedule impacts with respect to change order work.

The 30-day reliability test for the wastewater process equipment was successfully completed in April 2020. The odor control and HVAC systems are operational and the final air balancing is ongoing.

The freight elevator modernization is in progress with an anticipated completion in July 2021. Hazardous material abatement is approximately 99% complete. Final site restoration is nearing completion.

This Change Order

Change Order 47 consists of the following two items:

<u>Heat Tracing and Insulation on Outdoor Pressure Sensing Lines</u>	\$46,406
--	----------

The Contractor is required to furnish and install outdoor odor control equipment that includes three 250-horsepower fans, three carbon adsorbers and interconnecting ductwork. Pressure transmitters are installed on the interconnecting ductwork to monitor system pressure at the fans and carbon adsorbers. There are four pressure transmitters on each of the three odor control trains, which include fan inlet pressure, fan outlet pressure, fan differential pressure and carbon adsorber differential pressure. These are critical operating parameters used to confirm system performance as well as to provide protection to the fans and ductwork.

After commencement of the contract and during the first winter operating the new odor control equipment, staff reported faulty pressure readings from these transmitters. Staff identified condensation from the odorous air stream accumulating and freezing in the sensing lines to these pressure transmitters. With ice blocking the sensing lines, the transmitters cannot measure actual system pressure and the fans will not shutoff automatically to prevent high vacuum or pressure conditions. The contract required heat tracing and insulation on the low point condensate drains, but did not include the same freeze protection of the pressure sensing lines. To correct this omission, the Contractor must furnish and install heat tracing and insulation on all pressure sensing lines for the outdoor odor control equipment to prevent condensate from freezing.



Odor Control Fan Pressure Transmitters



Pressure Sensing Lines

This item was identified by MWRA staff as a design omission. MWRA staff, the Consultant and the Contractor have agreed to a lump sum amount of \$46,406 for this work. The Contractor proceeded with this work at its own risk in order to complete the remainder of the contract work.

Stairs at Communication Shelter

\$26,363

The Contractor is required to furnish and install a communication shelter to house the radio equipment on the new 160-foot microwave radio tower for communications with Deer Island, Fells Reservoir and Chelsea Administration Building. The communication shelter is a transportable precast concrete structure on a reinforced concrete foundation installed approximately five feet above finished grade to provide flood protection. Prefabricated aluminum stairs provide access from the shelter to finish grade. After commencement of the contract and fabrication of the precast shelter, it was noted the layout for the prefabricated stairs and stair landings indicated in the civil drawings did not match the location of the shelter door. The communication shelter was submitted, approved and constructed based on details included in the electrical and instrumentation drawings showing the layout of the radio equipment racks, cable trays, control panels and exterior door. In addition to the lack of coordination between design disciplines, the contract documents only indicate four steps for this set of stairs, but the Building Code requires seven steps, based on the change in elevation. To correct these errors, the size and layout for the prefabricated stairs, stair landings and surrounding sidewalks had to be revised to meet the access and egress paths required by the Building Code. The Contractor must furnish and install revised prefabricated aluminum stairs, stair landings, handrails and sidewalks for the communication shelter in lieu of what was specified to coordinate with the actual door location and meet the requirements of the Building Code.



Communication Shelter Door Location
(Actual)

This item was identified by MWRA staff as a design error. MWRA staff, the Consultant and the Contractor agreed to a lump sum amount of \$26,363 for this work. The Contractor proceeded with this work at its own risk in order to complete the remainder of the contract work.

Although the Contractor agrees with the pricing for the two 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 47 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	\$380,778.00	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	\$142,310.00	0 Days	03/31/20
Change Order 37*	\$169,097.00	0 Days	06/30/20
Change Order 38	\$226,853.00	0 Days	07/31/20
Change Order 39*	\$24,128.00	0 Days	09/09/20
Change Order 40*	(\$15,556.00)	0 Days	09/09/20
Change Order 41*	\$0.00	14 Days	10/21/20
Change Order 42*	\$69,579.00	0 Days	11/23/20
Change Order 43	\$600,000.00	120 Days	12/24/20
Change Order 44	\$308,291.00	0 Days	01/26/21
Change Order 45	\$644,447.00	0 Days	03/23/21
Change Order 46*	\$247,481.00	0 Days	Pending
Change Order 47	<u>\$72,769.00</u>	<u>0 Days</u>	Pending
Total of Change Orders:	\$12,294,789.06	134 Days	
Adjusted Contract:	\$85,153,789.06	1594 Days	

*Approved under delegated authority

If Change Order 47 is approved, the cumulative value of all change orders to this contract will be \$12,294,789.06 or 16.9% of the original contract amount. Work on this contract is approximately 95% complete.

BUDGET/FISCAL IMPACT:

The FY21 Capital Improvement Program includes a budget of \$83,366,700 for Contract 7161. Including this change order for a lump sum amount of \$72,769.00, the adjusted subphase total will be \$85,153,789.06 or \$1,787,089.06 over budget. This amount will be absorbed within the five-year CIP spending cap.

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 Directors
FROM: Frederick A. Laskey, Executive Director *Frederick A. Laskey*
DATE: June 23, 2021
SUBJECT: Nut Island Headworks Odor Control and HVAC Improvements
 Inspections, Evaluations, Design, Construction Administration and Resident
 Engineering Services
 Hazen and Sawyer, P.C.
 Contract 7517, Amendment 3

COMMITTEE: Wastewater Policy & Oversight

 INFORMATION
 X VOTE

John P. Colbert, P.E., Chief Engineer
David K. Pottle, P.E., Program Manager
 Preparer/Title

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

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Amendment 3 to Contract 7517, Nut Island Headworks Odor Control and HVAC Improvements Inspections, Evaluations, Design, Construction Administration and Resident Engineering Services, with Hazen and Sawyer, P.C., to increase the contract amount by \$836,304.00 from \$7,529,643.51 to \$8,365,947.51 with no increase in contract term.

DISCUSSION:

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



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

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

Construction of the facility improvements began in February 2020 under Contract 7548 - Nut Island Headworks Odor Control and HVAC Improvements. Contract 7548 is approximately 33% complete. Work completed to date includes installation of odor control ductwork, HVAC ductwork, electrical equipment and raceways, instrumentation equipment, chemical containment areas and tanks, modifications to the fire protection sprinkler system, installation of emergency spillway gates, and demolition of the heating system boilers. Substantial Completion is scheduled for December 2022.



New Suction Ductwork at Odor Control Fan 4



New Sodium Hydroxide Storage Tanks

Amendment 1 increased the contract amount by \$1,542,925.00 and extended the term by 700 days. The additional time was to complete the design and to provide engineering services during construction for a longer construction period. The added costs were for an additional Resident Engineer for the entire construction period to support this large complex project, additional onsite technical inspections, project administration, the use of the Orion e-construction services, and implementing high performance SCADA HMI graphics services.

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

This Amendment

Amendment 3 will increase the contract amount by \$836,304.00 from \$7,529,643.51 to \$8,365,947.51 with no increase in contract term.

The scope for the design and construction services for this project was prepared five years ago and provided assumed scope items for the construction contract. The hours for review of contractor submittals and requests for information in the scope of services were set at pre-determined levels of effort for all proposers, based upon review of past projects and staff design and construction experience.

The 100% design was completed two years ago and includes required equipment replacements and project sequencing. The number of contractor submittals necessary for this complex reconstruction project and detailed sequencing to allow the facility to remain operational is significantly higher than was envisioned when the scope of work was originally developed. Additional contractor submittals are necessary for the review of a number of temporary systems to accomplish the construction. These systems include temporary HVAC ductwork, facility heating, a supplemental carbon adsorber and odor control ductwork. In addition, the quantity of submittals required for the new permanent equipment is higher due to the significant quantity of associated system components, including the sensors and instruments required for the reconfigured odor control system and the new building management system. The number of requests for information is also higher due to the significant questions surrounding sequencing of work and the complexity of the construction to maintain facility operations during construction.

The Hazen and Sawyer (designer) team has been working cooperatively with the Authority to reduce the number of contractor submittals and requests for information (RFIs) needing to be reviewed by Hazen's design staff. Hazen's resident engineer, in conjunction with the Authority's construction staff, is reviewing submittals pertaining to operations and maintenance manuals, vendor training, equipment data forms and progress photos. Also, Hazen's resident engineer and the Authority's construction staff are reviewing RFIs pertaining to coordination with facility operations. The construction contract has expended 33% of the contract value in 46% of the contract time. The executed change orders to date represent approximately 1% of the construction value.

Additional Review of Contractor Submittals \$544,868

This contract provides engineering services during construction, and included 2,400 hours for review and responding to contractor submittals. This level of effort, established by staff during the design scope development phase, was exceeded earlier this year and Amendment 2 provided an additional 1,581 hours for these services.

This additional level of effort has recently been reached, and proposed Amendment 3 provides an additional 3,369 hours for these services, as estimated by staff to be required through the end of construction. This is estimated to increase the number of submittals that can be reviewed from 810 to a total of 1,500 with the additional Amendment 3 budget.

Additional Review of Contractor RFIs \$268,650

This contract includes 1,600 hours for review and response to contractor RFIs. This level of effort, established by staff during the design scope development phase, has recently been reached. Proposed Amendment 3 provides an additional 1,673 hours for these services, as estimated by staff to be required through the end of construction. This is estimated to increase the number of RFIs that can be responded to from 270 to a total of 550 with the additional Amendment 3 budget.

Additional SCADA Coordination

\$22,786

Construction phase SCADA integration services including programming, testing and implementation of the SCADA operating systems for new equipment requires additional meetings to ensure successful SCADA implementation. This project requires significant construction sequencing and phased equipment testing and startup, requiring many changes to the SCADA system throughout the work to maintain facility operations. Recent experience on the Chelsea Creek Headworks project, which required similar construction sequencing and phased equipment testing and startup, demonstrated the benefits of holding biweekly SCADA-specific coordination meetings between the contractor, designer and MWRA SCADA and operating staff to ensure all changes to the SCADA system provide the operational control and reporting required to maintain continuous facility operations. Proposed Amendment 3 provides 114 hours for instrumentation staff of the Hazen and Sawyer team to attend biweekly SCADA coordination meetings.

CONTRACT SUMMARY:

	<u>AMOUNT</u>	<u>TIME</u>	<u>DATED</u>
Contract Amount:	\$5,736,900.77	1,734 Days	02/15/17
Amendment 1	\$1,542,925.00	700 Days	01/15/20
Amendment 2*	\$ 249,817.74	0 Days	02/11/21
Proposed Amendment 3:	<u>\$ 836,304.00</u>	<u>0 Days</u>	Pending
Adjusted Contract:	\$8,365,947.51	2,434 Days	

*Approved under delegated authority

Amendments 1 through 3 increase the total contract amount by 45.8%.

BUDGET/FISCAL IMPACT:

The FY21 CIP includes a budget of \$7,279,826.00 for Contract 7517. Including this amendment for \$836,304.00, the adjusted sub-phase total will be \$8,365,947.51 or \$1,086,121.51 over budget. This amount will be absorbed within the five-year CIP spending cap. The FY22 Draft Final CIP includes a budget of \$8,207,826.

MBE/WBE PARTICIPATION:

The minimum MBE and WBE participation requirements for this contract were established at 7.18% and 5.77%, respectively. However, Hazen & Sawyer has committed to 7.19% MBE and 5.78% WBE participation, which will remain unchanged by this amendment.

STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: June 23, 2021
SUBJECT: Green Forestry Certification



COMMITTEE: Water Policy & Oversight

X INFORMATION
 VOTE

Hillary Monahan, Environmental Planner
Stephen Estes-Smargiassi, Dir, Planning and Sustainability
Preparer/Title



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

The Board requested, at the May 26, 2021 Board of Directors meeting, that staff provide additional information on whether the watershed forestry program should pursue certification under one of the "green forestry" programs. This topic was also discussed at the March 2021 Board of Directors meeting and had been raised and discussed at the Water Supply Protection Trust meetings in June 2021 and December 2020, as well as several times in 2015 and 2016. This staff summary provides the additional information requested. A representative for the Water Supply Citizens Advisory Committee has asked to briefly address the Board on this matter.

RECOMMENDATION:

For information only.

DISCUSSION:

The DCR watershed forestry program is designed to promote long-term protection of water quality and forest resilience to disease or natural disaster. The goal of the program is to move slowly, over decades, toward a multi-species, uneven aged forest that is less likely to be damaged by invasive species or a natural disaster such as a hurricane, reducing the risk to water quality. As discussed below, while all other objectives are treated as secondary to water quality protection, the DCR program substantially meets the objectives of the two major green forestry certification programs, Forest Stewardship Council (FSC) and the Sustainable Forestry Initiative (SFI).

The green forestry certification processes are intended to promote good forestry practices by certifying to consumers that their wood-based products, such as lumber, paper or furniture, come from a well-managed forest. MWRA specifies FSC-certified paper for the annual water quality report, and can include the FSC logo on the report. The programs are focused on promoting biodiversity, well-functioning ecosystems and water quality, while protecting the interests of local and regional stakeholders, such as indigenous peoples. Certification of a forestry program requires detailed documentation of environmentally appropriate forestry practices and independent certification. Certification of a product such as paper, wood, or furniture requires documentation of all of the steps from the forestry program to the factory.

As was discussed in March, the watershed forestry programs had been certified under the Forest Stewardship Council process from 1997 to 2004. The Commonwealth subsequently chose to pursue certification of all state forestry lands and was certified in 2004, but did not choose to complete the recertification process in 2009, due to the number of issues raised during the recertification. DCR could again pursue certification for just the watershed forestry program.

The FSC and SFI both have detailed certification standards and documentation requirements. SFI has 15 objectives, 37 performance measures and 101 separate detailed quantifiable indicators. FSC has 10 principles, 56 criteria, and 189 indicators. During the certification process, the applicant must provide documented evidence of the alignment of its programs with each of the indicators. The independent auditors review each indicator during the initial certification, and annual tracking of all metrics is required. Certification auditors also undertake substantial independent outreach and interviews with outside stakeholders.

At MWRA's request made at the December 2020 Water Supply Protection Trust meeting, DCR staff undertook a review of all of the indicators for both certification programs to provide a preliminary assessment as to the degree of alignment of the watershed forestry program with each indicator. That review did not assess whether the existing documentation was sufficient for certification, only that the program elements themselves as laid out in the DCR Land Management Plan and practiced in the field would likely be considered in alignment.

The review evaluated whether the program was:

- generally aligned with the indicator, meaning that the DCR program appeared to meet all the elements of the indicator;
- mostly aligned with the indicator, meaning that there might be some elements of the indicator that might not apply to the program, or that there was a degree of subjectivity in interpretation that would need to be determined during an actual certification evaluation. DCR judged that these generally were or could easily be brought into alignment;
- unsure or somewhat not aligned with the indicator, meaning that DCR staff felt that more information about the interpretation of that indicator in our situation was necessary to make a determination, or that the forestry program was not currently in alignment with some portion of the indicator;
- generally not aligned with the indicator; or
- not applicable unless certified, meaning that these were program elements that would come into play after a program was certified, and thus not germane to the review.

An indicator-by-indicator review by DCR staff is in Attachments A and B. The table below provides a summary, with the colors matching the review in the attachments.

Alignment level	SFI (101 total)	FSC (189 total)
Generally Aligned	61	144
Mostly Aligned	15	33
Unsure or Somewhat Not Aligned	9	6
Generally Not Aligned	0	0
Not Applicable Unless Certified	16	6

The DCR watershed forestry program likely already meets most of the substantive requirements of both certification programs. As indicated above, it is not enough to have a program that meets the physical measures of the indicators. The certification processes require substantial documentation from planning, through implementation, to tracking and review, with public stakeholder engagement at multiple points. DCR’s 2017 Land Management Plan was written to be responsive to the recommendations of the Science and Technical Advisory Council¹ 2012 independent review of the forest program (the STAC report) and to address water quality concerns. To meet green forestry certification requirements, it will need to be re-written or additional documentation developed. Developing the necessary documentation, metrics and tracking and reporting systems will require a significant level of effort both for the initial certification process and then to continue to track and report against each of the indicators.

The following paragraphs provide examples of FSC indicators and how the DCR watershed forestry program is aligned with them or not².

- FSC Indicator 4.4.d (see page 4 of Attachment A) requires a public consultation process for short and long term forestry planning. DCR’s current public participation processes, with public comment on the Land Management, and opportunities for review of annual cutting plans and lot specific plans, as well as information posted at each logging site, would likely be considered generally aligned with this indicator.
- FSC Indicator 5.6.a (see page 6 of Attachment A) focuses on calculating and demonstrating that harvests are sustainable. While DCR has been certified before and has designed its overall program to be well below sustainable harvest levels, the degree of analysis and documentation, and the scale of that analysis is subject to interpretation. It is possible that the certification auditors would require that DCR conduct a more detailed GIS-based analysis of the entire watershed and provide additional discussion of sustainable yields in its planning process. DCR staff consider the forestry program to be mostly aligned with this indicator.
- FSC Indicators 6.1.a, b, c and d (see page 7 of Attachment A) focus on the site-by-site environmental assessment of each cutting block and necessary mitigation, and require that

¹ The STAC was originally chartered in the 1990s by DCR as the Quabbin Science and Technical Advisory Committee, and was later tasked in 2010 to assist in overseeing forestry programs by the Secretary of EEA. It includes forest, wildlife, and natural resource researchers and managers from a variety of universities and agencies.

² DCR was previously certified under FSC, and the criteria are somewhat more aligned with the watershed program.

that information be publicly available. DCR's practice is to conduct all those types of analyses for each cutting block and to make those available for public review and comment, including outreach to community elected officials. As with most of the other indicators, while DCR may need to more explicitly call out each factor in their documents to completely satisfy this group of indicators, DCR staff consider the forestry program to be generally aligned with them.

- FSC Indicators 6.2.a, b and c (see page 8 of Attachment A) deal with how the forestry program considers and protects rare, threatened and endangered species in the planning for each cutting block. This is an area where DCR likely fully meets the requirements of the indicators and DCR staff consider the program to be generally aligned.
- FSC Indicator 6.3.g.2 (see page 9 of Attachment A) deals with how logging opening sizes are determined, evaluated, and documented. DCR staff consider this the program only mostly aligned with the indicator. However, there is substantial subjectivity that would require discussion with the auditors about how the Land Management Plan and specific logging sites are adjusted for other objectives, such as providing early successional habitat, and potential changes to the program. Additional documentation will also be required.
- FSC Indicator 6.3.h (see page 9 of Attachment A) relates to how the forestry program deals with invasive species. DCR staff consider this the program only mostly aligned with the indicator, as some of our water quality management considerations, such as generally avoiding the use of herbicides may conflict with how FSC auditors would evaluate the indicator.
- FSC Indicators 5.4.a, b, and c (see page 6 of Attachment A) relate to how the program strengthens and diversifies the local economy. DCR staff consider the program somewhat not aligned with the indicators as the program is not designed with that as an explicit objective. It may be possible to create documentation on how the program does benefit the local economy, but whether it will satisfy the subjective nature of these indicators is unclear.
- FSC Indicators 8.3.a and b (see page 17 of Attachment A) are not applicable until the forestry program is certified and require documentation of the chain of custody of the wood as it is harvested and transported off the watershed. DCR staff are unclear on the level of effort that would be required to continually meet this requirement. It is possible that a staff person would need to be on site to inspect and mark every load of wood as it leaves the watershed.

Overall, DCR and MWRA staff believe that DCR's 2017 Land Management Plan and its watershed forestry program substantially meet the substantive requirements of green certification, and satisfy MWRA's interest in assuring that DCR's forest management programs are building a resilient forest and protecting reservoir water quality in both the short term and the longer term.

In its correspondence to the Board in February and April of 2020, the Water Supply Citizen's Advisory Committee, (WSCAC) stresses the values of transparency that certification would engender and correctly points out the substantive positive publicity that the original watershed green forestry certification generated in the late 1990's. WSCAC points out that certification

process would present an opportunity for an independent and robust outreach effort to stakeholders, and could again provide positive public support for the watershed forestry programs.

Green forestry certification would offer an additional opportunity to publicly provide evidence of the quality of the DCR program. The extensive stakeholder consultation requirements of the certification process could potentially result in both positive and some negative publicity. There are individuals and organizations who seek to prevent or severely restrict all forestry activities, with a preference for establishing “forever wild” forest preserves. The issue of whether wood provides green energy would also likely arise, as neither of the green certification processes currently deal directly with greenhouse gas concerns. Having indicated those potential risks, it is noteworthy that when the watershed forestry was first certified, it did receive substantial positive coverage, and MWRA subsequently chose to print the annual water quality report on FSC certified paper to connect that report back to the well-managed forest that protects our water supply.

FSC is in the process of revising its criteria and standards again with the next release expected in 2022. Should green certification be pursued, the forestry program and associated planning documents would need to be regularly updated to continue to meet the certification requirements.

ATTACHMENTS:

Attachment A – DCR Review of Forest Stewardship Council (FSC) Certification Criteria

Attachment B – DCR Review of Sustainable Forestry Initiative (SFI) Certification Criteria

Attachment A – DCR Review of Forest Stewardship Council (FSC) Certification Criteria

Alignment level	SFI (101 total)	FSC (189 total)
Generally Aligned	61	144
Mostly Aligned	15	33
Unsure or somewhat not Aligned	9	6
Generally Not Aligned	0	0
Not Applicable unless Certified	16	6

Principles (10 total) and Criteria (56 total)	Indicator (189 total)
<p>PRINCIPLE 1: COMPLIANCE WITH LAWS AND FSC PRINCIPLES Forest management shall respect all applicable laws of the country in which they occur, and international treaties and agreements to which the country is a signatory, and comply with all FSC Principles and Criteria.</p>	
1.1. Forest management shall respect all national and local laws and administrative requirements.	1.1.a <i>Forest</i> management plans and operations demonstrate compliance with all applicable federal, state, county, municipal, and tribal laws, and <i>administrative requirements</i> (e.g., regulations). Violations, outstanding complaints or investigations are provided to the <i>Certifying Body</i> (CB) during the annual audit.
	1.1.b To facilitate legal compliance, the <i>forest owner</i> or <i>manager</i> ensures that employees and contractors, commensurate with their responsibilities, are duly informed about applicable laws and regulations.
1.2 All applicable and legally prescribed fees, royalties, taxes and other charges shall be paid.	1.2.a The forest owner or manager provides written evidence that all applicable and legally prescribed fees, royalties, taxes and other charges are being paid in a timely manner. If payment is beyond the control of the landowner or manager, then there is evidence that every attempt at payment was made.
1.3 In signatory countries, the provisions of all binding international agreements such as CITES, ILO Conventions, ITTA, and Convention on Biological Diversity, shall be respected.	1.3.a Forest management plans and operations comply with relevant provisions of all applicable binding international agreements. Violations, outstanding complaints or investigations are provided to the CB during the annual audit.
1.4 Conflicts between laws, regulations and the FSC Principles and Criteria shall be evaluated for the purposes of certification on a case-by-case basis, by the certifiers and the involved or affected parties.	1.4.a Situations in which compliance with laws or regulations conflicts with compliance with FSC Principles, Criteria or Indicators are documented and referred to the CB.
1.5 Forest management areas should be protected from illegal harvesting, settlement and other unauthorized activities.	1.5.a The forest owner or manager supports or implements measures intended to prevent illegal and unauthorized activities on the <i>Forest Management Unit</i> (FMU).
	1.5.b If illegal or unauthorized activities occur, the forest owner or manager implements actions designed to curtail such activities and correct the situation to the extent possible for meeting all land management objectives with consideration of available resources.
1.6 Forest managers shall demonstrate a long-term commitment to adhere to the FSC Principles and Criteria.	1.6.a The forest owner or manager demonstrates a long-term commitment to adhere to the FSC Principles and Criteria and FSC and FSC-US policies, including the FSC-US

Principles (10 total) and Criteria (56 total)	Indicator (189 total)
	Land Sales Policy, and has a publicly available statement of commitment to manage the FMU in conformance with FSC standards and policies.
	1.6.b If the certificate holder does not certify their entire holdings, then they document, in brief, the reasons for seeking partial certification referencing FSC-POL-20-002 (or subsequent policy revisions), the location of other managed forest units, the natural resources found on the holdings being excluded from certification, and the management activities planned for the holdings being excluded from certification.
	1.6.c The forest owner or manager notifies the Certifying Body of significant changes in ownership and/or significant changes in management planning within 90 days of such change.
PRINCIPLE 2: TENURE AND USE RIGHTS AND RESPONSIBILITIES Long-term tenure and use rights to the land and forest resources shall be clearly defined, documented and legally established.	
2.1 Clear evidence of long-term forest use rights to the land (e.g. land title, customary rights, or lease agreements) shall be demonstrated.	2.1.a The forest owner or manager provides clear evidence of <i>long-term</i> rights to use and manage the FMU for the purposes described in the management plan.
	2.1.b The forest owner or manager identifies and documents legally established use and access rights associated with the FMU that are held by other parties.
	2.1.c Boundaries of land ownership and use rights are clearly identified on the ground and on maps prior to commencing management activities in the vicinity of the boundaries.
2.2 Local communities with legal or customary tenure or use rights shall maintain control, to the extent necessary to protect their rights or resources, over forest operations unless they delegate control with free and informed consent to other agencies.	2.2.a The forest owner or manager allows the exercise of <i>tenure</i> and <i>use rights</i> established by law or regulation.
	2.2.b In FMUs where tenure or use rights held by others exist, the forest owner or manager consults with groups that hold such rights so that management activities do not significantly impact the uses or benefits of such rights.
2.3 Appropriate mechanisms shall be employed to resolve disputes over tenure claims and use rights. The circumstances and status of any outstanding disputes will be explicitly considered in the certification evaluation. Disputes of substantial magnitude involving a significant number of interests will normally disqualify an operation from being certified.	2.3.a If <i>disputes</i> arise regarding tenure claims or use rights then the forest owner or manager initially attempts to resolve them through open communication, negotiation, and/or mediation. If these good-faith efforts fail, then federal, state, and/or local laws are employed to resolve such disputes.
	2.3.b The forest owner or manager documents any significant disputes over tenure and use rights.
PRINCIPLE 3: INDIGENOUS PEOPLES' RIGHTS The legal and customary rights of indigenous peoples to own, use and manage their lands, territories, and resources shall be recognized and respected.	
3.1 Indigenous peoples shall control forest management on their lands and territories unless they delegate control with free and informed consent to other agencies.	
	3.1.a Tribal forest management planning and implementation are carried out by authorized tribal representatives in accordance with tribal laws and customs and relevant federal laws.

Principles (10 total) and Criteria (56 total)	Indicator (189 total)
	3.1.b The manager of a tribal forest secures, in writing, informed consent regarding forest management activities from the tribe or individual forest owner prior to commencement of those activities.
3.2 Forest management shall not threaten or diminish, either directly or indirectly, the resources or tenure rights of indigenous peoples.	
	3.2.a During management planning, the forest owner or manager consults with American Indian groups that have legal rights or other binding agreements to the FMU to avoid harming their resources or rights.
	3.2.b Demonstrable actions are taken so that forest management does not adversely affect tribal resources. When applicable, evidence of, and measures for, protecting tribal resources are incorporated in the management plan.
3.3 Sites of special cultural, ecological, economic or religious significance to indigenous peoples shall be clearly identified in cooperation with such peoples, and recognized and protected by forest managers.	
	3.3.a The forest owner or manager invites consultation with tribal representatives in identifying sites of current or traditional cultural, archeological, ecological, economic or religious significance.
	3.3.b In consultation with tribal representatives, the forest owner or manager develops measures to protect or enhance areas of special significance (see also Criterion 9.1).
3.4 Indigenous peoples shall be compensated for the application of their traditional knowledge regarding the use of forest species or management systems in forest operations. This compensation shall be formally agreed upon with their free and informed consent before forest operations commence.	
	3.4.a The forest owner or manager identifies whether <i>traditional knowledge</i> in forest management is being used.
	3.4.b When traditional knowledge is used, written protocols are jointly developed prior to such use and signed by local tribes or tribal members to protect and fairly compensate them for such use.
	3.4.c The forest owner or manager respects the confidentiality of tribal traditional knowledge and assists in the protection of such knowledge.
PRINCIPLE 4: COMMUNITY RELATIONS AND WORKER'S RIGHTS Forest management operations shall maintain or enhance the long-term social and economic well-being of forest workers and local communities.	
4.1 The communities within, or adjacent to, the forest management area should be given opportunities for employment, training, and other services.	
	4.1.a Employee compensation and hiring practices meet or exceed the prevailing <i>local</i> norms within the forestry industry.
	4.1.b Forest work is offered in ways that create high quality job opportunities for employees.
	4.1.c Forest workers are provided with fair wages.
	4.1.d Hiring practices and conditions of employment are non-discriminatory and follow applicable federal, state, and local regulations.

Principles (10 total) and Criteria (56 total)	Indicator (189 total)
	4.1.e The forest owner or manager provides work opportunities to qualified local applicants and seeks opportunities for purchasing local goods and services of equal price and quality.
	4.1.f Commensurate with the size and scale of operation, the forest owner or manager provides and/or supports learning opportunities to improve public understanding of forests and forest management.
	4.1.g The forest owner or manager participates in local economic development and/or civic activities, based on scale of operation and where such opportunities are available.
4.2 Forest management should meet or exceed all applicable laws and/or regulations covering health and safety of employees and their families.	
	4.2.a The forest owner or manager meets or exceeds all applicable laws and/or regulations covering health and safety of employees and their families (also see Criterion 1.1).
	4.2.b The forest owner or manager and their employees and contractors demonstrate a safe work environment. Contracts or other written agreements include safety requirements.
	4.2.c The forest owner or manager hires well-qualified service providers to safely implement the management plan.
4.3 The rights of workers to organize and voluntarily negotiate with their employers shall be guaranteed as outlined in Conventions 87 and 98 of the International Labor Organization (ILO).	
	4.3.a Forest workers are free to associate with other workers for the purpose of advocating for their own employment interests.
	4.3.b The forest owner or manager has effective and culturally sensitive mechanisms to resolve disputes between workers and management.
4.4 Management planning and operations shall incorporate the results of evaluations of social impact. Consultations shall be maintained with people and groups (both men and women) directly affected by management operations.	
	<p>4.4.a The forest owner or manager understands the likely social impacts of management activities, and incorporates this understanding into management planning and operations. Social impacts include effects on:</p> <ul style="list-style-type: none"> • Archeological sites and sites of cultural, historical and community significance (on and off the FMU); • Public resources, including air, water and food (hunting, fishing, collecting); • Aesthetics; • Community goals for forest and natural resource use and protection such as employment, subsistence, recreation and health; • Community economic opportunities; • Other people who may be affected by management operations. <p>A summary is available to the CB.</p>
	4.4.b The forest owner or manager seeks and considers input in management planning from people who would likely be affected by management activities.
	4.4.c People who are subject to direct adverse effects of management operations are apprised of relevant activities in advance of the action so that they may express concern.
	<p>4.4.d For <i>public forests</i>, consultation includes the following components:</p> <ol style="list-style-type: none"> 1. Clearly defined and accessible methods for public participation are provided in both long and short-term planning processes, including harvest plans and operational plans;

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	<p>2. Public notification is sufficient to allow interested stakeholders the chance to learn of upcoming opportunities for public review and/or comment on the proposed management;</p> <p>3. An accessible and affordable appeals process to planning decisions is available. Planning decisions incorporate the results of public consultation. All draft and final planning documents, and their supporting data, are made readily available to the public.</p>
<p>4.5 Appropriate mechanisms shall be employed for resolving grievances and for providing fair compensation in the case of loss or damage affecting the legal or customary rights, property, resources, or livelihoods of local peoples. Measures shall be taken to avoid such loss or damage.</p>	
	<p>4.5.a The forest owner or manager does not engage in negligent activities that cause damage to other people.</p>
	<p>4.5.b The forest owner or manager provides a known and accessible means for interested stakeholders to voice grievances and have them resolved. If significant disputes arise related to resolving grievances and/or providing fair compensation, the forest owner or manager follows appropriate dispute resolution procedures. At a minimum, the forest owner or manager maintains open communications, responds to grievances in a timely manner, demonstrates ongoing good faith efforts to resolve the grievances, and maintains records of legal suites and claims.</p>
	<p>4.5.c Fair compensation or reasonable mitigation is provided to local people, communities or adjacent landowners for substantiated damage or loss of income caused by the landowner or manager.</p>
<p>Principle 5: Benefits from the Forest Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits.</p>	
<p>5.1 Forest management should strive toward economic viability, while taking into account the full environmental, social, and operational costs of production, and ensuring the investments necessary to maintain the ecological productivity of the forest.</p>	
	<p>5.1.a The forest owner or manager is financially able to implement core management activities, including all those environmental, social and operating costs, required to meet this Standard, and investment and reinvestment in forest management.</p>
	<p>5.1.b Responses to short-term financial factors are limited to levels that are consistent with fulfillment of this Standard.</p>
<p>5.2 Forest management and marketing operations should encourage the optimal use and local processing of the forest's diversity of products.</p>	
	<p>5.2.a Where forest products are harvested or sold, opportunities for forest product sales and services are given to local harvesters, value-added processing and manufacturing facilities, and other operations that are able to offer services at competitive rates and levels of service.</p>
	<p>5.2.b The forest owner or manager takes measures to optimize the use of harvested forest products and explores product diversification where appropriate and consistent with management objectives.</p>
	<p>5.2.c On public lands where forest products are harvested and sold, some sales of forest products or contracts are scaled or structured to allow small business to bid competitively.</p>

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5.3 Forest management should minimize waste associated with harvesting and on-site processing operations and avoid damage to other forest resources.	
	5.3.a Management practices are employed to minimize the loss and/or waste of harvested forest products.
	5.3.b Harvest practices are managed to protect residual trees and other forest resources, including: <ul style="list-style-type: none"> • soil compaction, <i>rutting</i> and erosion are minimized; • residual trees are not significantly damaged to the extent that health, growth, or values are noticeably affected; • damage to NTFPs is minimized during management activities; and • techniques and equipment that minimize impacts to vegetation, soil, and water are used whenever feasible.
5.4 Forest management should strive to strengthen and diversify the local economy, avoiding dependence on a single forest product.	
	5.4.a The forest owner or manager demonstrates knowledge of their operation's effect on the local economy as it relates to existing and potential markets for a wide variety of timber and non-timber forest products and services.
	5.4.b The forest owner or manager strives to diversify the economic use of the forest according to Indicator 5.4.a.
5.5 Forest management operations shall recognize, maintain, and, where appropriate, enhance the value of forest services and resources such as watersheds and fisheries.	
	5.5.a In developing activities on the FMU, the forest owner or manager identifies and defines appropriate measures for maintaining and/or enhancing forest services and resources that serve public values, including municipal watersheds, fisheries, carbon storage and sequestration, recreation and tourism.
	5.5.b The forest owner or manager uses the information from Indicator 5.5.a to implement appropriate measures for maintaining and/or enhancing these services and resources.
5.6 The rate of harvest of forest products shall not exceed levels which can be permanently sustained.	
	5.6.a In FMUs where products are being harvested, the landowner or manager calculates the sustained yield harvest level for each sustained yield planning unit, and provides clear rationale for determining the size and layout of the planning unit. The sustained yield harvest level calculation is documented in the Management Plan. The sustained yield harvest level calculation for each planning unit is based on: <ul style="list-style-type: none"> • documented growth rates for particular sites, and/or acreage of forest types, age-classes and species distributions; • mortality and decay and other factors that affect net growth; • areas reserved from harvest or subject to harvest restrictions to meet other management goals; • silvicultural practices that will be employed on the FMU; • management objectives and desired future conditions. The calculation is made by considering the effects of repeated prescribed harvests on the product/species and its ecosystem, as well as planned management treatments and projections of subsequent regrowth beyond single rotation and multiple re-entries.
	5.6.b Average annual harvest levels, over rolling periods of no more than 10 years, do not exceed the calculated sustained yield harvest level.

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	5.6.c Rates and methods of timber harvest lead to achieving desired conditions, and improve or maintain health and quality across the FMU. Overstocked stands and stands that have been depleted or rendered to be below productive potential due to natural events, past management, or lack of management, are returned to desired stocking levels and composition at the earliest practicable time as justified in management objectives.
	5.6.d For NTFPs, calculation of quantitative sustained yield harvest levels is required only in cases where products are harvested in significant commercial operations or where traditional or customary use rights may be impacted by such harvests. In other situations, the forest owner or manager utilizes available information, and new information that can be reasonably gathered, to set harvesting levels that will not result in a depletion of the non-timber growing stocks or other adverse effects to the forest ecosystem.
<p>PRINCIPLE 6: ENVIRONMENTAL IMPACT Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.</p>	
<p>6.1 Assessment of environmental impacts shall be completed -- appropriate to the scale, intensity of forest management and the uniqueness of the affected resources -- and adequately integrated into management systems. Assessments shall include landscape level considerations as well as the impacts of on-site processing facilities. Environmental impacts shall be assessed prior to commencement of site-disturbing operations.</p>	
	<p>6.1.a Using the results of <i>credible scientific analysis, best available information</i> (including relevant databases), and local knowledge and experience, an assessment of conditions on the FMU is completed and includes:</p> <ol style="list-style-type: none"> 1) Forest community types and development, size class and/or successional stages, and associated <i>natural disturbance regimes</i>; 2) <i>Rare, Threatened and Endangered (RTE) species and rare ecological communities</i> (including plant communities); 3) Other habitats and species of management concern; 4) Water resources and associated riparian habitats and hydrologic functions; 5) <i>Soil resources</i>; and 6) <i>Historic conditions</i> on the FMU related to forest community types and development, size class and/or successional stages, and a broad comparison of historic and current conditions.
	6.1.b Prior to commencing site-disturbing activities, the forest owner or manager assesses and documents the potential short and long-term impacts of planned management activities on elements 1-5 listed in Criterion 6.1.a.
	6.1.c Using the findings of the impact assessment (Indicator 6.1.b), management approaches and field prescriptions are developed and implemented that: 1) avoid or minimize negative short-term and long-term impacts; and, 2) maintain and/or enhance the long-term ecological viability of the forest.
	6.1.d On public lands, assessments developed in Indicator 6.1.a and management approaches developed in Indicator 6.1.c are made available to the public in draft form for review and comment prior to finalization. Final assessments are also made available.
6.2 Safeguards shall exist which protect rare, threatened and endangered species and	

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<p>their habitats (e.g., nesting and feeding areas). Conservation zones and protection areas shall be established, appropriate to the scale and intensity of forest management and the uniqueness of the affected resources. Inappropriate hunting, fishing, trapping and collecting shall be controlled.</p>	
	<p>6.2.a If there is a likely presence of RTE species as identified in Indicator 6.1.a then either a field survey to verify the species' presence or absence is conducted prior to site-disturbing management activities, or management occurs with the assumption that potential RTE species are present. Surveys are conducted by biologists with the appropriate expertise in the species of interest and with appropriate qualifications to conduct the surveys. If a species is determined to be present, its location should be reported to the manager of the appropriate database.</p>
	<p>6.2.b When RTE species are present or assumed to be present, modifications in management are made in order to maintain, restore or enhance the extent, quality and viability of the species and their habitats. <i>Conservation zones</i> and/or <i>protected areas</i> are established for RTE species, including those S3 species that are considered rare, where they are necessary to maintain or improve the short and long-term viability of the species. Conservation measures are based on relevant science, guidelines and/or consultation with relevant, independent experts as necessary to achieve the conservation goal of the Indicator.</p>
	<p>6.2.c For medium and large public forests (e.g. state forests), forest management plans and operations are designed to meet species' recovery goals, as well as landscape level biodiversity conservation goals.</p>
	<p>6.2.d Within the capacity of the forest owner or manager, hunting, fishing, trapping, collecting and other activities are controlled to avoid the risk of impacts to vulnerable species and communities (See Criterion 1.5).</p>
<p>6.3 Ecological functions and values shall be maintained intact, enhanced, or restored, including:</p> <ul style="list-style-type: none"> a) Forest regeneration and succession. b) Genetic, species, and ecosystem diversity. c) Natural cycles that affect the productivity of the forest ecosystem. 	
	<p>6.3.a.1 The forest owner or manager maintains, enhances, and/or restores under-represented <i>successional</i> stages in the FMU that would naturally occur on the types of sites found on the FMU. Where old growth of different community types that would naturally occur on the forest are under-represented in the landscape relative to natural conditions, a portion of the forest is managed to enhance and/or restore old growth characteristics.</p>
	<p>6.3.a.2 When a <i>rare ecological community</i> is present, modifications are made in both the management plan and its implementation in order to maintain, restore or enhance the viability of the community. Based on the vulnerability of the existing community, <i>conservation zones</i> and/or <i>protected areas</i> are established where warranted.</p>
	<p>6.3.a.3 When they are present, management maintains the area, structure, composition, and processes of all <i>Type 1</i> and <i>Type 2 old growth</i>. Type 1 and 2 old growth are also protected and buffered as necessary with conservation zones, unless an alternative plan is developed that provides greater overall protection of old growth values.</p>
	<p>6.3.b To the extent feasible within the size of the ownership, particularly on larger ownerships, management maintains, enhances, or restores habitat conditions suitable for well-distributed populations of animal species that are characteristic of forest ecosystems within the landscape.</p>
	<p>6.3.c Management maintains, enhances and/or restores the plant and wildlife habitat of <i>Riparian Management Zones (RMZs)</i> to provide:</p> <ul style="list-style-type: none"> a) habitat for aquatic species that breed in surrounding uplands;

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	<ul style="list-style-type: none"> b) habitat for predominantly terrestrial species that breed in adjacent <i>aquatic habitats</i>; c) habitat for species that use riparian areas for feeding, cover, and travel; d) habitat for plant species associated with riparian areas; and, e) stream shading and inputs of wood and leaf litter into the adjacent aquatic ecosystem.
	<p>6.3.d Management practices maintain or enhance plant species composition, distribution and frequency of occurrence similar to those that would naturally occur on the site.</p>
	<p>6.3.e When planting is required, a local source of known provenance is used when available and when the local source is equivalent in terms of quality, price and productivity. The use of non-local sources are justified, such as in situations where other management objectives (e.g. disease resistance or adapting to climate change) are best served by non-local sources. <i>Native species</i> suited to the site are normally selected for regeneration.</p>
	<p>6.3.f Management maintains, enhances, or restores habitat components and associated stand structures, in abundance and distribution that could be expected from naturally occurring processes. These components include:</p> <ul style="list-style-type: none"> a) large live trees, live trees with decay or declining health, <i>snags</i>, and well-distributed coarse down and dead woody material. <i>Legacy trees</i> where present are not harvested; and b) vertical and horizontal complexity. <p>Trees selected for <i>retention</i> are generally representative of the dominant species naturally found on the site.</p>
	<p>6.3.g.1 In the Lake States, Northeast, Rocky Mountain and Southwest Regions, when even-aged silvicultural systems are employed, and during salvage harvests, live trees and other native vegetation are retained within the harvest unit in a proportion and configuration that is consistent with the characteristic natural disturbance regime unless retention at a lower level is necessary for the purposes of restoration or rehabilitation. See Appendix C for additional regional requirements and guidance.</p>
	<p>6.3.g.2 Under very limited situations, the landowner or manager has the option to develop a qualified plan to allow minor departure from the opening size limits described in Indicator 6.3.g.1. A qualified plan:</p> <ol style="list-style-type: none"> 1. Is developed by qualified experts in ecological and/or related fields (wildlife biology, hydrology, landscape ecology, forestry/silviculture). 2. Is based on the totality of the <i>best available information</i> including peer-reviewed science regarding natural disturbance regimes for the FMU. 3. Is spatially and temporally explicit and includes maps of proposed openings or areas. 4. Demonstrates that the variations will result in equal or greater benefit to wildlife, water quality, and other values compared to the normal opening size limits, including for sensitive and rare species. 5. Is reviewed by independent experts in wildlife biology, hydrology, and landscape ecology, to confirm the preceding findings.
	<p>6.3.h The forest owner or manager assesses the risk of, prioritizes, and, as warranted, develops and implements a strategy to prevent or control <i>invasive species</i>, including:</p> <ol style="list-style-type: none"> 1. a method to determine the extent of invasive species and the degree of threat to native species and ecosystems; 2. implementation of management practices that minimize the risk of invasive establishment, growth, and spread; 3. eradication or control of established invasive populations when feasible: and, 4. monitoring of control measures and management practices to assess their effectiveness in preventing or controlling invasive species.
	<p>6.3.i In applicable situations, the forest owner or manager identifies and applies site-specific fuels management practices, based on: (1) natural fire regimes, (2) risk of wildfire, (3) potential economic losses, (4) public safety, and (5) applicable laws and regulations.</p>

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6.4 Representative samples of existing ecosystems within the landscape shall be protected in their natural state and recorded on maps, appropriate to the scale and intensity of operations and the uniqueness of the affected resources.	
	6.4.a The forest owner or manager documents the ecosystems that would naturally exist on the FMU, and assesses the adequacy of their representation and protection in the <i>landscape</i> (see Criterion 7.1). The assessment for medium and large forests include some or all of the following: a) <i>GAP analyses</i> ; b) collaboration with state natural heritage programs and other public agencies; c) regional, landscape, and watershed planning efforts; d) collaboration with universities and/or local conservation groups. For an area that is not located on the FMU to qualify as a Representative Sample Area (RSA), it should be under permanent protection in its natural state.
	6.4.b Where existing areas within the landscape, but external to the FMU, are not of adequate protection, size, and configuration to serve as representative samples of existing ecosystems, forest owners or managers, whose properties are conducive to the establishment of such areas, designate ecologically viable RSAs to serve these purposes. Large FMUs are generally expected to establish RSAs of purpose 2 and 3 within the FMU.
	6.4.c Management activities within RSAs are limited to low impact activities compatible with the protected RSA objectives, except under the following circumstances: a) harvesting activities only where they are necessary to restore or create conditions to meet the objectives of the protected RSA, or to mitigate conditions that interfere with achieving the RSA objectives; or b) road-building only where it is documented that it will contribute to minimizing the overall environmental impacts within the FMU and will not jeopardize the purpose for which the RSA was designated.
	6.4.d The RSA assessment (Indicator 6.4.a) is periodically reviewed and if necessary updated (at a minimum every 10 years) in order to determine if the need for RSAs has changed; the designation of RSAs (Indicator 6.4.b) is revised accordingly.
	6.4.e Managers of large, contiguous public forests establish and maintain a network of representative protected areas sufficient in size to maintain species dependent on interior core habitats.
6.5 Written guidelines shall be prepared and implemented to: control erosion; minimize forest damage during harvesting, road construction, and all other mechanical disturbances; and protect water resources.	
	6.5.b Forest operations meet or exceed Best Management Practices (BMPs) that address components of the Criterion where the operation takes place.
	6.5.c Management activities including site preparation, harvest prescriptions, techniques, timing, and equipment are selected and used to protect soil and water resources and to avoid erosion, landslides, and significant soil disturbance. Logging and other activities that significantly increase the risk of landslides are excluded in areas where risk of landslides is high. The following actions are addressed: • Slash is concentrated only as much as necessary to achieve the goals of site preparation and the reduction of fuels to moderate or low levels of fire hazard. • Disturbance of topsoil is limited to the minimum necessary to achieve successful regeneration of species native to the site. • Rutting and compaction is minimized. • Soil erosion is not accelerated. • Burning is only done when consistent with natural disturbance regimes. • Natural ground cover disturbance is minimized to the extent necessary to achieve regeneration objectives.

Principles (10 total) and Criteria (56 total)	Indicator (189 total)
	<ul style="list-style-type: none"> • Whole tree harvesting on any site over multiple rotations is only done when research indicates soil productivity will not be harmed. • Low impact equipment and technologies is used where appropriate.
	<p>6.5.d The transportation system, including design and placement of permanent and temporary haul roads, skid trails, recreational trails, water crossings and landings, is designed, constructed, maintained, and/or reconstructed to reduce short and long-term environmental impacts, habitat fragmentation, soil and water disturbance and cumulative adverse effects, while allowing for customary uses and use rights. This includes:</p> <ul style="list-style-type: none"> • access to all roads and trails (temporary and permanent), including recreational trails, and off-road travel, is controlled, as possible, to minimize ecological impacts; • road density is minimized; • erosion is minimized; • sediment discharge to streams is minimized; • there is free upstream and downstream passage for aquatic organisms; • impacts of transportation systems on wildlife habitat and migration corridors are minimized; • area converted to roads, landings and skid trails is minimized; • habitat fragmentation is minimized; • unneeded roads are closed and rehabilitated.
	<p>6.5.e.1 In consultation with appropriate expertise, the forest owner or manager implements written <i>Streamside Management Zone (SMZ) buffer</i> management guidelines that are adequate for preventing environmental impact, and include protecting and restoring water quality, hydrologic conditions in rivers and stream corridors, wetlands, vernal pools, seeps and springs, lake and pond shorelines, and other hydrologically sensitive areas. The guidelines include vegetative buffer widths and protection measures that are acceptable within those buffers.</p>
	<p>6.5.e.2 Minor variations from the stated minimum SMZ widths and layout for specific stream segments, wetlands and other water bodies are permitted in limited circumstances, provided the forest owner or manager demonstrates that the alternative configuration maintains the overall extent of the buffers and provides equivalent or greater environmental protection than FSC-US regional requirements for those stream segments, water quality, and aquatic species, based on site-specific conditions and the best available information. The forest owner or manager develops a written set of supporting information including a description of the riparian habitats and species addressed in the alternative configuration. The CB must verify that the variations meet these requirements, based on the input of an independent expert in aquatic ecology or closely related field.</p>
	<p>6.5.f Stream and wetland crossings are avoided when possible. Unavoidable crossings are located and constructed to minimize impacts on water quality, hydrology, and fragmentation of <i>aquatic habitat</i>. Crossings do not impede the movement of aquatic species. Temporary crossings are restored to original hydrological conditions when operations are finished.</p>
	<p>6.5.g Recreation use on the FMU is managed to avoid negative impacts to soils, water, plants, wildlife and wildlife habitats.</p>
	<p>6.5.h Grazing by domesticated animals is controlled to protect in-stream habitats and water quality, the species composition and viability of the riparian vegetation, and the banks of the stream channel from erosion.</p>
<p>6.6 Management systems shall promote the development and adoption of environmentally friendly non-chemical methods of pest management and strive to avoid the use of chemical pesticides. World Health Organization Type 1A and 1B and chlorinated hydrocarbon pesticides; pesticides that are persistent, toxic or whose derivatives remain biologically active and accumulate in the food chain beyond their</p>	

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intended use; as well as any pesticides banned by international agreement, shall be prohibited. If chemicals are used, proper equipment and training shall be provided to minimize health and environmental risks.	
	6.6.a No products on the FSC list of Highly Hazardous Pesticides are used (see FSC-POL-30-001 EN FSC Pesticides policy 2005 and associated documents).
	6.6.b All toxicants used to control pests and competing vegetation, including rodenticides, insecticides, herbicides, and fungicides are used only when and where non-chemical management practices are: a) not available; b) prohibitively expensive, taking into account overall environmental and social costs, risks and benefits; c) the only effective means for controlling invasive and exotic species; or d) result in less environmental damage than non-chemical alternatives (e.g., top soil disturbance, loss of soil litter and down wood debris). If chemicals are used, the forest owner or manager uses the least environmentally damaging formulation and application method practical. Written strategies are developed and implemented that justify the use of chemical pesticides. Whenever feasible, an eventual phase-out of chemical use is included in the strategy. The written strategy includes an analysis of options for, and the effects of, various chemical and non-chemical pest control strategies, with the goal of reducing or eliminating chemical use.
	6.6.c Chemicals and application methods are selected to minimize risk to non-target species and sites. When considering the choice between aerial and ground application, the forest owner or manager evaluates the comparative risk to non-target species and sites, the comparative risk of worker exposure, and the overall amount and type of chemicals required.
	6.6.d Whenever chemicals are used, a written prescription is prepared that describes the site-specific hazards and environmental risks, and the precautions that workers will employ to avoid or minimize those hazards and risks, and includes a map of the treatment area. Chemicals are applied only by workers who have received proper training in application methods and safety. They are made aware of the risks, wear proper safety equipment, and are trained to minimize environmental impacts on non-target species and sites.
	6.6.e If chemicals are used, the effects are monitored and the results are used for adaptive management. Records are kept of pest occurrences, control measures, and incidences of worker exposure to chemicals.
6.7 Chemicals, containers, liquid and solid non-organic wastes including fuel and oil shall be disposed of in an environmentally appropriate manner at off-site locations.	
	6.7.a The forest owner or manager, and employees and contractors, have the equipment and training necessary to respond to hazardous spills.
	6.7.b In the event of a hazardous material spill, the forest owner or manager immediately contains the material and engages qualified personnel to perform the appropriate removal and remediation, as required by applicable law and regulations.
	6.7.c Hazardous materials and fuels are stored in leak-proof containers in designated storage areas, that are outside of riparian management zones and away from other ecological sensitive features, until they are used or transported to an approved off-site location for disposal. There is no evidence of persistent fluid leaks from equipment or of recent groundwater or surface water contamination.
6.8 Use of biological control agents shall be documented, minimized, monitored and strictly controlled in accordance with national laws and internationally accepted scientific protocols. Use of genetically modified organisms shall be prohibited.	
	6.8.a <i>Biological control agents</i> are used only as part of a pest management strategy for the control of invasive plants, <i>pathogens</i> , insects, or other animals when other pest

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	control methods are ineffective, or are expected to be ineffective. Such use is contingent upon peer-reviewed scientific evidence that the agents in question are non-invasive and are safe for native species.
	6.8.b If biological control agents are used, they are applied by trained workers using proper equipment.
	6.8.c If biological control agents are used, their use is documented, monitored and strictly controlled in accordance with state and national laws and internationally accepted scientific protocols. A written plan will be developed and implemented justifying such use, describing the risks, specifying the precautions workers will employ to avoid or minimize such risks, and describing how potential impacts will be monitored.
	6.8.d Genetically Modified Organisms (GMOs) are not used for any purpose.
6.9 The use of exotic species shall be carefully controlled and actively monitored to avoid adverse ecological impacts.	
	6.9.a The use of <i>exotic species</i> is contingent on the availability of credible scientific data indicating that any such species is non-invasive and its application does not pose a risk to native biodiversity.
	6.9.b If exotic species are used, their provenance and the location of their use are documented, and their ecological effects are actively monitored.
	6.9.c The forest owner or manager takes timely action to curtail or significantly reduce any adverse impacts resulting from their use of exotic species.
C6.10 Forest conversion to plantations or non-forest land uses shall not occur, except in circumstances where conversion: a) entails a very limited portion of the forest management unit; and b) does not occur on high conservation value forest areas; and c) will enable clear, substantial, additional, secure, long term conservation benefits across the forest management unit.	
	6.10.a Forest <i>conversion</i> to non-forest land uses does not occur, except in circumstances where conversion entails a very limited portion of the forest management unit (note that Indicators 6.10.a, b, and c are related and all need to be conformed with for conversion to be allowed).
	6.10.b Forest <i>conversion</i> to non-forest land uses does not occur on high conservation value forest areas (note that Indicators 6.10.a, b, and c are related and all need to be conformed with for conversion to be allowed).
	6.10.c Forest <i>conversion</i> to non-forest land uses does not occur, except in circumstances where conversion will enable clear, substantial, additional, secure, long term conservation benefits across the forest management unit (note that Indicators 6.10.a, b, and c are related and all need to be conformed with for conversion to be allowed).
	6.10.d Natural or semi-natural stands are not converted to plantations. Degraded, semi-natural stands may be converted to restoration plantations.
	6.10.e Justification for land-use and stand-type conversions is fully described in the long-term management plan, and meets the biodiversity conservation requirements of Criterion 6.3 (see also Criterion 7.1.1)
	6.10.f Areas converted to <i>non-forest use</i> for facilities associated with subsurface mineral and gas rights transferred by prior owners, or other conversion outside the control of the certificate holder, are identified on maps. The forest owner or manager consults with the CB to determine if removal of these areas from the scope of the certificate is warranted. To the extent allowed by these transferred rights, the forest owner or manager exercises control over the location of surface disturbances in a manner that minimizes adverse environmental and social impacts.

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	If the certificate holder at one point held these rights, and then sold them, then subsequent conversion of forest to non-forest use would be subject to Indicator 6.10.a-d.
<p>PRINCIPLE 7: MANAGEMENT PLAN A management plan -- appropriate to the scale and intensity of the operations -- shall be written, implemented, and kept up to date. The long term objectives of management, and the means of achieving them, shall be clearly stated.</p>	
<p>C7.1 The management plan and supporting documents shall provide:</p> <p>a) Management objectives. b) Description of the forest resources to be managed, environmental limitations, land use and ownership status, socio-economic conditions, and a profile of adjacent lands. c) Description of silvicultural and/or other management system, based on the ecology of the forest in question and information gathered through resource inventories. d) Rationale for rate of annual harvest and species selection. e) Provisions for monitoring of forest growth and dynamics. f) Environmental safeguards based on environmental assessments. g) Plans for the identification and protection of rare, threatened and endangered species. h) Maps describing the forest resource base including protected areas, planned management activities and land ownership. i) Description and justification of harvesting techniques and equipment to be used.</p>	
	7.1.a The management plan identifies the ownership and legal status of the FMU and its resources, including rights held by the owner and rights held by others.
	7.1.b The management plan describes the history of land use and past management, current forest types and associated development, size class and/or successional stages, and natural disturbance regimes that affect the FMU (see Indicator 6.1.a).
	7.1.c The management plan describes: a) current conditions of the timber and non-timber forest resources being managed; b) desired future conditions; c) historical ecological conditions; and d) applicable management objectives and activities to move the FMU toward desired future conditions.
	7.1.d The management plan includes a description of the landscape within which the FMU is located and describes how landscape-scale habitat elements described in Criterion 6.3 will be addressed.
	7.1.e The management plan includes a description of the following resources and outlines activities to conserve and/or protect: <ul style="list-style-type: none"> • rare, threatened, or endangered species and natural communities (see Criterion 6.2); • plant species and community diversity and wildlife habitats (see Criterion 6.3); • water resources (see Criterion 6.5); • soil resources (see Criterion 6.3); • Representative Sample Areas (see Criterion 6.4); • High Conservation Value Forests (see Principle 9); • Other special management areas.

Principles (10 total) and Criteria (56 total)	Indicator (189 total)
	7.1.f If invasive species are present, the management plan describes invasive species conditions, applicable management objectives, and how they will be controlled (see Indicator 6.3.j).
	7.1.g The management plan describes insects and diseases, current or anticipated outbreaks on forest conditions and management goals, and how insects and diseases will be managed (see Criteria 6.6 and 6.8).
	7.1.h If chemicals are used, the plan describes what is being used, applications, and how the management system conforms with Criterion 6.6.
	7.1.i If biological controls are used, the management plan describes what is being used, applications, and how the management system conforms with Criterion 6.8.
	7.1.j The management plan incorporates the results of the evaluation of social impacts, including: <ul style="list-style-type: none"> • traditional cultural resources and rights of use (see Criterion 2.1); • potential conflicts with customary uses and use rights (see Criteria 2.2, 2.3, 3.2); • management of ceremonial, archeological, and historic sites (see Criteria 3.3 and 4.5); • management of aesthetic values (see Indicator 4.4.a); • public access to and use of the forest, and other recreation issues; • local and regional socioeconomic conditions and economic opportunities, including creation and/or maintenance of quality jobs (see Indicators 4.1.b and 4.4.a), local purchasing opportunities (see Indicator 4.1.e), and participation in local development opportunities (see Indicator 4.1.g).
	7.1.k The management plan describes the general purpose, condition and maintenance needs of the transportation network (see Indicator 6.5.e).
	7.1.l The management plan describes the silvicultural and other management systems used and how they will sustain, over the long term, forest ecosystems present on the FMU.
	7.1.m The management plan describes how species selection and harvest rate calculations were developed to meet the requirements of Criterion 5.6.
	7.1.n The management plan includes a description of monitoring procedures necessary to address the requirements of Criterion 8.2.
	7.1.o The management plan includes maps describing the resource base, the characteristics of general management zones, special management areas, and protected areas at a level of detail to achieve management objectives and protect sensitive sites.
	7.1.p The management plan describes and justifies the types and sizes of harvesting machinery and techniques employed on the FMU to minimize or limit impacts to the resource.
	7.1.q Plans for harvesting and other significant site-disturbing management activities required to carry out the management plan are prepared prior to implementation. Plans clearly describe the activity, the relationship to objectives, outcomes, any necessary environmental safeguards, health and safety measures, and include maps of adequate detail.
	7.1.r The management plan describes the stakeholder consultation process.
7.2 The management plan shall be periodically revised to incorporate the results of monitoring or new scientific and technical information, as well as to respond to changing environmental, social and economic circumstances.	
	7.2.a The management plan is kept up to date. It is reviewed on an ongoing basis and is updated whenever necessary to incorporate the results of monitoring or new scientific and technical information, as well as to respond to changing environmental, social and economic circumstances. At a minimum, a full revision occurs every 10 years.
7.3 Forest workers shall receive adequate training and supervision to ensure proper implementation of the management plan.	

Principles (10 total) and Criteria (56 total)	Indicator (189 total)
	7.3.a Workers are qualified to properly implement the management plan; all forest workers are provided with sufficient guidance and supervision to adequately implement their respective components of the plan.
7.4 While respecting the confidentiality of information, forest managers shall make publicly available a summary of the primary elements of the management plan, including those listed in Criterion 7.1.	
	7.4.a While respecting landowner confidentiality, the management plan or a management plan summary that outlines the elements of the plan described in Criterion 7.1 is available to the public either at no charge or a nominal fee.
	7.4.b Managers of public forests make draft management plans, revisions and supporting documentation easily accessible for public review and comment prior to their implementation. Managers address public comments and modify the plans to ensure compliance with this Standard.
Principle 8: Monitoring and Assessment Monitoring shall be conducted -- appropriate to the scale and intensity of forest management -- to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.	
8.1 The frequency and intensity of monitoring should be determined by the scale and intensity of forest management operations as well as the relative complexity and fragility of the affected environment. Monitoring procedures should be consistent and replicable over time to allow comparison of results and assessment of change.	
	8.1.a Consistent with the scale and intensity of management, the forest owner or manager develops and consistently implements a regular, comprehensive, and replicable written monitoring protocol.
8.2 Forest management should include the research and data collection needed to monitor, at a minimum, the following indicators: a) Yield of all forest products harvested. b) Growth rates, regeneration and condition of the forest. c) Composition and observed changes in the flora and fauna. d) Environmental and social impacts of harvesting and other operations. e) Costs, productivity, and efficiency of forest management.	
	8.2.a.1 For all commercially harvested products, an inventory system is maintained. The inventory system includes at a minimum: a) species, b) volumes, c) stocking, d) regeneration, and e) stand and forest composition and structure; and f) timber quality.
	8.2.a.2 Significant, unanticipated removal or loss or increased vulnerability of forest resources is monitored and recorded. Recorded information includes date and location of occurrence, description of disturbance, extent and severity of loss, and may be both quantitative and qualitative.
	8.2.b The forest owner or manager maintains records of harvested timber and NTFPs (volume and product and/or grade). Records must adequately ensure that the requirements under Criterion 5.6 are met.

Principles (10 total) and Criteria (56 total)	Indicator (189 total)
	8.2.c The forest owner or manager periodically obtains data needed to monitor presence on the FMU of: 1) Rare, threatened and endangered species and/or their <i>habitats</i> ; 2) Common and rare plant communities and/or habitat; 3) Location, presence and abundance of invasive species; 4) Condition of protected areas, set-asides and buffer zones; 5) High Conservation Value Forests (see Criterion 9.4).
	8.2.d.1 Monitoring is conducted to ensure that site specific plans and operations are properly implemented, environmental impacts of site disturbing operations are minimized, and that harvest prescriptions and guidelines are effective.
	8.2.d.2 A monitoring program is in place to assess the condition and environmental impacts of the forest-road system.
	8.2.d.3 The landowner or manager monitors relevant socio-economic issues (see Indicator 4.4.a), including the social impacts of harvesting, participation in local economic opportunities (see Indicator 4.1.g), the creation and/or maintenance of quality job opportunities (see Indicator 4.1.b), and local purchasing opportunities (see Indicator 4.1.e).
	8.2.d.4 Stakeholder responses to management activities are monitored and recorded as necessary.
	8.2.d.5 Where sites of cultural significance exist, the opportunity to jointly monitor sites of cultural significance is offered to tribal representatives (see Principle 3).
	8.2.e The forest owner or manager monitors the costs and revenues of management in order to assess productivity and efficiency.
8.3 Documentation shall be provided by the forest manager to enable monitoring and certifying organizations to trace each forest product from its origin, a process known as the "chain of custody."	
	8.3.a When forest products are being sold as FSC-certified, the forest owner or manager has a system that prevents mixing of FSC-certified and non-certified forest products prior to the point of sale.
	8.3.b The forest owner or manager maintains documentation to enable the tracing of the harvested material from each harvested product from its origin to the point of sale.
8.4 The results of monitoring shall be incorporated into the implementation and revision of the management plan.	
	8.4.a The forest owner or manager monitors and documents the degree to which the objectives stated in the management plan are being fulfilled, as well as significant deviations from the plan.
	8.4.b Where monitoring indicates that management objectives and guidelines, including those necessary for conformance with this Standard, are not being met or if changing conditions indicate that a change in management strategy is necessary, the management plan, operational plans, and/or other plan implementation measures are revised to ensure the objectives and guidelines will be met. If monitoring shows that the management objectives and guidelines themselves are not sufficient to ensure conformance with this Standard, then the objectives and guidelines are modified.
8.5 While respecting the confidentiality of information, forest managers shall make publicly available a summary of the results of monitoring indicators, including those listed in Criterion 8.2.	
	8.5.a While protecting landowner confidentiality, either full monitoring results or an up-to-date summary of the most recent monitoring information is maintained, covering the Indicators listed in Criterion 8.2, and is available to the public, free or at a nominal price, upon request.
Principle 9: MAINTENANCE OF HIGH CONSERVATION VALUE FORESTS	

Principles (10 total) and Criteria (56 total)	Indicator (189 total)
<p>Management activities in high conservation value forests shall maintain or enhance the attributes which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach.</p>	
<p>9.1 Assessment to determine the presence of the attributes consistent with High Conservation Value Forests will be completed, appropriate to scale and intensity of forest management.</p>	
	<p>9.1.a The forest owner or manager identifies and maps the presence of High Conservation Value Forests (HCVF) within the FMU and, to the extent that data are available, adjacent to their FMU, in a manner consistent with the assessment process, definitions, data sources, and other guidance described in Appendix F. Given the relative rarity of old growth forests in the contiguous United States, these areas are normally designated as HCVF, and all old growth must be managed in conformance with Indicator 6.3.a.3 and requirements for legacy trees in Indicator 6.3.f.</p>
	<p>9.1.b In developing the assessment, the forest owner or manager consults with qualified specialists, independent experts, and local community members who may have knowledge of areas that meet the definition of HCVs.</p>
	<p>9.1.c A summary of the assessment results and management strategies (see Criterion 9.3) is included in the management plan summary that is made available to the public.</p>
<p>9.2 The consultative portion of the certification process must place emphasis on the identified conservation attributes, and options for the maintenance thereof.</p>	
	<p>9.2.a The forest owner or manager holds consultations with stakeholders and experts to confirm that proposed HCVF locations and their attributes have been accurately identified, and that appropriate options for the maintenance of their HCV attributes have been adopted.</p>
	<p>9.2.b On public forests, a transparent and accessible public review of proposed HCV attributes and HCVF areas and management is carried out. Information from stakeholder consultations and other public review is integrated into HCVF descriptions, delineations and management.</p>
<p>9.3 The management plan shall include and implement specific measures that ensure the maintenance and/or enhancement of the applicable conservation attributes consistent with the precautionary approach. These measures shall be specifically included in the publicly available management plan summary.</p>	
	<p>9.3.a The management plan and relevant operational plans describe the measures necessary to ensure the maintenance and/or enhancement of all high conservation values present in all identified HCVF areas, including the precautions required to avoid risks or impacts to such values (see Principle 7). These measures are implemented.</p>
	<p>9.3.b All management activities in HCVFs must maintain or enhance the high conservation values and the extent of the HCVF.</p>
	<p>9.3.c If HCVF attributes cross ownership boundaries and where maintenance of the HCV attributes would be improved by coordinated management, then the forest owner or manager attempts to coordinate conservation efforts with adjacent landowners.</p>
<p>9.4 Annual monitoring shall be conducted to assess the effectiveness of the measures employed to maintain or enhance the applicable conservation attributes.</p>	

Principles (10 total) and Criteria (56 total)	Indicator (189 total)
	9.4.a The forest owner or manager monitors, or participates in a program to annually monitor, the status of the specific HCV attributes, including the effectiveness of the measures employed for their maintenance or enhancement. The monitoring program is designed and implemented consistent with the requirements of Principle 8.
	9.4.b When monitoring results indicate increasing risk to a specific HCV attribute, the forest owner/manager re-evaluates the measures taken to maintain or enhance that attribute, and adjusts the management measures in an effort to reverse the trend.
<p>Principle 10: PLANTATION MANAGEMENT</p> <p>Plantations shall be planned and managed in accordance with Principles and Criteria 1-9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits, and can contribute to satisfying the world's needs for forest products, they should complement the management of, reduce pressures on, and promote the restoration and conservation of natural forests.</p>	
10.1 The management objectives of the plantation, including natural forest conservation and restoration objectives, shall be explicitly stated in the management plan, and clearly demonstrated in the implementation of the plan.	
	10.1.a Consistent with all the indicators within Principle 10 and requirements of Principle 7, the management plan contains clear descriptions of the management goals and prescriptions for plantations on the FMU, of the rationale for plantation management within the FMU, and the relationship between the plantations and natural forest conservation and restoration objectives within the unit.
	10.1.b The forest owner or manager demonstrates clear progress in implementation of the components of the management plan addressing natural forest conservation and restoration objectives as they pertain to plantation management.
10.2 The design and layout of plantations should promote the protection, restoration and conservation of natural forests, and not increase pressures on natural forests. Wildlife corridors, streamside zones and a mosaic of stands of different ages and rotation periods shall be used in the layout of the plantation, consistent with the scale of the operation. The scale and layout of plantation blocks shall be consistent with the patterns of forest stands found within the natural landscape.	
	10.2.a For plantations established on soils capable of supporting natural forests, harvest units shall be arranged to provide or maintain areas of vegetative cover that allows populations of mid to late successional and sedentary native plant and animal species to survive or be reestablished within the plantation.
	10.2.b New plantation establishment does not replace, endanger, or otherwise diminish the ecological integrity of any existing natural ecosystems on the FMU, including primary, natural, or semi-natural forests on the FMU. Note that <i>restoration plantations</i> may be established on <i>degraded, semi-natural forests</i> (see Criterion 6.10). Plantations can be established on the following sites: former plantations; agricultural lands; and non-forested lands that were historically naturally forested but have been used for non-forest purposes since before 1994 (see additional conditions in Criterion 10.9). New plantations are not established on rare or threatened non-forest habitats or ecosystems.

Principles (10 total) and Criteria (56 total)	Indicator (189 total)
	10.2.c In all regions except the Pacific Coast, openings lacking within-stand retention are limited to a 40 acre average and an 80 acre maximum. Harvest openings larger than 80 acres must have retention as required in Indicator 10.2.d and be justified by <i>credible scientific analysis</i> . The average for all openings (with and without retention) does not exceed 100 acres. Departures from these limits for restoration purposes are permissible but also must be justified by <i>credible scientific analysis</i> . In the Pacific Coast region, ... (N/A)
	10.2.d On openings larger than 80 acres that are justified by <i>credible scientific analysis</i> , live trees and native vegetation are retained in a proportion and configuration that are consistent with the characteristic natural disturbance regime in each community type, unless retention at a lower level is necessary for restoration purposes.
	10.2.e In all regions except the Southeast, before an area is harvested, regeneration in adjacent forested areas (either natural forest or plantation) on the FMU must be of the subsequent advanced successional habitat stage, or exceed ten feet in height, or achieve canopy closure along at least 50% of its perimeter.
10.3 Diversity in the composition of plantations is preferred, so as to enhance economic, ecological and social stability. Such diversity may include the size and spatial distribution of management units within the landscape, number and genetic composition of species, age classes and structures.	
	10.3.a Plantation management alone or in combination with natural forest management contributes to the economic stability of the local community, or helps the owner maintain the property as a working forest.
	10.3.b On plantations established on soils capable of supporting natural forests, the forest owner or manager maintains, conserves, and/or restores forest health and diversity, including wildlife habitat and soil productivity, by maintaining appropriate diversity of size, structures, age classes, species and genetics across the plantation FMU.
10.4 The selection of species for planting shall be based on their overall suitability for the site and their appropriateness to the management objectives. In order to enhance the conservation of biological diversity, native species are preferred over exotic species in the establishment of plantations and the restoration of degraded ecosystems. Exotic species, which shall be used only when their performance is greater than that of native species, shall be carefully monitored to detect unusual mortality, disease, or insect outbreaks and adverse ecological impacts.	
	10.4.a Species shall be used for planting that are suitable and appropriate to the site and are consistent with maintaining FMU health and productivity. Species native to the region are preferred to other species (not native to the region).
	10.4.b For the Northeast, Ouachita/Ozark, Rocky Mountain, Southwest, Pacific Coast and Lake States regions, the use of <i>exotic species</i> (i.e. species not native to the region) is contingent on <i>credible scientific analysis</i> confirming that the species in question is non-invasive, will not create significant risk to forest health, and performs better than species native to the region. If exotic plants are used, their provenance and the location of their use are documented and their ecological effects are monitored.
10.5 A proportion of the overall forest management area, appropriate to the scale of the plantation and to be determined in	

Principles (10 total) and Criteria (56 total)	Indicator (189 total)
regional standards, shall be managed so as to restore the site to a natural forest cover.	
	10.5.a Areas of forest and/or plantation to be restored to natural conditions are chosen through a landscape analysis that focuses on enhancing principle characteristics of the native ecosystem or providing important ecological benefits at the stand or landscape level.
	10.5.b Areas to be restored to natural conditions are prioritized where the analysis indicates the greatest conservation gain and are designed for long-term restoration.
	10.5.c Management plans should clearly state the extent and location of areas selected for such restoration, as well as the rationale for their selection.
	10.5.d Areas of forest and/or plantation to be restored or maintained as natural forests are managed to provide a diversity of community types, wildlife habitats, and ecological functions native to the site.
	10.5.e The ratio and spatial distribution of plantations, with respect to natural and semi-natural forests, maintains and/or restores the landscape diversity of community types, wildlife habitats, and ecological functions similar to a mosaic of natural forests.
	<p>10.5.f Where natural ecosystems were previously converted to plantations, a percentage of the total area of the FMU must be maintained and/or restored to natural or semi-natural cover. The minimum percentage area that is maintained and/or restored in natural or semi-natural state is:</p> <ul style="list-style-type: none"> • For 100 acres or less, at least 10 percent • For 101-1,000 acres, at least 15 percent • For 1,001-10,000 acres, at least 20 percent • For > 10,000 acres, at least 25 percent <p>In the Pacific Coast, the area being maintained or restored to natural cover must be managed for late seral conditions.</p> <p>In limited situations where restoration on an FMU is not ecologically achievable (e.g. cases of irreversibly altered geophysical conditions such as former flood plains where rivers have been dammed), restoration efforts may be allocated to areas outside the FMU. Forest managers may secure cooperative conservation agreements for those areas, and count them towards the requirements of 10.5.f. To be eligible, the areas outside the FMU must be of equal or higher priority for conservation and/or restoration than are areas within the FMU.</p>
	10.5.g All plantations on forest soils on public lands are managed to restore and maintain natural forest vegetation, structure, function, and habitats, and fully meet, at the earliest possible time, all aspects of Principles and Criteria 1-9 that are relevant to natural forests for the area.
10.6 Measures shall be taken to maintain or improve soil structure, fertility, and biological activity. The techniques and rate of harvesting, road and trail construction and maintenance, and the choice of species shall not result in long term soil degradation or adverse impacts on water quality, quantity or substantial deviation from stream course drainage patterns.	10.6.a Forest operations do not result in long-term adverse impacts to soil productivity, water resources, and hydrology. Soil disturbance is minimized during road/trail work and site preparation, and site preparation is done in accordance with BMPs.
	10.6.b Tree seedlings are planted in a way that minimizes damage to the soil, while facilitating seedling survival. Tree seedling species are selected appropriate for maintaining long-term site productivity.
	10.6.c Thinning is implemented in a manner that minimizes site disturbance and damage to the residual stand of crop trees and other desired vegetation (See Criterion 6.5).
	<p>10.6.d Fertilizer is applied only when all the following conditions are met:</p> <ul style="list-style-type: none"> • Soil classification or foliar analysis indicates one or more nutrients are a limiting factor for forest productivity. • Data and/or scientific literature suggest that the response to fertilization is economically justified.

Principles (10 total) and Criteria (56 total)	Indicator (189 total)
	<ul style="list-style-type: none"> • Where necessary due to topography, soils, or other conditions, measures are taken to prevent damage from fertilizer runoff or leaching. This includes preventing influences on native low-nutrient ecological systems, such as pitcher plant bogs, or on ground and surface water quality. • Fertilizer application maintains or enhances soil condition and site productivity.
	10.6.e Sufficient woody debris and other organic matter is retained within plantation stands to ensure adequate soil structure and nutrient recycling.
10.7 Measures shall be taken to prevent and minimize outbreaks of pests, diseases, fire and invasive plant introductions. Integrated pest management shall form an essential part of the management plan, with primary reliance on prevention and biological control methods rather than chemical pesticides and fertilizers. Plantation management should make every effort to move away from chemical pesticides and fertilizers, including their use in nurseries. The use of chemicals is also covered in Criteria 6.6 and 6.7.	10.7.a Outbreaks of pests and disease are controlled by maintaining plantation vigor. Management regimes in plantation areas are designed to minimize forest damage from fire, pests, diseases, wind and other factors. Where applicable: <ul style="list-style-type: none"> • Periodic thinnings are scheduled and conducted to reduce competition for light, water, and nutrients. • The forest owner or manager is aware of potential pest problems associated with the tree species in the plantation and region, and has some knowledge of control procedures. • Habitat for predators of plantation pests is maintained within or adjacent to the plantation. • Diversity of tree species is encouraged in the stand. • Management techniques are used that minimize reliance on chemicals.
	10.7.b A strategy is in place to control fire damage. Where applicable, prescribed burns are conducted according to BMPs and with adequate planning, equipment, training and weather conditions to maintain control of the burn within the burn plan area.
	10.7.c The forest owner implements a strategy to prevent or control invasive species, as noted in Indicator 6.3.h.
10.8 Appropriate to the scale and diversity of the operation, monitoring of plantations shall include regular assessment of potential on-site and off-site ecological and social impacts, (e.g. natural regeneration, effects on water resources and soil fertility, and impacts on local welfare and social well-being), in addition to those elements addressed in principles 8, 6 and 4. No species should be planted on a large scale until local trials and/or experience have shown that they are ecologically well-adapted to the site, are not invasive, and do not have significant negative ecological impacts on other ecosystems. Special attention will be paid to social issues of land acquisition for plantations, especially the protection of local rights of ownership, use or access.	10.8.a Monitoring of the impacts of plantations, both on and off-site, is conducted in the same manner as the monitoring of natural forests, in accordance with Principles 4, 6, and 8.
10.9 Plantations established in areas converted from natural forests after November 1994 normally shall not qualify for certification. Certification may be allowed in circumstances where sufficient evidence is submitted to the certification body that the manager/owner is not responsible directly or indirectly of such conversion.	10.9.a For plantations established in areas converted after 1994, the forest owner or manager demonstrates to the CB that the manager/owner was not directly or indirectly responsible for the conversion of the natural forest to the plantation.
	10.9.b For plantations established in areas converted after 1994, the forest owner or manager develops and implements a plan to restore the plantation stands to conditions characteristic of natural forests and to manage those stands in compliance with all Indicators of Principles 1-9 as quickly as feasible.

Source: FSC-US Forest Management Standard (V1.1) (FSC-STD-USA-1.1-2018, 2018). Accessed February 2021 from <https://us.fsc.org>

Attachment B – DCR Review of Sustainable Forestry Initiative (SFI) Certification Criteria

Alignment level	SFI (101 total)	FSC (189 total)
Generally Aligned	61	144
Mostly Aligned	15	33
Unsure or somewhat not Aligned	9	6
Generally Not Aligned	0	0
Not Applicable unless Certified	16	6

Objectives (15 total) and Performance Measures (37 total)	Indicator (101 total)
1. Forest Management Planning 1.1. <i>Program Participants</i> shall ensure that forest management plans include <i>long-term</i> harvest levels that are sustainable and consistent with appropriate <i>growth-and yield models</i> .	1.1.1. Forest management planning at a level appropriate to the size and scale of the operation, including a <i>long-term</i> resources analysis; a periodic or ongoing <i>forest inventory</i> ; a <i>land classification</i> system; <i>biodiversity</i> at <i>landscape</i> scales; soils inventory and maps, where available; access to <i>growth-and-yield modeling</i> capabilities; up-to-date maps or a <i>geographic information system (GIS)</i> ; recommended sustainable harvest levels for areas available for harvest; and a review of non-timber issues (e.g., recreation, tourism, pilot projects and economic incentive <i>programs</i> to promote water <i>protection</i> , carbon storage, <i>bioenergy feedstock</i> production, or <i>biological diversity conservation</i> , or to address climate-induced ecosystem change).
	1.1.2. Documented current harvest trends fall within <i>long-term</i> sustainable levels identified in the forest management plan.
	1.1.3. A <i>forest inventory</i> system and a method to calculate growth and yield.
	1.1.4. Periodic updates of <i>forest inventory</i> and recalculation of planned harvests to account for changes in growth due to <i>productivity</i> increases or decreases, including but not limited to improved data, <i>long-term</i> drought, fertilization, <i>climate change</i> , changes in forestland ownership and tenure, or <i>forest health</i> .
	1.1.5. Documentation of forest practices (e.g., <i>planting</i> , fertilization and thinning) consistent with assumptions in harvest plans.
1.2. <i>Program Participants</i> shall not convert one <i>forest cover type</i> to another <i>forest cover type</i> , unless in justified circumstances.	1.2.1. <i>Program Participants</i> shall not convert one <i>forest cover type</i> to another <i>forest cover type</i> , unless the conversion: a. Is in compliance with relevant national and regional <i>policy</i> and legislation related to land use and forest management; and b. Would not convert <i>native</i> forest types that are rare and ecologically significant at the <i>landscape</i> level or put any <i>native</i> forest types at risk of becoming rare; and c. Does not create significant <i>long-term</i> adverse impacts on <i>Forests with Exceptional Conservation Value</i> , <i>old-growth forests</i> , forests critical to <i>threatened and endangered</i> species, and <i>special sites</i> .
	1.2.2. Where a <i>Program Participant</i> intends to convert to another <i>forest cover type</i> , an assessment considers: a. <i>Productivity</i> and <i>stand</i> quality conditions and impacts which may include social and economic values; b. Specific ecosystem issues related to the site such as invasive species, insect or disease issues, riparian <i>protection</i> needs and others as appropriate to the site including regeneration challenges; and c. Ecological impacts of the conversion including a review at the site and <i>landscape</i> scale as well as consideration for any appropriate mitigation measures.
1.3. <i>Program Participants</i> shall not have within the scope of their	1.3.1. Forestlands converted to other land uses shall not be certified to this <i>SFI 2015-2019 Forest Management Standard</i> . This does not apply to forestlands used for forest and

Objectives (15 total) and Performance Measures (37 total)	Indicator (101 total)
certification to this <i>SFI 2015-2019 Forest Management Standard</i> , forestlands that have been converted to nonforestland use.	<i>wildlife</i> management such as <i>wildlife</i> food plots or infrastructure such as forest roads, log processing areas, trails etc.
2. Forest Health and Productivity 2.1 <i>Program Participants</i> shall promptly reforest after final harvest.	2.1.1. Documented <i>reforestation</i> plans, including designation of all harvest areas for either natural, planted or direct needed regeneration and prompt <i>reforestation</i> , unless delayed for site-specific environmental or <i>forest health</i> considerations or legal requirements, through <i>planting</i> within two years or two <i>planting</i> seasons, or by planned <i>natural regeneration</i> methods within five years.
2.2. <i>Program Participants</i> shall minimize chemical use required to achieve management <i>objectives</i> while protecting employees, neighbors, the public and the environment, including <i>wildlife</i> and <i>aquatic habitats</i> .	2.2.2. Clear criteria to judge adequate regeneration and appropriate actions to correct understocked areas and achieve acceptable species composition and stocking rates for <i>planting</i> , <i>direct seeding</i> and <i>natural regeneration</i> .
	2.2.3. <i>Plantings</i> of <i>exotic tree species</i> should minimize risk to <i>native ecosystems</i> .
	2.2.4. <i>Protection</i> of desirable or planned advanced <i>natural regeneration</i> during harvest.
	2.2.5. <i>Afforestation programs</i> that consider potential ecological impacts of the selection and <i>planting</i> of tree species in nonforested <i>landscapes</i> .
	2.2.1. <i>Minimized</i> chemical use required to achieve management <i>objectives</i> .
	2.2.2. Use of <i>least-toxic and narrowest-spectrum pesticides</i> necessary to achieve management <i>objectives</i> .
	2.2.3. Use of pesticides registered for the intended use and applied in accordance with label requirements.
	2.2.4. The World Health Organization (WHO) type 1A and 1B pesticides shall be prohibited, except where no other viable alternative is available.
	2.2.5. Use of pesticides banned under the Stockholm Convention on Persistent Organic Pollutants (2001) shall be prohibited.
	2.2.6. Use of <i>integrated pest management</i> where feasible.
	2.2.7. Supervision of forest chemical applications by state- or provincial- trained or certified applicators.
	2.2.8. Use of management practices appropriate to the situation, for example: a. notification of adjoining landowners or nearby residents concerning applications and chemicals used; b. appropriate multilingual signs or oral warnings; c. control of public road access during and immediately after applications; d. designation of streamside and other needed buffer strips; e. use of positive shutoff and minimal-drift spray valves; f. aerial application of forest chemicals parallel to buffer zones to <i>minimize</i> drift; g. monitoring of water quality or safeguards to ensure proper equipment use and <i>protection</i> of streams, lakes and other water bodies; h. appropriate transportation and storage of chemicals; i. filing of required state or provincial reports; and/or j. use of methods to ensure <i>protection</i> of <i>threatened and endangered</i> species.
2.3. <i>Program Participants</i> shall implement forest management practices to protect and maintain forest and soil <i>productivity</i> .	2.3.1. Process to identify soils vulnerable to compaction, and use of appropriate methods, including the use of soil maps where available, to avoid excessive soil disturbance.
	2.3.2. Use of erosion control measures to <i>minimize</i> the loss of soil and site <i>productivity</i> .
	2.3.3. Post-harvest conditions conducive to maintaining site <i>productivity</i> (e.g., limited rutting, retained down woody debris, <i>minimized skid trails</i>).
	2.3.4. Retention of vigorous trees during partial harvesting, consistent with scientific silvicultural standards for the area.
	2.3.5. Criteria that address harvesting and site preparation to protect soil <i>productivity</i> .
	2.3.6. Road construction and skidding layout to <i>minimize</i> impacts to soil <i>productivity</i> .

Objectives (15 total) and Performance Measures (37 total)	Indicator (101 total)
2.4. <i>Program Participants</i> shall manage so as to protect forests from damaging agents, such as environmentally or economically undesirable wildfire, pests, diseases, and <i>invasive exotic plants and animals</i> , to maintain and improve <i>long-term forest health, productivity and economic viability</i> .	
	2.4.1. <i>Program</i> to protect forests from damaging agents.
	2.4.2. Management to promote healthy and productive forest conditions to minimize susceptibility to damaging agents.
	2.4.3. Participation in, and support of, fire and pest prevention and control programs.
2.5. Program participants that deploy improved planting stock, including varietal seedlings, shall use best scientific methods.	2.5.1. Program for appropriate research, testing, evaluation and deployment of improved planting stock, including varietal seedlings.
3. Protection and Maintenance of Water Resources 3.1. <i>Program Participants</i> shall meet or exceed all applicable federal, provincial, state and local water quality laws, and meet or exceed <i>best management practices</i> developed under Canadian or U.S. Environmental Protection Agency–approved water quality <i>programs</i> .	3.1.1. <i>Program</i> to implement federal, state or provincial water quality <i>best management practices</i> during all phases of management activities.
	3.1.2. Contract provisions that specify conformance to <i>best management practices</i> .
	3.1.3. Monitoring of overall <i>best management practices</i> implementation.
3.2. <i>Program Participants</i> shall implement water, <i>wetland</i> and <i>riparian protection</i> measures based on soil type, terrain, vegetation, ecological function, harvesting system, state <i>best management practices (BMPs)</i> , provincial guidelines and other applicable factors.	3.2.1. <i>Program</i> addressing management and <i>protection</i> of rivers, streams, lakes, <i>wetlands</i> , other water bodies and <i>riparian areas</i> during all phases of management, including the layout and construction of roads and <i>skid trails</i> to maintain water reach, flow and quality.
	3.2.2. Mapping of rivers, streams, lakes, <i>wetlands</i> and other water bodies as specified in state or provincial <i>best management practices</i> and, where appropriate, identification on the ground.
	3.2.3. Documentation and implementation of plans to manage and protect rivers, streams, lakes, <i>wetlands</i> , other water bodies and <i>riparian areas</i> .
	3.2.4. Plans that address wet-weather events in order to maintain water quality (e.g., <i>forest inventory</i> systems, wet-weather tracts, definitions of acceptable operating conditions).
4. Conservation of Biological Diversity 4.1. <i>Program Participants</i> shall conserve <i>biological diversity</i> .	4.1.1. <i>Program</i> to incorporate the <i>conservation of native biological diversity</i> , including species, <i>wildlife habitats</i> and ecological community types at <i>stand</i> and <i>landscape</i> levels.
	4.1.2. Development of criteria and implementation of practices, as guided by regionally based <i>best scientific information</i> , to retain <i>stand-level wildlife habitat</i> elements such as snags, stumps, mast trees, down woody debris, den trees and nest trees.
	4.1.3. Document diversity of <i>forest cover types</i> and age or size classes at the individual ownership or forest tenure level, and where credible data are available, at the <i>landscape</i> scale. Working individually or collaboratively to support diversity of <i>native forest cover types</i> and age or size classes that enhance <i>biological diversity</i> at the <i>landscape</i> scale.
	4.1.4. <i>Program Participants</i> shall participate in or incorporate the results of state, provincial, or regional <i>conservation</i> planning and priority-setting efforts to conserve

Objectives (15 total) and Performance Measures (37 total)	Indicator (101 total)
	biological diversity and consider these efforts in forest management planning. Examples of credible priority- setting efforts include state <i>wildlife</i> action plans, state forest action plans, relevant <i>habitat conservation</i> plans or provincial <i>wildlife</i> recovery plans.
	4.1.5. Program to address <i>conservation</i> of known sites with viable occurrences of significant species of concern.
	4.1.6. Identification and <i>protection</i> of <i>non-forested wetlands</i> , including bogs, fens and marshes, and <i>vernal pools</i> of ecological significance.
	4.1.7. Participation in <i>programs</i> and demonstration of activities as appropriate to limit the introduction, spread and impact of <i>invasive exotic plants and animals</i> that directly threaten or are likely to threaten <i>native plant and animal communities</i> .
	4.1.8. Consider the role of natural disturbances, including the use of prescribed or natural fire where appropriate, and <i>forest health</i> threats in relation to <i>biological diversity</i> when developing forest management plans.
4.2. Program Participants shall protect threatened and endangered species, Forests with Exceptional Conservation Values (FECV) and old-growth forests.	4.2.1. Program to protect <i>threatened and endangered species</i> .
	4.2.2. Program to locate and protect known sites of flora and fauna associated with viable occurrences of <i>critically imperiled and imperiled</i> species and communities also known as <i>Forests with Exceptional Conservation Value</i> . Plans for <i>protection</i> may be developed independently or collaboratively, and may include <i>Program Participant</i> management, cooperation with other stakeholders, or use of easements, <i>conservation</i> land sales, exchanges, or other <i>conservation</i> strategies.
	4.2.3. Support of and participation in plans or <i>programs</i> for the <i>conservation</i> of <i>old-growth forests</i> in the region of ownership or forest tenure.
4.3. Program Participants shall manage ecologically important sites in a manner that takes into account their unique qualities.	4.3.1. Use of information such as existing natural heritage data or expert advice in identifying or selecting ecologically important sites for <i>protection</i> .
	4.3.2. Appropriate mapping, cataloging and management of identified ecologically important sites.
4.4. Program Participants shall apply knowledge gained through research, science, technology and field experience to manage <i>wildlife habitat</i> and contribute to the <i>conservation</i> of <i>biological diversity</i> .	4.4.1. Collection of information on <i>Forests with Exceptional Conservation Value</i> and other <i>biodiversity</i> -related data through <i>forest inventory</i> processes, mapping or participation in external <i>programs</i> , such as NatureServe, state or provincial heritage <i>programs</i> , or other credible systems. Such participation may include providing nonproprietary scientific information, time and assistance by staff, or in-kind or direct financial support.
	4.4.2. A methodology to incorporate research results and field applications of <i>biodiversity</i> and ecosystem research into forest management decisions.
5. Management of Visual Quality and Recreational Benefits 5.1. Program Participants shall manage the impact of harvesting on visual quality.	5.1.1. Program to address <i>visual quality management</i> .
	5.1.2. Incorporation of aesthetic considerations in harvesting, road, landing design and management, and other management activities where visual impacts are a concern.
5.2. Program Participants shall manage the size, shape and placement of clearcut harvests.	5.2.1. Average size of clearcut harvest areas does not exceed 120 acres (50 hectares), except when necessary to meet regulatory requirements, achieve ecological <i>objectives</i> , or respond to <i>forest health</i> emergencies or other natural catastrophes.
	5.2.2. Documentation through internal records of clearcut size and the process for calculating average size.
5.3. Program Participants shall adopt a <i>greenup requirement</i> or alternative methods that provide for <i>visual quality</i> .	5.3.1. Program implementing the <i>green-up requirement</i> or alternative methods.
	5.3.2. Harvest area tracking system to demonstrate conformance with the <i>green-up requirement</i> or alternative methods.

Objectives (15 total) and Performance Measures (37 total)	Indicator (101 total)
	5.3.3. Trees in clearcut harvest areas are at least 3 years old or 5 feet (1.5 meters) high at the desired level of stocking before adjacent areas are clearcut, or as appropriate to address operational and economic considerations, alternative methods to reach the <i>performance measure</i> are utilized by the <i>Program Participant</i> .
5.4. <i>Program Participants</i> shall support and promote recreational opportunities for the public.	5.4.1. Provide recreational opportunities for the public, where consistent with forest management <i>objectives</i> .
6. Protection of Special Sites 6.1. <i>Program Participants</i> shall identify <i>special sites</i> and manage them in a manner appropriate for their unique features.	6.1.1. Use of information such as existing natural heritage data, expert advice or stakeholder consultation in identifying or selecting <i>special sites</i> for <i>protection</i> .
	6.1.2. Appropriate mapping, cataloging and management of identified <i>special sites</i> .
7. Efficient Use of Fiber Resources 7.1. <i>Program Participants</i> shall employ appropriate forest harvesting technology and in-woods manufacturing processes and practices to <i>minimize</i> waste and ensure efficient utilization of harvested trees, where consistent with other <i>SFI 2015-2019 Forest Management Standard Objectives</i> .	7.1.1. <i>Program</i> or monitoring system to ensure efficient utilization, which may include provisions to ensure: a. management of harvest residue (e.g., slash, limbs, tops) considers economic, social and environmental factors (e.g., organic and nutrient value to future forests and the potential of increased fuels build-up) and other utilization needs; b. training or incentives to encourage <i>qualified logging professionals</i> to enhance utilization; c. exploration of markets for underutilized species and low-grade wood and alternative markets (e.g., bioenergy markets); or d. periodic inspections and reports noting utilization and product separation.
8. Recognize and Respect Indigenous Peoples' Rights 8.1. <i>Program Participants</i> shall recognize and respect <i>Indigenous Peoples'</i> rights.	8.1.1. <i>Program Participants</i> will provide a written <i>policy</i> acknowledging a commitment to recognize and respect the rights of <i>Indigenous Peoples</i> .
8.2. <i>Program Participants</i> with forest management responsibilities on public lands shall confer with affected <i>Indigenous Peoples</i> with respect to sustainable forest management practices.	8.2.1 <i>Program</i> that includes communicating with affected <i>Indigenous Peoples</i> to enable <i>Program Participants</i> to: understand and respect <i>traditional forest-related knowledge</i> ; identify and protect spiritually, historically, or <i>culturally important</i> sites; address the use of <i>non-timber forest products</i> of value to <i>Indigenous Peoples</i> in areas where <i>Program Participants</i> have <i>management responsibilities on public lands</i> ; and respond to <i>Indigenous Peoples'</i> inquiries and concerns received.
8.3. <i>Program Participants</i> are encouraged to communicate with and shall respond to local <i>Indigenous Peoples</i> with respect to sustainable forest management practices on their private lands.	8.3.1. <i>Program Participants</i> are aware of <i>traditional forest-related knowledge</i> , such as known cultural heritage sites, the use of wood in traditional buildings and crafts, and flora that may be used in cultural practices for food, ceremonies or medicine.
	8.3.2. Respond to <i>Indigenous Peoples'</i> inquiries and concerns received.
9. Legal and Regulatory Compliance 9.1. <i>Program Participants</i> shall comply with applicable federal, provincial, state and local <i>forestry</i> and related social and environmental laws and regulations.	9.1.1. Access to relevant laws and regulations in appropriate locations.
	9.1.2. System to achieve compliance with applicable federal, provincial, state, or local laws and regulations.
	9.1.3. Demonstration of commitment to legal compliance through available <i>regulatory action information</i> .
9.2. <i>Program Participants</i> shall take appropriate steps to comply with all applicable social laws at the federal, provincial, state and local levels in the	9.2.1. Written <i>policy</i> demonstrating commitment to comply with social laws, such as those covering civil rights, equal employment opportunities, anti-discrimination and anti-harassment measures, workers' compensation, <i>Indigenous Peoples'</i> rights, workers' and communities' right to know, prevailing wages, workers' right to organize, and occupational health and safety.

Objectives (15 total) and Performance Measures (37 total)	Indicator (101 total)
country in which the <i>Program Participant</i> operates.	
	9.2.2. <i>Forestry enterprises</i> will respect the rights of workers and labor representatives in a manner that encompasses the intent of the International Labor Organization (ILO) core conventions.
10. Forestry Research, Science and Technology 10.1. <i>Program Participants</i> shall individually and/or through cooperative efforts involving <i>SFI Implementation Committees</i> , associations or other partners provide in-kind support or funding for forest research to improve <i>forest health, productivity</i> and sustainable management of forest resources, and the environmental benefits and performance of forest products.	10.1.1. Financial or in-kind support of research to address questions of relevance in the region of operations. Examples could include, but are not limited to, areas of forest <i>productivity, water quality, biodiversity</i> , community issues-or similar areas that build broader understanding of the benefits and impacts of forest management.
	10.1.2. Research on genetically engineered trees via <i>forest tree biotechnology</i> shall adhere to all applicable federal, state, and provincial regulations and international protocols ratified by the United States and/or Canada depending on jurisdiction of management.
10.2. <i>Program Participants</i> shall — individually and/or through cooperative efforts involving <i>SFI Implementation Committees</i> , associations or other partners — develop or use state, provincial or regional analyses in support of their <i>sustainable forestry programs</i> .	10.2.1. Participation — individually and/or through cooperative efforts involving <i>SFI Implementation Committees</i> and/or associations at the national, state, provincial or regional level, in the development or use of some of the following: regeneration assessments; <i>growth and drain</i> assessments; <i>best management practices</i> implementation and conformance; <i>biodiversity conservation</i> information for family forest owners; and social, cultural or economic benefit assessments.
10.3. <i>Program Participants</i> shall — individually and/or through cooperative efforts involving <i>SFI Implementation Committees</i> , associations or other partners— broaden the awareness of <i>climate change</i> impacts on forests, <i>wildlife</i> and <i>biological diversity</i> .	10.3.1. Where available, monitor information generated from regional climate models on <i>long-term forest health, productivity</i> and <i>economic viability</i> .
	10.3.2. <i>Program Participants</i> are knowledgeable about <i>climate change</i> impacts on <i>wildlife, wildlife habitats</i> and <i>conservation of biological diversity</i> through international, national, regional or local <i>programs</i> .
11. Training and Education 11.1. <i>Program Participants</i> shall require appropriate training of personnel and contractors so that they are competent to fulfill their responsibilities under the <i>SFI 2015-2019 Forest Management Standard</i> .	11.1.1. Written statement of commitment to the <i>SFI 2015-2019 Forest Management Standard</i> communicated throughout the organization, particularly to facility and woodland managers, and field foresters.
	11.1.2. Assignment and understanding of roles and responsibilities for achieving <i>SFI 2015-2019 Forest Management Standard objectives</i> .
	11.1.3. Staff education and training sufficient to their roles and responsibilities.
	11.1.4. Contractor education and training sufficient to their roles and responsibilities.
	11.1.5. <i>Program Participants</i> shall have written agreements for the use of <i>qualified logging professionals</i> and/or <i>certified logging professionals</i> (where available) and/or <i>wood producers</i> that have completed training <i>programs</i> and are recognized as <i>qualified logging professionals</i> .


Objectives (15 total) and Performance Measures (37 total)	Indicator (101 total)
<p>11.2. <i>Program Participants</i> shall work — individually and/or with <i>SFI Implementation Committees</i>, logging or forestry associations, or appropriate agencies or others in the forestry community — to foster improvement in the professionalism of <i>wood producers</i>.</p>	<p>11.2.1. Participation in or support of <i>SFI Implementation Committees</i> to establish criteria and identify delivery mechanisms for <i>wood producer</i> training courses and periodic continuing education that address:</p> <ul style="list-style-type: none"> a. awareness of <i>sustainable forestry principles</i> and the <i>SFI program</i>; b. <i>best management practices</i>, including streamside management and road construction, maintenance and retirement; c. <i>reforestation, invasive exotic plants and animals, forest resource conservation, aesthetics and special sites</i>; d. awareness of responsibilities under the U.S. Endangered Species Act, the Canadian Species at Risk Act, and other measures to protect <i>wildlife habitat</i> (e.g., <i>Forests with Exceptional Conservation Value</i>); e. awareness of rare forested natural communities as identified by provincial or state agencies, or by credible organizations such as NatureServe and The Nature Conservancy; f. logging safety; g. U.S. Occupational Safety and Health Administration (OSHA) and Canadian Centre for Occupational Health and Safety (CCOHS) regulations, wage and hour rules, and other provincial, state and local employment laws; h. transportation issues; i. business management; j. public <i>policy</i> and outreach; and k. awareness of emerging technologies
	<p>11.2.2. The <i>SFI Implementation Committee</i>-approved <i>wood producer</i> training programs shall have a continuing education component with coursework that supports the current training programs, safety and the <i>principles</i> of <i>sustainable forestry</i>.</p>
	<p>11.2.3. Participation in or support of <i>SFI Implementation Committees</i> to establish criteria for recognition of logger certification programs, where they exist, that include:</p> <ul style="list-style-type: none"> a. completion of <i>SFI Implementation Committee</i> recognized <i>wood producer</i> training programs and meeting continuing education requirements of the training program; b. independent in-the-forest verification of conformance with the logger certification program standards; c. compliance with all applicable laws and regulations including responsibilities under the U.S. Endangered Species Act, the Canadian Species at Risk Act and other measures to protect <i>wildlife habitat</i>; d. use of <i>best management practices</i> to protect water quality; e. logging safety; f. compliance with acceptable <i>silviculture</i> and utilization standards; g. aesthetic management techniques employed where applicable; and h. adherence to a management or harvest plan that is site specific and agreed to by the forest landowner.
<p>12. Community Involvement and Landowner Outreach</p> <p>12.1. <i>Program Participants</i> shall support and promote efforts by consulting foresters, state, provincial and federal agencies, state or local groups, professional societies, conservation organizations, <i>Indigenous Peoples</i> and governments, community groups, sporting organizations, labor, universities, extension agencies, the <i>American Tree Farm System®</i> and/or other landowner cooperative programs to apply <i>principles</i> of sustainable forest management.</p>	
	<p>12.1.2. Support, individually or collaboratively, education and outreach to forest landowners describing the importance of and providing implementation guidance on:</p>

Objectives (15 total) and Performance Measures (37 total)	Indicator (101 total)
	<p>a. <i>best management practices</i>; b. <i>reforestation and afforestation</i>; c. <i>visual quality management</i>; d. <i>conservation objectives</i>, such as critical <i>wildlife habitat</i> elements, <i>biodiversity</i>, <i>threatened and endangered</i> species, and <i>Forests with Exceptional Conservation Value</i>; e. management of harvest residue (e.g., slash, limbs, tops) that considers economic, social and environmental factors (e.g., organic and nutrient value to future forests) and other utilization needs; f. control of <i>invasive exotic plants and animals</i>; g. characteristics of <i>special sites</i>; and h. reduction of wildfire risk.</p>
	<p>12.1.3. Participation in efforts to support or promote <i>conservation</i> of managed forests through voluntary market-based incentive <i>programs</i> such as current-use taxation <i>programs</i>, <i>Forest Legacy Program</i> or <i>conservation</i> easements.</p>
<p>12.2. <i>Program Participants</i> shall support and promote, at the state, provincial or other appropriate levels, mechanisms for public outreach, education and involvement related to sustainable forest management.</p>	<p>12.2.1. Periodic educational opportunities promoting <i>sustainable forestry</i>, such as: field tours, seminars, websites, webinars or workshops; educational trips; self-guided forest management trails; publication of articles, educational pamphlets or newsletters; or support for state, provincial, and local forestry organizations and soil and water <i>conservation</i> districts.</p>
<p>12.3. <i>Program Participants</i> shall establish, at the state, provincial-or other appropriate levels, procedures to address concerns raised by loggers, consulting foresters, employees, unions, the public or other <i>Program Participants</i> regarding practices that appear inconsistent with the <i>SFI 2015-2019 Forest Management Standard principles and objectives</i>.</p>	<p>12.3.1. Support for <i>SFI Implementation Committees</i> (e.g., toll-free numbers and other efforts) to address concerns about apparent nonconforming practices.</p>
<p>13. Public Land Management Responsibilities 13.1. <i>Program Participants</i> with forest <i>management responsibilities on public lands</i> shall participate in the development of <i>public land</i> planning and management processes.</p>	<p>13.1.1. Involvement in <i>public land</i> planning and management activities with appropriate governmental entities and the public.</p>
<p>14. Communications and Public Reporting 14.1. A <i>Program Participant</i> shall provide a summary audit report, prepared by the <i>certification body</i>, to <i>SFI Inc.</i> after the successful completion of a certification, recertification or surveillance audit to the <i>SFI 2015-2019 Forest Management Standard</i>.</p>	
	<p>14.1.1. The summary audit report submitted by the <i>Program Participant</i> (one copy must be in English), shall include, at a minimum: a. a description of the audit process, <i>objectives</i> and scope; b. a description of substitute <i>indicators</i>, if any, used in the audit and a rationale for each; c. the name of the <i>Program Participant</i> that was audited, including its <i>SFI</i> representative; d. a general description of the <i>Program Participant's</i> forestland included in the audit; e. the name of the <i>certification body</i> and <i>lead auditor</i> (names of the <i>audit team</i> members, including <i>technical experts</i>, may be included at the discretion of the <i>audit team</i> and <i>Program Participant</i>); f. the dates the audit was conducted and completed;</p>

Objectives (15 total) and Performance Measures (37 total)	Indicator (101 total)
	g. a summary of the findings, including general descriptions of evidence of conformity and any nonconformities and corrective action plans to address them, opportunities for improvement, and exceptional practices; and h. the certification decision.
14.2. <i>Program Participants</i> shall report annually to <i>SFI Inc.</i> on their conformance with the <i>SFI 2015-2019 Forest Management Standard</i> .	14.2.1 Prompt response to the <i>SFI</i> annual progress report survey.
	14.2.2. Record keeping for all the categories of information needed for <i>SFI</i> annual progress report surveys.
	14.2.3. Maintenance of copies of past survey reports to document progress and improvements to demonstrate conformance to the <i>SFI 2015-2019 Forest Management Standard</i> .
15. Management Review and Continual Improvement 15.1. <i>Program Participants</i> shall establish a management review system to examine findings and progress in implementing the <i>SFI 2015-2019 Forest Management Standard</i> , to make appropriate improvements in <i>programs</i> , and to inform their employees of changes.	15.1.1. System to review commitments, <i>programs</i> and procedures to evaluate effectiveness.
	15.1.2. System for collecting, reviewing, and reporting information to management regarding progress in achieving <i>SFI 2015-2019 Forest Management Standard objectives</i> and <i>performance measures</i> .
	15.1.3. Annual review of progress by management and determination of changes and improvements necessary to continually improve conformance to the <i>SFI 2015-2019 Forest Management Standard</i> .

Sources: Sustainable Forestry Initiative, January 2015: SFI 2015-2019 Standards and Rules; Standards, Rules for Label Use, Procedures and Guidance. SFI-00001, downloaded February 2021 from <https://www.forests.org>

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 23, 2021
SUBJECT: Water Supply Citizens Advisory Committee Contract

COMMITTEE: Water Policy & Oversight

INFORMATION
 VOTE

Carolyn M. Fiore, Deputy Chief Operating Officer
Stephen Estes-Smargiassi, Director, Planning and Sustainability
Katherine Ronan, Environmental Analyst
Preparer/Title


Sean Navin, Director
Intergovernmental Affairs

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to execute a contract, substantially in the form attached hereto, with the Water Supply Citizens Advisory Committee for a one-year period beginning July 1, 2021 to June 30, 2022, with a total contract cost of \$114,120.

DISCUSSION:

In addition to the critical oversight functions of the Advisory Board, many of MWRA's policy decisions are made with advice and support from two standing citizens' advisory committees, the Water Supply Citizens Advisory Committee (WSCAC) and the Wastewater Advisory Committee (WAC). A separate staff summary presented at this meeting recommends authorization for the Executive Director to execute a similar contract with WAC for FY22.

WSCAC originated in 1978 when its predecessor committee, the Northfield Citizens Advisory Committee, was formed at the direction of the Secretary of the Executive Office of Environmental Affairs. WSCAC has received direct funding from MWRA since MWRA's formation in 1984.

The proposed FY22 WSCAC contact is 3.28% greater than the FY21 contract. Health insurance increased 6%, while hourly salaries and other reimbursable expense items increased 3%. Health insurance is budgeted at 80% reimbursement for the Executive Director only, not to exceed \$11,096, with an optional health insurance buy-out program similar to that offered to MWRA employees who do not use MWRA's health insurance benefit. The proposed total FY22 WSCAC funding is \$114,120.

Current topics of interest to WSCAC include system redundancy, energy efficiency and carbon footprint, water system expansion issues, changing drinking water regulations, the Water System Master Plan, and watershed management and protection issues. The committee currently has 15

active members. WSCAC continues to work to identify additional members in categories which are not well represented on the committee.

WSCAC's office is located at Quabbin Reservoir in a Department of Conservation and Recreation (DCR) building, and most meetings are held at MWRA's Southborough facility. WSCAC's Executive Director is Lexi Dewey (selected by WSCAC's Executive Committee), and the current chairman is Gerald Eves, elected from among the members.

BUDGET/FISCAL IMPACT:

Sufficient funds for the WSCAC contract are included in the proposed FY22 Current Expense Budget.

ATTACHMENT:

Agreement between Massachusetts Water Resources Authority and Water Supply Citizens Advisory Committee

AGREEMENT
BETWEEN
MASSACHUSETTS WATER RESOURCES AUTHORITY
AND
WATER SUPPLY CITIZENS ADVISORY COMMITTEE

This Agreement (“Agreement”) is by and between the Massachusetts Water Resources Authority (“Authority”), a body politic and corporate and a public instrumentality of the commonwealth created by Chapter 372 of the Acts of 1984 with offices at Building 39 First Avenue, Charlestown Navy Yard, Charlestown, Massachusetts 02129 and the Water Supply Citizens Advisory Committee (“WSCAC”) an organization initially created under the Massachusetts Environmental Policy Act (“MEPA”) to ensure public representation and participation in Authority water supply activities, with offices currently at 485 Ware Road, Belchertown, MA 01007 (collectively “Parties”).

WHEREAS, the Authority is required to meet the water needs of its communities;

WHEREAS, the Authority desires WSCAC to continue to advise in water supply planning and programming; and

WHEREAS, WSCAC desires to have a continued role advising the Authority;

NOW, THEREFORE, for the consideration of mutual promises contained herein, the Authority and WSCAC agree as follows:

Article 1. Effective Date.

This Agreement shall be effective from July 1, 2021 through June 30, 2022, inclusive.

Article 2. Compensation, Budget, Payment, and Expenses.

2.1 The Authority shall make funds available as follows:

(a) Salaries and Duties.

Director. An Executive Director shall be chosen by WSCAC members at a salary not to exceed \$74,869 for the year commencing on July 1, 2021 through June 30, 2022, inclusive. The hourly salary rate (inclusive of payroll taxes) shall be \$44.94 with annual total hours of 1,666 (average 34 hours per week for 49 weeks). The duties of the Executive Director shall be in accordance with the job description prepared by the Executive Committee of WSCAC and on file with the Authority.

Administrative Assistant. A part-time Administrative Assistant shall be chosen by the WSCAC Executive Director in consultation with the Executive Committee of WSCAC at a salary not to exceed \$15,708 for the year commencing on July 1, 2021 through June 30, 2022, inclusive. The hourly salary rate shall be \$23.38 (inclusive of payroll taxes) with annual total hours of 672 (average 14 hours per week for 48 weeks). The duties of the Administrative Assistant shall be in accordance with the job description prepared by the Executive Committee of WSCAC and on file with the Authority.

(b) Reimbursable Expenses.

- (1) The Authority shall reimburse the WSCAC for 80% of the non-employer-sponsored health insurance for the WSCAC Executive Director (not to exceed \$11,096). The percentage rate for reimbursement of health insurance costs shall be changed to that of Authority staff if the Group Insurance Commission changes the rate.
- (2) Health insurance buy-out: The WSCAC Executive Director may elect a monetary allowance in lieu of reimbursement of health insurance costs, provided he or she has health insurance coverage through another employer-sponsored plan that meets Internal Revenue Service “minimum value” criteria, throughout that six-month period. The amount of the allowance will be \$1000 to waive family coverage or \$700 for waiving individual coverage. The WSCAC Executive Director is responsible for any withholding taxes on these payments with WSCAC being responsible for the employer share of payroll taxes.
- (3) Mileage costs, public transportation costs, highway tolls and parking expenses incurred by WSCAC staff and members from attendance at WSCAC meetings, pertinent conferences and seminars, or while performing other functions directly related to its scope of services. Mileage costs will be reimbursed at the prevailing Authority rate per mile.
- (4) Office supplies (such as letterhead, envelopes, pencils, paper clips), postage, office telephone and internet access, meeting expenses, and general administrative and office expenses;
- (5) The purchase or rental by WSCAC staff of books, films, cassettes, tapes, etc., if specifically approved by the Authority in advance, except that single copies of individual publications, books, and other written documents may be purchased for the WSCAC library use without prior approval, provided that the cost per item does not exceed \$200. All materials purchased under this section shall be considered property of the Authority.
- (6) Other miscellaneous expenses of the WSCAC staff approved by the Authority on a case-by-case basis. When possible, approval of the Authority should be received in advance of incurring such expenditures.

The Authority may advance up to \$750 to WSCAC, such advance to be applied to the payment of Miscellaneous Expenses as defined herein and as approved and budgeted under the terms of this Agreement. Payments made from an advance shall be accounted for in the same manner as all other Miscellaneous Expense payments. Prior to the expiration of this Agreement, any outstanding balance on an advance shall be applied against amounts due WSCAC.

The annual total reimbursement to WSCAC for annual and miscellaneous expenses combined shall not exceed \$23,543 from July 1, 2021 through June 30, 2022, inclusive.

(c) Non-reimbursable expenses.

The following expenses are not reimbursable: meals, entertainment, room and board expenses, fines, fees, or costs assessed as a result of improper or illegal actions on the part of the member, such as parking tickets or speeding fines.

ARTICLE 3. RESPONSIBILITIES OF THE AUTHORITY AND WSCAC.

(a) WSCAC shall employ an Executive Director, who is prohibited from being a member of WSCAC while serving his or her term as a paid employee.

(b) WSCAC shall, whenever applicable, take all necessary steps to receive an exemption from the Massachusetts Sales and Use taxes for materials, printing, and equipment purchased by WSCAC on behalf of the Authority.

(c) WSCAC shall submit monthly or periodic statements to the Authority requesting payment for salary, and for annual and miscellaneous expenses listed in Article 2. Such requests shall be supplemented or accompanied by time sheets, travel and expense vouchers, and by such other supporting data as may be required by the Authority.

(d) WSCAC shall maintain accounts, records, documents, and other evidence directly pertinent to performance of work under this Agreement. The Parties and their duly authorized representatives shall have access to such records, documents, and other evidence for the purpose of inspection, audit, and copying.

(e) The Authority or its duly authorized agent shall have the right at any and all reasonable times, to examine and audit WSCAC's records, documents and other evidence.

(f) This Agreement is subject to the laws dealing with the expenditures of public funds, including Chapter 12A of the Massachusetts General Laws.

(g) The Parties agree to consent to any reasonable modifications or changes in this contract that may be required by the Commonwealth of Massachusetts or any of its agencies.

(h) WSCAC acknowledges that the Authority is a state agency for purpose of Chapter 268A of the General Laws (the Massachusetts Conflict of Interest Law) and understands that for the purposes of that law, WSCAC staff and members are special state employees.

- (i) WSCAC shall be responsible for compliance with all applicable provisions and requirements of the Massachusetts Open Meeting Law.

ARTICLE 4. RESPONSIBILITIES OF THE WSCAC STAFF.

4.1 The WSCAC staff shall be responsible for the following tasks:

- (a) aiding WSCAC in its tasks under Article 6, managing the WSCAC office, educating the public, and acting as liaison with the Authority and its staff;
- (b) preparing monthly progress reports for submission to the WSCAC Executive Committee, the WSCAC members, and the Authority;
- (c) maintaining financial records, minutes of the WSCAC meetings, and other WSCAC records;
- (d) assuring that at least every other meeting be held in Eastern Massachusetts at a location to be jointly agreed upon by WSCAC and the Authority where Authority attendance is expected.
- (e) providing to the Authority copies of the notices for and minutes of all meetings of WSCAC and of all the WSCAC correspondence as soon as such materials are available.
- (f) administering and maintaining compliance by all its members and staff with the provisions of the Massachusetts Conflict of Interest Law including, without limitation, those mandatory provisions relating to: (i) annual distribution to members and staff of the State Ethics Commission's (SEC) Summary of Law and maintenance and archiving of acknowledgements of receipt of the Summary of Law from all members and staff, and (ii) compliance by members and staff with the SEC's bi-annual educational training exercises.

ARTICLE 5. MEMBERSHIP

5.1 Membership of WSCAC

- (a) Membership of WSCAC shall maintain parity between those individuals representing the interests of the communities listed in section 8(d) of the Authority's Enabling Act, c. 372 of the Acts of 1984, ("User Representatives") and those individuals representing the interests of the watershed communities ("Donor Representatives") and those individuals representing the interests of statewide or other appropriate interests as mutually agreed upon by WSCAC and the MWRA ("Other Representatives").
- (b) In order to maintain WSCAC membership status, members must be active participants, as defined in the WSCAC by-laws.

5.2 The appointment of WSCAC members shall be by joint designation by WSCAC and the MWRA and shall have a goal of achieving at least 10% minority representation on WSCAC.

ARTICLE 6. WSCAC TASKS.

WSCAC shall undertake the following tasks:

6.1 Water Supply Programs Review.

Advise the Authority staff and Board in the performance of their duties relating to water supply planning and policies. Participate in the design, review and evaluation of research, reports and new ideas for programs. Provide comments, information, advice, recommendations and guidance as to the direction, intent and execution of water planning and policy development.

6.2 Outreach and Education.

Assure informed public input by providing assistance in outreach to various groups regarding the Authority's water supply programs and policies, and state water resources legislation and policies. Review programs with and explain plans and policies to organizations and citizens, including the scheduling of workshops, meetings and conferences. Provide comments and assistance on legislation of importance to the Authority.

6.3 Working Group Representation.

When requested, provide a representative on Authority working groups, comprising MWRA staff and consultants, related to water supply planning and policy development, including the Advisory Board and its subcommittees and the Wastewater Advisory Committee.

6.4 Recommendations on Long Term Public Involvement.

Provide to the Authority staff and Board, proposals for continued effective and efficient long-term public involvement in water programs.

6.5 Recommendations and Discussion Documents.

The WSCAC staff shall be responsible for providing to the Authority's staff, Board, and others, recommendation and discussion documents on the subjects of the above tasks. Documents may be in the form of minutes of WSCAC meetings, memoranda, letters, reports, presentations and discussions as appropriate.

ARTICLE 7. MISCELLANEOUS REQUIREMENTS.

7.1 Nondiscrimination and Equal Employment Opportunity.

(a) WSCAC agrees to comply with all Federal and State laws pertaining to Civil Rights and Equal Opportunity, including executive orders and rules and regulations regarding employment,

demotion, transfers, recruitment, layoffs or termination, rates of pay or other compensation and training, including apprenticeships. With regard to WSCAC membership, WSCAC agrees to affirmatively solicit minority representation.

(b) WSCAC agrees to comply with the Authority's policy regarding non-discrimination and affirmative action.

ARTICLE 8. GENERAL PROVISIONS.

8.1 Termination of Contract.

(a) This Agreement may be terminated in writing, at any time, in whole or in part, by the Authority for its convenience or in the event of substantial failure by WSCAC to fulfill their obligations, or for violation of any of the covenants and stipulations of this Agreement.

(b) If termination is effected by the Authority an equitable adjustment shall be made providing for payment to WSCAC for services rendered and expenses incurred prior to the termination. In addition, termination settlement costs reasonably incurred by WSCAC relating to commitments, which had become firm prior to the termination, shall be paid.

(c) This agreement may be terminated at any time, in whole or in part, in writing by WSCAC in the event of substantial failure by the Authority to fulfill its obligations or for violation by the Authority to fulfill its obligations or for violation by the Authority of any of the covenants and stipulations of this agreement.

(d) No termination hereunder may be effected unless the terminating party gives the other party: (1) not less than forty-five days' written notice delivered by certified mail, return receipt requested of intent to terminate; and (2) an opportunity for consultation with the other party prior to termination, or (3) by mutual agreement of the parties.

8.2 Ownership of Property.

Upon termination of this Agreement for any reason, WSCAC shall turn over to the Authority all materials, equipment, including computer equipment currently on loan from the Authority and owned by the Authority, unused office supplies, books, pamphlets, publications and all other properties for which Authority or MDC reimbursements were made in whole or in part, directly or indirectly.

8.3 Assignability.

WSCAC shall not assign or transfer this Agreement or delegate its responsibility for the performance of services under this contract.

8.4 Integration Clause.

This Agreement may be amended only by a writing executed by each of the Parties.

8.5 Severability of Provisions.

If any provision of this Agreement shall, to any extent, be held invalid or unenforceable, the remainder of this Agreement shall not be deemed affected thereby.

8.6 Massachusetts Law to Govern.

All parties to this Agreement agree that this Agreement shall be governed by and enforced in accordance with the laws of the Commonwealth of Massachusetts.

8.7 Duplicate Originals.

This Agreement may be signed in more than one identical counterpart, each of which shall be deemed to be an original hereof.

8.8 Notices.

Communications shall be deemed to have been made when mailed postage prepaid or delivered to among:

Chair and
Executive Director
Water Supply Citizens Advisory Committee
485 Ware Road
Belchertown, MA 01007

Director of Public Affairs
Massachusetts Water Resources Authority
Charlestown Navy Yard
Building 39, First Avenue
Boston, MA 02129

Executive Director
Massachusetts Water Resources Authority
Charlestown Navy Yard
Building 39, First Avenue
Boston, MA 02129

IN WITNESS WHEREOF, this Agreement is executed as of this day of June, 2021.

FOR: WATER SUPPLY CITIZENS ADVISORY COMMITTEE

By: _____
Title: Chair, Water Supply Citizens
Advisory Committee


Dated:

FOR: MASSACHUSETTS WATER RESOURCES AUTHORITY

By: _____
Title: Executive Director

Dated:

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 23, 2021
SUBJECT: Low Service PRV Improvements Resident Engineering and Inspection Services
CDM Smith Inc.
Contract 7674

COMMITTEE: Water Policy & Oversight

 INFORMATION

 X VOTE


Michele S. Gillen

Director of Administration

John P. Colbert, P.E., Chief Engineer
Renie A. Jesanis, Project Manager
Preparer/Title


David W. Coppes, P.E.

Chief Operating Officer

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to award Contract 7674, Low Service PRV Improvements Resident Engineering and Inspection Services to CDM Smith Inc. and authorize the Executive Director, on behalf of the Authority, to execute said contract in an amount not to exceed \$718,080 for a contract term of 24 months from the Notice to Proceed.

DISCUSSION:

On May 30, 2018, the Board approved the award of Contract 7575 to CDM Smith Inc. to provide Design and Engineering Services During Construction for the replacement of pressure reducing valves (PRVs) to increase the flow of water to MWRA's Northern Low Service area. The project was developed as an interim improvement to enhance MWRA's emergency response to a failure of the Metropolitan Tunnel system until a redundant tunnel is constructed. The project is to replace pressure reducing valves on the Weston Aqueduct Supply Main (WASM) 4 at Nonantum Road in Boston and WASM 3 at Mystic Valley Parkway in Medford (Figure 1) to increase the supply to the Northern Low Service System and reduce the need to pump non-potable water out of the Spot Pond Reservoir in an emergency.

The new, larger pressure reducing valves at Nonantum Road and Mystic Valley Parkway will be designed to be controlled remotely through SCADA. The Northern Low Service pipelines will operate at increased grade lines to supply additional flow to the Spot Pond Pumping Station and Storage Facility and the Gillis Pumping Station in an emergency condition with the tunnel system out of service.

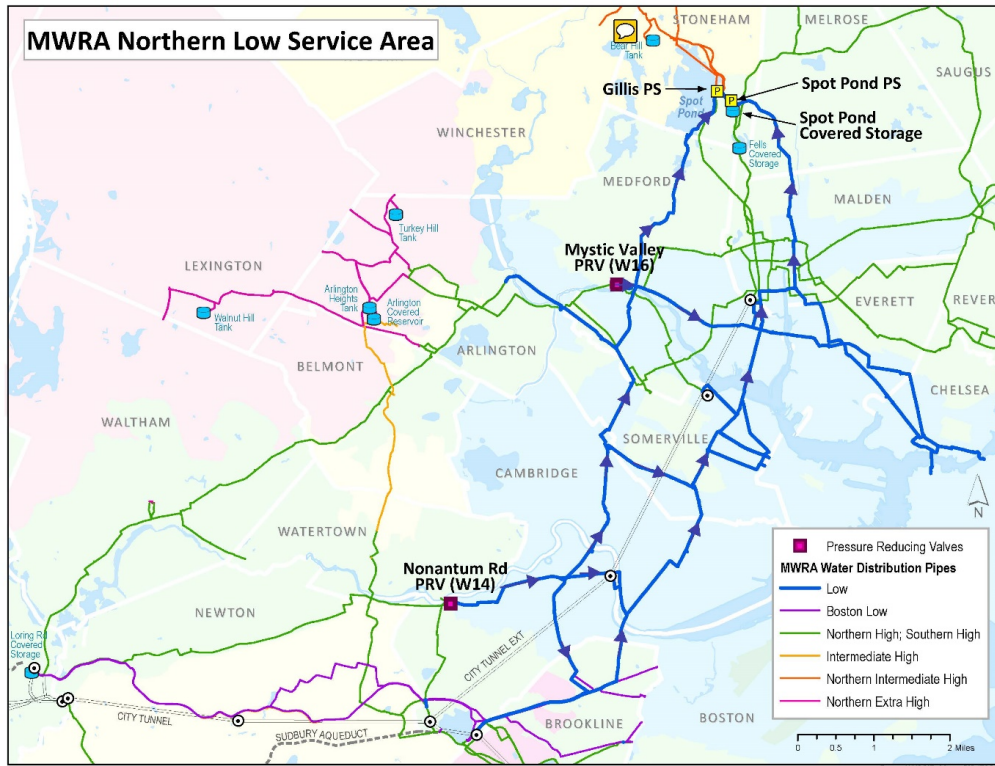


Figure 1: System Map of Northern Low Service Area

On May 26, 2021, the Board approved the award of Contract 7563, the construction contract for this project and Contract 7575, Amendment 1 to increase the contract term by 14 months from March 1, 2023 to May 1, 2024 for Engineering Services During Construction with no increase in the contract amount. This contract will provide Resident Engineering and Inspection Services for construction Contract 7563.

Procurement Process:

On April 21, 2021, MWRA issued a one-step Request for Qualifications Statements/Proposals (RFQ/P) that was publicly advertised in the Central Register, the Boston Herald, El Mundo, Banner Publications, and was made available on the MWRA Supplier Portal. In addition, notice of the RFQ/P was sent directly to 172 engineering firms. A total of 18 firms requested the RFQ/P documents.

The RFQ/P included the following evaluation criteria: Cost – 30 Points; Qualifications and Key Personnel – 30 points; Experience/Past Performance on similar non-MWRA projects and Past Performance on MWRA Projects - 30 points; Technical Approach - 7 points; Capacity/Organization and Management Approach- 3 points.

On May 19, 2021, MWRA received proposals from two firms: CDM Smith Inc. and Clean Properties Engineering, Inc. The proposals’ costs are listed below:

Proposer	Proposed Cost	Level of Effort
CDM Smith Inc.	\$718,079.91	5,928 hours
Clean Properties Engineering, Inc.	\$783,417.88	5,808 hours
<i>Engineers Estimate</i>	<i>\$888,624.00</i>	<i>5,808 hours</i>

On June 7, 2021 four voting members of the Selection Committee reviewed, scored, and ranked the proposals as follows:

Proposer	Total Points	*Order of Preference/ Total Score	Final Ranking
CDM Smith	363.1	4	1
Clean Properties Engineering.	156.95	8	2

*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.

CDM Smith was ranked first by the Selection Committee. The Selection Committee agreed that CDM Smith's proposal presented an appropriate level of effort for the project. The cost proposed was 20% lower and the level of effort 2% higher than the Engineer's Estimate. The greater level of effort is attributed to additional hours proposed for project administration. The Engineer's Estimate is higher, based upon an assumed hourly rate of \$153 compared to CDM Smith's proposed \$121 hourly rate.

CDM Smith's proposed team has excellent qualifications and relevant experience with locally based staff. The proposed Resident Engineer has extensive MWRA project experience, and the proposed Resident Inspector has several years of experience with MWRA projects. The past performance on MWRA projects has been excellent. MWRA experience includes the Chelsea Creek Headworks Upgrade, Spot Pond Pumping Station and Storage Facility, Beacon Street Line Repair, and the Supply Mains Rehabilitation Project, among others. CDM Smith received excellent references from Boston Water and Sewer Commission and South Central Connecticut Water Authority. Committee members were in agreement that CDM Smith's technical approach was very good and addressed all aspects of the scope of services. References provided were excellent.

Clean Properties Engineering was ranked second by the Selection Committee. Clean Properties Engineering proposed the highest cost. The Selection Committee agreed that the members of the project team did not meet the minimum qualifications and the majority of the experience provided on recent projects was not relevant. The proposed project team has limited experience with large public water projects and the Selection Committee found the technical approach lacking in detail. The one external reference that responded stated that the consultant work was below average.

Based on the final rankings, and for the reasons set forth above, the Selection Committee recommends the award of this contract to CDM Smith Inc. in an amount not to exceed \$718,080.

BUDGET/FISCAL IMPACT:

The FY21 CIP includes a budget of \$995,000 for Contract 7674. The contract award amount is \$718,080, or \$276,920 under budget.

MBE/WBE PARTICIPATION:

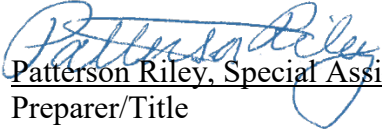
The Affirmative Action and Compliance Unit established a MBE/WBE participation requirement for this project of 0%. CDM Smith did not propose any MBE/WBE participation requirements for this contract.

STAFF SUMMARY

TO: Board of Directors
FROM: Patterson Riley, Special Assistant, Affirmative Action & Compliance Unit
DATE: June 23, 2021
SUBJECT: Diversity, Equity, and Inclusion Workgroup Update

COMMITTEE: Personnel & Compensation

 X INFORMATION
 VOTE


Patterson Riley, Special Assistant, AACU
Preparer/Title

RECOMMENDATION:

For information only.

DISCUSSION:

In accordance with Section 7(g) of the Authority's Enabling Act, the Board of Directors approves the Massachusetts Water Resources Authority's Affirmative Action Plan annually. Staff presented a summary of these accomplishments completed by the Authority of its most recent Affirmative Action Plan in February 2021. At the May Board meeting, there was a brief discussion of the MWRA's commitment to form a Diversity, Equity and Inclusion Workgroup to initiate and implement Authority progress and services designed to complement the diverse workforce we have achieved through affirmative action.

An overview of our diversity, equity and inclusion goals and objectives and progress toward achieving our goals for FY22 - FY23 include the following activities.

Development of Diversity, Equity and Inclusion Mission Statement

MWRA's mission is the provision of reliable, cost-effective, high quality water and wastewater treatment services that protects the public health, promotes environmental stewardship, maintains customer confidence and supports a vital economy. Recruiting, developing and retaining a high-performance workforce that reflects our service area and underscores our core principles of diversity, equity and inclusion, enables us to achieve our mission, brings value to our staff and makes us better able to serve the ratepayers.

The purpose of the MWRA Diversity, Equity and Inclusion Workgroup is to ensure that the MWRA creates a work environment that promotes diversity, equity and inclusion to the workplace. This leads to a work culture that leverages diversity to its fullest potential for every employee.

Employee Survey on Diversity, Equity and Inclusion

The MWRA Diversity, Equity, and Inclusion (DEI) Workgroup conducted an in depth Authority-wide survey to collect and analyze critical data regarding the current culture and social climate of the organization. The results of the survey have enabled the DEI workgroup to have a more accurate picture of the Authority, as it relates to our work culture, performance and organizational success.

The survey questions focused on thoughts and feelings about diversity recruitment efforts, commitment to meeting the needs of employees with disabilities, observations and experiences on strict action taken against discrimination, and advancement and promotion opportunities.

There was a total of 458 responses, 412 online responses, and 46 paper copy responses with a participation rate of 40.5% (approximate). The majority of respondents who participated were male (56.88%), with (28.57%) female, and (14.55%) who preferred not to answer. Over 75% of the respondents feel that, offensive racial, ethnic, sexual and gender comments, actions and/or materials are not tolerated at the MWRA and swift investigations take place whenever they are reported. Additionally, over 70% of the respondents feel that MWRA demonstrates a commitment to meeting the needs of employees with disabilities, and 70% agree that based on observations or experiences MWRA takes strict and effective action against discrimination.

We recognize the survey results presents views about how we can work together to improve diversity, equity and inclusion across the organization and we remain committed to following through on the development of programs and initiatives in full support of all our employees.

Initiate MWRA participation in a school to work program with vocational high schools within our service area beginning Fall 2021

Through a review of the DEI survey, a cross-section of the employees strongly advocated for vocational education and pushed for linkages with area vocational schools as a viable recruitment source for the Authority. The DEI Workgroup agrees with the survey respondents and through our School Education Program, we contacted several vocational high schools. MWRA, through its Affirmative Action and Compliance Unit, has become a member of the Program Advisory Board at Madison Park Technical Vocational High School and has joined more than forty (40) leading institutions such as the Massachusetts Competitive Partnership, General Air, Wentworth Institute, Boston Private Industry Council, IBEW Local 103, Massachusetts Convention Center Authority, and Benjamin Franklin Institute of Technology to name several. MWRA looks forward to working with Madison Park Technical Vocational High School to inform the school about full time job opportunities at the Authority and acquaint the community with the value of career/vocational technical education and introduce these opportunities to students.

Identify opportunities to ensure equal access for professional growth and advancement and develop a mentoring program for staff to participate

The DEI Workgroup recognized through the survey that employees were interested in the establishment of a mentoring program which would involve managers, supervisors and staff with both non-union and union staff as mentors and mentees. In addition, and in the assessment of the DEI Workgroup, a mentoring program as referred to in the survey responses would generate the best results and outcomes through the engagement of companies and consultants with that level of professional expertise in the delivery of mentoring programs. A Request for Proposal was developed by the DEI Workgroup and the Authority looks forward to a small (20 pairs) mentoring pilot program to start in FY22 and run through FY23.

Authority-Wide Diversity, Equity and Inclusion and Respect in the Workplace Training

MWRA, through the consultant law firm Morgan Lewis will conduct Diversity, Equity, and Inclusion and Respect in the Workplace Training this summer. At the direction of the Executive Director, diversity, ethics, or harassment prevention training will be conducted for all employees with a specific training component for managers and supervisors and for all line staff.

Key Initiatives

Through the senior management leadership of the Diversity, Equity and Inclusion Workgroup, DEI and Workforce Development is now a strategic priority of the MWRA Five-Year Strategic Business Plan FY2021-2025. As such, the Authority will build an inclusive leadership approach that consists of innovative and diverse points of view to the evolving needs of the Authority.

Finance Division - Diversity, Equity and Inclusion

Over the last several years there has been an increased interest in socially conscious investing. This has given rise to specific investment funds that focus on Environmental, Social and Governance (ESG) data when determining what investment securities to purchase. There is currently an estimated \$1.7 trillion in assets being managed by ESG funds. MWRA has been issuing green bonds, a type of ESG investment, since 2016 and is currently the largest issuer of those bonds in Massachusetts and top 10 nationally. In addition to the pure environmental benefits, staff believe that showcasing MWRA's commitment to DEI in the bond offering documents and with the credit rating agencies will enhance our credit quality. This could result in an increase in interest from ESG funds to purchase MWRA's bonds and potentially lower the overall cost of debt.

The DEI Workgroup anticipates returning to the Board with project updates on plans and programs on an annual basis.

STAFF SUMMARY

TO: Board of Director
FROM: Frederick A Laskey, Executive Director
DATE: June 23, 2021
SUBJECT: PCR Amendment - June 2021



COMMITTEE: Personnel and Compensation

Andrea Murphy, Director of Human Resources
Preparer/Title

 INFORMATION

 X VOTE



Michele S. Gillen
Director, Administration

RECOMMENDATION:

To approve an amendment 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 Amendment

There is one PCR Amendment this month.

Organizational Change:

1. Creation of a new position of Associate General Counsel (Environmental and Energy) Non-Union Grade 15 in the Law Division to better meet legal staffing needs.

The Law Division has a need for an in-house counsel, highly experienced in both environmental and energy law. Frequently, the Authority faces issues governed by environmental and energy law that require high-level legal review and guidance. As an authority subject to environmental laws and regulated by federal and state environmental agencies, an additional in-house resource with high-level expertise in environmental law will greatly benefit MWRA. Energy and public utility law is an area of legal specialty that the Authority currently does not have in-depth, in-house legal capacity where outside counsel is oftentimes utilized.

BUDGET/FISCAL IMPACT:

The annualized budget impact of this PCR amendment will be a cost of \$140,000. Staff will ensure that the cost increase associated with this PCR amendment will not result in spending over the approved FY21 Wages and Salaries budget.

ATTACHMENTS:

New Job Description

Old Job Description

MASSACHUSETTS WATER RESOURCES AUTHORITY
POSITION CONTROL REGISTER AMENDMENTS
FISCAL YEAR 2021

PCR AMENDMENTS REQUIRING BOARD APPROVAL - June 23, 2021																	
Number	Current PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Current/Budget Salary	Estimated New Salary		Estimated Annual		Reason For Amendment		
													\$	Impact			
B33	Law Division TBD	N/A	N/A	N/A	N/A	N/A	Associate General Counsel (Environmental and Energy)	NU	15	\$0	\$140,000	-	\$140,000	\$140,000	-	\$140,000	To better meet legal staffing needs.
BOARD TOTAL=					1						TOTAL:		\$140,000 - \$140,000				

**MWRA
POSITION DESCRIPTION**



POSITION: Associate General Counsel
(Environmental and Energy)

DIVISION: Law

DEPARTMENT: Law

BASIC PURPOSE:

Handles all legal issues, providing advice and counsel, and managing staff in the areas of responsibilities described below.

SUPERVISION RECEIVED:

Works under the general supervision of the General Counsel.

SUPERVISION EXERCISED:

Exercises direct supervision of Senior Staff Counsel and administrative staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Provides counsel and advice and develops the Authority's response to environmental, health and safety and energy law matters, including representing the Authority before and interacting with applicable state and federal regulatory agencies.
- Provides legal advice and guidance in all areas of federal and state environmental law including clean water, safe drinking water, clean air, hazardous and toxic substances, land and water use and conservation, wetlands, environmental impact review, permitting and common law actions.
- Provides counsel and advice to staff and representation of the Authority regarding the Authority's Toxic Reduction and Control (TRAC) program and regulations, including permitting and enforcement matters. Oversees promulgation or amendments of TRAC's regulations.
- Provides legal guidance, advice and counsel to staff of the Authority's Environmental Quality and Environmental and Regulatory Affairs Departments.

- Manages Law Division review of the issuance of permits under section 8(m) of the Authority's Enabling Act - Chapter 372 of the Acts of 1984. Advises and provides legal counsel regarding direct connections, water supply contracts, expansion initiatives, water and sewer requests from outside the service area and new admissions.
- Drafts, reviews and provides legal advice and counsel for a variety of transactions, contracts and legal agreements involving the Authority.
- Provides counsel and advice in all areas of federal and state energy law and public utility law including renewable and alternative energy (hydro, wind, combined heat & power, solar, etc.), clean energy, Renewable Portfolio Standards and Renewable Energy Certificates, energy projects and initiatives, power purchase agreements, energy efficiency, demand response, conservation and resiliency, climate change, regulated utility contracts, and applicable tariffs.
- Represents the Authority on energy and public utility matters, including those that affect the Authority and arise under the jurisdiction of the Massachusetts Department of Public Utilities, Federal Energy Regulatory Commission and ISO-New England.
- Drafts, analyzes and reviews legislation and regulations affecting the Authority and advises senior managers about the potential impacts upon the Authority's activities, practices and procedures.
- Researches, interprets and determines the applicability of federal, state and local laws, regulations and case law. Conducts legal research as required.
- Analyzes and develops rules, regulations, and policies, and provides advice on interpretations of the MWRA Enabling Act.
- Apprises the Board of Directors, Executive Director, and General Counsel on issues and developments in areas of responsibility.
- Supervises attorneys and administrative staff involved in the handling of legal issues.
- Assists with responses to public records requests as needed.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience Required:

- (A) Bachelor's degree and J.D. from accredited law school; and
- (B) At least seven (7) to ten (10) years of legal experience in the legal areas of environmental, energy, public utility, contract and health and safety law; and
- (D) At least three years of managerial or supervisory experience, public sector experience preferred.

Necessary Knowledge, Skills and Abilities:

- (A) Strong understanding of and knowledge in the legal areas of environmental, energy, public utility, health, safety and contract law.
- (B) Strong supervisory skills as acquired through managerial or supervisory experience are preferred.
- (C) Knowledge and experience in public records law preferred.
- (D) Strong analytical, organizational, and writing skills.

SPECIAL REQUIREMENTS:

Admittance in good standing to the bar to practice law in Massachusetts.

A valid Massachusetts Class D Motor Vehicle Operator's license.

TOOLS AND EQUIPMENT USED:

Office machines as normally associated, with the use of telephone, personal computer including word processing and other software, and multi-function office machines (copy, fax, scan, etc.).

PHYSICAL DEMANDS:

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

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

to stand and walk.

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

WORK ENVIRONMENT:

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

While performing the duties of this job, the employee regularly works in an office environment. The noise level in the work environment is usually a moderately quiet office setting.

June 2021

STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: June 23, 2021
SUBJECT: Appointment of Manager, Wastewater Operations



COMMITTEE: Personnel & Compensation

 INFORMATION
 X VOTE

Charles Ryan, Director, Wastewater Operations & Maintenance
Stephen Cullen, Director, Wastewater
Andrea Murphy, Director, Human Resources
Preparer/Title


David W. Coppes, PE
Chief Operating Officer

RECOMMENDATION:

To approve the appointment of Mr. Chad Whiting to the position of Manager, Wastewater Operations (Non Union, Grade 14), in the Wastewater Operations Department, at an annual salary of \$136,000, commencing on a date to be determined by the Executive Director.

DISCUSSION:

The position of Wastewater Operations became vacant in February 2021 as a result of the retirement of the incumbent. The position is responsible for the 24-hour operation of wastewater facilities, including the Wastewater Operations Control Center (OCC), wastewater pump stations, combined sewer overflow facilities and headworks facilities. The Manager, Wastewater Operations manages the shift operations activities of assigned personnel to ensure efficient and effective operation of all wastewater facilities, to optimize performance and to meet permit requirements. This position provides operations personnel with needed resources and support, and is required to be part of an on-call rotation for emergencies and wet weather, 24 hours per day, seven days per week.

Organizationally, the Manager, Wastewater Operations reports to the Director, Wastewater Operations & Maintenance and exercises general supervision of the Program Managers and Operations Supervisors in the Wastewater Operations Department. (See attached Organization Chart.)

Selection Process

The Manager, Wastewater Operations was posted internally and externally. Two candidates applied for the position, including one internal candidate and one external candidate. Both were determined to be qualified and were referred for an interview. The Director of Wastewater, the Director of Wastewater Operations & Maintenance and the Associate Special Assistant for Affirmative Action interviewed both candidates. Upon completion of the interviews, Mr. Chad Whiting was determined to be the best-qualified candidate for the position based on his wastewater operations and management experience, education, knowledge, skills, and abilities.

Mr. Whiting has worked in the wastewater field for the past 18 years. He spent his first eight years working in progressively more responsible operator positions in four private Wastewater Operations companies (Earth Tech, Earth Source, Veolia Water and Coler & Colantonio) supporting Gloucester, Raynham, Brockton and Taunton, Massachusetts. He was promoted to Lead Operator/Chief Operator in two of these positions and worked for two years as a Project Manager. During this time, he worked in two wastewater treatment plants and two septic receiving treatment facilities. He then worked for MWRA as an Operator at the Deer Island Wastewater Treatment Plant for two years. In 2013, Mr. Whiting left MWRA to work as the Assistant Wastewater Manager for the Town of Plymouth. In March 2020, he was promoted to the Wastewater Manager, responsible for the operation and maintenance of a wastewater treatment facility, eight sewer pump stations, and 65 miles of sewer collection system. He managed the town's Operations and Maintenance contractor staff of 12 as well as three town employees. Then in December 2020, Mr. Whiting became the Director of Water & Sewer for the City of Somerville, where he is responsible for the operation and maintenance of a large urban water distribution system, wastewater collection system and associated staff.

Mr. Whiting is very knowledgeable about wastewater operations, process control, and emergency response. He has experience in managing staff in a unionized environment with progressive discipline, hiring and issue resolution processes.

Mr. Whiting holds a Bachelor of Science degree in Engineering Technology from Wentworth Institute. He also has a Grade 7C wastewater operator license, a Grade 4 collection systems certification and a T1 OIT drinking operator license.

BUDGET/FISCAL IMPACTS:

There are sufficient funds for this position in the Operations Division's Proposed FY22 Current Expense Budget.

ATTACHMENTS

Resume of Chad Whiting
Position Description
Organizational Chart

Chad A Whiting

Objective

A Challenging career in the water quality industry which allows for utilization of critical thinking creative problem-solving skills.

Experience

December 2020 to
Present

City of Somerville

Somerville, MA

Director of Water & Sewer

- Responsible for all aspects water and sewer operations for the City of Somerville.
- Ensure public safety through the responsible provision of potable water and adequate fire protection and through the proper discharge of sewage.
- Supervise the construction, operation, metering, and billing of approximately 15,000 water and sewer accounts.
- Oversee the lead sampling program as mandated by the Department of Environmental Protection (DEP) and the Massachusetts Water Resource Authority (MWRA).
- Oversee the lead service replacement program as mandated by DEP.
- Formulate written policies and procedures to ensure regulatory compliance.
- Determine annual Budgetary needs and departmental goals.
- Responsible to develop annual rate structure and deliver annual budget to City Council totaling \$41 million annually.
- Develop and implement safety procedures and practices.
- Work with the Mayors office to forecast proficient operation and maintenance strategies for department operations.
- Manages collective bargaining agreements for the successful operations of the department and serve as the Department grievance hearing officer.
- Responsible for recruiting and hiring of staff to meet departmental needs. Including the development of job descriptions for existing and new positions.
- Work closely with engineering and asset management on capital projects including design, budgeting, construction, and implementation.

October 2013 to
December 2020

Town of Plymouth

Plymouth, MA

Wastewater Superintendent

- Hired as Assistant Wastewater Manager, promoted March 2020 to Wastewater Superintendent.
- Management over the operation and maintenance of a 3 MGD SBR wastewater treatment facility, 8 sewer pumping stations, and 65 miles of sewer collection system, Management & operation of satellite SBR wastewater treatment facility for the Plymouth Airport.
- Optimization of process control through the implementation of SCADA and instrumentation.
- Work collaboratively with Public Health to manage FOG Program.
- Monthly and annual reporting to MADEP and EPA.
- Development of Standard operating procedures for process and equipment optimization.
- Emergency response to sewer backups and overflows as needed.
- Customer relations for unpleasant situations dealing with sewer issues including building backflows.

- Complete insurance claim documents for Town Managers office related to sewer issues.
- Collaboration with Engineering for project plan reviews.
- Oversight of Town's O&M contractor responsible for the wastewater facility operations, staff of 12, and three Town staff.
- Oversight of contractors and in-house staff working on or around Town infrastructure.
- Collaboration with consulting engineers for the design and construction of large capital projects including sewer expansion (\$4.5M), pump station headworks rehabilitation (\$7.5M), Emergency Sewer force main repairs (\$48M).
- Application for grant opportunities where available, successful recipient of two grants from MASS CEC in 2019 totaling \$285,000.
- Permitting of new sewer connections.
- Development of annual operation & maintenance budgets.
- Development of Annual, 5-year, and 25-year capital planning needs.
- Development of sewer rules & regulations, mandatory connection policies.
- Processing & tracking of Invoices for capital projects & annual budgets.
- Trouble shoot process problems and equipment issues.
- Completion of Supervisory Development Training 2019.
- Presentation of budgets and capital project to various boards, committees, and annual Town meeting.
- Provide public education through PACTV local television programing.

June 2011 to October 2013

Massachusetts Water Resources Authority

Winthrop, MA

Wastewater Operations

- Monitoring the operation of critical wastewater equipment
- Process control sampling and testing for wastewater solids handling facilities
- Interpret testing results and make adjustment to solids handling equipment
- Tank Dewatering and cleaning
- Plant operations monitoring with SCADA
- Emergency on call operations during inclement weather events
- Shutdown of complex pumping system for maintenance procedures
- Successful completion of Supervisor Development Training Program
- Successful completion of NEIWPC Management Training Program
- Training of new employees in the operation of the MWRA wastewater treatment process

June 2009 to June 2011

Coler & Colantonio

Taunton, MA

Project Manager

- Hired as Lead Operator/ Mechanic, Promoted to Project Manager 2 weeks after starting on the project
- Operate and maintain the facility to receive the maximum amount of septage possible each day
- Manage 9 person staff to operate and maintain the facility
- Process control to meet discharge permit requirements
- Monthly reporting to client and the city of Taunton, Ma
- Liaison between client and the City of Taunton for reporting and annual inspections
- Successful management of client's high expectations of our company

- Laboratory Sampling to meet permit testing requirements of discharge permit
- Repair, maintenance, and replacement of process equipment and instrumentation

February 2008 to June
2009

Veolia Water

Brockton, MA

Wastewater Operations

- Plant operations and process equipment monitoring
- Process sampling for process control
- Centrifuge operation for solids thickening
- Incinerator operation for the biosolids incineration
- Completion of assigned work orders for equipment maintenance inspections
- Process standard operating procedure development to optimize operations

August 2006 to
February 2008

EarthSource

Raynham, MA

Assistant Chief Operator

- Hired as Wastewater Operator, promoted to Assistant Chief Operator in the first month of employment
- Operate and maintain the facility to receive the maximum amount of septage possible each day
- Manage 10 person staff to operate and maintain the facility
- Process control to meet discharge permit requirements
- Laboratory Sampling to meet permit testing requirements of discharge permit
- Act as Chief Operator/ Plant Manager in his absence
- Repair, replacement, and maintenance of equipment to keep facility operations running efficiently
- Process optimization to produce desired product while controlling costs
- Emergency on-call responsibility

August 2003 to August
2006

Earth Tech

Gloucester, MA

Lead Operator/ Site Safety Coordinator

- Hired as Wastewater Operator, promoted to Lead Operator/ Site Safety Coordinator after 120 days of employment
- Responsible for wastewater operations and process control to maintain plant compliance
- Development of standard operating procedures for plant processes
- Conduct site safety meetings and perform job hazard analysis on operations tasks
- Laboratory Sampling to meet permit testing requirements of discharge permit
- Act as Chief Operator/ Plant Manager in his absence
- Repair, replacement, and maintenance of equipment to keep facility operations running efficiently
- Emergency on-call response for plant issues

Education & Training Certifications

Graduated 2012

Wentworth Institute of Technology

Boston, MA

Bachelor of Science Engineering Technology

New England Interstate Water Pollution Control Commission

- MA Wastewater Management Training Program

Massachusetts Wastewater Collection System Operator Certification, Grade IV

Massachusetts Wastewater Operator Certification, Grade 7C Full

Massachusetts Drinking Water Operator Certification, T-1 OIT

8-Hour Osha Confined Space Training

Lockout Tagout Electrical Safety Training

Other Experience

Wentworth Environmental Club

North American Society Trenchless Technologies, NE Chapter, Board of Directors

Member of Water Environment Federation

New England Water & Environment Association Mentorship Training Program, Mentor

**MWRA
POSITION DESCRIPTION**

POSITION: Manager, Operations (Wastewater)

PCR#: 2470004

DIVISION: Operations

DEPARTMENT: Wastewater Operations

BASIC PURPOSE:

Manages the 24-hour operations of wastewater operations facilities including wastewater pumping stations, combined sewer overflow facilities, and headworks facilities. Manages the shift operations activities of assigned personnel to ensure efficient and effective operation of all wastewater facilities to optimize performance and meet permit requirements. Provides operations personnel with needed resources and support. Is required to be part of an on-call rotation for emergencies and wet weather, 24 hours a day, 7 days a week.

SUPERVISION RECEIVED:

Works under the general supervision of the Director, Wastewater Operations and Maintenance.

SUPERVISION EXERCISED:

Exercises general supervision of the Program Manager and Operations Supervisors.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Directs the twenty-four (24) hour operations of all wastewater facilities under the control of the Wastewater Operations Control Center (OCC).
- Ensures proper readiness, staffing and operation of all wastewater facilities during wet weather events. Responsible for creating and implementing wet weather staffing plans, and participating in management's storm coverage rotation.

- Coordinates with Operations Engineering staff on all wastewater pumping stations, Combined Sewer Overflow facility (CSO), and headworks facilities to optimize operations for proper treatment and flow control. Monitors facility flow control performance and identifies process control deficiencies. Plays an active role in the evaluation of long-range process control needs for the wastewater treatment and flow control.
- Establishes and updates operational procedures in accordance with control strategies. Works with SCADA and Operations Engineering staff to implement the wastewater facility SCADA changes.
- Works with MIS staff to establish priorities and ensure responsive computer systems and scanner hardware/software.
- Coordinates with the Maintenance Department and establishes priorities to assure successful facility operation.
- Plays an active role in capital project design, construction, and startup activities. Participates in the preparation of performance certification criteria and evaluation reports.
- Establishes and administers operational records and procedures required for all twenty-four (24) hour facilities.
- Oversees personnel management and staff hiring for the department. Ensures that major initiative and policy changes are properly communicated to all staff. Identifies organizational needs and proposes re-organization plans to address changing needs.
- Collaborates with the Manager, Training and Development to provide opportunities for technical, supervisory and managerial training and education for all Wastewater Operations employees.
- Oversees staff productivity monitoring and continual improvement through staff skills development, strategic planning, standard operating procedures (SOP) improvements and research, and implementation of technology advances. Maximizes effective use of the Maximo maintenance software and related computer programs.
- Manages the department's safety programs, maximizing employee involvement, supporting the Authority-wide safety program, and making inspections. Acts as liaison to the Manager, Occupational Safety and Health. Immediately notifies Occupational Safety

and Health of any safety issues or risks that need attention.

- Oversees development, periodic review, and updating of SOPs and Facility Operations and Maintenance (O&M) manuals, and ensures all staff are properly trained.
- Oversees budget management for Wastewater Operations. Ensures that budget resources are allocated appropriately between units. Monitors spending and ensures budget compliance.
- Establishes emergency response procedures and oversees training and practice drills.
- Ensures consistency and uniformity of work rules in accordance with established policies and procedures. Identifies needed improvements to work practices.
- Manages successful administration of collective bargaining agreement provisions to maintain harmonious labor management relations. Participates in grievance resolution, collective bargaining and contract negotiations. Serves as Step I hearing officer. Hears disciplinary actions.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A Bachelor's degree in civil or environmental engineering, or related field; and
- (B) Thorough knowledge of planning, operations and maintenance of wastewater utilities as normally acquired through eight (8) to ten (10) years of experience in a wastewater facility, of which a minimum of four (4) years must be in a management or supervisory capacity; and
- (C) Experience in operating large wastewater facilities preferred; or
- (D) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Excellent working knowledge of the operation and maintenance of a large metropolitan sewer system.
- (B) Excellent interpersonal, written and oral communication skills.
- (C) Demonstrated ability to plan, organize, direct, train and assign duties to subordinates.
- (D) Demonstrated successful experience managing in a union environment with a diverse workforce.
- (E) Proficient in the use of personal computers and associated Microsoft Office Suite programs, databases, data presentation & analysis tools.
- (F) Working knowledge of SCADA and of computerized maintenance management systems and procedures. Knowledge of statistical process control and work process continuous improvement preferred.

SPECIAL REQUIREMENTS:

Is required to be part of an on-call rotation for emergencies and wet weather 24 hours a day, 7 days a week.

A valid Massachusetts Class D Motor Vehicle Operator's license.

A Massachusetts Grade IV Wastewater Treatment Plant Operator's license.

A Massachusetts Grade IV Wastewater Collection Systems Operator Certification (or the ability to obtain within one year of appointment).

Registered Professional Engineer (P.E.) is preferred.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

WORK ENVIRONMENT:

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

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

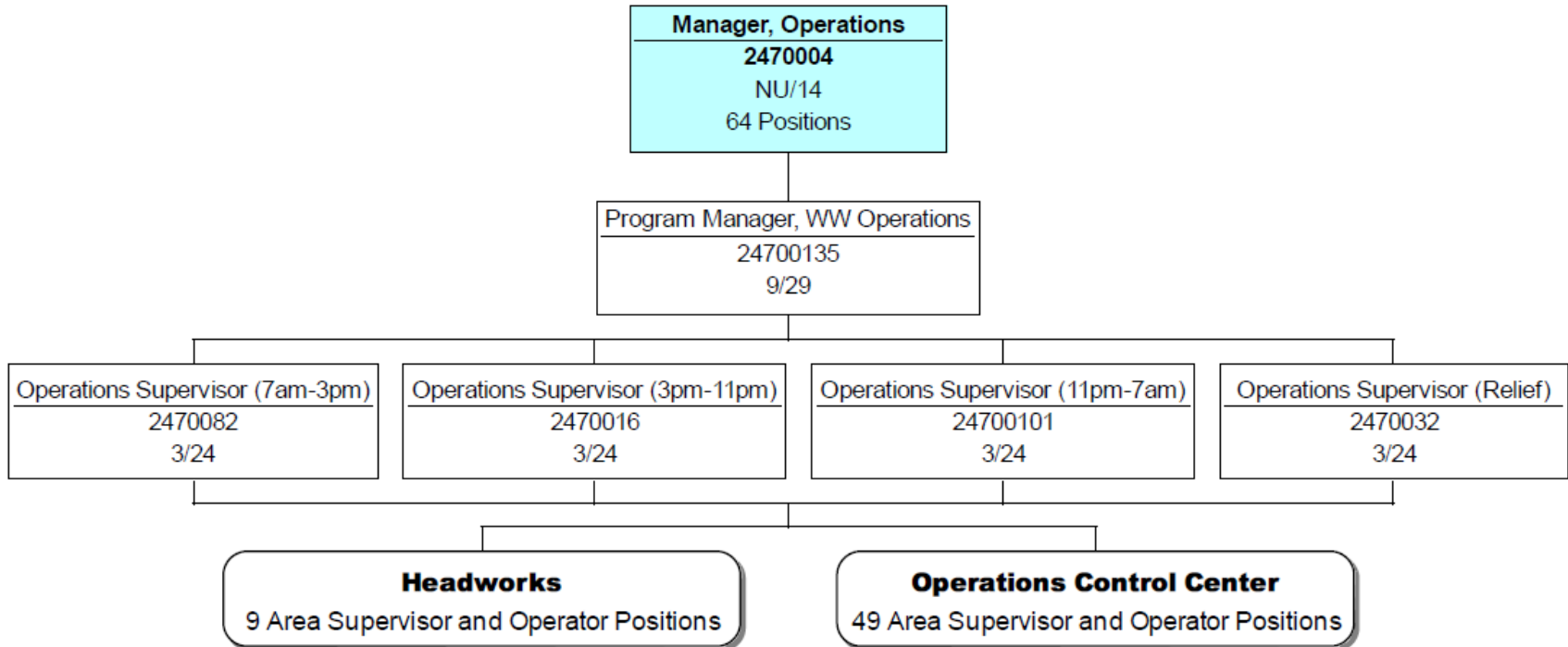
The noise level in the work environment is a moderately quiet in office setting.

NU14


February 2021

Wastewater Operations

June, 2021

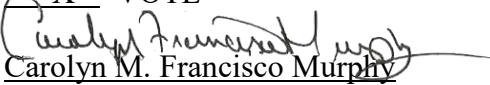


STAFF SUMMARY

To: Board of Directors
From: Frederick A. Laskey, Executive Director 
Date: June 23, 2021
Subject: Appointment of Associate General Counsel, Environmental and Energy

COMMITTEE: Personnel & Compensation

Andrea Murphy, Director, Human Resources
Preparer/Title

 INFORMATION
 X VOTE

Carolyn M. Francisco Murphy
General Counsel

RECOMMENDATION:

To approve the appointment of Michael J. Altieri to the position of Associate General Counsel, Environmental and Energy, Law Division (Non-Union, Grade 15) at an annual salary of \$140,000, commencing on a date to be determined by the Executive Director.

DISCUSSION:

In a separate staff summary, staff are recommending the creation of new position in the Law Division, Associate General Counsel, Environmental and Energy, reporting to the General Counsel. Frequently, the Authority faces issues governed by environmental law that require a high-level legal review and guidance. The issues can be complex in this specialized area of the law including, for example, the regulation of emerging containments such as PFAS, CSO compliance and water quality standards variances, NPDES permit compliance and renewal, environmental quality and toxic reduction and control, and various matters under the Boston Harbor case, Clean Water Act and Safe Drinking Water Act. As an authority subject to environmental laws and regulated by federal and state environmental agencies, an additional in-house resource with high-level expertise in environmental law will greatly benefit MWRA.

Energy and public utility law is an area of legal specialty that the Authority currently does not have in-depth, in-house legal capacity, where outside counsel is oftentimes used. The Authority is, for example, an interested party in filings at the Department of Public Utilities (DPU) relating to the Deer Island cross-harbor cable. In addition, staff look to advance the Authority's energy initiatives and require legal assistance and counsel to guide their efforts. Areas where in-house legal assistance would be valuable include renewable energy, power purchases, demand response, climate-related legislation and regulation, public utility filings and tariffs. The responsibilities of this newly created position require expertise in both environmental and energy law. With a need for an in-house counsel highly experienced in environmental and energy law, the Authority has a unique opportunity to hire an attorney with the experience and background ideally suited for the position, with a proven record of highly skilled legal work at MWRA.

Mr. Altieri began his legal career in New York State in the Office of General Counsel of New York's Department of Environmental Conservation where for more than 5 years he worked on matters arising under both the Clean Water Act and the Safe Drinking Water Act, including work

Involving a filtration avoidance determination for two of New York City's drinking water sources, CSO compliance issues, and permitting requirements under NPDES and SPDES permits. Attorney Altieri next worked in the Office of General Counsel for the Massachusetts Department of Environmental Protection for 2 ½ years where he worked on a range of matters including vehicle emissions, solid wastes, hazardous wastes, water resources matters, and asbestos remediation and wetlands enforcement. Attorney Altieri next served as an Assistant General Counsel for the Massachusetts Department of Conservation & Recreation (DCR) for 3 ½ years where he dealt with a variety of construction and procurement matters, participated in DCR/MWRA real estate and watershed acquisition transactions, and handled energy-related matters and continued his experience with environmental compliance matters arising under Massachusetts law (chapter 21E) and under the federal CERCLA statute.

Following the DCR, Attorney Altieri held various legal positions at the Massachusetts Department of Energy Resources (DoER), ultimately serving as the agency's General Counsel where he headed up a legal team involved with the agency's contract, finance and procurement needs and with a wide variety of energy policy issues, including the handling of energy-related matters before the Massachusetts Department of Public Utilities.

Mr. Altieri was next hired by MWRA as an Associate General Counsel. While at the Authority Mr. Altieri oversaw the Authority's environmental and real estate legal matters, provided legal counsel for issues arising in the Boston Harbor and HEEC litigation, provided legal review of electric and gas utility rate tariffs and special utility contracts and represented the Authority in various regulated utility dockets before the DPU, including dockets for ratemaking and net metering for hydroelectric and other resources.

Mr. Altieri is currently Senior Attorney at the national firm of Hunton Andrews Kurth LLP where he specializes his practice in environmental and energy law matters. Mr. Altieri counsels clients on the regulatory process, permitting, compliance, enforcement and other legal matters arising under various environmental laws including the Clean Water Act, among many others. He also provides counsel to clients regarding energy programs such as the state Renewable Portfolio Standard, including compliance obligations, and renewable energy certificate markets; and represents clients throughout the utility administrative proceedings, including rate cases, renewable resources, energy efficiency and investigations.

Mr. Altieri earned a Bachelor of Arts degree from the State University of New York (Buffalo) in 1995 and a Juris Doctor degree from Union University (Albany Law School) in 1999. He is admitted to practice law in Massachusetts and New York. He is in good standing in both jurisdictions.

BUDGET/FISCAL IMPACT:

There are sufficient funds for this position in the FY22 CEB.

ATTACHMENTS:

Resume of Michael J. Altieri
Position Description
Organizational Chart for Law Division

MICHAEL J. ALTIERI

New York State - Admitted 2000

Massachusetts - Admitted 2006

PROFESSIONAL ASSOCIATIONS

Boston Bar Association, Environmental Law Section

- *Member*

New York State Bar Association, Environmental and Energy Law Section

- *Member*
- *Former Co-Chair, Committee on Water Quality*

EXPERIENCE

Hunton Andrews Kurth LLP, Boston, MA

Senior Attorney, October 2019 – present

- Working as Senior Attorney within the firm's Administrative Practice Group specializing in environmental and energy law matters.
- Prepared comprehensive National Environmental Policy Act ("NEPA") comments for an anticipated U.S. Army Corps of Engineers major construction project.
- Advising clients on environmental and other regulatory considerations unique to offshore wind and renewable natural gas projects in the Northeast.
- Defending clients in feral Clean Water Act ("CWA") and Resource Conservation and Recovery Act ("RCRA") based regulatory and citizen suit matters, which includes analyzing complex permitting issues associated with mixing zones, combined sewer overflows, and similar discharge matters.
- Representing a client in connection with the environmental permitting for a proposed commercial aquaculture project.
- Analyzed issues arising under Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), including contribution protection ongoing litigation strategy.
- Conducted the environmental due diligence review for the acquisition of drinking water and wastewater systems.
- Provided counsel for an undersea telecommunications cable project, including real property and environmental permitting issues.
- Prepared publications, client alerts, and blog posts on emerging environmental and energy law issues in the Northeast.

Massachusetts Water Resources Authority, Boston, MA

Associate General Counsel, July 2017 – September 2019

- Oversaw a section of environmental and real estate attorneys within the Authority's Law Division and managed outside legal counsel and other experts who provide the Authority services in these

disciplines.

- Provided counsel to Authority Senior Management and its Board of Directors on Massachusetts governmental practice topics including the Massachusetts Open Meeting Law, Public Records Law, State Ethics Law, among others.
- Provided legal services related to public design and construction issues, including claims avoidance and dispute resolution on Authority water, sewer, and related infrastructure projects.
- Worked with the Authority's operating divisions to acquire property interests for construction and other projects.
- Provided legal services to the Fore River Railroad Corporation, and handled other corporate and real estate matters.
- Provided legal review of electric and gas utility rate tariffs and special utility contracts. Represented the Authority in various regulated utility dockets before the Massachusetts Department of Public Utilities, including dockets for ratemaking and net metering for hydroelectric and other resources.
- Coordinated the filing of the Authority's compliance and progress reports to the U.S. District Court in the Boston Harbor litigation, Clean Water Act permit compliance, and supporting projects under the Court schedule and other administrative orders.

Massachusetts Department of Energy Resources, Office of General Counsel, Boston, MA

General Counsel, January 2016 – June 2017

Acting General Counsel, October 2015 - December 2015

Counsel, November 2012 - September 2015

- Provided direct legal counsel to the Department's Commissioner and executive staff while leading a team of attorneys who service the legal needs of the Department.
- Served as the primary legal counsel to the Department's finance office. Responsible for reviewing the Department's procurement solicitation documents; contracts; federal and state grants and trusts; and other documents crucial to the Department's contracting operations.
- Represented the Department in dockets before the Massachusetts Department of Public Utilities. Prepared legal memoranda, pleadings, Department witnesses, and testimony for administrative hearings, including rate cases, energy efficiency, and various investigations.
- Conducted hearings and performed drafting necessary for the promulgation of Department regulations concerning Energy Management Services contracting, the Commonwealth's Renewable Energy Portfolio Standard, and its Green Communities Programs.
- Collaborated with agency analysts in preparing briefing memos and researching energy policy issues regarding the implementation of the Commonwealth's Climate Protection and Green Economy Act.
- Provided counsel to the Green Communities and Renewable and Alternative Energy Development Divisions on a variety of legal issues. Examples include counsel and support on public record requests, non-disclosure agreements, data privacy, and procurements for renewable energy.

Massachusetts Department of Conservation & Recreation, Office of General Counsel, Boston, MA

Assistant General Counsel, June 2008 – October 2012

- Represented Department Staff in administrative proceedings to demonstrate compliance with the Commonwealth's various public procurement and construction laws that led to favorable reported decisions in the following matters:
 - *Hi-Way Safety Systems Inc. v. DCR*, Attorney General Bid Protest Decision (2009); *The*

Aulson Company v. DCR, Attorney General Bid Protest Decision (2009); *Dagle Electrical Construction Corporation v. DCR*, Attorney General Bid Protest Decision (2009); and *Tasco Construction, Inc. v. DCR*, Attorney General Bid Protest Decision (2012).

- Served as the Department's liaison counsel, responsible for developing litigation strategies, drafting affidavits, and related litigation documents in a proceeding that challenged the Department's award of a significant bridge rehabilitation contract, in which the reviewing court upheld the Department's actions in all respects. *MIG Corporation, Inc. v. Mass. Dep't. of Cons. and Rec. and SPS New England, Inc.*, Middlesex Sup. Ct., No. MICV 2012-1429 (April 30, 2012).
- Served as counsel to the Department's Division of Contract Administration and Procurement, including matters related to the Department's procurement of energy management systems and renewable energy facilities.
- Reviewed and prepared legal documents associated with Commonwealth land acquisition and disbursement projects, including the negotiation and drafting of watershed preservation restrictions, easements, and fee interest documents.
- Provided legal counsel to various Department Divisions and Bureaus on compliance with M.G.L. c. 21E, the Massachusetts Contingency Plan, CERCLA, which touch and concern Commonwealth lands.

Massachusetts Department of Environmental Protection, Office of General Counsel, Boston, MA
Senior Counsel and Senior Regional Counsel, January 2006 – May 2008

- Provided legal counsel and support for all aspects the Commonwealth's Motor Vehicle Enhanced Emissions and Safety Test Program. Drafted and completed negotiation of one of the Commonwealth's largest service-based public contracts necessary for the implementation of the Commonwealth's Motor Vehicle Enhanced Emissions and Safety Test Program.
- Represented the Department's central and regional offices in all aspects of contested administrative proceedings challenging Department permits, licenses, and enforcement orders.
- Negotiated administrative orders on consent and drafted administrative enforcement orders.
- Provided legal assistance to the Department's central and regional offices regarding program implementation and enforcement of Massachusetts solid wastes, hazardous waste, and water resources matters, with a particular emphasis on asbestos and wetlands enforcement.

New York State Dept. of Environmental Conservation, Office of General Counsel, Albany, NY
Senior Attorney, October 2000 – January 2006

- Served as the legal advocate for Department's negotiating team regarding the USEPA's 2002 *Filtration Avoidance Determination*, allowing New York City to continue to avoid filtering its Catskill/Delaware water supply systems. Acquired a working knowledge of the federal CWA and SDWA; New York State Clean Water laws; and the enforcement and permitting requirements under the NPDES/SPDES programs.
- Department's liaison counsel, responsible for developing litigation strategies, drafting affidavits, and related litigation documents in the following environmental judicial proceedings:
 - *Altman v. Town of Amherst, N.Y., EPA, and NYSDEC*, 98-CV-237 (W.D.N.Y.) (Clean Water Act / Pesticides Proceedings); *Catskill Mountains Chapter of Trout Unlimited, et al. v. City of New York et al.* 00-CV-0051 (N.D.N.Y.) (Clean Water Act / Shandaken Tunnel Proceedings); and *Wisconsin Builders Association v. EPA*, 03-2908 (7th Cir.) (In Re EPA, Final NPDES

General Permit for Storm Water Discharge From Construction Activities).

- Department's counsel / co-counsel of record in the following environmental administrative proceedings:
 - *In the Matter of the New York City Department of Environmental Protection*, NYSDEC Case Nos. NY0026191, *et al.* (NYC 14 SPDES Permits / Long Island Sound TMDL); and *In the Matter of the City of Plattsburgh*, NYSDEC Case No. NY-0026018 (SPDES Permit / Lake Champlain TMDL).

General Electric Corporation, Energy (formerly Power Systems) - Legal, Schenectady, NY
Law Clerk, September 1999 - October 2000.

Served as a law clerk to the GE Environment, Health, & Safety (EHS) Senior Counsel, Counsel, and EHS professionals. Aided in many areas of Power Systems' EHS regulatory compliance. Substantive experience in the following environmental regulatory compliance areas: CAA (Title V & NSR), CWA, CERCLA/EPCRA, RCRA, and TSCA. Assisted with legal research as applicable to environmental audits, EHS issues in acquisitions and divestitures, and risk management for new products and services. Completed a comprehensive project, which analyzed individual state minor source CAA permitting requirements.

NYS Office of the Attorney General, Environmental Protection Bureau, Albany, NY
Legal Aide, May 1998 - May 1999; *Legal Extern*, 1997 – 1998.

Assisted attorneys in analyzing legal issues and researching solutions critical to protecting New York's environmental interests. Drafted legal memoranda and affidavits on issues including: the CAA, the CWA, the NYC Watershed Agreement, wetlands enforcement, Adirondack Park land use enforcement, RCRA, solid waste, public nuisance, and Brownfields redevelopment.

EDUCATION

Albany Law School of Union University, Albany, NY

Juris Doctor, May 1999, Concentration: Environmental Law

- *Coordinating Editor*, Albany Law Environmental Outlook Journal
- Gary M. Peck '79 Memorial Prize, May 1999

Established by the General Counsel, Regional attorneys, and the staff of attorneys of the New York State Department of Environmental Conservation with the support of the family of Gary Peck, ALS alumnus and professor, to the graduating senior who demonstrates a strong interest in environmental law, a commitment to solving problems, and personal integrity.

- Gary M. Peck '79 Scholarship, for excellence in environmental law, November 1998

State University of New York at Buffalo, Buffalo, NY

BA in Political Science, Minor in Economics, May 1995

**MWRA
POSITION DESCRIPTION**

POSITION: Associate General Counsel (Environmental and Energy)

DIVISION: Law

DEPARTMENT: Law

BASIC PURPOSE:

Handles all legal issues, providing advice and counsel, and managing staff in the areas of responsibilities described below.

SUPERVISION RECEIVED:

Works under the general supervision of the General Counsel.

SUPERVISION EXERCISED:

Exercises direct supervision of Senior Staff Counsel and administrative staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Provides counsel and advice and develops the Authority's response to environmental, health and safety and energy law matters, including representing the Authority before and interacting with applicable state and federal regulatory agencies.
- Provides legal advice and guidance in all areas of federal and state environmental law including clean water, safe drinking water, clean air, hazardous and toxic substances, land and water use and conservation, wetlands, environmental impact review, permitting and common law actions.
- Provides counsel and advice to staff and representation of the Authority regarding the Authority's Toxic Reduction and Control (TRAC) program and regulations, including permitting and enforcement matters. Oversees promulgation or amendments of TRAC's regulations.
- Provides legal guidance, advice and counsel to staff of the Authority's Environmental Quality and Environmental and Regulatory Affairs Departments.
- Manages Law Division review of the issuance of permits under section 8(m) of the Authority's Enabling Act - Chapter 372 of the Acts of 1984. Advises and provides legal counsel regarding

direct connections, water supply contracts, expansion initiatives, water and sewer requests from outside the service area and new admissions.

- Drafts, reviews and provides legal advice and counsel for a variety of transactions, contracts and legal agreements involving the Authority.
- Provides counsel and advice in all areas of federal and state energy law and public utility law including renewable and alternative energy (hydro, wind, combined heat & power, solar, etc.), clean energy, Renewable Portfolio Standards and Renewable Energy Certificates, energy projects and initiatives, power purchase agreements, energy efficiency, demand response, conservation and resiliency, climate change, regulated utility contracts, and applicable tariffs.
- Represents the Authority on energy and public utility matters, including those that affect the Authority and arise under the jurisdiction of the Massachusetts Department of Public Utilities, Federal Energy Regulatory Commission and ISO-New England.
- Drafts, analyzes and reviews legislation and regulations affecting the Authority and advises senior managers about the potential impacts upon the Authority's activities, practices and procedures.
- Researches, interprets and determines the applicability of federal, state and local laws, regulations and case law. Conducts legal research as required.
- Analyzes and develops rules, regulations, and policies, and provides advice on interpretations of the MWRA Enabling Act.
- Apprises the Board of Directors, Executive Director, and General Counsel on issues and developments in areas of responsibility.
- Supervises attorneys and administrative staff involved in the handling of legal issues.
- Assists with responses to public records requests as needed.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience Required:

- (A) Bachelor's degree and J.D. from accredited law school; and

- (B) At least seven (7) to ten (10) years of legal experience in the legal areas of environmental, energy, public utility, contract and health and safety law; and
- (D) At least three years of managerial or supervisory experience, public sector experience preferred.

Necessary Knowledge, Skills and Abilities:

- (A) Strong understanding of and knowledge in the legal areas of environmental, energy, public utility, health, safety and contract law.
- (B) Strong supervisory skills as acquired through managerial or supervisory experience are preferred.
- (C) Knowledge and experience in public records law preferred.
- (D) Strong analytical, organizational, and writing skills.

SPECIAL REQUIREMENTS:

Admittance in good standing to the bar to practice law in Massachusetts.

A valid Massachusetts Class D Motor Vehicle Operator's license.

TOOLS AND EQUIPMENT USED:

Office machines as normally associated, with the use of telephone, personal computer including word processing and other software, and multi-function office machines (copy, fax, scan, etc.).

PHYSICAL DEMANDS:

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

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

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

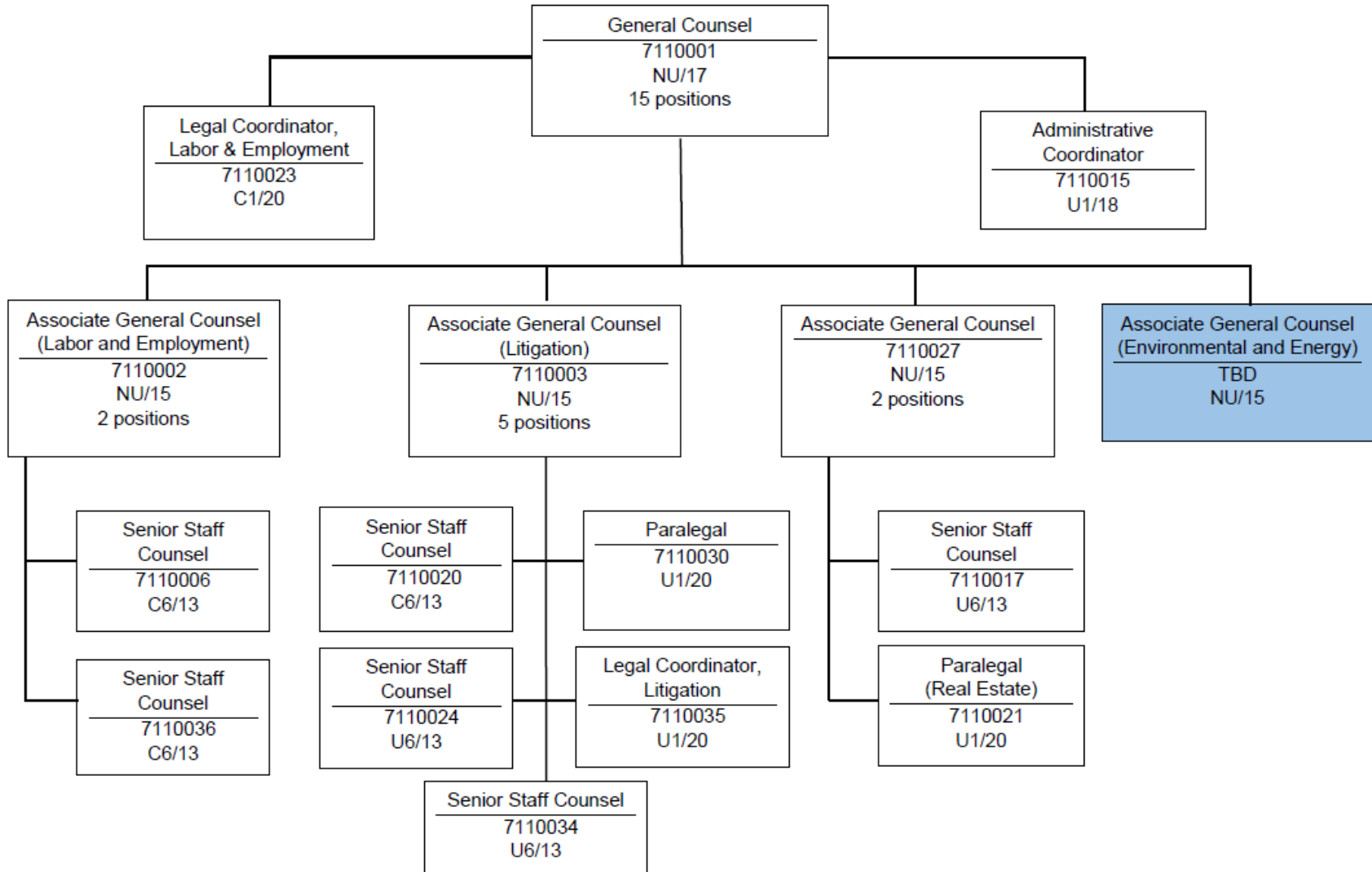
WORK ENVIRONMENT:

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


While performing the duties of this job, the employee regularly works in an office environment. The noise level in the work environment is usually a moderately quiet office setting.

June 2021

Legal Division
June 2021



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: June 23, 2021
SUBJECT: FY22 Non-Union Compensation and Extension of Employment Contract,
Director Tunnel Redundancy Program

COMMITTEE: Personnel and Compensation

X VOTE
 INFORMATION

RECOMMENDATION:

That the Board of Directors take the following actions for MWRA's FY22 non-union compensation review:

Authorize the Executive Director to implement a 3.0% across-the-board compensation adjustment for non-union managers effective with the first FY22 payroll.

Approve a revision to the non-union salary ranges for FY22 presented in Attachment A and filed with the records of the meeting.

Further, that the Board of Directors adopt the Executive Director's performance rating of Excellent for Kathleen M. Murtagh, Director Tunnel Redundancy Program, for FY19-21 and extend the term of her employment agreement to June 3, 2024.

DISCUSSION:

Under this proposal, there are 65 non-union managers who will be eligible for a compensation adjustment. This adjustment is intended to provide appropriate compensation to non-union managers who receive fewer benefits than union employees including annual step increases, longevity payments, sick leave buy back and subsidized parking (CNY only).

The salary adjustments will be provided to all non-union managers on the payroll as of June 26, 2021. This adjustment does not include the Executive Director with whom the Authority maintains individual employment contracts. Further, Kathleen M. Murtagh serves as the Director of the Tunnel Redundancy Program under a three-year employment agreement with the Authority that commenced in 2018. The Executive Director has conducted annual reviews of Ms. Murtagh's performance, which he has rated as "excellent" for each year of her employment. This rating entitles Ms. Murtagh to the amount of any Board-approved salary increase for non-union managers, unless otherwise provided by the Board. Further, the Executive Director recommends that the term of Ms. Murtagh's contract be extended to June 3, 2024.

BUDGET/FISCAL IMPACT

These adjustments for non-union managers result in a total annual cost of approximately \$269,752.65 for FY22.

ATTACHMENTS:

Attachment A: FY22 Proposed Non-Union Salary Ranges

ATTACHMENT A

FY 22 Proposed Non-Union Salary Ranges effective June 26, 2021

Grade	Minimum	Maximum
13	\$87,915.35	\$136,731.84
14	\$98,933.31	\$150,353.78
15	\$111,372.92	\$166,433.25
16	\$125,284.43	\$183,702.70
17	\$141,003.30	\$197,750.80
18	\$133,782.57	\$254,823.94