



**Massachusetts Water Resources Authority**  
Five-Year Strategic Business Plan  
FY 2026–2030







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## Dear Reader,

I am pleased to release the Massachusetts Water Resources Authority's (MWRA) Five Year Strategic Business Plan for fiscal years (FY) 2026-2030. Consistent with MWRA's prior Business Plans, it provides a management tool for identifying and prioritizing the strategic initiatives critical to MWRA's mission. It also provides transparency for our ratepayers and helps to ensure that these initiatives are carried out within the annual capital budget spending limits adopted by the MWRA Board of Directors.

MWRA continues its commitment to the delivery of safe drinking water and environmentally protective wastewater collection and treatment. Many of our strategic priorities are directly derived from these two organizational obligations. Within the 5 years of this Plan, we will make significant progress in pipeline rehabilitation and replacement of both water and wastewater infrastructure as well as the completion of rehabilitation of the outdated water and wastewater facilities. During this period we will also complete final design related to the Metropolitan Tunnel Redundancy Project and begin construction. This project represents a significant capital investment that continues our commitment to the secure provision of water to Boston and other member communities.

The term of the prior Strategic Business Plan ended in June 2025.

In sum, the Strategic Business Plan for FY2026-2030 provides the framework for MWRA staff to manage and measure progress towards achieving system priorities. We hope that you find this document helpful.

Sincerely,

A handwritten signature in black ink, appearing to read "Fred A. Laskey". The signature is fluid and cursive, with the first name "Fred" being the most prominent.

Frederick A. Laskey  
Executive Director



## Introduction

Massachusetts's Water Resources Authority's (MWRA) Five Year Strategic Business Plan for fiscal years (FY) 2026-2030 provides a management tool for identifying and prioritizing the strategic initiatives critical to MWRA's mission. It ensures staff are all working toward the same goals and objectives in an ever changing environment while allowing staff to track progress and identify new issues as they arise. It also provides transparency for our ratepayers and helps to ensure these initiatives are carried out within the annual capital budget spending limits adopted by the MWRA Board of Directors.

MWRA was established 40 years ago to operate and modernize water and wastewater systems serving approximately 3.1 million people in 61 cities and towns in eastern Massachusetts. While the systems have been significantly upgraded and rehabilitated over the past 40 years, work remains to be done to complete system upgrades and to ensure that facilities are properly maintained on an ongoing basis. This will enable MWRA to meet changing conditions, such as new regulatory requirements and the effects of climate change.

The Business Plan provides the framework for MWRA staff to manage and measure progress towards achieving system priorities; grouping goals and initiatives by the following strategic priorities.

- I. Drinking Water Quality and System Performance
- II. Wastewater Management and System Performance
- III. Infrastructure Management and Resilience
- IV. Finance and Systems Management
- V. Diversity, Equity, Inclusion and Workforce Development
- VI. Environmental Sustainability

Links throughout this document provide additional context and more detailed information on specific projects, ongoing reporting on routine maintenance initiatives, information on capital budgets and master planning efforts, and compliance with regulatory requirements.

MWRA's partnership with the cities and towns within our service area is critical to ensuring the continued delivery of safe water and the transport of wastewater. MWRA continues to provide financial assistance in the form of grants and loans to assist member communities in maintaining and upgrading their local systems. MWRA employs robust financial management policies, procedures, and systems to ensure both accountability and transparency to our ratepayers and cost effective resource management over the long-term. MWRA also works diligently to ensure that the organization fosters an inclusive workplace and equal opportunities for advancement to the many staff who make it the outstanding organization it is.



Quinapoxet River, West Boylston



## **Our Mission**

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

### **Guiding Principles**

- 1. Public Accountability & Transparency**
- 2. Cost-Effective Services**
- 3. Collaboration With Internal/External Partners**
- 4. System Resilience**
- 5. Environmental Stewardship**
- 6. Workforce Development**
- 7. Diversity, Equity And Inclusion**

## Brief System Overview

MWRA's water system extends from the Quabbin, Ware, and Wachusett watersheds in central Massachusetts to the Boston metropolitan area supplying 200 million gallons per day (MGD) to 55 cities, towns, and water districts. Assets and facilities include roughly 100 miles of transmission system tunnels and aqueducts, another 284 miles of pipelines, treatment facilities, pump stations, and water storage facilities. The Metro Boston Service Area's water supply is treated at the John J. Carroll Water Treatment Plant (JCWTP) in Marlborough, using ozone and ultraviolet light to provide primary disinfection, with chloramine for secondary disinfection. Alkalinity and pH are adjusted to meet corrosion control targets in the finished water. The Chicopee Valley Aqueduct service area water supply is treated at the William A. Brutsch Water Treatment Facility in Ware, using free chlorine and ultraviolet light to provide primary disinfection of water.

MWRA's Metropolitan Sewerage Service Area system covers 518 square miles in the greater Boston area and serves 43 communities. MWRA's system includes 274 miles of tunnels and interceptors, remote headworks facilities, pump stations and combined sewer overflow (CSO) storage and treatment facilities. The Deer Island Wastewater Treatment Plant has a design average daily flow of 361 million gallons per day (MGD) with a wet weather capacity of 1,270 MGD. MWRA's pelletizing plant ensures beneficial use of the residuals generated at Deer Island. MWRA also operates the Clinton Wastewater Treatment Plant, serving Clinton and Lancaster, which has a design flow of 3.01 MGD and a wet weather capacity of 12 MGD.

Ensuring a safe and reliable source of drinking water to our customers, and wastewater discharges that meet all applicable regulations drives both capital and current expense budget costs.

## Strategic Business Plan Approach

Six strategic priorities integral to MWRA's mission have been identified for action during 2026-2030. Under each of these priorities, MWRA has identified goals and initiatives to guide action. The Strategic Business Plan allows MWRA to track progress towards meeting the core (routine, on-going) and special (new, one-time or aspirational) initiatives. Core and/or special initiatives are identified for each Business Priority Area.

### **Key Strategic Priorities**

- I. Drinking Water Quality & System Performance**
- II. Wastewater Management & System Performance**
- III. Infrastructure Management & Resilience**
- IV. Finance & Management Systems**
- V. Diversity, Equity, Inclusion & Workforce Development**
- VI. Environmental Sustainability**



Quabbin Reservoir

I.

# Drinking Water Quality & System Performance

<b>Goal</b>	<b>Initiatives</b>
<p><b>1.</b> Maintain drinking water quality to protect public health, and continue to ensure that MWRA water meets all applicable regulations.<sup>1</sup></p>	<p><b>Core:</b></p> <ul style="list-style-type: none"><li>A. Optimize operation of water treatment facilities to produce high quality, safe drinking water while maximizing water aesthetics (i.e. taste, clarity, and odor).</li><li>B. Monitor drinking water quality in collaboration with member communities and the Department of Conservation and Recreation (DCR) in order to verify high quality water and provide guidance for operating decisions.</li><li>C. Ensure reliability of data presented in required regulatory compliance reports.</li><li>D. Work cooperatively with DCR on various water quality initiatives including chloride, nutrient, algae, organic matter and disinfection byproduct precursor monitoring programs. Jointly develop operational response plans for nuisance and harmful algal blooms, algal toxin detections, and taste and odor events.<sup>2,3</sup></li><li>E. Continue to encourage and support DCR to meet its obligations under its Watershed Protection Plan overseen by the Water Supply Protection Trust and monitor progress toward achieving those obligations.</li><li>F. Operate the reservoir system to optimize both quality and quantity of water available for water supply purposes and to meet statutory and regulatory requirements for downstream releases.</li><li>G. Continue water quality monitoring at the Quabbin Reservoir and Wachusett reservoirs by the deployment and operation of a seasonal water quality profiling buoy. Continue routine and automatic data transfers to ensure data are proactively reviewed and managed.</li><li>H. Maintain database management systems to provide easy access to data and incorporate web-based technologies for reporting near real time water quality metrics.</li><li>I. Enhance the security of the water supply and watershed system against accidental or intentional threats and hazards. Maintain standard contaminant monitoring response procedures for drinking water reservoirs.</li></ul>



<b>Goal</b>	<b>Initiatives</b>
<p><b>1.</b> (continued)</p>	<p>J. Maintain water quality sampling from source, treatment and community entry point taps and throughout the distribution system, including monitoring for emerging contaminants.</p> <p>K. Continue to identify and evaluate the impact of different treatment strategies and scenarios on the mitigation of transportation related contaminants into the source water</p> <p>L. Evaluate new water quality monitoring equipment and testing techniques to monitor and maintain high quality water all the way to the ends of the community systems.</p> <p>M. Participate with other water utilities nationwide in Water Research Foundation studies, specifically research opportunities.</p> <p>N. Regularly communicate routine coliform and chlorine monitoring data to Water Departments and assist with water quality sampling or training, as needed.</p> <p><b>Special Initiatives:</b></p> <p>O. Continue expanded water quality monitoring in the Quinapoxet basin of the Wachusett reservoir with deployment of a fixed depth buoy. The fixed depth buoy is lightweight and portable and can be relocated to other reservoirs in the future.</p> <p>P. Advocate for responsible and reasonable new and revised state and federal drinking water regulations and provide training and technical support to communities on new regulations.</p> <p>Q. Identify treatment strategies to minimize contaminants of concern in MWRA's source water. Maintain ongoing interdepartmental service agreement with UMass Amherst to perform investigative studies to minimize natural organic matter impacts to MWRA's water supply.</p> <p>R. Evaluate 2023-2025 sampling data from Unregulated Contaminant Monitoring Rule (UCMR) 5 monitoring and determine implications for long-term planning. Review and comment on proposed UCMR6 list when it is released.</p>

<b>Goal</b>	<b>Initiatives</b>
<p><b>2.</b> Continue to effectively report and communicate water quality information to our customers and public officials.</p>	<p><b>Core:</b></p> <ul style="list-style-type: none"> <li>A. Distribute the federally required annual water quality report, the Consumer Confidence Report (CCR), to all households.<sup>4</sup></li> <li>B. Maintain and improve water quality and public health information on MWRA’s web page, <a href="http://www.MWRA.com">www.MWRA.com</a>, and through widely distributed weekly and monthly reports.</li> <li>C. Ensure that all communications and engagement are inclusive and accessible for all members of the communities we serve.</li> </ul> <p><b>Special Initiatives:</b></p> <ul style="list-style-type: none"> <li>D. Extract, review and update appropriate water quality parameter data throughout the year for MWRA partial and fully-served communities, in anticipation of future CCRs being issued biannually.<sup>5</sup></li> <li>E. Assist communities interested in joining MWRA with water quality discussions.</li> </ul>
<p><b>3.</b> Assist member communities to improve local water distribution systems through ongoing financial, technical and operational support programs to maximize long-term water quality benefits.</p>	<p><b>Core:</b></p> <ul style="list-style-type: none"> <li>A. Provide technical and operational support through training, on-call contracts, and targeted assistance, as needed.</li> <li>B. Assist member communities with replacement of all remaining lead service lines by the end of 2032, thereby avoiding the need for future changes to corrosion control treatment of drinking water.<sup>6</sup></li> </ul> <p><b>Special Initiatives:</b></p> <ul style="list-style-type: none"> <li>C. Enhance outreach and technical assistance within the existing Lead Service Line Replacement program to support communities as they respond to the U.S. Environmental Protection Agency’s (EPA) revisions to the Lead and Copper Rule.</li> <li>D. Finalize results of a pipe rig study regarding the effects of modified corrosion control on remaining lead service lines. Demonstrate preferability of accelerated removal of all remaining lead service lines versus additional corrosion control, as already recommended by outside reviewers.</li> </ul>



Disinfection Basin at Deer Island Wastewater Treatment Plant

# II. Wastewater Management & System Performance

<b>Goal</b>	<b>Initiatives</b>
<p><b>4.</b> Meet or surpass environmental compliance standards at both MWRA treatment facilities and throughout the wastewater collection system.<sup>7</sup></p>	<p><b>Core:</b></p> <ul style="list-style-type: none"> <li>A. Continue to carry out the Pretreatment Program to protect receiving water quality, maximize the beneficial reuse of wastewater residuals, and protect workers and MWRA's wastewater treatment plants and receiving waters.<sup>8,9</sup></li> <li>B. Continue to monitor Deer Island Treatment Plant (DITP) processes to ensure high quality treated effluent optimizing plant performance to ensure all applicable National Pollutant Discharge Elimination System (NPDES) permit limits continue to be attained.<sup>10</sup></li> <li>C. Continue responsible environmental stewardship through monitoring of the Clinton Advanced Wastewater Treatment Plant processes to ensure high quality treated effluent, optimizing plant performance to ensure protection of the Nashua River Watershed and maintain compliance with applicable NPDES permit limits.</li> </ul>
<p><b>5.</b> Continue to initiate plans and studies to prepare for regulatory changes; identify opportunities to refine monitoring requirements; and improve effluent quality.</p>	<p><b>Core:</b></p> <ul style="list-style-type: none"> <li>A. Prepare updated Local Limits Studies for Clinton and Deer Island in accordance with EPA guidelines to confirm appropriate discharge limits from industries.</li> <li>B. Continue to review all Ambient Monitoring Plan questions and conduct evaluations to ensure they address MWRA needs and public concerns.<sup>11</sup></li> <li>C. Continue to closely follow developing permit issues such as the impact of changes in bacterial and nutrient water quality standards, effluent loading limits, emerging contaminants, Per- and Polyfluoroalkyl Substances (PFAS) regulations, stormwater permitting, endangered species designations, and phosphorus and PFAS in biosolids.</li> <li>D. Prepare for eventual implementation or revision of the draft NPDES permit for DITP and CSO facilities, issued in 2023. Closely monitor the status of implementation or further revisions in response to MWRA and others' comments.</li> </ul>



<b>Goal</b>	<b>Initiatives</b>
<p><b>5.</b> (continued)</p>	<p><b>Special Initiatives:</b></p> <ul style="list-style-type: none"> <li>E. Develop strategies to address emerging contaminants, (e.g., PFAS and microplastics) as they are identified and frame an approach to respond to the public’s concerns about these contaminants.</li> <li>F. Conduct outreach to communities in MWRA’s Service Area to inform them of the requirements in the 8M Permit program. 8M permits are required for any work located near or within an MWRA easement or property. A targeted area of outreach is ground penetrations for geothermal wells.</li> <li>G. Assess thresholds for annual nitrogen loading, including evaluating the existing thresholds and the environmental impact of nitrogen, as well as whether these thresholds developed over 20 years ago are valid or should be modified.</li> <li>H. Upon issuance of a renewed NPDES Permit, transition from threshold assessment and evaluation to continued monitoring of nitrogen species.</li> <li>I. Review new waste treatment technologies as they arise to continuously improve treatment performance and efficiency.</li> <li>J. Maintain partnerships to test MWRA’s wastewater effluent stream for Covid-19 and other viral loads and make that information available on our website. Share all testing data with MA Department of Public Health</li> </ul>
<p><b>6.</b> Move forward with design and construction of major wastewater infrastructure rehabilitation and renewal projects.</p>	<p><b>Core:</b></p> <ul style="list-style-type: none"> <li>A. Continue to design and implement facility rehabilitation projects for various pump stations, headworks, CSO facilities and the Deer Island Treatment Plant.<sup>12</sup></li> <li>B. Continue to implement an ongoing program to review, prioritize and accelerate interceptor renewal projects.</li> <li>C. MWRA is committed to developing communications and engagement strategies regarding major design and construction projects that are inclusive and accessible for all members of the communities we serve.</li> </ul>

<b>Goal</b>	<b>Initiatives</b>
<p><b>7.</b> Comply with the Water Quality Standards (WQS) Variances for Alewife Brook/Upper Mystic River Basin and Lower Charles River/Charles Basin issued to MWRA and CSO communities for the period of September 1, 2024 to August 31, 2029.</p>	<p><b>Core:</b></p> <ul style="list-style-type: none"> <li>A. Develop an updated CSO Control Plan together with the Cities of Cambridge and Somerville that outlines a single plan for each Variance Water that describes the level of CSO control, evaluation of costs and water quality benefits of further CSO control. Work toward compliance includes the development of a scope of services, development of a new “typical year,” and close coordination with Cambridge and Somerville in obtaining public and watershed input and developing a unified hydraulic model for each community’s use in analyzing alternatives.</li> <li>B. Comply with the CSO Variances for the Alewife Brook/Upper Mystic River Basin and Lower Charles River/Charles Basin issued to MWRA and CSO communities for the period of September 1, 2024 through August 31, 2029.<sup>13</sup></li> <li>C. Continue web and subscriber based CSO Public Notification Program, providing notification of a CSO overflow within four hours of the start of the discharge.<sup>14</sup></li> <li>D. MWRA is committed to developing communications and engagement strategies regarding WQS Variance activities that are inclusive and accessible for all members of the communities we serve.</li> </ul> <p><b>Special Initiatives:</b></p> <ul style="list-style-type: none"> <li>E. Investigate site specific measures to further reduce CSO discharges where possible.</li> </ul>
<p><b>8.</b> Assist member communities to improve their wastewater collection systems through ongoing technical, financial, and operational support programs.</p>	<p><b>Core:</b></p> <ul style="list-style-type: none"> <li>A. Provide technical and operational support including TV inspections, fieldwork assistance, or other targeted assistance, as needed.</li> <li>B. Promote and manage MWRA’s Inflow/Infiltration Local Financial Assistance Program to facilitate reduced I/I in local community infrastructure.</li> </ul>

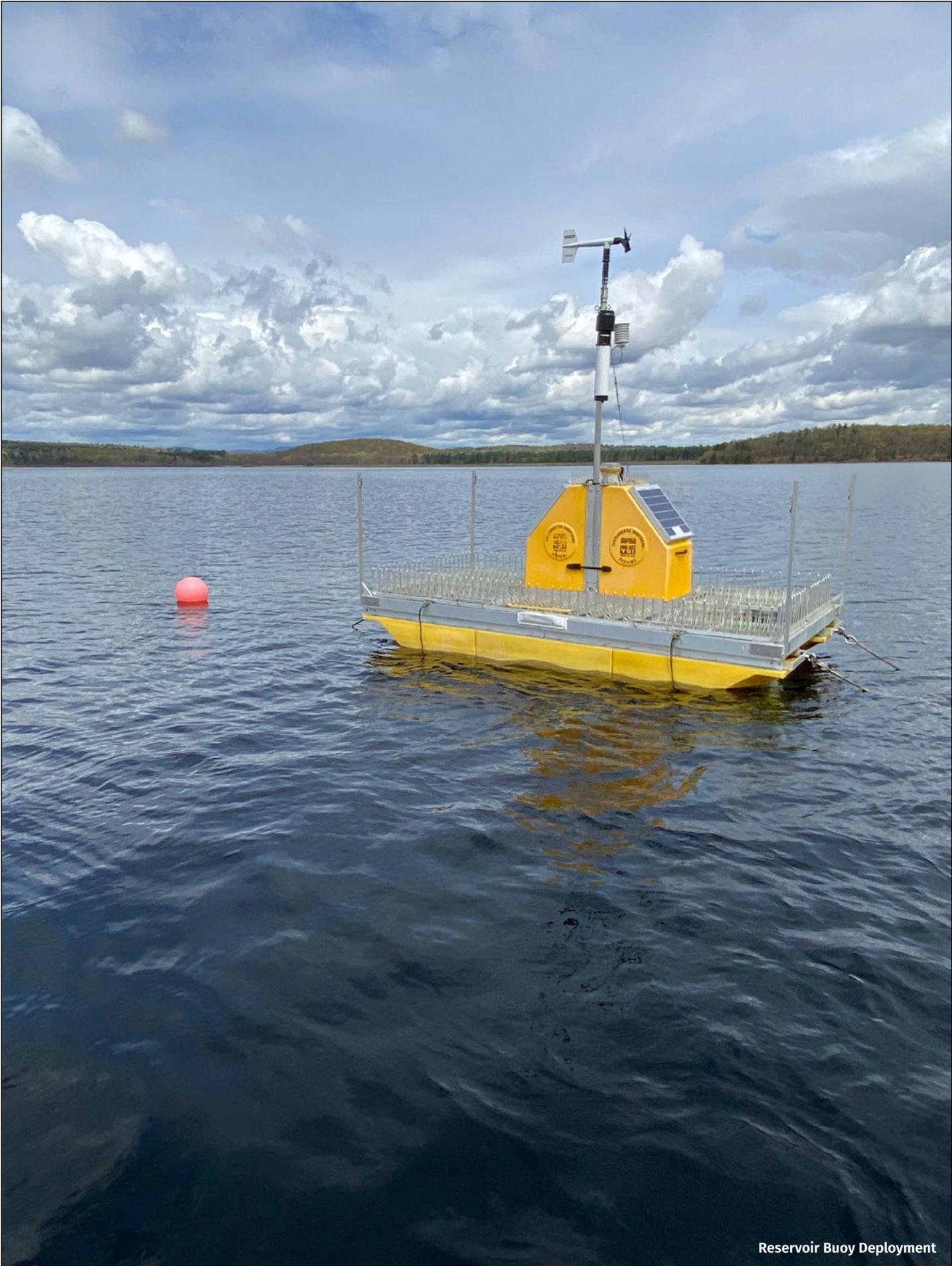
Pipeline Replacement, Saugus River Crossing



<b>Goal</b>	<b>Initiatives</b>
<p><b>9.</b>            Maintain and enhance water and wastewater system assets over the long term at the lowest possible life cycle cost and acceptable risk, consistent with customer, community, and regulatory support service levels.<sup>15,16,17,18</sup></p>	<p><b>Core:</b></p> <ul style="list-style-type: none"> <li>A. Continue to ensure proper operations and maintenance of the water and wastewater systems and minimize system downtime by performing:               <ul style="list-style-type: none"> <li>1. Preventative maintenance</li> <li>2. Predictive maintenance</li> <li>3. Corrective maintenance on equipment and linear assets</li> <li>4. Leak surveys of the water system</li> <li>5. Water system valve inspections and exercise</li> <li>6. Wastewater pipelines, structures, water storage tanks, and inverted siphons inspections, and cleaning.</li> <li>7. Inspections, maintenance, and other improvements to the dams, dikes, and other facilities constituting the infrastructure of the watershed and an adequate multi-year capital improvement program in order to ensure system reliability and limit potential flood hazards.</li> </ul> </li> <li>B. Deliver services equitably across a diverse service area.</li> </ul> <p><b>Special Initiatives:</b></p> <ul style="list-style-type: none"> <li>C. Continue use of Condition Monitoring for all Water and Wastewater sites. Expand Condition Monitoring techniques to provide earlier indication of asset degradation.</li> <li>D. Conduct an updated benchmarking analysis in order to identify gaps and sustain the goal of maximizing asset protection while potentially identifying new best practices in the industry.</li> <li>E. Continue to research and develop Key Performance Indicators (KPI) to compare our performance internally and against the industry.</li> <li>F. Enhance and monitor water pipeline protection to maximize pipeline lifetime.</li> <li>G. Continue to upgrade and improve upon the Supervisory Control and Data Acquisition (SCADA) and Process Information and Controls System (PICS) hardware and software to meet the current industry standard and to address cyber security concerns.</li> </ul>



<b>Goal</b>	<b>Initiatives</b>
<p><b>10.</b> Prepare for catastrophic events and malicious acts that could affect the water and wastewater systems.<sup>19,20</sup></p>	<p><b>Core:</b></p> <ul style="list-style-type: none"><li>A. Continue to improve and incorporate redundancy and operational flexibility within the water system to ensure uninterrupted service.</li><li>B. Design and implement projects including those that eliminate or mitigate single points of failure within MWRA's water transmission and distribution system.</li><li>C. Continue to train staff on various potential emergency scenarios and participate in broader Massachusetts Emergency Management Agency (MEMA) and other training exercises.</li><li>D. Work with Departments throughout MWRA to continue to implement a comprehensive security and emergency preparedness plan.</li><li>E. Continue regular assessments of the Cyber Security Defense-in-Depth strategy to leverage advances in technology to mitigate ever-evolving threats</li></ul> <p><b>Special Initiatives:</b></p> <ul style="list-style-type: none"><li>F. Assess current communication technology and implement communication redundancies where needed within the security network.</li><li>G. Complete Final Design for the Metropolitan Tunnel Redundancy Program and begin construction within the next four years.</li><li>H. Move forward with Wastewater Facility Emergency Response Planning to identify potential measures to minimize disruptions from failures of facilities, including development of a comprehensive Emergency Response Plan for each facility.</li><li>I. Create and implement a predetermined schedule of review for facility risk assessments.</li><li>J. Participate in Resilient Mystic Collaborative (RMC) efforts to address impacts of future sea level rise and storm surge on public infrastructure in the Lower Mystic River.</li></ul>



Reservoir Buoy Deployment



Water Quality Testing Boat near Peddocks Island in Boston Harbor

# IV. Finance and Management Systems

<b>Goal</b>	<b>Initiatives</b>
<p><b>11.</b> Ensure Financial Sustainability, Integrity and Transparency.</p>	<p><b>Core:</b></p> <ul style="list-style-type: none"> <li>A. Continue the long-term strategic budgeting practice to ensure predictable and sustainable sewer and water assessments to our member communities.</li> <li>B. Manage debt and investment portfolios to maximize savings/returns in compliance with all applicable rules and regulations.</li> <li>C. Continue diversification strategy to insulate against overexposure and promote resiliency to changing market conditions.</li> <li>D. Maintain a system of internal controls to best protect the organization’s resources.</li> <li>E. Continue to employ budget and expense control practices to manage expenses.</li> <li>F. Identify and pursue optimization in all aspects of MWRA financial operations.</li> <li>G. Continue to conduct strategic energy procurements.</li> <li>H. Continue to fund the pension fund at the annual required contribution level and to develop strategies to address the growing other Post-Employment Benefits.</li> </ul> <p><b>Special Initiative:</b></p> <ul style="list-style-type: none"> <li>I. Continue to pilot energy and utility bill management software begun in FY24 to reduce reliance on paper-based energy bill management processes.</li> </ul>
<p><b>12.</b> Maximize renewable energy production and revenue generation opportunities using MWRA’s energy assets.</p>	<p><b>Core:</b></p> <ul style="list-style-type: none"> <li>A. Continue to maximize value from generation assets including for load and cost management, as well as additional Demand Response opportunities as they are offered.</li> <li>B. Take full advantage of utility energy efficiency rebate opportunities.</li> </ul>



<b>Goal</b>	<b>Initiatives</b>
<p><b>13.</b> Leverage Information Technology to Improve Organizational Effectiveness.</p>	<p><b>Core:</b></p> <ul style="list-style-type: none"> <li>A. Deliver secure Information Technology (IT) services and solutions efficiently and effectively.</li> <li>B. Provide Information Technology solutions to streamline work processes while ensuring the security and integrity of MWRA data by leveraging the use of existing or emerging technologies.</li> <li>C. Obtain feedback from users on satisfaction levels and desired new services and implement changes accordingly.</li> <li>D. Maintain current technology hardware, software, and network infrastructure.</li> <li>E. Enhance Information Technology workforce capabilities through obtaining relevant and/or required certifications and licenses.</li> </ul> <p><b>Special Initiatives:</b></p> <ul style="list-style-type: none"> <li>F. Application Improvement Program - Implement an Application Improvement Program that will continue MWRA's efforts to update and enhance the multitude of applications used in the MWRA to improve efficiencies of business processes, mobile devices, and effectiveness of staff.               <ul style="list-style-type: none"> <li>1. Upgrade and enhance MWRA's major applications, leveraging out of the box functionality while striving to eliminate customizations by adopting industry standards.</li> <li>2. Develop a single, Authority-wide business intelligence platform that can pull data from various sources and provide staff with customizable dashboards to view, report, and make decisions based on that data.</li> <li>3. Implement a system that will provide Data Governance, Data Compliance, and Data Security, which will assist MWRA to discover, classify, protect, and manage their data across various environments, including cloud, on-premises, and endpoints.</li> </ul> </li> </ul>

<b>Goal</b>	<b>Initiatives</b>
<p><b>13.</b> (continued)</p>	<p>G. Infrastructure Improvement Program – Execute a Technology Infrastructure Improvement Program that will assess and implement consolidated and optimized versions of MWRA’s core IT infrastructure elements.</p> <ol style="list-style-type: none"> <li>1. Update and maintain servers and other infrastructure elements to ensure compliance with the most up-to-date security protocols.</li> <li>2. Evaluate possible uses for Artificial Intelligence (AI) and Machine Learning technology to assist the MWRA in addressing computational and process issues.</li> </ol> <p>H. Security Improvement Program – Enhance cyber security through targeted application and infrastructure improvements.</p> <ol style="list-style-type: none"> <li>1. Develop, implement, and test a Business Continuity/Disaster Recovery Plan for MWRA’s IT systems to better prepare for potential IT related interruptions.</li> </ol> <p>I. Technology Management Program – Improve the IT organization and the oversight processes for selecting, implementing and operating IT solutions throughout the MWRA.</p> <ol style="list-style-type: none"> <li>1. Assess Project Portfolio Management tools within Microsoft 365 and develop applications and/or business processes to assist the Project Management Office with overall department project oversight.</li> </ol>



Pride walk at Deer Island Wastewater Treatment Plant

# V. Diversity, Equity, Inclusion & Workforce Development

<b>Goal</b>	<b>Initiatives</b>
<p><b>14.</b> Foster and Sustain an Excellent Workforce.</p>	<p><b>Core:</b></p> <ul style="list-style-type: none"> <li>A. Prioritize Succession Planning in anticipation of critical retirements over the next five years and to minimize disruption to operations in the short term.</li> <li>B. Continue MWRA's in-house Job Shadowing, career development training programs and the mentoring program begun in 2023.</li> <li>C. Provide effective training necessary for employees to obtain and maintain required licenses and certifications to ensure a highly skilled workforce.</li> <li>D. Expand training to include management development initiatives designed to prepare staff to grow into managerial roles.</li> <li>E. Continue to develop and offer programs with a focus on professional and leadership development.</li> </ul> <p><b>Special Initiatives:</b></p> <ul style="list-style-type: none"> <li>F. Expand co-op and "in-training" positions initiatives.</li> </ul>
<p><b>15.</b> Foster a diverse and inclusive workplace.<sup>22</sup></p>	<p><b>Core:</b></p> <ul style="list-style-type: none"> <li>A. Cultivate a safe work environment for all employees that is free from harassment and encourages respect.</li> <li>B. Provide training to all employees on diversity, inclusion, equity, respect, and harassment prevention in the workplace.</li> <li>C. Continue MWRA's efforts to develop new recruitment and retention strategies to foster diversity, including traditionally underrepresented categories, people-term with disabilities, and veterans.</li> <li>D. Develop leadership skills at every level to increase opportunities for staff advancement and ownership.</li> <li>E. Continue to facilitate the Diversity, Equity, and Inclusion working group and implement its recommendations with measurable goals.</li> </ul> <p><b>Special Initiatives:</b></p> <ul style="list-style-type: none"> <li>F. Encourage and facilitate establishment of Employee Resource Groups.</li> </ul>



<b>Goal</b>	<b>Initiatives</b>
<p><b>16.</b> Ensure a safe and healthful work place for all employees, contractors and visitors free of recognized hazards</p>	<p><b>Core:</b></p> <ul style="list-style-type: none"> <li>A. Ensure adherence to the regulations outlined in Massachusetts Department of Labor Standards 454 CMR 25.00: Occupational Safety and Health for public sector employees, aligning with the Occupational Safety and Health Act (OSHA) of 1970.</li> <li>B. Maintain records and conduct investigations concerning occupational injuries, illnesses, fatalities, and exposure to hazardous substances in accordance with applicable regulations.</li> <li>C. Maintain OSHA Form 300A, 300, and 301, and submit annually to the Bureau of Labor Statistics (BLS), which involves OSHA injury and illness data to the Survey of Occupational Injuries and Illnesses (SOII).</li> <li>D. Inspect and document all facilities and work sites for recognized hazards and recommend improvements to ensure compliance with applicable regulations.</li> <li>E. Maintain life safety systems, including fire extinguishers, Automated External Defibrillators (AEDs), and first aid supplies. Additionally, prepare and sustain inventories and Safety Data Sheets for all chemicals across all facilities.</li> </ul>
<p><b>17.</b> Support businesses in and around MWRA's member communities by making MWRA procurement and contracting opportunities accessible to all potential qualified vendors or firms.</p>	<p><b>Core:</b></p> <ul style="list-style-type: none"> <li>A. Ensure equitable access to contract opportunities for firms, including minority business enterprises (MBE) and women business enterprises (WBE).</li> </ul> <p><b>Special Initiatives:</b></p> <ul style="list-style-type: none"> <li>B. Continue to attend networking events with diverse contractors and vendors to encourage participation in MWRA procurement and contracts.</li> <li>C. Provide information and resources to contractors and vendors to learn how to do business with the MWRA, including seminars, training, and development of frequently asked questions worksheets.</li> <li>D. Procure services for a new Availability/Disparity Study.</li> </ul>



Wastewater Pipeline Vector



# VI. Environmental Sustainability

<b>Goal</b>	<b>Initiatives</b>
<p><b>18.</b> Maximize energy efficiency of MWRA operations and continue to embed carbon reduction into MWRA operations and facility construction projects.</p>	<p><b>Core:</b></p> <ul style="list-style-type: none"> <li>A. Assist the Commonwealth in meeting its greenhouse gas (GHG) reduction goals set forth in the Global Warming Solutions Act. Compile regular estimates of GHGs from MWRA’s operations.</li> <li>B. Continue to conduct energy and decarbonization audits at all facilities as needed.</li> <li>C. Optimize water and wastewater processes to save energy.</li> <li>D. Continue to incorporate cost-effective energy efficiency, non-fossil fuel heating, EV charging capabilities and renewable energy projects into new construction, rehabilitation projects, and equipment replacement, where feasible.</li> <li>E. Continue to invest in new renewable energy projects at MWRA facilities.</li> <li>F. Implement building electrification to reduce MWRA’s reliance on more carbon intensive fuels, such as fuel oil and natural gas for heating.</li> </ul> <p><b>Special Initiatives:</b></p> <ul style="list-style-type: none"> <li>G. Construct new combined heat and power equipment to take advantage of the higher power and thermal efficiencies of new equipment, maximizing the production of additional electric power for on-site use at Deer Island as well as cost savings while reducing maintenance spending on aging equipment.</li> <li>H. Continue to develop the battery storage projects and work with the utility and its contractor to optimize demand savings. Evaluate opportunities for future battery storage projects.</li> <li>I. Expand our fleet of electric vehicles and charging stations, and continue to purchase high efficiency vehicles, and incorporate anti-idling technology in the vehicles we purchase.</li> <li>J. Evaluate standardization of MWRA building/plant information management systems, including a comprehensive energy management system.</li> </ul>



<b>Goal</b>	<b>Initiatives</b>
<p><b>19.</b> Continue to monitor climate change research and move forward with plans to reduce impacts of projected sea level rise and storm surge events on MWRA infrastructure.</p>	<p><b>Core:</b></p> <ul style="list-style-type: none"> <li>A. Incorporate projections of future sea level rise and storm surge into design specifications for regular facility rehabilitations and maintenance activities.</li> <li>B. Install flood protection barriers at facilities which fall below expected elevations of flood waters under condition of a FEMA 100-year storm plus 2 ½ feet to minimize damage and still provide service. Incorporate new data providing site specific elevations into design standards during scheduled facility rehabilitation projects.</li> </ul> <p><b>Special Initiatives:</b></p> <ul style="list-style-type: none"> <li>C. Work with State and regional organizations and academic institutions to identify how MWRA's existing long-term environmental data sets can be used to help assess and project impacts of climate change.</li> </ul>
<p><b>20.</b> Advance reasonable water system expansion.<sup>23</sup></p>	<p><b>Core:</b></p> <ul style="list-style-type: none"> <li>A. Continue to provide assistance to communities seeking admission to the MWRA's water system or seeking emergency withdrawals.</li> <li>B. Work with prospective communities to inform them of the benefits of admission.</li> </ul>

<b>Goal</b>	<b>Initiatives</b>
<p><b>21.</b> Continue to recognize the environmental, cultural, historical, and recreational importance of the watershed lands, the aqueduct system, and the unique location on Boston Harbor of the Deer Island Treatment Plant and Nut Island Headworks, to the citizens of the Commonwealth.</p>	<p><b>Core:</b></p> <ul style="list-style-type: none"> <li>A. Continue to work cooperatively with DCR and cities and towns to ensure that these lands are available for appropriate public access.</li> <li>B. Continue to work with cities and towns to implement the Public Access Initiative on the Wachusett, Weston, Sudbury, and Cochituate Aqueducts.<sup>24</sup></li> <li>C. Continue to provide public access to Boston Harbor at Deer and Nut Islands, while ensuring appropriate security for MWRA's operations.</li> <li>D. Continue implementation of MWRA's Environmental Justice (EJ) Strategy, which outlines actions to promote EJ considerations across all programs, policies and activities.</li> </ul>



Swift River Y-Pool, Ware

# Glossary

**Ambient Monitoring Plan:** MWRA monitors water quality at the outfall location in Massachusetts Bay where treated sewage, or effluent, is discharged. This sampling program is termed “ambient monitoring”, because sampling is focused on the ambient, or surrounding waters at the outfall, as well as more distant locations. The program is detailed in the Ambient Monitoring Plan which is overseen by state and federal regulators, as well as by the Outfall Monitoring Science Advisory Panel.

**Asset Management:** Defined by the EPA as “managing infrastructure capital assets to minimize the total cost of owning and operating them, while delivering the service levels customers desire.”

**Benchmarking:** The process of comparing one’s business processes and performance metrics to industry bests or best practices from other companies. One example of an industry metric MWRA uses to benchmark its performance is the American Water Works Association’s “Distribution Systems Operations and Management Standard”.

**Combined Heat and Power:** CHP, also known as cogeneration, is the simultaneous production of electricity and heat from a single fuel source. Fuels can include fuel oil, natural gas or biogas from anaerobic digestion as generated/used by Deer Island

**Combined Sewer Overflow:** Combined sewer systems are sewers that are designed to collect rainwater runoff, domestic sewage, and industrial wastewater in the same pipe. Most of the time, combined sewer systems transport all of their wastewater to a sewage treatment plant, where it is treated and then discharged to a water body. During periods of heavy rainfall or snowmelt, however, the wastewater volume in a combined sewer system can exceed the capacity of the sewer system or treatment plant. For this reason, combined sewer systems are designed to overflow occasionally and discharge excess wastewater directly to nearby streams, rivers, or other water bodies, with some treatment.

**Community Confidence Report:** The Community Confidence Report is MWRA’s annual report on drinking water test results which describes how we treat, test and deliver tap water to the homes and businesses in our service area. The MWRA and local water departments test up to 500 samples each week, and test for over 120 contaminants each year. This report is required under the federal Safe Drinking Water Act.

**Condition Monitoring:** Condition monitoring technologies based on vibration, acoustic ultrasonic, infrared thermography, electrical testing, and oil analysis are used to proactively track and trend equipment operating condition. By closely monitoring equipment health, catastrophic failures can be avoided, repairs can be made, and asset life can be extended. Component failure can be approximated, replacement parts ordered and replacements scheduled prior to failure and/or total loss of equipment availability.

**Headworks:** MWRA has four headworks whose function is to screen sand, gravel, and large objects out of the sewage prior to it reaching the sewage treatment plant.

**Inflow and Infiltration (I/I):** Inflow is surface water that enters the wastewater system from yard, roof and footing drains, from cross-connections with storm drains, downspouts, and through holes in manhole covers. Inflow occurs as a result of storm events such as rainfall, snowfall, springs or snow melt. Infiltration is groundwater, or groundwater that is influenced by surface or sea water, which enters sewer pipes (interceptors, collectors, manholes (MH), or side sewers) through holes, breaks, joint failures, and other openings.

**Local Limits Study:** Local limits are standards that are set by the local Publicly Owned Treatment Works (POTW) that establish the concentration of pollutants that may be discharged into the sewer system by industry. Local limits supplement, and in some cases, strengthen Federal Standards. As required under the EPA’s Pretreatment Regulations, 40 CFR Part 403, POTWs such as the MWRA’s Deer Island are required to conduct periodic analysis of the existing local discharge limits to ensure that they are adequate to prevent pollutants from entering the treatment system that will interfere with the operation of the treatment plant, degrade the quality of biosolids, or pass untreated through the treatment plant to contaminate the receiving water.

# Glossary

**Local Water Assistance Program:** MWRA's Local Water System Assistance Program (LWSAP) provides interest-free loans to member water communities to perform water system improvement projects. The program's goal is to improve local water system pipeline conditions to help maintain high water quality from MWRA's treatment plant through local pipelines to customers' taps. Community loans will be repaid to MWRA over a 10-year period. Currently, loan funds are approved for distribution from fiscal year 2011 through fiscal year 2020.

**MWRA Advisory Board:** The MWRA Advisory Board was created by the Massachusetts Legislature to represent the interests of MWRA service area communities in the 1984 Enabling Act that established the MWRA. Its members include the chief elected official and a designee from each of the 60 cities and towns, a member of the Metropolitan Area Planning Council, and six gubernatorial appointees representing various interests. The Advisory Board reviews and comments on MWRA capital and current expense budgets, as well as MWRA practices and policies.

**MWRA Board of Directors:** MWRA is governed by an 11-member Board of Directors who are appointed by the Governor or directly or indirectly by elected officials in MWRA customer communities. The make-up of the MWRA Board of Directors was established in the MWRA enabling act, (Chapter 372 of the Acts of 1984), and amended in August, 2010.

**NPDES Permit:** The National Pollutant Discharge Elimination System Permit Program, administered by the U.S. Environmental Protection Agency, controls water pollution by regulating point sources that discharge pollutants into waters of the United States. All wastewater treatment plants that discharge effluent to Waters of the United States, have an NPDES permit to ensure that their discharges meet all environmental regulatory requirements.

**Orange Notebook:** A quarterly report outlining MWRA's performance on key indicators.

**Predictive Maintenance:** Predictive maintenance are techniques used to determine the condition of assets. Some techniques include vibration, acoustic ultrasonic, ultrasonic thickness and oil analysis. The predictive maintenance results in proactive maintenance activities such as alignments, oil changes or filtering, or balancing rotating equipment that prevent failures and extend equipment life. These predictive maintenance activities are schedules based upon the type of equipment, frequency of use and service conditions.

**Pretreatment Program:** As defined in Federal Regulations 40 CFR 403.3, "pretreatment" means the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW. To reduce toxic discharges at their source, MWRA's Toxic Reduction and Control Department administers MWRA's Industrial Pretreatment Program under the Federal Clean Water Act. TRAC regulates industrial dischargers in accordance with its Sewer Rules and Regulations (360 CMR 10.00) and works with industries to encourage voluntary reductions in their toxic chemical use.

**Process Control:** An engineering function (as well as a staff unit) devoted to aiding operations in establishing control limits, monitoring performance and ensuring compliance with treatment plant goals and objectives.

**Reliability Centered Maintenance:** Reliability Centered Maintenance, or RCM, rigorously reviews systems' design, operating context, current maintenance strategies and identifies safety and design improvements. By reviewing systems in their specific operating context, staff's maintenance efforts can be focused where the greatest value is added. Often, the result is a Preventive Maintenance Program that is less costly and more effective in maintaining system availability and long-term asset protection.

**Residuals:** The solids that are left behind after the wastewater has been treated at a wastewater treatment plant, such as MWRA's Deer Island Plant, are called the residuals.

**Supervisory Control and Data Acquisition (SCADA):** These systems provide a means of monitoring and controlling facilities and equipment from a remote, centralized location, as well as providing a continuous record of facility operations

# Endnotes

**<sup>1</sup>The Water System**

<https://www.mwra.com/your-water-system>

**<sup>2</sup> Watershed Protection**

<https://www.mwra.com/your-water-system/reservoirs-watersheds/watershed-protection>

**<sup>3</sup>Water Supply Protection Trust**

<https://www.mass.gov/info-details/water-supply-protection-trust>

**<sup>4</sup>Annual Drinking Water Test Results**

<https://www.mwra.com/your-water-system/drinking-water-quality/annual-water-quality-test-results-0>

**<sup>5</sup>Consumer Confidence Report Rule Revisions**

<https://www.epa.gov/ccr/consumer-confidence-report-rule-revisions>

**<sup>6</sup>Lead Service Line Replacement Program**

<https://www.mwra.com/projects-programs/major-programs/community-support/lead-service-line-replacement-program>

**<sup>7</sup>MWRA Technical Reports**

<https://www.mwra.com/our-environment/water-quality-reports/technical-reports>

**<sup>8</sup>Discharge Regulations**

<https://www.mwra.com/your-sewer-system/toxic-reduction-and-control-trac/sewer-use-and-discharge-regulations>

**<sup>9</sup>Pretreatment Program and Federal Clean Water Act**

<https://www.mwra.com/your-sewer-system/toxic-reduction-and-control-trac#pretreatment>

**<sup>10</sup>NPDES Permit**

<https://www.epa.gov/npdes-permits/epas-permit-massachusetts-water-resources-authority-mwra-deer-island-treatment-plant>

**<sup>11</sup>Ambient Monitoring Plan**

<https://www.mwra.com/our-environment/water-quality-reports/regulatory-reports-0>

**<sup>12</sup>Combined Sewer Overflows (CSOs)**

<https://www.mwra.com/your-sewer-system/cso>

**<sup>13</sup>CSO Control Plan for Variance Waters (2022)**

<https://www.mwra.com/media/file/2022-4-updated-cso-control-plan-draft-scope-work-and-schedule>

**<sup>14</sup>CSO Public Notification Program**

[https://www.mwra.com/harbor/html/cso\\_sso\\_reporting.htm](https://www.mwra.com/harbor/html/cso_sso_reporting.htm)

**<sup>15</sup>Quarterly Orange Notebook**

<https://www.mwra.com/about-mwra/reports-publications/board-directors-quarterly-report-key-indicators-mwra-performance>

**<sup>16</sup>Wastewater System Master Plan**

<https://www.mwra.com/about-mwra/reports-publications/master-plan>

**<sup>17</sup>Water System Master Plan**

<https://www.mwra.com/about-mwra/reports-publications/master-plan>

# Endnotes

<sup>18</sup>**Capital Improvement Program (CIP)**

<https://www.mwra.com/about-mwra/rates-finances/information-investors>

<sup>19</sup>**Wastewater System Master Plan**

<https://www.mwra.com/about-mwra/reports-publications/master-plan>

<sup>20</sup>**Capital Improvement Program (CIP)**

<https://www.mwra.com/about-mwra/rates-finances/information-investors>

<sup>21</sup>**Renewable Energy Program**

<https://www.mwra.com/our-environment/sustainability/renewable-energy>

<sup>22</sup>**Diversity, Equity and Inclusion**

<https://www.mwra.com/about-mwra/diversity-equity-and-inclusion>

<sup>23</sup>**Water and Wastewater System Expansion**

<https://www.mwra.com/projects-programs/major-programs/water-wastewater-system-expansion>

<sup>24</sup>**Policy on Using MWRA Aqueduct Lands for Trails**

<https://www.mwra.com/projects-programs/public-affairs/aqueduct-trails>

<sup>25</sup>**MWRA Advisory Board**

<https://www.mwraadvisoryboard.com/>

<sup>26</sup>**1984 Enabling Act**

<https://archives.lib.state.ma.us/entities/archivalmaterial/b61f1a38-a5f7-4224-8ddf-806de2e2802e>

<sup>27</sup>**MWRA Board of Directors**

<https://www.mwra.com/about-mwra/governance-management/board-directors>

<sup>28</sup>**Chapter 274 of the Acts of 2010**

<https://malegislature.gov/Laws/SessionLaws/Acts/2010/Chapter274>

<sup>29</sup>**Pretreatment Program and Federal Clean Water Act**

<https://www.mwra.com/your-sewer-system/toxic-reduction-and-control-trac#pretreatment>

<sup>30</sup>**Sewer Use Regulations (360 CMR 10.000)**

<https://www.mwra.com/media/file/360cmr10-2024update>





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