



# MASSACHUSETTS WATER RESOURCES AUTHORITY

Deer Island  
33 Tafts Avenue  
Boston, MA 02128

**Frederick A. Laskey**  
**Executive Director**

*Chair:* R. Tepper  
*Vice-Chair:* A. Pappastergion  
*Secretary:* B. Peña  
*Board Members:*  
P. Flanagan  
J. Foti  
L. Taverna  
H. Vitale  
J. Walsh  
P. Walsh  
M. White-Hammond  
J. Wolowicz

## **BOARD OF DIRECTORS' MEETING**

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

**Date:** Wednesday, April 17, 2024  
**Time:** 1:00pm  
**Location:** Deer Island Reception/Training Building, 1<sup>st</sup> Floor  
33 Tafts Avenue – Favaloro Meeting Room  
Boston, MA 02128

A photo ID will be required for entry.

The meeting will also be available via Webex. The Webex meeting link, event number and password to attend virtually are below:

Webex meeting link (registration required):

<https://mwra.webex.com/weblink/register/r1628e1db6dbde42f12cb78e0f01988a7>

Event number: 2348 991 3101 Password: 41724

## **REVISED AGENDA**

**I. APPROVAL OF MINUTES**

**II. REPORT OF THE CHAIR**

**III. REPORT OF THE EXECUTIVE DIRECTOR**

**IV. EXECUTIVE SESSION**

i. Approval of March 13, 2024 Executive Session Minutes

**A. Real Estate**

1. Informational Update on External Parcel Funding on DCR Watershed

**B. Litigation**

1. *Thomas Ryan, et. Al. v. The Newark Group, Inc., et al.*, USDC for the District of Massachusetts, C.A. No. 4:22-cv-40089-MRG

**V. PERSONNEL & COMPENSATION**

**A. Approvals**

1. April 2024 PCR Amendments
2. Appointment of John Parkhurst, Manager, Wastewater Operations
3. Appointment of Kimberly LeBeau, Director, Water Quality
4. Appointment of David Wu, Director, Environmental Quality

**VI. WATER POLICY & OVERSIGHT****A. Information**

1. Update on Water Use Trends
2. Quabbin Reservoir Watershed Communities System Expansion Evaluation Update

**B. Approvals**

1. Town of Wilmington Water Supply Continuation Agreement and Waiver of Entrance Fee for Increased Withdrawal

**C. Contract Amendments/Change Orders**

1. Rehabilitation of Sections 23, 24 and 47 Water Mains - Boston and Newton, Albanese D&S, Inc., Contract 6392, Change Order 4

**VII. ADMINISTRATION, FINANCE & AUDIT****A. Information**

1. 2023 Annual Update on New Connections to the MWRA System
2. Delegated Authority Report – March, 2024
3. FY2024 Financial Update and Summary as of March 2024

**B. Approvals**

1. Approval of the 88th Supplemental Bond Resolution

**C. Contract Awards**

1. Disclosure Counsel Services: Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., Contract F277

**D. Contract Amendments/Change Orders**

1. Purchase Order Contract for Data Reporting Analyst, Contract WRA-5281Q, Amendment 1
2. Purchase Order Contract for Sr. Business Analyst, Contract WRA-5258Q, Amendment 1

**VIII. WASTEWATER POLICY AND OVERSIGHT****A. Approvals**

1. Approval of Appointment of Christine Bennett to the Wastewater Advisory Committee (WAC)

**B. Contract Awards**

1. Struvite, Scum, Sludge and Grit Removal Services at the Deer Island Treatment Plant, Moran Environmental Recovery, LLC, Contract WRA-5396

**IX. CORRESPONDENCE TO THE BOARD****X. OTHER BUSINESS****XI. ADJOURNMENT**

## MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Board of Directors

March 13, 2024

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A meeting of the Massachusetts Water Resources Authority (“MWRA”) Board of Directors was held on March 13, 2024 at MWRA’s Administration Facility in Chelsea, and via remote participation.

Chair Tepper presided from MWRA’s Chelsea Administration Facility. Board Members Foti, Pappastergion, Peña, Taverna, Jack Walsh, Patrick Walsh and White-Hammond also participated at the Chelsea Administration Facility. Board Members Vitale and Wolowicz participated remotely. Board Member Flanagan was absent.

MWRA Executive Director Frederick Laskey; General Counsel Carolyn Francisco Murphy; Chief Operating Officer David Coppes; Deputy Chief Operating Officer Rebecca Weidman; Director of Finance Thomas Durkin; Special Assistant for Affirmative Action Patterson Riley; MIS Director Paula Weadick; Tunnel Program Director Kathy Murtagh; Senior Program Manager, Planning Kristen Hall; MWRA Project Managers, Planning Israel Alvarez and David Granados; MWRA Director of Planning and Sustainability Stephen Estes-Smargiassi; Asset Management Analyst Michael Curtis; Chief of Staff Katie Ronan; Associate General Counsels Angela Atchue, Kimberley McMahon and Kristen Schuler Scammon; and, Assistant Secretary Kristin MacDougall participated at MWRA’s Chelsea Administration Facility.

Vandana Rao, Executive Office of Environmental Affairs (“EEA”), and Matt Romero, MWRA Advisory Board (“Advisory Board”), participated at MWRA’s Chelsea Administration Facility.

Chair Tepper called the meeting to order at 1:05pm.

### ROLL CALL

MWRA General Counsel Francisco Murphy took roll call of Board Members in attendance and announced that Board Members Vitale and Wolowicz were participating remotely. The Chair announced that the meeting was being held at MWRA’s Administration Facility and virtually, via a link posted on MWRA’s website. She added that the meeting would be recorded, and that the agenda and meeting materials were available on MWRA’s website. She also announced that individual roll call votes would be conducted after each motion was made and given an opportunity for discussion.

(Rev. White-Hammond joined the meeting after Roll Call.)

### APPROVAL OF FEBRUARY 21, 2024 MINUTES

**A motion was duly made and seconded to approve the minutes of the Board of Directors’ meeting of February 21, 2024.**

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Tepper		
Foti		
Pappastergion		
Peña		
Taverna		
Vitale		
J. Walsh		
		P. Walsh
White-Hammond		
Wolowicz		

(ref. I)

#### REPORT OF THE CHAIR

Secretary Tepper announced the launch of a new EEA multimedia campaign, “Climate Action is for All of Us,” which raises awareness about climate change and promotes ways for individuals to take action. She explained that the campaign will be conducted through ad placement in a variety of channels such as YouTube, the MBTA, and a blanketing of South Station in April, 2024, and noted that the ads will direct the public to the campaign website. Finally, the Secretary encouraged Board Members and meeting participants to learn more about the campaign, and to put its helpful, concrete suggestions into practice. (ref. II)

#### REPORT OF THE EXECUTIVE DIRECTOR

MWRA Executive Director Fred Laskey reported that a Quabbin transfer is underway, and that the MWRA system is currently spilling more water than it is delivering. Mr. Laskey then announced that MWRA is being honored by the Massachusetts Chapter of the American Council of Engineering Companies (“ACEC”) for its Low Service Pressure Reducing Valve Improvements project, and thanked the project team for their work. Next, he discussed his March, 2024 presentation at the Utility Contractors’ Association of New England “UCANE” annual dinner meeting and trade show; he noted that his remarks on MWRA’s Diversity, Equity and Inclusion (“DEI”) initiatives were especially well-received. Finally, Mr. Laskey described recent and upcoming DEI events at MWRA, including a new Lunch and Learn Speaker Series, where staff present talks on varied topics of interest for their colleagues, and the ongoing Lunchtime Speaker Series, which features external guest presenters. (ref. III)

EXECUTIVE SESSION

Chair Tepper requested that the Board move into Executive Session to discuss Real Estate, Litigation and Collective Bargaining, since discussing such in Open Session could have a detrimental effect on the litigating and negotiating positions of the Authority. She announced the planned topics for Executive Session were the acceptance of a grant of a sewer easement in Hingham; a watershed land acquisition; an amendment to a prior Board vote with respect to a watershed land acquisition; discussion of strategy with respect to litigation; and, collective bargaining for all bargaining units. She announced that the Board would return to Open Session after the conclusion of Executive Session.

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

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

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Tepper		
Foti		
Pappastergion		
Peña		
Taverna		
Vitale		
J. Walsh		
P. Walsh		
White-Hammond		
Wolowicz		

**Voted: to enter Executive Session, and to resume Open Session after Executive Session adjournment.**

\*\*\* EXECUTIVE SESSION \*\*\*

The meeting entered Executive Session at 1:08pm and adjourned at 1:59pm.

\*\*\* CONTINUATION OF OPEN SESSION \*\*\*

## BOARD INFORMATION ITEMS

### Metropolitan Water Supply Tunnel Program Overview

Kathy Murtagh, MWRA Tunnel Program Director, presented a brief overview of the Metropolitan Water Tunnel Program (“Tunnel Program”). The presentation included a review of the Program’s scope, status, benefits, goals, budget and cost controls, as well as an update on the Metropolitan Interim Improvements Program.

(Board Members Peña and Taverna joined the meeting, and Board Member Wolowicz left the meeting during the presentation.)

Hearing no discussion or questions from the Board, Chair Tepper moved to the next Information item. (ref. BI A)

### Local Water System Assistance Program Annual Update (ref. W C.1)

Kristen Hall, MWRA Senior Program Manager, Planning, presented an annual update on the Local Water System Assistance Program (“LWSAP”) as detailed in the March 13, 2024 Staff Summary and filed with the records of this meeting.

She described the Program’s goals and funding phases, and presented examples of LWSAP-funded community projects. Ms. Hall also discussed the associated Lead Service Line Replacement Program (“LLP”). Finally, she noted that MWRA staff are working with the Advisory Board to develop revisions to the LLP in order to facilitate the acceleration of community lead service line replacements.

Hearing no discussion or questions from the Board, Chair Tepper moved to the next Information item. (ref. W C.1/ BI B)

### Infiltration/Inflow Financial Assistance Program Annual Update (ref. WW A.1)

Ms. Hall introduced MWRA Project Managers Israel Alvarez and David Granados, who manage the Infiltration and Inflow (“I/I”) Financial Assistance Program and LLP, respectively, and presented an annual update on MWRA’s Infiltration/Inflow Financial Assistance Program (“I/I Program”), as detailed in the March 13, 2024 Staff Summary and filed with the records of this meeting.

The presentation included a summary of Program services provided, as well as the Program’s goals, achievements, and budget. Ms. Hall also presented examples of I/I sources, methods to identify I/I, and community projects funded through the Program. The presentation also included an overview of the I/I Program’s phases, and community grant allocations and loan terms to date.

There was discussion with questions about how I/I Program improvements are measured and

graphically presented. Board Member Peña asked if MWRA communities that receive MWRA I/I financial assistance are required to remove illicit connections to their sewer systems. Mr. Alvarez explained that the communities use MWRA I/I Program funds to remove these connections at their discretion. Ms. Hall added that the communities typically design projects to remove such connections at a later date, and briefly discussed a recent local manhole sealing project. There was also brief discussion about service area population growth.

Hearing no further discussion or questions from the Board, Chair Tepper moved to Board Actions. (ref. WW A.1/BI.C)

### BOARD ACTIONS

Chair Tepper stated that all items for vote at this meeting were discussed at the March 13, 2024 Board Committee meetings, and that those agendas and meeting materials are available on MWRA's website.

Board Member Vitale shared positive feedback that he received about MWRA staff during a recent bond transaction, and thanked staff for their contributions to the transaction's success. He also complimented MWRA's administrative staff.

### APPROVALS

Metropolitan Water Tunnel Program: Contract Structure for Final Design Engineering Services, Contract 7556 (ref. W B.1)

**A motion was duly made and seconded to approve staff's recommended contract structure for Engineering Services During Construction under Contract 7556, Final Design Engineering Services for the Metropolitan Water Tunnel Program where the cost for Engineering Services During Construction during tunnel construction, if approved by the Board of Directors, will be authorized and added by amendment(s) to the Final Design Engineering Services Contract 7556, as further detailed in the March 13, 2024 Staff Summary and presented and filed with the records of this meeting.**

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Tepper		
Foti		
Pappastergion		
Peña		
Taverna		
Vitale		

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
J. Walsh		
P. Walsh		
White-Hammond		

(ref. W B.1/V A.1)

March 2024 PCR Amendments (ref. P&C A.1)

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

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

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

(ref. P&C A.1/V A.2)

Appointment of Heather Sulejman, Manager, Training and Development (ref. P&C A.2)

**A motion was duly made and seconded to approve the appointment of Heather Sulejman to the position of Manager, Training and Development (Non-Union, Grade 14) in the Administration Division at an annual salary of \$139,000, commencing on a date to be determined by the Executive Director.**

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Tepper		
Foti		
Pappastergion		
Peña		
Taverna		

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Vitale		
J. Walsh		
P. Walsh		
White-Hammond		

(ref. P&C A.2/V A.3)

#### CONTRACT AWARDS

Thermal Plant, Hydro Power and Wind Turbine Maintenance, Deer Island Treatment Plant: O'Connor Corporation, Contract OP-464 (ref. WW B.1)

**A motion was duly made and seconded to approve the award of Contract OP-464, Thermal Plant, Hydro Power and Wind Turbine Maintenance, Deer Island Treatment Plant, to the lowest responsible and eligible bidder, O'Connor Corporation, and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$13,590,197 for a contract term of 1095 calendar days from the Notice to Proceed.**

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

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

(ref. WW B.1/V B.1)

#### CONTRACT AMENDMENTS/CHANGE ORDERS

Section 101 Pipeline Extension (Waltham): Baltazar Contractors, Inc., Contract 7457, Change Order 4 (ref. W D.1)

**A motion was duly made and seconded to authorize the Executive Director, on behalf of the Authority, to approve Change Order 4 to Contract 7457, Section 101 Pipeline Extension, with Baltazar Contractors, Inc., for a not-to-exceed amount of \$500,000, increasing the contract amount from \$32,735,976.89 to \$33,235,976.89, and extending the contract term by 540 calendar days from April 7, 2024 to September 29, 2025.**

**Further, a motion was duly made and seconded to authorize the Executive Director to approve additional change orders as may be needed to Contract 7457 in an amount not to exceed the aggregate of \$1,000,000 and extend the contract term by 180 days in accordance with the Management Policies and Procedures of the Board of Directors.**

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

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

(ref. W D.1/V C.1)

Rehabilitation of WASM 3 Sections W11/W12/W16/51 (Medford, Somerville and Arlington): Albanese D&S, Inc., Contract 6544, Change Order 9 (ref. W D.2)

**A motion was duly made and seconded to authorize the Executive Director, on behalf of the Authority, to approve Change Order 9 to Contract 6544, Rehabilitation of WASM 3 Sections W11/W12/W16/51 (Medford, Somerville and Arlington), with Albanese D&S, Inc. for a lump sum amount of \$374,297.01, increasing the contract amount from \$20,175,619.60 to \$20,549,916.61, with no increase in contract term.**

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Tepper		
Foti		
Pappastergion		
Peña		
Taverna		
Vitale		
J. Walsh		
P. Walsh		

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
White-Hammond		
(ref. W D.2/V C.2)		

Enterprise Content Management System Purchase and Implementation: Cadence Solutions Inc., Contract 7438, Amendment 2 (ref. A&F B.1)

**A motion was duly made and seconded that the Board of Directors, on behalf of the Authority, approve Amendment 2 to Contract 7438, Enterprise Content Management System purchase and implementation, with Cadence Solutions Inc., to extend the contract term by 12 months, from March 24, 2024 to March 24, 2025, with the additional cost of \$86,700 to be included under a separate delegated authority amendment as set forth in the March 13, 2024 Staff Summary presented and filed with the records of this meeting.**

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Tepper		
Foti		
Pappastergion		
Peña		
Taverna		
Vitale		
J. Walsh		
P. Walsh		
White-Hammond		
(ref. A&F B.1/V C.3)		

#### CORRESPONDENCE TO THE BOARD

There was no correspondence to the Board (ref. VI)

#### OTHER BUSINESS

There was no Other Business. (ref. VII)

#### ADJOURNMENT

**A motion was duly made and seconded to adjourn the meeting.**

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Tepper		
Foti		

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Pappastergion		
Peña		
Taverna		
Vitale		
J. Walsh		
P. Wash		
White-Hammond		

(ref. VIII)

The meeting adjourned at 2:32pm.

Approved: April 17, 2024

Attest:

\_\_\_\_\_  
Brian Peña, Secretary

#### LIST OF DOCUMENTS AND EXHIBITS USED

- Draft Minutes of the February 21, 2024 MWRA Board of Directors' Meeting (ref. I)
- March 13, 2024 Presentation – Quabbin Overflow Photograph (ref. III)
- March 13, 2024 Staff Summary and Presentation – Metropolitan Water Supply Tunnel Program Overview (ref. BI A)
- March 13, 2024 Staff Summary and Presentation – Local Water System Assistance Program Annual Update (ref. W C.1/BI B)
- March 13, 2024 Staff Summary and Presentation – Infiltration/Inflow Local Financial Assistance Program Annual Update (ref. WW A.2/BI 3)
- March 13, 2024 Staff Summary and Presentation – Metropolitan Water Tunnel Program: Contract Structure for Final Design Engineering Services Contract 7556 (ref. W B.1/V A.1)
- March 13, 2024 Staff Summary – March 2024 PCR Amendments (ref. P&C A.1/V A.2)
- March 13, 2024 Staff Summary – Appointment of Heather Sulejman, Manager, Training and Development (ref. P&C A.2/V A.3)
- March 13, 2024 Staff Summary and Presentation – Thermal Plant, Hydro Power and Wind Turbine Maintenance, Deer Island Treatment Plant: O'Connor Corporation, Contract OP-464 (ref. WW B.1/V B.1)
- March 13, 2024 Staff Summary and Presentation – Section 101 Pipeline Extension (Waltham): Baltazar Contractors, Inc., Contract 7457, Change Order 4 (ref. W D.1/V C.1)

- March 13, 2024 Staff Summary– Rehabilitation of WASM 3 Sections W11/W12/W16/51 (Medford, Somerville and Arlington): Albanese D&S, Inc., Contract 6544, Change Order 9 (ref. W D.2/V C.2)
- March 13, 2024 Staff Summary– Enterprise Content Management System Purchase and Implementation: Cadence Solutions Inc., Contract 7438, Amendment 2 (ref. A&F B.1/V C.3)

**STAFF SUMMARY**

**TO:** Board of Director  
**FROM:** Frederick A Laskey, Executive Director  
**DATE:** April 17, 2024  
**SUBJECT:** April 2024 PCR Amendments



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**COMMITTEE:** Personnel and Compensation

       INFORMATION  
  X   VOTE

Wendy Chu, Director of Human Resources  
Preparer/Title

  
Michele S. Gillen  
Director, Administration

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**RECOMMENDATION:**

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

**DISCUSSION:**

The Position Control Register lists all positions of the Authority, filled and vacant. It is updated as changes occur and it is published at the end of each month. Any changes to positions during the year are proposed as amendments to the PCR. All amendments to the PCR, except those resulting only in a change in title or cost center, must be approved by the Personnel and Compensation 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.

**April 2024 PCR Amendments**

There are three PCR Amendments this month.

Organizational Changes:

1. Title and grade change to one vacant position in the Finance Division, Treasury Department from a Manager, Deer Island Administration & Finance (Unit 6, Grade 13) to a Treasury Analyst (Unit 6, Grade 8) to better meet staffing needs.
2. Title and grade change to one vacant position in the Operations Division, Engineering and Construction Department from a Senior Program Manager (Unit 9, Grade 30) to a Program Manager (Unit 9, Grade 29) to better meet staffing needs.
3. Title and grade change to one vacant position in the Operations Division, Western Water Grounds Maintenance Department from a Skilled Laborer (Unit 2, Grade 11) to an OMC Laborer (Unit 2, Grade 13) due to staffing needs and a union agreement.

**BUDGET/FISCAL IMPACT:**

The annualized budget impact of these PCR amendments will be a minimum savings of \$65,138. Staff will ensure that the cost associated with these PCR amendments will not result in spending over the approved FY24 Wages and Salaries budget.

**ATTACHMENTS:**

Job Descriptions



**MWRA  
POSITION DESCRIPTION**

**OLD**

**POSITION:** Manager, DI Administration and Finance

**DIVISION:** Operations

**DEPARTMENT:** O & M Support/Deer Island

**BASIC PURPOSE:**

Directs all administrative and fiscal activities for the Deer Island Treatment Plant. Directs the budget management and the financial control function, plant personnel/payroll and records coordination activities, mail distribution and other administrative functions as required.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Deputy Director, O & M Support.

**SUPERVISION EXERCISED:**

Exercises close supervision of Administration and Finance staff.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Directs the development and management of the DITP's \$43 million CEB. Oversees variance reporting, reallocations, APPO process, schedule reporting and Authority's business plan reporting.
- Serves as the Deputy Director's designated representative for approval of administrative items such as personnel hiring, requisitions, budget reallocations, etc, serves as the acting Deputy Director for administrative matters in the absence of the Deputy Director.
- Provides consultation and advice to plant personnel and assists in the resolution of operational, management, budgetary and fiscal issues.
- Directs the implementation of all authority policies and procedures relative to administrative matters including personnel, affirmative action, budgeting, procurement, service contracts, etc.
- Acts as a liaison between the Plant and Sewerage and other Divisions on Administrative matters.

- Directs the activities of the plants fiscal section involving the efficient process of accounts payable documentation, financial analysis and budgeting.
- Provides consultation to section managers regarding bench-marking activities.
- Assists the Deputy Director in the development and implementation of team building strategies.
- Assures that the administrative section serves as an effective resource for other plant personnel in the proper application of routine pay and personnel related benefits emanating from collective bargaining agreement provisions and established personnel policies.

**SECONDARY DUTIES:**

- Administers the application of collective bargaining agreement provisions and personnel policies in the work place and serves as Step-One Grievance Hearing officer for the department.
- Conducts employee performance reviews in accordance with MWRA procedures, recommends hires, merit raises and promotions.
- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) A four (4) year college program in business administration. Advanced degree preferred; and
- (B) Knowledge of financial management, budgeting, the procurement and contract management processes, bench marking management and administrative systems, and related computer based systems, as acquired through seven (7) to nine (9) years of progressively responsible experience in administration, finance, or management, of which three (3) years are in a supervisory capacity; or
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Excellent written and verbal communications, team building and interpersonal skills.
- (B) Knowledge of financial management, budgeting, the procurement and contract management processes, bench marking management and administrative systems and related computer-based systems.
- (C) Proficient in the use of personal computers and software applications packages for financial analysis and management, such as Lotus 1-2-3, WordPerfect, Microsoft Word and Excel.

**SPECIAL REQUIREMENTS:**

None

**TOOLS AND EQUIPMENT USED:**

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

**PHYSICAL DEMANDS:**

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

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

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

**WORK ENVIRONMENT:**

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

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

**August, 1999**

**MWRA  
POSITION DESCRIPTION**

**NEW**

**POSITION:** Treasury Analyst

**DIVISION:** Finance

**DEPARTMENT:** Treasury

**BASIC PURPOSE:**

Assists with financial and contract administration functions related to the daily management of financial activities. Assist with special financial projects as assigned.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Deputy Director of Finance/Treasurer.

**SUPERVISION EXERCISED:**

None

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Coordinates all day-to-day operations of assigned project work.
- Monitors activities of assigned projects to ensure project completion, compliance with applicable terms and conditions, to include accurate payment of applicable fees and invoices.
- Assists with the administration of finance projects from project initiation through design, construction and project completion.
- Receives, reviews and recommends approval of all project invoices.
- Assists with the development of grant applications.
- Assists with activities with federal, state and local entities to ensure compliance with applicable laws and regulations, mitigate project impact, and addresses concerns.
- Prepares agenda and all supporting material for internal and external formal meetings.
- Assists in the development of schedules, applications, forms, spreadsheets, and notices.
- Assists with the collection and collation needed for Finance Division transactions.

- Works on special analytical projects.
- Assists with the development of the annual budget.
- Assists with the development of procurement documents.
- Assists with maintaining financial applications and databases.

**SECONDARY DUTIES:**

Performs related duties as required.

**DESIRED MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) A Bachelor's degree in business, finance, accounting, or a related field; and
- (B) One (1) to three (3) years experience in contract administration and/or financial analysis; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Excellent spreadsheet and database skills.
- (B) Proficient in Microsoft Office Suite.
- (C) Excellent analytical, written, organizational, interpersonal, planning and communication skills.
- (D) Demonstrated ability to work effectively with managers at all levels of the organization
- (E) Attention to detail and ability to maintain confidentiality.

**SPECIAL REQUIREMENTS:**

A valid Massachusetts Class D Motor Vehicle Operator's License

**TOOLS AND EQUIPMENT USED:**

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

**PHYSICAL DEMANDS:**

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

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

reach with hands and arms. The employee is frequently required to stand and walk; and occasionally climb or balance; stoop, kneel, crouch, crawl, or smell.

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

### **WORK ENVIRONMENT:**

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

While performing the duties of this job, the employee regularly works in an office environment. The employee routinely makes visits to operating facilities and construction sites. In these situations the employee is occasionally exposed to outdoor weather conditions, extreme heat or cold and wet, humid conditions (non-weather) and vibration. The employee occasionally works near moving mechanical parts, and in high precarious places. The employee is occasionally exposed to fumes, toxic or caustic chemicals and airborne particles. The employee occasionally exposed to risk of electrical shock and radiation.

The noise level in the normal work environment is a moderately quiet office setting. Visits made to facilities and construction sites include noise levels at the site that could range from loud to very loud.

**July 2021**

**MWRA  
POSITION DESCRIPTION**

**OLD**

**POSITION:** Senior Program Manager (Engineering & Construction)

**DIVISION:** Operations

**DEPARTMENT:** Engineering & Construction

**BASIC PURPOSE:**

Manages all projects in assigned programs from conceptual planning through construction contract award and supports construction implementation. Oversees engineering staff in their development, procurement, and management of engineering design consultant contracts for the design and construction of various capital improvement projects, studies, and programs.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Assistant Director, Engineering.

**SUPERVISION EXERCISED:**

Exercises close supervision of professional engineering and project management staff.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Manages assigned programs including conformance to standards and procedures, staffing assignments, project scheduling and prioritization, and work product quality in accordance with the Quality Management Plan.
- Oversees the work of professional engineering consultants under contract to the MWRA including quality of outputs, budget and schedule compliance and conformance to contract terms.
- Prepares and manages staff development and provides thorough review of staff and consultant work products, including scopes of service, requests for proposals, project specifications, contract documents, and necessary documents to secure contracts, grants and permits from various federal and state agencies.
- Supervises professional engineering work of substantial difficulty and importance requiring the application of professional engineering principles and the exercise of independent engineering judgement.

- Oversees staff coordination of projects with communities, government agencies and other MWRA departments.
- Coordinates and manages the preparation of annual and supplementary budget requests on future and current capital projects.
- Participates in consultant selection procedures and contract negotiations.
- Addresses community and professional organizations on agency programs and policies, prepares reports and correspondence and maintains liaison with representatives of other agencies.

**SECONDARY DUTIES:**

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Knowledge of engineering principles and practices as normally attained through Bachelor's Degree in civil engineering or related field; and
- (B) Understanding of issues related to engineering design as acquired through eight (8) to ten (10) years of experience in water and/or wastewater field, of which a minimum of four (4) years is in a supervisory capacity; or
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Demonstrated skill in the design of water and/or wastewater facility and system components including CSO remediation and regulatory requirements.
- (B) Knowledge of water and/or wastewater facility and system operations, process control theory, practices & principles, and computer applications.
- (C) Excellent interpersonal, oral and written communication skills. Ability to communicate technical information effectively.
- (D) Strong organizational skills and the ability to manage multiple priorities with competing

demands for resources.

- (E) Excellent analytical and quantitative skills, and attention to detail with some experience supporting financial tracking and monitoring.
- (F) Skill in the development and oversight of MGL Chapter 30 and 149 contracts.
- (G) Proficient computer skills including MS Office Suite and project management software.

**SPECIAL REQUIREMENTS:**

A valid Class D Massachusetts Motor Vehicle Operators License.

Massachusetts Registered Professional Engineer preferred.

**TOOLS AND EQUIPMENT USED:**

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

**PHYSICAL DEMANDS:**

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

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

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

## **WORK ENVIRONMENT:**

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

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

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

**November 2021**

**MWRA  
POSITION DESCRIPTION**

**NEW**

**POSITION:** Program Manager

**DIVISION:** Operations

**DEPARTMENT:** Engineering and Construction

**BASIC PURPOSE:**

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

**SUPERVISION RECEIVED:**

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

**SUPERVISION EXERCISED:**

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

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Oversees projects, including the planning and design of rehabilitation and capital engineering projects for waterworks and wastewater facilities and pipelines. Additionally, manages the planning and design phases of assigned water and wastewater engineering and or maintenance projects including, feasibility and environmental impact reports, detailed plans and specifications, permitting, project schedules, technical assistance, progress review and evaluation.
- Oversees the work of professional engineering consultants, including all work products for quality of work, budget, schedule, and compliance with contractual terms and MWRA objectives and policies.
- Supervises and manages professional staff, including assignment of projects, evaluation of performance, and staff development planning. Provides technical and administrative assistance to staff in the development and management of projects which include design and

engineering services during construction of new and rehabilitation water and wastewater projects, development of maintenance and operations procedures and working closely with MWRA Safety staff, development of safety procedures.

- Supervises professional multi-discipline engineering work of substantial difficulty and importance, requiring application of professional engineering principles and the exercise of independent engineering judgment.
- Oversees and coordinates cooperative project development with other MWRA divisions and departments to ensure complete and coordinated projects. Coordinates projects with communities, government agencies and other MWRA departments. Provides technical information and assistance. Addresses professional and community groups and initiates outreach projects as required.
- Participates in consultant selection procedures and contract negotiations for projects. Additionally, oversees all phases of consultant selection for assigned projects including development of scope of services, specifications, cost estimates, work schedules, negotiations, and preparations of contract award recommendations. Ensures compliance with contract budgets, schedules and terms.
- Prepares annual and supplementary budget requests for the projects in the Capital Improvement Program. Oversees and reviews projects' budgets and schedules for compliance with established department, division, and MWRA program goals.
- Ensures compliance with MWRA procedures and policies, regulatory requirements and applicable engineering standards. Ensures all project activities are coordinated with MWRA divisions and departments, outside regulatory and permitting agencies and communities, as appropriate.

**SECONDARY DUTIES:**

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Completion of a four (4) year college program in civil or related engineering field; and
- (B) Seven (7) to nine (9) years of civil engineering experience of which three (3) years must be in a supervisory capacity and three (3) years in project management; or

(C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Knowledge of principles and practices of engineering.
- (B) Understanding of issues related to design, construction and operation of water and wastewater facilities and infrastructure.
- (C) Demonstrated ability to work effectively as part of a project team and also to function independently with minimal supervision.
- (D) Knowledge of Massachusetts bidding laws, including M.G.L Chapter 30 and Chapter 149 construction bidding regulations.
- (E) Familiarity with computer software such as Word and Excel
- (F) Proven interpersonal, managerial, written and oral communications skills are required.

**SPECIAL REQUIREMENTS:**

Registered Massachusetts Professional Engineer preferred.

**TOOLS AND EQUIPMENT USED:**

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

**PHYSICAL DEMANDS:**

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

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

arms.

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

**WORK ENVIRONMENT:**

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

While performing the duties of this job, the employee is not exposed to any unusual environmental conditions.

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

**January 2013**

**MWRA  
POSITION DESCRIPTION**

**OLD**

**POSITION:** Skilled Laborer

**DIVISION:** Operations / Support

**DEPARTMENT:**

**BASIC PURPOSE:**

Performs routine and skilled manual tasks as assigned. Assists operations, maintenance and skilled trades staff as required. May be required for overtime in extended workday and emergency situations. May be required for regular, on-call rotations.

**SUPERVISION RECEIVED:**

Works under the general supervision of a foreman or supervisor.

**SUPERVISION EXERCISED:**

None.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Performs manual tasks requiring some specialized skill in assisting valve foremen, mechanics, electricians, masons, plumbers, carpenters and other skilled tradesmen.
- Assists in the maintenance and operation of vehicles and equipment such as pickup trucks, tractors, mowers, pumps, cement mixers, air compressors and snow removal equipment.
- Assists in loading, moving and transporting materials, equipment, freight and supplies, and assists in the handling and storage of stock.
- Assists in the maintenance and repair of heavy vehicles, and equipment as needed.
- Assists in the repair of electrical and mechanical equipment.
- Assists in the upkeep and cleaning of MWRA equipment, grounds and roadways.
- Uses and makes minor repairs to small tools and simple mechanical equipment such as chain saws, brush kings, weed eaters, etc.
- Performs general housekeeping and maintenance tasks, which include, but are not limited to,

vacuuming, washing of floors, upkeep of rest rooms and conference room areas.

- Gases, oils and greases trucks, automobiles and miscellaneous grounds maintenance facilities.
- Works as a member of a multi-person crew, as needed.
- Assists in the handling, storage, loading and unloading of stock.

**SECONDARY DUTIES:**

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Basic reading, writing, mathematical and oral communication skills as normally attained through a high school education; or
- (B) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Working knowledge of the use of common tools, construction and sewer maintenance equipment, and of one or more of the mechanical or building trades.
- (B) Ability to operate light automotive trucks and equipment, snow plows, pickup trucks and power-driven grounds maintenance equipment.
- (C) Ability to perform manual labor of semi-skilled nature, use/make minor repairs to small tools and simple mechanical equipment.
- (D) Basic knowledge of the operation and maintenance of facilities.
- (E) Ability to perform heavy manual labor for extended periods of time, under varying climatic conditions.
- (F) Ability to follow oral and written instructions.

**SPECIAL REQUIREMENTS:**

A valid Massachusetts Class D Motor Vehicle Operator's License required.

## **TOOLS AND EQUIPMENT USED:**

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

## **PHYSICAL DEMANDS:**

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

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

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

## **WORK ENVIRONMENT:**

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

While performing the duties of this job, the employee regularly works in outside weather conditions. The employee regularly works near moving mechanical parts and is occasionally exposed to wet and/or humid condition and vibration. The employee occasionally works in precarious places and is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals and risk of electric shock. May be required for overtime in extended workday and emergency situations. May be required for regular, on-call rotations.

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

**February 2000**

**MWRA  
POSITION DESCRIPTION**

**NEW**

**POSITION:** OMC Laborer

**DIVISION:** Operations

**DEPARTMENT:** Wastewater Operations, Western Operations, Equipment Maintenance,  
Metro Pipe Maintenance

**BASIC PURPOSE:**

Performs routine and skilled manual tasks as assigned. Assists operations, maintenance and skilled trades staff as required. May be required for overtime in extended workday and emergency situations. May be required for regular, on-call rotations.

**SUPERVISION RECEIVED:**

Works under the general supervision of a foreman or supervisor.

**SUPERVISION EXERCISED:**

None.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Performs tasks requiring some specialized skill in the maintenance and operation of equipment such as pickup trucks, pump trucks, tractors, mowers, pumps, generators and pneumatic tools, cement mixers, air compressors, snow removal equipment, sewer maintenance equipment, etc.
- Performs manual tasks requiring some specialized skill or knowledge in assisting skilled tradesmen engaged in construction, maintenance and repair work, including minor adjustments and repair of equipment.
- Performs a variety of manual tasks in connection with valve operations, pipeline construction and maintenance such as cleaning culverts and drains, digging ditches, spreading asphalt, caulking lead joints, and assisting in valve installations, repair of valves and pipeline under pressure 6" to 72" in diameter and the chlorination of water mains.
- Gases, oils and greases trucks, automobiles and miscellaneous grounds maintenance equipment.
- Performs a variety of manual tasks in connection with building and grounds maintenance work such as grass cutting, shoveling snow, repair of fences, disposing of trash and maintaining general building cleanliness.
- Assists personnel of a higher grade in all aspects of plant maintenance and repairs, including but not

limited to diesel engine overhaul, positive displacement pump overhaul and repair, centrifugal pump overhaul and repair, re-chaining of grit channels and sedimentation tanks and building concrete structures.

- Assists in the repair of electrical and mechanical equipment.
- Assists in upkeep and cleaning of MWRA equipment, structures and facilities such as screen chambers, tidegates and regular chambers.
- Assists in the handling and storage of stock, loads, unloads, moves and transports material, equipment, freight and supplies.
- Works as a member of a multi-crew, as needed.

**SECONDARY DUTIES:**

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

(A) A high school diploma or GED; or

(B) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

(A) Working knowledge of the use of common tools, construction and sewer maintenance equipment, and of one or more of the mechanical or building trades.

(B) Ability to operate various types of vehicles and equipment including light automotive trucks and equipment, ten-wheel dump trucks, snow plows, pickup trucks, tractors and power-driven grounds maintenance equipment.

(C) Ability to perform manual labor of semi-skilled nature, use/make minor repairs to small tools and simple mechanical equipment.

(D) Basic knowledge of the operation and maintenance of facilities.

(E) Ability to perform heavy manual labor for extended periods of time, under varying climatic conditions.

(F) Ability to follow oral and written instructions.

### **SPECIAL REQUIREMENTS:**

Must possess a current valid Class B Massachusetts Commercial Drivers License.

Will be subject to the MWRA Controlled Substance and Alcohol Testing Policy and the random drug-testing program.

### **TOOLS AND EQUIPMENT USED:**

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

### **PHYSICAL DEMANDS:**

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

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

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

### **WORK ENVIRONMENT:**

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

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

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

**May, 2001**

## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** April 17, 2024  
**SUBJECT:** Appointment of Manager, Wastewater Operations



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**COMMITTEE:** Personnel & Compensation

     INFORMATION  
  X   VOTE

Charles Ryan, Director, WW Operations & Maintenance  
Stephen Cullen, Director, Wastewater  
Wendy Chu, Director, Human Resources  
Preparer/Title



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David W. Coppes, PE  
Chief Operating Officer

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### RECOMMENDATION:

To approve the appointment of Mr. John Parkhurst to the position of Manager, Wastewater Operations (Non Union, Grade 14), in the Wastewater Operations Department, at an annual salary of \$162,000, commencing on a date to be determined by the Executive Director.

### DISCUSSION:

The position of Manager, Wastewater Operations became vacant in August 2022 as a result of a promotion for the incumbent. This position is responsible for the 24-hour operation of wastewater facilities, including the Wastewater Operations Control Center, 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 includes the management of staffing and operation of all the Wastewater/CSO facilities during wet weather events. 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.

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

### Selection Process

The Manager, Wastewater Operations was posted internally and externally. Fourteen candidates applied for the position, including six internal candidates. Six candidates were referred for an interview. The Director of Wastewater, the Director of Wastewater Operations & Maintenance and the Associate Special Assistant for Affirmative Action interviewed the candidates. Upon completion of the interviews, Mr. John Parkhurst 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. Parkhurst has worked in the wastewater field for the past 20 years. He spent his first two years in the field working as an Operator at the Lowell Regional Wastewater Facility. He spent the next five and a half years working as the Assistant Plant Manager and Plant Manager at the Acton Wastewater Facility while employed by Woodard & Curran. While at Acton, Mr. Parkhurst was dispatched by his company to provide back-up coverage and start-up expertise for various plants and to assist in disaster recovery efforts. Mr. Parkhurst then moved to the Plant Manager position at the Concord Wastewater Facility, for a year and a half, while still working for Woodard & Curran. This role included increased management responsibilities and leadership of company-wide initiatives utilizing tablet based data collection and online monitoring.

For the past ten plus years, Mr. Parkhurst has been the Superintendent of the Ipswich Wastewater Facility, supervising union staff in the operation and maintenance of the wastewater treatment plant and five wastewater pump stations. There, he has expanded the utility's use of formal standard operating procedures, instituted a maintenance tracking system, expanded SCADA control, and introduced tablet-based logs and lab software.

Mr. Parkhurst is very knowledgeable about wastewater operations, process control, and emergency response. He has experience in managing staff in a unionized environment. He has also demonstrated the ability to go into a new facility and quickly learn the critical aspects of its operation. This will prove valuable at MWRA with its many pumping stations, headworks and CSO facilities.

Mr. Parkhurst holds a Bachelor of Arts in Criminal Justice from the University of Lowell; an Emergency Medical Technician Certification from Middlesex Community College; a Massachusetts Grade 7C full Wastewater Operator License; a Grade 4 Collection Systems Certification and a Massachusetts Grade 2D water distribution operator in training license.

**BUDGET/FISCAL IMPACTS:**

There are sufficient funds for this position in the Operations Division's FY24 Current Expense Budget.

**ATTACHMENTS:**

Resume of John Parkhurst  
Position Description  
Organizational Chart

# John T. Parkhurst

## Objective

Position myself in a career, utilizing my education, training and diverse skill set.

## Experience

### **Ipswich Wastewater Facility, Ipswich, MA**

#### **Superintendent (10/2013-Present)**

- Provide reliable wastewater treatment in an environmentally sensitive and responsible manner for a 5MGD wastewater treatment facility and 5 pump stations with a \$3million-dollar operating budget and additional upgrade budget.
- Completed or worked on multiple capital improvement upgrades.
- Applied and received multiple grants for state and federal programs.
- Introduced SOP's throughout the process and lab.
- Began a maintenance tracking system for staff to follow.
- Began reducing paper by using tablet-based logs and lab sheets software.
- Implemented SCADA technology to existing systems.
- Identified needs of the facility to remain compliant.
- Administration duties. Ex: state and federal reports, invoice and vendor tracking, town reports, state quote programs, contract renewals, budgeting, capital forecasting, ordering, accounts payable, and union staff supervision.
- Project manager of the utilities asset management system.
- Assist with the transition of retiring staff and working with new staff to keep both the water and wastewater treatment facilities running efficiently.
- Provided tours and training to town staff, residents, and students from surrounding vocational schools.

### **Concord Wastewater Facility, Concord, MA (Woodard & Curran)**

#### **Plant Manager II (5/2012-10/2013)**

- Provided reliable wastewater treatment in an environmentally sensitive and responsible manner for a contract with an \$850,000 operating budget and additional \$100,000 toward capital improvements.
- Primary Emergency Coordinator.
- Focus on quality and process control to maintain clean and safe water for the Concord River.
- Management duties. Ex: Responsible for supervision of Maintenance Manager, Operator I, and an Intern. Including annual and semi-annual reviews, leadership,

training, mentoring, raise and bonus program, and performance improvement plans when needed.

- Administration duties. Ex: state and federal reports, invoice and vendor tracking, client reports, state quote programs, contract renewals, visit potential clients, budgeting, ordering, and accounts payable.
- Laboratory duties. Ex: All state, local and federal requirements for a grade 5 municipal wastewater treatment facility with a NPDES water discharge permit.
- Worked with local business, federal organizations and other city utilities to increase public awareness, decrease environmental contaminations, and respond to emergency situations.
- Completed all necessary equipment and instrumentation maintenance and repairs while tracking the work on a third party hosted CMMS website. (SEMS Technology)
- Assisted with the start-up of a company wide program to implement the use of tablets and IPADS for data collection, online monitoring of facilities, and day-to-day functions at our 40 water and wastewater project within W&C.
- Worked alone or with others on a time limit to complete assignments.
- Upheld local, state, and federal environmental standards. (EPA, OSHA, DEP)
- On-Call 24/7, weekend coverage at the Concord Wastewater Treatment Facility in Concord, MA.
- Provided clear and accurate information to our client. (Concord, MA Public Works Department.)
- Supervised confined space entry events and trainings.
- Supervised new equipment start-up.
- Traveled to different wastewater plants throughout the country to provide back-up coverage.
- Recorded data and process control changes.
- Completed all site security and safety initiative programs and reviews.
- Safely used company owned equipment.
- Worked on new technology with the first in the world CO-MAG Treatment process.

#### Mentionable Accomplishments:

- Became Maine Grade 5 full status municipal wastewater certified.
- Completed an over one-year corporate leadership development program that I graduated from June 2012 and continue to work on follow-up programs.
- Continued to work with the company intern program throughout the many service line groups.
- Continued to assist Acton, MA WWTF during the training transition of the new plant manger while learning my new role at the Concord, MA WWTF.

#### **Acton Wastewater Facility Acton, MA (Woodard & Curran)**

##### **Plant Manager (10/2007-5/2012)**

- Promoted to Plant Manager.
- Provide reliable wastewater treatment and collection service in an environmentally sensitive and responsible manner for a contract with a \$500,000 operating budget and additional \$60,000 toward capital improvements.
- Primary Emergency Coordinator.

- Focus on quality and process control to maintain a clean, healthy ground water.
- Management duties. Ex: Responsible for supervision of an Assistant Plant Manager and an Intern. Including annual and semi-annual reviews, leadership, training, mentoring, raise and bonus program, and performance improvement plans when needed.
- Administration duties. Ex: state reports, invoice and vendor tracking, client reports, state quote programs, contract renewals, visit potential clients, budgeting, ordering, and accounts payable.
- Laboratory duties. Ex: All state, local and federal requirements for a grade 5 municipal wastewater treatment facility with a ground water discharge permit.
- Worked with local business, federal organizations and other city utilities to increase public awareness, decrease environmental contaminations, and respond to emergency situations.
- Complete all necessary equipment and instrumentation maintenance and repairs.
- Assisted with the implementation of a company wide maintenance/ asset management tracking software that is web based. (SEMS) .
- Uphold local, state, and federal environmental standards. (EPA, OSHA, DEP)
- On-Call 24/7, weekend coverage at the Concord Wastewater Treatment Facility in Concord, MA
- Worked with Co-MAG technology at the Concord Wastewater Treatment Facility.
- Assisted with Victorville, CA. Wastewater Treatment Facility start-up.
- Assisted with site clean-up after Hurricane Irene at the Bound Brook Superfund Site in Somerset, NJ.
- Provide clear and accurate information to our client. (Acton, MA Board of Health)
- Record data and report process control functions.
- Completed all site security and safety initiative programs and reviews.
- Safely using company owned vehicles and equipment.
- Supervised confined space entry events, new equipment start-ups, and trainings.
- Traveled to different wastewater plants to provide back-up coverage.

### **Acton Wastewater Facility Acton, MA (Woodard & Curran)**

#### **Assistant Plant Manager (10/2006-10/2007)**

- Provided reliable wastewater treatment and collection service in an environmentally sensitive and responsible manner.
- Emergency Coordinator.
- Focus on quality and process control to maintain a clean, healthy ground water.
- Worked with local business, federal organizations and other city utilities to increase public awareness, decrease environmental contaminations, and respond to emergency situations.
- Administration duties. Ex: state reports, invoice and vendor tracking, client reports, budgeting, ordering, and accounts payable.
- Laboratory duties. Ex: All state, local and federal requirements for a grade 5 municipal wastewater treatment facility with a ground water discharge permit.
- Worked alone or with others on a time limit to complete assignments.
- Uphold local, state, and federal environmental standards. (EPA, OSHA, DEP)
- On-Call 24/7.

- Weekend coverage at the Concord Wastewater Treatment Facility in Concord, Ma.
- Provided clear and accurate information to our client. (Acton, MA Board of Health)
- Recorded data and reported process control functions.
- Site security and safety.
- Safely using company owned vehicles and equipment.

**Mentionable Accomplishments:**

- Became Massachusetts Grade 7-C Full Municipal Wastewater Certified.
- Became California Grade 2 Municipal Wastewater Certified
- Became Grade 4 New England Water Environment Association Collections Operator Certified
- Became New Hampshire Grade 3 Wastewater Facility Operator Certified.
- Completed OSHA's 40 Hazardous Waste Training
- Managing a Grade 5 Municipal Wastewater Treatment Facility.
- Received a Corporate Health and Safety award August 23<sup>rd</sup>, 2007.
- Received a Corporate Compliance award July, 15<sup>th</sup>, 2008.
- Proposed an abstract to the NEWEA Conference committee that was selected to be presented at the 2008 NEWEA Plant Operations Seminar & Exhibit.

**Lowell Regional Wastewater Facility Lowell, MA**

**Operator (9/2004-10/2006)**

- Provided reliable wastewater treatment and collection service in an environmentally sensitive and responsible manner.
- Focused on quality and process control to maintain a clean, healthy Merrimac River.
- Recorded data and reported process control functions.
- Site security and safety.
- Safely using city owned vehicles and equipment.
- Worked with local business, federal organizations and other city utilities to increase public awareness, decrease environmental contaminations, and respond to emergency situations.
- Worked the midnight shift while being able to take overtime.
- Worked alone or with others on a time limit to complete assignments.
- Upheld local, state and federal environmental standards. (EPA, OSHA, DEP)

**Grounds Keeper (6/2000-9/2004)**

- Completed all landscaping needs of a fifteen-acre treatment plant.
- Worked alone and with others with a time limit to complete assignments.
- Assisted with the coordination of the EPA Student Summer Work Program.
- Safely used city owned vehicles and equipment.
- Worked with a two-thousand-dollar budget for landscaping products.
- Assisted with routine operator preventative maintenance. Ex: Hosing down tanks, cleaning belt filter press room and polymer batching system. Assisted with waste haulers paperwork, pH test, and sample collection.

**Mentionable Accomplishments:**

- Worked with FEMA/ MEMA during the 2006 floods aiding local home owners and businesses.
- Became ISO 14001 Certified
- Became a Grade 4 Municipal Wastewater Operator.
- Working full-time and continue to be a full-time enrolled student.
- Worked at a Grade 6 Municipal Wastewater Treatment Facility
- Became a licensed fork lift operator.

**Education**

**University of Massachusetts, Lowell, MA, 2002-2006**

Degrees

- B.A., Criminal Justice.
- Minor, Sociology
- Graduated Magna Cum Laude- GPA 3.511

**Middlesex Community College, Lowell, MA, 2003**

Certification

- Emergency Medical Technician Certificate.

**Central Catholic High School Lawrence, MA, 1998-2002**

- Graduated with Honors

**Current Licenses/Certifications**

- Massachusetts Grade 7-C Full Wastewater Operator
- Massachusetts Grade 2D OIT Water Distribution Operator
- NEWEA Grade 4 Collections System Operator
- NH Drivers License OPR-MC
- United States Coast Guard Charter Captains License

**Microsoft Office Software**

- Proficient with Excel, Outlook, Word and PowerPoint.
- Knowledgeable of, with basic skills, Access and SPSS.

**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 Managers and Operations Supervisors.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Directs the twenty-four (24) hour operations of all wastewater facilities under the control of the Wastewater 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 process engineering staff on all wastewater pumping stations, CSOs, 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 Process Control staff to implement the wastewater facility SCADA changes.
- 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.
- Oversees staff productivity monitoring and continual improvement through staff skills development, strategic planning, 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 standard operating procedures (SOPs) and Facility 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 four (4) year college degree in civil or environmental engineering, public administration 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:**

A Massachusetts Wastewater Treatment Plant Operations Certification, Grade IV.

A Massachusetts Wastewater Collection Systems Certification, Grade IV (or the ability to obtain

within one year of appointment).

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

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

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

**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:**

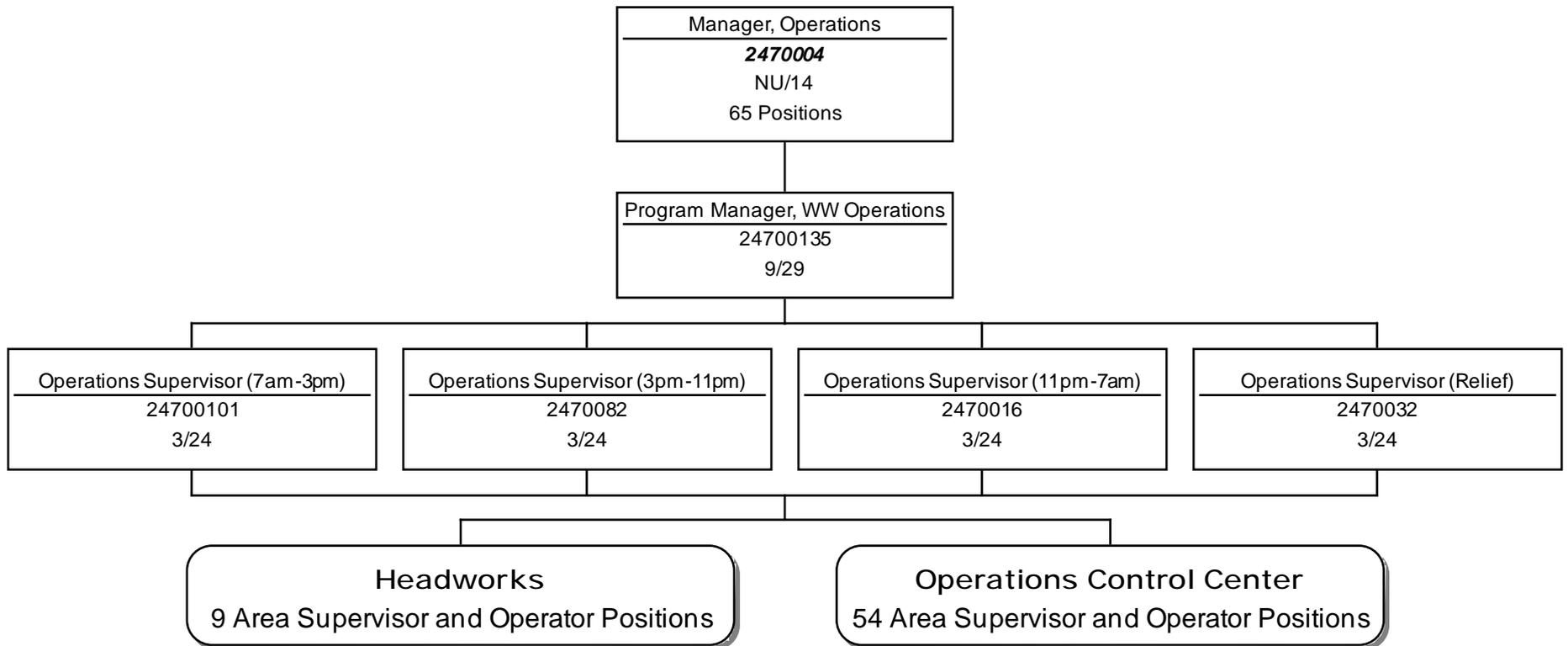
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

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.

May 2019

Operations - Wastewater O&M  
**Wastewater Operations**



**STAFF SUMMARY**



**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** April 17, 2024  
**SUBJECT:** Appointment of Director, Water Quality, Operations Division

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**COMMITTEE:** Personnel and Compensation

           INFORMATION  
  X   VOTE

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

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

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**RECOMMENDATION:**

To approve the appointment of Ms. Kimberly LeBeau to the position of Director, Water Quality, Operations Division (Non-Union Grade 15) at an annual salary of \$168,205, commencing on a date to be determined by the Executive Director.

**DISCUSSION:**

At the February meeting of the Board of Directors, staff presented a reorganization plan for the existing Department of Environmental Quality that creates two departments, one focusing solely on wastewater reporting and compliance issues (Department of Environmental Quality) and the other focusing solely on drinking water reporting and compliance issues (Department of Water Quality). At the same meeting, the Board approved the creation of a new position, the Director, Water Quality (Non-Union Grade 15) to oversee the Department of Water Quality.

The duties of the Director, Water Quality position include directing the collection and analysis of drinking water and environmental quality data for compliance with Massachusetts Department of Environmental Protection Drinking Water Regulations; reviewing drinking water treatment processes and targets and the monitoring of compliance with Safe Drinking Water Act and other water regulations; and providing broad technical assistance in environmental, technical and scientific assessments, testing and monitoring. Staff advertised both the Director, Environmental Quality and the Director, Water Quality positions simultaneously to have an opportunity for transition and information transfer from the existing Department Director to the two new Department Directors.

**Selection Process**

The position of Director, Water Quality was posted internally and externally. Seven candidates applied for the position, one internal candidate and six external candidates. One internal and one external candidate were interviewed by the Deputy Chief Operating Officer, Director of Waterworks, and the Special Assistant for Affirmative Action. Ms. LeBeau was determined to be

the most qualified candidate for the position based on a combination of experience, abilities, knowledge, skills, and education.

Ms. LeBeau started at MWRA as an intern and then joined the Authority as a full-time employee in 1999. She is currently the Senior Program Manager - Water Quality. In this role, she manages the program's Water Quality Assurance staff, oversees MWRA's water quality monitoring program and compliance with state and federal regulations, and develops and maintains the program's emergency response plans. Recently, Ms. LeBeau assisted with the planning and training of a team of over 30 MWRA staff to implement a fluoride tracer study. Ms. LeBeau has also given a variety of presentations and provided training for MWRA member communities and at state and regional conferences.

Prior to her current role, Ms. LeBeau held the positions of Program Manager – Water Quality and Program Manager – Quality Assurance. In these roles, she was responsible for the regulatory sampling and compliance with several Safe Drinking Water Act requirements and working with member communities to address customer complaints and conduct distribution system sampling. She also oversaw vendor compliance with wastewater treatment chemical contracts and developed MWRA procedures and provided training on chemical safety, hazardous and universal waste storage, and chemical spill response. In addition, Ms. LeBeau was the quality assurance representative for the startup for the Carroll Water Treatment Plant, Norumbega Covered Storage Tank, and the MetroWest Tunnel.

Ms. LeBeau is currently a Mentor in MWRA's mentorship program. Ms. LeBeau holds a Bachelor of Science in Multidisciplinary Studies and a Master of Arts from Tufts University in Urban and Environmental Policy. She also holds a Massachusetts Water Treatment Grade II Full Operator License.

**BUDGET/FISCAL IMPACTS:**

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

**ATTACHMENTS:**

- Resume of Kimberly LeBeau
- Position Description
- Director, Water Quality Organizational Chart

# KIMBERLY B. LEBEAU

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## EXPERIENCE

### MASSACHUSETTS WATER RESOURCES AUTHORITY

#### Senior Program Manager - Water Quality

2018 - Present

- Exercises direct supervision of four managers and indirect management of all Water Quality Assurance staff. Coordinates preparation of staffing plans and communicates personnel policies. Manages department expense budget and monitors spending; supports procurements and contract management.
- Oversees MWRA's water quality monitoring program and compliance with state and federal drinking water regulations. Analyzes monitoring data and communicates updates to MWRA's Water Quality Team, community officials, and regulators.
- Develops and manages emergency response plans including those for bulk chemical supply, treatment chemical disruptions, turbidity, customer complaints, corrosion control, total coliform, *E. coli*, *Giardia* and *Cryptosporidium* detection, reservoir algae control, and water contamination. Assists MWRA's consecutive community systems and senior management during emergencies or training drills by leading discussions on water quality issues.
- Executed a successful fluoride tracer study including leading a team with planning and training of over 30 MWRA volunteers; responsible for overall sample plan development, execution and communication during study.
- Reviews treatment plant and system water quality performance to recommend treatment changes.
- Directs preparation and timely submission of regulatory reports to EPA, DEP, and DPH. Manage drinking water data used for routine reporting including monthly and quarterly updates, process control reports, and annual Consumer Confidence Reports.

#### Program Manager - Water Quality

2014 - 2018

- Supervised Lab Supervisor and up to four full-time and temporary employees.
- Executed MWRA's regulatory sampling schedule for compliance with the Revised Total Coliform Rule, Optimal Water Quality Parameters, Disinfection Byproducts Rule, Fluoridation, Surface Water Treatment Rule and the Unregulated Contaminants Monitoring Rule.
- Communicated with water superintendents and facilitated community assistance for customer complaints, coliform assessments, distribution system sampling, chlorine decay investigations, and boil water order preparations.
- Coordinated algae and algal toxin monitoring and led efforts to commence toxin screening in-house. Utilized buoy monitoring data and algal counts to determine need for enhanced monitoring.
- Participated in the startup of new or recently maintained water storage tanks and pipelines pertaining to disinfection and clearance sampling.
- On-call management of water quality issues including turbidity, microbiological detections, or continuous analyzer alarms.

#### Project Manager - Quality Assurance

1999 - 2014

- Oversaw vendor compliance for all bulk water and wastewater treatment chemical contracts valued over \$15 million. Facilitated emergency chemical procurement during manufacturing shortages, emergencies, and wet weather events. Analyzed chemical use throughout contract term.
- Successfully managed four DEP unannounced hazardous waste and underground storage tank audits. Developed procedures for Western Operations environmental compliance and permitting. Managed contractors tasked with performing environmental inspections and maintenance.
- Delivered training on chemical safety, hazardous and universal waste storage, and chemical spill response.
- Acted as Quality Assurance construction start-up representative for new drinking water facilities including but not limited to Carroll Water Treatment Plant, Norumbega Covered Storage Tank, and the MetroWest Tunnel.
- Created chemical acceptance procedures and delivered on-shift Operator training.

## **DEPARTMENT OF ENVIRONMENTAL PROTECTION, SOUTHEAST REGION**

### **Regional Planner III, Bureau of Waste Site Cleanup**

1999

- Oversaw Public Involvement Plan activities for the Massachusetts Contingency Plan.
- Participated in public meetings and educated citizen groups.

## **MASSACHUSETTS WATER RESOURCES AUTHORITY**

### **Waterworks Operations Contract Employee**

1998 - 1999

### **Waterworks Operations and Program Management Division Intern**

1995 - 1998

- Performed air dispersion modeling and developed chlorine gas Risk Management and Emergency Response Plans for MWRA's Norumbega Facility. Coordinated regulatory compliance actions for EPA's Clean Air Act 112r Accidental Release Prevention Requirements.
- Analyzed industry-wide practices for chemical delivery, testing, and quality assurance of drinking water chemicals.
- Performed construction change order audits of Boston Harbor contracts. Identified and resolved discrepancies.

## **EDUCATION**

### **TUFTS UNIVERSITY**

*M.A., Urban and Environmental Policy, 1998*

*Thesis: The Importation of Liquefied Natural Gas into Boston Harbor: Challenges for Risk Management*

*Coursework: Emergency Response Planning, Environmental Compliance & Management*

### **UNIVERSITY OF MASSACHUSETTS DARTMOUTH**

*B.S., Cum Laude, Multidisciplinary Studies, 1995*

*Coursework: Regulatory Policy and Oversight, Ecology, Oceanography*

Board of Governors Chairperson, Vice-President Class of 1995, Honorary Degree Committee

## **CERTIFICATIONS AND MEMBERSHIPS**

Massachusetts Water Treatment Grade II Full Operator License

Massachusetts DEP Underground Storage Tank (UST) Class A/B Operator Certificate

Member NEWWA & AWWA, 2014-Present; Massachusetts Waterworks Association, 2020-Present

Massachusetts Waterworks (MWWA) Education Committee, 2022-Present

NEWWA: Laboratory Operations Committee, 2017-2019; Bulk Chemical Delivery Committee/Trainer, 1998-2002

MWRA Emergency Services Unit – Site Characterization Team, 2004-2014 and Local Safety Committee, 1998-2014

MWRA's 2021 Core Growth "Building Water's Future Leaders Program"; subsequently mentored four staff 2021-Present

## **TRAINING**

OSHA/EPA HAZWOPPER 40-Hour Hazardous Waste Site Worker, OSHA/EPA 24-Hour Hazardous Material Worker

Protection & Incident Commander, OSHA 10-Hour Construction Safety, OPA-90 QI, ICS-300 & NIMS

## **PRESENTATIONS**

NEWWA Spring Conference 2014: *Implementing a Treatment Chemical Acceptance Program*

MWRA's Emergency Response Plan Training for consecutive systems, 2015-2023 – various water quality presentations

NEWWA Annual Conference 2019: *Hope for the Best, Plan for the Worst: Develop a Coliform Detection Response Plan*

NEWWA Spring Conference 2022: *Learning to Pivot during Supply Chain Disruptions*

MWWA Training 2024: *Executing a Successful Revised Total Coliform Rule Sampling Program*

**MWRA  
POSITION DESCRIPTION**

**POSITION:** Director, Water Quality

**DIVISION:** Operations

**DEPARTMENT:** Water Quality

**BASIC PURPOSE:**

Directs the collection and analysis of drinking water and environmental quality data for compliance with Massachusetts Department of Environmental Protection (MassDEP) Drinking water regulations. Directs the review of drinking water treatment processes and targets and the monitoring of compliance with Safe Drinking Water Act (SDWA) and other water regulations. Makes recommendations for treatment changes and adjustments. Defines the responsibilities and scope of technical and environmental studies related to drinking water quality. Provides broad technical assistance in environmental, technical and scientific assessments, testing and monitoring. Tracks new drinking water regulations, works with relevant professional and regulatory groups to furnish comments, and provides implementation guidance to ensure compliance with new regulations.

**SUPERVISION RECEIVED:**

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

**SUPERVISION EXERCISED:**

Exercises direct supervision over one Senior Program Manager and one Project Manager and indirect management of drinking water quality assurance staff.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Provides intra-divisional coordination with users of drinking water treatment performance data and laboratory services so that data analysis and recommendations for division operation and capital project decisions are available to the division managers and the Executive Director.
- Reviews and comments on relevant state and federal environmental regulations including all relevant drinking water regulations.

- Analyzes monitoring data and prepares and presents results to Authority staff, the Board of Directors, state and federal regulatory agencies, the academic community, environmental advocacy groups, and the general public as needed.
- Assists in the development of consumer confidence reports (water quality reports).
- Directs the preparation and submission of required reports for regulatory agencies and related special projects.
- Seeks funding for studies, such as cooperative research projects, which will complement MWRA goals.
- Directs the timely monitoring of and reporting on drinking water quality, including sampling, testing, data analysis and interpretation of results.
- Directs the review of drinking water treatment processes and targets, and the monitoring of compliance with SDWA and other drinking water regulations. Makes recommendations for treatment changes and adjustments.
- Directs reservoir operations relating to algae control.
- Oversees staff participation in the start-up of new facilities, including development of facility handbooks, Standard operating procedures (SOPs), Operation and Maintenance (O&M) manuals and training programs.
- Directs the resolution of community or public drinking water quality complaints. Oversees timely notification and participates in emergency response for drinking water quality incidents.
- Informs various groups regarding departmental activities. Provides regulatory agencies and the public with requested information in a professional and timely manner.
- Provides assistance to other departments as directed for the review or development of environmental research and monitoring programs.
- Coordinates special project requests with existing water department programs.
- Reviews drinking water quality monitoring programs in other regions of the country for applicability to Authority goals.
- Manages the department in a manner that is consistent with MWRA's goals of Diversity, Equity, and Inclusion.

- Administers human resources policies, provides direction and coordinates the selection, supervision, training and evaluation of department personnel.
- Coordinates preparation of departmental staffing plan, budget and schedule and monitors the implementation of departmental objectives in keeping with budget parameters.

**SECONDARY DUTIES:**

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Analytical and research skills through a Master's degree in chemistry, biology, environmental sciences or related field is required. Doctoral degree is preferred; and
- (B) At least ten (10) years of experience in developing and evaluating environmental research programs and budgets and applying technical information to drinking water quality monitoring of which at least five (5) years were in a supervisory or managerial capacity; or
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Understanding of environmental research principles and practices.
- (B) Excellent interpersonal, management and written and oral communication skills.
- (C) Familiarity with water infrastructure issues.
- (D) Extensive knowledge and experience with federal and state environmental regulations.
- (E) Knowledge of federal, state and local laws related to water quality.
- (F) Understanding of water quality issues.
- (G) Demonstrated ability to manage a large staff of field workers.
- (H) Demonstrated ability to plan, organize, direct, train and assign duties to subordinates.
- (I) Excellent analytical, negotiation, and strategic planning skills.

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

**SPECIAL REQUIREMENTS:**

A valid Massachusetts Class D Motor Vehicle Operators License.

Must be available for on-call assignments and responding to emergencies on a 24/7 basis.

A valid Massachusetts Grade II Water Treatment-Operator-in-training or Grade II Water Distribution Operator-in-training license or higher is preferred.

**TOOLS AND EQUIPMENT USED:**

Laboratory equipment and instruments, telephone, mobile radio, personal computer including word processing and other software, copy and fax machine.

**PHYSICAL DEMANDS:**

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

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

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

## **WORK ENVIRONMENT:**

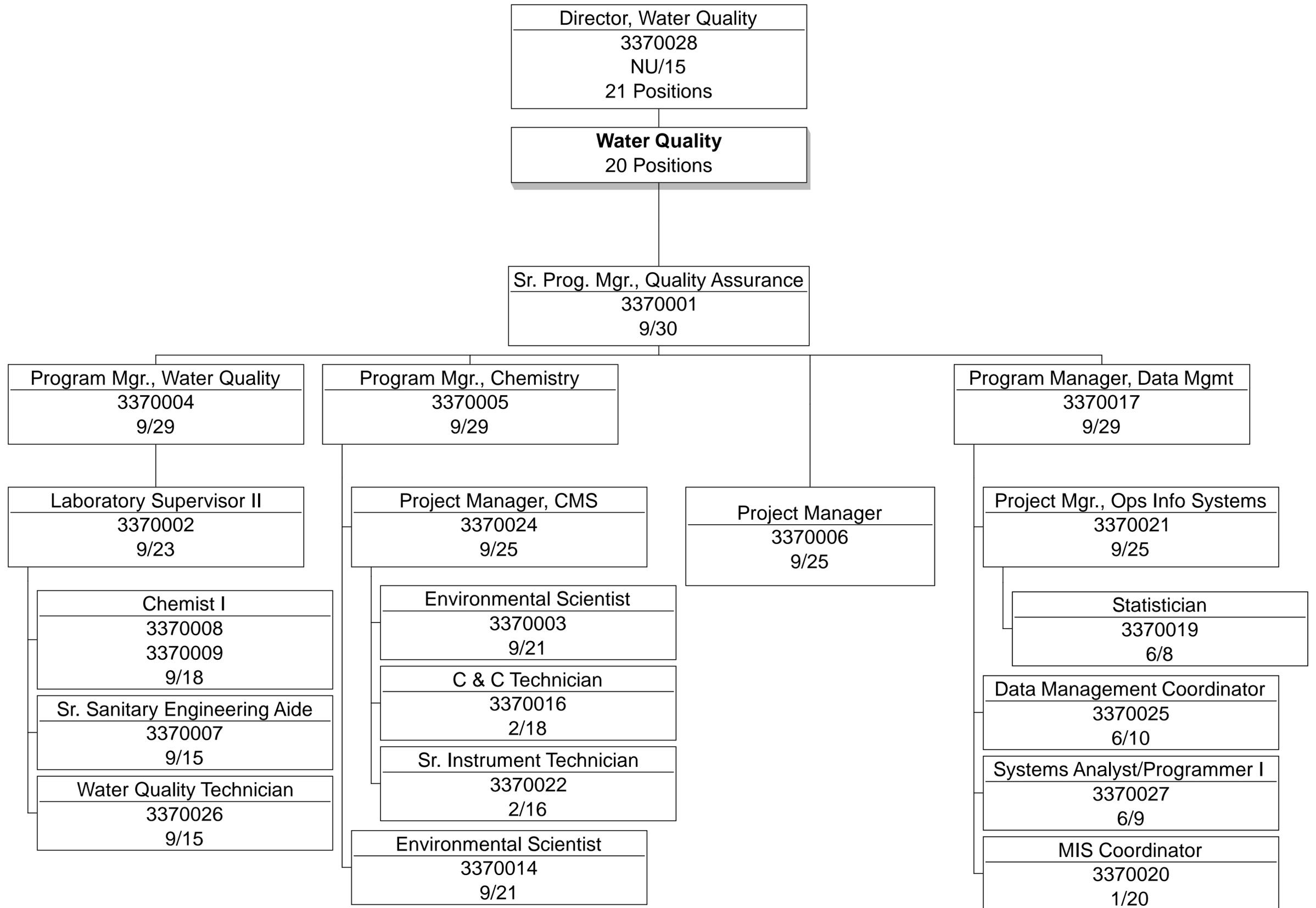
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee usually works in an office environment. The employee occasionally works in water and wastewater treatment facilities near moving mechanical parts and is occasionally exposed to wet and/or humid conditions and vibration. The employee is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals, infectious organisms, and risk of electric shock. The employee occasionally works in high, precarious places and is exposed to outside weather conditions. The employee occasionally works on board boats.

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

**February 2024**

# Water Quality



**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** April 17, 2024  
**SUBJECT:** Appointment of Director, Environmental Quality, Operations Division



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**COMMITTEE:** Personnel and Compensation

       INFORMATION  
  X   VOTE

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



David W. Coppes  
Chief Operating Officer

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**RECOMMENDATION:**

To approve the appointment of Mr. David Wu to the position of Director, Environmental Quality, Operations Division (Non-Union Grade 15) at an annual salary of \$168,205, commencing on a date to be determined by the Executive Director.

**DISCUSSION:**

At the February Board of Directors meeting, staff presented to the Board a reorganization plan of the existing Department of Environmental Quality that creates two Departments, one focusing solely on wastewater reporting and compliance issues (Department of Environmental Quality) and the other focusing solely on drinking water reporting and compliance issues (Department of Water Quality). The duties of the Director, Environmental Quality position were revised as part of the reorganization and the position will be responsible for directing the collection and analysis of wastewater and environmental quality data to provide guidance to Wastewater Operations, Toxic Reduction and Control, and Residuals. The Director oversees the implementation of the requirements included in MWRA's National Pollutant Discharge Elimination System (NPDES) permits, tracks new Clean Water Act and other relevant regulations, works with professional and regulatory groups to furnish comments, and provides implementation guidance and technical assistance to ensure compliance with new regulations and existing and future wastewater permits.

At the same meeting, the Board also approved the creation of a new position, the Director, Water Quality (Non-Union Grade 15) to oversee the Department of Water Quality. Staff proceeded with advertising both the Director, Environmental Quality and the Director, Water Quality positions simultaneously to have an opportunity for transition and information transfer from the existing Department Director to the two new Department Directors.

**Selection Process**

The position of Director, Environmental Quality was posted internally and externally. One candidate applied for the position and was interviewed by the Deputy Chief Operating Officer, Director of the Deer Island Treatment Plant, and Special Assistant for Affirmative Action. Mr. Wu was determined to be highly qualified for the position based on a combination of experience,

abilities, knowledge, skills, and education. Mr. Wu has a clear understanding of the regulatory framework under which MWRA operates and extensive knowledge of MWRA's NPDES permits and the permitting process.

Mr. Wu has been with MWRA's Environmental Quality - Wastewater Department since 2000. During that time, he has acted in a variety of capacities; he is currently the Senior Program Manager of Environmental Monitoring, overseeing MWRA's Harbor and Outfall Monitoring Program. During his tenure, he managed MWRA's Harbor and Outfall Monitoring contracts, ensuring quality deliverables and working with the Outfall Monitoring Science Advisory Panel and other partners to communicate the results of this work. Recently, Mr. Wu became a member of the Northeastern Regional Association of Coastal Ocean Observing Systems Board of Directors. Mr. Wu has given numerous presentations on a range of topics over the last ten years on MWRA's extensive monitoring program.

Prior to his current role, Mr. Wu was the Program Manager of Environmental Compliance and Monitoring where he was responsible for ensuring compliance with the NPDES permit for the Deer Island Treatment Plant and determining how new and revised regulations impact wastewater operations. Early in his career, he helped to complete the NPDES permit application for the Deer Island Treatment Plant that was issued in 2023 as draft for public comment.

Mr. Wu is currently a Mentor in MWRA's mentorship program. Mr. Wu holds a Bachelor of Arts in History and Masters of Environmental Management from Duke University. He also holds a Massachusetts Grade IV Collections Systems Certification and passed the Massachusetts Grade VI Operator Treatment License exam.

**BUDGET/FISCAL IMPACTS:**

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

**ATTACHMENTS:**

- Resume of David Wu
- Position Description
- Director, Environmental Quality Organizational Chart

# DAVID C. WU

## PROFESSIONAL EXPERIENCE

### Massachusetts Water Resources Authority, Boston, MA Environmental Quality – Wastewater Department

#### Senior Program Manager, Environmental Monitoring (September 2021 – present)

Responsible for all aspects of MWRA's Harbor and Outfall Monitoring (HOM) program in Massachusetts Bay and Boston Harbor. Oversee in-house MWRA monitoring program in Boston Harbor and its tributary rivers. Convey monitoring results from the programs to the MWRA senior management, the Outfall Monitoring Science Advisory Panel (OMSAP), regulatory agencies, and the public.

- HOM Program
  - Contract manager for HOM contracts OP-401A/B and OP-466, with approximately \$1.6 million budget annually.
    - Communicate, coordinate, and manage work with two environmental consulting firms.
    - Develop Task Order scopes of work and coordinate initiation of Task Orders.
    - Ensure timely delivery and technical review of monitoring data and other deliverables. Manage the review process with other MWRA staff.
    - Develop budgets with the department Director and Senior Analyst.
    - Submit monthly accruals to and confirm invoice payments with MWRA financial staff.
  - Oversee other HOM contracts with the Center for Coastal Studies (OP-453), Deltares USA (OP-442), Bowdoin College, and University of Maine.
  - Responsible for procuring and amending (i.e., developing scopes of service and coordinating with Procurement staff) consultant contracts related to the program.
- Oversee Environmental Quality staff involved in the running of the in-house monitoring program of Boston Harbor, including monitoring and reporting required by the CSO Variances for the Charles and Mystic Rivers.
- Act as one of the primary MWRA contacts to OMSAP and regulatory agencies for questions regarding MWRA environmental monitoring. Present monitoring results at OMSAP public meetings.
- MWRA contact for other state and regional environmental and scientific groups such as the Department of Conservation and Recreation (DCR), the Massachusetts Division of Marine Fisheries (DMF), the MassBays program, and the Northeastern Regional Association of Ocean Observing Systems (NERACOOS), as well as academic and government researchers interested in HOM program data.
- Work closely with the department's data management group to ensure smooth flow of monitoring data from consultants and DLS to ENQUAL's Oracle database.
- Regulatory Compliance
  - Reviewed and provided comments on the 2023 draft Deer Island NPDES permit, and lead author for the Ambient Monitoring section of MWRA's comment letter. Coordinated a consultant Task Order that provided outside expertise on the draft Ambient Monitoring provisions.
  - Track, with department staff, regulatory and scientific developments regarding contaminants of emerging concern, especially PFAS compounds and microplastics.
  - Responsible for interpreting regulations and regulatory documents (e.g., Massachusetts Water Quality Standards, the MWRA Deer Island NPDES permit) to ensure MWRA programs meet regulatory requirements and to inform analysis of monitoring program data.
  - Lead author for Contingency Plan exceedance letters involving ambient monitoring Contingency Plan thresholds.
  - Coordinate Contingency Plan threshold testing with the department data management group.
  - Coordinate submittal of NPDES permit-required reports from the HOM program with Environmental Quality NPDES staff.
  - Member of MWRA's NPDES Steering Committee.
- Member of selection committee for contract OP-442, "Modeling Massachusetts Bay Water Quality" and secretary of the selection committee for contract OP-466 "Harbor and Outfall Monitoring, 2024-2027".
- Member of the NERACOOS Board of Directors.
- Supervise three technical staff.

### **Acting Senior Program Manager, NPDES (April – June 2019)**

Responsible for all NPDES permit compliance activities for MWRA's water and wastewater facilities, including reporting monitoring results from the HOM program, and continued with several responsibilities from the Program Manager, Environmental Compliance and Monitoring position.

### **Program Manager, Environmental Compliance and Monitoring (February 2016 – September 2021)**

Responsible for Boston Harbor and tributary rivers water quality monitoring and NPDES permit compliance.

- Water Quality Monitoring
  - Managed, in conjunction with DLS staff, Boston Harbor and tributary rivers (Charles, Mystic, and Neponset) field monitoring projects carried out by DLS's Indigo Team, including the development and management of a storm sampling program for the CSO Post Construction Monitoring and Performance Assessment.
  - Analyzed data from the Charles and Mystic River monitoring projects and wrote technical reports in support of the CSO Variance for those receiving waters.
  - Coordinated permit-required bacterial sampling in Massachusetts Bay with the Indigo Team; results of this sampling are sent to DMF.
  - Coordinated bacterial monitoring of Boston Harbor beaches with DLS, DCR, and DCR's consultant.
  - Participated in workshops and kept up to date on upcoming changes to state water quality standards.
  - Provided technical assistance with harbor, river, and beach monitoring data to other ENQUAL and MWRA staff.
- Permit Compliance
  - Provided technical assistance and oversight to coworkers working on wastewater and water NPDES issues, especially pertaining to the Deer Island Treatment Plant, CSO facilities, and wastewater operations.
    - Involved in 2017 preparations for the new NPDES permit for Clinton Treatment Plant, as well as review of the final permit.
    - Member of discussion groups regarding a future Deer Island NPDES permit and preparing possible MWRA responses to regulators.
  - Reviewed, and if necessary, commented on proposed NPDES permits and proposed regulations that might impact NPDES permits.
  - Authored an analysis of *Enterococcus* in Deer Island effluent and Massachusetts Bay, examining future permit compliance implications of an *Enterococcus* effluent limit; results were presented at the 2017 NEWEA Annual Conference.
  - Member of MWRA's NPDES Steering Committee and CSO Public Notification team.
  - Part of the NPDES On-Call Manager and Wet Weather Manager rotations, which provided 24/7 response to potential NPDES issues and support for web-based near real-time reporting of CSO and SSO discharges, respectively.
- CSO Post Construction and Monitoring Performance Assessment
  - Participated in the initial scope development for DEP.
  - Developed and managed the CSO facility influent sampling program with TRAC and DLS.
  - Developed and coordinated stormwater and untreated CSO sampling program with TRAC, DLS, and the communities of Arlington, Cambridge, Medford, and Somerville.
  - Reviewed and commented on numerous consultant (AECOM) documents regarding the development, calibration, and results from the water quality models for the Charles River and Alewife Brook/Mystic River.
  - Continued to assist in reviewing water quality analysis results.
- Acted as a contact point for outside groups (e.g., DMF, BWSC, Mystic River Watershed Association, etc.) for NPDES and water quality questions and data requests.
  - Member of the Technical Advisory Committee for the Mystic River Phosphorus Alternative TMDL.
  - Member of the Save the Harbor/Save the Bay Beaches Science Advisory Committee.
  - Coordinated annual meetings between DLS, ENQUAL, and local watershed associations.
- Worked with the department's data management group to streamline data management issues relating to harbor, river, NPDES reporting, and wastewater operational data.
- Selection committee member for contract OP-420, "Wastewater Monitoring for COVID-19."
- Supervised two technical staff, as well as summer interns.

### **Project Manager** (April 2015 – February 2016)

Coordinated effluent and HOM environmental monitoring projects for the Deer Island Treatment Plant and CSO treatment facilities.

- Interpreted and reported NPDES permit-required whole effluent toxicity (WET) testing results from the Authority's wastewater facilities.
- Communicated with the WET testing contract lab, as well as TRAC and DLS, regarding sampling schedules and issues with test results and interpretations.
- Analyzed results from permit-required flounder, lobster, and mussel biomonitoring projects in Boston Harbor and Massachusetts Bay in collaboration with other MWRA staff and outside consultants.
- Communicated with the consultant, the department's data management group, and DLS regarding both collection and analysis status and general project progress for the effluent biomonitoring project.
- Assisted with the development of water quality factsheets on Boston Harbor beaches, and text and graphics for the 2015 CSO Annual Report.
- Provided technical assistance to coworkers working on NPDES issues.
- Member of the NPDES Steering Committee, and the NPDES On-Call Manager rotation as detailed above.
- Continued to work on projects from the Environmental Scientist position: primarily beach and river data analysis, marine mammal sightings, and internal and external data requests.

### **Environmental Scientist** (December 2000 – April 2015)

NPDES permit compliance specialist for the Deer Island Treatment Plant and CSO facilities.

- Generated permit-required monthly discharge monitoring reports for the public and regulators.
- Co-authored a study examining the two 2014 WET test failures at the Clinton Treatment Plant, looking for linkages between historical effluent, plant process data, and the test failures.
- Wrote and edited several permit-related annual reports (e.g., Deer Island NPDES compliance report, technical survey of nitrogen removal technologies, marine mammal observation summary).
- Managed permit-related deliverables, including ambient monitoring and Contingency Plan items; approximately 75 annually. Coordinated with the department's webmaster to make deliverables available online.
- Extensive experience with MWRA's database system for treatment plant and CSO facility operational and sampling data. Responded to internal and external requests for that data.
- Assisted on permit-related duties related to the Clinton Treatment Plant, including review of the 2010 and 2013 draft permits.
- Reviewed current and potential regulations pertaining to the MWRA's wastewater treatment facilities.
- Responsible for permit-related pages in the MWRA's Yellow and Orange Notebooks.
- Member of the NPDES Steering Committee, and the NPDES On-Call Manager rotation as detailed above.
- During the swimming season, analyzed and posted to the web daily beach monitoring data.
- In conjunction with coworkers, collated and analyzed river monitoring data for CSO variance reporting.
- Miscellaneous tasks relating to the Authority's environmental monitoring programs (e.g., entering data on marine mammal sightings, checking data for QA/QC purposes).

### **SELECTED PRESENTATIONS AND POSTERS**

NEWEA 2017 Annual Conference, "Indicator bacteria: disinfection and dilution protect Massachusetts Bay,"  
January 24, 2017

Boston Harbor and Islands Science Symposium, "25 Years of Monitoring Data" (poster), April 12, 2017

Northeastern University Marine Science Center, "MWRA Environmental Monitoring," September 20, 2017 (with  
Ken Keay)

Alewife Corridor Resilience Symposium, "MWRA and Alewife Brook," January 20, 2018

Outfall Monitoring Science Advisory Panel, "Indicator bacteria: disinfection and dilution protect Massachusetts  
Bay," February 28, 2018

Mystic Science Forum, "MWRA Monitoring in the Mystic/Alewife," April 30, 2019

Mystic River Steering Committee, "MWRA Sampling Update 2019," June 4, 2020

Co-presenter, Wastewater Advisory Committee, CSO Assessment WQ model update, December 4, 2020

Outfall Monitoring Science Advisory Panel, "2019 Nitrogen Load Exceedance," May 11, 2021 (with Ken Keay)

Outfall Monitoring Science Advisory Panel, "2021 Exceedances of Low Dissolved Oxygen Saturation in  
Stellwagen Basin and *Alexandrium*," December 6, 2021

Outfall Monitoring Science Advisory Panel, "MWRA's Outfall Monitoring: 2021 results," February 10, 2023

Outfall Monitoring Science Advisory Panel, "MWRA's Outfall Monitoring: 2022 Outfall Monitoring Overview  
and Contingency Plan Exceedances," February 9, 2024

## **OTHER EXPERIENCE**

**Recruiting Assistant** (Summer – Fall 2000)  
Office of Career Services, Harvard University, Cambridge, MA

**Fisheries Habitat Researcher** (Summer 1999)  
North Carolina Environmental Defense Fund, Raleigh, NC

**Staff Assistant** (Summer 1998)  
Office of Continuing Education, Duke University Divinity School, Durham, NC

**Marine Sciences Summer Intern** (Summer 1996)  
College of Marine Sciences, University of Delaware, Lewes, DE

## **EDUCATION**

**Master of Environmental Management**, May 2000  
Nicholas School of the Environment, Duke University, Durham, NC  
*Concentration:* Coastal zone management  
*Master's project:* Ecological and Political Dynamics of Fish Nursery Areas: Marshallberg, NC

**Bachelor of Arts**, May 1997  
Duke University, Durham, NC  
*Major:* History; coursework for marine biology  
*Honors:* Dean's List, 6 semesters.

## **LICENSES AND CERTIFICATIONS**

Massachusetts Grade 6-Combined Wastewater Operators License (#17393; When and If status)  
NEWEA Grade IV Collection Systems Certification (#C-6726)

## **COMPUTER SKILLS**

Extensive experience with Microsoft Office applications, OriginLab Origin Pro, and Adobe Acrobat Pro  
Knowledge of Adobe Illustrator, InDesign, and Photoshop, ESRI ArcMap, and Oracle SQL Developer  
Extensive experience with MWRA and Environmental Quality – Wastewater database systems  
Basic knowledge of HTML and SQL

## **ADDITIONAL INFORMATION**

Selected for “Core Growth – Building Water’s Future Leaders” program, January – July 2021  
MWRA Supervisory Development training  
Mentor in MWRA’s Mentoring Program, 2023-24  
NEWEA/WEF member, 2017-2024

**MWRA  
POSITION DESCRIPTION**

**POSITION:** Director, Environmental Quality

**DIVISION:** Operations

**DEPARTMENT:** Environmental Quality

**BASIC PURPOSE:**

Directs the collection and analysis of wastewater and environmental quality data to provide guidance to Wastewater Operations, Toxic Reduction and Control (TRAC), and Residuals. Directs the review of wastewater treatment processes and targets and the monitoring of compliance with all National Pollutant Discharge Elimination System (NPDES) permits. Tracks new Clean Water Act (CWA) and other relevant regulations, working with professional and regulatory groups to furnish comments, and provides implementation guidance to ensure compliance with new regulations. Defines the responsibilities and scope of technical and environmental studies related to river and oceanographic monitoring. Provides broad technical assistance in environmental, technical and scientific assessments, testing and monitoring. Assists other MWRA departments with implementation of compliance programs related to emerging contaminants. Oversees the implementation of the requirements within NPDES permits for MWRA's water and wastewater facilities.

**SUPERVISION RECEIVED:**

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

**SUPERVISION EXERCISED:**

Exercises general supervision over two Senior Program Managers, support staff, and indirect management of wastewater and environmental professional staff.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Provides intra-divisional coordination with users of wastewater treatment performance and harbor and outfall monitoring data and laboratory services so that data analysis and recommendations for division operation and capital project decisions are available to the division managers and the Executive Director.
- Oversees the management of the database of harbor and outfall monitoring. Reviews wastewater data quality.

- Chairs the NPDES steering committee (an interdepartmental MWRA committee) that coordinates MWRA NPDES activities.
- Reviews and comments on state and federal environmental regulations, such as Massachusetts's Surface Water Quality Standards and the Sewage Notification Regulations.
- Review new wastewater or stormwater regulations and impacts to MWRA facilities and operations (e.g., upcoming Residual Designation Authority (RDA) requirements).
- Coordinates data reporting and tracking of contaminants of emerging concern in wastewater (including TRAC, Wastewater Operations, and Biosolids). Assists with implementation of compliance programs related to contaminants of emerging concern.
- Analyzes monitoring data and prepares and presents results to Authority staff, the Board of Directors, state and federal regulatory agencies, the academic community, environmental advocacy groups, and the general public.
- Oversees the harbor and outfall monitoring program as required in MWRA's NPDES permits and Combined Sewer Overflow (CSO) variances and to measure the effectiveness of MWRA programs including the long-term CSO control program and wastewater treatment.
- Negotiates NPDES permit requirements and monitoring plans with state and federal agencies.
- Directs the preparation and submission of required reports for regulatory agencies and related special projects.
- Coordinates consultant selection process for harbor and outfall monitoring services.
- Seeks funding for studies, such as cooperative research projects, which will complement MWRA goals.
- Informs various groups regarding departmental activities. Provides regulatory agencies and the public with requested information in a professional and timely manner.
- Provides assistance to other departments as directed for the review or development of environmental research and monitoring programs.
- Coordinates special project requests with existing wastewater department programs.
- Reviews water pollution abatement and impact efforts in other regions of the country for applicability to Authority goals.

- Manages the department in a manner that is consistent with MWRA's goals of Diversity, Equity, and Inclusion.
- Administers human resources policies, provides direction and coordinates the selection, supervision, training and evaluation of department personnel.
- Coordinates preparation of departmental staffing plan, budget and schedule and monitors the implementation of departmental objectives in keeping with budget parameters.

**SECONDARY DUTIES:**

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Analytical and research skills through a Master's degree in chemistry, biology, environmental sciences or related field is required. Doctoral degree is preferred; and
- (B) At least ten (10) years of experience in developing and evaluating environmental research programs and budgets; and applying technical information to wastewater treatment and pollution control; of which at least five (5) years were in a supervisory or managerial capacity; or
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Understanding of environmental research principles and practices.
- (B) Excellent interpersonal, management and written and oral communication skills.
- (C) Familiarity with water and sewer infrastructure issues.
- (D) Extensive knowledge and experience with federal and state environmental regulations.
- (E) Knowledge of federal, state and local laws related to water quality, hazardous waste and wastewater discharges.
- (F) Understanding of water quality, toxics control and source reduction.
- (G) Demonstrated ability to plan, organize, direct, train and assign duties to subordinates.

- (H) Excellent analytical, negotiation, and strategic planning skills.
- (I) Ability to successfully interact with high-level executives.
- (J) Ability to maintain confidentiality and diplomacy.

**SPECIAL REQUIREMENTS:**

A valid Massachusetts Class D Motor Vehicle Operators License.

Must be available for on-call assignments and responding to emergencies on a 24/7 basis.

A valid Massachusetts Grade 4 Wastewater Treatment Plant Operator- in- training license or higher is preferred.

**TOOLS AND EQUIPMENT USED:**

Laboratory equipment and instruments, telephone, mobile radio, personal computer including word processing and other software, copy and fax machine.

**PHYSICAL DEMANDS:**

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

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

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

**WORK ENVIRONMENT:**

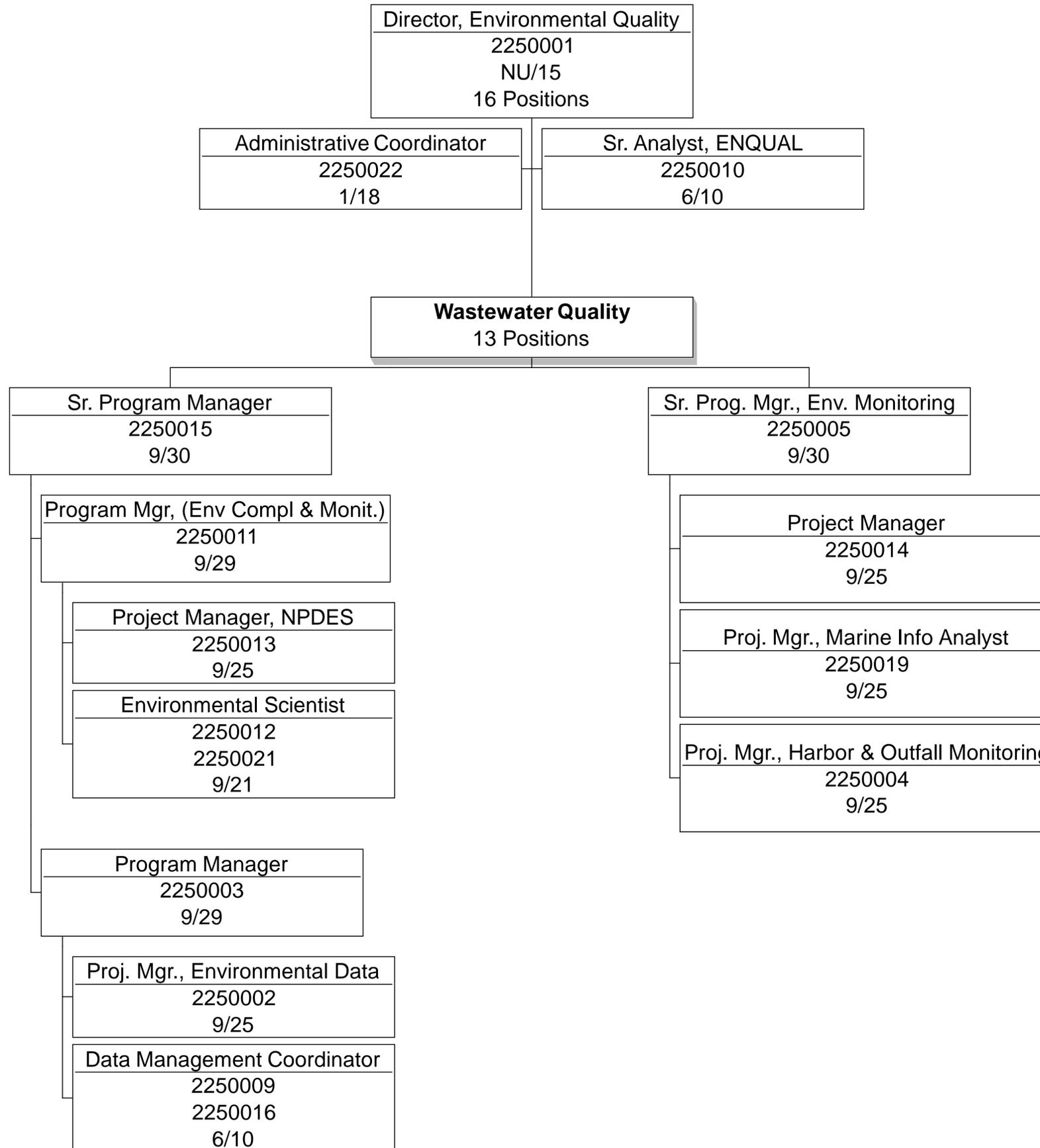
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee usually works in an office environment. The employee occasionally works in water and wastewater treatment facilities near moving mechanical parts and is occasionally exposed to wet and/or humid conditions and vibration. The employee is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals, infectious organisms, and risk of electric shock. The employee occasionally works in high, precarious places and is exposed to outside weather conditions. The employee occasionally works on board boats, both within Boston Harbor and its tributary rivers and on the open ocean.

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

**February 2024**

# Environmental Quality Operations



**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** April 17, 2024  
**SUBJECT:** Report on 2023 Water Use Trends and Reservoir Status



**COMMITTEE:** Water Policy & Oversight

INFORMATION  
 VOTE

Rebecca Weidman, Deputy Chief Operating Officer  
Daniel Nvule, Senior Program Manager  
Stephen Estes-Smargiassi, Director, Planning and Sustainability  
Preparer/Title

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

**RECOMMENDATION:**

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

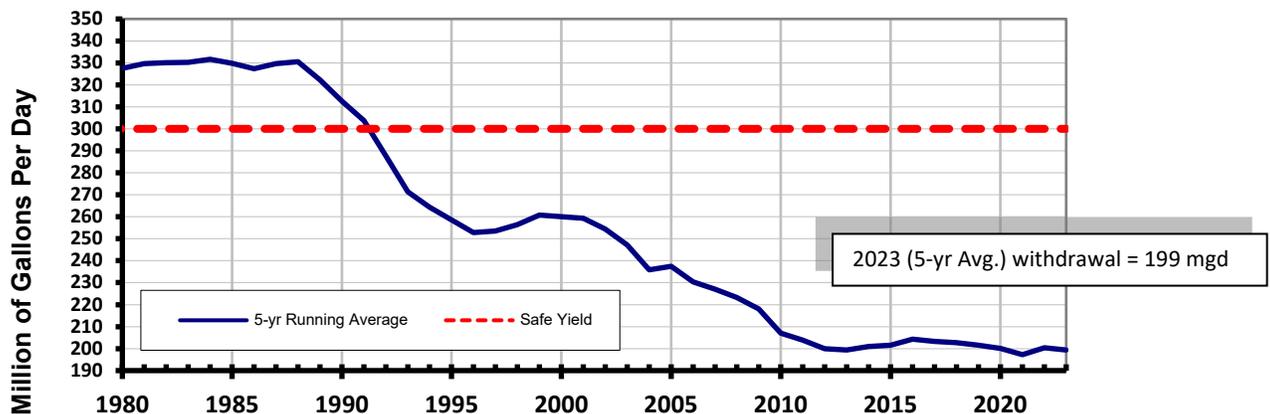
**DISCUSSION:**

This staff summary provides an overview of water consumption by communities, base and seasonal water use trends, and reservoir withdrawals and reservoir status.

Reservoir Withdrawals and Releases

Reservoir withdrawals are the metric used to compare to the 300 million gallons per day (mgd) safe yield of the watershed/reservoir system<sup>1</sup>. Figure 1 on the next page shows five-year averages of withdrawals from 1980 to the present. The five-year averaging reduces the effects of year-to-year variability due to weather and provides a good indication of longer-term trends.

**Figure 1. Total Reservoir Withdrawals – Five-Year Running Average 1980 to 2023**



<sup>1</sup> The 300 mgd safe yield is based on the drought of the 1960s. Use of a less conservative 20-year recurrence drought, as allowed by DEP, would result in a safe yield as high as 350 mgd. MWRA's Water Management Act registration is for 312 mgd.

Withdrawals include water sold to MWRA communities as well as other non-revenue generating uses in the watershed and MWRA system. Total MWRA water withdrawals decreased by 8.2 percent in 2023, from 211.6 mgd in 2022 to 194.3 mgd. The last time annual demand was that low was around 1950. The five-year average had a very slight decrease between 2022 and 2023.

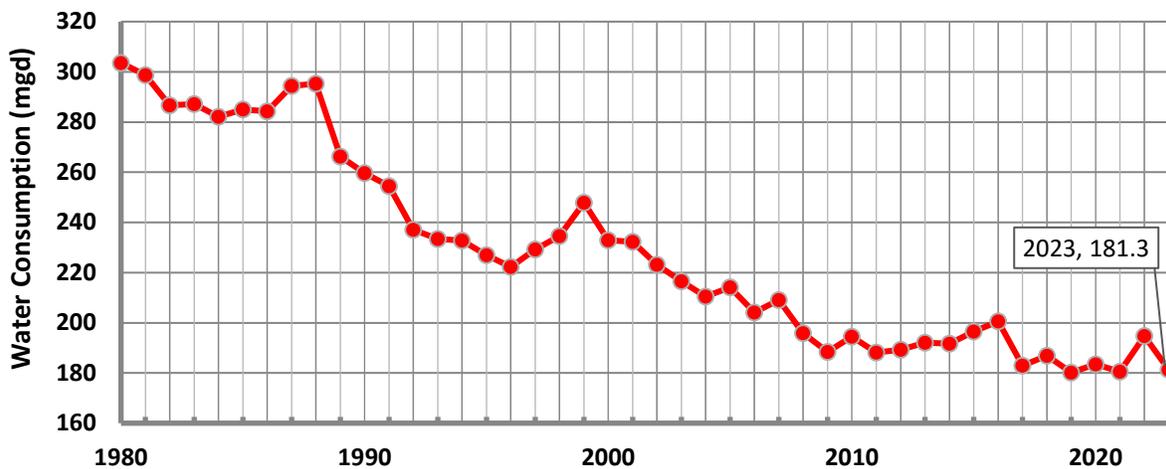
The pipeline supplying the McLaughlin Fish Hatchery in Belchertown had an average use of 6.13 mgd. MWRA activated the dedicated hydroelectric station and pipeline in December 2016. Without that withdrawal, total reservoir withdrawals in 2023 would have been 188.17 mgd.

Total reservoir withdrawals have decreased by over 130 mgd since the 1980's, even as the service area has expanded.

Water Consumption by MWRA Communities

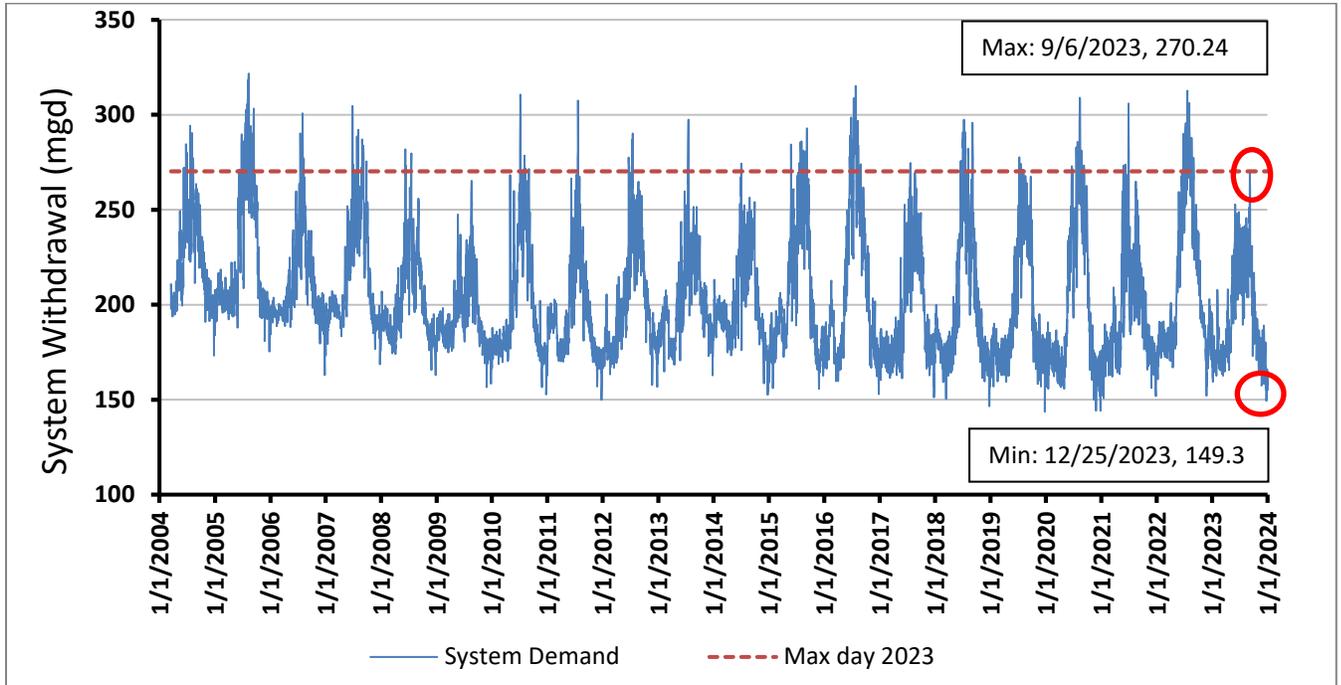
Water consumption by all MWRA communities of 181.3 mgd decreased by 6.8 percent (13.23 mgd) from 2022, as shown on Figure 2. In addition, Figure 2 illustrates a long term downward trend with a relative plateau in the last six years, even with new users.

**Figure 2. Total Consumption by MWRA Communities (1980 to 2023)**



System-wide, 2023 had a maximum day reservoir withdrawal of 270.24 mgd on September 6 (13.6 percent lower than the 2022 maximum). This was the second lowest maximum day in 15 years. At the opposite extreme, Christmas Day at 149.3 mgd was the lowest day of the year. Figure 3 shows daily system withdrawals from 2004-2023 with the 2023 highlights of maximum and minimum withdrawals.

**Figure 3. Daily System Withdrawals (2004 to 2023)**



Demand from MWRA’s largest customer, the Boston Water and Sewer Commission, was 60.31 mgd, which was slightly lower than last year by 0.86 mgd (1.4 percent). Current Boston demand continues to be lower than demand before 1900, as shown on Figure 4 below. As Attachment A indicates, many other communities experienced a decrease in demand.

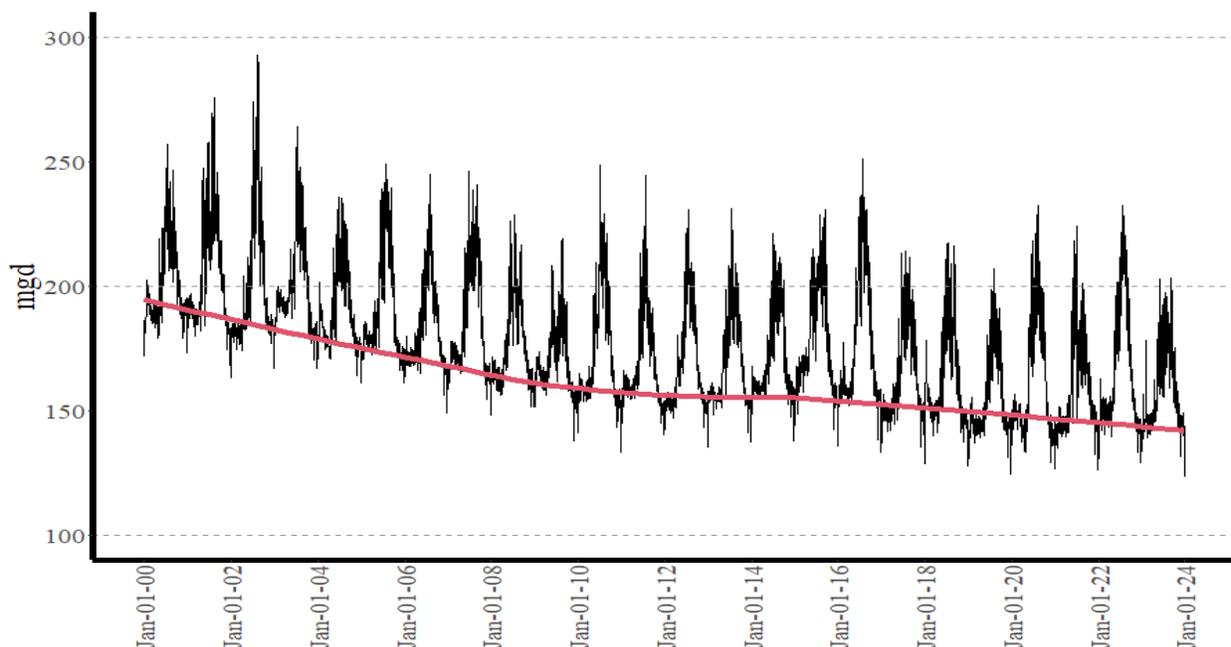
**Figure 4. Boston Water Demand (1900-2023)**



## Demand – Base Water Use and Seasonal Water Use

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

**Figure 5: Fully Supplied Communities Demand (1999 to 2023)<sup>2</sup>**



The impact of the downward trend in base water use partially explains the decreasing demand within the overall system, despite adding new communities as well as an increase in population and employment to the MWRA system. Table 1 lists these community additions and the system withdrawal (five-year average) from that associated year of admission.

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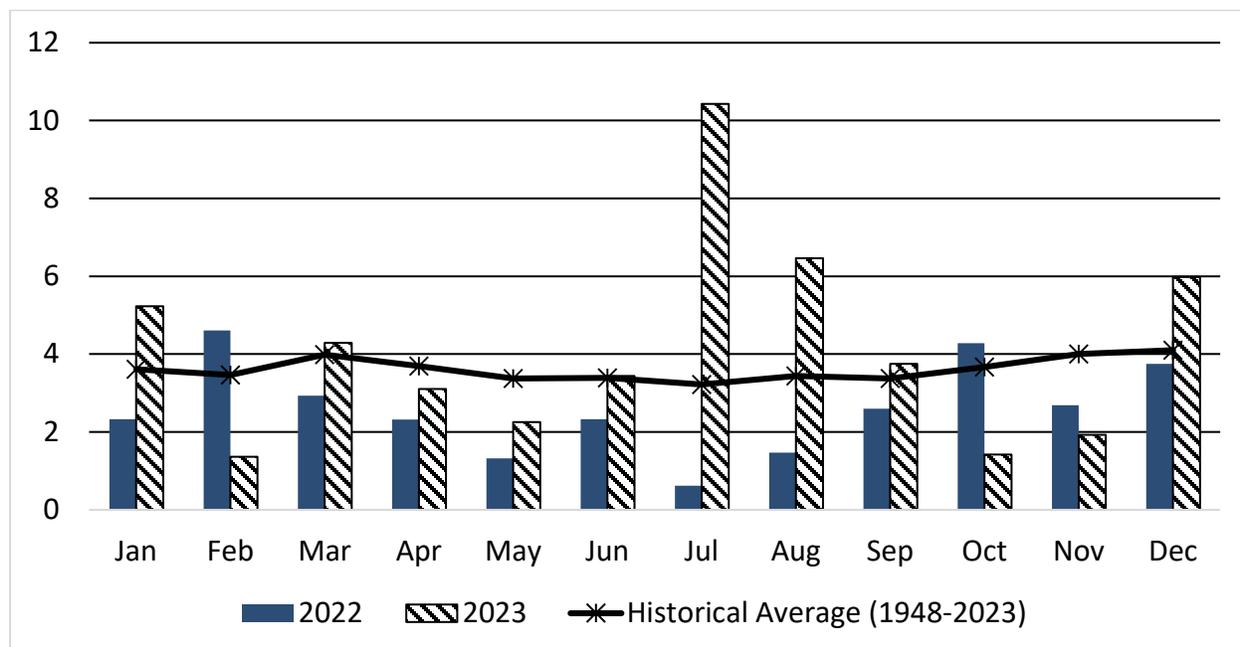
<sup>2</sup> Certain analyses can be done only on fully supplied communities where MWRA has information on their daily use available from MWRA's revenue meters. MWRA receives data on monthly total use for partially supplied communities, but not until they provide that data to DEP in their Annual Statistical Reports in March. Fully supplied communities represent almost 90 percent of the total annual demand.

Table 1: Communities Admitted to the MWRA Water System		
Year	Community	MWRA Withdrawal (5-yr Avg.) at date of admission to MWRA
1993	Bedford	271.4
2002	Stoughton	254.3
2005	Reading	237.4
2005	Dedham-Westwood Water District	237.4
2009	Wilmington	218.1
2016	McLaughlin Hatchery	204.3
2018	Ashland	202.8
2020	Burlington	200.4

Demand – Seasonal Water Use

Seasonal, or outdoor, water use is more variable than indoor demand and driven in large part by weather during the irrigation season. Factors influencing seasonal use include the total irrigation season precipitation, the number of dry days between rainfall events, temperature, and the total amount of sunshine. During drought conditions, mandatory restrictions or general media exposure will reduce outdoor use over what it would have been, but dry years still tend to have higher demand. Over time, the price of water also influences seasonal use. Seasonal use can be compared using the 2022 drought and the late summer rainfall of 2023. Figure 6 shows two years of contrasting rainfall patterns. Later in this summary, the corresponding impact on seasonal use for these years can be seen. The Boston Globe reported that the summer of 2023 was the second rainiest since 1872.

**Figure 6. Boston Monthly Average Rainfall (inches)**



Figures 7 and 8 show the variation in seasonal water use in fully supplied communities over time, and the long term decline in both base and total water use. Figure 7 illustrates the relatively small impact that seasonal demand has on total water use.

**Figure 7. Fully Supplied Communities Annual Base and Seasonal Demand**

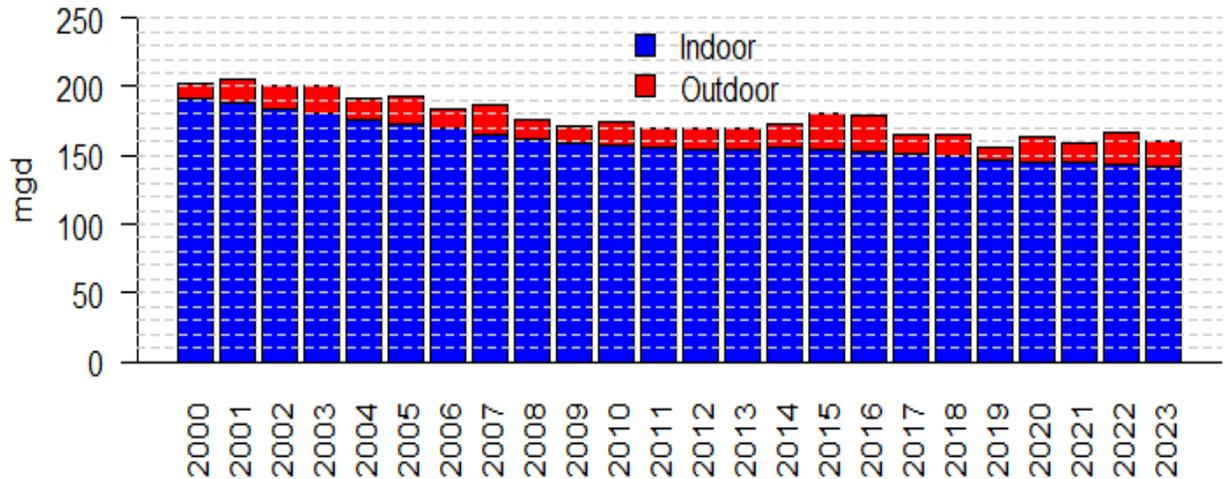
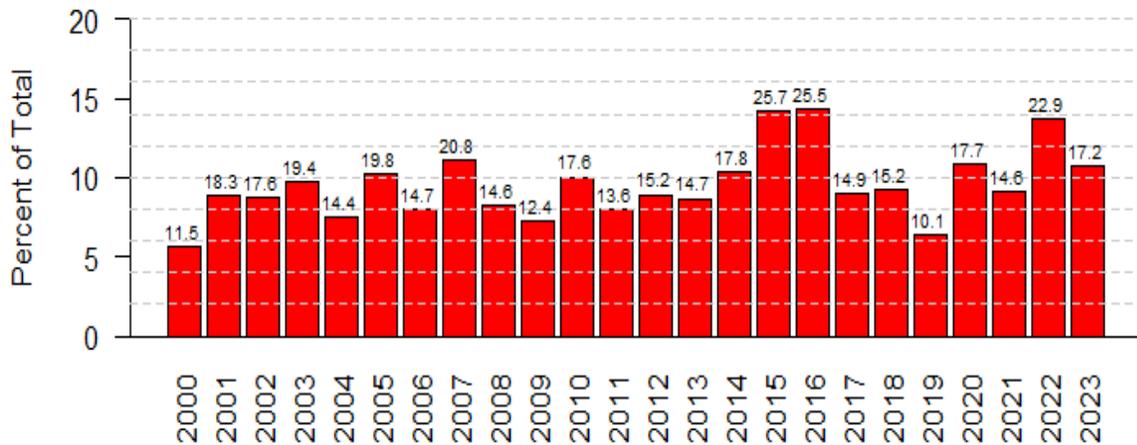


Figure 8 provides a closer look at the seasonal use from 2000-2023. The seasonal water use for 2023 of 17.2 mgd (10.8% of the total water use) was almost equal to the 23-year average of 17 mgd. The decline in seasonal water use from 2022 to 2023 is attributable to the wetter summer for 2023.

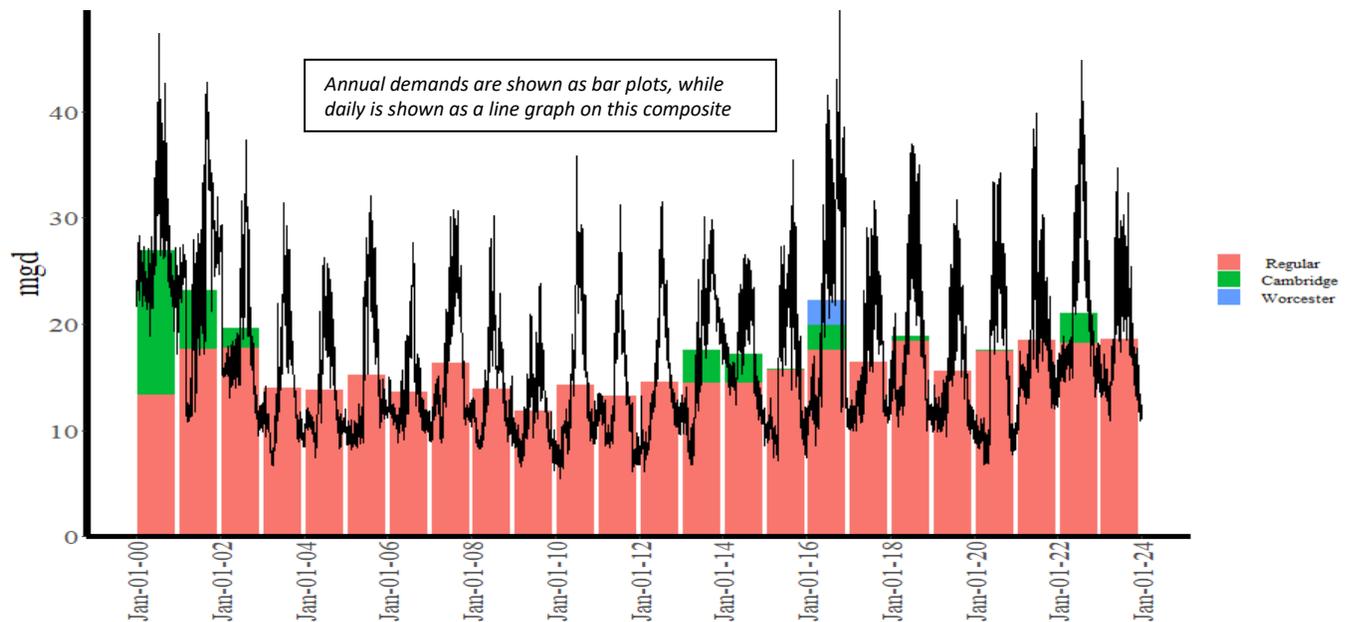
**Figure 8. Fully Supplied Communities' Annual Seasonal Demand (Labels show demand in mgd)**



## Demand - Partially Supplied Communities

Demand for the partially supplied communities decreased by 3.43 mgd (15.6 percent) from 2022 to 2023, as shown in Figure 9. This decrease was related to the 2022 Cambridge use of MWRA water while upgrading its treatment plant to improve PFAS removal. In 2023, Burlington increased MWRA water use as pipeline capacity was increased.

**Figure 9. Partially Supplied Communities – MWRA Supplied Demand (Daily and Annual)**



## Reservoir Status

Quabbin Reservoir was in normal operating range for the entire year. In addition to routinely exceeding its minimum required releases, Quabbin spilled for 25 days in the spring, for a total of 135 million gallons. In a relatively rare event, Quabbin also spilled in January and February 2024. MWRA transferred 52 billion gallons from Quabbin Reservoir to Wachusett Reservoir between May and December to meet supply and water quality objectives. Releases from Wachusett to the Nashua River were 45.2 billion gallons, which was 123.8 mgd on average.

Despite adding new customers to the system, water demand in 2023 was the lowest since 1950. The system stayed in the normal operating range during the entire year, while both the Swift and Nashua Rivers received substantial releases from the reservoirs, well above their minimum requirements. MWRA's large multi-year reservoirs provide the storage needed to manage inflows during wet years, capturing excess yield for use during extended dry periods. MWRA's resilient supply system is well situated to provide a reliable supply of safe water to our customers, economic vitality to the region, and to be an option for communities struggling with water quality or source reliability issues.

## **ATTACHMENT:**

Attachment A: Community Water Use Data

Massachusetts Water Resources Authority

MWRA Water Supplied

Reporting Period: December 2023

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

	Monthly (MG)			YTD (MG)			YTD System Share			Prior Year-End Totals	
	Dec		Flow Change	YTD		Flow Change	Flow Share <sup>1</sup>		% Change in YTD Flow Share	2022	
	2023	2022		2023	2022		2023	2022		Annual Flow (mg)	Flow Share <sup>1</sup>
<b>Metro-System (Fully Served)</b>											
Arlington	91.7	85.7	7.0%	1,142.1	1,261.8	-9.5%	1.83%	1.91%	-4.0%	1,261.8	1.91%
Belmont	48.2	46.8	3.1%	653.1	723.5	-9.7%	1.05%	1.09%	-4.2%	723.5	1.09%
Boston (BWSC)	1,721.3	1,711.7	0.6%	22,012.9	22,328.6	-1.4%	35.28%	33.74%	4.6%	22,328.6	33.74%
Brookline	112.4	122.7	-8.4%	1,677.7	1,881.9	-10.8%	2.69%	2.84%	-5.4%	1,881.9	2.84%
Chelsea	91.5	93.3	-1.9%	1,172.5	1,205.0	-2.7%	1.88%	1.82%	3.2%	1,205.0	1.82%
Everett	108.0	105.6	2.2%	1,373.7	1,362.2	0.8%	2.20%	2.06%	7.0%	1,362.2	2.06%
Framingham	149.1	148.5	0.4%	1,942.1	2,100.3	-7.5%	3.11%	3.17%	-1.9%	2,100.3	3.17%
Lexington <sup>2</sup>	100.7	113.0	-10.9%	1,689.5	1,947.2	-13.2%	2.71%	2.94%	-8.0%	1,947.2	2.94%
Lynnfield W.D.	9.5	9.6	-1.1%	184.3	208.5	-11.6%	0.30%	0.32%	-6.3%	208.5	0.32%
Malden	145.1	149.0	-2.6%	1,798.1	1,888.3	-4.8%	2.88%	2.85%	1.0%	1,888.3	2.85%
Marblehead	36.5	37.6	-2.8%	609.9	690.0	-11.6%	0.98%	1.04%	-6.3%	690.0	1.04%
Medford	125.7	136.0	-7.6%	1,611.2	1,724.7	-6.6%	2.58%	2.61%	-0.9%	1,724.7	2.61%
Melrose	58.9	54.0	9.0%	774.4	776.2	-0.2%	1.24%	1.17%	5.8%	776.2	1.17%
Milton	54.6	54.5	0.2%	810.7	920.7	-12.0%	1.30%	1.39%	-6.6%	920.7	1.39%
Nahant	6.4	7.3	-12.7%	113.6	130.6	-13.0%	0.18%	0.20%	-7.7%	130.6	0.20%
Newton	200.8	211.1	-4.9%	3,056.3	3,181.3	-3.9%	4.90%	4.81%	1.9%	3,181.3	4.81%
Norwood	68.7	71.0	-3.3%	948.8	1,024.4	-7.4%	1.52%	1.55%	-1.8%	1,024.4	1.55%
Quincy	240.6	229.8	4.7%	2,939.0	3,095.5	-5.1%	4.71%	4.68%	0.7%	3,095.5	4.68%
Reading	41.4	40.2	2.8%	572.0	623.1	-8.2%	0.92%	0.94%	-2.6%	623.1	0.94%
Revere	109.2	110.1	-0.8%	1,313.4	1,413.5	-7.1%	2.11%	2.14%	-1.5%	1,413.5	2.14%
Saugus	89.2	79.9	11.7%	1,074.7	1,200.8	-10.5%	1.72%	1.81%	-5.1%	1,200.8	1.81%
Somerville	174.8	171.9	1.7%	2,142.7	2,094.4	2.3%	3.43%	3.17%	8.5%	2,094.4	3.17%
Southborough	20.8	22.5	-7.6%	327.2	374.5	-12.6%	0.52%	0.57%	-7.3%	374.5	0.57%
Stoneham	53.7	53.3	0.7%	735.7	797.5	-7.8%	1.18%	1.21%	-2.2%	797.5	1.21%
Swampscott	34.5	34.7	-0.6%	500.2	575.4	-13.1%	0.80%	0.87%	-7.8%	575.4	0.87%
Waltham	193.5	189.2	2.3%	2,602.1	2,644.6	-1.6%	4.17%	4.00%	4.4%	2,644.6	4.00%
Watertown	69.5	69.8	-0.6%	918.3	926.5	-0.9%	1.47%	1.40%	5.1%	926.5	1.40%
Weston	23.9	22.4	6.4%	493.4	632.2	-22.0%	0.79%	0.96%	-17.2%	632.2	0.96%
Winthrop	43.8	32.2	36.2%	426.2	411.2	3.6%	0.68%	0.62%	9.9%	411.2	0.62%
<b>Subtotal Metro-System (Fully Served)</b>	<b>4,223.9</b>	<b>4,213.6</b>	<b>0.2%</b>	<b>55,615.6</b>	<b>58,144.5</b>	<b>-4.3%</b>	<b>89.1%</b>	<b>87.9%</b>	<b>1.4%</b>	<b>58,144.5</b>	<b>87.87%</b>
<b>Metro-System (Partially Served)</b>											
Ashland (P)	-	-	0.0%	-	-	0.0%	0.00%	0.00%	0.0%	-	0.0%
Burlington (P)	11.3	34.2	-66.8%	528.4	367.7	43.7%	0.85%	0.56%	52.4%	367.7	0.6%
Canton (P)	38.7	53.5	-27.6%	550.1	549.0	0.2%	0.88%	0.83%	6.3%	549.0	0.8%
Dedham-Westwood W.D. (P)	18.5	0.1	27892.5%	182.3	147.9	23.3%	0.29%	0.22%	30.7%	147.9	0.2%
Leominster (P)	-	-	0.0%	-	-	0.0%	0.00%	0.00%	0.0%	-	0.0%
Lynn (LWSC) (P)	6.1	1.5	309.9%	32.8	29.5	11.2%	0.05%	0.04%	17.9%	29.5	0.0%
Marlborough (P)	115.5	115.4	0.1%	1,478.6	1,573.6	-6.0%	2.37%	2.38%	-0.3%	1,573.6	2.4%
Needham (P)	1.93	8.6	100%	243.03	416.0	-41.6%	0.39%	0.63%	-38.0%	416.0	0.6%
Northborough (P)	25.1	25.6	-1.9%	310.6	325.5	-4.6%	0.50%	0.49%	1.2%	325.5	0.5%
Peabody (P)	14.3	71.1	-79.8%	465.6	871.4	-46.6%	0.75%	1.32%	-43.3%	871.4	1.3%
Stoughton (P)	1.5	1.4	9.4%	19.6	22.8	-14.0%	0.03%	0.03%	-8.8%	22.8	0.0%
Wakefield (P)	53.3	51.2	4.1%	662.1	735.8	-10.0%	1.06%	1.11%	-4.6%	735.8	1.1%
Wellesley (P)	34.5	38.2	-9.6%	653.6	928.4	-29.6%	1.05%	1.40%	-25.3%	928.4	1.4%
Wilmington (P)	8.2	5.2	57.9%	97.1	252.5	-61.6%	0.16%	0.38%	-59.2%	252.5	0.4%
Winchester (P)	20.8	28.4	-26.7%	407.6	519.6	-21.6%	0.65%	0.79%	-16.8%	519.6	0.8%
Woburn (P)	46.2	59.3	-22.0%	1,145.1	1,289.9	-11.2%	1.95%	1.95%	0.0%	1,289.9	1.9%
<b>Subtotal Metro-System (Partially Served)</b>	<b>396.1</b>	<b>493.4</b>	<b>-19.7%</b>	<b>6,776.3</b>	<b>8,029.7</b>	<b>-15.6%</b>	<b>10.9%</b>	<b>12.1%</b>	<b>-10.5%</b>	<b>8,029.7</b>	<b>12.1%</b>
<b>Subtotal Metro-System (Full &amp; Partial)</b>	<b>4,620.1</b>	<b>4,707.0</b>	<b>-1.8%</b>	<b>62,391.9</b>	<b>66,174.1</b>	<b>-5.7%</b>	<b>100%</b>	<b>100%</b>		<b>66,174.1</b>	<b>100%</b>
<b>Chicopee Valley Aqueduct</b>											
Chicopee	136.4	133.3	2.4%	1,940.4	1,970.8	-1.5%	71.64%	70.31%	1.90%	1,970.8	70.3%
South Hadley FD #1	25.0	24.5	1.9%	360.1	391.3	-8.0%	13.30%	13.96%	-4.75%	391.3	14.0%
Wilbraham	25.0	25.0	0.1%	407.8	440.9	-7.5%	15.06%	15.73%	-4.26%	440.9	15.7%
<b>Subtotal CVA System</b>	<b>186.4</b>	<b>182.7</b>	<b>2.0%</b>	<b>2,708.3</b>	<b>2,803.0</b>	<b>-3.4%</b>	<b>100%</b>	<b>100%</b>		<b>2,802.95</b>	<b>100%</b>
<b>Other Revenue Supply</b>											
Cambridge (P)	-	-	0.0%	0.0273	1,017.60	-100%				1017.600	
Clinton <sup>3</sup>	50.3	47.2	6.4%	577.5	487.1	18.6%				487.1	
Worcester (P)	-	-	0.0%	-	-	0.0%				0.0	
Other Revenue Customers <sup>4</sup>	43.6	44.6	-2.4%	496.5	524.3	-5.3%				524.3	
<b>Subtotal Other Revenue Supply <sup>5</sup></b>	<b>93.8</b>	<b>91.9</b>	<b>2.1%</b>	<b>1,074.0</b>	<b>2,029.0</b>	<b>-47.1%</b>				<b>2,029.0</b>	
<b>Total Water Supplied</b>											
Fully Supplied Metro Communities	4,223.9	4,213.6	0.2%	55,615.6	58,144.5	-4.3%				58,144	
CVA Communities	186.4	182.7	2.0%	2,708.3	2,803.0	-3.4%				2,803	
Partially Supplied Communities	396.1	493.4	-19.7%	6,776.3	8,029.7	-15.6%				8,030	
Other Revenue Customers	93.8	91.9	2.1%	1,074.0	2,029.0	-47.1%				2,029.0	
<b>Total Water Supplied <sup>6</sup></b>	<b>4,900.3</b>	<b>4,981.6</b>	<b>-1.6%</b>	<b>66,174.2</b>	<b>71,006.1</b>	<b>-6.8%</b>				<b>71,006.1</b>	

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

2) Lexington supplies Bedford with partial MWRA water service.

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

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

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

6) This report includes only water supplied for which revenue is collected in accordance with existing user agreements. It does not include water utilized for system maintenance, or water provided to the McLaughlin Fish Hatchery.

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

Question's regarding water supplied can be directed to Tim Beaulieu @ (617) 660-7680 or Leo Norton @ (617) 788-2256.

**STAFF SUMMARY**



**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** April 17, 2024  
**SUBJECT:** Quabbin Reservoir Watershed Communities System Expansion Evaluation Update

**COMMITTEE:** Water Policy & Oversight

X  INFORMATION  
  VOTE

Hillary Monahan, Project Manager, Env. Permitting  
Colleen Rizzi, P.E., Director, Env. and Regulatory Affairs  
Preparer/Title

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

**RECOMMENDATION:**

For information only.

**DISCUSSION:**

MWRA is currently in the process of preparing a feasibility study to assess the expansion of MWRA’s water system to communities within the Quabbin Reservoir Watershed. At its October 18, 2023 meeting, the MWRA Board of Directors voted to move forward with a study to evaluate supplying water to 10 communities. Those communities include: Barre, Belchertown, Hardwick, New Salem, Orange, Pelham, Petersham, Shutesbury, Ware, and Wendell. Since that meeting, two communities, Phillipston and Ludlow, have been added to the study area (see Figure 1).

MWRA previously completed three water system expansion feasibility studies (available on [www.mwra.com](http://www.mwra.com)). The study areas include 10 South Shore communities, 12 Ipswich River Basin communities, and 21 MetroWest communities. The studies reviewed the feasibility of MWRA providing an alternative source of drinking water to these communities. Specifically, the studies were intended to:

- quantify MWRA’s available water distribution and transmission system capacity to serve the study communities;
- identify new infrastructure needed to deliver the available capacity to these communities;
- provide planning-level cost estimates for infrastructure needed to serve the communities;
- consider the impact on drinking water quality from blending MWRA water with that of the communities and highlight the importance for future study prior to any expansion community connections; and
- identify other factors that would need further study if system expansion discussions proceed, such as required permits and the time necessary for planning, permitting, design, and construction of required infrastructure.

The Quabbin Reservoir Watershed feasibility study will vary slightly from the previous three feasibility studies due to limited access to existing MWRA infrastructure. This feasibility evaluation will:

- quantify MWRA's existing capacity available to serve new customers;
- identify the critical infrastructure needed to supply water to Quabbin communities, including transmission and distribution pipelines and new treatment facilities;
- identify potential water supply alternatives (such as surface water intakes and groundwater supplies within the Quabbin Watershed); and
- provide planning-level cost estimates for those alternatives.

This study will provide a range of water supply options that could be further investigated by the Quabbin Watershed communities.

A kickoff meeting was held on March 7, 2024 with MWRA staff and our consultants Hazen and Sawyer/Tighe & Bond to discuss project execution. MWRA sent initial inquiries to Quabbin Reservoir communities to request a meeting with staff involved with water supply (e.g. DPW directors, superintendents, etc.) from each of the study area communities; the initial meeting will be held as a large group meeting with individual meetings to follow with each of the communities. These initial inquiries also included detailed data requests tailored to specifically address communities with existing public water systems and those communities without public water supplies. The requested data includes the presence of a public water supply, water distribution maps, water master plans and town-wide master plans, water system GIS mapping, water system population and/or demand projections, Water Management Act permits, latest Sanitary Surveys, Consumer Confidence Reports, and water quality information (potential pollutants of concern and contamination potential).

The Quabbin Reservoir Study is anticipated to be completed by the end of 2024.

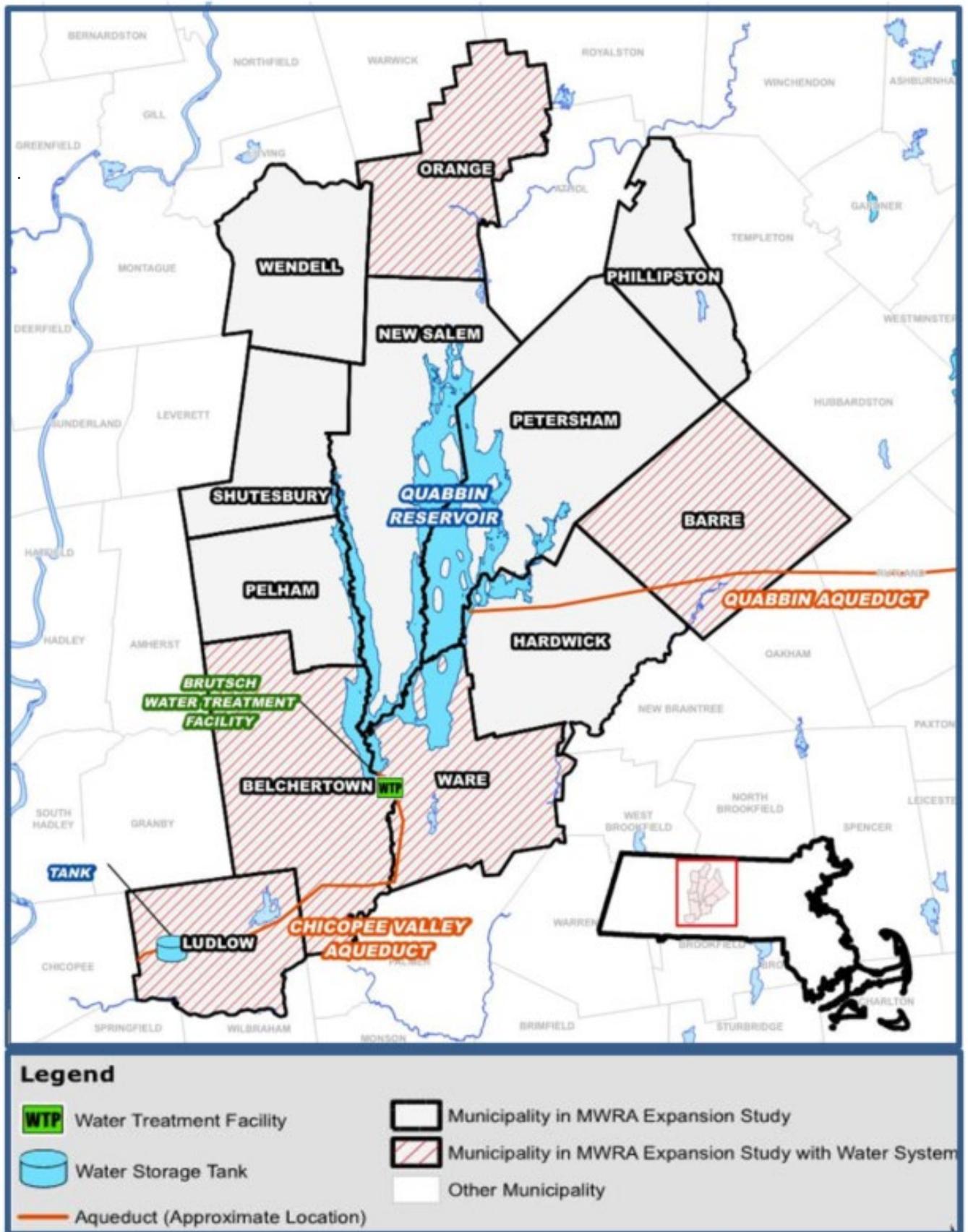


Figure 1. Quabbin Reservoir Communities Study Area

**STAFF SUMMARY**



**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** April 17, 2024  
**SUBJECT:** Town of Wilmington Renewal of Water Supply Continuation Agreement with Increased Withdrawal and Waiver of Entrance Fee

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**COMMITTEE:** Water Policy and Oversight

       INFORMATION  
  X   VOTE

Colleen Rizzi, P.E., Director, Env. and Regulatory Affairs  
Hillary Monahan, Project Manager, Environmental  
Preparer/Title

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

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**RECOMMENDATION:**

To authorize the Executive Director, on behalf of the Authority, to approve the Town of Wilmington’s request to increase its withdrawal volume limits to up to 450.5 million gallons per year, or 1.23 million gallons per day average daily use, and up to 2.5 million gallons per day maximum day use and to waive the entrance fee associated with such increased withdrawal volume. Further, to authorize the Executive Director, on behalf of the Authority, to execute the Water Supply Continuation Agreement with the Town of Wilmington, substantially in the form included as Attachment A to this staff summary.

**DISCUSSION:**

The Town of Wilmington is a “contract community” as it receives water from MWRA pursuant to a Water Supply Continuation Agreement reflecting obligations to be fulfilled by both MWRA and the community. The difference between contract and non-contract communities dates back to before MWRA’s Enabling Act. Of the 53 MWRA water-served communities, 28 of them are contract communities. Of these MWRA contract communities, eight are fully served, 17 are partially supplied by MWRA and regularly use local sources to meet some portion of demand, and three rely on MWRA only in unusual or emergency situations.

The typical term for Water Supply Continuation Agreements with communities is ten years, with the exception of first-time Agreements for new entrants to the MWRA water system, which are five years. An important component of Water Supply Continuation Agreements is that they set maximum annual water volumes and maximum daily water volumes that MWRA agrees to provide to the community. The Water Supply Continuation Agreements also set forth the entrance fee that the community agrees to pay pursuant to MWRA *Operating Policy 10, Admission of New Community to MWRA Water Works System (OP.10)*.

Wilmington was admitted into the MWRA Water System in 2009 as a partially-supplied MWRA community, purchasing up to 219 million gallons per year from MWRA, or 0.6 million gallons per day (mgd) on an average annualized basis. Wilmington is partially supplied by MWRA and is seeking to permanently increase its usage of and reliance on MWRA water. This requires

amending the existing Water Supply Continuation Agreement to reflect the requested increases in withdrawal volume limits.

Wilmington joined MWRA under OP.10 at a time when an increase to the maximum annual water volume limit also required the assessment of an entrance fee for the additional volume of water requested. On September 14, 2022, at the recommendation of the Advisory Board and staff, the Board of Directors approved a waiver of the entrance fee through December 31, 2027 for communities that can demonstrate that their local sources are impacted by water quality issues, their water supply is located in a stressed basin, or local economic development is significantly constrained by their existing water supply. Under the approved entrance fee waiver, a total of up to 20 mgd are available for new communities that are not currently members of MWRA's water system. Wilmington is now requesting an additional volume of water under its Water Supply Continuation Agreement and a waiver of the entrance fee for the additional volume of water due to water quality issues in local sources, which result in public health concerns and difficulty meeting local demand. Wilmington is an existing MWRA water system member, therefore the requested additional water volume does not count towards the 20 mgd new community entrance fee waiver limit in OP.10.

The Town estimates that its average day water withdrawals from the MWRA Water System could range from approximately 0.7 to 2.5 mgd over the next ten years (2024 through 2034). Wilmington is requesting 1.23 mgd and will request an amendment to its contract if higher demands are realized during this 10-year contract period. This variability is due to uncertainties related to quality, capacity, and reliability of the Town's active groundwater sources of supply. These sources are threatened by various contaminants; the Town's five wells in its southern Maple Meadow Brook aquifer were placed into inactive status in 2002 due to N-nitrosodimethylamine (NDMA) contamination. According to MassDEP, this contamination is believed to have been caused by historical releases of hazardous materials at the Olin Corporations site at 51 Eames Street in Wilmington. It is not expected that these wells will be reactivated.

Additionally, all four of the remaining active wells in Wilmington are impacted by per- and polyfluoroalkyl substances (PFAS) contamination. The Town is concerned about concentrations increasing over time, the pending limits set by EPA, and potentially stricter standards set by MassDEP. Multiple wells also experience increasing chlorides concentrations from deicing operations along Interstate 93. This contamination has been studied by EPA and concentrations are expected to continue to increase over the long term, potentially requiring advanced treatment. In addition to these considerations, the Town's local supplies are located within the highly stressed Ipswich River Basin. Recommendations have focused on reduced use of municipal water supply wells for headwater communities, such as Wilmington, particularly when streamflow is lowest in the summer months.

For the reasons set forth herein, staff recommend the Board's approval of the Town of Wilmington's request to purchase up to 450.5 million gallons per year, or 1.23 mgd average daily use, and up to 2.5 mgd maximum day use and to waive the entrance fee associated with this increased withdrawal volume. Increases above the stated volume will require an amendment to the Town of Wilmington's Water Supply Continuation Agreement.

**BUDGET/FISCAL IMPACTS:**

The Town of Wilmington will continue to be assessed in accordance with MWRA’s Community Charge Determination Policy. MWRA’s Community Charge Determination Policy computes charges for water services on the basis of each community’s metered water flows. For fiscal year 2024, MWRA will receive \$716,510 from the Town of Wilmington for water service. This is in addition to the Town’s \$207,915 annual entrance fee payment, which will be paid through FY2029.

The Town of Wilmington is seeking a waiver of the entrance fee associated with its requested additional withdrawal volume limits on the basis of local source water quality and associated public health concerns. If not waived, the entrance for Wilmington’s requested additional water would be approximately \$3.4 million. As explained in the September 14, 2022 staff summary associated with the amendments to OP-10 regarding the entrance fee waiver approval, the reallocation of the rate revenue requirement as a result of selling additional water is a significant benefit that will offset potential loss of the more limited revenue associated with collection of an entrance fee. The total requested additional average daily use for the Town of Wilmington is approximately 0.63 mgd.

**ATTACHMENTS:**

Attachment A: Water Supply Continuation Agreement with Town of Wilmington (Draft)

Attachment B: Town of Wilmington’s Request for Entrance Fee Waiver

**WATER SUPPLY CONTINUATION AGREEMENT  
BETWEEN  
THE MASSACHUSETTS WATER RESOURCES AUTHORITY  
AND  
THE TOWN OF WILMINGTON**

**PARTIES:**

This Water Supply Continuation Agreement (“Agreement”) is entered into by and between the Massachusetts Water Resources Authority, a body corporate and politic and an instrumentality of the Commonwealth of Massachusetts established pursuant to Chapter 372 of the Acts of 1984, as amended, having an address of Deer Island, 33 Tafts Avenue, Boston, MA 02128 (“MWRA”) and the Town of Wilmington (“Town”), (hereinafter jointly referred to as “the Parties” and each individually as a “Party”). This Agreement documents the understanding of the Parties regarding the arrangement whereby the Town will continue to purchase its water supply from the MWRA water supply system.

**RECITALS:**

- R1. Whereas, the Massachusetts Legislature created MWRA in December 1984 to use, operate, maintain, and improve the waterworks and sewerage systems serving the greater metropolitan area. Operating pursuant to its enabling act under chapter 372 of the Acts of 1984, as amended (“Act”), MWRA provides water supply and distribution services and wastewater collection and treatment services, to certain cities, towns and special services districts (“Communities”) within MWRA’s service area;
- R2. Whereas, Section 8(d) of the Act permits the MWRA to enter into an arrangement to provide for the continued delivery of water to a community under reasonable terms as determined by MWRA provided that specific requirements are met;
- R3. Whereas, a regulation entitled “Continuation of Contract Water Supply,” promulgated by the MWRA at 360 C.M.R. § 11.00 and most recently revised on November 18, 1994, (“Regulation”) defines more specifically the requirements of Section 8(d) of the Act and govern the continued delivery of water by the MWRA to the Communities purchasing water from the MWRA;
- R4. Whereas, the Town, having met the conditions of Section 8(d) of the Act, the Regulation, and the conditions of MWRA *Policy O.P. #10, Admission of New Community to the Waterworks System* (“OP.10”), was duly admitted to the MWRA Waterworks system on May 9, 2009, thereby acquiring certain rights and obligations conferred by that admission;
- R5. Whereas, the Parties executed a first *Water Supply Agreement dated May 9, 2009*, for the Town’s purchase of 219 million gallons of water a year from the MWRA;

- R6. Whereas, the Parties subsequently executed a *Water Supply Continuation Agreement dated May 2014*, for the continued purchase of water from the MWRA, which terminates on April 30, 2024;
- R7. Whereas, the Town agreed to pay MWRA a Net Entrance Fee of \$2,809,320 for its share of the value of the waterworks system in place at the time of its entrance and associated with an annualized withdrawal of 0.6 mgd. The Net Entrance Fee reflected an Entrance Fee of \$3,126,210 minus the Total Net Asset Value contributions of \$316,890 previously paid pursuant to *MWRA Policy OP.05 Emergency Water Supply Withdrawals*. The Net Entrance Fee was to be paid to the MWRA in accordance with a schedule of payments established at the time of its entrance and attached to the *Water Supply Agreement dated May 9, 2009*. That schedule amortized payments of the Net Entrance Fee over 20 years with interest on the unpaid balance of 4.67%. In 2014, the interest rate upon remaining payments was further reduced for the remaining years of payments to 4.34%.
- R8. Whereas, on November 17, 2016, the Advisory Board approved a further reduction in the interest rate upon remaining installments of the Town's Entrance Fee to 3.95%, and the Parties executed an *Amended and Restated Water Supply Continuation Agreement dated February 2017*;
- R9. Whereas, on September 14, 2022, MWRA's Board of Directors voted to approve revisions to MWRA's *OP #10 Admission of a New Community to the Waterworks System* ("OP.10") to allow a waiver of the entrance fee under certain conditions (e.g., local water sources being impacted by: (a) water quality issues; (b) located in a stressed basin, and/or (c) significantly constraining for economic development), for communities entering the System or those purchasing additional water;
- R10. Whereas, in accordance with Section 8(d) of the Act, the Regulation, and OP.10, on March 4, 2024, the Town submitted a two-part request that generally: (1) seeks to increase its withdrawal from the System to a total of 450.5 million gallons per year; and (2) seeks a waiver of the entrance fee for the additional withdrawal ("Request");
- R11. Whereas, the Town's Request seeks to increase its annual withdrawal volume from 219 million gallons per year to 450.5 million gallons per year due to uncertainties related to quality, capacity, and reliability of the Town's active groundwater sources;
- R12. Whereas, in support of the Request the Town submitted a continuation request and a Supplementary Report including: (1) a supply analysis; (2) a demand analysis; (3) a water management plan, (4) an ordinance for the protection of local sources, and (5) a description of the local user charges and accounting system;
- R13. Whereas, the Town's Request indicated that the Town anticipated its demand from MWRA for the next ten years would not decrease;

- R14. Whereas, the Town's Request also explained the water quality issues that the Town is managing, and particular that it has taken five of its nine wells offline due to N-Nitrosodimethylamine (NDMA) and/or nitrite contamination, the feasibility of providing treatment of these wells to suitable drinking water standards appears uncertain and presents concern, and the Massachusetts Department of Environmental Protection ("DEP") has agreed that use of the wells should be discontinued for the foreseeable future;
- R15. Whereas, the Town's Request indicated there was no plan for the evaluation, development, and use of potentially feasible new local water supply sources identified in the Supply Analysis;
- R16. Whereas, on \_\_\_\_\_, 2024, the MWRA Board of Directors approved the Town's two-part Request authorizing the additional supply of water and waiving the corresponding Entrance Fee for this additional supply, such that schedule of payment is carried forward from the *Amended and Restated Water Supply Continuation Agreement dated February 2017* into this Agreement;
- R17. Whereas, MWRA desires to continue to provide safe and sufficient water supplies to the Town and to provide system-wide assistance to help protect and conserve water supplies;
- R18. Whereas, MWRA is designing redundancy improvements to the Northern Intermediate High system, which are anticipated to be implemented during the Agreement term, and which shall increase reliability and the hydraulic capabilities of the MWRA system to serve and convey water to the Town;
- R19. Whereas, the MWRA finds that the applicable requirements of Section 8(d) of the Act have been met as follows:
- (1) the safe yield of the watershed system as of the date of this Agreement and as projected for the term hereof is sufficient to meet the projected demand of the Town;
  - (2) No existing or potential water supply source for the Town has been abandoned;
  - (3) Effective demand management measures have been developed by the Town;
  - (4) A local water supply source feasible for development has not been identified by either the Town or the DEP; and
  - (5) A water use survey has been completed, which identifies all users within the Town that consume in excess of twenty million gallons a year;
- R20. Whereas, the MWRA and the Town wish to formalize their rights and obligations regarding the continuation of supply of water to the Town and therefore enter into this Agreement.

#### **AGREEMENT:**

NOW, THEREFORE, in consideration of the mutual promises contained herein and for other good and valuable consideration, the MWRA and the Town agree to the following:

1. The term ("Term") of this Agreement shall end at midnight on \_\_\_\_\_, 2024.
2. The MWRA shall, during the Term, provide the Town with water on a maximum annual water volume basis, stated in millions of gallons, as follows:

Maximum Annual Volume  
450.5 million gallons

And up to 2.5 millions of gallons per day ("mgd") on a maximum day (non-emergency) basis, subject to the hydraulic capabilities of MWRA's distribution system. In the event that the Town anticipates that its withdrawal will exceed a flow rate of 1.2 mgd prior to the implementation of redundancy improvements to the MWRA's Northern Intermediate High System, the Town shall notify MWRA Operations at 617-305-5950 at least 48 hours in advance. If, prior to implementation of Northern Intermediate High system improvements, the Town's withdrawal in excess of 1.2 mgd at meter 339 coincide with peak withdrawals of other MWRA Communities in this meter vicinity, MWRA reserves the right to restrict the Town's withdrawal to a maximum of 1.2 mgd. The Town may also withdraw up to 3.25 mgd for the Town's consumption if unusual conditions arise, after notification to MWRA Operations at 617-305-5950 with at least 48 hours' notice. MWRA reserves the right to restrict peak maximum day withdrawal, in its sole discretion.

In the event of unusual circumstances regarding local demand and/or supply should occur or in the event new Water Management Act conditions affect local source withdrawals, and upon notice to the MWRA disclosing and explaining such conditions, MWRA agrees that it will use its best efforts to supply the Town with those quantities of water to meet its legitimate needs in excess of the maximum daily and annual water volumes stated above.

3. The Parties understand that long-term water demand in the Town is projected to increase and that the Town was approved by the Water Resources Commission to purchase up to 620.5 million gallons annually from the MWRA. Any increase beyond 450.5 million gallons on an average annual basis will require a written contract revision and revision to the entrance fee based on the MWRA Entrance Fee Policy at that time. A water supply emergency may be an appropriate reason for the Town to temporarily increase its maximum water volume in excess of the above referenced volume without requiring a revision to this Agreement.
4. The Parties agree that once MWRA's Northern Intermediate High improvements are implemented, maximum day withdrawals at the Town's meter 339 may further increase to a volume agreed upon by MWRA at that time.
5. The Town agrees that during the Term it will operate its local water supply system in such a manner so as to make maximum feasible use of local water supply sources subject to the limits and conditions imposed by the Water Resources Commission.
6. The Town agrees that the MWRA will not be liable for any disruption of water service to the Town attributable to the Town's water distribution system.

7. The MWRA shall bill the Town, which shall in turn remit payment to the MWRA charges for all water supplied under this Agreement at the MWRA's applicable prevailing rate. All billing procedures, due dates, and interest charges for late payments shall be in accordance with the MWRA's Budget and Assessment Policies and Procedures (Exhibit A).
8. The Town agrees to continue a user charge system and an accounting system, which meets the Regulation's requirement to: (a) incorporate a uniform rate or an alternative structure which provides incentives for water conservation and/or is designed to ensure the affordability of water services to low and/or fixed income persons; and (b) prohibit rate structures that incorporate descending or declining block rates.
9. The Town agrees to continue in effect a full cost pricing system for water received from the MWRA water supply system.
10. The Town agrees to continue to pay MWRA its Net Entrance Fee in accordance with the schedule of payment (Exhibit B), which is attached hereto and incorporated herein by reference.
11. The Town agrees that during the Term it shall continue the implementation of its current and proposed local demand management programs, including the following: participation in MWRA conservation programs, distribution of MWRA-provided materials to all water users, compliance with the MWRA's regulations for town-wide leak detection and repair (360 CMR §12.00), maintaining metering in 100 percent of the Town's distribution system, including all municipal facilities, and maintenance of efficient water fixtures in all public buildings, together with promotion of their use in industrial, commercial and residential areas.
12. The Town agrees that during the Term it shall not abandon any local source and substitute for it water from MWRA sources unless DEP has declared that the local source will be or has been abandoned, is unfit for drinking, and cannot be economically restored for drinking purposes.
13. The Town agrees that during the Term if its plans change to either provide treatment for the five wells it took off-line and re-activate those wells, or to evaluate or develop new local water supply sources, it will notify MWRA immediately so that MWRA can plan accordingly in making capital investment decisions.
14. The Town agrees to continue in full force and effect its Zoning Bylaw Aquifer Protection District to preserve and protect existing and potential sources of drinking water supplies, or, at Wilmington's discretion, to adopt an ordinance with more stringent measures.
15. Any dispute arising between the MWRA and the Town concerning the calculation of the annual assessment shall be resolved in accordance with the Review and Dispute Resolution Process as outlined in MWRA's Budget and Assessment Policies and Procedures (Exhibit A). Any other dispute between MWRA and the Town under terms of this Agreement shall

be resolved in accordance with the dispute resolution process set forth at 360 CMR § 11.14 and the administrative procedures set forth at 360 CMR § 1.00.

**IN WITNESS WHEREOF**, the Parties have caused this Agreement to be executed on this \_\_\_\_\_ day of April, 2024 by their duly authorized representatives.

**MASSACHUSETTS WATER RESOURCES AUTHORITY**

By: \_\_\_\_\_  
Frederick A. Laskey  
Executive Director

**TOWN OF WILMINGTON**

By: \_\_\_\_\_  
Lou Cimaglia  
Temporary Town Manager

Exhibit A: MWRA Budget and Assessment Policies and Procedures  
Exhibit B: Net Entrance Fee Schedule of Payment

## Exhibit A

### **MASSACHUSETTS WATER RESOURCES AUTHORITY BUDGET AND ASSESSMENT POLICIES AND PROCEDURES**

**(Revised August 2003 to incorporate changes to capital budget section of Management  
Policies adopted by the Board of Directors June 11, 2003)**

These policies and procedures govern certain budget, assessment, and rates management practices at the Massachusetts Water Resources Authority (MWRA). Policies and procedures may be amended from time to time, provided that changes in provisions governing reporting to or approvals by the Board of Directors or the Advisory Board must be approved by the Board of Directors. If any sections of these policies and procedures are at variance with requirements of MWRA's financing agreements, the latter shall govern.

#### ASSESSMENT POLICIES AND PROCEDURES

##### **Basis of MWRA Assessments**

MWRA is required by its Enabling Act to establish assessments which, with other revenues, provide sufficient funds each year to pay all current expenses, debt service, and obligations to the Commonwealth; to pay all costs of maintenance, replacement, improvements, extension, and enlargement of the sewer and waterworks systems; to create and maintain reserve funds; and to provide amounts required by financing agreements. These assessments are adopted by MWRA based on the rate revenue requirements set forth in the Current Expense Budget.

##### **Costs Recovered**

MWRA capitalizes certain of its asset costs in accordance with its capitalization policy. Capital expenditures are planned as set forth in the Capital Improvement Program and are recovered through assessments in accordance with MWRA financing agreements. The Current Expense Budget provides detailed information on capital and debt costs, additions to reserves, and all operations and maintenance costs to be recovered with current revenue.

##### **Sources of Current Revenue**

MWRA recovers most of its current expenses from users of the services it provides. In addition to rate revenue requirements, budgeted current revenue includes anticipated fines, fees, investment income on certain fund balances, and payments for contracted services. MWRA is committed to seeking additional sources of current revenue.

## **Coverage Requirements**

MWRA's financing agreements include coverage requirements which provide that each year revenue less operating expenses (net revenue) must be more than the amount required for debt service payments on outstanding bonds. The primary bond coverage requirement is that net revenue must be 120 percent of required debt service fund deposits for bonds outstanding excluding subordinated bonds. The secondary coverage requirement is that net revenue must be 110 percent of required debt service fund deposits for all bonds outstanding, including subordinated bonds. Revenue must be raised annually to meet the primary and secondary bond coverage requirements and may be used for additions to reserves or for payment of obligations to the Commonwealth. Amounts remaining after these uses are used to pay capital costs in order to reduce the need for future borrowing or to reduce current debt service costs. In addition, MWRA has a supplemental bond coverage requirement that amounts contained in its Community Obligation and Revenue Enhancement (CORE) Fund shall equal 10 percent of required debt service fund deposits for bonds outstanding, excluding subordinated bonds. Amounts required to be on deposit in the CORE Fund are recovered through assessments as necessary.

## **Budget Surpluses**

In any year in which current revenue exceeds both current expenses on a budget basis and amounts required to meet bond coverage tests, the amount of over-recovery is deposited first to reserve funds, if any, which are below the level specified in any financing agreements, and second into MWRA's rate stabilization fund or bond redemption fund. Amounts deposited in these funds are used to offset rate requirements in subsequent years. Use of rate stabilization and bond redemption fund amounts is carried out in furtherance of MWRA's budgeting objectives and in accordance with its financing agreements. MWRA consults with the Advisory Board concerning use of amounts in the funds.

## **Budgeting and Assessment Objectives**

MWRA intends to follow prudent budgeting practices, and has the following objectives in developing budgets and community assessments:

1. To minimize total costs, consistent with MWRA's statutory responsibilities to provide effective, environmentally sound wholesale water delivery and wastewater collection and treatment services;
2. To minimize the cost of debt;
3. To avoid single year assessment spikes by prudent management of cost and assessment increases, and
4. To support inter-generational equity by avoiding unfair assessment burdens on either current or future ratepayers.

## **Allocation of Costs and Revenue to Systems**

Most of MWRA's current expenses are directly attributable to either water or sewerage service costs or to investment in either the water or sewerage systems. Expenses which support both systems (indirect system costs) are allocated to the water or sewer system based on generally accepted cost allocation principles. Investment, contract, and other income offsets water and sewerage expenses on either a direct or allocated, indirect basis. The resulting net cost of water and sewerage services is the amount to be recovered through water and sewer assessments.

## **Allocation of Rate Revenue Requirements to User Assessments**

Users of MWRA wholesale water and sewerage services are assessed for those services according to MWRA's water and sewer assessment methodologies. Assessments for water services are computed by MWRA based on metered water use for the immediately preceding calendar year. The total assessment is allocated based on each community's share of water delivered in the immediately preceding calendar year.

Assessments for sewer services are computed on the basis of a combination of metered wastewater flow and loads, and population.

- O&M costs are allocated based on total annual metered wastewater flow, and total annual average strength, septage, and high strength flow loads.
- Capital (or debt service) costs are allocated based on a combination of metered wastewater flow and loads, and population. One-quarter of capital costs are allocated based on maximum month flow, and total annual average strength, septage, and high strength flow loads. The remaining three-quarters of capital costs are allocated based on population. Half of the population allocation is based on census population and half is based on contributing population.

## **Schedule and Procedure for Adoption of Assessments**

During the preparation of the proposed Current Expense Budget, required water and sewer rate revenue is determined, and a preliminary calculation of the allocation of costs to user-specific assessments is made. This information is provided to MWRA customers to assist them in their own fiscal planning. As provided in the Enabling Act, the proposed Current Expense Budget and preliminary assessments undergo statutory review, including public hearings and review by MWRA's Advisory Board. Further refinements of projected expenses and revenues also occur during this period. If review and analysis of the proposed Current Expense Budget results in lower projected expenses or higher projected revenue, some or all of such savings from preliminary estimates of assessments can be included in the adopted budget as additions to the rate stabilization fund and used to reduce rate revenue requirements in subsequent years. Alternatively, some or all of such savings can be used to reduce final assessments to customers below preliminary estimates.

The Current Expense Budget and final water and sewer assessments are adopted in June for the fiscal year beginning in July. The budget adopted in June may differ from the proposed budget as a result of review and further refinement of the proposed budget, although final assessments adopted by MWRA must be sufficient to recover water and sewer rate revenue requirements specified in the adopted budget. Final water and sewer rate requirements and their allocation to users may thus change from preliminary estimates. In addition, any individual community's final assessment may be higher or lower than the preliminary estimate, both because of changes in the factors which affect the allocation of assessments among wholesale customers, and because of differences between MWRA's proposed and final budgets as approved by the Board of Directors.

### **Review and Dispute Resolution Process**

MWRA annually determines preliminary and final assessments for water and sewer services in February and June prior to the beginning of the new fiscal year. These assessments must satisfy the requirement that MWRA fully recover its water and sewer costs by apportioning total costs as assessments among its wholesale water and sewer customers pursuant to its water and sewer rate methodologies and to certain specified data including:

- Calendar year metered water volume and metered wastewater flow obtained from MWRA's water and wastewater metering systems;
- Federal and state community census statistics, and sewer population estimates and other information supplied on Customer Service Update forms and Municipal Discharge Permits; and
- High strength user monitoring data and estimates of community septage volumes as obtained by MWRA's Toxic Reduction and Control Department.

The review and dispute resolution process provides MWRA's wholesale customers with the opportunity to review and comment on the reasonableness of the data used to calculate preliminary water and sewer assessments. During the year, MWRA provides its customers with monthly summaries of water and wastewater flow data distributed, at a minimum, on a bimonthly basis. Because annual metered water and wastewater flows are major components for establishing water and sewer charges for each community, customers are strongly encouraged to review this data closely upon receipt and raise questions with MWRA staff concerning the data. MWRA expects that prompt customer review and comment on meter data will result in the resolution of most water and wastewater metering questions and assure the most consistency between preliminary assessments in February and final assessments announced in June. Community contributions of high strength flow and septage, and population data are made available with the release of preliminary assessments in February.

If after an initial review a community believes that specific data used to calculate assessments should be reevaluated, a community may submit a written objection to the Executive Director with a copy to the Rates Manager or their designee. The objection must be signed by the local

official on record with MWRA as responsible for water or sewer services in the city, town, or district. The objection should state the community's concern with the data used to calculate community assessments, and should also include information and technical data to support the community's objection.

In order for any data adjustments to be incorporated into the allocation of final fiscal year assessments, all objections to data used to calculate preliminary assessments must be received no later than the date of the final public hearing on the proposed budget and preliminary assessments, held pursuant to Section 10 of the MWRA Enabling Act. MWRA staff will review and evaluate the merits of all written objections. Customers are notified in writing of the results of this review prior to the release of final assessments.

Adjustments to preliminary data, if any, are not retroactive beyond the applicable calendar year for proposed assessments. Final fiscal year assessments are calculated incorporating adjustments, if any, resulting from the review and objection process, and final rate revenue requirements as adopted by the Board of Directors.

Written objection(s) may also be submitted following the adoption of final fiscal year assessments, but no later than the end of the fiscal year for which the assessments are applicable. Objections submitted in this manner must also be directed to the Executive Director with a copy to the Rates Manager or their designee.

Following MWRA staff review, adjustments to assessments resulting from the challenge of rate basis data that are submitted following the adoption of final fiscal year assessments will be applied to the subsequent year's assessments. Customers are notified in writing of the results of this review and any assessment adjustments prior to the release of the subsequent year's assessments.

### **Water and Sewer Assessment Payment Schedule**

MWRA adopts a schedule of assessments and a schedule of payments annually. Any adjustments for prior years resulting from the review and objection process are apportioned to each of the scheduled payment amounts. No interest is paid or billed by MWRA for previous year's adjustments.

Beginning in FY2001, assessments are payable to MWRA in ten equal installments due on the first day of August, September, October, November, December, February, March, April, May, and June.

### **Interest Charge on Delinquent Payments**

For payments received after a payment due date MWRA levies an interest charge of one percent per month or 0.033 percent per day. Interest charges do not accrue until 45 days after the bills are mailed to MWRA's customer communities. Interest charges are added to subsequent regular billings.

## **Retail Rates**

MWRA assessments are for MWRA's provision of wholesale services. Local bodies which receive wholesale services in turn provide retail services to their users at the local level.

MWRA encourages its customers to establish retail rates which:

1. Recover the full cost of providing local water and/or sewerage services, including both direct costs and an allocation or estimate of indirect costs,
2. Charge users of local water and/or sewerage services in a manner which demonstrates to customers that increased use of services results in increased user costs,
3. Comply with MWRA policies directed to conservation of water; elimination of infiltration and inflow of surface water and ground water into the sewage collection, treatment, and disposal system; and removal or pretreatment of industrial wastes, and
4. To the extent consistent with #1 and #2, provide assistance to low income users through lifeline rates.

**Exhibit B**  
**Massachusetts Water Resources Authority**  
**Wilmington Entrance Fee**  
**Amortization Schedule**  
**FY2017 Amendment**

Principal 2,082,626.87  
Interest Rate 3.950%  
Term (years) 13.00  
  
Annual Payment 207,915.46

<u>Year</u>	<u>FY</u>	<u>Beginning Balance</u>	<u>Principal</u>	<u>Interest</u>	<u>Total Payment</u>	<u>Ending Balance</u>
1	2017	2,082,626.87	125,651.70	82,263.76	207,915.46	1,956,975.17
2	2018	1,956,975.17	130,614.94	77,300.52	207,915.46	1,826,360.23
3	2019	1,826,360.23	135,774.23	72,141.23	207,915.46	1,690,586.00
4	2020	1,690,586.00	141,137.31	66,778.15	207,915.46	1,549,448.68
5	2021	1,549,448.68	146,712.24	61,203.22	207,915.46	1,402,736.44
6	2022	1,402,736.44	152,507.37	55,408.09	207,915.46	1,250,229.07
7	2023	1,250,229.07	158,531.41	49,384.05	207,915.46	1,091,697.66
8	2024	1,091,697.66	164,793.40	43,122.06	207,915.46	926,904.26
9	2025	926,904.26	171,302.74	36,612.72	207,915.46	755,601.52
10	2026	755,601.52	178,069.20	29,846.26	207,915.46	577,532.32
11	2027	577,532.32	185,102.93	22,812.53	207,915.46	392,429.39
12	2028	392,429.39	192,414.50	15,500.96	207,915.46	200,014.88
13	2029	200,014.88	200,014.88	7,900.59	207,915.47	0.00
Totals			2,082,626.87	620,274.14		



Town of Wilmington  
Office of the Town Manager  
121 Glen Road  
Wilmington, MA 01887-3597

PHONE: (978) 658-3311

FAX: (978) 658-3334

TTY: (978) 694-1417

[WWW.WILMINGTONMA.GOV](http://WWW.WILMINGTONMA.GOV)

March 4, 2024

MWRA Advisory Board  
2 Griffin Way  
Chelsea, MA 02150

MWRA Board of Directors  
Deer Island  
33 Tafts Avenue  
Boston, MA 02128

Dear MWRA Advisory Board and MWRA Board of Directors,

The Town of Wilmington (Town) requests Massachusetts Water Resources Authority (MWRA) approval to increase our annual withdrawal volume from the MWRA Water System from 219 million gallons per year (MGY) to 450.5 MGY. Additionally, the Town requests a waiver of the MWRA entrance fee for the additional withdrawal volume pursuant to the MWRA Board of Director's September 14, 2022 vote for a five-year waiver of the entrance fee. The Town believes that the requests meet the eligibility criteria for a waiver of the entrance fee because our local sources are impacted by water quality issues, capacity limitations, and long-term reliability. The Town is an existing MWRA Water System member community. The basis for the request for increased withdrawal volume and waiver of the associated entrance fee is provided in this letter as follows.

The Town previously received approval through the Massachusetts Environmental Policy Act (MEPA) and Interbasin Transfer Act (ITA) to withdraw up to 620.5 MGY, or 1.7 million gallons per day (MGD) on an average annual basis and our current Water Supply Agreement with the MWRA allows for up to 219 MGY, or 0.6 MGD on an average annual basis. The MEPA certificate and ITA approval are attached to the end of this letter. We estimate that the Town's average day water withdrawals from the MWRA Water System could range from approximately 0.7 to 2.5 MGD over the next ten years (2024 through 2034). Refer to Table 1 on page 3 of this letter for details. This variability is due to uncertainties related to quality, capacity, and reliability of our active groundwater sources of supply. These sources are threatened by various contaminants. The Town's five wells in our southern Maple Meadow Brook aquifer were placed into inactive status in 2002 due to N-nitrosodimethylamine (NDMA) contamination. According to MassDEP, this contamination is believed to have been caused by historical releases of hazardous materials at the Olin Corporations site at 51 Eames Street, Wilmington. It is expected that these wells will not be reactivated. All four of the remaining active wells in Wilmington are impacted by PFAS contamination and we are concerned about concentrations increasing over time, the pending limits set by EPA, and potentially stricter standards set by MassDEP. In addition, multiple wells are experiencing increasing chlorides concentrations

from deicing operations along Interstate 93. This contamination has been studied by EPA and the Town expects concentrations will continue to increase over the long term and may require advanced treatment.

The Town's two water treatment facilities have granulated activated carbon (GAC) as part of their treatment processes, which has been effective in treating PFAS in our water supplies. The concentrations of the six specific PFAS compounds regulated by the Massachusetts PFAS Standard for Public Drinking Water Supplies vary within each of the groundwater wells that supply the two treatment facilities; however, the Town coordinates for GAC replacement after the six compounds are detected in the finished water. The Town's Sargent Water Treatment Facility provides nearly 80% of the Town's local water supply and can deliver approximately 1.6 MGD on average and up to 2.2 MGD during maximum day demand). Therefore, the GAC in this facility needs replacement more frequently than our Butters Row Treatment Facility to meet the current Massachusetts maximum contaminant limit (MCL) of 20 ppt (for the total of 6 compounds). After GAC replacement, the Sargent facility can operate for about 2 months before PFAS compounds are detected in the finished water. Replacement is required about every 11 months to prevent the concentrations from exceeding the MCL. These conditions require the Town to be diligent with our recurring GAC replacement. In October 2021, the Sargent facility violated the MCL and the town had to temporarily shut down one of the three wells that supply the facility to reduce PFAS levels in the finished water until the GAC was replaced.

In March 2023, the EPA proposed a National Primary Drinking Water Regulation for PFAS that sets an MCL of 4.0 ppt for both PFOA and PFOS and is proposing to address four additional PFAS (GenX, PFBS, PFNA, and PFHxS) as a mixture using a Hazard Index. EPA's web site indicates that these federal regulations are expected to be published by the end of this year with a deadline for compliance of 3 years. MassDEP has indicated that the state regulations will be "at least as stringent" as the federal standards and "will be finalized before the federal deadline." Therefore, we expect the need to replace our GAC more frequently in the coming years based on the above statements from MassDEP. Under the pending EPA regulations, Wilmington will need to initiate GAC replacement soon after PFOA is detected in the finished water because levels increase to over 4 ppt within about 4 months of detection, based on our current monitoring results (attached to the end of this letter). This replacement interval will be every 4-5 months.

The Town is concerned that we will not be able to replace the GAC at our Sargent facility this frequently due to lead times for GAC product and availability of qualified replacement contractors. The Town's vendor currently requires a 6 week notice before carbon can be made available, but when the EPA regulations are in place, this is sure to increase due to the limited number of vendors. This will result in the facility being offline for periods of time throughout the year while awaiting replacement. Therefore, we plan to use MWRA water supply as a recurring supplemental source as needed when our Sargent facility is offline. Under the pending regulations, the Town assumes that the Sargent facility will require three GAC replacements per year and there will be up to 4-6 weeks during each replacement when the Sargent facility will be offline while awaiting the GAC product, contractor availability, and the replacement work to be complete. Consequently, the Town is planning for the Sargent facility to be offline approximately 4 months per year. If the Town uses its MWRA connection when the Sargent facility is offline at its average capacity of 1.6 MGD, it equates to approximately 195 MGY of MWRA supply. This withdrawal volume will be in addition to the Town's current use of the MWRA Water System as a supplemental, seasonal supply due to lack of local supply capacity. In 2022, we used 248.5 MGY, which exceeded the annual supply volume of 219 MGY in our current water supply agreement. This year, it is projected to be well under this amount due to the high amount of

rainfall over the spring and summer, which significantly lowered water demands in Town. However, the new agreement should increase the current amount to account for elevated seasonal demands and declining well yields in the Town. Our Shawsheen Well yield has been diminishing and can no longer be recovered through well rehabilitation.

Based on the above analysis, we expect that the Town’s use of the MWRA Water System will increase up to approximately 255.5 MGY (0.7 MGD) for the next 2 years or so to meet seasonal demands, then increase to approximately 450.5 MGY (1.23 MGD) to also supplement the Sargent facility for about 3 years. Beyond the next 5 years, it is hard for us to predict how much volume we will need. The Town plans to construct a new pumping station to increase the capacity of our MWRA connection to Meter 339 in the MWRA Northern Intermediate High System. This pumping station is currently in our capital plan, scheduled for completion by 2029. It will be located in the Town near the Woburn city-line and will be designed for an average day demand of 2.5 MGD and a maximum day demand of 4.3 MGD, which is based on current water demands with a small contingency for growth. The pump station will be initially used to supplement the Town’s existing sources; however, the capacity is based on the potential for obtaining all of our water supply from the MWRA in the future. By that time, the Town will need to decide whether to upgrade our local treatment plants with advanced treatment to treat PFAS and potentially elevated chlorides or to purchase all supply from the MWRA. This decision will be informed by the status of PFAS concentrations in our groundwater supplies and the associated federal and state MCLs for PFAS which may be the pending standards proposed by EPA or a lesser concentration enacted by Massachusetts. Obtaining any annual volume from the MWRA above 620.5 MGY (1.7 MGD) would require MEPA review and ITA approval under a future permitting process, in addition to a new agreement with the MWRA.

**Table 1** shows our current estimate of the Town’s supply requirements from MWRA by year.

**Table 1: Projected Supply Requirements from MWRA**

<b>Year</b>	<b>Projected Supply Needs</b>	<b>Notes</b>
2024-2026	255.5 MGY (0.7 MGD)	Small increase for seasonal supply.
2026-2029	450.5 MGY (1.23 MGD)	Increased seasonal supply plus GAC replacement periods at Sargent facility.
2029-	To be determined: up to 912.5 MGY (2.5 MGD)	Pump station complete, Town to decide to upgrade local treatment facilities or obtain full MWRA supply.

In addition to these considerations, the Town’s local supplies are located within the Ipswich River Basin, which is highly stressed and has been the subject of numerous studies for improving streamflow impairment. Recommendations have focused on reduced use of municipal water supply wells for headwater communities, such as Wilmington, particularly when streamflow is lowest in the summer months. Supply from the MWRA Water System has been the primary recommended alternative, so increased use of the MWRA for supplemental supply is consistent with the recommendations in those studies.

Pursuant to the MWRA Board of Director’s September 14, 2022 vote for a five-year waiver of the entrance fee, the Town requests a waiver of the MWRA entrance fee associated with this request for an increase in withdrawal volume. The Town requests a waiver of the entrance fee because it is an existing MWRA Water System member community and our local sources are impacted by water quality issues, capacity limitations, and long-term reliability.

We appreciate MWRA's consideration of this request so that the Town can withdraw additional water from the MWRA system to supplement local sources and ensure a reliable, long-term water supply for our residents and businesses. With this request, the Town would like to amend our existing Water Supply Continuation Agreement, dated April 30, 2024 and amended February 16, 2017.

A handwritten signature in black ink, appearing to read 'L. Cimaglia', with a stylized flourish at the end.

Lou Cimaglia  
Temporary Town Manager



# *The Commonwealth of Massachusetts*

*Executive Office of Environmental Affairs*

*100 Cambridge Street, Suite 900*

*Boston, MA 02114-2524*

MITT ROMNEY  
GOVERNOR

KERRY HEALEY  
LIEUTENANT GOVERNOR

STEPHEN R. PRITCHARD  
SECRETARY

Tel. (617) 626-1000  
Fax. (617) 626-1181  
<http://www.mass.gov/envir>

July 28, 2006

CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS  
ON THE  
SUPPLEMENTAL FINAL ENVIRONMENTAL IMPACT REVIEW /  
PHASE III COMPREHENSIVE WATER RESOURCES MANAGEMENT PLAN

PROJECT NAME : Comprehensive Water Resources  
Management Plan  
PROJECT MUNICIPALITY : Wilmington  
PROJECT WATERSHED : Ipswich River  
EOEA NUMBER : 8844  
PROJECT PROPONENT : Wilmington  
DATE NOTICED IN MONITOR : **June 21, 2006**

As Secretary of Environmental Affairs, I hereby determine that the Supplemental Final EIR/Phase III (SFEIR) document, submitted on this project **adequately and properly complies** with the Massachusetts Environmental Policy Act (G. L., c. 30, ss. 61-62H) and with its implementing regulations (301 CMR 11.00).

On a statewide level, I remain concerned about the need to balance water budgets in each watershed across the Commonwealth. We must protect the water sources we have, use water more efficiently, identify and protect the additional sources we'll need to meet reasonable future demands, and balance our water budgets within our watersheds to protect environmental resources. Existing local water withdrawals from Wilmington and other communities are causing severe stresses on the ecosystem of the Ipswich River basin. Restoring the water balance in the Ipswich River basin will require a combination of reducing the amount of wastewater exported out of the basin for treatment, improved stormwater management and groundwater recharge, and supplementing or replacing existing water supplies. As part of this effort, the Ipswich River basin communities will need to work together, to develop a comprehensive long-term plan to securing water while protecting the environment.

## Overview

The Town of Wilmington has developed a Comprehensive Wastewater Management Plan/Environmental Impact Report (CWMP/EIR) to address the short-term and long-term issues relating to the Town's wastewater treatment and disposal needs, and drinking water supply needs. The goal of the CWMP/EIR is to examine the full range of Wilmington's water supply, wastewater management, and stormwater management needs, and identify environmentally sustainable alternatives that respond to the community's needs, meet water quality and public health standards, and restore and protect the Ipswich River and associated watershed resources. The result is a comprehensive plan outlining how the Town of Wilmington will meet its water supply needs and treat and dispose of its sanitary sewage for the next 20 years.

The Town of Wilmington was asked to identify and analyze one or more comprehensive approaches to address Wilmington's long-term water supply needs and long-term wastewater needs in a manner consistent with state policies and regulations and consistent with the goal of restoring, maintaining, and enhancing recharge to groundwater and base flow to the Ipswich River. Specifically, the Town of Wilmington was required to provide information and analysis on a number of water management issues including:

- Wastewater disposal methods that do not result in the transfer of water out of the Ipswich River basin; a detailed evaluation of alternative water supply sources to meet the Town's public water supply needs;
- A wastewater management proposal that maximizes the use of on-site subsurface wastewater disposal systems and near-site and subregional wastewater treatment facilities that adequately evaluates the potential impacts of proposed new sewers to secondary growth, water supply demand, increased impervious surface area and stormwater management, and stream flow and water balance in the Ipswich River basin; and
- A commitment to the full range of effective local water conservation measures that reduce demand on water supplies to the maximum practicable extent.

The Town of Wilmington's CWRMP seeks to balance sewer discharges, water withdrawal pump rates from local streamside wells, and water purchased from MWRA during critical low stream flow periods. The Source Management component of the Town of Wilmington's CWRMP calls for the construction of a water supply connection to the Massachusetts Water Resources Authority (MWRA) to purchase approximately 2.5 million gallons per day (mgd) of MWRA water supplies to replace the loss of supply from the Maple Meadow Brook Aquifer (MMBA) water supply wells, and to ensure an adequate supply of water to the Town while reducing the stress placed on the Ipswich River by the Town's existing withdrawals during seasonal low flow periods (May thru September). The Town's Plan includes the proposed rehabilitation of the Brown's Crossing Wellfield and the Salem Street Well to provide an in-basin water supply source (approximately 1.2 mgd) to supplement the MWRA purchase to meet Wilmington's estimated future water supply needs.

The Sewer Mitigation component of the Town of Wilmington's CWRMP is comprised of MWRA water imports, stormwater infiltration/recharge from the Town's Stormwater By-Law, elimination of infiltration and inflow (I/I), and water conservation.

According to the information provided in the SEIR, the Sewer Mitigation and Source Management components of Wilmington's CWRMP are based on a series of projections and assumptions. The Town has committed to reviewing these projections and assumptions prior to the construction of each Phase of sewer expansion and each time the Town's Water Management Act Permit is renewed.

As described in the SFEIR, the Town's stormwater management plan will provide a minimum of 2.5 mgd of stormwater recharge to the Ipswich River basin. According to the proponent, the in-stream flow restored by the Town's purchase of MWRA water, use of the Brown's Crossing Wellfield and the Salem Street Well, and stormwater management plan is to be retained in the Ipswich River, where it is critically needed to support healthy aquatic ecosystems and other in-stream functions and values, including recreation and pollution dilution.

The Secretary's Certificate on the FEIR, issued in October 15, 2004, required the proponent to prepare a Supplemental Environmental Impact Report (SFEIR) to address a number of significant issues of statewide policy pertaining to water conservation, water supply, sewer expansion, and stormwater management so that they can be considered in the evaluation of the most feasible options and a presentation of the Final Recommended Plan. Specifically, the proponent was asked to provide additional information to adequately address the following issues:

- A detailed commitment to the full range of effective local water conservation measures that reduce demand on water supplies to the maximum practicable extent.
- A reevaluation of the Town's sewer expansion plan and the need to extend new sewer to include new additional residential land areas surrounding Wilmington's remaining public water supply resource areas, and
- A commitment that the relief offered by out-of-basin sources will be offset by reducing allowable local withdrawals, to ensure that the Ipswich River ecosystem truly benefits from the project.

### Water Resources Conservation

Water conservation efforts in the Town of Wilmington and other Ipswich Basin communities are likely to have significant beneficial impacts to streamflows in the Ipswich River. I note that the conservation measures required by DEP for all water suppliers located in the Ipswich River Basin have been contested by the Town of Wilmington as part of the Town's appeal of DEP's May 2003 modifications to the Town of Wilmington's Water Management Act permit. As a result, the Town has elected to not include in the SFEIR a detailed description of the Town's proposed conservation measures or a commitment to their implementation until the Administration Magistrate has issued his decision. In their comments, DEP anticipates that the Administration Magistrate's decision for the Town of Wilmington's appeal, will be similar to that of other decisions rendered for other municipal appeals in the Ipswich River Basin communities, and will result in Wilmington's adoption of water conservation measures that are compliant with DEP's April 2004 policy.

As Secretary of the Environmental affairs, I have an independent obligation under MEPA and its implementing regulations to ensure that a proposed project has taken all feasible steps to avoid, minimize, and mitigate damage to the environment.

I find that water conservation serves as a fundamental component of the Source Management component of the Town's CWRMP, and to many of the permits that may be required for this project. I am therefore requiring the proponent to provide a copy of the final water conservation plan for this project to the MEPA Office for the project file. The proponent's water conservation plan should include a detailed description of the Town's voluntary and mandatory water restriction and conservation measures that have been approved, and those measures that have been funded and implemented to date, the proponent's commitments to program funding, outdoor water use restrictions, and water use rates. I strongly encourage the proponent to work closely with DEP in the final design of the water conservation plan and to identify opportunities for incorporating a number of additional tools to improve water conservation, including: the use of a water bank, enactment of a bylaw regulating automatic sprinklers and/or clearing of land for grass lawns, and promotion of the use of cisterns for outdoor watering.

#### Sewer Expansion

As described in the SFEIR, the Town has revised its sewer expansion plan in response to comments received on the FEIR, and has eliminated the previously proposed sewerage under Phase IV from the CWRMP. As currently proposed, a reserve sewer allotment, equivalent to the total wastewater flows of 200 single-family houses, will replace the proposed Phase IV sewer area. This reserve sewer allotment, to be administered by Wilmington's Board of Water and Sewer Commissioners and the Board of Health, may be applied to office, commercial, industrial, and municipal developments, as well as residential developments, and may be used in any of the Phase sewer areas (Phase I-III). The reserve sewer allotment should be considered as a total wastewater flow amount (gpd) so as to adjust for reductions in the reserve allotment from sewerage non-residential developments. According to the DEP, the elimination of the Phase IV sewer area and the incorporation of a reserve sewer allotment represents a reduction of approximately 92,000 gpd of wastewater to be exported from the Ipswich River Basin.

The Town has also proposed to adopt a Sewer District By-Law establishing a permit review process, also administered by Wilmington's Board of Water and Sewer Commissioners and the Board of Health, for any development proposals not located within the Town's Sewer District and Implementation Plan map and requesting a sewer extension/connection to the municipal sewer system. Project proponents will need to satisfactorily demonstrate to Wilmington officials and DEP that the need for sewer exists, and that no other viable wastewater treatment and disposal options exist.

### Local Sources

The SFEIR includes a more detailed discussion of the proposed use of local water supply sources (Salem Street and Browns Crossing well-fields) and their combined ability to provide local source water during the critical low streamflow Summer Target period (May-September), and the non-critical streamflow Winter Target period (October – April). Under the Plan's Summer Target scenario, Wilmington will monitor streamflow in the Ipswich River from May thru September using the South Middleton gauge, and employ a Minimum Streamflow Threshold (MST) of 18.7 cubic feet per second (cfs) to activate its maximum purchase of MWRA water (approximately 2.5 mgd) and reduce its local water supply source withdrawal rates to approximately 1.2 mgd. During the Winter Target period (October-April), the Town will operate its local water supply sources at a higher average daily rate (approximately 2.2 mgd) and minimize the purchase of MWRA water to approximately 1.0 mgd.

Many commenters have expressed concern with the project's potential impacts to Martins Brook and Lubbers Brook, tributary streams to the Ipswich River, resulting from the increased pumping and withdrawals from Wilmington's local source wells (Salem Street and Browns Crossing well-fields) as proposed in the CWRMP. According to the comments received from the Ipswich Watershed Association, the League of Women Voters of Wilmington and others, these headwater tributary streams experience critical low flow conditions sooner and more frequently than critical low flow conditions that may be identified in the Ipswich River at the South Middleton gage. The South Middleton gage is located approximately eight miles downstream of these tributary streams. The Town's proposed use of the South Middleton gauge to monitor MST in the Ipswich River during critical low streamflow periods may not detect critical low flow conditions in the headwaters of the Ipswich River in a timely manner. A number of commenters have reported that the streamflow in Lubber Brook was eliminated for a period of time in 2005 due to municipal withdrawals at streamside wells. Numerous comments have been received requesting regular monitoring of the Martins Brook Aquifer area, and the use of permanent streamflow gages, to be installed upstream of the existing South Middleton gage, to help monitor the impacts of the Town's CWRMP on headwater tributary streams to the Ipswich River.

I ask that DEP and the Water Resources Commission include this issue in their respective Water Management Act and InterBasin Transfer Act permit review processes for this project, and any proposed periodic updates of the Source Management and Sewer Mitigation components of Wilmington's CRWMP.

### Stormwater Management

The SFEIR contains a more detailed discussion of the benefits associated with the groundwater recharge of existing and future stormwater run-off and the proponent's proposed stormwater management program. According to the proponent, the stormwater management program has been designed to mitigate the loss of water from the preferred sewer alternative and balance Wilmington's water budget in the Ipswich River Basin. As described in the SFEIR, the proposed stormwater management program is now estimated to provide approximately 2.5 mgd of groundwater recharge to the Ipswich River Basin by 2025.

As discussed in the SFEIR, immediately upon completion of the MEPA review process for the CWRMP, the Town of Wilmington proposes to complete the process to draft, adopt and implement a bylaw for stormwater infiltration that will require new development (excluding individual homes) and renovation/expansion to recapture 150% and 100% of stormwater runoff, respectively. Stormwater recharge serves as a fundamental component of the proponent's proposed sewer mitigation plan. I am also requiring the proponent to provide a copy of the final Stormwater infiltration By-Law for this project to the MEPA Office for the project file. As described in the SFEIR, the Wilmington Planning Board and Building Inspector's Office will maintain records, including engineering calculations for the infiltration systems installed under the stormwater infiltration By-Law, to monitor the actual verses proposed infiltration benefits.

### Conclusion

Numerous state agencies, environmental advocacy groups and interested parties have invested a substantial amount of time reviewing this project. The proponent and the state permitting agencies should carefully consider the comments received on the SFEIR.

I note that DEP has indicated that the SFEIR has adequately addressed DEP's comments on the FEIR, and that WRC has indicated that technical issues raised in WRC's comment letter can be addressed during the IBTA permitting process. I am requiring the Town of Wilmington to work closely with DEP and WRC to satisfactorily address the comments received on the SFEIR pertaining to water conservation, stormwater management, streamflow monitoring, and water auditing during the permitting process. The permitting agencies should forward a copy of their final Section 61 Findings to the MEPA Office for completion of the project file.

July 28, 2006  
DATE

  
Stephen R. Pritchard, Secretary

### Comments received:

07/18/06	Massachusetts Water Resources Authority (MWRA)
07/20/06	Suzanne M. Sullivan
07/20/06	Water Resources Commission (WRC)
07/21/06	Water Supply Citizens Advisory Commission, MWRA
07/21/06	League of Women Voters of Wilmington
07/21/06	Massachusetts Department of Environmental Protection (DEP) – NERO
07/21/06	Ipswich River Watershed Association (IRWA)

SFEIR 8844  
SRP/NCZ/ncz



# THE COMMONWEALTH OF MASSACHUSETTS

## WATER RESOURCES COMMISSION

100 CAMBRIDGE STREET, BOSTON MA 02114

### **REPORT OF THE FINDINGS, JUSTIFICATIONS AND DECISION OF THE WATER RESOURCES COMMISSION**

#### **Relating to the Approval of the Town of Wilmington's Request for an Interbasin Transfer Pursuant to M.G.L. Chapter 21 § 8C**

#### DECISION

On June 14, 2007, by an eight to zero (8-0) vote, the Water Resources Commission (WRC) approved the Town of Wilmington's request for an Interbasin Transfer for admission to the MWRA Water Works System. This vote was taken after review of the facts provided by the applicant, analysis of the associated data, and consideration of comments received concerning this proposal.

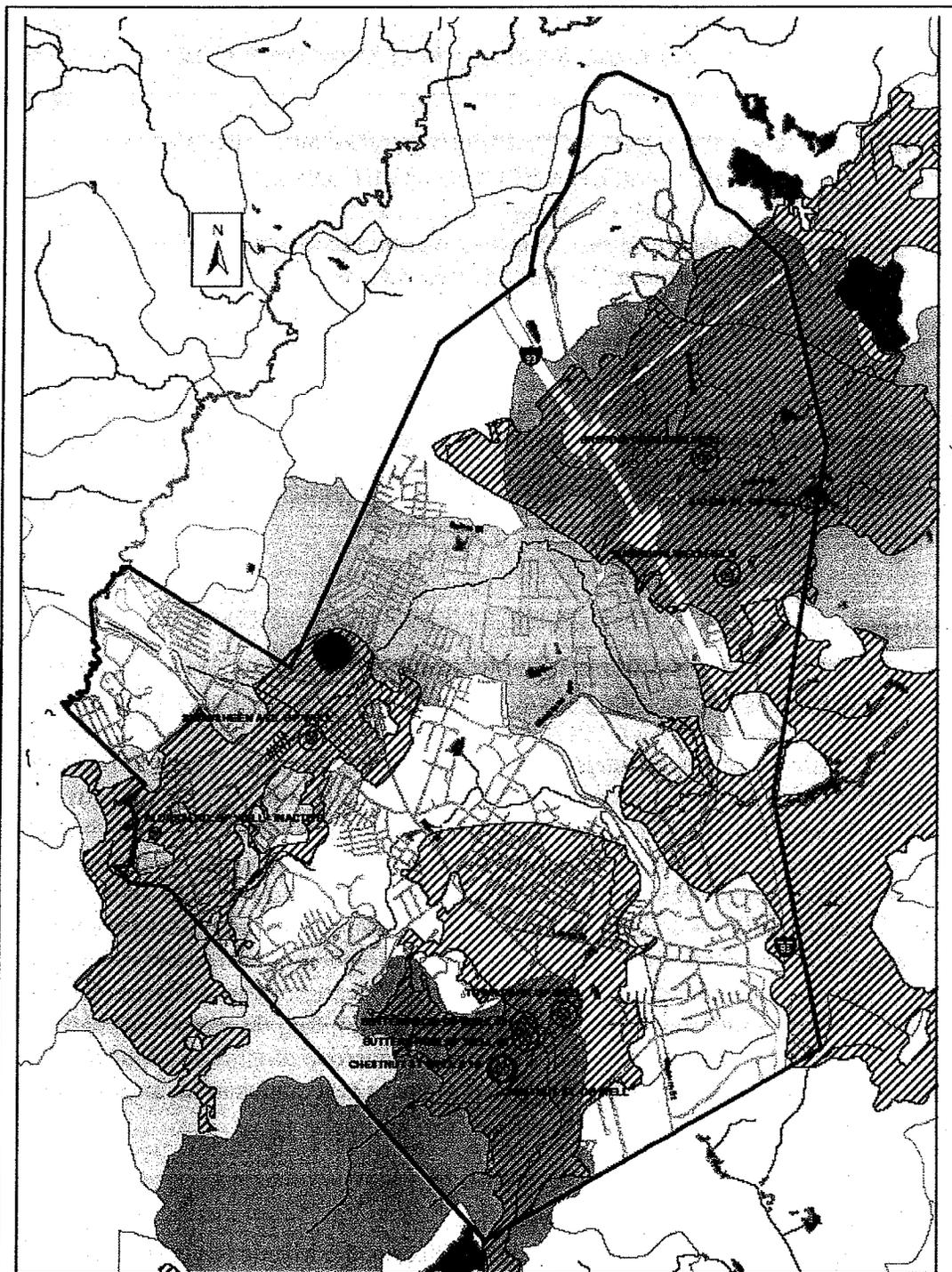
#### INTRODUCTION

On September 1, 2004, the Massachusetts Water Resources Commission (WRC) received a request for approval of an action to increase the present rate of interbasin transfer under the Interbasin Transfer Act (M.G.L. Chapter 21 §§ 8B-8D) from the Town of Wilmington, as part of a Final Comprehensive Water Resources Management Plan/Environmental Impact Report (CWMP/EIR). Wilmington is proposing to purchase a maximum of 3.25 million gallons per day (mgd) of water from the Massachusetts Water Resources Authority (MWRA) to supplement its existing water supply sources (Figure 1). This represents a maximum day demand. Wilmington's average day demand (ADD), based on the years 2001 to 2005, has ranged from 2.11 mgd to 2.80 mgd. In 2003, five of Wilmington's wells were taken off-line due to contamination and the Town started receiving water from the MWRA on an emergency basis. The current reliable capacity of Wilmington's active sources is estimated as 1.70 mgd. Wilmington has a Water Management Act permit for 3.56 mgd, although in 2003, DEP proposed limiting the permit to 3.36 mgd. This is currently under appeal. Wilmington is requesting to transfer a maximum amount of 620.5 million gallons per year (mgy) from the MWRA system. This equates to an average annual transfer of 1.70 mgd.

#### FACTS PERTAINING TO THE PROPOSAL

1. Wilmington has land area in the Ipswich River basin, the Mystic River subbasin of the Boston Harbor basin and Shawsheen River basin.
2. The MWRA Waterworks System has sources in the Chicopee River basin and the Nashua River basin. The Interbasin Transfer (IBT) application was submitted as part of the Final Comprehensive Water Resources Management Plan/Environmental Impact Report (CWMP/EIR) for this project (EOEA #8844).

Figure 1



3,000 1,500 0 3,000 6,000 Feet

Figure WRC-15 combines two figures provided in the Draft CWRMP and shows well locations with respect to sub-basins. (Please refer to Figure 6.1 in Appendix J of the Draft CWRMP EIR for a representation of well locations with respect to overborder aquifers.)

Legend

- Town Boundary
- Public Water Supply Wells
- DEP Approved Zone I
- DEP Approved Zone II
- Mt. Brook Sub-basin
- Upper Lubbers Brook Sub-basin
- Lower Lubbers Brook Sub-basin
- Sawmill Brook Sub-basin
- Martins Brook Sub-basin
- Greenish River Sub-basins
- Abington River Sub-basins
- North Coastal Sub-basin
- Branch River Sub-basins
- Maple Meadow Brook Sub-basin
- Water
- Streams

Source: Massachusetts Geographic Information System and Wilmington Geographic Information System

Figure WRC-19

Water Supply Sources

Wilmington, Massachusetts

**SEA** S E A Consultants Inc.  
 Scientists, Engineers, Architects

3. The CWMP addressed Interbasin Transfer Act (ITA) issues, as well as issues not jurisdictional under the ITA. Only the purchase of water from the MWRA, one of the issues addressed in the water supply sections, is jurisdictional under the ITA.
4. The WRC accepted Wilmington's application as complete at its January 11, 2007 meeting.
5. Two required public hearings were held to take comment on this application on February 27, 2007 and February 28, 2007.
6. On April 12, 2007, the WRC discussed Staff's recommendation to approve Wilmington's application under the Interbasin Transfer Act to join the MWRA's Water Works system.
7. A public hearing on the Staff Recommendation was held on April 26, 2007.
8. Responses to comments received through the public comment period are available in a separate report from the WRC.

### EVALUATION OF THE PROPOSED INTERBASIN TRANSFER

This Interbasin Transfer application was reviewed on its own merits. The Decision was made on facts relevant to the Interbasin Transfer Act and its regulations. The application was evaluated against the eight criteria outlined in the regulations (313 CMR 4.05), as well as the Interbasin Transfer Act Performance Standards and with consideration of comments received through the public comment process.

### SYNOPSIS OF THE EVALUATION CRITERIA (313 CMR 4.05)

<b>Criteria</b>	<b>Application Meets?</b>
<b>Criterion #1:</b> MEPA Compliance	Yes
<b>Criterion #2:</b> Viable In-Basin Sources	Yes
<b>Criterion #3:</b> Water Conservation	With Conditions
<b>Criterion #4:</b> Forestry Management	Not Applicable
<b>Criterion #5:</b> Reasonable Instream Flow	Yes
<b>Criterion #6:</b> Groundwater/Pumping Test	Not Applicable
<b>Criterion #7:</b> Local Water Resources Management Plan	Yes
<b>Criterion #8:</b> Cumulative Impacts	Yes

### BASIS FOR THE WRC DECISION

This application was reviewed by WRC staff at the Department of Conservation and Recreation (DCR) Office of Water Resources, and staffs from the Department of Environmental Protection's (DEP) Division of Watershed Permitting and Northeast Regional Office, and Department of Fish and Game's (DFG) Division of Fisheries and Wildlife and Riverways Program. This Decision was made after an extensive evaluation of the project and of Wilmington's compliance with the six applicable criteria of the Interbasin Transfer Act regulations. Attachment 1 provides a synopsis of how the application addresses these criteria. The following section describes in detail, compliance with the criteria.

### **Criterion #1 MEPA Compliance**

An environmental review, pursuant to Section 61 and 62H, inclusive, of Chapter 30, was required for this proposed action. The Interbasin Transfer application was submitted as part of the Final Comprehensive Water Resources Management Plan/Environmental Impact Report (CWMP/EIR) for this project (EOEA #8844). The Secretary's Certificate on the FCWMP/EIR was issued on October 15, 2004 and required that a Supplemental FEIR (SFEIR) be developed. The SFEIR included a partial response to the WRC's comments. The Secretary's Certificate on the SFEIR was issued on July 28, 2006 and stated that no further MEPA review was necessary.

### **Criterion #2 Viable In-Basin Sources**

To meet this criterion, Wilmington was required to demonstrate that it had identified and developed all viable sources in the receiving area. Wilmington has ten existing groundwater sources, all located in the Ipswich River basin (See Table 1). Only four of these sources are currently active. Five wells were taken off-line in 2003 due to contamination. Another well has been inactive since 1972 because of elevated levels of naturally-occurring iron and manganese. Wilmington has estimated the current reliable capacity of its active sources as 1.70 mgd, although redevelopment or reconstruction may increase the yield of its existing wells. Wilmington operates two water treatment plants: the Butters Row Water Treatment Plant and the Sargent Water Treatment Plant. The Butters Row Water Treatment Plant served the wells lost to contamination and currently treats water only from the Shawsheen Avenue well. It is now being used below its design capacity of 3.0 mgd. The Sargent Water Treatment Plant, which also has a design capacity of 3.0 mgd, serves the wells on the north side of Wilmington (Brown's Crossing, Barrows and Salem Street wells). The Sargent Water treatment plant is also operating below its design capacity because the sources that it treats are not operating at their permitted withdrawal limits, as their capacities have deteriorated over time. The estimated operating capacity of the wells served by the Sargent Water Treatment Plant is approximately 1.8 mgd. Wilmington maintains interconnections with North Reading, Burlington and Woburn, as well as an emergency connection with the MWRA. The emergency connection with MWRA has been in use since 2003, when some of Wilmington's wells were taken off-line in response to contamination concerns.

#### *Existing Wells*

Wilmington has five wells in the Maple Meadow Brook subbasin of the Ipswich River basin. These wells are located in the southern end of Wilmington and include the two Butters Row wells, two Chestnut Street wells, and the Town Park well. Combined, these wells have an approved yield of 4.54 mgd, according to the town's current Water Management Act (WMA) permit. In 1999, ammonia, nitrate, and nitrite concentrations were discovered in the well water and resulted in Wilmington developing and implementing an Emergency Contingency Plan. In 2002, N-nitrosodimethylamine (NDMA) was discovered in the Maple Meadow Brook Aquifer and in Wilmington's wells which draw from that aquifer. Subsequently, many additional chemical contaminants have been identified in the Maple Meadow Brook Aquifer. The contamination includes a dense, non-aqueous phase liquid that has settled on the bedrock surface. The source of contamination is from an upgradient property formerly used for industrial purposes. The contamination is being remediated through the U.S. Environmental Protection Agency Superfund program with participation by DEP's Bureau of Waste Site Cleanup. The full extent of the contamination is not known and cleanup of ground water contamination is in early

**Table 1  
Wilmington's Existing Water Supply Sources**

	<b>WMA Daily Max. Rate (mgd)</b>	<b>Current Max. Capacity (mgd) *</b>	<b>Current Capacity 16 hr/day (mgd)</b>	<b>Comments/Status</b>
<b>Maple Meadow Brook Aquifer</b>				
Butters Row – 1	1.30	0.50	0.34	<b>Off-Line (aquifer contamination)</b>
Butters Row – 2	1.37	0.86	0.58	
Chestnut St – 1	1.37	0.50	0.34	
Chestnut St – 1A	combined	0.97	0.65	
Town Park	0.50	0.22	0.14	
<b>Subtotal Maple Meadow Brook Aquifer</b>	<b>4.54</b>	<b>3.05</b>	<b>2.05</b>	
<b>Lubbers Brook Aquifer (treated at Butters Row Water Treatment Plant)</b>				
Shawsheen Ave	0.72	0.72	0.48	<b>Active</b>
Aldrich	Not included in permit	Not Applicable	Not Applicable	<b>Discontinued in 1972 (elevated iron and manganese concentrations)</b>
<b>Subtotal Lubbers Brook subwatershed</b>	<b>0.72</b>	<b>0.72</b>	<b>0.48</b>	
<b>Martins Brook (treated at Sargent Water Treatment Plant)</b>				
Brown's Crossing	1.55	0.72	0.48	<b>Upgrade to original capacity proposed</b>
Barrows	0.94	0.65	0.43	
Salem St	1.01	0.46	0.31	<b>Upgrade to original capacity proposed</b>
<b>Subtotal Martins Brook subwatershed</b>	<b>3.50</b>	<b>1.83</b>	<b>1.22</b>	
<b>Town Total Capacity</b>	<b>8.76</b>	<b>2.55</b>	<b>1.70</b>	<b>Current capacity does not include Maple Meadow Brook wells</b>
<b>WMA Permit Limit</b>	<b>3.56</b>	<b>3.56</b>	<b>3.56</b>	
<b>Projected Average Day Demand 2025</b>	<b>3.32</b>	<b>3.32</b>	<b>3.32</b>	
<b>Projected Max Day Demand 2025</b>	<b>5.08</b>	<b>5.08</b>	<b>5.08</b>	

Note: \* indicates calculation based upon wells operating 24 hours per day, not optimal

stages. DEP, in a letter to the Town of Wilmington dated October 23, 2003, concurred that use of the aquifer as a source of drinking water should be discontinued for the foreseeable future, until plans to control/remove contaminants, and to ensure that use of the aquifer does not pose a threat to public health have been developed, approved by DEP, and implemented.

Wilmington's Shawsheen Avenue well is located on the west side of town along Lubbers Brook, and is currently in operation, utilizing the Butters Row treatment plant. The Shawsheen Avenue well has an approved yield of 0.72 MGD. The Aldrich gravel packed well is also located within this aquifer near the headwaters of Lubbers Brook, but has been designated as inactive since 1972 because of heavy iron and manganese concentrations. The Aldrich well was not incorporated into Wilmington's Water Management Act permit and would require New Source Approval to be reactivated.

The remainder of Wilmington's active water supply sources, Brown's Crossing Wellfield, Barrows Wellfield, and Salem Street Well, are located in northern Wilmington, in the Martins Brook subbasin. Water from these wells is treated at the Sargent Water Treatment Plant. The Browns Crossing Wellfield, a tubular wellfield, has an approved yield of 1.55 mgd. The Town reports the current yield of the wellfield as 0.72 mgd. Another tubular wellfield, the Barrows Wellfield, has an approved yield of 0.94 mgd, but Wilmington estimates the current yield of this wellfield as 0.65 mgd. A gravel-packed well at Salem Street has an approved yield of 1.00 mgd, but a reported existing capacity of 0.46 mgd. The Town is considering rehabilitation of the Brown's Crossing Wellfield and has started rehabilitation of the Salem Street Well. At Salem Street, two satellite wells are installed and pumps have been installed, but the site has only been able to produce about 500 gpm (0.72 mgd). The Town is studying the situation to determine if the approved yield (700 gpm, or 1 mgd) can be restored. It is unlikely that full rehabilitation will be achieved at either Brown's Crossing or Salem Street, and the Town may only realize a maximum additional yield of approximately 1.08 mgd. This potential maximum increase is still less than the 1.60 mgd additional capacity estimated to be needed by 2025 to meet Wilmington's average day demand. Due to the limited size of its contributing area, the Barrows Wellfield was not targeted for increased withdrawal or upgrades. The Town would still need an additional source of water to meet its long term needs. The Browns Crossing and Salem Street wells cannot be rehabilitated without taking them offline. This would require Wilmington to have a reliable back-up water supply source. The FEIR states that the existing Brown's Crossing Wellfield and Salem Street Well could gain approximately 0.8 mgd and 0.52 mgd, respectively, through restoration. Even with full restoration of these sources, more water would still be needed to meet the Town's current and future demands. The WRC supports operation of in-basin water supplies that avoids further degradation of the Ipswich River or its tributaries. These wells should be used to the extent environmentally and physically feasible, in accordance with the Town's WMA permit. If use of the wells is not feasible, it is possible that the Town may experience a water supply shortfall in the future.

#### *Existing Interconnections*

Wilmington has explored the possibility of obtaining permanent water supply from neighboring communities. Although existing emergency interconnections exist with North Reading, Burlington, and Woburn, and all of the surrounding communities are willing to assist Wilmington with short-term emergencies, none would commit to a long-term permanent supply.

Communities contacted were Woburn, North Reading, Andover, Burlington, Tewksbury and Billerica.

*Development of new in-town sources*

In 2001, Wilmington investigated the development of gravel-packed wells in the Shawsheen River basin portion of town. A potential location was identified, but test drilling in 2002 did not result in favorable results for development of a municipal water supply. The Town also investigated the development of bedrock wells within the Shawsheen River basin and identified three potential sites. Test wells were not drilled at the bedrock well sites; however, the SFEIR evaluated the economic feasibility of developing the bedrock well sites and determined that the cost of water from these sites would be greater than MWRA water. Another concern is that the bedrock well sites are located in the vicinity of industrial property. Wilmington was reluctant to make an investment in new water supply sources that may be subject to contamination.

Wilmington considered potential well sites within the Ipswich River basin to be non-viable as a result of the flow impacts that have been documented in the Ipswich River. It is unlikely that MassDEP would permit new wells in an already impacted basin without significant restrictions.

Wilmington has a small amount of land area within the Boston Harbor Mystic River basin. No overburden aquifers are mapped within this area, and this area is in the headwaters of the basin, so the potential for municipal wells in this area is low.

At WRC staff's request, Wilmington evaluated the feasibility of using the Maple Meadow Brook aquifer wells for a non-potable industrial water supply. Wilmington's industrial water demand is estimated at 1.0 mgd and the Maple Meadow Brook Wells could supply this rate. Such a system would be required to operate with separate treatment, piping and storage from the potable water supply both in the distribution system and within any buildings that utilized it. Wilmington was reluctant to consider this option because of the liability issues related to serving this water to customers, and it did not have assurance that any customers would be interested in the service. An economic analysis in the SFEIR indicated that the cost of implementing such a system would result in water rates more expensive than the cost of MWRA water. Therefore, a non-potable industrial supply of water from the Maple Meadow Brook well field appears to be infeasible at this time.

**Criterion #3 Water Conservation**

Wilmington has an existing water conservation program which meets most of the 1999 IBT Performance Standards for Criterion #3 and most of the Water Conservation Standards for the Commonwealth of Massachusetts. Wilmington does not meet the Performance Standard for a rate structure which encourages conservation. However, the Town is currently conducting a rate study and has committed to implementing a rate structure which encourages conservation, once the study is complete. Wilmington has not fully complied with the Water Conservation Standard which requires that water suppliers meter or estimate contractor use of water from hydrants (in place in both the 1992 and 2006 Standards). The Water Department's regulations require that contractors use temporary meters when using hydrants, however, the 2005 Water Audit indicated that unmetered water use by contractors could be a major source of water loss for the town, as contractors may not be diligent in using the meters. The Water Audit Report recommended that

the Water Department conduct periodic monitoring and consider enforcement provisions to ensure that contractors are using hydrant meters at construction sites.

Based on this, the WRC has determined that Wilmington is in the process of addressing the ITA Performance Standard for conservation rates and will be increasing its enforcement of contractor hydrant use. Therefore the WRC has determined that Wilmington meets this criterion, with conditions. These are, that if this transfer is approved, Wilmington must provide a copy of the completed rate study, a description of the conservation rate structure proposed to be adopted, and documentation that it has been implemented. In addition, if the transfer is approved, Wilmington must provide a plan to increase its enforcement of contractor hydrant use and a timetable for implementation, as well as update its water conservation plan to incorporate the 2006 Water Conservation Standards.

Wilmington has a very low rate of unaccounted-for water, averaging 4.19% from 2001 to 2005. The Town performs a leak detection survey every two years. Residential gallons per capita per day (gpcd) ranged from 51 in 2004 to 72 in 2002. The average residential gpcd for the years 2001 to 2005 is 62.

The Town adopted a Water Restriction By-law in 1999, however, in 2006, it elected to utilize the "Calendar Trigger" restrictions outlined in DEP's January 17, 2006 Water Management Act Permitting Policy revisions. Wilmington currently allows watering to be done only with hand-held devices.

The WRC notes that the Water Management Act (WMA) permit for Wilmington is currently under appeal and contains different requirements for the control of outdoor water use. According to comments from DEP, its 2006 Guidance, which outlines the Calendar Trigger restrictions, states that "This Guidance shall not apply to DEP permits under the Water Management Act for which an Administrative appeal or judicial review is pending at the time of its effective date." DEP has stated that "Wilmington's appeal (was) filed in May 2003 (and) clearly predates the effective date of the Guidance so it should not be applied." The Calendar Trigger restrictions that Wilmington has proposed as part of its interbasin transfer application are more stringent than the 1999 Water Restriction By-law and must remain in effect at least until the Administrative Law Judge issues a ruling on the Wilmington appeal. If this ruling is silent on outdoor water use restrictions, Wilmington's Calendar Trigger restrictions shall remain in effect until they are superseded by any subsequent WMA permit restrictions issued by DEP.

Wilmington received \$300,000 as part of an EPA Targeted Watershed Grant, administered by DCR. With this grant, the Town has undertaken a two-part research demonstration project to return water to the Ipswich River basin and reduce non-point source runoff to Silver Lake, within the town of Wilmington. The first part of the project involved redevelopment at the town beach, and included repaving the parking lot, demonstrating four types of pervious pavement, converting two storm culverts to open grass swales, and installing several bioretention cells. The second part of the project, across the lake from the town beach, involved retrofitting a neighborhood within the catchment area of a direct outfall to the lake by installing rain gardens and permeable pavers along the streets in the public right-of-way to intercept and filter street,

driveway, and roof runoff. This two-part project was completed in June 2006. This project is being monitored by USGS and quarterly progress reports are being furnished to DCR.

In addition to the Silver Lake project, the Targeted Watershed Grant is funding a second project in Wilmington. Thirty nine residential rainwater harvesting systems were installed at private residences in Wilmington in the spring of 2006 to provide water for outdoor use. The systems provide either 200-gallons or 800-gallons of storage for rainwater run-off and include a pressure pump for delivery through a hose spigot. Additionally, in April 2007, a large underground rainwater storage vault of approximately 8,000-gallons was installed at a Wilmington public school to assist in meeting the irrigation needs of an adjacent ball field. The rainwater harvesting systems will be monitored through the grant to evaluate their effectiveness in reducing demand of potable water for outdoor use.

Table 2 lists Wilmington's water conservation accomplishments with respect to all of the water conservation standards.

#### **Criterion #4 Forestry Management**

This criterion refers to surface water sources currently used by the proponent, and so is not applicable to this proposal. Wilmington's sources are ground water sources.

#### **Criterion #5 Reasonable Instream Flow and Criterion #8 Cumulative Impacts**

Wilmington is proposing to purchase up to 620.5 mg of water from the MWRA per year. This is an average of 1.7 mgd. System hydraulics and the maximum interbasin transfer amount requested will result in a maximum transfer of 3.25 MGD. The Town proposes to use a source management plan that would, in general, maximize use of its local water supplies during the winter months, and maximize use of the MWRA water during the summer months (low-flow periods) in order to enhance flow in the Ipswich River basin. MWRA's sources are the Quabbin Reservoir in the Chicopee River Basin and the Wachusett Reservoir in the Nashua River basin (Figures 2, 3, and 4). The majority of Wilmington's land area is located in the Ipswich River basin, with small portions in the Shawsheen River basin and the Boston Harbor Mystic River basin.

The Interbasin Transfer Act regulations (313 CMR 4.05) direct the WRC to consider that "reasonable instream flow in the river from which the water is transferred is maintained" in making its decision to approve or deny an Interbasin Transfer request. In this case, the impacts of transferring an average of 1.7 mgd on the operations of the MWRA Water Works System were evaluated. This included impacts to reservoir levels, drought levels, low flows, intermediate flows, high flows, and the MWRA's mandated downstream releases. In addition, the cumulative impacts of the Wilmington transfer and other potential transfers (Reading's partial supply and Dedham-Westwood's partial supply) were evaluated on a monthly basis. These three potential transfers could result in an additional combined annual average of 2.45 mgd of system demand. It should be noted that Reading's demands were evaluated with the scenario of it purchasing MWRA water only during summer months, not during the entire year. Reading is in the process of applying for additional interbasin transfer to allow purchase of its entire public water supply year-round from the MWRA. The results of the analysis with a full-time MWRA source for Reading are not believed to be significantly different, however.



CONSERVATION MEASURE	1999 IBT PERFORMANCE STANDARD	2006 WATER CONSERVATION STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS
Leak Detection and Repair	<p>Full Leak Detection survey within the previous two years of the application</p> <p>Documentation of survey and of leaks identified and repaired</p> <p>Completed by methods at least as comprehensive as the MWRA's regulations for leak detection</p>	<p>Conduct complete system-wide leak detection every two (2) years or as described in this section</p> <p>Repair all leaks found as expeditiously as possible. Establish a priority system for leak repairs.</p>	<p>The last survey was completed in 2005; the next is scheduled to be conducted in 2007</p> <p>Documentation of the 2005 leak detection survey was provided. It included a list of the leaks identified and repaired. Detectable leaks are fixed immediately after being found.</p> <p>Field surveys are conducted according to AWWA methods.</p> <p>Wilmington files properly completed ASRs yearly</p> <p>The average unaccounted-for water was 4.19% from 2001 to 2005</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>

CONSERVATION MEASURE	1999 IBT PERFORMANCE STANDARD	2006 WATER CONSERVATION STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS
Metering	<p>100% Metering All public buildings should be metered</p> <p>Quarterly billing, based on actual meter readings; bills should be easily understood by customer</p> <p>Regular maintenance, calibration, testing and repair program; description of program included in application</p> <p>Master meters calibrated annually; documentation of annual master meter calibration</p>	<p>100% metering, including all indoor water use at all municipal facilities</p> <p>Implement quarterly billing as soon as possible. For domestic accounts bill customers on actual, not estimated, meter readings.</p> <p>Implement a water meter repair/replacement policy and program based on AWWA standards and guidelines from MassDEP</p> <p>Calibrate any meter used to record quantity, according AWWA Standards can be consulted for calibration requirements and accuracy standards.</p> <p>Properly size the service lines and meters</p> <p>Increase billing frequency.</p> <p>Establish an annual budget line item for the metering program.</p> <p>Seal all water account metering systems against tampering and periodically inspect to ensure water works system integrity.</p> <p>Establish the necessary regulations and controls to ensure that owners of large meters calibrate the meters annually and provide the results as part of an annual reporting requirement.</p>	<p>Wilmington is 100% metered. All public buildings are metered.</p> <p>Wilmington bills its customers quarterly, based on actual meter readings; the bills appear to be easily understood by customer</p> <p>Wilmington retrofit all of its meters with Automatic Meter Reading systems in 2004. A regular testing program, based on AWWA standards, has been instituted.</p> <p>Because of iron and manganese fouling, master meters are tested and calibrated every 4-5 months. Documentation of master meter tests and calibrations was provided.</p> <p>Service lines and meters are properly sized.</p> <p>Wilmington bills its customers quarterly</p> <p>Water Department funds are dedicated in a special revenue account, which is similar to an enterprise account.</p> <p>All water account metering systems are sealed against tampering and periodically inspect to ensure water works system integrity.</p> <p>The Town owns all commercial and industrial meters and tests according to AWWA guidelines</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>NA</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>

CONSERVATION MEASURE	1999 IBT PERFORMANCE STANDARD	2006 WATER CONSERVATION STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS
Pricing	<p>Documentation of full cost pricing</p> <p>Rate structure must encourage water conservation</p>	<p>Full Cost Pricing</p> <p>Perform a rate evaluation every three to five years</p> <p>Prohibit decreasing block rates.</p>	<p>Full Cost Pricing: Water Department funds are dedicated in a special revenue account, which is similar to an enterprise account.</p> <p>\$3.58/100 cubic feet; at the completion of the rate study, the Town has committed to implement a rate structure which encourages conservation.</p> <p>Rates are evaluated semi-annually. A water rate study is now underway.</p> <p>Wilmington does not allow decreasing block rates.</p>	<p>Yes</p> <p>No</p> <p>Yes</p> <p>Yes</p>
Residential water use	<p>If the community's residential gallons per capita/day is greater than 65, the proponent should be implementing a comprehensive residential conservation program that seeks to reduce residential water use through a retrofit, rebate or other similarly effective program for encouraging installation of household water saving devices, including faucet aerators, showerheads and toilets and through efforts to reduce excessive outdoor water use.</p>	<p>Install Water Efficient Plumbing Fixtures.</p> <p>Use Residential Water Efficiently. Meet or demonstrate steady progress toward meeting residential water use of 65 gallons per capita per day (gpcd) including both indoor and outdoor use as soon as practicable</p> <p>Implement a comprehensive residential water conservation program</p>	<p>The average per capita residential water use was 62 gallons per person per day from 2001 to 2005.</p>	<p>Yes</p>

CONSERVATION MEASURE	1999 IBT PERFORMANCE STANDARD	2006 WATER CONSERVATION STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS
Public sector water use	<p>All public buildings should be metered</p> <p>Retrofit all public buildings with low-flow devices</p> <p>Proponents should provide records of water audits conducted on public facilities. The most recent audit should have occurred within two years prior to the application for Interbasin Transfer approval.</p>	<p>Conduct indoor and outdoor audits as described in these standards</p> <p>Build new public buildings with equipment that reduces water use. Water saving devices and measures should be well identified to users of public buildings and facilities.</p> <p>Focus on replacing/ retrofitting water consuming equipment in buildings (e.g. bathrooms, boilers, chillers).</p> <p>Practice good, efficient lawn and landscape water use techniques</p> <p>Meter or estimate contractor use of water from fire hydrants for pipe flushing and construction.</p> <p>Strictly apply plumbing codes and incorporate other conservation measures in new and renovated buildings.</p>	<p>All public buildings are metered</p> <p>All public buildings have been retrofitted with low-flow devices</p> <p>A water audit was conducted in the Fall of 2005. The April 2006 draft water audit report was provided</p> <p>Any new public building will be built in accordance with State plumbing codes. Water saving devices in municipal buildings are not identified to the public.</p> <p>As equipment requires replacement, priority is placed on utilizing equipment with energy and water saving features.</p> <p>Moisture sensors have been installed on all irrigation systems for municipal recreation fields. All but two of these systems have been disconnected from the municipal water supply.</p> <p>The 2005 water audit indicated that unmetered sales and construction water losses should be pursued for potential water loss reductions. Contractors are required to use temporary hydrant meters, but contractors may not be diligent in using them. The Water Department will conduct periodic monitoring and consider enforcement provisions to ensure use of the meters by contractors at construction sites.</p> <p>Plumbing codes are strictly applied and other conservation measures are incorporated in new and renovated buildings.</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Partially</p> <p>Yes</p> <p>Yes</p> <p>Partially</p> <p>Yes</p>

CONSERVATION MEASURE	1999 IBT PERFORMANCE STANDARD	2006 WATER CONSERVATION STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS
Water Supply System Management/ Comprehensive Planning	<p>Written Drought/emergency contingency plan, to include:</p> <ul style="list-style-type: none"> <li>- seasonal use guidelines</li> <li>- measures for voluntary and mandatory water use restrictions and describe how these will be implemented</li> <li>- tie water use restrictions to streamflow and/or surface water levels in the affected basin(s) where this information is available</li> </ul>	<p>Develop a drought management plan that follows American Water Works Association Drought Management Planning guidance;</p> <p>Develop strategies appropriate to the system to reduce daily and seasonal peak demands and develop contingency plans to ameliorate the impacts of drought, seasonal shortages and other non-emergency water supply shortfalls;</p> <p>Develop emergency management plans according to MassDEP requirements</p>	<p>A water use restriction by-law was adopted in April 1999.</p> <p>Wilmington has opted to use the "Calendar Trigger", as described in DEP's 1/17/06 Water Management Act Policy to restrict outdoor water use.</p>	Yes
	<p>Unaccounted-for water should be at 10% or less</p>	<p>Develop a written program to comply with these Conservation Standards and, where possible, recommendations</p>	<p>Unaccounted-for water is less than 10%</p>	Yes
		<p>Make the above documents readily available to personnel from all municipal departments</p>	<p>Wilmington has a Conservation Plan that is based on the 1992 Conservation Standards. Their ITA application was submitted before the 2006 standards were adopted.</p> <p>Documents are readily available to other town departments.</p>	Yes

CONSERVATION MEASURE	1999 IBT PERFORMANCE STANDARD	2006 WATER CONSERVATION STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS
Other	<p>A program of land use controls to protect existing water supply sources of the receiving area that meet the requirements of the Department of Environmental Protection.</p> <p>A long-term water conservation program which complies with the <u>Water Conservation Standards for the Commonwealth of Massachusetts</u> should be in place.</p>		<p>Ground Water Protection District regulated through by-laws and Board of Health regulations</p> <p>A long-term water conservation plan was developed in 2001</p>	<p>Yes</p> <p>Yes</p>

CONSERVATION MEASURE	1999 IBT PERFORMANCE STANDARD	2006 WATER CONSERVATION STANDARD	ACCOMPLISHMENTS	MEETS STANDARDS
Lawn and Landscape Water Conservation		<p>Minimize watering lawns or landscapes</p> <p>Develop and implement seasonal demand management plans which identify water supply and environmental indicators (such as streamflow triggers) to serve as water use restriction triggers and outline a set of increasingly stringent and effective water use restrictions that are designed to protect public health and the environment.</p> <p>Adopt and implement (as appropriate) a water use restriction bylaw, ordinance or regulation, which applies to both municipal and private wells. This bylaw, ordinance or regulation should provide the ability to implement mandatory water use restrictions.</p> <p>Abide by water restrictions and other conservation measures implemented by the municipality or water supplier.</p> <p>Fully enforce water use restrictions. Empower authorities to issue warnings to first-time offenders and citations to repeat offenders.</p>	<p>Moisture sensors have been installed on all irrigation systems for municipal recreation fields. All but two of these systems have been disconnected from the municipal water supply.</p> <p>Wilmington has opted to use the "Calendar Trigger", as described in DEP's 1/17/06 Water Management Act Policy to restrict outdoor water use. Since the loss of several wells, the Town has restricted hours for outdoor water use and the use of sprinklers and irrigation systems (hand held only).</p> <p>When they are allowed, underground sprinklers are metered. Moisture/rain sensors are required. Sprinkler systems can only be used between 7 PM and 6 AM.</p> <p>Authorities are empowered to issue fines to violators</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>

In its analysis of these criteria, the WRC relied on data provided in the Wilmington CWRMP/SFEIR plus additional submittals in response to WRC request, plus information regarding the MWRA system in a document titled, "MWRA Water System Supply and Demand" (May, 2002). Streamflow data for the analysis were obtained from the US Geological Survey, and release data for the MWRA Reservoirs were obtained from the Department of Conservation and Recreation, Office of Watershed Management.

#### MWRA System

The main components of the MWRA water supply system include the Quabbin and Wachusett Reservoirs, the Ware River intake, and its extensive distribution system. The construction of Winsor Dam on the Swift River was completed in 1939, creating the Quabbin Reservoir within the Chicopee River basin. The Quabbin Reservoir has a watershed area of 186 square miles, and maximum storage capacity of 412 billion gallons, equivalent to about four years worth of supply. In addition to the water flowing into the Quabbin directly, Quabbin Reservoir can receive water from the Ware River (also in the Chicopee River basin) via the Ware River intake. The Ware River at its intake has a watershed area of 96.8 square miles. The Quabbin Reservoir is connected by pipeline (the Quabbin Aqueduct) to the Wachusett Reservoir in the Nashua River basin. Wachusett Reservoir has a capacity of 65 billion gallons and a watershed area of 107 square miles. The Quabbin Reservoir came on-line in 1948 to supply the public water works system now operated by the MWRA, significantly supplementing the existing reservoir system (including the Wachusett Reservoir) that had been serving the Boston metropolitan area.

The MWRA reservoir system is operated with the primary objective of ensuring high quality adequate water supply. Secondary operational objectives include maintaining an adequate flood protection buffer particularly during the spring melt and hurricane seasons and maintaining required minimum releases to both the Swift and Nashua Rivers. The MWRA controls Wachusett Reservoir elevation through transfers from Quabbin Reservoir. The objective is to operate Wachusett Reservoir over a narrow operating range (between elevation 390 and 391.5 feet) while allowing Quabbin Reservoir to freely fluctuate. The Quabbin Reservoir elevation at the primary spillway is 530 feet. There is also a smaller, low-level spillway at elevation 528 feet.

The operation of Quabbin Reservoir includes maintenance of a minimum flow in the Swift River at Bondsville (five miles downstream of Winsor Dam) of 20 mgd, or 30 cubic feet per second (cfs). This threshold was mandated in Chapter 321 of the Acts of 1927 (Massachusetts General Laws). A 1929 War Department permit (now overseen by the Army Corps of Engineers) also requires seasonal releases from the Winsor Dam to maintain flow for navigability on the Connecticut River between June 1 and November 30. The seasonal releases are 70 cfs (45 mgd) if the flow in the Connecticut River, as measured at the Montague stream gage, falls below 4,900 cfs, and 110 cfs (70 mgd) if the flow in the Connecticut River falls below 4,650 cfs.

During its normal operation, the Quabbin Reservoir maintains the required thresholds stated above through controlled releases through a turbine (formerly used for hydropower production) or a turbine by-pass pipe. The by-pass pipe has a capacity of approximately 70 mgd (108 cfs). The reservoir has been historically controlled to maximize safe yield and assure water quality, while at the same time satisfying the regulatory required releases. Uncontrolled releases, or spills, occur periodically over the spillway. Uncontrolled releases are undesirable due to downstream flooding impacts and the rapid increase of high flow these cause.

Transfers from the Ware River to Quabbin Reservoir are only allowed when flows in the Ware River are above 85 mgd (131 cfs), and must be limited to the period from October 15 to June 15. In addition, permission must be obtained from the Army Corps of Engineers to transfer water during the periods of June 1 through June 15 and October 15 through November 30. Under the "limited Ware" approach currently implemented by the MWRA, transfers from the Ware River are made only on a limited basis for flood control or to help fill the Quabbin when Quabbin Reservoir levels are beneath their seasonal normal values. Transfers from the Ware River are avoided as possible.

The streamflow requirements listed above are intended to maintain pre-existing mill operation on the Swift River and navigation on the Connecticut River, but do not take into account the other instream uses which are evaluated when determining a reasonable instream flow. Flow in the Swift River was significantly impacted when the Quabbin Reservoir was built. An Indicators of Hydrologic Alteration (IHA) analysis of pre-1939 flows compared to post-1939 flows indicates that in general, streamflows in the Swift River have been significantly reduced by construction of the reservoir. The mean annual flow has decreased from 313 cfs to 100 cfs. In addition, all monthly flows have been reduced (Gomez and Sullivan Engineers, Overview of Water Use and Transfer in the Chicopee River Basin, 2003).

Minimum releases are also mandated with the operation of the Wachusett Reservoir on the South Branch of the Nashua River. Chapter 488 of the Acts of 1895 (Massachusetts General Laws) requires a release of 12 mg per week or 1.71 mgd (equivalent on average to approximately 2.6 cfs). An additional 12 mg per week can be requested by a downstream mill owner. Similar to the Quabbin Reservoir and the Swift River, the flow characteristics of the Nashua River were significantly altered when the Wachusett Reservoir was constructed.

#### Hydrologic Analysis--Overview

The safe yield of the MWRA reservoir system is approximately 300 mgd (MWRA, 2002). Demands on the MWRA water supply system peaked in 1980 at 343 mgd and were above 300 mgd for 20 years. Since this time, MWRA system demand has decreased dramatically as a result of aggressive water conservation efforts, water efficiency initiatives, response to price and rate increases, and regional economic conditions. The average annual baseline demand for the period of 2000 to 2004 was 233 mgd. In its comment letter on Wilmington's interbasin transfer application, MWRA notes that the most recent five-year average demand (2002 to 2006) was 224 mgd, and

the 2006 reservoir withdrawal was 212 mgd. The Metropolitan Area Planning Council estimates future demands for the existing system to be an additional 13 mgd through 2025. Using the 2000 to 2004 demand of 233 mgd, the interbasin transfer analysis was based on a future demand for the existing system of 246 mgd. Adding the proposed demands from Wilmington, Reading, and Dedham-Westwood (2.5 mgd) results in a total future demand of 248.5 mgd. The future demand for the existing system using more recent data would be 237 mgd, plus the future proposed demands would bring the future estimate below the future demand projected from the existing system used in the Wilmington interbasin transfer analysis. The Wilmington application points out that this figure is substantially lower than historic system demands and is far below the system safe yield.

Several types of data are available to evaluate the potential impact of the Wilmington transfer, as well as any planned or proposed transfers, on the Quabbin Reservoir. Streamflow data, or a hydrograph showing the impact of the proposed transfer on the donor river basin, is usually evaluated as part of an interbasin transfer review. However, several factors make the use of downstream flow data difficult in this case. First, the Quabbin Reservoir has a huge storage capacity, which is used to maintain a constant minimum flow. Second, the current MWRA system demand is significantly lower than its historic demand; therefore superimposing the transfer on a historic downstream hydrograph would not be realistic. For these reasons, other types of data, including releases and reservoir levels, are being used to evaluate these criteria. To account for the change in system demand, some of the analyses have used a shortened period of record on which to superimpose the transfer. Due to the presence of large water supply dams and their associated reservoirs, Aquatic Base Flow (ABF) criteria were not applied to downstream releases, since the outflows from the dams would not reflect the size of the watersheds above the dams on a cubic feet per second per square mile (cfs/m) basis.

The Wilmington application indicates that in general, given the relatively small size of the Wilmington transfer in comparison to the capacity of the reservoir and the magnitude of discharges over the spillway, and the discharges governed by regulatory requirements, the effects on hydraulic characteristics from Wilmington's withdrawals will be imperceptible. Intended downstream releases at Quabbin, Ware, and Wachusett will not change. There would only be a slight reduction in unintended spillway flows at Quabbin.

Both time series flow graphs and flow duration curves are used to describe river flow conditions. Figure 5 shows both the time series and flow duration curve for the Swift River at the West Ware gage for the time period of 1950 to 2006. The Swift River West Ware gage is located 1.4 miles downstream from Winsor Dam and has a period of record from 1913 to present. The West Ware gage is located approximately 3.6 miles upstream of the compliance point at Bondsville. The intervening drainage area between the two points is reported to contribute 4 mgd of base flow (MWRA Water System Supply and Demand, 2002); therefore, releases of at least 16 mgd are made from the Quabbin Reservoir to maintain the minimum 20 mgd flow required at Bondsville. Significant flow variation is evident in the time series graph, and the flow duration curve depicts the very high frequency of flows that exceed the minimum release requirement from the Quabbin

Reservoir. For example, releases of 60 mgd are equaled or exceeded approximately 37 percent of the time. The slope of the flow duration curve increases significantly about 100 mgd, reflecting conditions when the maximum release from the bypass has been exceeded and high flows begin over the spillway.

Releases from Wachusett Reservoir typically occur through a fountain on the downstream side of the dam at the headwaters of the Nashua River. Flows are measured by a venturi flow meter and typically are 1.8 mgd in the winter, and approximately 1.72 mgd during warmer months when the fountain is in use. Both of these conditions represent an essentially fully open valve at the fountain, so the flows are fairly constant. In addition, approximately 0.4 mgd of water from Wachusett is discharged to Lancaster Mills as non-contact cooling water. This water is discharged to the Nashua River just downstream of the dam. MWRA also estimates that an additional 0.9 mgd of seepage occurs from the Wachusett Reservoir dams and dikes (personal communication, Stephen Estes-Smargiassi, MWRA). A pressure-reducing sleeve valve installed a few years ago allows additional discharges up to 100 mgd. Flows between 1.8 and 100 mgd may be released through a sleeve valve to control the reservoir level or when Wachusett Reservoir is being supplemented with Quabbin water for water quality purposes. These intermediate flows are typically increased in 25 mgd increments over a period of two days (similarly, flows are decreased over a period of two days when the release is completed). Flows above 100 mgd occur when the Wachusett reservoir is spilling over the dam. Weekly release data provided by the DCR Office of Watershed Management for the period of 1938 to 2006 were used in the hydrologic analysis. Average daily flows were calculated from the monthly values for each month during this period. Daily release data were provided for the period of 2002 to 2006, and separate analyses were performed using these data. Figure 6 shows the time series and flow duration curve for releases from Wachusett Reservoir for the time period of 1938 to 2006. The graphs show that the minimum of 1.71 mgd release or greater occurred 92.5 percent of the time; however, between 2002 and 2006 the minimum release was achieved greater than 99 percent of the time. Flows above 100 mgd (spills) occurred approximated 2.25 percent of the time between 1938 and 2006 and rose to 26 percent of the time during the 2002 to 2006 period.

Figure 7 shows the time series and flow duration curve for the Ware River for the time period of 2002 to 2006. Ware River flows were measured at the USGS gage 01173000, known as Ware River at intake works near Barre, MA from 1928 to 2005. According to MWRA, the Ware intake at Barre was designed to pass the first 85 mgd before flow can be siphoned into the intake. Flow is measured by MWRA using its own meter at the intake. The USGS gage time series has superimposed on it the reduced flow as a result of diversions to the Quabbin Reservoir. Between 2002 and 2005, diversions to the Quabbin were as high as 85 percent of the total flow in the Ware River (e.g., 87 mgd passing the intake, while 507 mgd diverted to Quabbin). However, since the diversions are only allowed at flows exceeding 85 mgd (and the operating practice is to not divert below 89 mgd), there are no impacts to low flows caused by the diversions. It is noted that diversions from the Ware River to the Quabbin Reservoir are typically only made

when the reservoir level is below normal or the Army Corps of Engineers requests it for flood control.

#### *Low Flows*

USGS data indicates that the minimum Quabbin release to the Swift River (16 mgd) as measured at the West Ware gage was maintained 99 percent of the time between 1950 and 2006. Because the mandated flow requirements have been maintained, even during periods when demands were nearly 100 mgd over the current level, and through the drought of record, it is assumed that those releases will continue to be met and permit conditions will be satisfied under the proposed transfer demand scenarios, which are significantly less than the historic use. Additional demands from Wilmington and other proposed users are not expected to affect Swift River releases from the Quabbin Reservoir, which represent the majority of low flows.

Low-flow impacts on Ware River diversions as a result of the additional demands posed by Wilmington, Reading, and Dedham-Westwood are not expected. Ware River diversions are limited to non-low-flow months (November through May), and to periods when flow exceeds 85 mgd.

Data provided by the DCR Office of Watershed Management for the period of 1938 to 2006 indicate that releases from Wachusett Reservoir to the Nashua River have met the 1.71 mgd requirement more than 92.5 percent of the time (99 percent of the time since 2002). Again, additional demands of Wilmington and other proposed users are not expected to affect Nashua River releases from the Wachusett reservoir.

#### *Intermediate Flows*

While only "minimum" release requirements apply to the Quabbin and Wachusett Reservoirs, data indicate that intermediate flows occur as a result of releases above the minimum requirements. Data from the USGS Swift River West Ware gage indicate that flows between 100 mgd and 500 mgd occurred approximately 30 percent of the time for the period of 1950 to 2006. It should be noted that there is a mechanical limitation to intermediate releases from the Winsor Dam. The bypass structure is limited to approximately 70 mgd and the next opportunity for releases is a spill over the low-level spillway.

At the Wachusett Reservoir, flows between 10 mgd and 100 mgd are estimated to have occurred approximately 6 percent of the time for the period of 1938 to 2006 (based on monthly data). During the 2002 to 2006 period, flows between 10 and 100 mgd also occurred approximately 6 percent of the time. The ability to release controlled flows is limited to 100 mgd through the sleeve valve at Wachusett. When possible, more frequent intermediate seasonal flow releases from the Wachusett Reservoir would be beneficial to the Nashua River.

Intermediate flows at the Ware River intake (between 50 to 100 mgd) occurred 38 percent of the time between 2002 and 2006. During this period, at times when the diversion was activated, up to 85% of Ware River flow was diverted, while maintaining

at least the minimum 85 mgd downstream release. For the period analyzed (2002 to 2006), the Ware diversion was operated 184 days, or about 27 percent of the time during the intermediate flows. It is acknowledged that Ware diversions are limited based on MWRA's operating principles. Even with the diversions, however, the frequency and magnitude of intermediate flows in the Ware River appears nearly normal.

### *High Flows*

Increasing demands can impact the amount of water that is released from Quabbin. In order to evaluate the impact of the proposed Wilmington interbasin transfer (and other proposed future transfers), the applicant provided a figure depicting flows at the Swift River West Ware gage for the period of 1990 to 2003, shown as Figure 8. The applicant states that there is no correlation between flows in the Swift River and system demand; rather, variations in flow are related to operational practices as well as climatic conditions. Increasing transfers from the Quabbin Reservoir to meet water quality objectives and to meet increased summer demands decrease the likelihood of spills. The figure also shows that flow variation exists in the Swift River downstream of the Winsor Dam. In particular, high flows occur frequently, although not annually, in the form of uncontrolled spills. During the period of 1950 to 2006, flows above 500 mgd were recorded at the USGS Swift River gage approximately 3 percent of the time. The issue of uncontrolled releases and spring flows at Quabbin are further discussed under the section Impacts to Other Uses, Fisheries. Spills from Quabbin are undesirable because of their adverse impacts downstream including warm water release to the cold-water fishery and flooding issues.

High flows on the Ware River are impacted by diversions to the Quabbin Reservoir. High flows (above 100 mgd) at the Ware River intake occurred 30 percent of the time between 2002 and 2006. During this period, at times when the diversion was activated, up to 84% of Ware River flow was diverted, while maintaining at least the minimum 85 mgd downstream release. For the period analyzed (2002 to 2006), the Ware diversion was operated only 34 days, or about 6 percent of the time during high flows. As noted previously, Ware diversions are limited based on MWRA's operating principles. Even with the diversions, however, the frequency and magnitude of high flows in the Ware River appears nearly normal. The addition of Wilmington and other communities will not likely have an impact on the use of Ware River diversions or high flows in the Ware River.

Since high flows from the Wachusett Reservoir are generally uncontrolled spills, and the reservoir level is intended to be managed to a narrow range of levels, the proposed withdrawals are not considered to have an impact on high flows in the Nashua River. High flows (greater than 100 mgd) are estimated to have occurred approximately 2 percent of the time over the period between 1938 and 2006 (using monthly data); however, the high flows occurred much more frequently (27 percent of the time, based on daily data) between 2002 and 2006.

### Quabbin Levels/Drought Analysis

Quabbin Reservoir levels fluctuate by design, but minimum percent full values have been established and are the basis for drought designations. The applicant evaluated maximum pool level reductions at various demands and hydrologic conditions simulated from 1948 through 2000. The results of the analysis are that at the base withdrawal, plus Wilmington and future community demands (248.5 mgd total), the maximum pool descent does not vary considerably from current demand conditions. The additional community demands would result in a Quabbin level descent to elevation 502.7 feet, well above the minimum acceptable pool descent of 470 feet elevation. At demands less than 290 mgd, pool descent is not modeled to reach thresholds for concern for the MWRA system (MWRA, 2002).

An analysis was conducted to determine the impact of the proposed transfer on the Quabbin Reservoir during a drought. Increasing additional demands can impact the frequency with which a reservoir system reaches various drought levels. This analysis of the incremental transfers for Wilmington, Reading, and Dedham-Westwood is useful to determine impacts to levels in the reservoir as well as impacts to other communities currently on the MWRA system. Analyses of the increase in demand due to the proposed Wilmington transfer and future community transfers show that the MWRA system would result in no increase the frequency and duration of drought levels (Stage 1 drought levels remained the same at 5 months over the entire period analyzed). This analysis was based on a period of 1948 to 2000. At demands less than 270 mgd, models of drought action thresholds do not show unacceptable impacts to the MWRA system.

### Impacts to Flow Characteristics

Interbasin Transfer Act criteria require evaluating impacts of the transfer on specific flow statistics. No impact to the Swift River 95% flow duration (20.0 mgd) is expected, compared to existing conditions. The 95% flow duration is equivalent to the state-mandated release requirement of 20 MGD at Bondsville. Data from the Swift River gage indicate that the mandated release has been achieved at virtually all times and it is expected that it will be maintained into the future and will not be affected by the proposed transfer or those of future communities included in this analysis.

Likewise, the 95% flow duration at the Wachusett Reservoir is not likely to be affected by the proposed additional transfers requested by Wilmington, Reading, and Dedham-Westwood. The estimated 95% flow duration for the Nashua River (based on weekly historical release data) is 1.6 mgd, slightly below the 1.71 mgd mandated release. Data provided by the DCR Office of Watershed Management indicate that the mandated release has been achieved at virtually all times since 2002 and it is expected that it will be maintained into the future and not be affected by the proposed transfer. Thus, the 95% flow duration flow is expected to increase slightly with future operations to at least the 1.71 mgd threshold.

The 95% flow duration at the Ware River should not be impacted by the proposed increase in interbasin transfer since Ware River diversions are not allowed during low flow periods.

## Impacts to Other Uses

### *Fisheries*

According to the Massachusetts Division of Fisheries and Wildlife, the Swift River below Winsor Dam, down to the confluence with the Ware River, contains significant fisheries habitat. In addition, the river is one of only two rivers in Massachusetts which receive a cold-water release that significantly benefits habitat, such as the catch and release trout fishery directly below the dam. The current required flow releases are beneficial to the fishery, as they provide a continuous source of fresh cold water. DFW operates a trout hatchery downstream of the Winsor Dam on the Swift River, which uses river intakes as part of its water supply. Relatively warm-water spills from the surface of Quabbin Reservoir during the summer can be detrimental to the fish hatchery operation, and high flood flows can damage the river intake.

An instream flow incremental method (IFIM) study of the Swift River in 1997 by Normandeau Associates for MWRA indicated that the current flow releases were adequate to protect the Swift River trout fishery. The study found substantial, large, deep pools in the Swift River that serve as habitat refuge for adult trout. The efficacy of pools as low flow refuges is enhanced by an abundance of overhanging and downed trees that contribute substantial amounts of woody debris.

As part of the review of the Reading Interbasin Transfer application for MWRA water, approved by the Water Resources Commission in 2005, DFW, MWRA and DCR Office of Watershed Management considered habitat improvements that could be made within the limitations of existing permits. Through a Memorandum of Understanding with MWRA, DCR's Office of Watershed Management is responsible for developing policies and procedures to be followed during wet weather or flood periods, to enable MWRA to determine how much water (above statutory requirements) is released into the Nashua, Swift, Ware, or Sudbury Rivers. During winter and spring months when the Quabbin Reservoir is filling to high levels, it may be possible to increase releases to the Swift River (using the Winsor Dam by-pass and/or other future improvements). Winter/spring diversions from the Ware River (in accordance with permitted limitations) may be used to supplement Quabbin and allow for enhancement of higher controlled or variable Swift River releases in the spring months. The WRC recommends that DFW, MWRA and the DCR Office of Watershed Management continue to cooperate to establish and implement enhanced release procedures to the Swift River from the Quabbin Reservoir.

MWRA and DCR Office of Watershed Management have taken a number of steps to address fisheries issues in the Swift River. The McLaughlin Fish Hatchery's main concerns are related to summer spill water temperature, ramping rates of the extra flows required by the Army Corps permit, and very high flood flow impacts on their river intake. These steps include:

1. Implementation, in the early 1990s, of continuous 24-hour discharges from Quabbin into Swift River all year round, instead of higher releases for 5-7 hour periods.

2. Revision of MWRA operations to more slowly ramp up the higher volume controlled discharges made in the summer months, in response to a request of the Division of Fisheries and Wildlife.
3. Consideration is made to Fish Hatchery concerns regarding warm water spills in reservoir operating procedures. These procedures consider the placement of stoplogs in Quabbin's lower spillway structure to increase reservoir elevation and decrease spills and increases in cold-water discharges at the dam to offset the warmer surface spillway discharges. These actions usually take place over a short time period with daily discussions between Fish Hatchery and DCR Office of Watershed Management staff.
4. DCR Office of Watershed Management has offered assistance and personnel to design or implement habitat improvements and modifications on the Swift River, in response to suggestions by others that placing sediment and rocks in strategic areas may benefit fish habitat. DCR has also received a state grant to construct a walkway bridge over the upper reach of the Swift River above the "Y Pool" to improve access for fishermen.

MWRA has also made a number of improvements at the Wachusett Dam related to downstream releases. At the request of the Nashua River Watershed Association, MWRA has decreased the ramp-up rate for extra discharges made as an indirect result of water supply quality considerations or for flood control purposes. MWRA has also replaced the valves at the base of the dam to provide better operational control. Since their replacement, planned releases to the South Branch of the Nashua River, particularly in the spring and early summer, have greatly exceeded the minimum flow requirements. Average discharges from 2001 through 2006 were 21 times the minimum requirement.

#### *Hydropower*

A hydropower turbine was in use at the Winsor Dam until 1991, when it was damaged by a fire. The 1997 Normandeau study was commissioned to determine suitable flow levels for fisheries during drought periods as this information would directly impact the feasibility of generating hydropower while maintaining a trout fishery. However, no action was taken to re-implement the hydropower production and according to MWRA there are no plans at this time to reactivate the hydropower station at the Winsor Dam. The addition of the proposed communities to the MWRA system would not likely have any impact on hydropower at the Winsor Dam nor on any downstream hydropower facilities.

#### *Recreation*

Aside from the sport fishery addressed above, there is some boating recreation on the impoundments in Bondsville and it has been suggested that the South Nashua River may be boatable under certain flow conditions. Again, these uses will not be affected because operation of Quabbin and Wachusett reservoirs will not change with the Wilmington transfer.

### *Wetlands*

Other than the Quabbin Reservoir itself, the only significant wetland in the Chicopee River basin that could be affected by the transfer is in Ware, along the Swift River. The area is 70 acres of open water impounded by a dam in Bondsville. Because this area is open water and is part of the river, current minimum flow requirements appear to be adequate to protect the wetland area.

### Summary of Reasonable Instream Flow Analysis

The analyses of release data indicate there will be no change in the operation of the Quabbin and Wachusett Reservoirs in response to the proposed Wilmington transfer or other communities proposing to join the MWRA water system included in the analysis. Downstream flows will continue to meet all applicable permit and regulatory requirements. Current resources will be unaffected by the transfer. The Commission recognizes that current conditions represent a highly engineered environment. Modifications to the timing and magnitude of releases to the Nashua River (i.e., intermediate flows) may be beneficial to the downstream aquatic habitat. The Secretary of EOEA has instructed the WRC to address the instream flow needs of the Ware, Swift, and Nashua River basins during its review of projects under the Interbasin Transfer Act and as part of the ongoing dialogue among MWRA, DFG, WRC and other stakeholders. This Decision attempts to address the balance between water supply needs and aquatic habitat needs of flow, water quality and water temperature in the Swift, Ware, and Nashua Rivers.

### **Criterion #6 Groundwater/Pumping Test**

This criterion is not applicable to this proposal. MWRA's sources are surface water sources.

### **Criterion #7 Local Water Resources Management Plan**

In June 2006, Wilmington submitted a Supplemental Final Comprehensive Water Resources Management Plan/Environmental Impact Report. (SFEIR). This report concludes the Town's water resources planning process, which started prior to 1999. This planning process addresses wastewater, stormwater and water supply issues within Wilmington. The SFEIR outlines the chapters of the Comprehensive Water Resources Management Plan reports which discuss the issues required to be addressed in a Local Water Resources Management Plan. These reports address the issues identified in the 1999 Interbasin Transfer Act Performance Standards, Appendix B, Local Water Resources Management Plan Outline. Therefore on June 14, 2007, the WRC approved Wilmington's Local Water Resources Management Plan, with the condition that the entire CWMP/EIR and other documents used in the ITA process be placed in a location that will be easily accessible to other town departments, boards and commissions. The Water Department should advertise the availability of these documents to these town agencies.

### OTHER ISSUES CONSIDERED

The Secretary's Certificate on the SFEIR stated that numerous comments had been received through the MEPA process requesting regular monitoring of the Martins Brook

Aquifer area in Wilmington, and the use of permanent streamflow gages to help monitor the impacts of Wilmington's sewerage, stormwater and water supply plan on headwater tributary streams to the Ipswich River. In the Certificate, the Secretary asked that DEP and the Water Resources Commission include this issue in their respective Water Management Act permit and Interbasin Transfer Act approval review processes for this project. The WRC believes that this issue is more appropriately addressed in the Water Management Act process, since the criteria for approval outlined in the Interbasin Transfer Act and regulations do not address streamflow impacts as a result of existing sources in the receiving basins. The WRC supports DEP's efforts in addressing Ipswich River basin issues in Wilmington's WMA permit. The appeal of the permit amendment issued in 2003 is pending, as of the date of this Decision. However all permits within the Ipswich River Basin, including Wilmington's, will expire in 2009.

#### EO 385

This Decision is consistent with Executive Order 385, which has the dual objective of resource protection and sustainable development. This Decision does not encourage growth in areas without adequate infrastructure nor does it cause a loss of environmental quality or resources.

#### CONDITIONS OF THE WRC DECISION

Based on the analyses and concerns expressed about this project, the approval of Wilmington's application under the Interbasin Transfer Act, as proposed, for admission to the MWRA Waterworks System is subject to the following conditions. **Wilmington must commit in writing to abide by any conditions required by the approval of this transfer.**

***In order to demonstrate compliance with Criterion #2 that all reasonable efforts have been made to identify and develop all viable sources in the receiving area of the proposed interbasin transfer.***

1. Wilmington must consult with WRC Staff if it intends to revise its source management plan in such a way that it results in using more MWRA water than has been approved under this review. Any increase in purchase from the MWRA over the approved 620.5 mgd will require additional WRC approval under the ITA. In addition, Wilmington must notify the WRC of any system changes, including those in infrastructure or operation, which could allow the Town to increase its rate of interbasin transfer.
2. This decision is based on the capacity of Wilmington's currently viable in-basin water supply sources, which existed prior to the effective date of the Interbasin Transfer Act (March 1984). The current maximum capacity is 2.55 mgd, as described in Table 1, Page 5 of this Decision. If, in the future, the Maple Meadow Brook Aquifer wells are rehabilitated, or if any additional in-basin sources of water are developed so that the total availability of in-basin water supplies exceeds this capacity, Wilmington, or the proponent of the use of this water supply, must notify the WRC for consideration of the implications of this in-basin water availability on this Interbasin Transfer Act approval.

3. Wilmington must work with DEP to condition its Water Management Act permit so that the amount permitted is distributed between its own local sources and MWRA.

***In order to fully comply with Criterion #3, that all practical measures to conserve water have been taken in the receiving area:***

1. Wilmington must continue effective demand management programs that meet the Interbasin Transfer Performance Standards for Criterion #3, Water Conservation.
2. Wilmington must provide the DEP Annual Statistical Reports to the WRC for the first five (5) years after the town begins to receive MWRA water, to determine if the programs in place are successful in keeping unaccounted-for water at or below 10% and residential gallons per capita per day (gpcd) at 65 or less and to confirm that the interbasin transfer from MWRA to Wilmington meets the annual limit of 620.5 million gallons. After the five year period, Wilmington will provide these reports on request of the WRC Staff.
3. If the amount of unaccounted-for water increases to greater than 10%, Wilmington must either provide an explanation of why this has occurred (e.g. water main break, large fire, etc.) or provide a plan, for WRC approval, to reduce unaccounted-for water to acceptable levels.
4. If per capita residential water use increases above 65 gpd, the Town must implement a comprehensive residential conservation program that seeks to reduce residential water use through a retrofit, rebate or other similarly effective program for encouraging installation of household water saving devices, including faucet aerators, showerheads and toilets and through efforts to reduce excessive outdoor water use, including the imposition of seasonal water use rates and other measures. If this occurs, the Town must provide a plan for this program to the WRC for approval.
5. Wilmington must provide a copy of the completed rate study, a description of the conservation rate structure proposed to be adopted, and documentation that it has been implemented, before it can begin to receive water from the MWRA. The adopted rate structure shall conform to the rate structures described in the Water Conservation Standards for the Commonwealth of Massachusetts.
6. Wilmington must provide a plan to increase its enforcement of contractor hydrant use and a timetable for implementation by September 1, 2007.
7. Wilmington must update its water conservation plan to reflect 2006 edition of the Water Conservation Standards for the Commonwealth of Massachusetts. This revised plan must be submitted to WRC Staff within a year of the approval of this transfer.
8. The Calendar Trigger restrictions on outdoor water use must remain in effect at least until the Administrative Law Judge issues a ruling on the Wilmington WMA permit appeal. If this ruling is silent on outdoor water use restrictions, the Calendar Trigger restrictions shall remain in effect until they are superseded by any subsequent WMA permit restrictions issued by DEP.

***In order to fully comply with Criterion #7, that the communities and districts in the receiving area have adopted or are actively engaged in developing a local water resources management plan.***

1. The entire CWMP/EIR and other documents used in the ITA process must be placed in a location that will be easily accessible to other town departments, boards and commissions. The Water Department should advertise the availability of these documents to these town agencies.

Figure 2. Schematic of MWRA Water System

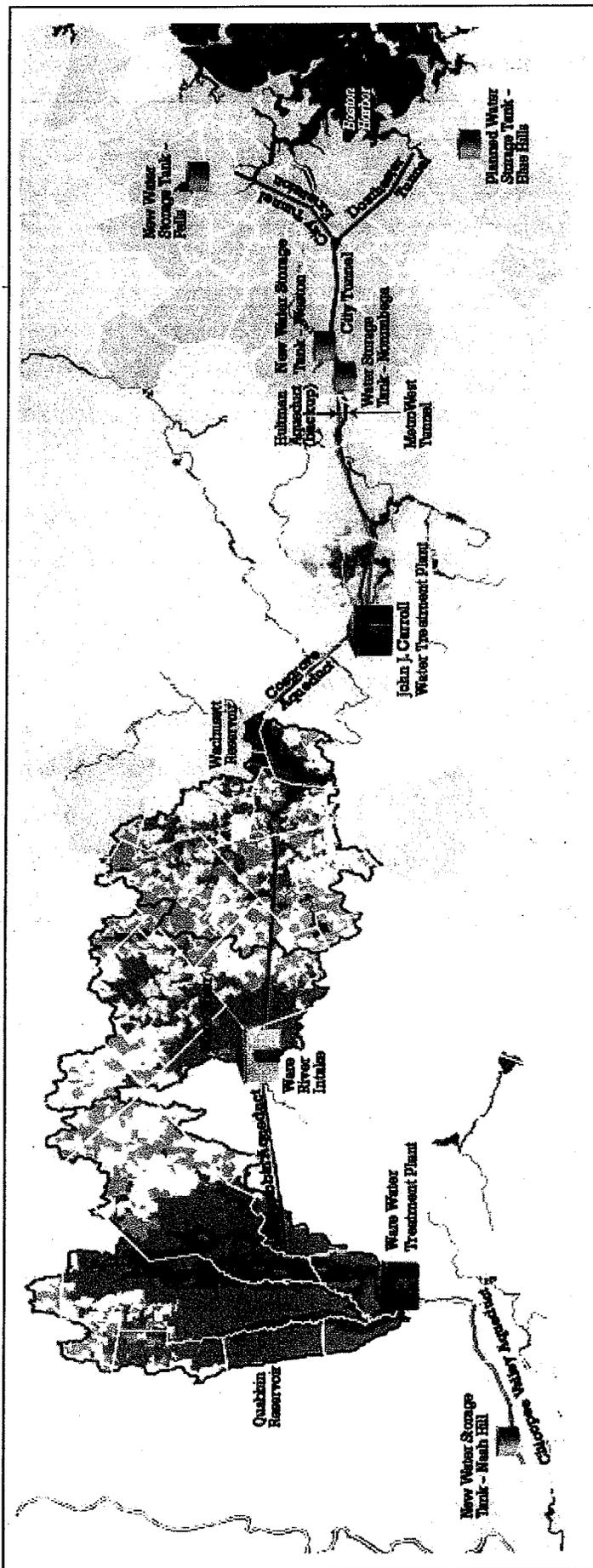


Figure 3. Quabbin Reservoir Donor Basin

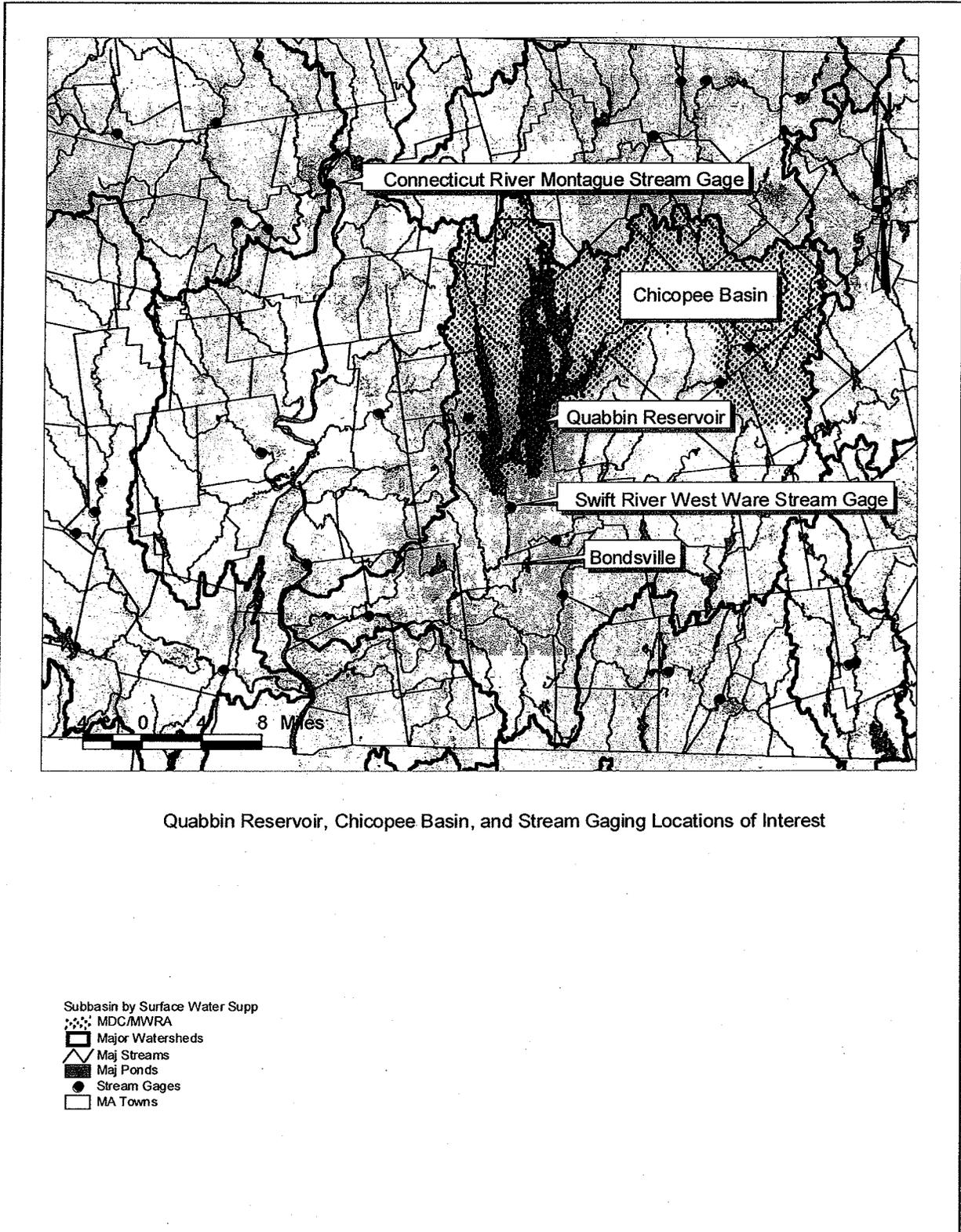
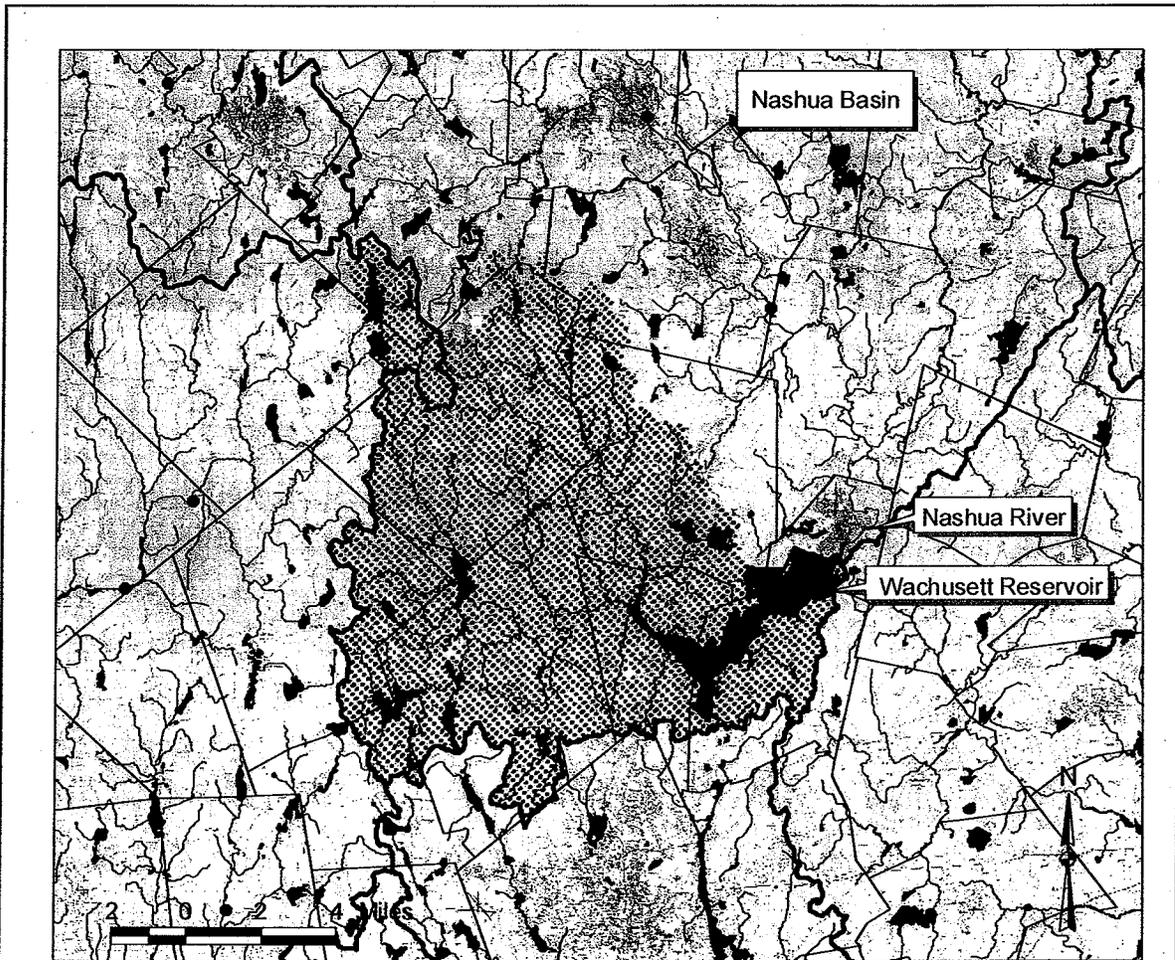


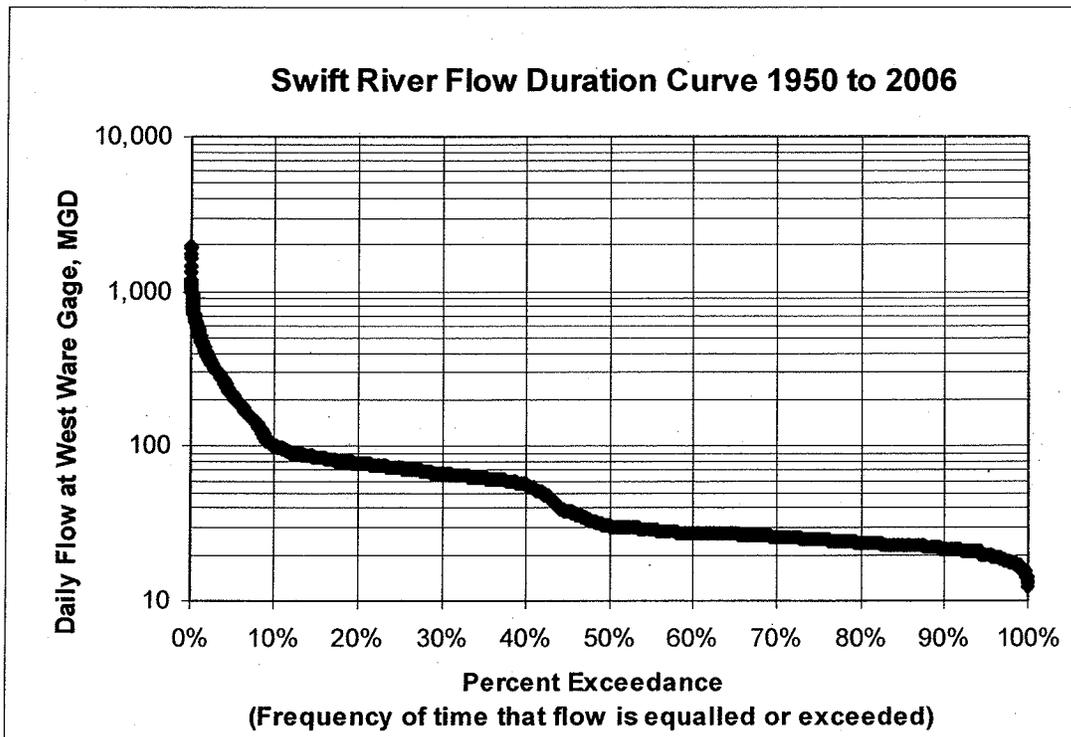
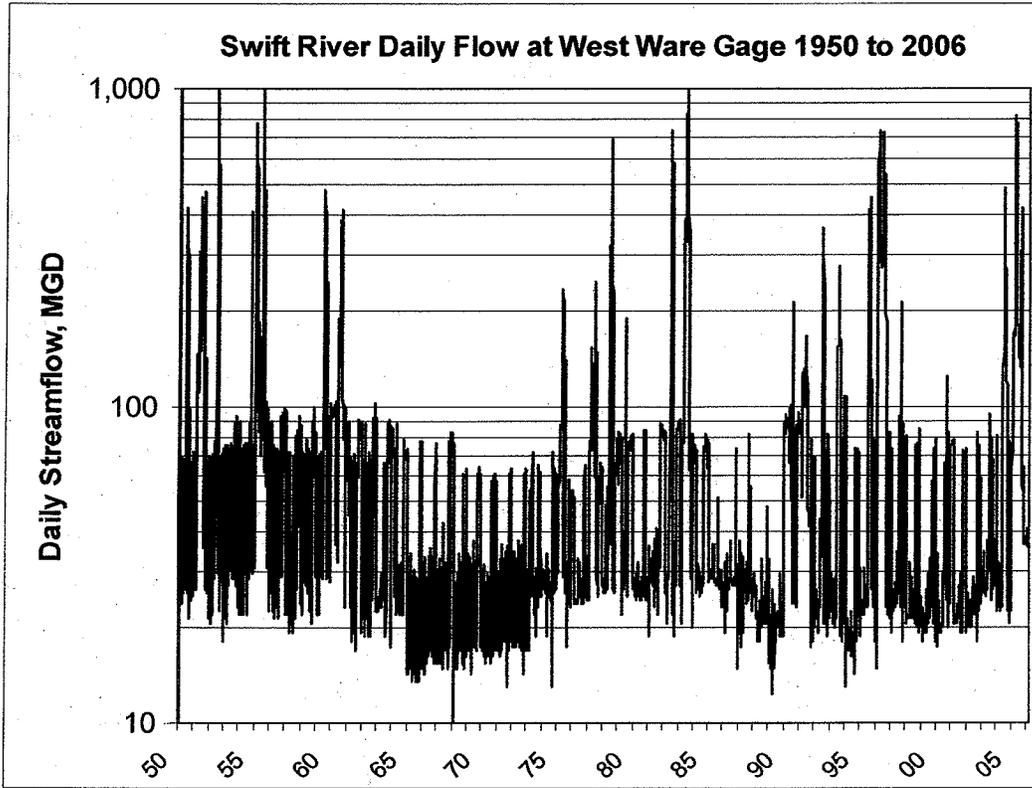
Figure 4. Wachusett Reservoir Donor Basin



Wachusett Reservoir and Nashua Basin

- Subbasin by Surface Water Supp
- ▨ MDC/MWRA and Public
  - △ Streams 100K
  - Ponds 100K
  - Stream Gages
  - ▭ Major Watersheds
  - MA Towns

**Figure 5. Swift River Time Series and Flow Duration Curve 1950 to 2006**



**Figure 6. Releases from Wachusett Reservoir to Nashua River, 1938 to 2006  
Time Series and Flow Duration Curve**

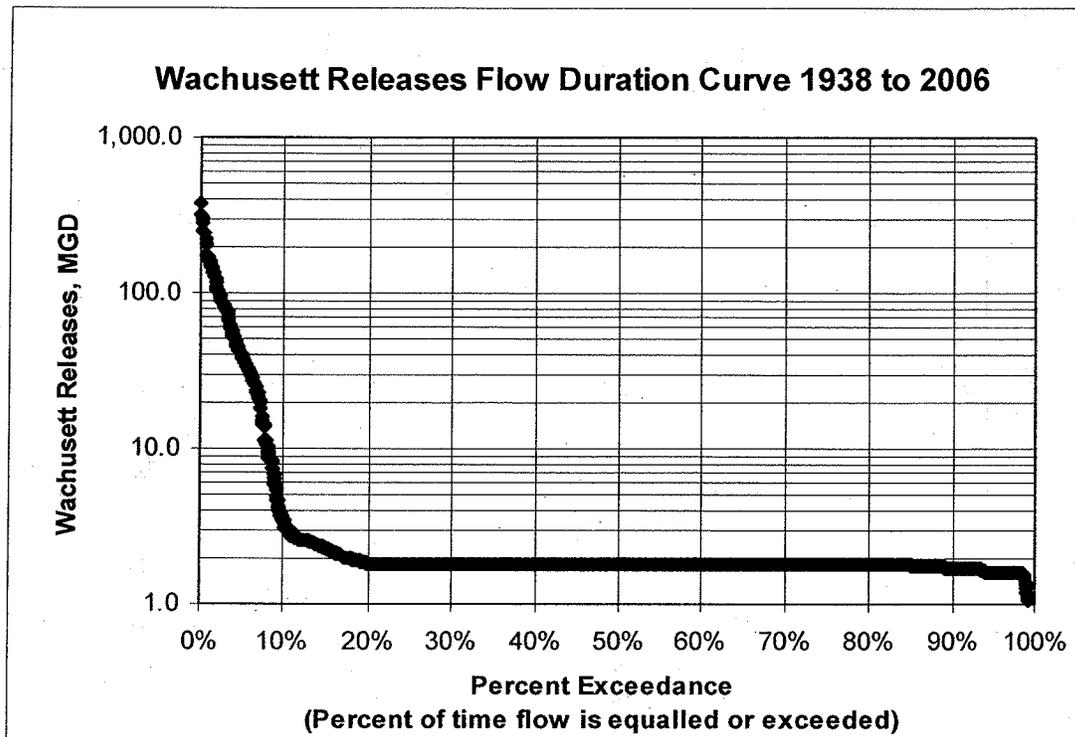
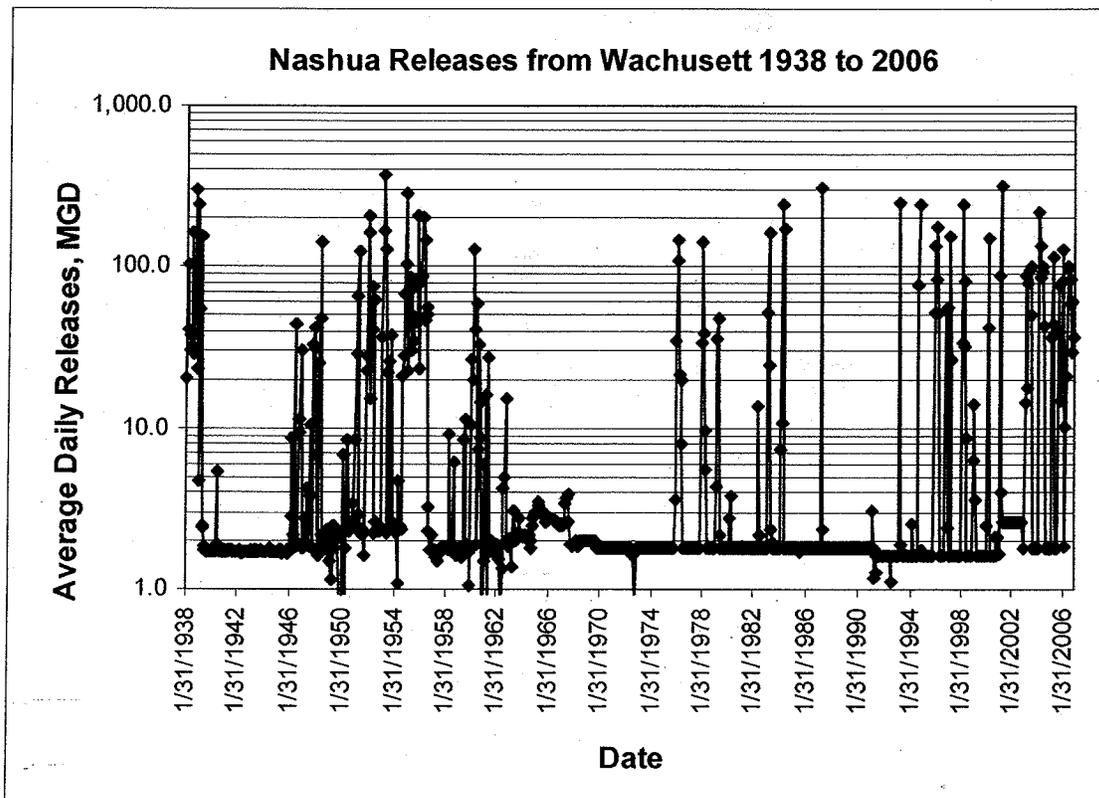


Figure 7. Ware River Flows and Flow Duration Curve, 2002 to 2006

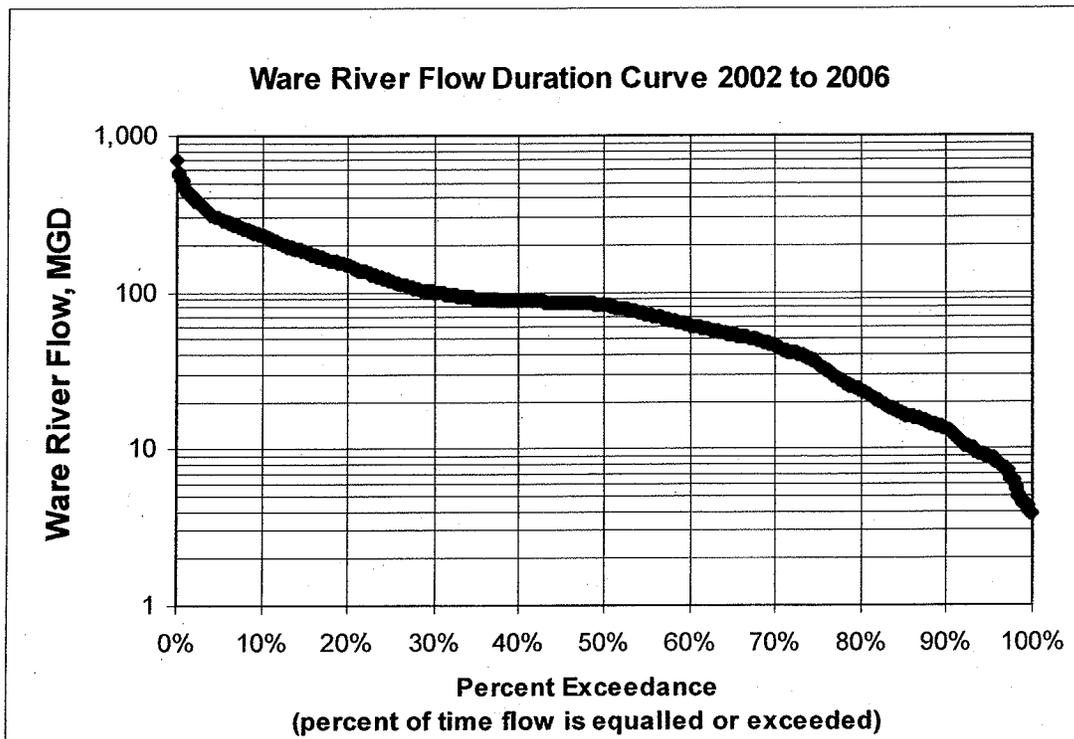
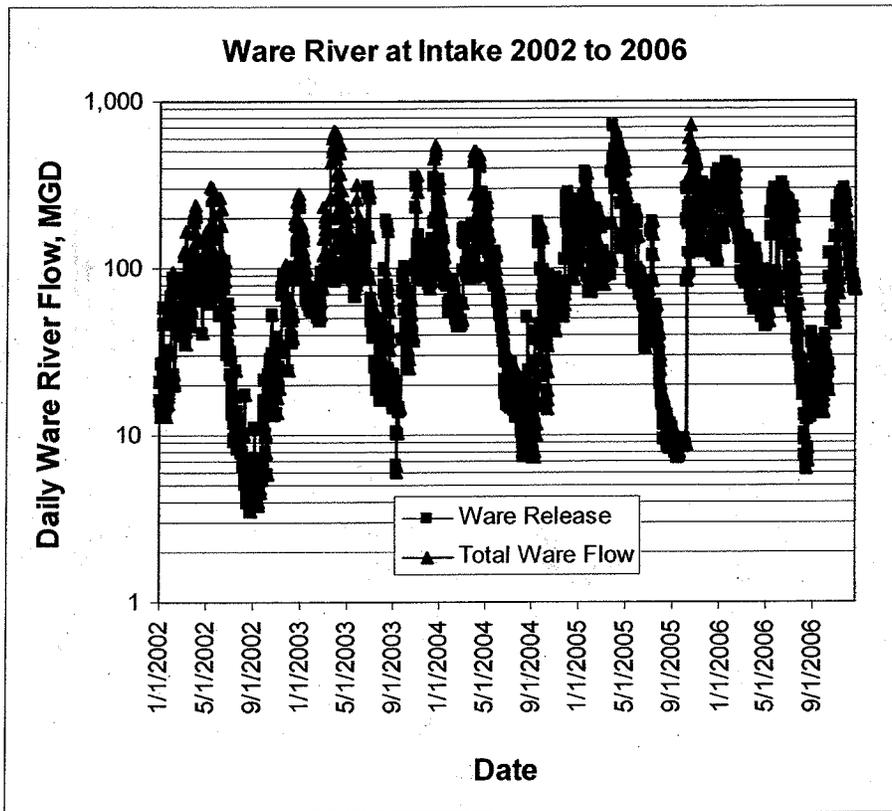
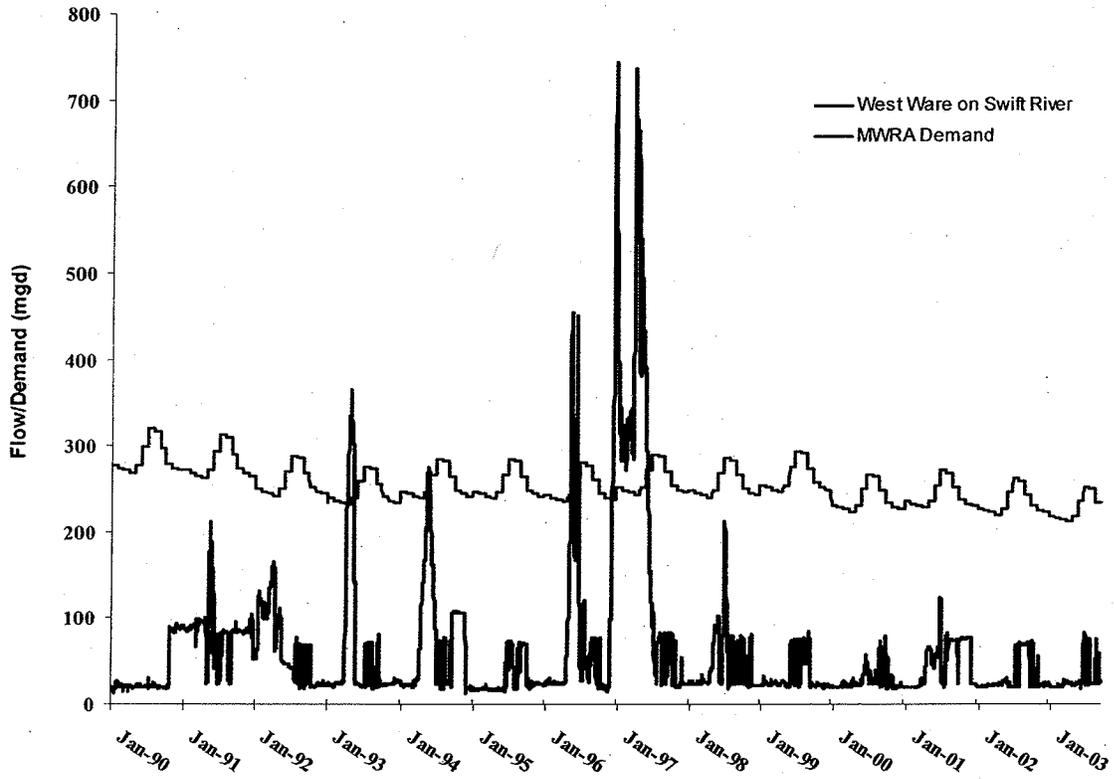


Figure 8. Swift River Flows and MWRA Water Demand, 1990 to 2003

Figure 5.1  
Comparison of Demand and Swift River Flows  
Time Period (1990 to 2003)



THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 351

PROBLEM SET 1

## ATTACHMENT 1

### INTERBASIN TRANSFER ACT CRITERIA FOR EVALUATING AN APPLICATION

**CRITERION #1:** An environmental review pursuant to MGL, c. 30, §§ 61 and 62H, inclusive has been compiled with for the proposed IBT.  
*The Secretary's Certificate on the Supplemental Final Environmental Impact Report was issued on July 28, 2006 stating that no further MEPA review was necessary.*

**CRITERION #2:** All reasonable efforts have been made to identify and develop all viable sources in the receiving area.

The WRC performance standard for a water supply source directs a proponent to discuss the water supply alternatives considered, but rejected. Reason for the rejection of these alternatives should be clearly stated. This information should be included as part of the Local Water Resources Management Plan required under Criterion #7. In addition, as stated in the regulations, development of a new local source must not cause unacceptable environmental damage.

- *Six of Wilmington's ten existing wells are no longer viable as drinking water sources.*
- *No neighboring communities can furnish long-term water supply to Wilmington.*
- *Development of new sources within town is not economically or environmentally viable.*

**CRITERION #3:** All practical measures to conserve water have been taken in the receiving area...

For a water supply transfer, the WRC performance standards require:

- 1) A full leak detection survey should have been completed within the previous two years of the application. The proponent should provide documentation regarding repair of leaks identified during the survey. Leak detection surveys should be carried out in accordance with the MWRA's leak detection regulations (360 CMR 12.00).  
*Wilmington conducts leak detection surveys every two years. The last survey was completed in 2005; the next is scheduled for 2007. Documentation of the 2005 leak detection survey was provided. It included a list of the leaks*

*identified and repaired. Detectable leaks are fixed immediately after being found. Field surveys are conducted according to AWWA methods.*

2) *The water supply system should be 100% metered, including public facilities served by the proponent. A program of meter repair and/or replacement must be in place. Documentation of annual calibration of master meters and a description of the calibration program should be included in the application.*

*Wilmington is 100% metered. All public buildings are metered. Wilmington retrofit all of its meters with Automatic Meter Reading systems in 2004. A regular testing program, based on AWWA standards, has been instituted. Because of iron and manganese fouling, master meters are tested and calibrated every 4-5 months. Documentation of master meter tests and calibrations was provided.*

3) *Unaccounted-for water should be 10% or less. The proponent should provide documentation of unaccounted-for water, in both gallons and percentage of the total water pumped and withdrawn, for each of the past five years. The definition of accounted-for and unaccounted-for water for use in Interbasin Transfer applications is given in Appendix C of the Performance Standards. The plan by which the community intends to maintain or reduce this level should be included in the water resources management plan required under Criterion #7.*

*The average unaccounted-for water in Wilmington was 4.19% from 2001 to 2005. The proponent provided documentation of unaccounted-for water, in both gallons and percentage of the total water pumped and withdrawn, for each of the past five years.*

4) *The proponent should provide documentation to show that there are sufficient sources of funding to maintain the system, including covering the costs of operation, proper maintenance, proposed capital improvements, and water conservation. The rate structure must encourage water conservation.*

*Water Department funds are dedicated in a special revenue account, which is similar to an enterprise account. Wilmington has a flat rate structure. The Town is currently conducting a rate study and has committed to implement a rate structure which encourages conservation.*

5) *The proponent should bill its customers at least quarterly based on actual meter readings. Bills should be easily understandable to the customer (e.g. providing water use in gallons and including comparison of the previous year's use for same period).*

*Wilmington bills its customers quarterly, based on actual meter readings; the bills appear to be easily understandable.*

- 6) A drought/emergency contingency plan, as described in 313 CMR 4.02, should be in place. This plan should include seasonal use guidelines and measures for voluntary and mandatory water use restrictions and describe how these will be implemented. There should be a mechanism in place to tie water use restrictions to streamflow and/or surface water levels in the affected basin(s) where this information is available. The plan should be part of the Local Water Resources Management Plan required under Criterion #7.  
*Wilmington adopted a water use restriction by-law in April 1999. In 2006, the Town has opted to use the "Calendar Trigger", as described in DEP's January 17, 2006 Water Management Act Policy to restrict outdoor water use.*
- 7) All government and other public buildings under the control of the proponent, should have been retrofit with water saving devices.  
*All public buildings have been retrofit with low-flow devices*
- 8) Proponents should provide records of water audits conducted on public facilities. The most recent audit should have occurred within two years prior to the application for Interbasin Transfer approval.  
*A water audit was conducted in the Fall of 2005. The April 2006 draft water audit report was provided*
- 9) If the community's residential gallons per capita/day is greater than 65, the proponent should be implementing a comprehensive residential conservation program that seeks to reduce residential water use through a retrofit, rebate or other similarly effective program for encouraging installation of household water saving devices, including faucet aerators, showerheads and toilets and through efforts to reduce excessive outdoor water use.  
*The average residential gallons per capita/day in Wilmington was 62 from 2001 to 2005.*
- 10) A broad-based public education program, which attempts to reach every user at least two times per year, through such means as mailings, billboards, newspaper articles, cable television announcements or programs, or the use of other media, should be in place. Water suppliers should refer to the WRC's 1992 "Water Conservation Standards for the Commonwealth of Massachusetts" and the Massachusetts Water Works Association for recommended public education measures.  
*Wilmington contacts its customers concerning water conservation issues via bill stuffers, Internet/cable notifications and publication of water use restrictions in the local paper.*
- 11) A program which identifies and ranks all commercial, industrial and institutional customers according to amount of use, and requires regular contact with the largest users to promote water conservation, should be in place. The water

supplier should make regular contact with these users to promote water conservation. Materials on water reuse and recirculation techniques should be provided, where appropriate. *The Water Department contacts commercial/industrial users directly. In 2006, the Town conducted water audits of its 10 largest users.*

12) A program of land use controls to protect existing water supply sources of the receiving area that meet the requirements of the Department of Environmental Protection. *Wilmington established a Ground Water Protection District, which is regulated through by-laws and Board of Health regulations.*

13) As part of the local water resources management plan, there should be a long-term water conservation program, which complies with the Water Conservation Standards for the Commonwealth of Massachusetts, in place. This plan should reflect the goal of maintaining unaccounted-for at 10% or less of all water used, and of reducing future residential water use through a comprehensive residential water conservation program, if residential gpcd is greater than 65. The water conservation program should also have a goal of operating the system to balance water supply with other environmental needs. If the transfer is approved, the proponent will need to submit a copy of its Public Water Supply Annual Statistical Report (required by DEP) to the Commission annually to demonstrate the continued effectiveness of the program.

*A long-term water conservation plan which complies with the 1992 Water Conservation Standards for the Commonwealth of Massachusetts, was developed in 2001.*

**CRITERION #4:** A comprehensive forestry management program which balances water yields, wildlife habitat, and natural beauty on watershed lands presently serving the receiving area and under control of the proponent has been implemented.

*This criterion is not applicable to this project. Wilmington's water supply sources are ground water sources.*

**CRITERION #5:** Reasonable instream flow in the river from which the water is transferred is maintained.

- *An instream flow requirement for the Swift River below the Quabbin Reservoir, as measured at Bondsville, of 30 cfs (20 mgd) is always met.*

- A seasonal 70 to 110 cfs flow release from Quabbin Reservoir, based on levels in the Connecticut River, is always met.
- A flow release of 12 mg per week from the Wachusett Reservoir on the South Branch of the Nashua River is met.
- Analyses of the increase in demand due to the proposed Wilmington transfer show that the MWRA system would have minimal impacts on the frequency or duration of drought levels.
- The analyses of release data indicate there will be no significant change in the operation of the Quabbin and Wachusett Reservoirs in response to the proposed Wilmington transfer. Current resources will be unaffected by the transfer.

**CRITERION #6:** The results of the pump test have been used to indicate the potential impacts of this project on other environmental resources and adjacent wells. This criterion is not applicable to this project. MWRA's water supply sources are surface water sources.

**CRITERION #7:** Communities have adopted or are actively engaged in developing a local water resources management plan. Wilmington's 1999 to 2006 Comprehensive Water Resources planning processes addressed wastewater, stormwater and water supply issues. The reports generated through this process address the issues identified in the 1999 Interbasin Transfer Act Performance Standards Appendix B Local Water Resources Management Plan Outline.

- CRITERION #8:** The Commission shall consider the impacts of all past, authorized or proposed transfers in the donor basin.
- Although the Wilmington request would not adversely impact existing conditions downstream of the Quabbin and Wachusett Reservoirs, current conditions represent an impacted environment.
  - Staff recommends that DFG, DCR Division of Water Supply Protection and MWRA continue discussions on these issues.

**EO 385**

*This staff recommendation is consistent with Executive Order 385, which has the dual objective of resource protection and sustainable development. This recommendation does not encourage growth in areas without adequate infrastructure nor does it cause a loss of environmental quality or resources.*

Sample Date	Location	Method	Lab	Min Reporting limit (MRL)	PFBS	PFHxS	PFHpA	PFOA	PFOS	PFNA	PFDA	HFPO-DA	New ?? PFAS 6	PFAS 6 total	comments
<b>SARGENT FINISH WATER</b>															
<b>2019</b>															
7/15/2019	Browns/Salem only	537	con-test	1		0.00	0.00	1.10	0.00	0.00	0.00			1.10	PFBS HFPO-DA
						0.00	0.00	1.30	0.00	0.00	0.00			1.30	
8/12/2019	All wells on	537	con-test	1.5		0.00	0.00	3.30	0.00	0.00	0.00			3.30	
<b>2021</b>															
4/14/2021	All wells on	537.1	EEA	2		1.90	3.20	6.70	5.00	0.64	0.00			17.44	
5/18/2021	All wells on	537.1	EEA	2	4	2.00	3.20	6.80	5.00	0.58	0.00	<2.0		17.58	Results were received on 6/15/2021 with errors update report was 6/18/21, a holiday, on 6/22/21 ordered more PFAS bottles, resampled on 7/8/21
7/8/2021	All wells on	537.1	Pace	2		1.40	2.40	6.30	4.30	0.58	0.00			14.98	
8/4/2021	All wells on	537.1	Pace	2		1.80	2.60	7.40	5.30	0.77	0.00			17.87	
9/10/2021	All wells on	537.1	Pace	2		2.00	2.60	8.20	6.00	0.00	0.00			18.80	
10/6/2021	All wells on	537.1	Pace	1.8		2.40	3.30	8.60	6.30	0.00	0.00			20.60	
10/21/2021	Browns/Salem only	537.1	Pace			2.20	2.50	6.50	5.30	0.00	0.00			16.50	New GAC
11/1/2021	All wells on	537.1	Pace			0.00	0.00	0.00	0.00	0.00	0.00			0.00	
12/1/2021	Sargent Finish Water (all wells on)	537.1	Pace	1.9		0.00	0.00	0.00	0.00	0.00	0.00			0.00	
<b>2022</b>															
1/5/2022	Sargent Finish Water (all wells on)	537.1	Pace	1.9		0.00	0.00	0.89	0.00	0.00	0.00			0.89	
2/2/2022	Barrows/Browns only	537.1	Pace	1.9		0.00	0.00	1.10	0.00	0.00	0.00			1.10	
3/2/2022	Barrows/Browns only	537.1	Pace	1.9		0.00	0.77	1.40	0.00	0.00	0.00			2.17	
4/6/2022	Sargent Finish Water (all wells on)	537.1	Pace	1.8		0.00	1.20	2.40	0.93	0.00	0.00			4.53	
5/1/2022	Sargent Finish Water (all wells on)	537.1	Pace	1.9		0.64	1.60	3.00	1.10	0.00	0.00			6.34	
6/6/2022	Sargent Finish Water (all wells on)	537.1	Pace	1.9		1.10	2.00	4.30	1.80	0.00	0.00			9.20	
7/7/2022	Sargent Finish Water (all wells on)	537.1	Pace	2		1.40	2.40	6.10	2.10	0.00	0.00			12.00	
8/3/2022	Sargent Finish Water (all wells on)	537.1	Pace	1.9		1.20	2.80	5.50	2.40	0.00	0.00			11.90	
9/1/2022	Sargent Finish Water (all wells on)	537.1	Pace	1.8		1.30	2.40	6.30	2.40	0.00	0.00			12.40	
9/12/2022		537.1	Pace	1.8		0.00	0.99	2.50	0.91	0.00	0.00			4.40	9/11/22 #1 filter new GAC Norit 400
10/3/2022	Sargent Finish Water (all wells on)	537.1	Pace	1.8		0.00	1.10	2.60	0.00	0.00	0.00			3.70	
11/2/2021	Sargent Finish Water (all wells on)	537.1	Pace	1.9		0.63	1.50	2.40	0.87	0.00	0.00			5.40	11/21/22, #2 Filter new GAC Filtrasorb400
12/1/2022	Sargent Finish Water (all wells on)	537.1	Pace	1.8		0.00	0.00	0.00	0.00	0.00	0.00			0.00	



Sample Date	Location	Method	Lab	Min Reporting limit (MRL)	PFBS	PFHxS	PFHpA	PFOA	PFOS	PFNA	PFDA	HFPO-DA	New ?? PFAS 6	PFAS 6 total	PFAS 6 total yearly min
<b>BUTTERS FINISH WATER</b>															
<b>2019</b>															
9/12/19	Butters FW	537	con-test	1.5		0.00	0.00	0.00	0.00	0.00	0.00			0.00	
<b>2021</b>															
4/14/21	Butters FW	537.1	EEA	2		0.61	1.40	3.70	1.40	0.00	0.00			3.70	
5/18/21	Butters FW	537.1	EEA	2	9.2	2.00	2.90	7.30	5.10	0.68	0.00	<2.0		17.30	Results were received on 6/15/2021 with errors update report was 6/18/21, a holiday, on 6/22/21 ordered more PFAS bottles, resampled on 7/7/21
6/17/21	Butters FW	537.1	EEA	2		1.10	2.40	5.50	2.70	2.00	2.00			10.60	
7/7/21	Butters FW	537.1	con-test	2		0.73	1.60	4.00	1.60	0.00	0.00			4.00	
8/4/21	Butters FW	537.1	con-test	2		1.20	1.80	4.40	2.10	0.00	0.00			6.50	
9/23/21	Butters FW	537.1	con-test	2		0.83	1.80	4.00	1.70	0.00	0.00			4.00	
10/6/21	Butters FW	537.1	con-test	1.8		1.10	2.30	5.20	2.20	0.00	0.00			9.70	
11/1/21	Butters FW	537.1	con-test	1.9		0.77	2.10	4.40	1.70	0.00	0.00			6.50	
12/1/21	Butters FW	537.1	pace	1.9		0.91	1.70	4.10	1.60	0.00	0.00			5.80	
<b>2022</b>															
1/1/22	Butters FW	537.1	pace	2.00		1.10	1.70	4.60	1.70	0.00	0.00			4.60	
2/2/22	Butters FW	537.1	pace	1.80		1.10	1.80	5.00	2.10	0.00	0.00			8.90	
3/2/22	Butters FW	537.1	pace	1.80		0.98	1.70	4.40	2.10	0.00	0.00			8.20	
4/6/22	Butters FW	537.1	pace	1.80		1.30	1.80	5.40	2.50	0.00	0.00			9.70	
5/1/22	Butters FW	537.1	pace	1.90		1.20	2.10	4.70	1.70	0.00	0.00			6.80	
6/6/22	Butters FW	537.1	pace	1.90		1.30	2.10	5.70	2.90	0.00	0.00			10.70	
7/6/22	Butters FW	537.1	pace	1.90		1.40	2.50	6.10	2.50	0.00	0.00			11.10	
8/3/22	Butters FW	537.1	pace	1.90		1.70	2.90	6.90	3.10	0.00	0.00			14.60	
9/1/22	Butters FW	537.1	pace	1.90		2.20	3.00	9.20	4.10	0.00	0.00			18.50	
9/17/22	Butters FW	537.1	pace	1.90		0.68	1.40	2.40	1.00	0.00	0.00			2.40	9/14/22 #1 filter new GAC- N-400
10/3/22	Butters FW	537.1	pace	1.80		0.00	0.00	0.00	0.00	0.00	0.00			0.00	
11/3/22	Butters FW	537.1	pace	0.90		0.00	0.87	2.00	0.82	0.00	0.00			2.00	11/22/22, #2 Filter new GAC Filtrasorb400
12/1/22	Butters FW	537.1	pace	1.90		0.00	0.00	0.00	0.00	0.00	0.00			0.00	



**STAFF SUMMARY**



**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** April 17, 2024  
**SUBJECT:** Rehabilitation of Sections 23, 24 and 47 Water Mains – Boston and Newton Albanese D&S, Inc.  
Contract 6392, Change Order 4

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**COMMITTEE:** Water Policy & Oversight

       INFORMATION  
  X   VOTE

Martin E. McGowan, Director, Construction  
Alejandro Alvarez, Construction Coordinator  
Preparer/Title

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

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**RECOMMENDATION:**

To authorize the Executive Director, on behalf of the Authority, to approve Change Order 4 to Contract 6392, Rehabilitation of Sections 23, 24 and 47 Water Mains – Boston and Newton, with Albanese D&S, Inc. for a not-to-exceed amount of \$1,087,031.50, increasing the contract amount from \$27,385,464.07 to \$28,472,495.57, with no increase in contract term.

Further, to authorize the Executive Director to approve additional change orders as may be needed to Contract 6392 in an amount not to exceed the aggregate of \$1,000,000 in accordance with the Management Policies and Procedures of the Board of Directors.

**DISCUSSION:**

Contract 6392 includes cleaning and cement mortar lining of approximately 4,500 linear feet of Section 23, which is a 36-inch diameter cast iron water main, 10,800 feet of 20-inch Section 24 and Section 47 cast iron water main, and 500 feet of 20-inch steel water main along Section 24. The construction work also includes installing, by open-cut, 3,600 feet of 36-inch ductile iron Section 23 water main, 6,400 feet of 24-inch ductile iron Section 24 water main, new valves and appurtenances, and replacing the check valve assembly at Boston Meter 120. Additionally, the construction contract includes replacing approximately 2,400 linear feet of the City of Newton’s 20-inch diameter, 140-year-old cast iron water main on Ward Street between Manet Road and Waverly Avenue. Under the terms of a Memorandum of Agreement between MWRA and the City of Newton, the City will reimburse MWRA for the cost of Newton’s work.

The Contractor has completed the pipeline rehabilitation and replacement and is currently performing final disinfection so these lines can be reactivated. Remaining work includes site restoration and final paving now scheduled to be completed in May 2024. The Contractor and MWRA are continuing to negotiate and finalize costs for the remaining change order items encountered during the project. These include items like utility conflicts, daily paving, repairing existing structures and commodity increases. It is expected that the requested \$1,000,000 in re-delegation will be sufficient to cover these final costs. Staff are anticipating a significant final balancing change order for unspent quantities for soil and rock unit prices as well as unspent police, utility and MBTA allowances.

## This Change Order

Change Order 4 consists of the following two items:

### Soil Overrun

Not to exceed \$795,510.00

The Contractor is required to remove, handle, transport and dispose of all surplus soil. The contract documents include estimated quantities for five different soil classifications under both Line Item 1 for MWRA work and Line Item 2 for City of Newton work for a total of ten soil quantities. These quantities were based on preliminary investigations and assumptions made during design. The five soil classifications are as follows:

- Group IA: Less than MCP RCS-1 and MassDEP Similar Soils
- Group IB: Less than MCP RCS-1 and Greater than Similar Soils
- Group IIA: Unlined Landfill
- Group IIB: Lined Landfill
- Group III: Out of State Disposal Facility

After commencement of the contract and prior to excavating, the Contractor performed some pre-characterization of soils in situ. This initial testing indicated the majority of surplus soil would be classified as Group IB, instead of Group IA. Once construction activities began, the Contractor segregated (MWRA versus Newton) and stockpiled all surplus soils for additional testing to determine the appropriate classification for disposal. These tests confirmed that three of the ten soil quantities have significant overruns in contract quantities, while the remaining soil quantities have significant underruns in contract quantities. In addition, change order work associated with additional water main installation, municipal drain and sewer relocation and replacement resulted in an overall increase in soil quantities to be disposed of. Soil quantity underruns will be captured in the final balancing change order for a credit to MWRA and City of Newton.



Excavating and Transporting Soil from Site



Soil Stockpile Prior to Disposal

The Contract included 100 tons of Group IB soils for MWRA work and 10 tons for the City of Newton work. As expected from soil pre-characterization, the actual quantities were significantly higher. The projected final quantity overrun for Group IB excavated soils is now 16,500 tons for

MWRA work and 1,400 tons for City of Newton work. The contract states that the Contractor shall include a unit price for each classification of material (Soil Group) in the Schedule of Values and if the actual quantity of any class of material varies from the assumed quantity, the contract price shall be adjusted in accordance with the terms of the contract. The Contractor carried a unit price of \$37.00 a ton in its Schedule of Values for the contract specified quantities. However, due to the significant increased quantities encountered, the unit price increased marginally to \$41.90 a ton to account for an increase in the landfill disposal fee. The Contractor will be compensated for the additional Group IB soil quantities at this revised unit price for an amount not to exceed \$691,350 for MWRA work and \$58,660 for City of Newton work. The City of Newton has approved this additional work, accepted the revised unit price and agreed to reimburse the Authority for its portion of surplus soils per the terms of the Memorandum of Agreement.

Finally, the Contract included 100 tons of Group IIB soils for MWRA work. The projected final quantity overrun for Group IIB soils is now 650 tons. The Contractor carried a unit price of \$55.00 a ton in their Schedule of Values for the contract specified estimate of 100 tons. However, due to the significant increased quantities encountered, the unit price increased to \$70.00 a ton to account for the distance to a different disposal site and an increase in disposal fee. The Contractor will be compensated for the additional Group IIB soil quantities at this revised unit price for an amount not to exceed \$45,500.

This item was identified by MWRA staff as an unforeseen condition. MWRA staff, the Consultant, and the Contractor have agreed to a not-to-exceed amount of \$795,510 for this work. The Contractor proceeded with this work at its own risk in order to complete the remainder of the contract work.

Emergency Interconnection between MWRA and City of Newton \$291,521.50

As part of the Section 23 rehabilitation, the Contractor is required to replace approximately 1,000 feet of 36-inch cast iron pipe by open cut from Commonwealth Avenue to Ward Street in the City of Newton. After commencement of Contract 6392 and prior to installing this section of pipe, the Design Engineer working on a separate pipeline design (Intermediate High Pipeline Improvement Program, Contract 6955) performed hydraulic modeling and identified a hydraulic shortfall that would affect future construction projects that will result from Contract 6955.

The Intermediate High Pipeline Improvement Program consists of multiple construction projects that will interconnect two distinct and hydraulically unconnected Intermediate High water service areas, with Newton to the south and Arlington, Belmont and Watertown to the north. This Program will provide redundancy and operational flexibility in the event of pipe failures. During the future construction projects under this Program, there will be brief periods when critical meters to the north are out of service with no means to supply water. To ensure uninterrupted water supply in these locations during these future construction projects, MWRA planned to use the City of Newton's covered storage tank through an existing emergency interconnection located on Ward Street at Hammond Road. However, based on the hydraulic modeling completed under Contract 6955, the Design Engineer determined that this existing emergency interconnection would not satisfy the full demand, which required the Design Engineer to evaluate other potential interconnection points in the system. The Design Engineer identified a location for a new emergency interconnection where the City of Newton's 20-inch pipe crosses the new 36-inch pipe, which was currently being replaced under Contract 6392.

While this new emergency interconnection will initially support the upcoming Intermediate High Pipeline Improvement Program, it will also mutually benefit MWRA and the City of Newton by providing additional redundancy and flexibility in the future. Staff determined that this new emergency interconnection should be installed under Contract 6392 to eliminate the need to deactivate, cut and disinfect the new Section 23 piping during a future Intermediate High pipeline improvement construction project. In addition, performing this work under Contract 6392 avoids disturbing new pavement on the residential streets that have endured utility relocations and improvements over the past several years.



Installing the 36-inch by 20-inch Tee on Section 23 for Emergency Interconnection



Completed Piping at the City of Newton's Existing 20-Inch Water Main

As a result of this design change, the Contractor must now furnish and install a 20-inch emergency interconnection between MWRA's 36-inch Section 23 and the City of Newton's 20-inch line near the intersection of Ward Street and Manet Road, including pipe, valves, fittings and thrust restraints.

This item was identified by MWRA staff as a design change. MWRA staff, the Consultant, and the Contractor have agreed to a lump sum amount of \$291,521.50 for this work. The Contractor proceeded with this work at its own risk in order to complete the remainder of the contract work.

**CONTRACT SUMMARY:**

	<u>Amount</u>	<u>Time</u>	<u>Dated</u>
Original Contract:	\$26,843,000.00	912 Days	11/18/21
Change Orders:			
Change Order 1*	\$0.00	0 Days	10/17/23
Change Order 2*	\$517,845.56	0 Days	10/31/23
Change Order 3*	\$24,618.51	0 Days	12/05/23
Change Order 4	<u>\$1,087,031.50</u>	<u>0 Days</u>	Pending
Total of Change Orders:	\$1,629,495.57	0 Days	
Adjusted Contract:	\$28,472,495.57	912 Days	

\*Approved under delegated authority

If Change Order 4 is approved, the cumulative value of all change orders will be \$1,629,495.57 or 6.1% of the original contract. Work on this contract is 93% complete.

**BUDGET/FISCAL IMPACTS:**

The FY24 CIP includes \$24,583,000 for Contract 6392. Including this change order for \$1,087,031.50, the adjusted subphase total will be \$28,472,495.57, or \$3,889,495.57 over the CIP amount. This amount will be absorbed within the five-year CIP spending cap. In addition, the CIP includes a credit for costs associated with replacement of the City's 20-inch water main of \$2,868,000, which will be reimbursed to MWRA in accordance with the terms of the Memorandum of Agreement between MWRA and the City of Newton

**MBE/WBE PARTICIPATION:**

The D/MBE and D/WBE participation requirements for this project were established at 4.2% and 4.5%, 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  
**DATE:** April 17, 2024  
**SUBJECT:** 2023 Annual Update on New Connections to the MWRA System

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**COMMITTEE:** Administration, Finance and Audit

INFORMATION  
 VOTE

Hillary Monahan, Project Manager, Environmental Permitting  
Colleen Rizzi, P.E., Director, Env. and Regulatory Affairs  
Preparer/Title



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

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### RECOMMENDATION:

For information only.

### DISCUSSION:

MWRA's system expansion policies require an annual update on the status of any new connections (connection approved within the preceding five years) to MWRA from outside the water and sewer service areas. Calendar year 2002 was the first year that MWRA system expansion policies prescribed this annual update requirement. In an effort to maintain a single document that includes all new connections, the 2023 Annual Update discusses all post-2002 connections to MWRA. A summary of each connection's compliance in 2023 with requirements as stipulated in its water supply or sewer use agreement is provided. For water connections, requirements include compliance with water withdrawal limits and entrance fee payments due to MWRA. For wastewater connections, requirements address inflow removal, ongoing stipulations regarding management of wet weather flows, compliance with discharge limits, and entrance payments due to MWRA.

Reduced demand on MWRA's water supply over the last several decades has positioned MWRA as a source of reliable water supply for existing and interested new communities. This report includes a discussion of inquiries from potential applicants for admission in calendar year 2023 and other related system expansion activities, including the Board of Directors' approval in September 2022 of a five-year waiver of MWRA's water system entrance fee under certain conditions. This waiver extends through December 31, 2027.

The MWRA operating policies listed below govern system expansion. A more detailed summary of each policy is provided in Attachment A.

- *OP.04, Sewer Connections Serving Property Partially Located in a Non-MWRA Community (the "Sewer Straddle" policy);*
- *OP.05, Emergency Water Supply Withdrawals;*
- *OP.09, Water Connections Serving Property Partially Located in a Non-MWRA community (the "Water Straddle" policy);*
- *OP.10, Admission of New Community to MWRA Water System; and*

- *OP.11, Admission of New Community to MWRA Sewer System and Other Requests for Sewer Service to Locations Outside MWRA Sewer Service Area.*

## **Summary of Approved Connections to the MWRA System**

### **Water**

In 2023, Quabbin Reservoir levels remained well within the normal operating band, spilling 135 million gallons in the spring over 25 days in addition to routinely exceeding its minimum required releases. According to monthly DCR Hydrologic Conditions Reports<sup>1</sup>, 2023 began with generally high temperatures and below normal snowfall. Above normal rainfall continued as the year progressed. In May, *Level 1 – Mild Drought* was declared for only Western and Cape Cod Regions, and by November, *Level 2 – Significant Drought* conditions developed only throughout the Islands Region. Conditions gradually improved during the fall and all regions, with the exception of the Islands Region, returned to normal by the beginning of 2024.

MWRA’s large multi-year reservoirs are calculated to hold roughly 5.6 years of water supply demand at current withdrawal rates. Notably, despite adding new customers to the system, water demand in 2023 was the lowest since 1950. Maintaining normal operation range throughout the year, both the Swift and Nashua Rivers received substantial releases from the reservoirs, well above their minimum requirements.

Demand for the partially supplied communities decreased by 3.43 mgd (15.6 percent) from 2022 to 2023. This decrease was related to the 2022 Cambridge use of MWRA water while upgrading its treatment plant to improve PFAS removal. Additionally, Burlington increased MWRA water use in 2023 as pipeline capacity was increased.

Since 2002, Stoughton, Reading, the Dedham-Westwood Water District, Wilmington, Ashland and Burlington have become MWRA water communities. (Bedford was admitted into the MWRA system prior to 2002, before firm water withdrawal limits were established for new communities.) There have also been two “straddle connections” since 2002: Avalon in Peabody/Danvers (now called 14 North) and the YMCA in Marblehead/Salem. The connections are shown on the map in Figure 1 and information pertaining to these connections is provided in Table 1.

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<sup>1</sup> <https://www.mass.gov/info-details/monthly-hydrologic-conditions#2023->



<b>Table 1 - Approved Connections to MWRA Water System Since 2002</b>					
<b>Applicant</b>	<b>Applicable MWRA Policy</b>	<b>Approval Date or Emergency Period (month/year)</b>	<b>Entrance Fee or Payment of Charges Under the Emergency Policy</b>	<b>MWRA Approved Withdrawal</b>	<b>2023 MWRA Withdrawal</b>
Hudson	OP.05 Emergency	6/13 (emergency) 12/13 (emergency) 6/14 (emergency) 1/16 (emergency)	MWRA has received a total of \$1,033,787 for emergency withdrawals.	N/A	0
Reading	OP.10, New	11/05 (admitted) 10/07 (amended)	Entrance fee of \$3,285,242 (first 0.6 mgd) & \$7,799,606 (additional 1.5 mgd) paid in full.	766.5 mg/yr (3.8 mgd max)	572.0 mg/yr
YMCA Salem/ Marblehead	OP.09, Straddle	11/06 (admitted)	Entrance fee of \$70,823 paid in full.	0.0127 mgd	0.003410 mgd
14 North Danvers/ Peabody	OP.09 Straddle	05/03 (admitted)	Entrance fee of \$64,063 paid in full.	0.012 mgd	0.005642 mgd
Stoughton (partial supply)	OP.10, New	6/02 (admitted)	Entrance fee of \$5,657,117 paid in full.	419.75 mg/yr (2.5 mgd max)	19.6 mg/yr

*mg/yr = million gallons per year; mgd = million gallons per day*

The highlights of Table 1 are summarized below.

- The Town of Burlington was approved by the Board of Directors for admission to the MWRA water system on December 16, 2020. A Water Supply Agreement was executed in 2021, in alignment with the first phase of Burlington’s connection, which allowed the Town to obtain up to 324 mg/year and 0.886 mgd on average from MWRA via a connection to the Town of Lexington’s local water system. In 2022, Burlington withdrew a total of 367.7 million gallons, exceeding its Water Supply Agreement withdrawal limit. Phase 2 of Burlington’s connection involved construction of a pipeline, which allows Burlington to obtain up to 6.5 mgd from MWRA. Construction of the Phase 2 pipeline was completed in July 2023. On June 21, 2023, the Board voted to approve the Town of Burlington’s request to increase its withdrawal volume limits to up to 1,278 mg/year, or 3.5 mgd average daily use, and up to 6.5 mgd maximum daily use, as well as to waive the entrance fee associated with such increased withdrawal volume.
- The Town of Wilmington requested approval to increase its annual withdrawal volume from the MWRA water system from 219 mg/year to 450.5 mg/year on March 4, 2024, as well as a waiver of the MWRA entrance fee for the additional withdrawal volume. Wilmington, which is partially supplied by MWRA, has requested this approval because declining groundwater levels have caused a substantial drop in the production capabilities of local groundwater wells and PFAS concerns. The Town is seeking 255.5 mg/year, or 0.7 mgd, through 2026 to meet seasonal demands. Following those two years, Wilmington requests an increase to 450.5 mg/year, or 1.23 mgd, to also supplement their Sargent Water Treatment Facility through 2029. The Town acknowledges that an annual volume above 620.5 mg/year (1.7 mgd) would require Massachusetts Environmental Policy Act review and Interbasin Transfer Act approval under a future permitting process, in addition to a new agreement with MWRA. The Town estimates that withdrawals could range from 0.7

to 2.5 mgd over the next ten years (2024 through 2034). The Town of Wilmington’s contract renewal is the subject of a separate staff summary.

- In June 2023, the Board voted to approve the Dedham-Westwood District’s request to increase its withdrawal volume limits to up to 565.75 mg/year, or 1.55 mgd average daily use and up to 3.1 mgd maximum daily use, as well as to waive the entrance fee associated with such increased withdrawal volume. The District, which is partially supplied by MWRA, increased the volumes in their agreement to increase blending of MWRA water with local supplies while taking measures to permanently reduce Total Trihalomethanes in local finished water, in compliance with MassDEP’s Maximum Contaminant Level. The District’s Water Supply Agreement includes a provision allowing for a temporary increase in water volume in excess of the withdrawal limit without revision to the Agreement in emergency situations.
- For permanent connections made prior to 2020, all entrance fees have been paid pursuant to agreed-upon schedules of payments included in Water Supply Agreements. Burlington and Ashland began entrance fee payments in December 2023 (FY2024) and will continue to make annual payments through FY2045.

### ***Emergency Supplies to MWRA Member Communities***

In the latter half of 2023, the City of Cambridge activated its emergency connection to MWRA’s water system for a brief period in accordance with an Agreement between the City and MWRA.

In 2023, MWRA provided water to Winchester via Spot Pond in accordance with an Agreement between the Town and MWRA. Winchester requested approval to withdraw water from Spot Pond while the Town works on its North Reservoir Dam and while MWRA rehabilitates its Section 89 pipeline, which serves a portion of Winchester.

### **Sewer**

In 2023, there were no new formal applications for admission under OP.11 or OP.4, the “Sewer Straddle” policy. Since 2002, ten entities have been approved to discharge into the MWRA wastewater system. Most recently, Crescent Ridge Dairy was approved in 2019 pursuant to OP.11, and The Rivers School was approved in 2020 pursuant to OP.04, the “Sewer Straddle” policy. Figure 2 shows, and Table 2 summarizes, connections to the MWRA sewer system since 2002, when annual reporting requirements were established.

Figure 2: New or Increased Volume Sewer Connections Since 2002

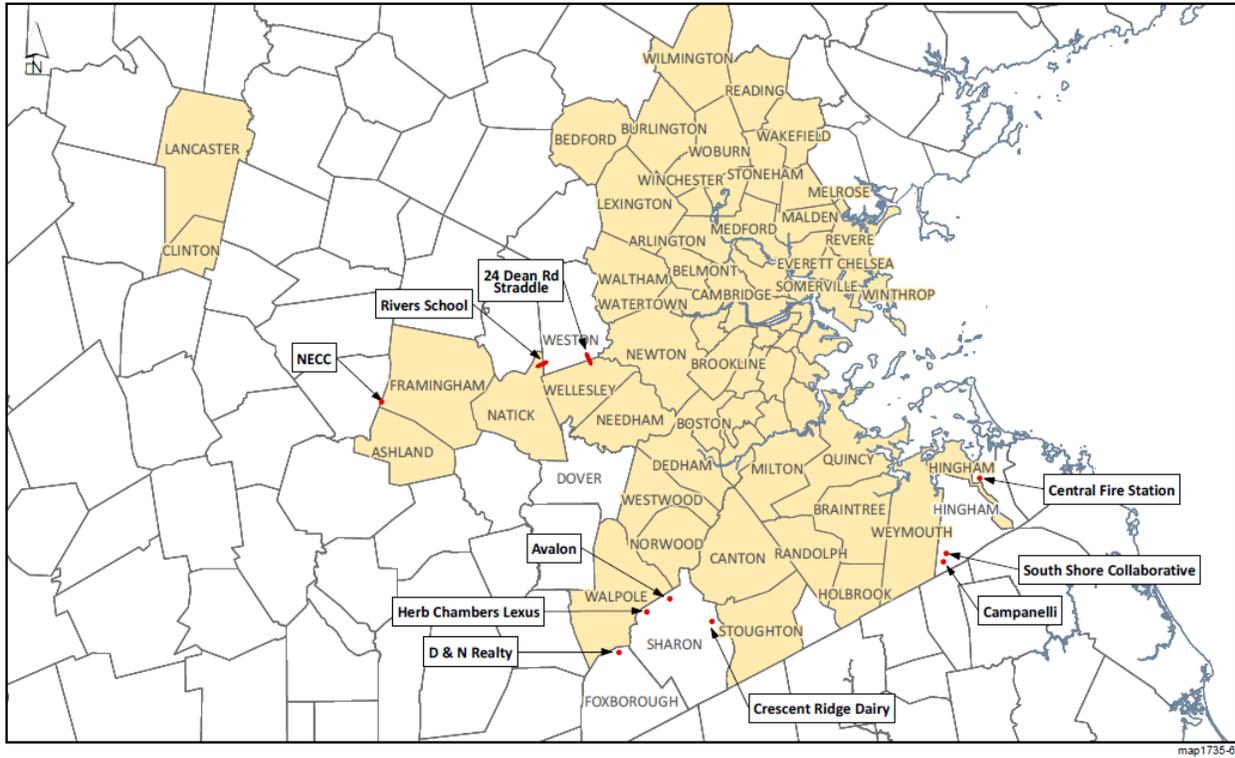


Table 2 - Approved Connections to MWRA Sewer System Since 2002

Applicant	MWRA Policy	Approval Date	Entrance Fee Payment	Status of Inflow Removal/Other Contract Requirements	MWRA Approved Discharge	Estimated Discharge to MWRA in 2023*
Rivers School, Weston	OP.04, Straddle	6/20	\$42,086 paid in full	Payment of \$141,600 to Natick to complete inflow removal.	3,000 gpd (average) 12,000 gpd (max)	3,820 gpd
Crescent Ridge Dairy, Sharon	OP.11	5/19	\$33,642 paid in full	Payment of \$200,000 made to Stoughton to complete inflow removal.	10,000 gpd	3,972 gpd
New England Center for Children, Southborough	OP.11	7/15	\$51,898 Paid in full	Inflow removal completed.	12,500 gpd	4,677 gpd
FoxRock Realty, South Shore Collaborative, Hingham	OP.11	4/12	21,883 paid in full	Inflow removal completed.	5,336 gpd	1,976 gpd
24 Dean Road, Weston/Wellesley	OP.04 Straddle	3/11	\$18,033 paid in full	Inflow removal completed.	575 gpd	431 gpd
2 Washington St, D&N Realty, Foxborough**	OP.11	6/07	\$168,391 paid in full	Inflow removal completed.	13,000 gpd (average) 22,750 gpd (max)	1,116 gpd
Avalon Bay, Sharon	OP.11	6/07	\$105,586 paid in full	Inflow removal completed.	16,120 gpd	15,143 gpd

<b>Table 2 - Approved Connections to MWRA Sewer System Since 2002</b>						
<b>Applicant</b>	<b>MWRA Policy</b>	<b>Approval Date</b>	<b>Entrance Fee Payment</b>	<b>Status of Inflow Removal/Other Contract Requirements</b>	<b>MWRA Approved Discharge</b>	<b>Estimated Discharge to MWRA in 2023*</b>
Herb Chambers Lexus, Sharon	OP.11	5/07	\$40,750 paid in full.	Inflow removal completed.	6,400 gpd (average)  10,500 gpd (max)	4,457 gpd***
Hingham Fire Station, Hingham	OP.11	4/07	\$8,429 paid in full	Inflow removal completed.	782 gpd	199.33 gpd
Campanelli (now Gill Research Drive, LLC), Hingham	OP.11	2/04	\$11,162, paid in full	Inflow removal completed.	2,475 gpd	No reporting requirement
<p>* Wastewater discharges are estimated based on water meter readings.  ** 2 Washington Street in Foxborough was formerly Family Funway, which permanently closed several years ago.  ***Water consumption figures are adjusted downward by 5% to account for a certain percentage of water that is used by the facility and not returned as wastewater (such as landscaping, water consumed).  <i>gpd = gallons per day</i></p>						

The key findings of Table 2 are noted below.

- Most wastewater discharges in 2023 were below the approved agreement limits, and entities reported compliance with obligations related to sewer system operations.
- The Rivers School exceeded its approved estimated discharge limit of 3,000 gpd, with an average daily flow at 3,820 gpd. Staff are working with the school to determine if adjustment of the 2020 Sewer Connection Agreement is necessary. The Rivers School notes that actual discharges may be less, due to water used to create ice and maintain such for its ice hockey rink.
- Family Funway in Foxborough was a small amusement park that permanently closed in 2022 after the passing of its owner. The late owner’s staff are still managing the property at 2 Washington Street, including its discharge reporting, coordinated through Legacy Engineering LLC. MWRA staff will work to ensure that any future owners are aware of annual estimated discharge reporting requirements.

### **System Expansion and Potential Future Connections**

In the fall of 2022, MWRA completed two feasibility studies for expanding MWRA’s water system to the Ipswich River Basin (Beverly, Danvers, Hamilton, Ipswich, Middleton, Lynn, Lynnfield Center Water District, Peabody, Salem, Topsfield, Wenham, Wilmington) and to the South Shore (Abington, Avon, Brockton, Cohasset, Hanover, Hingham, Norwell, Scituate, Rockland, Weymouth, and the Former Naval Air Station). These studies were initiated at the request of the Baker-Polito Administration and in a direct legislative appropriation, respectively. The South Shore feasibility study also looked at expanding MWRA’s wastewater system to the South Shore.

In July of 2023, MWRA completed a third feasibility study for expanding MWRA’s water system to communities in the MetroWest area. The MetroWest Feasibility Study includes the communities

of Acton, Ayer, Bedford, Chelmsford, Concord, Groton, Holliston, Hopkinton, Hudson, Lincoln, Littleton, Maynard, Natick, Sherborn, Stow, Sudbury, Wayland, Wellesley, Westborough, Westford and Weston. This study was requested by the participating communities, many of which are experiencing significant water quantity and quality issues. This study identifies conceptual alternatives to supply water to the communities in the study area from MWRA's tunnel system. All three of these studies are available on [www.mwra.com](http://www.mwra.com).

MWRA is currently in the process of preparing a fourth feasibility study to assess the expansion of MWRA's water system to communities within the Quabbin Reservoir Watershed. This evaluation will quantify MWRA's existing system capacity available to serve new customers, identify the critical infrastructure needed to supply water to Quabbin communities, provide new water supply alternatives (such as surface water intakes and treatment or groundwater supply), and provide planning-level cost estimates for those alternatives. This evaluation will allow MWRA to better understand the infrastructure needed to supply drinking water to the Quabbin Reservoir Watershed communities of Barre, Belchertown, Hardwick, New Salem, Orange, Pelham, Petersham, Phillipston, Shutesbury, Ware, and Wendell. Also, Ludlow was recently added to the study. This study will be completed in a similar manner to the previous three system expansion studies for MetroWest, Ipswich River Basin, and South Shore communities. It is anticipated that this study will be completed by the end of 2024.

In September 2022, the Board of Directors voted to adopt the MWRA Advisory Board's recommendation to temporarily waive the entrance fee. Historically, new communities and entities seeking admission to the MWRA water system were charged an entrance fee, based on the value of the existing water system at the time of admission. The entrance fee has been identified as a barrier for new communities in need of water. Analysis has shown that selling additional water will benefit both new and existing water communities; for existing water communities, the additional sale of water could significantly reduce future annual water assessments. The waiver will extend through 2027 for new communities seeking admission for up to a combined total 20 mgd. To qualify for the entrance fee waiver, communities must demonstrate that local sources are impacted by water quality issues, local sources are located in a stressed basin or that local economic development is significantly constrained by existing local sources.

MWRA staff anticipate that the four feasibility studies will generate some additional interest in connecting to MWRA's water system. Below is a summary of communities that have expressed intentions or significant interest in pursuing admission to the MWRA water system.

### ***Communities***

**Avon:** Representatives from the Town of Avon recently met with MWRA staff to discuss the potential to connect to both MWRA's water and sewer systems. Avon is looking to provide service to an industrial complex in town and anticipates demand would be approximately 0.1 mgd. Avon seeks to connect through the Town of Stoughton and is currently working with Stoughton to determine if a connection is feasible.

**Billerica:** Representatives from the City of Billerica recently met with MWRA staff to discuss the potential to connect to MWRA's water system as a partial community, with the possibility of becoming a fully served community in the future. Billerica's interest stems from the deteriorating water quality of its drinking water source, the Nashua River. Billerica would wheel water through

an existing community. Further modeling is required to determine if there is capacity to supply additional water in that portion of MWRA's distribution system.

**Hopkinton:** The Town of Hopkinton is in the process of pursuing admission to the MWRA water system, pursuant to OP.10, for supplemental water supply (amount to be determined but not to exceed approximately 1.1 mgd). Hopkinton is planning to wheel water through Southborough and is working with Southborough to evaluate connection options. Hopkinton has received Town Meeting approval to proceed in the admission process.

**Lynnfield Center Water District:** Lynnfield Center is pursuing admission to the MWRA water system, pursuant to OP.10. The Water District is seeking to withdraw approximately 0.28 mgd average day demand and up to 0.83 mgd maximum day demand. This connection will remedy local contamination issues and increased difficulty meeting local demand. Lynnfield Center is working with the Town of Wakefield to construct a new water main that will allow it to connect to MWRA via the local Wakefield water distribution system. This scenario will also remedy water quality issues (due to two dead end pipes) in the Wakefield water distribution system. MWRA staff have been in close contact with Lynnfield Center and its consultants throughout 2023, as it begins the admission process and applicable regulatory approvals. Lynnfield Center began the Massachusetts Environmental Policy Act and Interbasin Transfer Act review processes midway through 2023, filing an Expanded Environmental Notification Form in June, followed by the establishment of a Special Review Procedure in late July. The Certificate was issued in September 2023, with a determination that a Single Environmental Impact Report would be required.

**MetroWest Communities:** MWRA continues to have regular discussions with 21 MetroWest communities included in the System Expansion Study. A subset of these communities is actively working to determine the physical and financial feasibility of connecting to MWRA's Water System.

**Natick:** The Town of Natick is actively working toward pursuing admission to MWRA's water system, pursuant to OP.10. The Town is initially seeking to utilize MWRA as a supplemental source, seeking a volume of 1.25 mgd, with the potential to increase supply in the future. Natick has received Town Meeting approval to proceed in the admission process.

**North Sherborn Water and Sewer District:** A developer in Sherborn is seeking to create a new water and sewer district to support a proposed development. The total volume estimated by the developer is 0.05 mgd. The developer is working with Framingham to determine if it can wheel water and wastewater through Framingham's existing systems.

**Walpole:** The Town of Walpole has informed MWRA that it is currently investigating alternative supplemental water supply sources and that the Town intends to pursue admission to the MWRA water system. The Town would wheel water through Norwood.

**Wayland:** The Town of Wayland intends to pursue admission to the MWRA water system pursuant to OP.10 and is currently in the design process. Throughout 2023, staff have worked closely with the community and its consultants as it evaluates infrastructure connection options. The Town intends to pursue admission for an emergency and partial supply with connections directly from the MetroWest Water Supply Tunnel, and is requesting approximately 0.64 mgd with the potential of becoming a fully served community (volume of 1.6 mgd) in the future. Wayland has received Town Meeting approval to proceed in the admission process.

**Wellesley:** The Town of Wellesley is currently a partially supplied MWRA water community and has expressed interest in obtaining additional water from MWRA. Staff have met with Wellesley on numerous occasions and conceptual new infrastructure connection options have been identified. Staff will continue to coordinate closely with the Town.

**Weymouth:** The Town of Weymouth has expressed intentions to pursue admission to the MWRA water system, pursuant to OP.10, to obtain supply for both the Town and the former South Weymouth Naval Air Station Redevelopment located in South Weymouth. Staff met with the developers in 2023 to discuss the admission process and requirements. MWRA's South Shore Feasibility Studies identified two conceptual infrastructure connections that could supply Weymouth and the development.

**Wilmington:** The Town of Wilmington is a partially served member community. The Town is seeking to increase the volume of water it is authorized to take due to water quality issues and its location in a stressed basin. The renewal of Wilmington's Water Supply Continuation Agreement and the increase in volume is the subject of a separate staff summary.

***Non-Communities:***

**Former South Weymouth Naval Air Station:** This development is a 1,440-acre community located within Abington, Rockland, and Weymouth. The site is partially developed, with additional development pending. According to a December 2023 Notice of Project Change MEPA filing, the water demand would be 2.1 mgd (including the existing development), with 1.8 mgd in the proposed Project, and the Southfield Redevelopment Authority<sup>2</sup> is working with the Town of Weymouth to pursue admission to the MWRA's water system. Pursuant to OP.10, the community or local body connecting to MWRA is responsible for the connection and must fulfill all requirements of the policy, including Interbasin Transfer Act approval. The Notice of Project Change includes another MWRA-based alternative that involves the Southfield Redevelopment Authority joining MWRA separately from the Town; this alternative also requires full compliance with OP.10. In this scenario, a water district must be formed and said district would be required to join MWRA pursuant to OP.10. Staff will continue to remain available to meet with the Proponent as they explore alternative routes and conveyance options.

Regarding estimated wastewater volumes, it is anticipated that construction of the SWNAS could generate an average daily wastewater flow of up to approximately 1.6 mgd at full buildout. Weymouth is currently a MWRA sewer community, and its portion of the Base could produce a buildout wastewater design flow of 0.8 to 0.9 mgd depending on the ultimate mix of uses within its borders. The Proponent and the Southfield Redevelopment Authority have been working closely with the Town of Weymouth to analyze Weymouth's sewerage system's capacities to meet future demands. There is limited capacity in the MWRA sewer system in this area and MWRA staff will continue to coordinate closely with the Proponent and the Town of Weymouth regarding wastewater discharges to the MWRA system.

**ATTACHMENT:**

Attachment A: Policies for Admission to the MWRA

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<sup>2</sup> Southfield Redevelopment Authority is the local governmental agency for the former South Weymouth Naval Air Station.

## ATTACHMENT A

### Policies for Admission to the MWRA

- **OP.04. Sewer Connections Serving Property Partially Located in a Non-MWRA Community.** This policy applies to persons seeking sewer services for buildings/structures that are located partially within a MWRA sewer community and partially outside a MWRA sewer community. (The actual structures, not just the parcel of land on which the structure is located, must straddle the municipal boundary.) It is also known as the “Sewer Straddle” policy.
- **OP.05. Emergency Water Supply Withdrawals.** This policy applies to communities outside MWRA’s water service area that are seeking MWRA water on an emergency basis. MWRA may approve emergency withdrawals for no more than six months at a time, and typically, the emergency withdrawal period coincides with a DEP Declaration of Emergency for the Community.
- **OP.09. Water Connections Serving Property Partially Located in a Non-MWRA community.** This policy applies to persons seeking to obtain water for a location, building, or structure located on a parcel of land, under single ownership, and which is subject to an integrated plan for use of development that is located partially within a MWRA water community and partially outside a MWRA water community. It is also known as the “Water Straddle” policy.
- **OP.10. Admission of New Community to MWRA Water System.** This policy applies to communities seeking admission to the MWRA water system. OP.10 also applies to any local body, institution, agency or facility of the Commonwealth or federal government seeking MWRA water for a location outside MWRA’s water service area. Connections and withdrawals by private entities outside the water service area are prohibited, except for those that are eligible under either the water straddle policy (OP.9), or that are located contiguous to, or in the vicinity of, local community-owned water supply pipelines that extend from the MWRA’s Chicopee Valley Aqueduct (CVA), and that receive the appropriate approvals from the CVA, host communities and applicable regulatory bodies.
- **OP.11. Admission of New Community to MWRA Sewer System and Other Requests for Sewer Service to Locations Outside MWRA Sewer Service Area.** This policy applies to communities seeking admission to the MWRA sewer system and to all parties seeking sewer service for locations outside the MWRA service area that are not eligible under the Sewer Straddle policy.

MWRA must approve all extension of service to entities outside the service area pursuant to the applicable policy noted above, with the exception of connections to local community-owned water supply pipelines that extend from the Chicopee Valley Aqueduct. This is the case even when an entity outside the service area is not directly connected to MWRA, but instead to a local community system that is part of the MWRA service area.

**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** April 17, 2024  
**SUBJECT:** Delegated Authority Report – March 2024



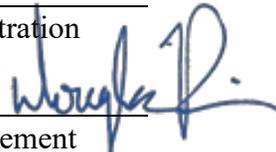
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**COMMITTEE:** Administration, Finance & Audit

INFORMATION  
 VOTE

Barbara Aylward, Administrator A & F  
Karen Smith, Administrative Systems Coor.  
Preparer/Title

  
Michele S. Gillen  
Director, Administration

  
Douglas J. Rice  
Director of Procurement

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**RECOMMENDATION:**

For information only. Attached is a listing of actions taken by the Executive Director under delegated authority for the period March 1 - 31, 2024.

This report is broken down into three sections:

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

**DISCUSSION:**

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

Construction Contract Awards:

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

Change Orders:

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

Professional Service Contract Awards:

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

Non-Professional Service Contract Awards:

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

Purchase or Lease of Equipment, Materials or Supplies:

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

Amendments:

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

Amendments to the Position Control Register:

Amendments which result only in a change in cost center.

**BUDGET/FISCAL IMPACT:**

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

**Purchasing Delegated Authority Items March 1-31, 2024**

No.	Date of Award	Title and Explanation	Company	Value
P-1	02/08/24	<p><b>Two-Year Sole Source Purchase Order Contract for the Supply and Delivery of Emulsion Polymer</b></p> <p>The Phosphorus Reduction Facility at the Clinton Wastewater Treatment Plant uses a chemical phosphorus removal system, which requires the addition of ferric chloride and polymer prior to filtration. Polymer is added after ferric chloride to assist in the flocculation of particles so the filters more easily remove them. Staff estimate that approximately 46,300 pounds of emulsion polymer will be required during the term of this two-year contract. Under the existing contract with Aries Chemical, Inc. MWRA paid \$2.14 per pound of polymer. Compared to the existing contract, costs will increase to \$2.27 per pound a 6% increase.</p>	Aries Chemical, Inc.	<b>\$105,101.00</b>
P-2	02/13/24	<p><b>One-Year Purchase Order Contract for the Supply and Delivery of Sodium Bisulfite</b></p> <p>Sodium bisulfite is a chemical added to Deer Island’s effluent to reduce and control total residual chlorine levels. Staff have reviewed Holland Company’s bid and have determined that it meets all of the requirements of the bid specifications. Under the existing contract, MWRA is paying the same fixed bid price of \$1.63 per gallon.</p>	Holland Company, Inc.	<b>\$285,250.00</b>
P-3	02/13/24	<p><b>Two-Year Purchase Order Contract for the Supply and Delivery of Propane Gas</b></p> <p>Throughout Western Operations, propane is used as the main source of heat and fuel for backup power at 11 different facilities. Staff estimated approximately 90,400 gallons of propane will be used throughout the 11 facilities per year. Under the previous contract with Superior, MWRA paid an average of \$1.36 per gallon in FY23 and \$1.81 per gallon in FY22. Under this contract Superior’s bid price for all locations for the first year is \$1.80 per gallon and second year for all locations is \$1.98 per gallon.</p>	<b>Superior Plus Energy Services, Inc. dba Osterman Propane</b>	<b>\$341,712.00</b>
P-4	02/08/24	<p><b>Sole Source Purchase Order for the Repair of Four Digester Mixer Assemblies</b></p> <p>The anaerobic sludge digesters at the Deer Island Treatment Plant have been in operation for more than 20 years. A key component common to all of the digesters is the central mixer assembly. The original equipment manufacturer will complete the refurbishment of mixer assemblies to “like new” condition with a full warranty through Aqua Solutions, Inc. The Director of Procurement has approved the sole source nature of this procurement.</p>	Aqua Solutions, Inc.	<b>\$426,592.00</b>

No.	Date of Award	Title and Explanation	Company	Value
P-5	02/28/24	<p><b>Purchase Order for the Supply and Delivery of 480,000 Gallons of Ultra-Low Sulfur #2 Diesel Fuel – State Contract ENE47</b></p> <p>The Deer Island Treatment Plant uses ultra-low sulfur #2 diesel fuel in the Thermal Power Plant. The fuel is burned as supplemental fuel to digester gas in two high-pressure steam boilers and as primary fuel for two combustion turbine generators. Pursuant to this request, 480,000 gallons of fuel oil will be delivered to Deer Island over eight business days. Global Montello Group Corporation submitted a locked in, firm per-gallon delivered price of \$2.8547 per gallon that includes all taxes and fees.</p>	Global Montello Group Corporation	\$1,370,256.00
P-6	03/01/24	<p><b>Purchase Order Contract for One Year Renewal of Everbridge Subscriptions – State Contract ITS75</b></p> <p>Everbridge is a vendor-hosted Critical Event Management (CEM) solution that allows designated MWRA staff to communicate pressing information to employees and community representatives by delivering messages to all communication devices at one time. Additionally, the MWRA uses the Opt-In module where visitors to mwra.com can subscribe to topic-based information updates.</p>	Insight Public Sector, Inc	\$26,420.79
P-7	03/06/24	<p><b>Confirming Purchase Order for a Delivery of Ultra Low Sulfur Diesel Fuel – State Contract ENE47</b></p> <p>The Columbus Park Headworks uses diesel fuel to power both the heating system and the backup emergency generator. On February 12, 2024, Dennis K. Burke, Inc. delivered 8,001 gallons of ULSD to the facility. The Mass State Contract price for that day was \$3.09/gallons. With Federal Leaking Underground Storage Tank (LUST) Federal Spill/ Superfund, and Ma URP taxes, the total cost of the delivery was \$25,154.24</p>	Dennis K. Burke Inc	\$25,154.24.00
P-8	03/06/24	<p><b>Sole Source Purchase for Replacement Parts for Flowrox/Valmet Pumps for the Deer Island Treatment Plant</b></p> <p>This purchase is for direct replacement of two Thickened Primary Sludge pump rotors, stators and other consumable parts used for the existing Flowrox/Valmet pumps. Parts are stocked at the Deer Island warehouse and are periodically drawn out and installed by MWRA maintenance staff. The Director of Procurement has approved the sole source nature of this procurement.</p>	Valmet Flow Controls, Inc.	\$34,084.62
P-9	03/08/24	<p><b>Purchase of Five New Electric Charging Stations – State Contract VEH102</b></p> <p>In an effort to advance the electrification of MWRA’s fleet, staff have applied for and been approved to participate in Eversource’s EV Make Ready Program, which will provide all underground infrastructure for several electric vehicle chargers at MWRA’s Southborough</p>	Voltrek, LLC	\$36,021.95

No.	Date of Award	Title and Explanation	Company	Value
		<p>Facility at virtually no charge to the MWRA. Related to that is the purchase of five electric charging stations. The work provided under this contract includes the chargers, the “Smart” software described above as well as startup of the software, connecting the chargers to the Eversource infrastructure, signage, commissioning of the systems, and an extended warranty for two years beyond the one year manufacturer’s warranty.</p>		
P-10	03/08/24	<p><b>Sole Source Purchase Order Contract for a One Year of Subscription Renewal for Trimble Unity Remote Monitoring/Telog and Client Licenses</b></p> <p>In December 2022, the MWRA procured and implemented the Trimble Unity Remote Monitoring application to replace the unsupported and obsolete Telog reporting solution being used at that time. Operations depends on remote monitoring to quickly respond to community inquiries. This subscription renewal will ensure that staff are able to continue to monitor and report on metering data in a timely fashion.</p>	Badger Meter, Inc	\$65,440.00
P-11	03/08/24	<p><b>One-Year Purchase Order Contract for the Supply and Delivery of Sodium Hydroxide</b></p> <p>MWRA uses sodium hydroxide at its headwork’s facilities to control odors. This purchase order contract will require the awarded vendor to provide sodium hydroxide to each location on an as-needed basis. Based upon reasonable assumptions and previous contract history, staff’s total projected estimate of usage during a one-year period for all facilities is 20,000 gallons. Of this amount, staff estimate that 3,000 gallons will be used at Columbus Park; 1000 gallons will be used at Ward Street, and 16,000 gallons will be used at Nut Island. These are estimates and MWRA will pay only for product that is ordered and received.</p>	Borden & Remington Corporation	\$75,453.10
P-12	02/29/24	<p><b>Purchase Order for One New Flatbed Truck with Articulating Hydraulic Crane</b></p> <p>Staff recommend the replacement of WRA-944 due to its age and the fact that it has been out of service since 2021 due to a lack of repair parts. This piece of equipment has proven to be an invaluable asset for not only the Water Pipeline Group but for other programs within Field Operations that includes Equipment Maintenance to install pumps in water and wastewater facilities. The recommended truck is a 2025 International HX620 SBA with a Cummins ISX15 565 horsepower engine. The vehicle will be equipped with a Palfinger PK78002 articulating multistage, self-folding, 59-foot hydraulic crane and a 22-foot stake body.</p>	D.C. Bates Equipment Co., Inc	\$600,635.00
P-13	02/28/24	<p><b>Purchase Order for One Catamaran Survey Boat</b></p> <p>The current Laboratory Services vessel used to support several testing programs is a RV Merganser 28-foot fiberglass single engine vessel. It was acquired by MWRA in 1996 and has served exceptionally well for the last 28 years. With the ever changing climate conditions and MWRA’s responsibilities offshore, this vessel is in need of replacement. After reviewing</p>	Armstrong Consolidated LLC	\$641,500.00

No.	Date of Award	Title and Explanation	Company	Value
		current capabilities and designs, specifications were developed for a purpose-built vessel to provide a more stable base for both offshore and inland waterway sampling.		
P-14	03/11/24	<p><b>Sole Source Purchase Order One Muffin Monster Grinder for the Chelsea Creek Headworks</b></p> <p>MWRA has been purchasing Muffin Monster sewage grinders for more than 22 years for use in its wastewater treatment plants, headworks and pumping stations. These grinders macerate solids such as bricks, wood, plastics, and light metal, which can commonly find their way into the wastewater system. The Director of Procurement has previously approved the sole source nature of these grinders.</p>	JWC Environmental, LLC	<b>\$64,809.85.00</b>
P-15	02/29/24	<p><b>One-Year Extension Option to the Purchase Order Contract for the Supply and Delivery of Hydrogen Sulfide Control Chemicals</b></p> <p>On February 27, 2023, Bid WRA-5249 was awarded to Evoqua Water Technologies, LLC for the supply and delivery of up to 70,000 gallons of a nitrate-based product called Bioxide. The initial award of this contract was for one year at \$221,200. This contract also included two additional 2 one-year options to extend at the conclusion of each year.</p>	Evoqua Water Technologies, LLC	<b>\$247,800.00</b>
P-16	02/29/24	<p><b>Purchase Order Contract for the Provision of the MWRA Consumer Confidence Report – State Contract OFF48</b></p> <p>The Safe Drinking Water Act Amendments of 1996 contain a requirement for owners of community water systems to provide annual reporting on the state of drinking water quality to its customers. As it has since 1998, MWRA will produce and provide brochures to every household in 45 of its water service area communities. The mailed annual water quality report provides an important opportunity to communicate directly with MWRA’s customers about the quality of their drinking water.</p>	Hannaford & Dumas Commercial Printers	<b>\$313,978.94</b>
P-17	03/21/24	<p><b>Purchase Order Contract for Quality Control Diver Contractor Services for Aquatic Invasive Plant Control Efforts</b></p> <p>MWRA’s invasive aquatic plants control program at the Wachusett, Sudbury and Weston Reservoirs includes diver assisted suction harvesting (DASH) for target removal of invasive plants in an effort to encourage native plants to remain and repopulate the areas of control. This quality control diver contract (QC Diver) serves to monitor, verify, and document the DASH work performed by another firm at these reservoirs.</p>	Fathom Resources, LLC	<b>\$60,500.22</b>

No.	Date of Award	Title and Explanation	Company	Value
P-18	03/25/24	<p><b>Two-Year Purchase Order Contract for Testing Pharmaceuticals in Industrial Wastewater Samples for the Department of Laboratory Services</b></p> <p>The MWRA's Toxic Reduction and Control Department collects two to three samples per month at industrial facilities for determination of the concentrations of thirty-eight pharmaceutical pollutants. Because it is not cost effective to perform these tests in house, MWRA has historically hired an outside contractor to perform these services.</p>	Teklab, Inc.	\$26,900.00
P-19	03/27/24	<p><b>Purchase Order for Two W4 Heat Exchanger Plate Packs for the Centrifuge Facility at the Deer Island Treatment Plant</b></p> <p>There are 156 plate and frame heat exchangers on Deer Island. These units require little maintenance. DITP staff inspects heat exchangers. Plate packs are replaced as conditions warrant. This request includes the purchase of two complete heat exchanger plate packs which will be placed into stock for later use. The availability of spare plate packs will minimize equipment downtime during future failures or repairs.</p>	Process Solutions	\$29,210.00
P-20	03/27/24	<p><b>Purchase Order for Two Portable Light Towers for the Deer Island Treatment Plant</b></p> <p>This request is for the purchase of two portable light towers that will be placed at the Primary Battery C/D and Reactor Battery C locations until the CIP contract can replace the permanently installed failed units. The portable light towers will be placed in service using MWRA labor and reused during the CIP contract and other instances where temporary lighting is needed.</p>	Boss LTG, Inc.	\$30,700.00
P-21	03/25/24	<p><b>Sole Source Purchase Order for Replacement Innomag Pump Parts for the Sodium Hypochlorite Recirculation / Transfer System at the Deer Island Treatment Plant</b></p> <p>Aqua Solutions, Inc. has been previously identified as is the exclusive distributor for Flowserve pumps and spare parts. The new Innomag pumps are a patented design of Flowserve. The Director of Procurement has previously approve a sole source for the entire Flowserve product line.</p>	Aqua Solutions, Inc	\$40,509.00
P-22	03/26/24	<p><b>Sole Source Purchase Order Six Replacement Muffin Monster Grinder Cartridges for the Deer Island Treatment Plant</b></p> <p>MWRA has been purchasing Muffin Monster sewage grinders for more than 22 years for use in its wastewater treatment plants, headworks and pumping stations. These grinders macerate solids such as bricks, wood, plastics, and light metal, which can commonly find their way into the wastewater system. The Director of Procurement has previously approved the sole source nature of these grinders.</p>	JWC Environmental, LLC	\$77,112.00

No.	Date of Award	Title and Explanation	Company	Value
P-23	03/12/24	<p><b>Three-Year Sole Source Purchase Order Contract for Fume Hood Maintenance</b>            The Central Laboratory's fume hoods are controlled by a Siemens environmental control system that is integrated with the HVAC controls for the entire Administration/Laboratory Building. Under this contract, Siemens will perform annual preventive maintenance on the controllers and monitors for 28 fume hoods, including testing, exercising, cleaning and calibrating the equipment to ensure its proper operation. Siemens technicians will also replace any sensors and actuators and other small parts that may affect the rate of airflow or the overall performance of the fume hoods.</p>	Siemens Industry, Inc	<b>\$101,255.00</b>
P-24	03/20/24	<p><b>Purchase Order Contract for Aquatic Invasive Plant Monitoring and Control</b>            Under the previous contract, MWRA awarded a contract for \$145,180 to Solitude Lake Management, LLC for comparable services. The size and scope of this contract is similar to the previous contract.</p>	Solitude Lake Management, LLC	<b>\$150,430.00</b>
P-25	3/19/24	<p><b>One-Year Purchase Order Contract for Oracle Processor Licenses Maintenance and Support – State Contract ITS64</b>            This agreement will cover maintenance and support for a combination of named user, concurrent and processor licenses, which meets the needs of the department while minimizing the cost, since the combination of named user and concurrent licenses are less expensive than processor-based licenses. Under this agreement the production, test and development environments for 27 applications including the Financial, Procurement, and Human Resources Management System (Infor Inc.'s) and the MWRA's Asset Management System (MAXIMO) are serviced. Examples of maintenance and support covered by the agreement include provision of new releases on supported platforms, technical support, troubleshooting, bug fixes and security patches.</p>	Oracle America, Inc	<b>\$235,379.12</b>
P-26	03/29/24	<p><b>Purchase Order for the Removal and Disposal of Hazardous Waste – State Contract FAC110</b>            A leak was located on a Boylston Street Main which is a 40-inch water main located on Brookline Ave in Brookline at the City of Boston line. While excavating to repair the leak the crew encountered soil that has been sampled and determined to be below the reportable limits for Mass DEP. The subsequent groundwater water sample however tested above the reportable limit for lead. MWRA has filed a Utility Related Abatement Measure (URAM) with the Department of Environmental Protection. MWRA staff will mobilize to the site to complete excavation and manage the groundwater removal, transport and disposal. To complete this work it is necessary to utilize a licensed hazardous material contractor to remove of and dispose the contaminated groundwater.</p>	ACV Environmental Services, Inc	<b>\$53,202.60</b>

**Construction & Professional Services Delegated Authority Items March 1 – 31, 2023**

<b>No.</b>	<b>Date of Award</b>	<b>Title and Explanation</b>	<b>Contract</b>	<b>Amend/CO</b>	<b>Company</b>	<b>Value</b>
<b>C-1</b>	<b>03/04/24</b>	<b>Worker’s Compensation Legal Services</b> Extend contract term by 12 months from April 1, 2024 through March 31, 2025 to ensure continuity of litigation services while modifications of the scope of services for replacement contract are drafted.	<b>A627</b>	<b>1</b>	<b>Tentino, Kendall, Canniff &amp; Keefe, LLP</b>	<b>\$75,000.00</b>
<b>C-2</b>	<b>03/04/24</b>	<b>Supervisory Development Training</b> Award of a contract to the highest ranked proposer to provide supervisory development training services for a term of three years.	<b>A637</b>	<b>Award</b>	<b>Casey Hall Training Associates, LLC</b>	<b>\$183,000.00</b>
<b>C-3</b>	<b>03/08/24</b>	<b>Wind Turbine Maintenance</b> Increase unspecified maintenance repair hours; Extend contract term by 59 calendar days from March 8, 2024 to May 6, 2024.	<b>S605</b>	<b>1</b>	<b>Baldwin Energy, LLC</b>	<b>\$78,180.00</b>
<b>C-4</b>	<b>03/19/24</b>	<b>CHE008 Pipe Replacement Project</b> Relocate temporary sewerage bypass pumps and piping; Revise excavation support, Extend bypass pumping duration and perform additional brick sewer work; Place flowable fill in lieu of gravel backfill.	<b>795</b>	<b>5</b>	<b>D’Alessandro Corporation</b>	<b>\$233,580.50</b>
<b>C-5</b>	<b>03/20/24</b>	<b>John J. Carroll Water Treatment Plant Chemical Feed System Improvements Resident Engineering Services</b> Extend contract term by four months from March 5, 2024 through July 5, 2024 to allow resident engineering services to continue past the anticipated substantial completion of contract 7598 – John J. Carroll Water Treatment Plant Chemical Feed System Improvements.	<b>7972</b>	<b>1</b>	<b>CDM Smith, Inc.</b>	<b>\$26,965.12</b>
<b>C-6</b>	<b>03/25/24</b>	<b>Technical Assistance Consultant Services – Hazardous Materials</b> Extend contract term by four months from May 1, 2024 through September 1, 2024 to ensure that on-going Massachusetts DEP projects are completed.	<b>609TA</b>	<b>1</b>	<b>Hydro-Environmental Technologies, Inc.</b>	<b>\$50,000.00</b>
<b>C-7</b>	<b>03/25/24</b>	<b>Technical Assistance Consultant Services – Hazardous Materials</b> Extend contract term by four months from May 1, 2024 through September 1, 2024 to ensure that on-going Massachusetts DEP projects are completed.	<b>610TA</b>	<b>1</b>	<b>Green Seal Environmental, LLC</b>	<b>\$50,000.00</b>

<b>C-8</b>	<b>03/25/24</b>	<b>Strategies for Minimizing Adverse Impacts of Natural Organic Matter in MWRA's Water Supply</b> Award of a Sole Source contract for strategies for minimizing the adverse impacts of natural organic matter in MWRA's water supply for a term of 36 months.	<b>W348</b>	<b>Award</b>	<b>University of Massachusetts, Amherst</b>	<b>\$450,000.00</b>
<b>C-9</b>	<b>03/27/24</b>	<b>Overhead Door Maintenance Services – Various MWRA Facilities</b> Final balancing change order to decrease the following bid items: Non-emergency and emergency maintenance services and replacement parts.	<b>OP-431</b>	<b>1</b>	<b>Safeway Overhead Crane Service, Inc.</b>	<b>(\$48,946.43)</b>
<b>C-10</b>	<b>03/27/24</b>	<b>Prison Point CSO Facility Improvements – Discharge Header Rehabilitation</b> Custom weld repairs; Additional welded steel patch pipe repairs.	<b>8013</b>	<b>3</b>	<b>R. Zoppo Corp.</b>	<b>\$506,750.00</b>

### STAFF SUMMARY



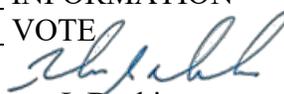
**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** April 17, 2024  
**SUBJECT:** FY24 Financial Update and Summary through March 2024

**COMMITTEE:** Administration, Finance & Audit

INFORMATION

VOTE

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

  
Thomas J. Durkin  
Director, Finance

#### RECOMMENDATION:

For information only. This staff summary provides the financial results and variance highlights for Fiscal Year 2024 through March 2024, comparing actual spending to the budget, and includes a projection to June 30, 2024.

#### DISCUSSION:

MWRA is continuing the practice of setting aside favorable Capital Finance variances into the Defeasance Account with the intention of recommending Board approval to use these funds to defease debt and provide rate relief in future years. Targeted defeasances are a critical component of the Authority’s multi-year rate management strategy. As such, in March the year-to-date debt related savings of \$4.7 million was transferred to the Defeasance Account. This variance is primarily due to lower than budgeted variable interest expense, swap termination savings, and lower SRF spending due to timing.

The total Year-to-Date variance for the FY24 CEB is \$25.7 million, due to lower direct expenses of \$17.0 million, indirect expenses of \$1.3 million, and higher revenue of \$7.3 million. The year-end favorable variance is projected at \$46.8 million, of which \$13.0 million is related to debt service. Beyond debt service savings, staff project a favorable variance of approximately \$33.8 million at year-end of which \$25.8 million would be from lower direct expenses, \$0.1 million from lower indirect expenses, and \$7.9 million from greater than budgeted revenues.

As the year progresses and more actual spending information becomes available, staff will continue to refine the year-end projections and update the Board accordingly.

#### FY24 Current Expense Budget

The CEB expense variances through March 2024 by major budget category were:

- Lower Direct Expenses of \$17.0 million or 7.5% under budget. Spending was lower for Wages & Salaries, Chemicals, Other Services, Professional Services, Fringe Benefits, and

Training & Meetings. Spending was higher than budget for Maintenance, Utilities, Other Materials, Overtime, and Workers' Compensation.

- Lower Indirect Expenses of \$1.3 million or 2.3% under budget due primarily to lower Watershed Reimbursement and PILOT.
- Debt Service expenses were on budget after the transfer of \$4.7 million to the defeasance account.
- Revenue was \$7.3 million or 1.1% over budget driven by higher Investment Income of \$6.4 million due to higher than budgeted interest rates and higher average balances.

**FY24 Budget and FY24 Actual Variance by Expenditure Category  
(in millions)**

	<b>FY24 Budget</b>	<b>FY24 Actual</b>	<b>\$ Variance</b>	<b>% Variance</b>
Direct Expenses	\$227.4	\$210.3	-\$17.0	-7.5%
Indirect Expenses	\$56.3	\$55.0	-\$1.3	-2.3%
Capital Financing	\$336.6	\$336.6	\$0.0	0.0%
<b>Total</b>	<b>\$620.3</b>	<b>\$601.9</b>	<b>-\$18.3</b>	<b>-3.0%</b>

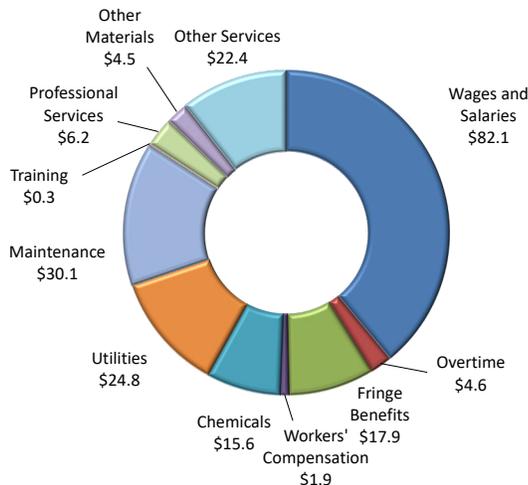
*Totals may not add due to rounding*

*Please refer to Attachment 1 for a more detailed comparison by line item of the budget variances for FY24.*

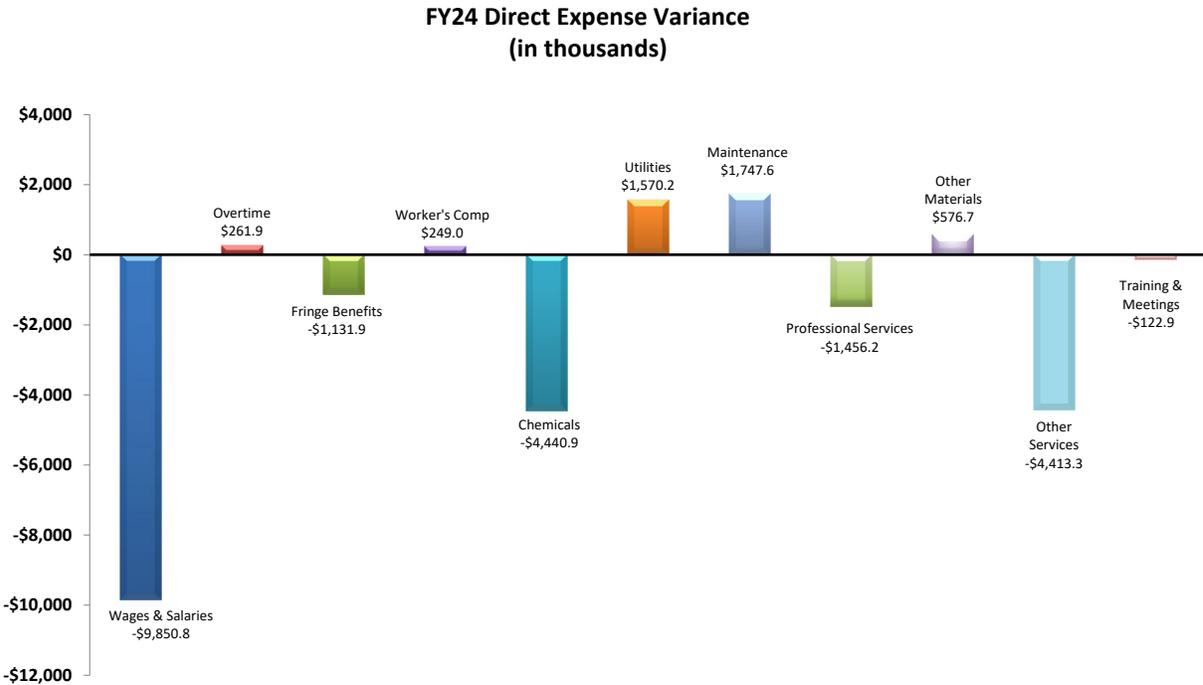
**Direct Expenses**

FY24 Direct Expenses through March totaled \$210.3 million, which was \$17.0 million or 7.5% less than budgeted.

**FY24 Direct Expenses  
(in millions)**

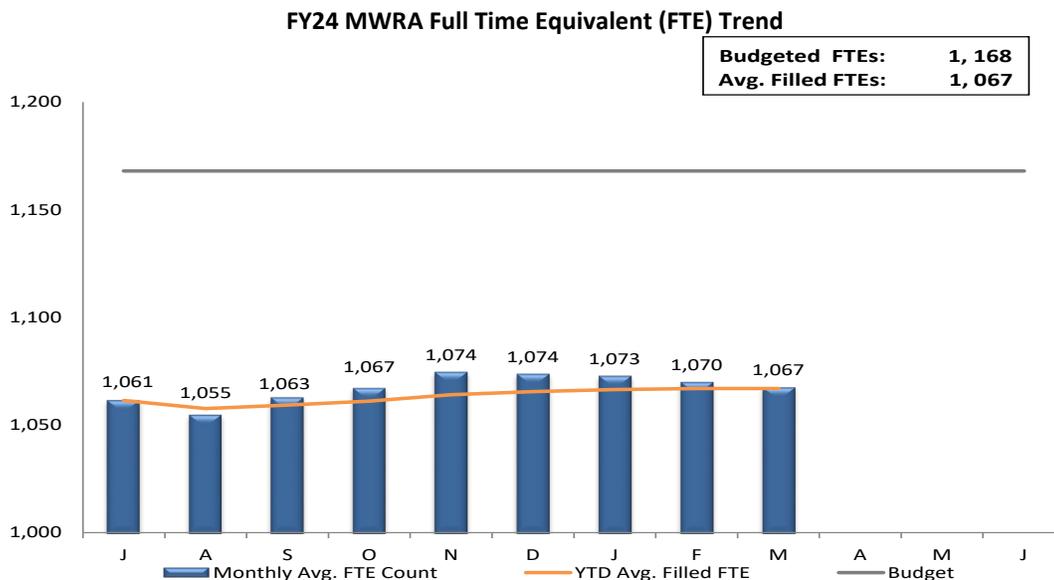


Spending was lower than budget for Wages & Salaries, Chemicals, Other Services, Professional Services, Fringe Benefits, and Training & Meetings. These were partially offset by higher than budgeted spending for Maintenance, Utilities, Other Materials, Overtime, and Workers' Compensation.



## Wages and Salaries

Wages and Salaries were under budget by \$9.9 million or 10.7%. Through March, there were 101 fewer average FTEs (1,067 versus 1,168 budget) or 8.6% and lower average salaries for new hires versus retirees. The timing of backfilling vacant positions also contributed to Regular Pay being under budget.



## **Chemicals**

Chemicals were lower than budget by \$4.4 million or 22.2%. Lower than budgeted spending on Sodium Hypochlorite of \$2.4 million was driven by Water Operations of \$1.5 million and Wastewater Operations of \$147,000 primarily due to contract pricing, and DITP of \$685,000 due to lower pricing for the new contract, which is offset by additional usage for disinfection due to higher flows earlier in the fiscal year. Lower Ferric Chloride of \$879,000 was due to decreased usage to maintain digested sludge orthophosphate levels within the target range. Lower Carbon Dioxide of \$539,000 was primarily due to lower volume, lower contract price, and lower dose required to meet target residual levels in finished water. Lower Aqua Ammonia of \$276,000 was due to lower price and lower flows. Lower Sodium Bisulfite of \$172,000 was primarily driven by Water Operations of \$118,000 due to lower dose and volume due to lower flows, lower price and volume at Clinton Wastewater Treatment Plant of \$48,000, and lower volume at DITP of \$15,000 due to lower quantities to dechlorinate the effluent. DITP flows are 12.1% greater than estimated and the CWTP flows are 2.7% less than estimated through March. It is important to note that Chemical variances are also based on deliveries which in general reflect the usage patterns. However, the timing of deliveries is an important factor.

## **Other Services**

Other Services were lower than budget by \$4.4 million or 16.4% driven by Sludge Pelletization of \$3.0 million primarily due to no spending on landfill costs related to potential PFAS regulation changes that were budgeted in the second half of FY24, lower Telecommunication costs of \$844,000 due to updated and less than anticipated costs, and lower Grit & Screenings Removal of \$262,000 due to lower quantities.

## **Maintenance**

Maintenance was greater than budget by \$1.7 million or 6.2%. Maintenance Materials were higher than budget by \$876,000 driven by Plant & Machinery Materials of \$987,000 due to the timing of spending as well as higher costs for glass lined pipe/fittings, seals, and grinder cartridges, as well as Warehouse Inventory of \$655,000 due to the need for spare parts as well as purchasing of materials early due to supply chain delays. These are partially offset by lower Special Equipment Materials of \$449,000 primarily due to the later than anticipated purchase of hatch covers at Loring Road, Computer Materials of \$152,000 and HVAC Materials of \$133,000, both due to less than anticipated purchases through March. Maintenance Services were higher than budget by \$872,000 driven by Plant & Machinery Services of \$1.9 million primarily due to the early purchase of parts related to the Combustion Turbine Generator (CTG) control system upgrade, Computer Software-Licenses/Upgrades of \$798,000 due to the timing of licenses/upgrades including SQL Server Enterprise, and HVAC Services of \$124,000 due to the purchase of a temporary air handler unit at Columbus Park Headworks. This higher than budgeted spending was partially offset by lower Electrical Services of \$990,000 due to the timing of work including the John Carroll Water Treatment Plant (JCWTP) Ozone generator PLC replacement, JCWTP emergency generator emissions monitoring PLC repair, and JCWTP Switchgear PLC Replacement, Building & Grounds Services of \$562,000 due to less than anticipated spending through March.

## **Utilities**

Utilities were greater than budget by \$1.6 million or 6.7%. Overspending in Electricity of \$1.9 million primarily at Deer Island Treatment Plant (DITP) of \$1.1 million was driven by a new pass through cost associated with the Mystic Power Station and higher demand usage due to the many rain events. Electricity in Field Operations was greater than budget by \$800,000 primarily due to higher use as a result of the many rain events for pumping and fan use for odor control. Underspending in Diesel Fuel of \$309,000 primarily in field Operations was due to less than projected cost of Diesel Fuel.

## **Professional Services**

Professional Services were less than budget by \$1.5 million or 19.1% driven by lower Other Services of \$591,000 due to timing of services including the Disparity Study, Legal Services of \$313,000, and Lab & Testing Analysis of \$305,000 all due to the timing of spending through March.

## **Fringe Benefits**

Fringe Benefit spending was lower than budget by \$1.1 million or 5.9%. Spending was lower than budgeted for Health Insurance of \$1.2 million, 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.

## **Other Materials**

Other Materials were greater than budget by \$577,000 or 14.6% driven by Computer Hardware of \$552,000 primarily due to additional purchases for printers, audiovisual equipment, and equipment kiosks, Vehicle Purchases of \$375,000 due to timing of purchases, Health/Safety Materials of \$108,000 due to additional safety materials purchases than originally planned, and Vehicle Expense of \$73,000 due to timing of vehicle expenses including the electrical vehicle charging stations originally anticipated to be completed by FY23. These were partially offset by lower than budgeted spending for Equipment/Furniture of \$306,000 due to timing of purchases including the Operations Control Center (OCC) furniture and miscellaneous purchases, and Other Materials of \$277,000 primarily due to timing of purchases for Phase 3 Office Consolidation to Chelsea and DITP as well as timing of purchases of miscellaneous materials, and less than anticipated gravel purchases at Clinton through March.

## **Overtime**

Overtime expenses were greater than budget by \$262,000 or 6.1%. Greater than budgeted spending at Deer Island of \$461,000 was due to shift coverage, partially offset by lower spending in Field Operations of \$81,000 due to vacancies resulting in less scheduled overtime, and Engineering & Construction of \$42,000. Year-to-date rainfall was a major contributor for the increased overtime.

## Worker's Compensation

Worker's Compensation expenses were greater than budget by \$249,000 or 15.5%. The higher than budgeted expenses were due to Compensation Payments of \$196,000 and Medical Payments of \$93,000, partially offset by lower Administrative Expenses of \$40,000. Due to uncertainties of when spending will happen, the budget is spread evenly throughout the year.

## Training & Meetings

Training & Meetings was lower than budget by \$123,000 or 32.2% due to less than anticipated spending.

## Indirect Expenses

Indirect Expenses totaled \$55.0 million, which is \$1.3 million or 2.3% lower than budget. The variance is driven by lower Watershed Reimbursements and PILOT.

Based on FY24 operating activity only, the Watershed Division is \$1.2 million or 8.0% under budget. Lower spending on Wages and Salaries, Maintenance, and Fringe Benefits are driving the variance. When factoring in the FY23 balance forward of \$157,000 which was a credit towards FY24, Watershed Reimbursement is \$1.4 million or 9.0% below budget through March.

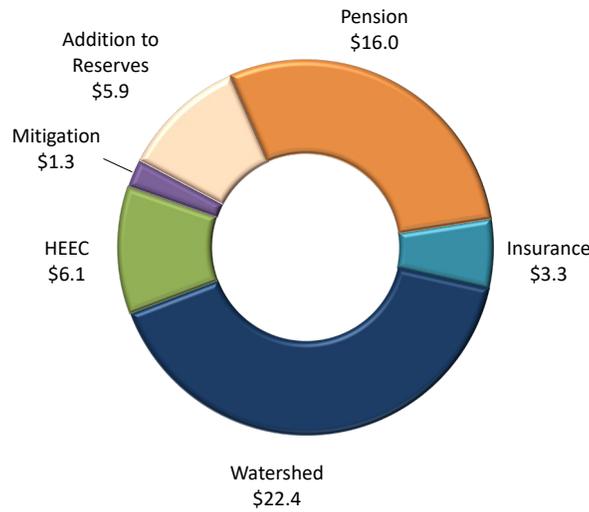
**FY24 Watershed Protection Variance**

\$ in millions	YTD Budget	YTD Actual	YTD \$ Variance	YTD % Variance
Operating Expenses	16.1	14.7	-1.4	-8.7%
Operating Revenues - Offset	0.8	0.6	-0.2	-21.2%
<b>FY24 Operating Totals</b>	<b>15.3</b>	<b>14.0</b>	<b>-1.2</b>	<b>-8.0%</b>
DCR Balance Forward (FY23 year-end accrual true-up)	0.0	-0.2	-0.2	
<b>FY24 Adjusted Operating Totals</b>	<b>15.3</b>	<b>13.9</b>	<b>-1.4</b>	<b>-9.0%</b>
PILOT	8.9	8.5	-0.4	-4.6%
<b>Total Watershed Reimbursement</b>	<b>24.2</b>	<b>22.4</b>	<b>-1.8</b>	<b>-7.4%</b>

*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 estimates provided by DCR and trued-up monthly based on the monthly invoice. MWRA's budget is based on the annual Fiscal Year Work Plan approved by the Massachusetts Water Supply Protection Trust (with a vacancy adjustment applied). The FTE count at the end of March was 148 (and 145.6 on a year-to-date basis) vs. a budget of 150.

**FY24 Indirect Expenses  
(in millions)**

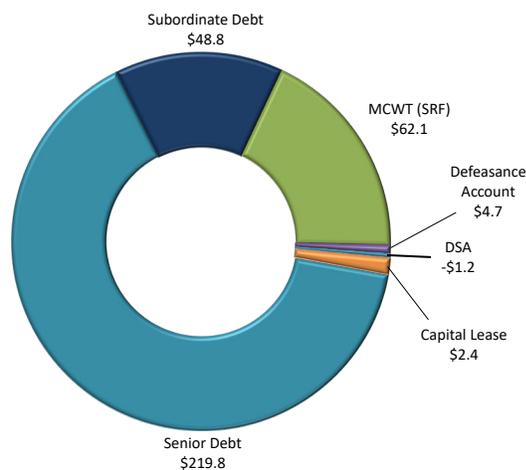


**Capital Financing**

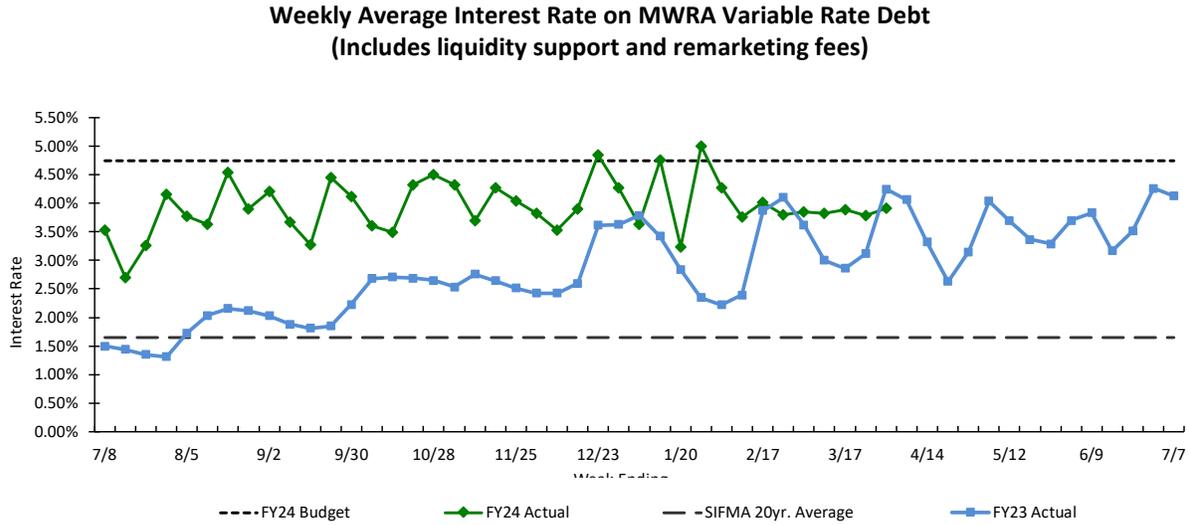
Capital Financing expenses include the principal and interest payments for fixed senior debt, the variable subordinate debt, the Massachusetts Clean Water Trust (SRF) obligation, the commercial paper program for the local water pipeline projects, current revenue for capital, Optional Debt Prepayment,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

Capital Financing expenses for FY24 through March totaled \$336.6 million, which is at budget after the transfer of \$4.7 million year-to-date to the Defeasance account. The transfer reflects lower variable rate debt expense due to lower than anticipated interest rates, swap termination savings, and lower SRF spending due to timing.

**FY24 Capital Finance  
(\$ in millions)**



The graph below reflects the FY24 actual variable rate trend by week against the FY24 Budget.



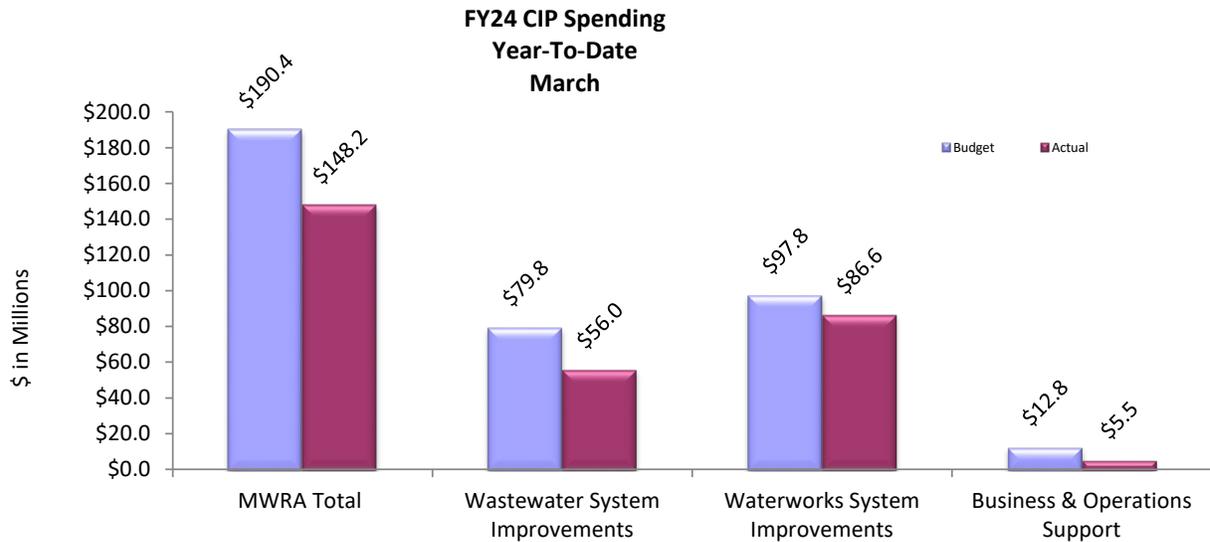
**Revenue & Income**

Revenues of \$662.2 million were \$7.3 million or 1.1% greater than the estimate driven by Investment Income which was \$6.4 million or 39.8% over the estimate due to higher than anticipated interest rates and higher average balances.

**FY24 Capital Improvement Program**

Capital expenditures in Fiscal Year 2024 through March total \$148.2 million, \$42.2 million or 22.2% under planned spending.

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 \$94.0 million, \$47.2 million or 33.4% under planned spending.



Overall, CIP spending reflects under planned spending in Wastewater Improvements (\$23.7 million), Waterworks (\$11.2 million) and Business and Operations Support (\$7.3 million). Major variances in Wastewater are primarily due to timing of community grants and loans for the I/I Local Financial Assistance Program, timing of work and construction delays for Braintree/Weymouth Improvements – Construction, delay in performing shaft inspections and issuing NTP for Final Design for the Ward Street & Columbus Park Headworks Upgrades - Design/CA contract, schedule changes for DITP Roofing Replacement and DiStor Membrane Replacements, lower than projected task order work for DITP As-Needed Design contracts, and work scheduled for FY24 that was completed in FY23 for Chelsea 008 Pipe Replacement. This was partially offset by claim settlements for Chelsea Creek Upgrades, equipment received ahead of schedule for the Clarifier Rehabilitation Phase 2 – Construction contract, and contractor progress for DITP Radio Repeater System Upgrade.

Waterworks variances are primarily due to schedule change for Section 75 Extension, timing of consultant’s work for Tunnel Redundancy Preliminary Design and Massachusetts Environmental Policy Act (MEPA) Review, timing of final work for CP-1 NEH Improvements, less than anticipated contractor progress for Section 89/29 Replacement, and timing of services for Geotechnical Support. This was partially offset by timing of community loan distributions for the Water Loan Program, contractor progress for CP-2, Sections 25 & 24 – Construction contract, work scheduled in FY23 that was completed in FY24 for the Waltham Water Pipeline and CWTP Chemical Feed System Improvements – Construction contracts.

\$ in Millions	Budget	Actuals	\$ Var.	% Var.
<b>Wastewater System Improvements</b>				
Interception & Pumping	22.1	15.9	(6.2)	-28.1%
Treatment	22.7	17.1	(5.6)	-24.6%
Residuals	0.0	0.0	0.0	0.0%
CSO	3.0	2.9	(0.1)	-2.1%
Other	32.0	20.1	(11.9)	-37.1%
<b>Total Wastewater System Improvements</b>	<b>\$79.8</b>	<b>\$56.0</b>	<b>(\$23.7)</b>	<b>-29.8%</b>
<b>Waterworks System Improvements</b>				
Drinking Water Quality Improvements	2.8	1.6	(1.2)	-43.1%
Transmission	39.6	24.8	(14.8)	-37.5%
Distribution & Pumping	32.0	23.2	(8.8)	-27.5%
Other	23.4	37.0	13.7	58.5%
<b>Total Waterworks System Improvements</b>	<b>\$97.8</b>	<b>\$86.6</b>	<b>(\$11.2)</b>	<b>-11.5%</b>
<b>Business &amp; Operations Support</b>	<b>\$12.8</b>	<b>\$5.5</b>	<b>(\$7.3)</b>	<b>-56.8%</b>
<b>Total MWRA</b>	<b>\$190.4</b>	<b>\$148.2</b>	<b>(\$42.2)</b>	<b>-22.2%</b>

### FY24 Spending by Program:

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

#### **Waterworks Transmission:** Net under planned spending of \$14.8 million

- \$3.1 million for Tunnel Redundancy Preliminary Design & MEPA Review due to timing of consultant work.
- \$1.7 million for Wachusett Lower Gatehouse Pipe & Boiler Replacement – Construction due to longer lead time on some larger items and a change in design for the multi-orifice valve.
- \$1.5 million for Shaft 5 Improvements Design/CA and Construction, \$1.5 million for Maintenance Garage/Wash Bay/Storage Building – Construction, and \$1.4 million for CP3 Shafts 7, 7B, 7C & 7D all due to schedule changes.
- \$1.0 million for WASM 3 Rehabilitation CP-1 due to work scheduled for FY24 performed in FY23.
- \$0.9 million for Geotechnical Support Services due to timing of support services.
- This under planned spending was partially offset by greater than planned spending of \$0.9 million for Waltham Water Pipeline due to work scheduled in FY23 that was performed in FY24.

#### **Other Waterworks:** Net greater than planned spending of \$13.7 million

- \$15.6 million for Local Financial Assistance due to timing of community loan distributions.
- This over planned spending was partially offset by less than planned spending of \$2.1 million for Steel Tank Improvements due to updated schedule.

#### **Other Wastewater:** Net under planned spending of \$11.9 million

- \$11.9 million for Community I/I due to timing of community distributions of grants and loans.

**Water Distribution and Pumping:** Net under planned spending of \$8.8 million

- \$3.3 million for Section 75 Extension - Construction CP-1 due to updated schedule.
- \$2.6 million for CP-1 NEH Improvements due to timing of final work and \$1.9 million for Section 89/29 Replacement – Construction due to less than anticipated contractor progress.
- \$0.5 million for CP-2 NEH Improvements due to updated schedule.

**Business & Operations Support:** Net under planned spending of \$7.3 million

- \$2.1 million for As-Needed Design Contracts due to lower than projected task order work.
- \$1.4 million for Security Equipment & Installation due to timing of security initiatives.
- \$1.0 million for Cabling, \$0.8 million for Lawson Upgrade, and \$0.5 million for MAXIMO Interface Enhancements due to timing and scheduling of work.

**Interception & Pumping:** Net under planned spending of \$6.2 million

- \$3.6 million for Braintree/Weymouth Improvements – Construction due to timing, long lead time for equipment and delay in fabrication of structural steel.
- \$2.0 million for Ward Street & Columbus Park Headworks Upgrades - Design/CA due to delay in performing shaft inspections and issuing NTP for Final Design.
- \$1.7 million for Siphon Structure Rehabilitation due to updated schedule.
- This under planned spending was partially offset by greater than planned spending of \$1.8 million for Prison Point Construction 2 - Discharge Piping Rehab due to the contract award being greater than amount in the CIP.

**Wastewater Treatment:** Net under planned spending of \$5.6 million

- \$1.7 million for DITP Roofing Replacement, \$1.3 million for DiStor Membrane Replacements, \$0.5 million for Chemical Pipe Replacement – Construction, and \$0.4 million for Combined Heat and Power Design/ESDC/REI all due to schedule changes.
- \$1.1 million for Deer Island As-Needed Design contracts due to lower than projected task order work, and \$0.9 million for South System Pump Station VFD Replacement Design due to Design Report phase being more complicated than originally anticipated.
- This under planned spending was partially offset by greater than planned spending of \$0.9 million for Clarifier Rehabilitation Phase 2 – Construction due to equipment received ahead of schedule, \$0.4 million for Miscellaneous VFD Replacements due timing of work, and \$0.3 million for Radio Repeater System Upgrade 2 due to contractor progress.

**Drinking Water Quality Improvements:** Net under planned spending of \$1.2 million

- \$1.6 million for the John Carroll Water Treatment Plant (JCWTP) Technical Assistance due to lower than projected task order work, partially offset by \$0.8 million for JCWTP Chemical Feed System Improvements Construction due to work scheduled for FY23 that was performed in FY24.

**Combined Sewer Overflow:** Net under planned spending of \$0.1 million

- \$0.7 million for Somerville Marginal New Pipe Connection due to schedule change, and \$0.5 million for Chelsea 008 CSO Pipe Replacement due to work scheduled for FY24 performed in FY23.
- This under planned spending was partially offset by over planned spending of \$1.3 million for Fort Point Channel & Mystic due to timing of Community Managed CSO payments.

## **Construction Fund Balance**

The construction fund balance was \$77.8 million as of the end of March. Commercial Paper/Revolving Loan available capacity was \$120 million.

## **ATTACHMENTS:**

- Attachment 1 – Variance Summary March 2024
- Attachment 2 – Current Expense Variance Explanations
- Attachment 3 – Capital Improvement Program Variance Explanation
- Attachment 4 – Year-End Current Expense Projections vs. Budget

ATTACHMENT 1  
FY24 Actuals vs. FY24 Budget

	Mar 2024 Year-to-Date				
	Period 9 YTD Budget	Period 9 YTD Actual	Period 9 YTD Variance	%	FY24 Approved
	<b>EXPENSES</b>				
WAGES AND SALARIES	\$ 91,928,496	\$ 82,077,715	\$ (9,850,781)	-10.7%	\$ 127,828,242
OVERTIME	4,323,161	4,585,095	261,934	6.1%	5,727,593
FRINGE BENEFITS	19,042,961	17,911,013	(1,131,948)	-5.9%	25,823,383
WORKERS' COMPENSATION	1,608,296	1,857,299	249,003	15.5%	2,144,395
CHEMICALS	20,004,687	15,563,785	(4,440,902)	-22.2%	28,269,124
ENERGY AND UTILITIES	23,269,619	24,839,862	1,570,243	6.7%	31,064,890
MAINTENANCE	28,370,393	30,117,995	1,747,602	6.2%	38,574,256
TRAINING AND MEETINGS	382,148	259,247	(122,901)	-32.2%	498,597
PROFESSIONAL SERVICES	7,626,260	6,170,024	(1,456,236)	-19.1%	10,410,484
OTHER MATERIALS	3,950,408	4,527,131	576,723	14.6%	7,167,400
OTHER SERVICES	26,844,244	22,430,953	(4,413,291)	-16.4%	38,494,660
<b>TOTAL DIRECT EXPENSES</b>	<b>\$ 227,350,673</b>	<b>\$ 210,340,119</b>	<b>\$ (17,010,556)</b>	<b>-7.5%</b>	<b>\$ 316,003,024</b>
INSURANCE	\$ 3,049,035	\$ 3,309,022	\$ 259,987	8.5%	\$ 4,065,380
WATERSHED/PILOT	24,167,546	22,378,672	(1,788,874)	-7.4%	30,358,187
HEEC PAYMENT	5,866,407	6,091,071	224,664	3.8%	7,500,650
MITIGATION	1,334,315	1,334,315	-	0.0%	1,779,086
ADDITIONS TO RESERVES	5,895,776	5,895,776	-	0.0%	7,861,035
RETIREMENT FUND	15,972,804	15,972,804	-	0.0%	15,972,804
POST EMPLOYEE BENEFITS	-	-	-	---	2,849,365
<b>TOTAL INDIRECT EXPENSES</b>	<b>\$ 56,285,883</b>	<b>\$ 54,981,659</b>	<b>\$ (1,304,224)</b>	<b>-2.3%</b>	<b>\$ 70,386,507</b>
STATE REVOLVING FUND	\$ 63,488,301	\$ 62,139,283	\$ (1,349,018)	-2.1%	\$ 90,798,263
SENIOR DEBT	219,794,858	219,794,858	-	0.0%	294,055,644
DEBT SERVICE ASSISTANCE	(1,187,297)	(1,187,297)	-	0.0%	(1,187,297)
CURRENT REVENUE/CAPITAL	-	-	-	---	19,200,000
SUBORDINATE MWRA DEBT	52,111,106	52,111,106	-	0.0%	69,931,072
LOCAL WATER PIPELINE CP	-	-	-	---	7,744,625
CAPITAL LEASE	2,412,795	2,412,795	-	0.0%	3,217,060
VARIABLE DEBT	-	(3,323,652)	(3,323,652)	---	-
DEFEASANCE ACCOUNT	-	4,672,671	4,672,671	---	-
DEBT PREPAYMENT	-	-	-	---	4,000,000
<b>TOTAL CAPITAL FINANCE EXPENSE</b>	<b>\$ 336,619,763</b>	<b>\$ 336,619,764</b>	<b>\$ -</b>	<b>0.0%</b>	<b>\$ 487,759,367</b>
<b>TOTAL EXPENSES</b>	<b>\$ 620,256,319</b>	<b>\$ 601,941,542</b>	<b>\$ (18,314,780)</b>	<b>-3.0%</b>	<b>\$ 874,148,898</b>
<b>REVENUE &amp; INCOME</b>					
RATE REVENUE	\$ 625,701,000	\$ 625,701,000	\$ -	0.0%	\$ 834,268,000
OTHER USER CHARGES	7,784,470	7,967,352	182,882	2.3%	10,390,434
OTHER REVENUE	5,029,611	5,776,981	747,370	14.9%	5,838,903
RATE STABILIZATION	229,112	229,112	-	0.0%	305,482
INVESTMENT INCOME	16,087,129	22,492,370	6,405,241	39.8%	23,346,079
<b>TOTAL REVENUE &amp; INCOME</b>	<b>\$ 654,831,322</b>	<b>\$ 662,166,816</b>	<b>\$ 7,335,493</b>	<b>1.1%</b>	<b>\$ 874,148,898</b>

**ATTACHMENT 2**  
**Current Expense Variance Explanations**

Total MWRA	FY24 Budget YTD March	FY24 Actuals March	FY24 YTD Actual vs. FY24 Budget		Explanations
			\$	%	
<b>Direct Expenses</b>					
Wages & Salaries	91,928,496	82,077,715	(9,850,781)	-10.7%	Wages and Salaries are under budget by \$9.9 million or 10.7%. Year to date, there have been 101 fewer average FTEs (1,067 versus 1,168 budget), lower average new hire salaries versus retirees, the timing of backfilling vacant positions.
Overtime	4,323,161	4,585,095	261,934	6.1%	Overtime expenses were greater than budget by \$262,000 or 6.1%. Greater than budget spending at Deer Island of \$461,000 was due to shift coverage, partially offset by Engineering & Construction of \$42,000, and Field Operations of \$81,000 due to vacancies resulting in less scheduled overtime. Year-to-date rainfall was a major contributor for the increased overtime.
Fringe Benefits	19,042,961	17,911,013	(1,131,948)	-5.9%	Fringe Benefit spending was lower than budget by \$1.1 million or 5.9%. Spending was lower than budget for <b>Health Insurance</b> of \$1.2 million, due to fewer than budgeted participants in health insurance plans, increased contribution by external new hires vs. lower contribution rates of staff retiring, and the shift from family to individual plans which are less expensive.
Worker's Compensation	1,608,296	1,857,299	249,003	15.5%	Worker's Compensation expenses were greater than budget by \$249,000 or 15.5%. The higher than budgeted expenses were due to <b>Compensation Payments</b> of \$196,000 and <b>Medical Payments</b> of \$93,000 and, partially offset and <b>Administrative Expenses</b> of \$40,000. Due to uncertainties of when spending will happen, the budget is spread evenly throughout the year.

**ATTACHMENT 2  
Current Expense Variance Explanations**

Total MWRA	FY24 Budget YTD March	FY24 Actuals March	FY24 YTD Actual vs. FY24 Budget		Explanations
			\$	%	
Chemicals	20,004,687	15,563,785	(4,440,902)	-22.2%	Chemicals were lower than budget by \$4.4 million or 22.2%. Lower than budget spending on <b>Sodium Hypochlorite</b> of \$2.4 million driven by Water Operations of \$1.5 million and Wastewater Operations of \$147,000 primarily due to contract pricing, and DITP of \$685,000 due to lower pricing for new contract, which is offset by additional usage for disinfection due to higher flows earlier in the fiscal year, <b>Ferric Chloride</b> of \$879,000 due to decreased usage to maintain digested sludge orthophosphate levels within the target range, <b>Carbon Dioxide</b> was lower than budget by \$539,000 primarily due to lower volume, lower contract price, and lower dose required to meet target residual levels in finished water, <b>Aqua Ammonia</b> of \$276,000 due to lower price and lower flows, <b>Sodium Bisulfite</b> of \$172,000 primarily driven by Water Operations of \$118,000 due to lower dose and volume due to lower flows, lower price and volume at Clinton Wastewater Treatment Plant of \$48,000, and lower volume at DITP of \$15,000 due to lower quantities to dechlorinate the effluent, <b>Other Oxidizers</b> (Bioxide) at Framingham PS was lower than budget by \$118,000 due to lower price and less deliveries, partially offset by higher <b>Hydrogen Peroxide</b> of \$220,000 which is added to the DITP influent to reduce elevated H2S levels for odor pretreatment and corrosion control, and allows staff to perform maintenance activities more safely within the tanks. DITP flows are 12.1% greater than the budget and the CWTP flows are 2.7% less than the budget through March. 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	23,269,619	24,839,862	1,570,243	6.7%	Utilities were greater than budget by \$1.6 million or 6.7%. Overspending in <b>Electricity</b> of \$1.9 million primarily at DITP of \$1.1 million driven by new pass through cost associated with the Mystic Power Station and higher demand usage due to the many rain events. Electricity in Field Operations was greater than budget by \$800,000 primarily due to higher use as a result of the many rain events for pumping and fan use for odor control. Underspending in <b>Diesel Fuel</b> of \$309,000 primarily in field Operations due to less than projected cost of diesel.

**ATTACHMENT 2**  
**Current Expense Variance Explanations**

Total MWRA	FY24 Budget YTD March	FY24 Actuals March	FY24 YTD Actual vs. FY24 Budget		Explanations
			\$	%	
Maintenance	28,370,393	30,117,995	1,747,602	6.2%	Maintenance was greater than budget by \$1.8 million or 6.5%, largely driven by the timing of projects. <i>Maintenance Services</i> were higher than budget by \$872,000 driven by <b>Plant &amp; Machinery Services</b> of \$1.9 million primarily due to timing of Combustion Turbine Generator control system upgrade payment to order parts, <b>Computer Software-Licenses/Upgrades</b> of \$798,000 due primarily to timing of licenses/upgrades including SQL Server Enterprise, and <b>HVAC Services</b> of \$124,000 due to purchase of a temporary air handler unit at Columbus Park Headworks. This higher than budgeted spending was partially offset by <b>Electrical Services</b> of \$990,000 due to timing of work including JCWTP Ozone generator PLC replacement, JCWTP emergency generator emissions monitoring PLC repair, and JCWTP Switchgear PLC Replacement, <b>Building &amp; Grounds Services</b> of \$562,000 also due to timing of services. <i>Maintenance Materials</i> were higher than budget by \$876,000 driven by <b>Plant &amp; Machinery Materials</b> of \$987,000 due to timing and higher spending for glass lined pipe/fittings, seals, and grinder cartridges and <b>Warehouse Inventory</b> of \$655,000 due to need for spare parts as well as purchasing of materials early due to supply chain issues, partially offset by <b>Special Equipment Materials</b> of \$449,000 due to timing including the purchase of hatch covers at Loring Road, <b>Computer Materials</b> of \$152,000 and <b>HVAC Materials</b> of \$133,000 also due to timing of materials purchases which have been less than anticipated through March.
Training & Meetings	382,148	259,247	(122,901)	-32.2%	Training & Meetings was lower than budget by \$123,000 or 32.2% is primarily due to timing of meetings and conferences driven by MIS (\$77,000), Water Redundancy (\$23,000), Engineering & Construction (\$10,000), Deer Island Treatment Plant (\$10,000), and Procurement (\$10,000), partially offset by higher spending in Operations Administration of \$11,000 and Laboratory Services of \$11,000.
Professional Services	7,626,260	6,170,024	(1,456,236)	-19.1%	Professional Services were less than budget by \$1.5 million or 19.1% driven by lower <b>Other Services</b> of \$591,000 due to timing of services including the Disparity Study, <b>Legal Services</b> of \$313,000, and <b>Lab &amp; Testing Analysis</b> of \$305,000 all due to the timing of spending through March.
Other Materials	3,950,408	4,527,131	576,723	14.6%	Other Materials were greater than budget by \$577,000 or 14.6% driven by <b>Computer Hardware</b> of \$552,000 million primarily due additional purchases for printers, audiovisual equipment and equipment kiosks, <b>Vehicle Purchases</b> of \$375,000 due to timing of purchases, and <b>Health/Safety</b> of \$108,000 due to additional safety materials purchases than originally planned and <b>Vehicle Expense</b> of \$73,000 due to timing of vehicle expenses including the electrical vehicle charging stations originally anticipated to be completed by FY23. These were partially offset by lower than budgeted spending for <b>Equipment/Furniture</b> of \$306,000 due to timing of purchases including the Opeerations Control Center (OCC) furniture and miscellaenous purchases and <b>Other Materials</b> of \$277,000 primarily due to timing of purchases for Phase 3 Office Consolidation to Chelsea and DITP as well as timing of purchases of miscellaneous materials, and less than anticipated gravel purchases at Clinton through March.

**ATTACHMENT 2**  
**Current Expense Variance Explanations**

Total MWRA	FY24 Budget YTD March	FY24 Actuals March	FY24 YTD Actual vs. FY24 Budget		Explanations
			\$	%	
Other Services	26,844,244	22,430,953	(4,413,291)	-16.4%	Other Services were lower than budget by \$4.4 million or 16.4% driven by <b>Sludge Pelletization</b> of \$3.0 million primarily due to \$2.9 million of the \$6.2 million of potential landfill costs due to anticipated PFAS regulations that were budgeted in the second half of FY24 as well as lower inflation on the fixed portion of the contract, and lower quantities and <b>Grit &amp; Screenings Removal</b> of \$262,000 due to lower quantities, and <b>Telecommunications</b> of \$844,000 due to updated and less than anticipated costs.
<b>Total Direct Expenses</b>	<b>227,350,673</b>	<b>210,340,119</b>	<b>(17,010,554)</b>	<b>-7.5%</b>	
<b>Indirect Expenses</b>					
Insurance	3,049,035	3,309,022	259,987	8.5%	Higher Payments/Claims of \$243,000 and higher Premiums of \$16,000 than budgeted
Watershed/PILOT	24,167,546	22,378,672	(1,788,874)	-7.4%	Lower Watershed Reimbursement of \$1.8 million driven by lower spending on Wages & Salaries, Equipment/Maintenance, and Fringe Benefits.
HEEC Payment	5,866,407	6,091,071	224,664	3.8%	HEEC Revenue Requirement of \$230,000.
Mitigation	1,334,315	1,334,314	(1)	0.0%	
Addition to Reserves	5,895,776	5,895,776	-	0.0%	
Pension Expense	15,972,804	15,972,804	-	0.0%	
Post Employee Benefits	-	-	-		
<b>Total Indirect Expenses</b>	<b>56,285,883</b>	<b>54,981,659</b>	<b>(1,304,224)</b>	<b>-2.3%</b>	
<b>Debt Service</b>					
Debt Service	337,807,060	337,807,061	1	0.0%	Capital Financing was on budget after the transfer of \$4.7 million to the Defeasance account. The transfer reflects lower variable rate debt expense due to lower than budget variable interest expense of \$3.3 million as a result of lower interest rates, savings from the swap terminations, and lower SRF spending of \$1.3 million due to timing.
Debt Service Assistance	(1,187,297)	(1,187,297)	-	0.0%	
<b>Total Debt Service Expenses</b>	<b>336,619,763</b>	<b>336,619,764</b>	<b>1</b>	<b>0.0%</b>	
<b>Total Expenses</b>					
<b>Total Expenses</b>	<b>620,256,319</b>	<b>601,941,542</b>	<b>(18,314,776)</b>	<b>-3.0%</b>	

**ATTACHMENT 2**  
**Current Expense Variance Explanations**

Total MWRA	FY24 Budget YTD March	FY24 Actuals March	FY24 YTD Actual vs. FY24 Budget		Explanations
			\$	%	
<b>Revenue &amp; Income</b>					
Rate Revenue	625,701,000	625,701,000	-	0.0%	
Other User Charges	7,784,471	7,967,352	182,881	2.3%	
Other Revenue	5,029,611	5,776,981	747,370	14.9%	Other Revenue was \$747,000 or 14.9% greater than budget due to <b>Energy Rebates</b> of \$270,000, <b>Permit Fees</b> of \$237,000, <b>Miscellaneous Revenue</b> of \$230,000, <b>Energy Revenue</b> of \$131,000, and <b>Penalties</b> of \$105,000, partially offset by <b>Profit and Loss on Disposal of Equipment</b> of \$231,000.
Rate Stabilization	229,112	229,112	-	0.0%	HEEC Reserve.
Investment Income	16,087,129	22,492,370	6,405,241	39.8%	Investment Income is over budget due to higher than budgeted interest rates and higher average balances.
<b>Total Revenue</b>	<b>654,831,323</b>	<b>662,166,815</b>	<b>7,335,492</b>	<b>1.1%</b>	
<b>Net Revenue in Excess of Expenses</b>	<b>34,575,004</b>	<b>60,225,273</b>	<b>25,650,268</b>		

**ATTACHMENT 3  
FY24 CIP Variance Report (\$000s)**

	FY24 Budget March	FY24 Actuals March	Actuals vs. Budget		Explanations
			\$	%	
<b>Wastewater</b>					
Interception & Pumping (I&P)	\$22,081	\$15,868	(\$6,213)	-28.1%	<u>Less than planned spending</u> Braintree/Weymouth Improvements - Construction: \$3.6M (timing of work, long lead time for equipment and delay in fabrication of structural steel) Ward Street & Columbus Park Headworks Upgrades - Design/CA: \$2.0M (delay in performing shaft inspections and issuing NTP for Final Design) Siphon Structure Rehabilitation Construction: \$1.7M, and Hayes Pump Station Rehabilitation - Construction: \$750k (schedule changes) <u>Greater than planned spending</u> Prison Point Construction 2 - Discharge Piping Rehab: \$1.8M (award greater than budget) Chelsea Creek Upgrades: \$1.6M (claim settlements)
Treatment	\$22,657	\$17,083	(\$5,574)	-24.6%	<u>Less than planned spending</u> DITP Roofing Replacement: \$1.7M, DiStor Membrane Replacements: \$1.3M, and Chemical Pipe Replacement - Construction: \$500k (schedule changes) DITP As-Needed Design: \$1.1M (lower than projected task order work) SSPS VFD Replacement - Design/ESDC/REI: \$858k (Design Report phase more complicated than originally anticipated) Clinton Clariflocculator Valve Replacement: \$300k (work incorporated into Cinton Rehabilitation contract) <u>Greater than planned spending</u> Clarifier Rehabilitation Phase 2 - Construction: \$872k (equipment received ahead of schedule) Miscellaneous VFD Replacements: \$352k (FY23 planned work completed in FY24) Radio Repeater System Upgrade 2: \$323k (contractor progress)
Residuals	\$0	\$0	\$0	0.0%	
CSO	\$3,000	\$2,938	(\$62)	-2.1%	<u>Less than planned spending</u> Somerville Marginal New Pipe Connection: \$650k (schedule change) Chelsea 008 Pipe Replacement: \$465k (work scheduled for FY24 performed in FY23) <u>Greater than planned spending</u> Fort Point Channel & Mystic: \$1.3M (timing of Community Managed CSO payments)

**ATTACHMENT 3  
FY24 CIP Variance Report (\$000s)**

	FY24 Budget March	FY24 Actuals March	Actuals vs. Budget		Explanations
			\$	%	
Other Wastewater	\$32,020	\$20,133	(\$11,887)	-37.1%	<u>Less than planned spending</u> I/I Local Financial Assistance: \$11.9M (timing of community distributions of grants and loans)
<b>Total Wastewater</b>	<b>\$79,758</b>	<b>\$56,022</b>	<b>(\$23,736)</b>	<b>-29.8%</b>	
<b>Waterworks</b>					
Drinking Water Quality Improvements	\$2,807	\$1,596	(\$1,211)	-43.1%	<u>Less than planned spending</u> CWTP Technical Assistance: \$1.6M (lower than projected task order work) CWTP Parapet Wall Repairs: \$338k (award later than originally anticipated) <u>Greater than planned spending</u> CWTP Chemical Feed System Improvements - Construction: \$789k (work scheduled for FY23 performed in FY24)
Transmission	\$39,589	\$24,754	(\$14,836)	-37.5%	<u>Less than planned spending</u> Tunnel Redundancy Preliminary Design & MEPA Review: \$3.1M (timing of consultant work) Wachusett Lower Gatehouse Pipe & Boiler Replacement - Construction: \$1.7M (longer lead time on some larger items and a change in design for the multi-orifice valve) Shaft 5 Improvements Design/CA and Construction: \$1.5M, Maintenance Garage/Wash Bay/Storage Building - Construction: \$1.5M, and CP3 Shafts 7, 7B, 7C & 7D: \$1.4M (schedule changes) Administration, Legal & Public Outreach: \$1.0M (timing of administration, legal and public acquisition costs) WASM 3 Rehabilitation CP-1: \$990k (work scheduled for FY24 performed in FY23) WASM 3 - MEPA/Design/CA/RI: \$942k (timing of consultant work) Geotechnical Support Services: \$876k (timing of support services) Watershed Land Acquisition: \$695k (timing of land purchases) Program Support Services: \$619k (timing of services) WASM/SPSM PRV - Design/CA: \$475k (less than anticipated consultant services) <u>Greater than planned spending</u> Waltham Water Pipeline - Construction: \$863k (work scheduled in FY23 performed in FY24)

**ATTACHMENT 3**  
**FY24 CIP Variance Report (\$000s)**

	FY24 Budget March	FY24 Actuals March	Actuals vs. Budget		Explanations
			\$	%	
Distribution & Pumping	\$32,019	\$23,204	(\$8,815)	-27.5%	<u>Less than planned spending</u> Section 75 Extension - Construction CP-1: \$3.3M, and CP-2 NEH Improvements: \$500k (schedule changes) CP-1 NEH Improvements: \$2.6M, and Section 89/29 Replacement - Construction: \$1.9M (timing of work) Northern Extra High Service Legal: \$500k (less than anticipated legal expenses) <u>Greater than planned spending</u> CP-2, Sections 25 & 24 - Construction: \$1.5M (contractor progress)
Other Waterworks	\$23,370	\$37,035	\$13,665	58.5%	<u>Greater than planned spending</u> Local Water Pipeline Financial Assistance Program: \$15.6M (timing of community loan distributions) Electrical Distribution Upgrades at Southborough: \$494k (work planned for FY23 performed in FY24) <u>Less than planned spending</u> Steel Tank Improvements - Construction: \$1.5M and Design/CA: \$571k (updated Construction schedule)
<b>Total Waterworks</b>	<b>\$97,785</b>	<b>\$86,588</b>	<b>(\$11,196)</b>	<b>-11.5%</b>	
<b>Business &amp; Operations Support</b>					
<b>Total Business &amp; Operations Support</b>	<b>\$12,825</b>	<b>\$5,547</b>	<b>(\$7,279)</b>	<b>-56.8%</b>	<u>Less than planned spending</u> As-Needed Design Contracts: \$2.1M (lower than projected task order work) Security Equipment & Installation: \$1.4M (timing of security initiatives) Cabling: \$966k, Lawson Upgrade: \$842k, and MAXIMO Interface Enhancements: \$515k (timing of work) FY24-28 Vehicle Purchases: \$640k (timing of purchases) <u>Greater than planned spending</u> Office Space Modifications: \$823k (FY23 planned work completed in FY24)
<b>Total MWRA</b>	<b>\$190,368</b>	<b>\$148,157</b>	<b>(\$42,211)</b>	<b>-22.2%</b>	

**Attachment 4  
FY24 Budget vs. FY24 Projection**

TOTAL MWRA	FY24 Budget	FY24 Projection	Change FY24 Budget vs FY24 Projection	
			\$	%
<b>EXPENSES</b>				
WAGES AND SALARIES	\$ 127,828,242	\$ 115,045,418	\$ (12,782,824)	-10.0%
OVERTIME	5,727,593	6,243,283	515,690	9.0%
FRINGE BENEFITS	25,823,383	24,532,214	(1,291,169)	-5.0%
WORKERS' COMPENSATION	2,144,395	2,412,444	268,049	12.5%
CHEMICALS	28,269,124	20,340,501	(7,928,623)	-28.0%
ENERGY AND UTILITIES	31,064,893	31,733,215	668,322	2.2%
MAINTENANCE	38,574,255	38,750,865	176,610	0.5%
TRAINING AND MEETINGS	498,597	373,948	(124,649)	-25.0%
PROFESSIONAL SERVICES	10,410,484	9,410,484	(1,000,000)	-9.6%
OTHER MATERIALS	7,167,398	7,667,398	500,000	7.0%
OTHER SERVICES	38,494,660	33,736,660	(4,758,000)	-12.4%
<b>TOTAL DIRECT EXPENSES</b>	<b>\$ 316,003,024</b>	<b>\$ 290,246,430</b>	<b>\$ (25,756,594)</b>	<b>-8.2%</b>
INSURANCE	\$ 4,065,380	\$ 4,295,270	\$ 229,890	5.7%
WATERSHED/PILOT	30,358,187	29,873,556	(484,631)	-1.6%
HEEC PAYMENT	7,500,650	7,643,162	142,512	1.9%
MITIGATION	1,779,086	1,779,086	-	0.0%
ADDITIONS TO RESERVES	7,861,035	7,861,035	-	0.0%
RETIREMENT FUND	15,972,805	15,972,805	-	0.0%
POSTEMPLOYMENT BENEFITS	2,849,365	2,849,365	-	0.0%
<b>TOTAL INDIRECT EXPENSES</b>	<b>\$ 70,386,507</b>	<b>\$ 70,274,278</b>	<b>\$ (112,229)</b>	<b>-0.2%</b>
STATE REVOLVING FUND	\$ 90,798,263	\$ 83,358,104	\$ (7,440,159)	-8.2%
SENIOR DEBT	294,055,644	291,943,144	(2,112,500)	-0.7%
SUBORDINATE DEBT	69,931,072	66,443,800	(3,487,272)	-5.0%
LOCAL WATER PIPELINE CP	7,744,625	7,744,625	-	0.0%
CURRENT REVENUE/CAPITAL	19,200,000	19,200,000	-	0.0%
CAPITAL LEASE	3,217,060	3,217,060	-	0.0%
DEBT PREPAYMENT	4,000,000	4,000,000	-	0.0%
DEBT SERVICE ASSISTANCE	(1,187,297)	(1,187,297)	-	0.0%
<b>TOTAL DEBT SERVICE</b>	<b>\$ 487,759,367</b>	<b>\$ 474,719,436</b>	<b>\$ (13,039,931)</b>	<b>-2.7%</b>
<b>TOTAL EXPENSES</b>	<b>\$ 874,148,898</b>	<b>\$ 835,240,144</b>	<b>\$ (38,908,754)</b>	<b>-4.5%</b>
<b>REVENUE &amp; INCOME</b>				
RATE REVENUE	\$ 834,268,000	\$ 834,268,000	\$ -	0.00%
OTHER USER CHARGES	10,390,434	10,349,723	(40,711)	-0.4%
OTHER REVENUE	5,838,903	5,645,942	(192,961)	-3.3%
RATE STABILIZATION	305,482	305,482	-	0.0%
INVESTMENT INCOME	23,346,079	31,520,079	8,174,000	35.0%
<b>TOTAL REVENUE &amp; INCOME</b>	<b>\$ 874,148,898</b>	<b>\$ 882,089,226</b>	<b>\$ 7,940,328</b>	<b>0.9%</b>

**VARIANCE:** **\$ (46,849,082)** **\$ (46,849,082)**

### STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** April 17, 2024  
**SUBJECT:** Approval of the Eighty-Eighth Supplemental Resolution



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**COMMITTEE:** Administration, Finance & Audit

X VOTE  
       INFORMATION

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

  
Thomas J. Durkin  
Director of Finance

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### RECOMMENDATION:

To adopt the Eighty-Eighth Supplemental Resolution authorizing the issuance of up to \$500,000,000 of Massachusetts Water Resources Authority Tax-Exempt General Revenue Bonds and General Revenue Refunding Bonds and the supporting Issuance Resolution.

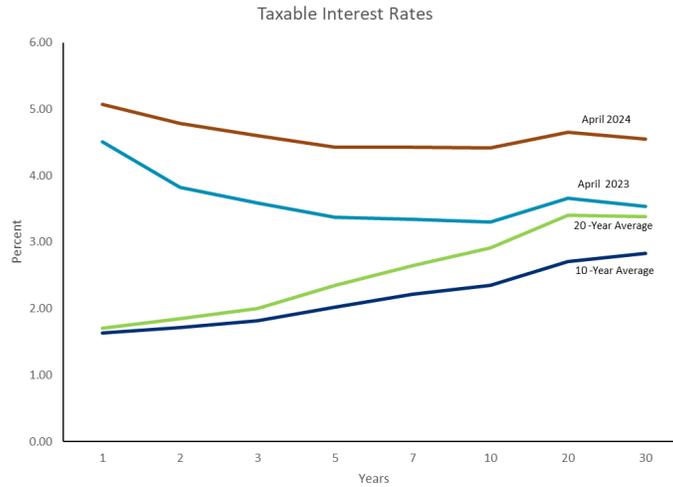
### DISCUSSION:

The bonds to be issued under this authorization will include approximately \$300 million in refunding bonds and \$200 million in new money bonds. The new money bonds will be used to permanently finance outstanding short-term borrowings used for construction in progress and a deposit to the Debt Service Reserve Fund if necessary. The \$300 million in refunding bonds will be utilized to complete a refunding of outstanding bonds for interest rate savings. Since tax-exempt advanced refundings are no longer permitted by the internal Revenue Service these bonds will be refunded using a tender process discussed in this staff summary. The following table provides a breakdown of the components of the proposed transaction.

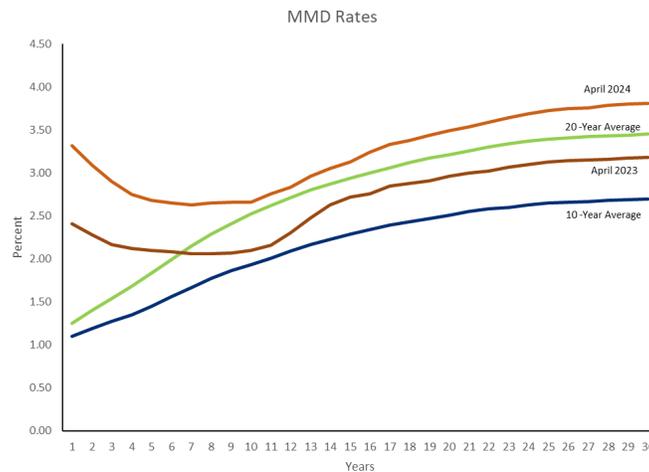
Bond Type	Proposed Issuance Amount
New Money	\$ 200,000,000
Refunding Bonds	\$ 300,000,000
<b>Total Authorization</b>	<b>\$ 500,000,000</b>

Prior to the passage of the Tax Reform and Jobs Act of 2017, MWRA would have utilized tax-exempt bonds to complete an advance refunding for interest rate savings. Where bond proceeds would be placed in an escrow until the time at which the bonds could be called. Unfortunately, the 2017 Act eliminated the ability to use tax-exempt debt to advance refund outstanding tax-exempt bonds. As a result, the use of tax-exempt debt for refundings is limited to current refundings, which limits the new debt issuance to within 90-days of the call date of the outstanding bonds. In 2019 and 2021, MWRA utilized taxable bonds to complete a refunding transaction for

interest rate savings. Starting in March 2022, the Federal Reserve Open Market Committee has increased short-term interest rates by 4.25%. The Federal Reserve continues to maintain the short-term interest rates at these higher levels. These sustained higher level interest rates have pushed taxable interest rates much higher across the yield curve. The following graph details the 10 and 20 year averages as compared to the current and last year's US Treasury interest rates.



In addition to the pressure on taxable interest rates, there have been increases to the tax-exempt yield curves. The following graph details the 10 and 20 year averages as compared to the current and last year's Municipal Market Data tax-exempt yield curves.



Given these current market dynamics, tender prices that are attractive to bondholders but below the face value of the bonds are possible. MWRA's 2019 and 2021 taxable bonds were issued when interest rates were extremely low, which makes them good candidate for a tender transaction. In addition the inversion in the MMD tax-exempt yield where a one or two year investment has a higher interest yield than a 14 year investment also results in viable tax-exempt candidates. As a result of the sustained higher interest rates, the value of MWRA's bonds held by investors has decreased. Under current market conditions many of these taxable bonds that were issued at par

are trading on the secondary market at significant discounts. At the time a bond is initially sold to an investor, the yield that they receive on the bonds is based on the interest rate payment and the market at that time. As interest rates rise and fall, the value and the yield on that bond changes. For example based on market conditions at the time of issuance a bond has a yield of 4%, if the owner wanted to sell the bond he could get \$1 for every dollar of principal. As interest rates rise, investors can purchase bonds with higher yields in the bond market and as a result that 4% bond has less value. If the owner of that bond wants to sell the bond in this higher interest rate market, they will not receive a dollar for every dollar of principal, but might only receive 95 cents on the dollar. This decreased value for the bonds has created a desire by investors to remove these bonds from their portfolios and allow MWRA to purchase the bonds at less than face value.

In order to determine whether bondholders might have an interest in selling their bonds back to MWRA, a two week public tender process will be conducted. Under that process a notice of tender will be sent to applicable MWRA bondholders asking them if they are willing to sell their bonds back and to indicate the price at which they are willing to sell. At the end of the tender period the offers to sell will be reviewed by MWRA, its financial advisor and the dealer manager to determine which bonds can be purchased at a discount that will result in refunding savings that meet MWRA's criteria. MWRA can execute a tender for these taxable bonds using the proceeds from the newly issued tax-exempt refunding bonds to pay for the tendered bonds. Purchasing the bonds at a discount coupled with the refunding bonds being issued at a lower spot on the yield curve than when the tendered bonds were originally issued drives the savings. Staff will utilize MWRA's debt policy's parameters when reviewing candidates for a refunding for interest rate savings. The criteria are as follows:

- overall savings has a present value of 4.0% or greater;
- individual maturities have a 3% present value savings or an option value above 70%; and
- the efficiency of the escrow is greater than 50%.(not applicable/no escrow)

In addition to these criteria, bonds may be refunded or restructured to meet particular organizational and/or strategic needs when it is advantageous to do so. All refunding transactions require the approval of the Board of Directors. Based on current market conditions approximately \$676.7 million in bonds have a decreased market value and meet MWRA's refunding criteria. Currently in the market, issuers that have issued tender requests have seen a typical range of 30% to 44% participation rate from bond holders which would result in approximately \$200 million to \$300 million in bonds being tendered. Since the amount of bonds that are tendered will be determined by bondholder interest and market conditions, staff is seeking an authorization of up to \$300 million to ensure that the refunding can be maximized if market conditions became more favorable and generate a larger tender response.

Based on a 30% response to the offer to tender under current market conditions could result in \$22.1 million in budgetary savings with \$15.5 million or 10.4% in present value savings for the recommended bonds. The table to the right details the refunding savings by fiscal year.

Fiscal Year	Prior Debt Service	Refunding Debt Service	Savings
2024	\$ 3,072,753	\$ 988,600	\$ 2,084,153
2025	\$ 6,145,507	\$ 7,414,500	\$ (1,268,993)
2026	\$ 6,145,507	\$ 7,414,500	\$ (1,268,993)
2027	\$ 6,145,507	\$ 7,414,500	\$ (1,268,993)
2028	\$ 20,645,507	\$ 19,074,500	\$ 1,571,007
2029	\$ 16,160,949	\$ 14,516,500	\$ 1,644,449
2030	\$ 24,898,584	\$ 23,207,250	\$ 1,691,334
2031	\$ 25,461,475	\$ 23,844,250	\$ 1,617,225
2032	\$ 27,715,720	\$ 26,087,500	\$ 1,628,220
2033	\$ 11,489,371	\$ 9,808,000	\$ 1,681,371
2034	\$ 13,802,619	\$ 12,129,000	\$ 1,673,619
2035	\$ 13,049,917	\$ 11,363,500	\$ 1,686,417
2036	\$ 8,524,796	\$ 6,789,250	\$ 1,735,546
2037	\$ 16,509,582	\$ 14,877,500	\$ 1,632,082
2038	\$ 18,126,264	\$ 16,510,500	\$ 1,615,764
2039	\$ 16,110,543	\$ 14,500,250	\$ 1,610,293
2040	\$ 5,450,291	\$ 3,743,250	\$ 1,707,041
2041	\$ 1,202,953		\$ 1,202,953
2042	\$ 365,771		\$ 365,771
2043	\$ 365,811		\$ 365,811
2044	\$ 365,554		\$ 365,554
<b>Total</b>	<b>\$ 241,754,982</b>	<b>\$ 219,683,350</b>	<b>\$ 22,071,632</b>

These bonds will represent the third time in MWRA’s history that it has conducted a tender process to purchase back bonds at a discount from bondholders. The most recent transaction in April 2023 resulted in \$19.9 million in budgetary savings or \$12.9 million in present value interest rate savings. Long-term tax-exempt fixed interest rates would have to increase by 150 basis points for the entire refunding transaction to fall below the 4% threshold.

In addition to the refunding, staff are recommending issuing \$200 million of new money bonds. The new money bonds would be utilized to permanently finance the outstanding tax-exempt commercial paper and revolving loan. Both the commercial paper and revolving loan are utilized for short-term borrowings, primarily for projects under construction. Currently MWRA could issue the new money at an All-In True Interest Cost of 4.19%.

Similar to previous bond transactions, staff will structure these bonds around the existing bonds to continue to minimize peaks and valleys in debt service. Staff intend to issue both the refunding and new money bonds as “Green Bonds.” Green Bonds are marketed to environmentally responsible investment funds. While there is no required certification for Green Bonds, MWRA will be required to document that the funds were used to pay for projects that provided an environmental benefit. Given MWRA’s mission, its projects are green by their nature. MWRA has issued \$2.6 billion in Green Bonds making it one of the largest Green Bond issuers in the country.

Under the terms of the last procurement approved by the Board in June 2021, Barclays Capital Inc. will serve as the lead underwriter for this transaction. Staff will continue to work with MWRA’s financial advisor to determine the most appropriate size and structure for the transaction.

**BUDGET/FISCAL IMPACT:**

There are sufficient funds available in the FY24 CEB to pay the debt service costs associated with these borrowings. The potential refunding for savings component will reduce future debt service. The amount of the potential reduction will be determined based on market conditions and the ultimate pricing of the refunding transaction.

### STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** April 17, 2024  
**SUBJECT:** Disclosure Counsel Services  
Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.  
Contract F277



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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

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### RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to award Contract F277 to Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. for Disclosure Counsel Services and to authorize the Executive Director, on behalf of the Authority, to execute contract F277 in an amount not to exceed \$675,260 and for a term of four years from the date indicated in the Notice to Proceed.

### DISCUSSION:

MWRA requires the services of Disclosure Counsel for all of its bond issuances to ensure compliance with applicable rules and regulations from the Securities and Exchange Commission (SEC), as well as other state and federal requirements governing the sale of public securities. In addition to the primary offering documents, Disclosure Counsel assists with ongoing disclosure including material event notices and annual continuing disclosure filings required by the SEC. When MWRA issues bonds in the public market, Disclosure Counsel drafts a Preliminary Official Statement (POS) which provides potential bondholders with the information about MWRA necessary to make an informed decision about purchasing the bonds. This information includes MWRA's operational and financial status, any pending regulatory or legal issues as well as information on the Amended and Restated General Revenue Bond Resolution and other security for the bondholders. Once the sale has been completed, Disclosure Counsel updates the POS with all relevant information on the bonds as a result of the sale, including principal amortization, interest rates, and call dates. This new document becomes the final Official Statement which documents the complete bond transaction for the public market.

In addition to POS and Official Statements, Disclosure Counsel also develops an Information Statement when the Massachusetts Clean Water Trust (Trust) issues bonds in the public market. The Trust is provided with an Information Statement to support its public debt issuances since, as the largest borrower, MWRA's credit quality is part of the security for the bonds. An Information Statement contains much of the same information as an Official Statement, but is modified to reflect the nature of the borrowing. Disclosure Counsel reviews the closing documents for all bond transactions to ensure compliance with disclosure requirements and issues a legal opinion indicating that the MWRA's disclosure is in compliance with applicable rules and regulations. MWRA's Disclosure Counsel may also provide assistance with the ongoing management of MWRA's debt portfolio on an as needed basis.

## **PROCUREMENT PROCESS:**

The procurement process to select Disclosure Counsel utilized a one-step Request for Qualification Statements and Proposals (RFQ/P), which was issued on February 27, 2024. The procurement was publically advertised in the Goods and Services Bulletin, Boston Herald, Banner Publications, El Mundo and via the MWRA Supplier Portal. In addition to MWRA's standard procurement advertising requirements, copies of the advertisement were sent directly to eight firms. As in the past, firms serving as either MWRA's Bond Counsel or as Trustee's Counsel were prohibited from proposing.

Four firms, Bowditch & Dewey, LLP (Bowditch), Locke Lord, LLP (Locke), McCarter & English, LLP (McCarter), and Mintz, Levin, Cohn, Ferris, Glovsky, and Popeo, P.C. (Mintz), submitted proposals on March 15, 2024.

As part of the procurement process, proposers are required to provide MWRA with Disclosure Statements assuring that the firm's engagement would not result in a form of Conflict of Interest or other activity prohibited by Rules 1.7-1.10, inclusive, under Rule 3:07 of the Massachusetts Supreme Judicial Court Rules (SJC Rules). Those statements are reviewed by a separate Disclosure Panel, comprised of staff from Procurement and the Law Division, which report any areas of non-compliance or concern to the Selection Committee. After review of the Disclosure Statements and clarifications received from Bowditch, Locke, McCarter, and Mintz the panel determined that those firms did not have conflicts of interest or other prohibited activities under the SJC Rules.

The Selection Committee evaluated and ranked the proposals from Bowditch, Locke, McCarter, and Mintz based on the criteria contained in the RFQ/P: Cost (30 pts), Qualifications and Key Personnel (30 pts), Experience and Past Performance (25 pts), Capacity/Organization, and Management and Technical Approach (15 pts). The proposals for Disclosure Counsel Services were ranked as follows:

<b>Rank</b>	<b>Firm</b>	<b>Cost</b>
1	Mintz	\$ 675,260
2	Locke Lord	\$ 1,139,825
3	McCarter	\$ 759,080
4	Bowditch	\$ 670,200

The current Disclosure Counsel contract (Contract F255) has a not-to-exceed amount of \$637,100 derived from an estimated number of bond transactions and level of effort for other tasks. Based on actual tasks completed, MWRA has expended \$160,625 on Contract F255.

All four proposals reviewed by the Selection Committee demonstrated significant relevant experience and are well respected in the municipal bond market. Mintz's proposed a cost of \$675,260 to provide these services with approximately 61% of the time allocated the partner level. Mintz did not propose any escalation in rates over the term of the contract. Mintz made the business decision to provide the tasks associated with additional services at no additional charge to MWRA. Mintz proposed a strong team that is familiar with MWRA and its capital financing program. The proposed lead partner has served as underwriter's counsel on many recent MWRA bond transaction. Mintz's experience with both MWRA and the broader bond markets make it well suited to assist MWRA with providing market disclosures. Locke proposed a strong team with significant experience in the bond market, but at a higher cost than Mintz. Similarly McCarter provided a strong proposal, yet at a higher cost than Mintz. While Bowditch provided a team with strong experience in the bond market at a slightly lower cost, the proposal did not demonstrate as much direct disclosure experience as Mintz.

Based on the cost, experience and qualifications of the firm, the Selection Committee recommends award of Contract F277 Disclosure Counsel Services to Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.

**BUDGET/FISCAL IMPACT:**

Most costs associated with Disclosure Counsel Services are included as part of the cost of issuance and are funded from the proceeds of bond transactions. A small portion of the work is funded through the CEB. The FY24 CEB has sufficient funds to pay for the work included in this contract.

**MBE/WBE PARTICIPATION:**

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

**STAFF SUMMARY**



**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** April 17, 2024  
**SUBJECT:** Amendment 1 Purchase Order for Data Reporting Analyst (Report Writer)  
Consultant Mindlance Inc.  
Bid WRA-5281Q, State Contract ITS77 Category 1A and 1B

**COMMITTEE:** Administration, Finance, & Audit

     INFORMATION

  X   VOTE

  
Michele S. Gillen

Director of Administration

Michael Farmer, Program Manager, Tech Services  
Paul Fentross, Business Applications Manager  
Preparer/Title

  
Paula Weadick  
Director, MIS

**RECOMMENDATION:**

That the Board of Directors, on behalf of the Authority, approve the award of Amendment 1 to WRA-5281Q for a Data Reporting Analyst (Report Writer) Consultant to Mindlance Inc., in the amount of \$168,148.50 and authorize the Director of Administration to execute an amended purchase order, increasing the purchase order amount from \$168,148.50 to \$336,297, and extending the contract term by one year from April 25, 2024 to April 25, 2025.

**DISCUSSION:**

In March 2022 the sole MWRA MIS Report Writer resigned. Initial efforts to fill this position were unsuccessful, resulting in the need for this consultant contract. During the course of this contract additional efforts to permanently fill this position have resulted in eighteen applicants, but only one met the position’s minimum qualifications, and that applicant declined the offer. The Report Writer is a critical role that provides report development and support for various departments, especially the Maximo Asset Management users. Continued staff augmentation is needed to provide this support until the Report Writer position is filled.

The MWRA Program Manager of Technical Services will work with the Consultant to prioritize report development. The Consultant will be responsible for the following:

- participate in discussions with users to meet report requirements;
- complete report definition document;
- code and publish report to the development environment;
- work with business users to identify and remediate any issues;

- ensure all report source code reside in the MWRA’s repository;
- obtain approval from Operations and MIS representatives before publishing to production environment; and
- publish completed reports to the production environment following established change management process.

**This Amendment:**

There are a large number of Business Objects and Crystal Reports used by MWRA end users and it is very important that MIS has the expertise to provide support and development services for them. The Custom Applications team has had a staffing deficit for more than two years due to a difficult hiring environment. In order to ensure that these reports and their end users are supported, MIS hired a Report Writer Consultant to assist with the support of the Report Writing at the MWRA. This existing Consultant has excellent skills and has performed well in the role displaying an understanding of relevant technologies and has developed a good understanding of MWRA’s environment and the reporting that the Consultant supports. Maintaining the existing Consultant will ensure continuity of support while the search for permanent staff continues. The Consultant has had an impact by addressing a number of enhancements and bugs within the reporting applications. Staff recommend extending the existing contract so that these services can continue to be provided without disruption.

If approved, Amendment 1 will increase the purchase order amount by \$168,148.50 and extend the contract duration by 12 months. The increase reflects an additional 1,950 hours at \$86.23 per hour.

**CONTRACT SUMMARY:**

	<u>Amount</u>	<u>Time</u>	<u>Dated</u>
Original Contract:	\$168,148.50	1 year	4/25/2023
Amendment 1	\$168,148.50	1 year	Pending
Amended Contract:	\$336,297	2 years	

**BUDGET/FISCAL IMPACT:**

There are sufficient funds for this purchase order included in the FY24 and Proposed FY25 Current Expense Budgets under Account 86100-10610.

**MBE/WBE PARTICIPATION:**

Mindlance Inc. is not certified Minority-Owned or Woman-Owned business.

## STAFF SUMMARY



**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** April 17, 2024  
**SUBJECT:** Amendment 1 Purchase Order Contract for Senior Business Analyst Consultant  
Acro Service Corporation  
Bid WRA-5258Q, State Contract ITS77 Category 1A and 1B

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**COMMITTEE:** Administration, Finance, & Audit

     INFORMATION

VOTE

  
Michele S. Gillen

Director of Administration

Paul Fentross, Business Applications Manager  
Preparer/Title

  
Paula Weadick

Director, MIS

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### RECOMMENDATION:

That the Board of Directors, on behalf of the Authority, approve the award of Amendment 1 to WRA-5258Q for a Senior Business Analyst Consultant to Acro Service Corporation, in the amount of \$163,800 and authorize the Director of Administration to execute an amended purchase order, increasing the purchase order amount from \$163,800 to \$327,600, and extending the contract term by one year from March 31, 2024 to March 31, 2025.

### DISCUSSION:

The MIS Enterprise Resource Planning (ERP) team supports the Infor Lawson and associated integrated systems (MWRA's core financial, procurement and human resources management system). Since January of 2021, MIS has been seeking to fill a vacant System Analyst/Programmer III position in this group. The position has been posted multiple times with no applicants being selected. While the search process continues to find a permanent replacement and to ensure continued support for the critical ERP applications, MIS seeks to extend the contract for a Business Analyst consultant to assist with the following ERP initiatives until the vacant ERP position is filled:

- assist with Infor Lawson to CloudSuite SaaS migration and implementation analysis;
- assist with Lawson and Landmark Application and support;
- support Infor Lawson Strategic Sourcing, Contracts Management, and Procurement;
- develop and support Infor Process Automation interfaces and flows; and
- provide technical consulting services to support the three tiers of the Lawson system.

**This Amendment:**

The existing consultant was contracted to augment the ERP team staff while the search continues for a full-time candidate for the open position. In the fall of 2023, the MWRA kicked off a project to migrate the existing on premise Lawson ERP application to Infor’s Cloudsuite SaaS environment. In order to maintain the current project schedule it is critical that the ERP project team maintain its current staffing level to ensure successful completion of the project. The existing consultant has participated in many of the migration project training and design workshops. It is important that the project team not lose the knowledge that the consultant gained.

Having a resource that has institutional knowledge of the current MWRA ERP environment and the proposed Cloudsuite configuration will provide continuity in the project. The consultant has excellent skills and has performed well in the role displaying an understanding of relevant technologies and functionality and has developed a good understanding of MWRA’s environment. Maintaining the existing consultant will ensure continuity of the project team while the search for permanent staff continues. Should the vacancy be filled, staff anticipate needing an overlap between the consultant and the MWRA employee. Staff recommend extending the existing contract so that these services can continue to be provided without disruption.

This amendment, if approved, will increase the purchase order amount by \$163,800 with a 12 month contract term extension to expire on March 31, 2025. This increase reflects an additional 1,950 hours at \$84.00 per hour.

**CONTRACT SUMMARY:**

	<u>Amount</u>	<u>Time</u>	<u>Dated</u>
Original Contract:	\$163,800.00	1 year	3/31/2023
Amendment 1	\$163,800.00	1 year	Pending
Amended Contract:	\$327,600.00	2 years	

**BUDGET/FISCAL IMPACT:**

There are sufficient funds for this purchase order included in the FY24 and FY25 Current Expense Budget under the Professional Services Account 86100-10610.

**MBE/WBE PARTICIPATION:**

Acro Service Corp. is a certified Minority-Owned business.

## STAFF SUMMARY



**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** April 17, 2024  
**SUBJECT:** Approval of New Member of the Wastewater Advisory Committee

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**COMMITTEE:** Wastewater Policy & Oversight

       INFORMATION  
  X   VOTE

Wendy Leo, Senior Program Manager  
Preparer/Title



Sean Navin  
Director,  
Intergovernmental Affairs

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### RECOMMENDATION:

To approve the addition of one new member, Ms. Christine Bennett of the MWRA Advisory Board, to the Wastewater Advisory Committee.

### 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).

The WAC was created in 1990 to offer independent recommendations on wastewater programs and policies; it is a successor to the Facilities Planning Citizen Advisory Committee, which was 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 the science and education fields. The Advisory Board has historically appointed a member as well.

The WAC contract provides that WAC shall have a maximum of 20 members approved by MWRA's Board of Directors; the contract prohibits alternates or designees. 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 Kannan Vembu and WAC's current Executive Director is Andreae Downs.

The proposed new member, Christine Bennett, joined the MWRA Advisory Board staff in January 2024 as a Finance and Policy Analyst. Prior to joining the Advisory Board, Ms. Bennett had a long career in non-profit management. An award-winning town planner, she has particular expertise in data analytics and visualization for the non-profit and public sectors.

The current fourteen members on the WAC are: George Atallah, Triumvirate Environmental; Craig Allen, Commonwealth Research Group, Inc.; Philip Ashcroft, Business and Executive Coach; Adriana Cillo, Boston Water and Sewer Commission; Wayne Chouinard, Town of Arlington Department of Public Works; Jim Ferrara, National Grid; Stephen Greene, Howland-Greene Consultants; Taber Keally, Neponset River Watershed Association; Karen Lachmayr, Harvard University; Martin Pillsbury, Metropolitan Area Planning Council; Alfredo Vargas, City of Newton Engineering; Kannan Vembu, AquaEnviroBio Solutions LLC (Chair); and Dan Winograd, Woodard & Curran.

In accordance with the current agreement, the WAC unanimously nominated Ms. Bennett for membership at its March 2024 meeting.

**ATTACHMENTS:**

Resume of Christine Bennett

# Christine Bennett

RESEARCH & POLICY ANALYST

| | [Linkedin.com/in/Christine-Bennett](https://www.linkedin.com/in/Christine-Bennett)

## Profile Summary

Passionate data enthusiast leveraging a career in environmental non-profit management for business intelligence and analytics. Proactive approach to continuous learning. Proven track record of creating and strengthening data models. Experience developing and implementing data-driven strategic business initiatives. Employs out-of-the-box thinking to solve complex problems. Communicates effectively with diverse audiences. Deploys experience, education, and facility with quantitative analysis to drive outcomes.

## Skills

**PROFESSIONAL SKILLS** Strategic Planning | Project Management | Policy Research | Team Building  
External Relations | Public Speaking | Regulatory Compliance | Analytical Problem-Solving  
Excellent Communication | Statistical Analysis | Data Cleaning | Data Visualization

**TECHNICAL SKILLS** SQL | R | DAX | MS Excel | PowerBI | PowerQuery | PowerPivot | Office365 | Adobe Suite | Wordpress

## Projects

**QUESTHIRE FACEBOOK ADVERTISING CAMPAIGN** April 2022  
Project Description: Design a model to glean insights into the effectiveness of a Facebook Advertising Campaign for a fictional company using a real dataset. Present findings & actionable next steps | Data Analyst | Project Link: [analyticsbychristine.com/section4](https://analyticsbychristine.com/section4)

**TOWN OF ELIOT ENERGY MODEL** 2017 - 2023  
Project Description: tracking and monitoring municipal electrical meter data and power generation of two town-owned solar arrays, tracking of conservation measures for municipal buildings. Deployed in 2018 to consider ROI of an additional solar array with three purchase scenarios by integrating historic electricity pricing, contract price, inflation, future cost, buy-back price, design life, and panel degradation rates. Assumed sole-responsibility of the project in 2023 | Role: data extraction, cleaning, loading, modeling, and visualization | Project Link: [analyticsbychristine.com/eliotenergymodel](https://analyticsbychristine.com/eliotenergymodel)

## Work Experience

**CAREER TRANSITION – Data Analyst Training** 2019 - 2023  
Long career of non-profit management characterized by a Fibonacci spiral of continuously broadening functional roles, skillsets, and responsibilities leading to a realignment of career path in research and data analytics. Leveraged experience and facility with primary & secondary research, data wrangling and visualization to construct a course of study that expanded existing knowledge and skillsets (statistics, Excel & Power BI), gained data literacy, and broadened conceptual frameworks and experience with programming languages. Utilizing the Eliot Energy Model as a practicum.

**EXECUTIVE DIRECTOR** Kittery Land Trust | Kittery, Maine | 2011 - 2019

- Doubled conserved land in three years, tripled in nine primarily through a \$1.1M federally and locally funded conservation easement purchase on the largest Holstein dairy farm in York County (300-acre) and a \$1.98M five parcel (150-acre) mixed method project that utilized conservation financing (\$1.34M).



**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** April 17, 2024  
**SUBJECT:** Struvite, Sludge, Scum and Grit Removal Services  
Moran Environmental Recovery, LLC  
WRA-5396



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**COMMITTEE:** Wastewater Policy and Oversight

           INFORMATION  
  X   VOTE

  
Michele S. Gillen

Director of Administration

Chad Whiting, Deputy Director, Deer Island Treatment Plant  
David F. Duest, Director, Deer Island Treatment Plant  
Preparer/Title

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

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**RECOMMENDATION:**

To approve the award of purchase order contract WRA-5396 to provide struvite, scum, sludge and grit removal services at the Deer Island Treatment Plant to the lowest responsive bidder, Moran Environmental Recovery, LLC and to authorize the Executive Director, on behalf of the Authority, to execute said purchase order contract in an amount not to exceed \$1,616,150 for a period of two years, from July 1, 2024 through June 30, 2026.

**DISCUSSION:**

Struvite is a crystallized compound forming from solubilized phosphate, ammonia and magnesium, which can form a matrix with digested sludge solids and coat pipelines or other surfaces similar to a lime scale in a boiler. An example of struvite buildup can be seen in Figure 1.



*Figure 1. Struvite Blockage in  
Digester Overflow Piping*

Struvite buildup is a concern because of the operational problems that it can cause. Struvite can affect process equipment and piping, and can result in the loss of digester and sludge pumping capacity.

Staff have been preventing struvite buildup with the addition of ferric chloride or other iron salts to the digester sludge feed. The iron in ferric chloride binds the soluble phosphate, which reduces the risk of struvite formation. However, struvite buildup can still occur. When it does, it requires the specialized services and industrial equipment of specialty contractors, often working in confined spaces.

Staff use these specialized services to clean other severe blockages, including the buildup of sludge, scum, grit and rags (from flushable and non-flushable wipe material) in a number of

process areas across the plant. An example of struvite that has been removed from process piping can be seen in Figure 2. While struvite buildup has only occurred in and downstream of the Deer Island Residuals Complex, staff have found other types of blockages in the gravity thickeners, primary clarifiers, influent channels and scum receiving well.



*Figure 2. Struvite Buildup Removed From Pipe*

Contracted services are utilized only as a last resort measure, as MWRA staff are the first option in clearing these types of blockages. Staff employ MWRA vector trucks to clean some of the blockages. Contracted services are required when blockages reach a level that is beyond in-house capability, or when the sludge, scum, grit, or rags are of such a thick consistency that processing the material through the plant could cause a plant upset condition or the potential for equipment damage.

Approximately 20% of this contract is utilized for the removal and disposal of struvite, as the use of ferric chloride in digested sludge has greatly reduced the level of struvite formation in the residuals process areas. The remaining portion of the contract is used for clearing and removing other blockages in plant process areas, such as in the scum receiving wells and in the gravity thickeners, as seen in Figure 3 to the right.



*Figure 3. Gravity Thickening Center Column Clog*



*Figure 4. Rag Buildup in Process Tanks*

The industry has seen an increased use and disposal of ‘flushable,’ non-flushable, and antiseptic wipes. In FY23, Deer Island spent nearly \$1 million in maintenance costs repairing equipment damaged because of clogs caused by wipes. An example of rag buildup in a process tank is shown in Figure 4 to the left.

**Procurement Process**

Bid WRA-5396 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 5768) and six potential bidders were solicited through the e-Portal.

On January 31, 2024 Event 5768 closed with the following results:

<u>Bidder</u>	<u>Total Bid Price</u>
<b>Moran Environmental Recovery, LLC</b>	<b>\$1,616,150</b>
Boston Green Fuel Company, Inc.	\$1,724,500

The scope of services and estimated quantities for this contract include 325 days of field work, an increase of 25 days or 8.3% overall in labor hours from the current contract; 150 days with a five-

person work crew (formerly 100 days in the current contract or a 50% increase); and 175 days with a three-person work crew (currently 200 days in the current contract or 12.5% decrease) and all necessary special cleaning equipment to be used on an as-needed basis. In addition, bid prices were submitted for the hauling and disposal of an estimated 800 tons of solid material (an increase of 100 tons or 14% over the current contract) and 50,000 gallons of wet material during a two-year period. These estimates were based on recent workloads under the existing contract, including added work to clear blockages due to an increased presence of flushable wipes over the past several years, and an increase in the amount of materials needed to be disposed. This requested level of effort is an estimate and not a guaranteed commitment to the vendor; MWRA will incur costs only for services provided and satisfactory documentation of quantities removed (e.g., weight slips from licensed landfills or disposal sites) during the two-year contract term.

Moran Environmental Recovery, LLC is the incumbent on the current contract. A close comparison of the two contracts reveal increases in labor costs of roughly 5.3%.

In addition, this contract includes 400 hours of off-hour work; 200 hours with a five-person crew and 200 hours with a three-person crew. These bid items will be used only if treatment processes are impacted such that crews need to be either extended beyond the normal working day or if crews need to be called in during off-hours. No off-hour work has been utilized in the existing contract as of this date.

Staff have reviewed Moran's bid and determined that it meets all of the requirements of the bid specifications. Staff are satisfied with Moran's performance on the existing and other past contracts and, therefore, recommend the award of this purchase order contract to Moran Environmental Recovery, LLC as the lowest responsive bidder. The new contract will result in an increase of roughly 18% from the existing contract.

**BUDGET/FISCAL IMPACTS:**

The FY25 proposed Current Expense Budget includes \$300,000 for the first portion of this contract. Any overspending will be absorbed within the Current Expense Budget. Appropriate funding will be included in subsequent proposed CEB requests for the remaining term of this two-year contract.

**MBE/WBE PARTICIPATION:**

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