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October 16, 2026

Todd Borci
U.S. Environmental Protection Agency
ECAD4-4
5 Post Office Square, Suite 100
Boston, MA 02109-3912

Whitney Fenwick
NPDES Section Chief
Department of Environmental Protection
100 Cambridge Street, Suite 900
Boston, MA 02114

RE: NPDES Permit Number MA0103284
O&M Annual Report/Status Sheets

Dear Mr. Borci and Ms. Fenwick:

Enclosed please find the MWRA's annual status sheets on plant performance and maintenance for the period covering July 2025 – June 2026. This submittal fulfills the requirements of MWRA's NPDES Permit MA0103284 - Section 1.18.f and 1.18.g that states in part:

> …The permittee shall report on the [operations and maintenance] plan's implementation and results to EPA and the MADEP on a yearly basis…An annual maintenance update shall be published in the MWRA's Annual Report. The MWRA shall submit an annual status sheet to EPA and the MADEP on plant performance, using key indicators for maintenance and providing detailed information on any necessary equipment replacement. The annual status sheet shall be placed on the MWRA web page for public information purposes.

If you have questions or need additional information, please feel free to email David Wu at David.Wu@mwra.com.

Sincerely,

Stephen Cullen
Deputy Chief Operating Officer

Enclosures:
- Annual Report on Operations and Maintenance, FY2026
- Status Sheets with key indicators of maintenance, FY2026
  - Deer Island Treatment Plant
  - Wastewater Transport System
  - Fore River Pellet Plant

cc: massdep.nerowastewater@mass.gov
Michele Barden, EPA

MWRA ANNUAL REPORT ON OPERATION AND MAINTENANCE
July 2025 - June 2026

Introduction/Purpose

This report fulfills the requirements of MWRA's NPDES Permit MA0103284, Section 1.18.f, which states:

"Within ninety (90) days of the effective date of this permit, the permittee shall develop and implement a long-range operations and maintenance plan that will maximize the life of the treatment facility. The permittee shall report on the plan's implementation and results to EPA and the MADEP on a yearly basis."

Also included with this submittal are the annual status sheets on plant performance and maintenance required in section I.18.g.

System Overview

MWRA's Metropolitan Boston wastewater system consists of the Deer Island Sewage Treatment Plant, the wastewater collection system, and the Pelletizing Plant, described below.

Deer Island Sewage Treatment Plant

The Deer Island Sewage Treatment Plant (DITP) is the centerpiece of MWRA's $3.8 billion program to protect Boston Harbor against pollution from Metropolitan Boston's sewer systems. The purpose of DITP is to remove human, household, business, and industrial pollutants from the wastewater collected and transported through 5,400 miles of pipes, community-owned sewer lines, and approximately 240 miles of Authority-owned interceptors and tunnels.

DITP is a state-of-the-art wastewater treatment facility and one of the most automated in the country. MWRA has made considerable capital investment in DITP and is ensuring that the authority maintains this valuable public asset in the best possible manner. MWRA's Board of Directors, Executive Director, management team, and staff are dedicated to providing the highest quality of asset management. MWRA has assembled a highly skilled and qualified staff that operates and maintains the treatment plant to meet the satisfaction of regulatory agencies and the public.

Wastewater Transport System

The Wastewater Operations Department operates and maintains MWRA's wastewater transport system, which transports wastewater from MWRA member communities to the Deer Island Treatment Plant. This system includes a network of 240 miles of interceptor sewer lines and related appurtenances, a screen house, 13 pumping stations, four remote headwork facilities, three combined sewer overflow (CSO) treatment facilities and two CSO storage facilities. The primary goal of the Wastewater Transport system is to provide uninterrupted wastewater transport service in a safe, cost-effective, and environmentally sound manner.

Fore River Pelletizing Plant

The operation and output of the Fore River Pelletizing Plant is regulated, in part, by the terms of the federal NPDES permit, 40 CFR 503 regulations, and state sludge regulations in Massachusetts (310 CMR 32.00) and the states to which the pelletized product is shipped. Other external factors that influence the operation of the Fore River Pelletizing Plant include an extensive Residuals Management Facilities Plan developed as part of the permitting process and MWRA's commitment to local communities.

Under the terms of the current operating agreement between New England Fertilizer Company (NEFCO), a wholly owned, indirect subsidiary of Synagro Technologies, Inc., and MWRA, NEFCO budgets for and performs all necessary predictive, preventive, and routine maintenance at the pellet plant. NEFCO's agreement contains a facility plan for the maintenance, repair, and operation. Currently, NEFCO's performance meets the standard for proper operation and maintenance. Since the inception of the second contract, S345 in March of 2001, there has not been any incident requiring an interruption in service. That continues in the current contract S592 which started on January 1, 2024.

The operating agreement requires NEFCO to provide a letter of credit for $1,000,000 (adjusted for inflation) that MWRA might draw on in the event that there is a material breach of the operating agreement, such as inadequate maintenance of the facility.

Permit Violations

There were no violations at MWRA facilities due to inadequate maintenance efforts.

Facilities Assets Management Program

The goals of MWRA's multi-year maintenance plan include coordinated, consistent asset inventory, condition assessment, maintenance scheduling and long-term replacement planning. MWRA has developed and implemented the Facilities Asset Management Program (FAMP). This asset management program addresses the goal of becoming more efficient by developing consistent best practices and cost- effective operations, and maintenance procedures.

MWRA had been conducting its maintenance on a calendar-based schedule in accordance with the original equipment manufacturers' (OEM) recommendations. Contractual obligations of the OEM warranties primarily drove this approach to maintenance. MWRA's management team believed that it was important to modify its existing program to achieve a more rational approach to maintenance management. MWRA management acknowledges the importance of asset management and developed FAMP to meet the long-term demands of facility maintenance. The main objective of FAMP was to develop a sound maintenance strategy that would ultimately lead to better overall asset management, extended equipment life and increased reliability.

MWRA expanded its condition-monitoring program utilizing Reliability Centered Maintenance (RCM). This program prioritizes asset replacement, capital improvements, and staff training. Since the upgrade from Maximo 5.2 to the 7.6 platform in 2018, DITP has continued to build the program with the addition of the Clinton site, and continuing to use the methodology of RCM, consolidating the tool database into Maximo, expanding a condition monitoring oil analyses by using on-site testing equipment, and continuously reviewing our metrics to ensure we are at or above industry benchmarks.

Computerized Maintenance Management Software

MWRA uses Maximo, an Enterprise Asset Management (EAM) software program. Maximo EAM includes job and safety plan modules allowing MWRA to document hazardous areas and materials at DITP. Maximo can develop Lock-Out Tag-Out (LOTO) tasks and generate associated work orders for field personnel. Maximo's document management function streamlines maintenance and regulatory functions and workflow capabilities for synchronizing operations. Maximo applications can be fine-tuned to suit specific work processes or interface with other software programs.

Maximo helps operations and maintenance staff plan, prioritize and assign work based on labor and availability of required spare parts. Maximo's data analytic and reporting tools analyze failure trends in equipment, enabling staff to optimize preventive maintenance tasks to better plan asset replacement projects.

Maximo 7.6 added functionality to track labor, material, service contract, spare part costs and usage for over 148,139 assets.

Maximo 7.6 provides MWRA with updated technology, increasing functionality for maintenance and improved reporting capabilities. MWRA has transitioned to a consistent version of Maximo agency-wide, with Deer Island, Field Operations, Information Technology (IT) (formerly Management Information Systems (MIS) group), Laboratory asset tracking, and Vehicle Maintenance accessible in a single- organization, multi-site application. This increases productivity and limits the number of software systems needed to perform asset management functions. In addition, Maximo 7.6 add-ons include Maximo Calibration for instrumentation, SCADA assets and Maximo Spatial for buried assets and pipelines.

Operations and Maintenance continue to collaborate with IT to enhance Maximo's automation capabilities, data display and reporting efficiencies, and end-user usability. Contract 7649 Lawson / Maximo Interface Enhancements was completed in the last quarter of FY24 enhancing the existing interface between Lawson (Infor), MWRA's Enterprise Resource Planning (ERP) system and Maximo by adding additional functionality for the IT site while reducing data errors between the two systems. The contract also upgraded MWRA's Maximo version to 7.6.1.3. Operations and IT migrated Lawson, now Cloudsuite, to the cloud and are now starting preparations to migrate Maximo to the cloud as Maximo will be upgraded to Maximo Application Suite (MAS) version 9 by the end of FY27.

NEFCO utilizes its own computerized maintenance management software, "E-maint." E-maint is used for work order management including preventive and corrective maintenance work.

Service Contracts

A series of service contracts supplements MWRA's maintenance program. These contracts aim to provide specialized services beyond the resources of MWRA maintenance staff. Tables 1, 2 and 3 below show the service contracts currently used by MWRA.

TABLE 1 **DEER ISLAND CURRENT SERVICE CONTRACTS**
Laser alignment
CCTV maintenance
Centrifuge maintenance
Combustion Turbine Generator maintenance
Continuous emissions monitoring
Catch Basin Contract
Copier/fax maintenance
Crane maintenance
Cryogenics facility maintenance
Digester Mixer overhauls
Electrical testing
Elevator maintenance
Facilities coatings
HVAC chemical treatment (Legionella testing)
Fire Sprinkler Repair Contract
Thermal Plant, Hydropower and Wind Turbine Maintenance
Hydraulic maintenance
Janitorial services
Lab hood certification
Locksmith services
Lube oil analysis
Oil/water separator cleaning
Overhead door maintenance
Pest control
Plant and Public access landscape services
Plant instrumentation and control system (PICS) maintenance
Pratt Whitney (CTG OEM) Preferred service
Reactor Mixer gearbox rebuild
Recycle contract (Scrap/Paper)
Security
Trash removal
Vibration analysis

TABLE 2 FIELD OPERATIONS CURRENT SERVICE CONTRACTS
Elevator Maintenance
Crane Maintenance
Hydraulic Equipment Maintenance
Instrumentation Maintenance
Fuel Storage Tanks
Fire Alarm and Sprinkler
Air Compressor Service
Boiler and Water Heater
Pest Control Services
Trash Removal
Electrical Testing
Grounds keeping
Lube Oil Analysis
Union Park Station Operation and Maintenance
Generator Maintenance
Overhead Door Maintenance
Vibration Monitoring

TABLE 3 FORE RIVER PELLETIZING PLANT CURRENT SERVICE CONTRACTS
Elevator Maintenance
Crane Maintenance
Fire Alarm and Sprinkler
Air Compressor Service
Boiler and Water Heater
Pest Control Services
Trash Removal
Electrical Testing
Fenwal Explosion Suppression System

ANNUAL STATUS SHEETS
July 2025 – June 2026

The attached pages constitute the annual status sheets on plant performance, using key indicators for maintenance. There are status sheets for Deer Island, Wastewater Transport (Field Operations), and the Fore River Pelletizing Plant.

Deer Island Maintenance reports on Key Performance Indicators for FY26.

- Preventive Maintenance (PM) – The maintenance goal is to complete 100% of all PM work orders. PM completion rate for FY26 was 99.9%. Maintenance initiated 22,196 PM work orders this year. This year's completion rate was slightly under our goal.

- Work Order Kitting - The first step to increase wrench time is to have all parts available for work orders. Kitting is a task where the maintenance planner identifies the specific parts required for a task on the work order and electronically sends the information to warehouse personnel to assemble the parts in one location (kit) for the technician. This year's average monthly kitting rate for FY26 was 57%, slightly under the 58% monthly kitting goal.

- Predictive Maintenance (PdM) Extending the useful life of equipment, by monitoring and trending equipment characteristics, allows for better planning for equipment replacement**.** Deer Island's FY26 predictive maintenance goal was 100%. DITP completed 99% of all PdM work orders. 8,030 work orders were completed for vibration, acoustic ultrasonic, ultrasonic thickness, and oil analysis. Deer Island met its goal of 26% in FY26 of all work orders being cataloged as predictive maintenance.

- Maintenance Backlog in Hours - Backlog is determined by totaling the planned craft hours on open work orders and comparing them to available craft resources. The average backlog in FY26 was 16,040 hours, equaling five weeks of work for the entire Maintenance workforce. This backlog is within the industry standard of 8,730 - 17,460 hours or 4 - 6 weeks. To ensure the backlog does not adversely affect equipment availability, DITP monitors these metrics closely.

- Maintenance Overtime - The goal is to maintain maintenance overtime at or below 5% of total wages and salaries. DITP was slightly above the benchmark at 5.5% of total wages. This was due to wet weather and winter storm coverage.

- To free up Maintenance staff to complete more detailed and complex maintenance, Operations staff have been committed to completing a number of the routine monthly preventative maintenance duties. The goal for Deer Island Operations staff is to complete 100% of the Preventative Maintenance work orders. In FY26, Deer Island Operations staff completed 100% of the work orders.

Critical Equipment Availability: 12-Month Average — 99%

An equipment availability report is generated daily that details the critical equipment required to treat the maximum flow of approximately 1.3 billion gallons per day. Higher maintenance priority is given to critical equipment that drops below the number of units required to treat the maximum flow. No operational impact has occurred in the past year from 99% versus 100% availability, as the plant typically operates at about one-quarter of its design flow capacity.

Average Craft Hours and Work Orders per Month:

Preventative Maintenance	4,049 hours	35%	1850 work orders	57%
Predictive Maintenance	333 hours	3%	669 work orders	21%
Corrective Maintenance	6,197 hours	54%	386 work orders	12%
Emergency Maintenance	31 hours	0%	1 work orders	0%
Project Work	148 hours	1%	4 work orders	0%
Other (SERV, CBM, NPL, NE, EVT, STND.)	737 hours	6%	324 work orders	10%
Total	11,495 hours	100%	3,233 work orders	100%

Total Work Orders:

38,798 work orders initiated in FY26
35,644 work orders completed/closed in FY26

Maintenance Projects and Equipment Replacement:

- Thermal Plant, Hydropower and Wind Turbine Maintenance: $2,113,000
  A maintenance contract was established for annual boiler preventive maintenance including necessary repairs. This contract was combined with similar contracts for the Hydroelectric plant, and the Wind Turbines. The intention of combining the three contracts under one was to save money on equipment and mobilization costs. Maintenance spending focused on scheduled annual outage tasks. In addition, the Hydro facility wicker gates required extensive refurbishment.

- Reactor Aerator/Mixer Gearbox Rebuilds: $217,757
  Secondary Reactor Batteries A, B, and C contain nine aerator trains, each train has four aerators and four mixers. In total, there are 72 gearbox drives with 36 aerators and 36 mixers. Each aerator and mixer have a triple reduction gearbox and mixing blade. When condition-monitoring techniques (oil analysis, vibration data and physical inspections) indicate a potential for failure, staff remove and ship out gearboxes to be refurbished back to original operational specifications. Two gearboxes were refurbished during FY26 with new bearings, gears, seals and shafts.

- Disinfection Sim Loop: $61,500
  The Disinfection Facility has a sample loop that continuously analyzes the chlorine residual that calculates the need for de-chlorination prior to plant effluent being discharged into Massachusetts Bay via the Outfall tunnel. Electrical staff replaced one SIM Loop Sample

Pump variable frequency drive (VFD) and added a second pump and VFD for redundancy to the sample system. This project was completed in FY26.

- Grinder Rebuilds: $175,438
  Deer Island has small Muffin Monster grinders installed "in-line" to provide continuous grinding of screenings and sludge into uniform, homogenized slurry. Screenings removed from the Winthrop Terminal Facility are dewatered, compressed, and ejected into a hopper for offsite disposal. In addition, sludge, which travels through these in-line grinders, is transported from Primary and Secondary treatment processes. The in-line grinders in Residuals are used after pre-treatment where solids and rags are removed. Normal wear and tear to the grinders caused by constant operation wear the gears and seals, requiring periodic service to rebuild the grinders or cutter blocks. Maintenance has noticed an increase in grinder rebuilds due to rags/wipes entering the plant. Staff replace grinder cartridges on-site to minimize downtime.

- East and West Odor Control Scrubber Control System Upgrade: $126,562
  Wet scrubbers remove hydrogen sulfide from process air through the addition of sodium hypochlorite and sodium hydroxide. These chemicals are drawn from their respective “day” storage tanks, pumped then combined with water forming the “scrubbing liquid.” This scrubbing liquid is injected into the wet scrubber removing the majority of hydrogen sulfide and other odorous compounds from process air before final treatment by carbon adsorption. There are 14 sodium hydroxide and 14 sodium hypochlorite pumps, each having an independent control system that receives control signals from Deer Island’s Process Information and Control System (PICS). The pump control system components are obsolete, and spare parts are no longer available for purchase. Deer Island Instrumentation and PICS staff are upgrading each control panel with new and supported components. This is a multiyear project.

- Primary Sludge Pump Instrumentation / Seal Water Panel Upgrade: $16,554
  There are 72 primary sludge (PSL) pumps on Deer Island, 18 in each of the Primary Galleries A, B, C, and D, that pump primary sludge to the Residuals complex where the sludge is digested and thickened before being pumped to the Pelletizing Plant in Quincy. Each PSL pump has an independent Instrumentation / Seal Water Panel (Panel) that monitors and reports control and process information to Deer Island’s Process Control and Information System (PICS) and provides service water to flush the PSL pump seal. Then panels were installed in 1992 in Primary A/B batteries and in 1994 in Primary C/D batteries and are constructed of copper. The copper piping is corroded and will be replaced with stainless steel improving corrosion resistance and equipment reliability. This is a multiyear project.

- Polymer System Upgrade: $50,279
  There are 25 Polymer pumps that add Polymer to the Centrifuges to aid in the thickening of sludge. The control system was installed under the Boston Harbor Project and is obsolete. Deer Island electrical and instrumentation staff purchased upgraded variable frequency drives (VFD) and other appurtenant equipment for upgrading the system to a factory supported system. This project was completed in FY26.

- Replacement of Admin / Lab Chiller 3: $333,360
  The Administration Laboratory, Maintenance Warehouse, and Reception Training

buildings at Deer Island are cooled using circulated chilled water from the central chilled water plant consisting of three 260-ton R-134a chillers that produce 48-degrees Fahrenheit chilled water, two cooling towers, 12 chilled and condenser water pumps, and a network of distribution piping to various air handlers and fan coil units. The chillers were installed in 1993 and are obsolete. Chiller 3 failed beyond repair and Deer Island Maintenance staff engineered and installed a replacement chiller until a future construction project replaces all three chillers.

- Uninterruptable Power Supply Battery Replacements: $348,300
  An uninterruptible power supply (UPS) is an electrical component that provides power to a critical load during an unanticipated power loss. Each UPS contains a set of batteries that provides backup power during a power loss. The battery runtime of a typical UPS is not unlimited and is generally determined by the size of the load and the capacity of the UPS batteries. The UPSs located at Deer Island are integral components of the power supply serving the process control systems. The UPS batteries are replaced every five to ten years depending upon battery type. In FY26 UPS batteries were replaced in North and South Main Pump Stations, Admin / Lab, Reception / Training, and Secondary Operations Buildings.

- Central Plant Heating System Valve Replacements: $67,931
  The Deer Island On-Site Thermal Plant generates electricity and heat using both steam boilers and combustion turbine generators. Heat produced by the steam boilers is transferred through local heat exchangers to the secondary side of the Central Plant Heating System and used throughout Deer Island in various treatment processes and building heating systems. As an ongoing yearly project, Deer Island HVAC staff identifies isolation valves that are failing and marks these valves for replacement during the annual Thermal Plant Maintenance Outage. This year HVAC staff replaced six valves on the Central Plant Heating System.

Capital Projects

In addition to the maintenance projects listed above, the following on-going Capital Improvement design and construction projects include work for Deer Island in FY26:

On-going Design Related Work

- Deer Island Residuals Facility Rehabilitation Contract 7052
- Deer Island HVAC Controls System, Equipment and Fume Hood Replacement Contract 7110
- Deer Island Heat and Power Plant Contract 6730
- Deer Island eastern Seawall and Shoreline Protection Remediation Contract 6723
- Clarifier Rehab Phase 2 Design/ESDC Contract 7394
- As-Needed Design Contract 7981
- As-Needed Design Contract 7982
- As-Needed Design Contract 8018

On-going Construction Related Work

- Clarifier Rehab Phase 2 Construction Contract 7395
- Deer Island Roofing Replacement, Various Buildings Contract 7734
- Wind Turbine No 1 Replacement Contract 8148

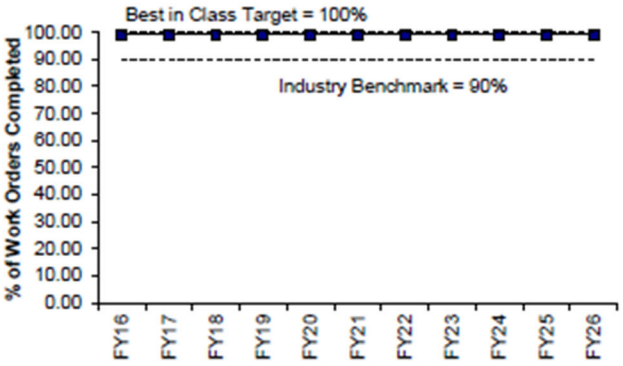
The following pages adapted from MWRA's quarterly performance report to the Board of Directors, the "Orange Notebook", summarize key indicators relating to Deer Island maintenance. The full Orange Notebook can be found at: https://www.mwra.com/about-mwra/reports-publications/board-directors-quarterly-report-key-indicators-mwra-performance.

Deer Island Yearly Maintenance Metrics

FY26

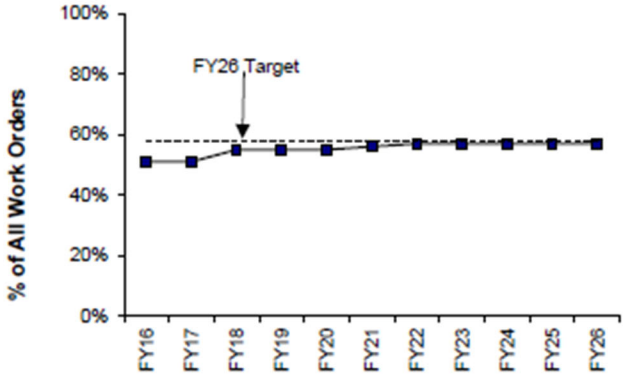
Proactive and Productivity Measures

Preventative Maintenance



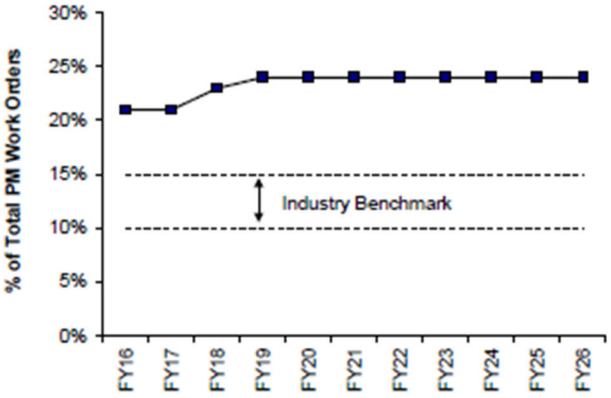
The industry benchmark is 90% for Preventative Maintenance (PM) completion. Upon reaching the 90% goal in FY05, the target goal was increased to the "Best in Class" Target of 100% PM completion. Reliability-Centered Maintenance (RCM) and PM optimization efforts have continued. PM completion rate was 99% in FY26.

Maintenance Kitting



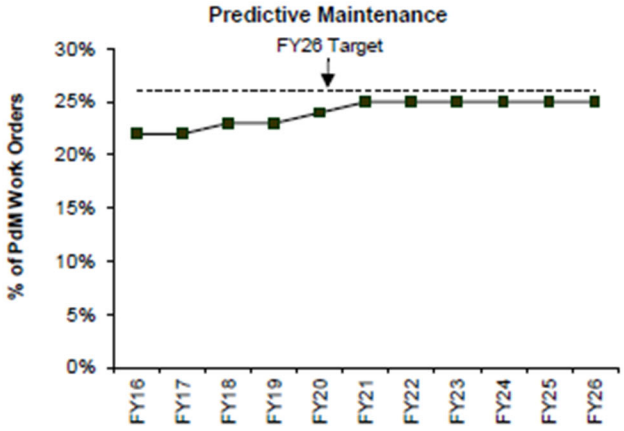
Preventive Maintenance (PM) inventory items were loaded into Maximo to assign spare parts for equipment to PM work orders. DITP reached the PM kitting goal of 100%. In FY12 a new graph was developed to track kitting of all maintenance work orders in an effort to increase wrench time. Staff continues to fine-tune the process to "kit" all maintenance work orders. Kitting is considered a best practice by maintenance and reliability professionals. It entails staging parts necessary to complete maintenance work. Kitting allows maintenance staff to spend more time "turning the wrench" and less time waiting for parts at the stockroom window. Kitting for FY26 was 57%, slightly under DITP new goal of 58%.

Operations Light Maintenance PMs



The percentage of preventive maintenance work orders completed by Operations staff (non maintenance staff) increased from less than 1% in January 2002 to the current level of 24% in FY26. DITP reached the industry benchmark range of 15% and has exceeded the goal through FY26.

Predictive Maintenance

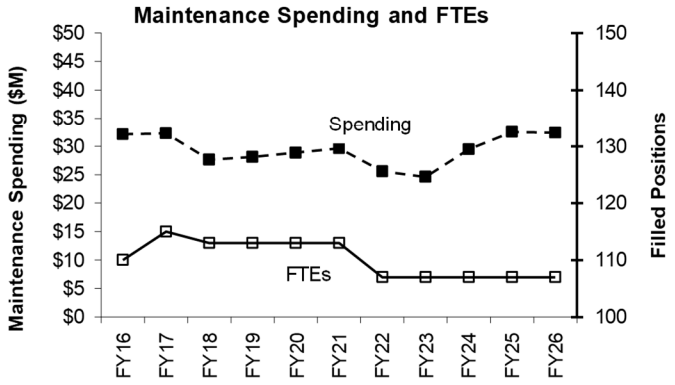


Predictive maintenance has steadily increased from 2% in FY03 to 25% in FY26, DITP was slightly below our new goal of 26%. This percentage in predictive maintenance was achieved through the expanded use of lubrication, vibration, thermography, and acoustic ultrasonic testing techniques. The Condition Monitoring Group continually reviews and investigates new opportunities and initiatives to expand condition monitoring testing and analysis.

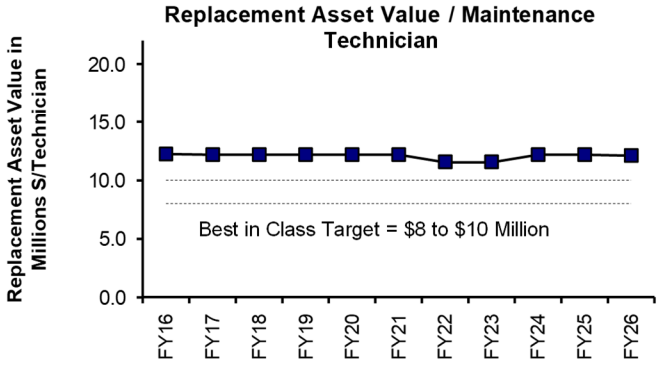
Deer Island Yearly Maintenance Metrics

FY26

Overall Maintenance Program Measures

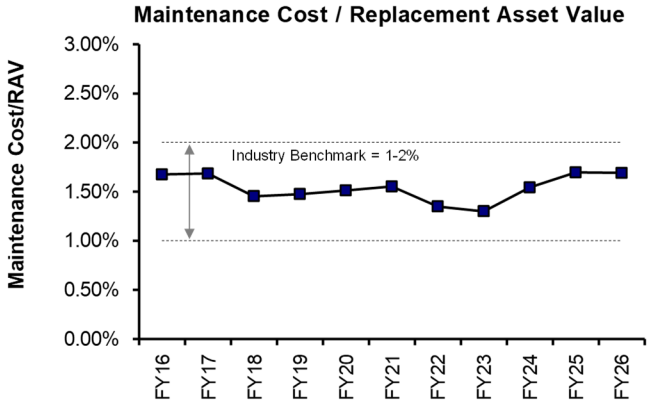


DITP's Maintenance staff is currently at 107 FTE's. Maintenance staff levels ended at 107 due to retirements and hiring challenges for trades personnel. Maintenance has worked to meet our goals though implementation of numerous maintenance efficiencies including: Operations performing light maintenance, cross-functional training and flexibility, and Reliability-Centered Maintenance. This year's overall Maintenance spending has decreased.

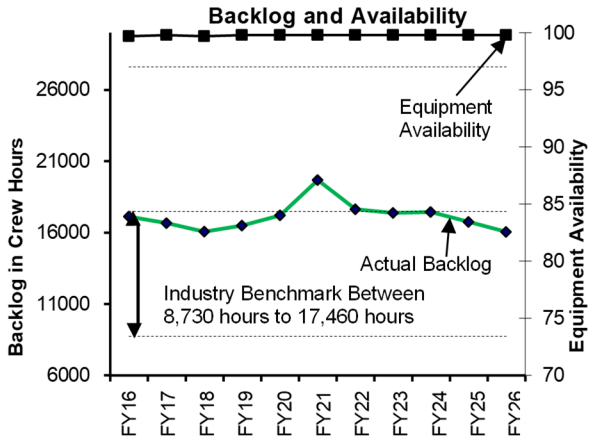


DITP adopted a "best in class" target of $8-$10 Million/Technician for maintenance staffing. DITP remains above this Best in Class. However, as the plant ages and additional equipment replacements are expected, DITP management will reassess staffing as needed.

The Maintenance Spending graph shows actual annual maintenance spending and CIP asset replacements (equipment costs only). Maintenance staff continues to evaluate plant assets and requirements for replacement of obsolete equipment to ensure the plant operates at maximum efficiency. In FY26, overall spending decreased from FY26. Maintenance staff replaced electrical conduits in the Primary Clarifier area. Plumbers removed and installed new sump pump controls and pumps in Residuals. Power and Pump staff replaced one odor control fan in the North Main Pump Station. Instrument staff replaced speed controllers for the Polymer Pump system in Centrifuge Facility. HVAC staff replaced one 130 ton Multistack module chiller for the Administration campus buildings and twenty-three valves on the Central Plant Heating System (H1S/H1S).



The industry benchmark for annual maintenance spending is between 1% to 2% of replacement asset value, currently DITP is at 1.69%. The plant's replacement asset value is calculated at approximately $2.0 billion dollars. DITP's current maintenance spending is the industry benchmark. Overall maintenance spending has decreased from last year. DITP Maintenance CEB spending is $28.33 million. CIP spending was $4.1 million (equipment costs only). CIP/CEB Spending totaled $32.41 million in FY26.



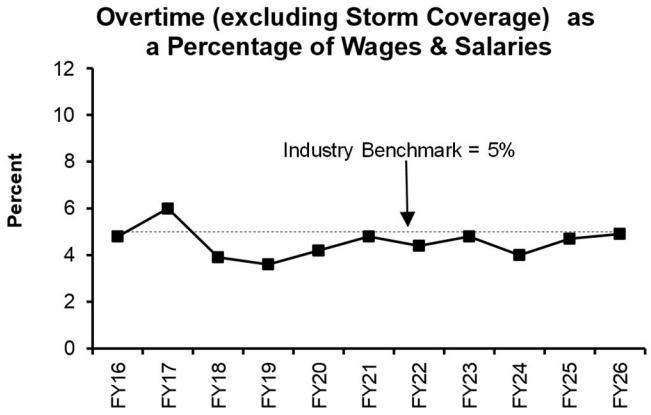
Industry benchmark for Equipment Availability is 97%. Deer Island has exceeded this benchmark over for the last ten years. In FY26 the availability was 99%. The high percentage in Equipment Availability during FY26 is due to redundancy of equipment and effective/efficient maintenance practices.

Industry Benchmark for Backlog is between 8,730 to 17,460 hours for maintenance based on current staffing, the total average backlog for FY26 was 16,040 hours, which is within the industry benchmark. DITP Maintenance has made significant progress to be within the Industry Benchmark.

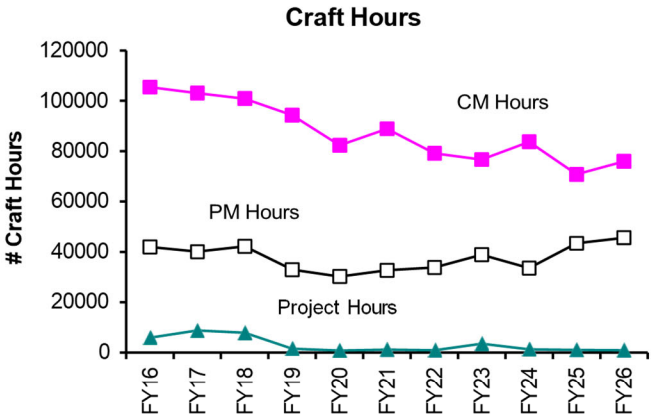
Deer Island Yearly Maintenance Metrics

FY26

Overall Maintenance Program Measures (cont.)



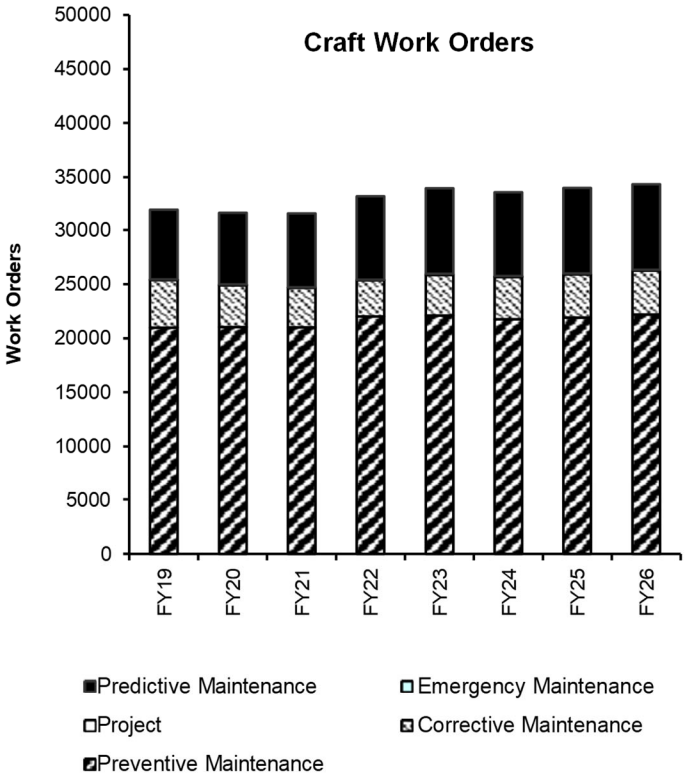
Management continues its effort to keep overtime below the industry benchmark. DITP maintenance overtime was 4.9% for FY26. Management has taken steps to reduce overtime spending by limiting overtime to repair critical equipment and systems only. DITP has been under the Industry Benchmark every year except FY17, due to the increase in overtime for the Eversource Cable Outage.



This year's increased in Corrective Maintenance (CM) hours was due to equipment failures in the Hydro Plant, Primary Clarifiers, and impacts from the Dewatering Line failure.

This year's slight increase in Preventive Maintenance (PM) was due to adjusting PM frequencies to meet plant needs and training of new trade staff. Staff continued to work on optimization of the Preventive Maintenance (PM) program.

Maintenance did complete some significant maintenance work in FY26: Staff replaced twenty-three valves on the Central Plant Heating System (H1S/H1R). The original valves were installed under the Boston Harbor Project and were failing and no longer provided a leak-free seal. Residuals staff removed and replaced three digester mixers. The mixers were recommended for refurbishment based upon impeller and bearing wear, which was identified by vibration analyses. Mixers are critical to plant performance. It provides the driving force for mixing the digester content and ensuring a uniform temperature within the sludge mass. Mechanical staff changed out numerous in-line grinders due to the additional clogging due to wipes in the system. Power and Pump staff replaced one Odor Control Fan in North Main Pump Station. The fan was installed under the Boston Harbor Project and was showing trends to failure. Plumbers removed and installed new



During FY26, the overall number of work orders slightly increased from the previous year. The Work Coordination department is continuously modifying PM, PdM, and CM Job Plans to ensure maintenance is being performed efficiently and effectively, while ensuring reliability and availability of DITP's Assets.

Field Operations Maintenance reports on Key Performance Indicators for FY26.

- Operations Light Maintenance Hours– In an effort to free up Maintenance staff to complete more detailed and complex maintenance, Operations staff have been committed to completing a number of the routine monthly preventative maintenance (PM) tasks. These tasks generally consist of observation and light maintenance tasks. The industry benchmark is 10% - 15% of the total preventative maintenance hours. In FY26, Operations staff completed on average 412 hours per month, which accounted for 12% of the total preventative maintenance hours.

- Operations Light Maintenance % PM Completion – In an effort to free up Maintenance staff to complete more detailed and complex maintenance, Operations staff have been committed to completing the routine monthly preventative maintenance duties. The goal for Operations staff is to complete 100% of the Preventative Maintenance work orders. In FY26, Operations staff completed 100% of the work orders.

- Overall Preventive Maintenance – Both Operation and Maintenance staff complete the preventive maintenance work orders. The goal for FY26 was to complete 100% of all preventative maintenance work orders. The PM completion for FY26 was 100%.

- Work Order Kitting – In an effort to more efficiently complete work, maintenance staff and work coordination center staff have utilized the Lawson/Maximo interface to better kit stock and non-stock material. The goal is to kit 60% of all work orders. The average for FY26 was 64% kitting of all work orders.

- Maintenance Backlog in Crew Hours - Backlog is determined by totaling the planned craft hours in open work orders and comparing them to craft resources available. The FY26 backlog average was 12,319 hours. This backlog is within the industry standard of 6,636 to 13,275 hours of 4 to 6 weeks. Metro Maintenance monitors these metrics closely to ensure the backlog does not adversely impact equipment availability.

- Maintenance Overtime – Maintenance overtime spending was $71,916 over budget for FY26. Overtime was used to support call-ins for emergency maintenance and planned overtime. It was also used for maintenance coverage related to weather events.

Facilities Operational Statement

During FY26, Wastewater Transport facilities operated at full capacity. All required equipment to maintain the flow and processing of wastewater was available. The CSO facilities operated with sufficient chlorination and de-chlorination, though some NPDES exceedances were reported. The required number of pumps in each gravity and pumping CSO was available throughout the year.

Critical Equipment Availability

An equipment availability report is generated daily. It details the critical equipment required to collect and transport the wastewater flow at the facility design capacity. Higher maintenance priority is given to equipment that drops below the required number. Because of the high daily equipment availability, no operational impact has occurred in the past year.

SCADA Program

MWRA Supervisory Control and Data Acquisition (SCADA) system provides a means ofmonitoring and controlling facilities and equipment from a remote centralized location, as well as providing a continuous record of facility operations. The SCADA System has been in place at all field facilities since FY10. SCADA staff perform minor and medium updates on the system throughout the year. As Capital Improvement Projects are planned at each facility, SCADA improvements are included as part of the facility upgrade.

MWRA SCADA staff perform the required maintenance and upgrades to the majority of the field instrumentation and control panel equipment to ensure accurate measurements and continued operation throughout MWRA's field facilities. These efforts are supplemented by an Instrumentation Service Contractor who is primarily responsible for performing calibrations and corrective service to the gas monitoring systems within facilities. SCADA staff also maintain, upgrade, program, and patch the computers and hardware used in collecting, controlling, transmitting and displaying facility data. Continued emphasis is placed on improving MWRA's cyber security posture. This included the expansion of the SCADA communications network "Domain" architecture, where user accounts and policies are centrally managed via a "Domain Controller."

Facility Maintenance and Equipment Replacement Projects

Equipment replacement is part of the overall maintenance strategy that ensures compliance with permit requirements. Projects and initiatives are completed during each fiscal year to maintain redundancy and continued reliability. Many projects are extensive, requiring significant in-house resources and the use of specialty/service contractors. Some examples of key improvements, equipment replacement, or significant repair work during the past fiscal year include in-house and outsourced projects.

- Caruso Pump Station: Replaced two variable frequency drive units.
- Columbus Park Headworks: Replaced the rakes on all four screens.
- DeLauri Pump Station: MWRA Maintenance staff replaced a gearbox for pump Number 2.
- DeLauri Pump Station: Replaced the rake chain on Screen 2.

- Nut Island Headworks: Replaced a belt on the screenings system.
- Ward Street Headworks: Replaced the rakes on all four screens.

Capital Projects

In addition to the maintenance projects listed above, the following are Construction and Design Capital Improvement Projects started or ongoing during FY26:

Construction:

- Braintree-Weymouth Pump Station Improvements - Contract 7366 substantially completed 5/2025
- Hayes Pump Station Rehabilitation Contract 7375
- Somerville Marginal New Pipe Connection – Contract 7985
- West Roxbury Tunnel Inspection – Contract 6898
- Ward Street Make-Up Air Handler Units Replacement – Contract 8151

Design:

- Ward Street & Columbus Park Headworks Design/ESDC – Contract 7429
- Siphon Structure Rehabilitation Design/CA – Contract 6224
- Interceptor Renewal No. 7 Malden-Melrose Design/ESDC – Contract 7216
- Cottage Farm CSO Facility PCB Abatement – Contract 7392
- Repackaging of the Fuel Storage Tank Replacement Project Contract No. 7692
  - DeLauri and Framingham Pump Stations, and Cottage Farm CSO Facility Fuel Storage Tank Replacements – Final Design and Bidding
  - Caruso and New Neponset Pump Stations Fuel Storage Tank Replacements - Siting Evaluation, Final Design and Bidding
- Ward Street Headworks Make-Up Air Handling Units – Contract 7991 Task Order 14 Design and ESDC

Pipeline Inspection and Maintenance Projects

The Technical Inspection Unit oversees all sewer inspections and reporting. By analyzing pipeline inspection results and wastewater flow data, the unit schedules maintenance activities to ensure reliable system performance and reduce the risk of blockages or structural failures. Below are examples of key inspection programs and rehabilitation projects carried out during the past fiscal year:

Manhole Inspection and Rehabilitation Program

The Technical Inspections Unit (TIU) of the Wastewater Operations Department conducts manhole inspections. These inspections facilitated the beginning of the manhole rehabilitation program. Specialized equipment and training are the essential elements of the program. Pipeline maintenance crews perform manhole renovations and repairs that result in reduced I/I. The manholes are coated using cementitious material applied with spinning equipment and then covered with special coatings to resist corrosion from hydrogen sulfide.

In FY26, TIU staff inspected 645 manholes. In-house staff rehabilitated approximately 42 manholes. The rehabilitation work included frame and cover replacement, external repairs to raised manholes, internal repairs using the spin-cast application, and other miscellaneous repair work.

Pipeline Inspection and Cleaning Projects

To efficiently and consistently maintain the wastewater collection system, the Technical Inspection and Wastewater Pipeline Maintenance groups were merged. The work performed by the inspection staff is an important element in the planning and execution of pipeline maintenance work. The inspection tasks are shared by the entire staff, and the maintenance workload is prioritized based on inspection data and information.

TIU conducts internal inspections of MWRA structures and pipelines to reveal potential problem areas and identify locations requiring maintenance. Pipeline inspections average about 67% of the workload followed by inspections of other structures and manholes. Approximately 27 miles of pipelines were TV inspected in FY26.

Pipeline maintenance crews perform a variety of maintenance activities for MWRA's Wastewater Transport system. The Transport collection system includes 240 miles of interceptor sewer lines. Approximately 37 miles of pipeline were cleaned. In FY26, 27 siphon barrels were inspected, and 57 siphon barrels were cleaned.

In addition to general pipeline and manhole repair work performed under this program, the following are other activities pipeline crews perform during the year:

- Pipeline spot repair work in shallow excavations
- Snow plowing and removal during winter months
- NPDES inspections and best management practice activities
- Emergency pumping activities for communities during major wet weather events
- By-pass pumping for contracted pipeline rehabilitation or repairs
- Emergency response and overflow monitoring during wet weather events
- Response to odor complaints in the system

Pipeline Rehabilitation Projects

Pipeline Rehabilitation projects are first identified by the TIU during routine inspections of the pipelines and interceptors. MWRA engineers review these projects and perform or coordinate all necessary design and construction contracting. The following are the pipeline construction/rehabilitation projects under design & construction in FY26:

- Siphon Structure Rehab Design/CA – Contract 6224 (Construction)
- Interceptor Renewal No. 7 Malden-Melrose Design/CS – Contract 7217 NTP August 2026.

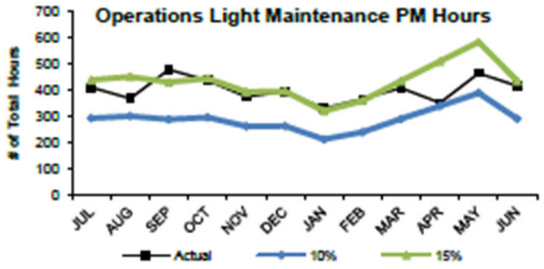
The following pages adapted from MWRA's quarterly performance report to the Board of Directors, the "Orange Notebook", summarize key indicators relating to Wastewater Transport Pipeline Maintenance and Equipment/Facility Maintenance. The full Orange Notebook can be found at: https://www.mwra.com/about-mwra/reports-publications/board-directors-quarterly-report-key-indicators-mwra-performance

Wastewater Transport

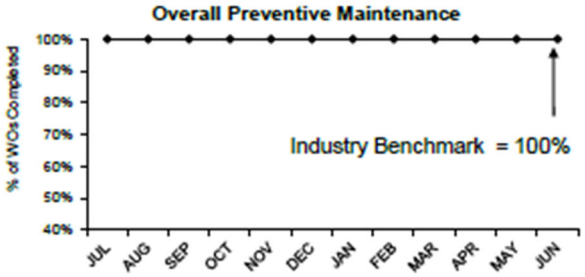
Overall, Field Operations' Metropolitan Equipment & Facility Maintenance

FY26

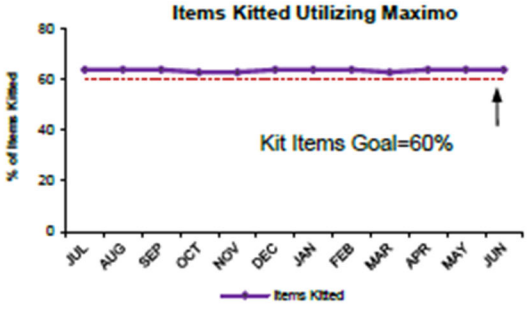
Several maintenance and productivity initiatives are in progress. The goal for the Overall PM completion and the Operator PM completion is 100%. The Operator PM and kitting initiatives frees up maintenance staff to perform corrective maintenance and project work, thus reducing maintenance spending. Backlog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



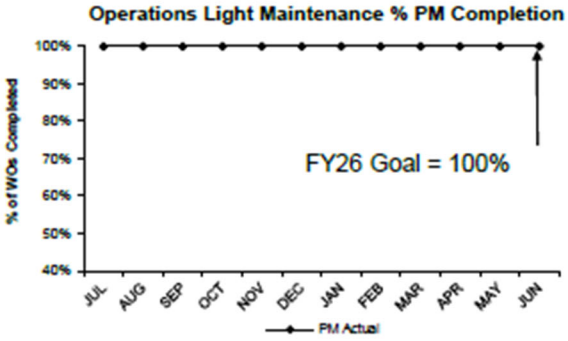
Operations staff averaged 412 hours per month of preventive maintenance during the 4th Quarter of FY26, an average of 12% of the total PM hours for the 4th Quarter, which is within the industry benchmark of 10% to 15%.



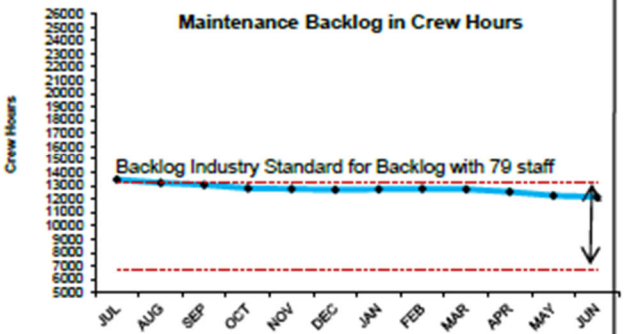
The Field Operations Department (FOD) preventive maintenance goal for FY26 is 100% of all PM work orders. Staff completed 100% of all PM work orders in the 4th Quarter of FY26.



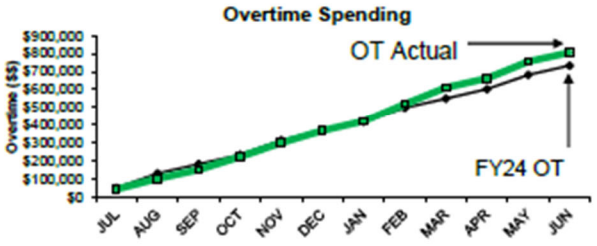
Operations' FY26 maintenance kitting goal has been set at 60% of all work orders to be kitted. Kitting is the staging of parts or material neccesary to complete maintenance work. In the 4th Quarter of FY26, 64% of all applicable work orders were kitted. This resulted in more wrench time and increased productivity.



Wastewater Operations complete light maintenance PM's which frees up maintenance staff to perform corrective maintenance. Operations' FY26 PM goal is completion of 100% of all PM work orders assigned. Operations completed 100% of PM work orders in the 4th Quarter of FY26.



The 4th Quarter of FY26 backlog average is 12,319 hours. Which is within the industry benchmark of 6,636 to 13,275 hours. The current backlog is due to vacancies and several large maintenance projects.



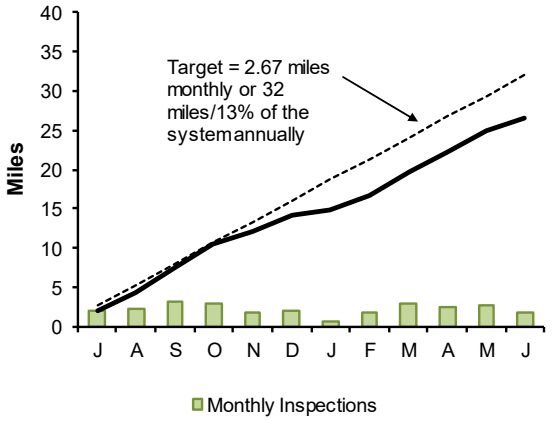
Maintenance overtime was $3,860 over budget on average, per month, for the 4th Quarter of FY26. Overtime is used for critical maintenance repairs and wet weather events. The overtime budget through the 4th Quarter of FY26 is $733,832. Overtime spending was $805,748 which is $71,916 over budget for the fiscal year.

Wastewater Transport

Wastewater Pipeline and Structure Inspection and Maintenance FY26

Inspections

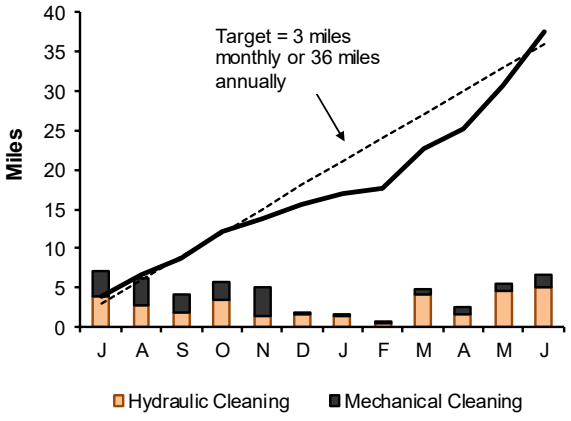
Pipeline Inspections



Staff internally inspected 1.76 miles of MWRA sewer pipe during this month. The year to date total is 26.59 miles. No Community Assistance was provided.

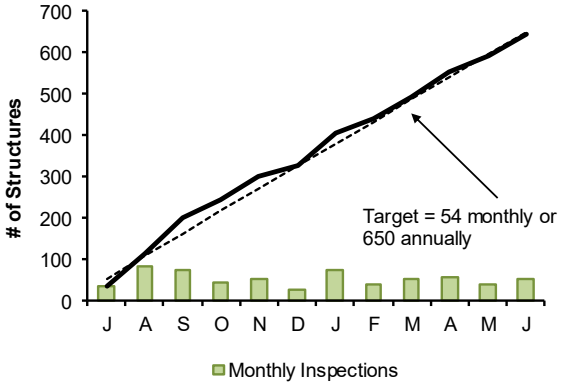
Maintenance

Pipeline Cleaning



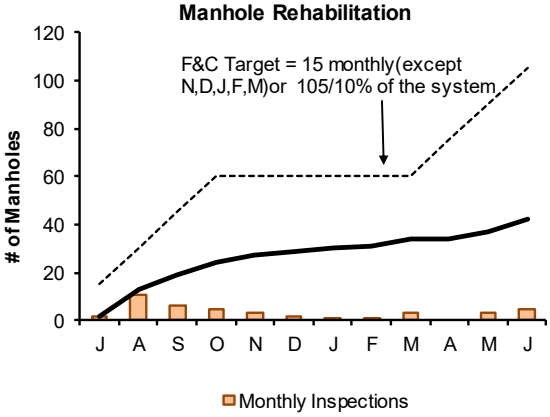
Staff cleaned 5.01 miles of MWRA sewer pipe, and removed 1.75 yards of grit. The year to date total is 34.47 miles cleaned. Community Assistance was provided to DCR Ravinee Rd Stoneham SSO..

Structure Inspections



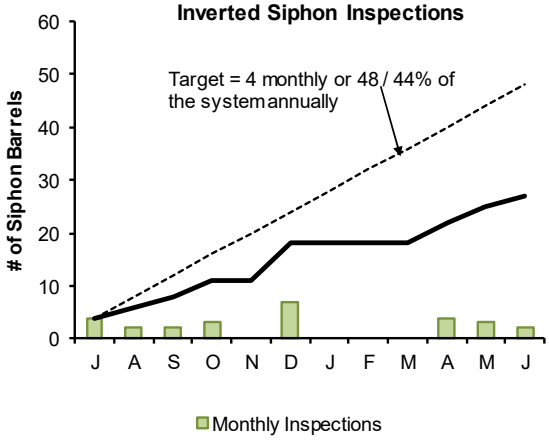
Staff inspected the 12 CSO structures and performed other additional 41 manhole/structure inspections during this month. The year to date total is 645 inspections.

Manhole Rehabilitation



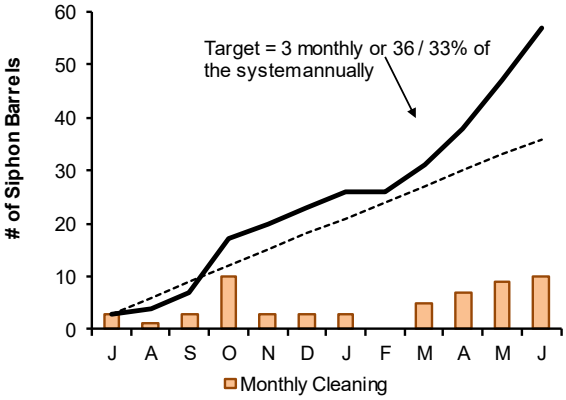
Staff replaced 5 frames and covers this month. The year to date total is 42.

Inverted Siphon Inspections



Staff inspected 2 siphon barrels this month. The year total is 27 siphon inspections.

Inverted Siphon Cleaning



Staff cleaned 10 siphon barrels this month. The year total is 57 barrels .

Fore River Maintenance reports on Key Performance Indicators for FY26

Critical Equipment Availability:

Operating logs indicate that out of 2,190 machine days in FY26, centrifuges were available for 1,720 days, resulting in an availability rate of 78.53%. Two rotating assemblies were at the OEM repair shop for a total of 105 days. The centrifuges and ancillary equipment are considered critical components at the Pelletizing Plant, as dewatered sludge can either be processed through the dryers or diverted via a bypass system to trucks for landfill disposal.

The primary cause of downtime was the disassembly and cleaning of the rotating assemblies. Currently, 10 out of 12 centrifuges are operational, providing the plant with more than enough capacity to handle flows from Deer Island. The facility operates on a five-day work week, with operations typically paused on weekends.

Maintenance Work Orders and Backlog:

In FY26, a total of 1,725 work orders were created in the eMaint CMMS. Of these:

- 1,039 were preventive maintenance (PM) tasks,
- 216 were planned,
- 362 were unplanned, and
- 54 were safety-related work orders.

As of July 1, 2026, there were 77 open work orders, representing a 95.5% completion rate. Of the 77 open orders, 25 were entered within the previous 30 days and are still within the self-established 30-day window for completion.

The preventive maintenance system is continuously being updated to reflect equipment changes, revised lubrication schedules, and new inspection and cleaning practices. Additionally, operations staff are using the system to track non-routine cleaning tasks, helping to determine optimal cleaning frequencies and enabling these tasks to be scheduled as preventive rather than corrective actions.

Maintenance:

Over $2.9 million was spent on replacement parts and maintenance-related items in FY26, including:

- Continuation of the storage tank cleaning (grit removal)
- Centrifuge repairs: two complete rotating assemblies were returned to the manufacturer and overhauled to OEM specifications
- Replacement of the transition piece between mixer A and Mixer B on one train
- Two centrifuge motor overhauls
- Drum repairs on trains 1,2, 3, and 4 based on manufacturer recommendations

- Replacement of ceramic media in two of four RTOs
- Repairs to the pellet silo transfer lines
- Multiple fire alarm system repairs
- Purchase of new sludge grinder
- SCADA component replacement
- Site security upgrades
- Train #1 furnace refractory repairs
- Train #2 heat exchanger gasket replacement