

MASSACHUSETTS WATER RESOURCES AUTHORITY

Board of Directors Report

on

Key Indicators of MWRA Performance

Third Quarter FY2024

Q1	Q2	Q3	Q4

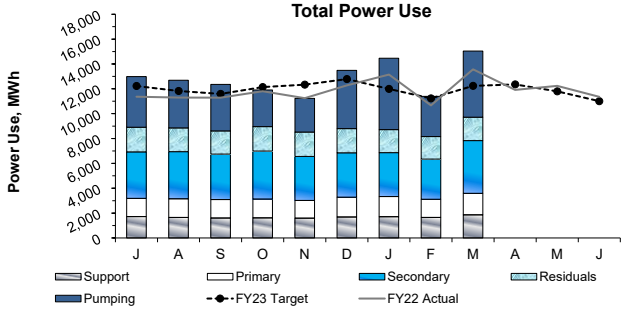


Frederick A. Laskey, Executive Director
David Coppes, Chief Operating Officer
May 22, 2024

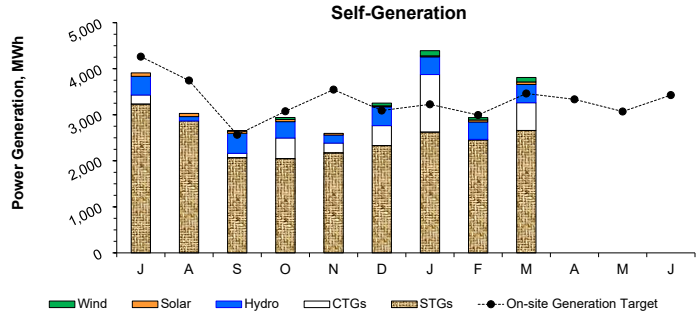
OPERATIONS AND MAINTENANCE

Deer Island Operations

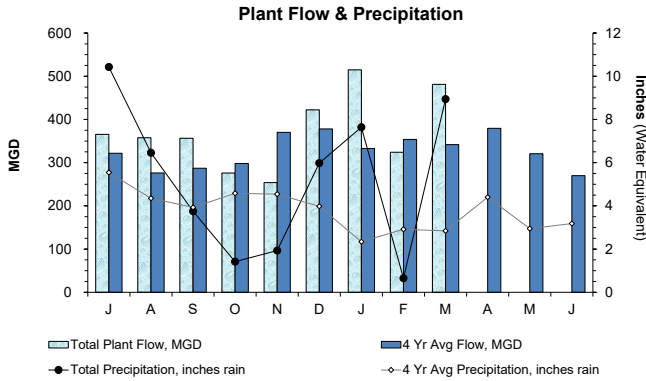
3rd Quarter - FY24



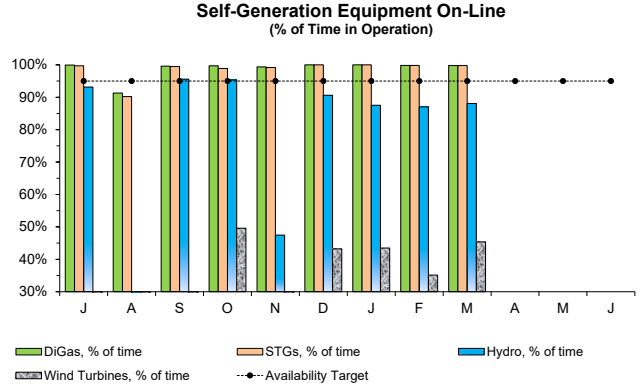
Total power usage in the 3rd Quarter was 15.3% above target as plant flow for this period was 28.4% above target with historical (4 year average) data used to generate the electricity model. Power used in most areas and major treatment processes was similar to target, except for power used for raw wastewater pumping and for secondary treatment, which were 36.1% and 12.7% above target respectively, due to the higher plant flows.



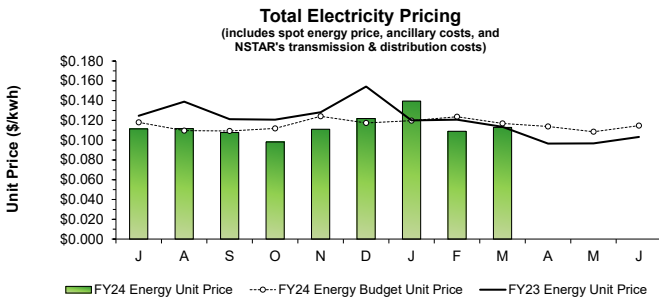
Power generated on-site during the 3rd Quarter was 15.1% above the target due to CTGs operation. CTGs generation was more than 6.6 times the target mostly due to the 141.8 hours of operation in January and March solely as potential backup power in the event of utility power loss during periods of very high plant flows resulting from several significant rain and high wind storms. STGs generation was 8.3% above target as supplemental fuel oil was used to maintain consistent boiler operation during periods of low or unstable digester gas production. Hydro Turbine generation was 22.8% below target due to a wicket gate issue with Turbine #2, as well as high plant flows, combined with high tides, which limited power generation. Solar Panel generation was 18.6% below target as the rooftop array on the Residuals Odor Control Facility remains out of service due to a failed inverter in addition to an abundance of overcast days in the quarter. Wind Turbine generation was 57.5% below target as Turbine #1 remains out of service indefinitely and mechanical issues on Turbine #2 kept the unit out of service from February 15 through February 24. Additionally, turbulent winds blowing through the digesters during several storms caused Turbine #2 to trip and reduced its availability during these periods.



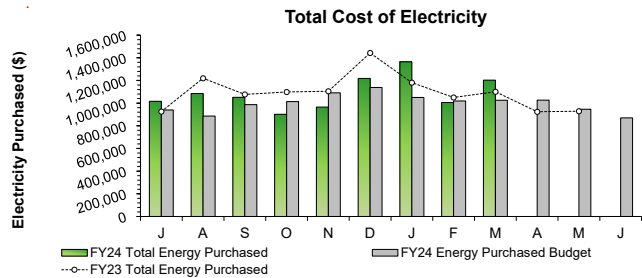
Total Plant Flow for the 3rd Quarter was 28.4% above target with the budgeted 4 year average plant flow (440.0 MGD actual vs 342.7 MGD expected) as precipitation was more than two (2) times higher than target this quarter (17.23 inches actual vs. 8.10 inches expected).



The DiGas System and STGs availability exceeded the 95% availability target in the 3rd Quarter. Hydro Turbine availability was 87.5% due to a wicket gate issue with Turbine #2, as well as multiple periods with high plant flows, combined with high tides, which limited turbine operation. Additionally, Turbine #1 remains offline pending a replacement gearbox and bearings. Wind Turbine availability was well below target as Turbine #1 remains out of service indefinitely and Turbine #2 had a mechanical issue that kept the unit out of service from February 15 through February 24. Additionally, turbulent winds blowing through the digesters reduced Turbine #2 availability during several storm events.



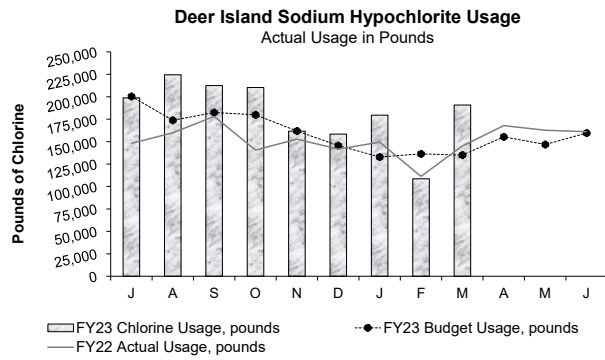
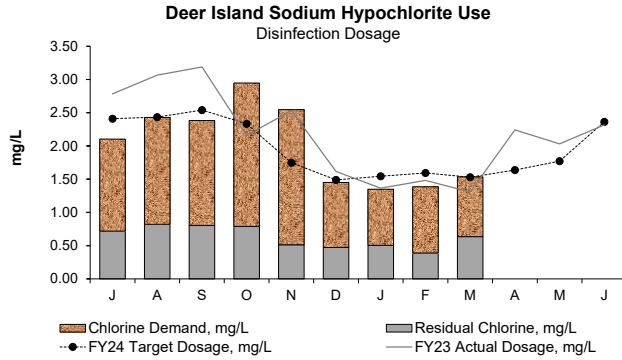
Under the current energy supply contract, a block portion of DI's energy is a fixed rate and the variable load above the block is purchased in real time. The actual Total Energy Unit Price is depicted for July through February (months with the latest available unit prices), while the March unit price is estimated due to a billing delay with Direct Energy (NRG). Overall, the average unit price is estimated to be 2.4% lower than the budgetary estimate through March. The Total Energy Unit Price includes a fixed block price, spot energy price, transmission & distribution charges, and ancillary charges.



Year-to-date Total Cost of Electricity is estimated to be \$661,937 (7.2%) higher than budgeted through March. The actual Total Cost of Electricity is depicted for July through February (months with the latest available unit prices), while the March Cost of Electricity is estimated due to a billing delay with Direct Energy (NRG). Even though the estimated Total Energy Unit Price through March was 2.4% lower than target, the Total Volume of Electricity Purchased was 9.9% above target due mainly to higher-than-expected overall power usage due to the higher plant flows.

Deer Island Operations

3rd Quarter - FY24



The disinfection dosing rate in the 3rd Quarter was 8.6% below target with budgetary estimates as plant flow was 28.4% higher than expected due to multiple heavy rain events which produces wastewater having a lower chlorine demand as a result of dilution. However, sodium hypochlorite usage in pounds of chlorine was 18.4% higher-than-target due to the higher plant flows. DITP maintained an average disinfection chlorine residual of 0.51 mg/L in the 3rd Quarter with an average dosing rate of 1.42 mg/L as chlorine demand was 0.91 mg/L. On March 4, the disinfection basin effluent total chlorine residual target for dry weather flows was increased to greater than or equal to 0.50 mg/L in preparation for potential new NPDES seasonal permit limits for indicator bacteria. The purpose for the higher chlorine residual target (and higher sodium hypochlorite dosing) is to continue developing operating strategies for the new permit, an effort that was also undertaken in 2023. As a result, the disinfection dosing rate in March was on target with budgetary estimates even though it was 8.6% below target for the quarter.

The overall disinfection dosing rate (target and actual) is dependent on plant flow, target effluent total chlorine residual levels, effluent quality and NPDES permit levels for fecal coliform.

Secondary Blending Events

Month	Count of Blending Events	Count of Blending Events Due to Rain	Count of Blending Events Due to Non-Rain-Related Events	Secondary, as a Percent of Total Plant Flow	Total Hours Blended During Month
July	8	8	0	98.4%	27.30
August	3	3	0	99.1%	13.32
September	2	2	0	99.4%	12.36
October	0	0	0	100.0%	0.00
November	0	0	0	100.0%	0.00
December	3	3	0	96.7%	53.67
January	5	5	0	94.9%	90.09
February	0	0	0	100.0%	0.00
March	6	6	0	96.9%	63.77
April					
May					
June					
Total	27	27	0	98.0%	260.52

96.9% of all flows were treated at full secondary during the 3rd Quarter. There were a total of eleven (11) secondary blending events due to high plant flows from heavy precipitation. These blending events resulted in 153.87 hours of blending and a total of 1,271.69 MGal of primary-only treated effluent blended with secondary effluent. The Maximum Secondary Capacity during the entire quarter was 700 MGD.

Secondary permit limits were met at all times during the 3rd Quarter.

Deer Island Operations & Maintenance Report

Environmental/Pumping:

The plant achieved an instantaneous peak flow rate of 1,312.6 MGD during the morning of January 10. This peak flow occurred during a storm event that brought 2.47 inches of total precipitation to the metropolitan Boston area over the course of two (2) days. While February was the second driest February on record for Massachusetts (0.65 inches of precipitation), the total rainfall that fell during the 3rd Quarter was more than two (2) times the 4 year average rainfall target for the quarter, following a series of heavy storms in January and in March.

Several January high plant flow records, since full plant startup in July 1998, were set this past January. These new records include the average daily Total Plant Influent flow to DITP (514.75 MGD), the North System Influent average daily flow (315.68 MGD), and the South System Influent average daily flow (199.07 MGD). The total recorded rainfall for January 2024, as reported by the National Weather Service from their Boston Logan Airport station, was 7.64 water equivalent inches, also a new record for January since plant startup in July 1998.

January High Plant Flow Records

	Previous January High Flow Records (since plant startup July 1998)	New January High Flow Records (set 2024 highlighted in yellow)	Current All-time Monthly High Flow Records (since plant startup July 1998)
Total Plant Influent Flow	465.84 MGD (2005)	514.75 MGD	725.65 MGD (March 2010)
North System Influent Flow	291.78 MGD (2005)	315.68 MGD	460.80 MGD (March 2010)
South System Influent Flow	173.41 MGD (2005)	199.07 MGD	264.84 MGD (March 2010)
Precipitation	5.63 inches (1999)	7.64 inches	14.87 inches (March 2010)

In December, staff from several departments in the MWRA collaborated to successfully complete the project to install a new fiber communications system between the Ward Street Headworks Facility and DITP. The installation of this new fiber communications system replaced the T1 copper line communications system and was necessary as the copper circuits in the T1 copper line system are in the process of being decommissioned by Verizon. The cutover to the fiber communications system took place before the end of December and was fully completed on January 4 after staff addressed several final issues after the initial system cutover. The new fiber and the backup radio communications systems are both fully functional.

Deer Island Operations

3rd Quarter - FY24

Deer Island Operations & Maintenance Report (continued)

Disinfection/Dechlorination:

MWRA uses sodium hypochlorite to destroy pathogens in plant effluent after primary and secondary treatment. Indicator bacteria such as Fecal Coliform, E. coli, and Enterococcus are used to measure the presence of potential pathogens. To provide a proper pathogen kill, sodium hypochlorite, a disinfectant, is added to meet a chlorine demand then regulated by maintaining a chlorine residual. On March 4, the disinfection basin effluent total residual chlorine target for dry weather was increased from 0.30 mg/L to greater than or equal to 0.50 mg/L. The purpose for adjusting to the higher chlorine residual target (by increasing the sodium hypochlorite dosing) is to continue developing operating strategies for the future more stringent seasonal NPDES permit limits for indicator bacteria prior to the limits coming into effect, an effort that was also undertaken in 2023. Deer Island maintained an average disinfection chlorine residual of 0.64 mg/L this month with an average dosing rate of 1.53 mg/L as chlorine demand was 0.90 mg/L with the adjusted higher target. Higher usage of both sodium hypochlorite and sodium bisulfite, used for removing the residual chlorine before discharging the effluent, will be necessary in order to comply with the more stringent indicator bacteria limits in the proposed new NPDES permit.

Energy and Thermal Power Plant:

Overall, total power generated on-site accounted for 27.2% of Deer Island's total power use in the 3rd Quarter. Renewable power generated on-site (by Solar, Wind, STGs, and Hydro Turbines) accounted for 22.7% of Deer Island's total electrical power use for the quarter.

CTGs generation was more than 6.6 times the target mostly due to 141.8 hours of operation in January and March solely as potential backup power in the event of utility power loss during periods of very high plant flows resulting from several significant rain and high wind storms.

The CTGs were operated a total of 141.8 hours in January and March as a source of potential backup power during several storm events that produced significant rainfall and damaging high winds. These heavy rain events resulted in regional flooding and also lengthy periods of sustained high plant flows at the DITP.

Staff and multiple contractors conducted work over the course of two (2) days in January to troubleshoot a CTG-2B electrical reconnection issue with the Eversource B-side electrical bus. The work included testing all relevant electrical relays individually and recalibrating the CTG-2B synchronizer. Unfortunately, the work and testing that was done only addressed part of the problem as the testing conducted after this effort confirmed the reconnection issue remained unresolved. Troubleshooting by Eversource took place in February under close coordination with DITP staff. Eversource was able to identify a faulty fuse which was replaced and a subsequent successful B-bus resynchronization test was then conducted using CTG-2B following the fuse replacement. DITP was able to return to normal electrical configuration with power being fed by both Eversource A- and B-side distribution buses following this work by Eversource.

The engine heater blower motor on the CTG-1A start air system was replaced by a contractor with support from the DITP electricians on March 18 and the CTG was successfully test operated following this work. There was a short circuit on the blower that did not impact the operation of the CTG but the issue needed to be addressed. After this work was completed, the contractors were able to lock out CTG-2B to devote the remainder of the week on scheduled annual maintenance. The scope of this work consisted of routine maintenance and calibrations for this turbine, and this year, the carbon dioxide cylinders for the fire suppression system were also removed and sent out for inspection and testing. CTG-2B was successfully test operated on Friday afternoon after the scheduled maintenance was completed and the carbon dioxide cylinders were reinstalled. The annual fire protection system testing by a certified contractor needed to be rescheduled for a later date and was successfully completed for CTG-2B on March 28.

Wind Turbine #2 was out of service from February 15 through February 24 due to an issue with failed bolts that connect the traverse to the pitch rod. The turbine was returned to service on the afternoon of February 25.

Wind Turbine #2 was out of service from 8:00pm on March 10 to 2:00pm on March 12 due to a failed electrical contactor. Troubleshooting and replacement of the electrical contactor was delayed to March 12 due to the active wind storm which hampered efforts to conduct the troubleshooting until the wind subsided.

Hydro Turbine #2 was out of service from the afternoon of February 23 to the morning of February 27 due to a wicket gate issue which was resolved by the service contractor. No additional issues have been observed since it was returned to operation.

DITP took delivery of 480,000 gallons of #2 fuel oil, a total of 48 oil tanker trucks, without incident from March 6 through March 15. This fuel oil is used for CTG operation, for boiler startup operations, and for supplemental fuel for boiler operation during periods of low or unstable digester gas production.

Clinton Operations & Maintenance Report

Dewatering Building

Maintenance staff replaced the torn buckets on the sludge belt filter press conveyor, a Muffin Monster grinder in the lower dewatering sludge line going to belt filter press, and the suction valve in front of the grinder, and the squeegee on the gravity thickener #1 scum rake arm. The Facilities Specialist completed painting of the polymer platform base.

Chemical Building

Maintenance staff installed the new #2 bisulfite pump, motor, backflow pressure valve, check valves and they blew out the piping manifold. They also replaced a section of feed piping on the Bisulfite system. The M&O's repaired the feed line water piping on the soda ash machine. The Facilities Specialist pressure washed the upper soda ash mix tank area and fixed a hole in the floor of the Chemical Building.

Aeration Basins

Operations staff cleaned the pH and Dissolved Oxygen probes. The contractor installed a new pH meter for aeration tank #2.

Phosphorus Reduction Facility (PRF)

Maintenance staff and the Facilities Specialist removed all the filter sections from disc filter #2 and reinstalled new filters, installed cables to hold up the disc covers on all three (3) discs, and cleaned and repaired the polymer feed line for the disc filters. The PRF was placed into operation in March and will remain online until November 1. Operations staff cleaned and changed the reagents in both CL17 chlorine analyzers and installed a new feed pump for the 5500 Analyzer.

Headworks Building

The M&O's inspected and greased the lower bearings in the influent screw pumps. The Facilities Specialist and the Maintenance staff cleaned the mechanical bar rack and greased both upper and lower pin racks. The M&O's replaced the shear pin on the #1 bucket elevator and returned it to service. Operations staff put #1 grit chamber on line and took off #2 out of service for maintenance. The contractor installed a second level transducer in the influent lift pump well.

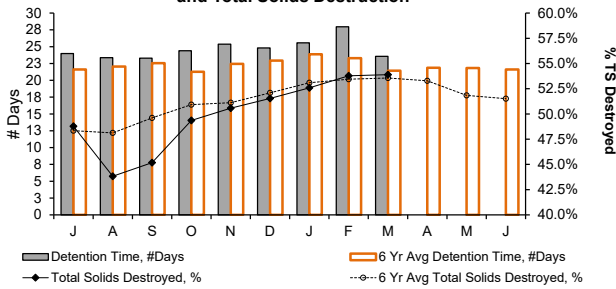
Digester Building

The Maintenance staff checked all equipment for proper operation and greased the Ovivo mixer on the floating digester cover. The contractor installed a new motor for the #2 digester boiler and replaced the transformer on #1 waste gas flare.

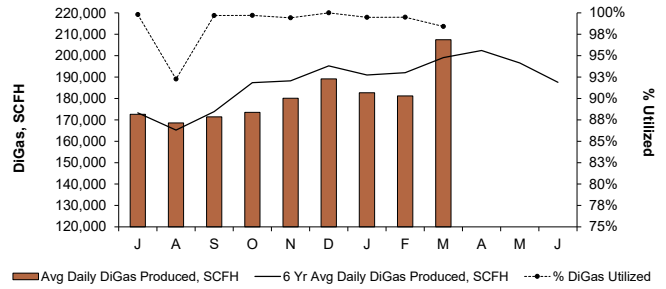
Deer Island Operations and Residuals

3rd Quarter - FY24

Sludge Detention Time in Digesters and Total Solids Destruction



Digester Gas Production and % Utilized



Total solids (TS) destruction following anaerobic sludge digestion averaged 53.4% during the 3rd Quarter, on target (+0.1%) with the 6 year average. Sludge detention time in the digesters was 25.7 days, 12.4% above the 22.9 days detention time target with projected eight (8) digesters in operation.

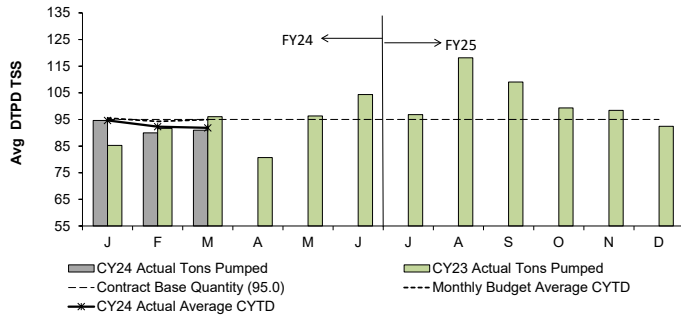
The Avg Daily DiGas Production in the 3rd Quarter was 1.9% below target with the 6 Year Avg Daily DiGas Production as total sludge production was lower than target. 99.1% of the Digas produced was utilized at the Thermal Power Plant.

Total solids (TS) destruction is dependent on sludge detention time which is determined by primary and secondary solids production, plant flow, and the number of active digesters in operation. Solids destruction is also significantly impacted by changes in the number of digesters and the resulting shifting around of sludge.

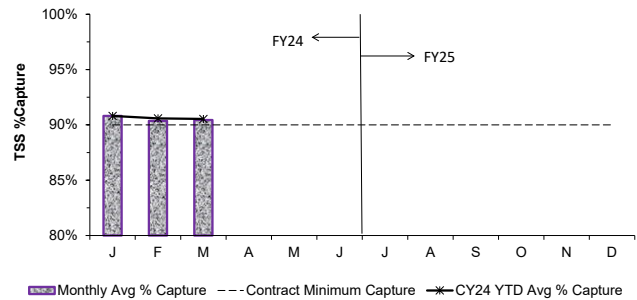
Residuals Pellet Plant

New England Fertilizer Company (NEFCO), a wholly-owned, indirect subsidiary of Synagro Technologies, Inc., operates the MWRA Biosolids Processing Facility (BPF) in Quincy under contract. MWRA pays a fixed monthly amount for the calendar year to process up to 95.0 DTPD/TSS as an annual average (for the extended contract period of January 1, 2024 through December 31, 2034). The monthly invoice is based on 95.0 DTPD/TSS (Dry Tons Per Day/Total Suspended Solids) times 365 days divided by 12 months. At the end of the year, the actual totals are calculated and additional payments are made on any quantity above the base amount. On average, MWRA processes more than 95.0 DTPD/TSS each year (FY24's budget is 103.2 DTPD/TSS and the FY25 budget is 102.5 DTPD/TSS).

Sludge Pumped From Deer Island



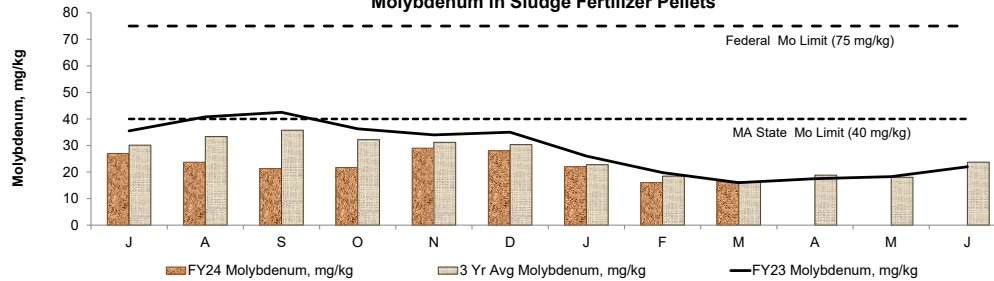
Monthly Average % Capture of Processed Sludge



The average quantity of sludge pumped to the Biosolids Processing Facility (BPF) in the 3rd Quarter was 91.8 TSS Dry Tons Per Day (DTPD), 3.3% below target with the FY24 budget of 95.0 TSS DTPD for the same period, due to lower-than-expected sludge production as a result of the higher-than-expected plant flows.

The contract requires NEFCO to capture at least 90.0% of the solids delivered to the Biosolids Processing Facility. The average capture for the 3rd Quarter was 90.54%.

Molybdenum in Sludge Fertilizer Pellets



Copper, lead, and molybdenum (Mo) are metals of concern for MWRA as their concentrations in its biosolids have, at times, exceeded regulatory standards for unrestricted use as fertilizer. Molybdenum-based cooling tower water is a significant source of Mo in the sludge fertilizer pellets. The Federal standard for Mo is 75 mg/kg. The Massachusetts Type 1 biosolids standard for molybdenum was changed from 25 mg/kg to 40 mg/kg in 2016, allowing MWRA to sell its pellets in-state for land application whereas the previous limits forced several months' worth of pellets to be shipped out of state.

Overall, the levels have been below the DEP Type 1 limit for all three (3) metals. For Mo, the level in the MWRA sludge fertilizer pellets during the 3rd Quarter averaged 18.1 mg/kg, 6% below the 3 year average, 55% below target with the MA State Limit, and 76% below the Federal Limit.

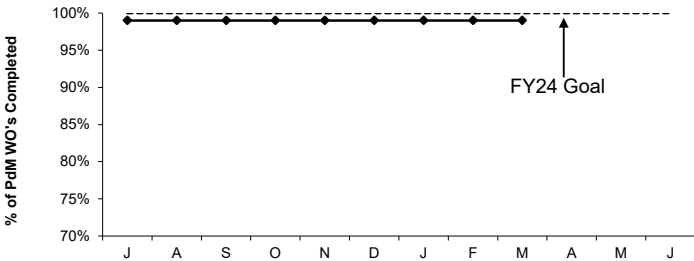
Deer Island Maintenance

3rd Quarter - FY24

Productivity Initiatives

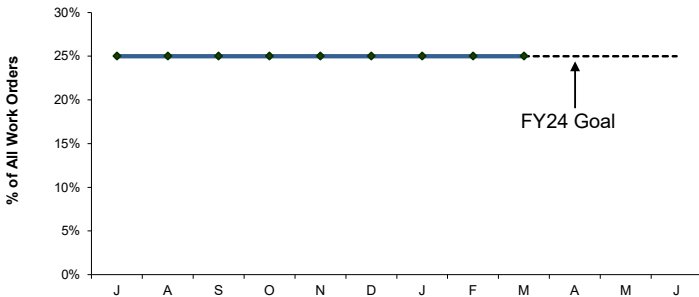
Productivity initiatives include increasing predictive maintenance compliance and increasing PdM work orders. Accomplishing these initiatives should result in a decrease in overall maintenance backlog.

Predictive Maintenance Compliance



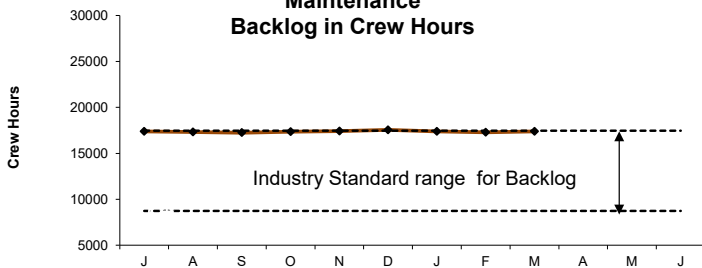
Deer Island's FY24 predictive maintenance goal is 100%. DITP completed 99% of all PdM work orders this quarter. DITP is continuing with an aggressive predictive maintenance program. Deer Island is slightly below our goal this quarter.

Predictive Maintenance



Deer Island's increased FY24 predictive maintenance goal is 25% of all work orders to be predictive. 25% of all work orders were predictive maintenance this quarter. The industry is moving toward increasing predictive maintenance work to reduce downtime and better predict when repairs are needed.

Maintenance Backlog in Crew Hours

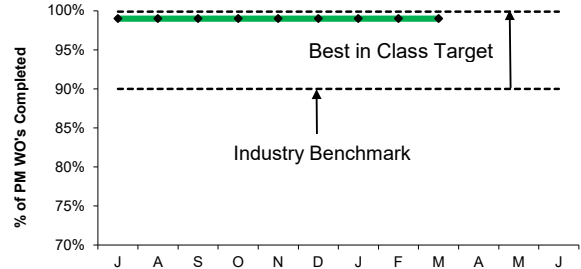


DITP's maintenance backlog at Deer Island is 17,394 hours this quarter. DITP is barely within the industry average for backlog. The industry Standard for maintenance backlog with 97 staff (currently planned staffing levels) is between 8,730 hours and 17,460 hours. Backlog is affected by (6) Vacancies; (1) HVAC Technician and (5) I&C Technicians. Management continues to monitor backlog and to ensure all critical systems and equipment are available.

Proactive Initiatives

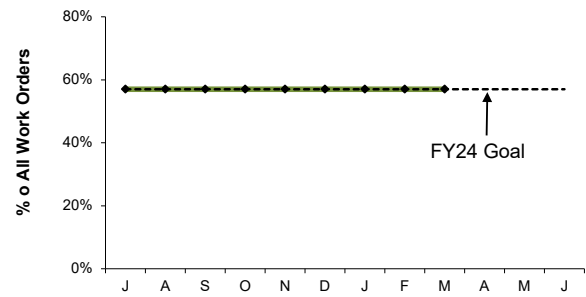
Proactive initiatives include completing 100% of all preventative maintenance tasks and increasing preventative maintenance kitting. These tasks should result in lower maintenance costs.

Preventive Maintenance Compliance



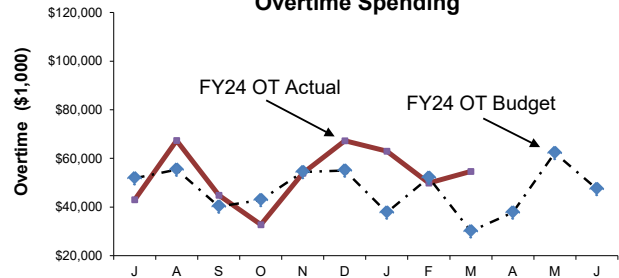
Deer Island's FY24 preventative maintenance goal is 100% completion of all work orders from Operations and Maintenance. DITP completed 99% of all PM work orders this quarter. Deer Island was slightly below our goal, but within Best in Class Target.

Maintenance Kitting



Deer Island's increased FY24 maintenance kitting goal is 57% of all work orders to be kitted. 57% of all work orders were kitted this quarter. Kitting is staging of parts or material necessary to complete maintenance work. This has resulted in more wrench time and increased productivity.

Overtime Spending



Maintenance overtime was over budget by \$47K this quarter and \$57k over for the year. Management continues to monitor backlog and to ensure all critical equipment and systems are available. This quarter's overtime was predominately used for Storm Coverage/High Flows, Pump/Grinder Clogging Issues, WTF Maintenance Support of Bypass Chute, Thermal Power Plant Support for Eversource Outage and Primary Tank Cross Collector Issues.

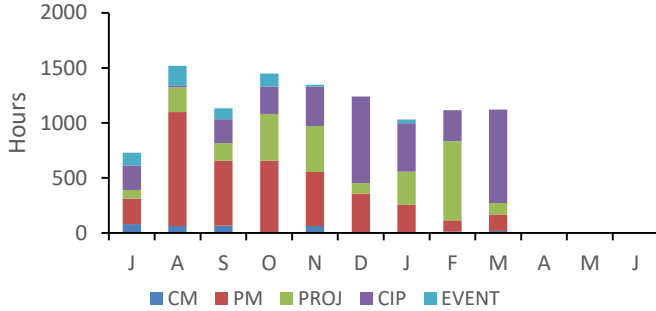
Water Distribution System Valves

3rd Quarter 2024 - FY24

Background

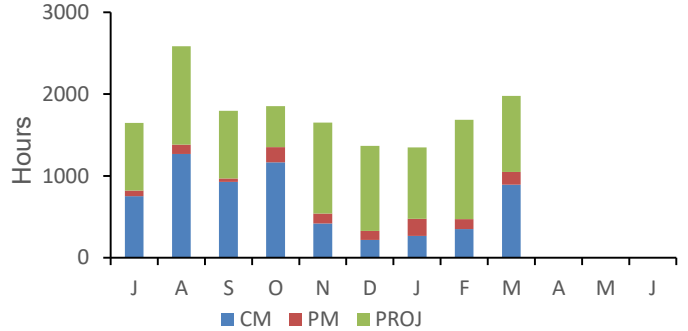
Valves are exercised, rehabilitated, or replaced in order to improve their operating condition. This work occurs year round. Valve replacements occur in roadway locations during the normal construction season, and in off-road locations during the winter season. Valve exercising can occur year round but is often displaced during the construction season. This is due to the fact that a large number of construction contracts involving rehabilitation, replacement, or new installation of water lines, requires valve staff to operate valves and assist with disinfection, dechlorination, pressure-testing, and final acceptance. Valve exercising can also be impacted due to limited redundancy in the water system; valve exercising cannot be performed in areas where there is only one source of water to the community meters or flow disruptions will occur.

Water Valve Labor Hours



During the 3rd quarter of FY24 there was a total of 3,267 hours worked. Percentage breakdown; Corrective Maintenance 1%, Preventative Maintenance 16%, Project 34%, Capital Improvement Project 48%, Event - Wtr Fountain

Water Pipeline Labor Hours



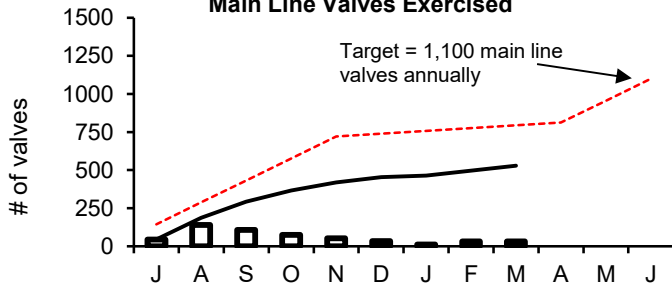
During 3rd quarter of FY24 there was a total of 5,013 hours worked. Percentage breakdown; Corrective Maintenance 30%, Preventative Maintenance 10%, Project 60%

Type of Valve	Inventory #	Operable Percentage	
		FY24 to Date	FY24 Targets
Main Line Valves	2,159	97.2%	95%
Blow-Off Valves	1,682	98.9%	95%
Air Release Valves	1,519	96.5%	95%
Control Valves	49	100.0%	95%

Key to Symbols:

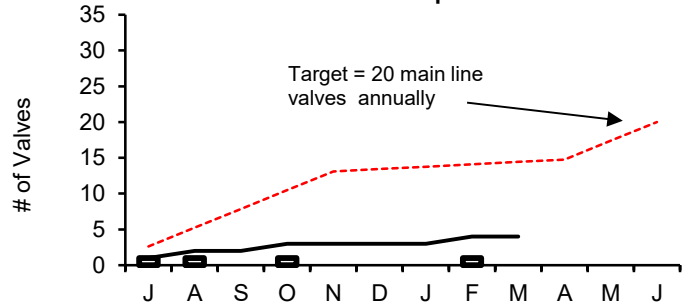
- FY24 Monthly Total
- FY24 Cumulative Total
- FY24 Target

Main Line Valves Exercised



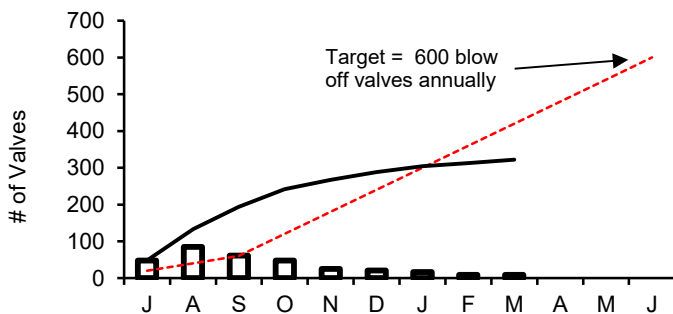
During 3rd quarter of FY24, 75 main line valves were exercised. The total exercised for the fiscal year to date is 529.

Main Line Valves Replaced



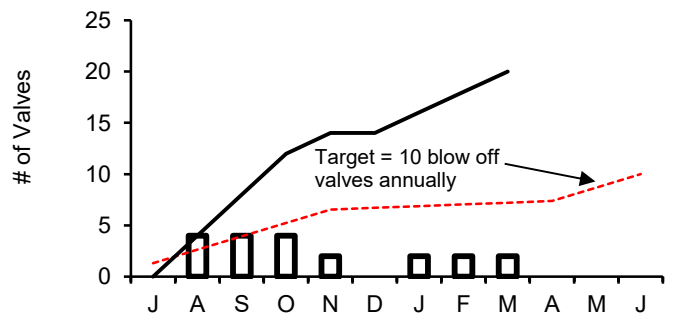
During 3rd quarter of FY24, there was 1 main line valve replaced. The total replaced for the fiscal year to date is 4.

Blow-Off Valves Exercised



During the 3rd quarter of FY24, 34 blow off valves were exercised. The total exercised for the fiscal year to date is 322.

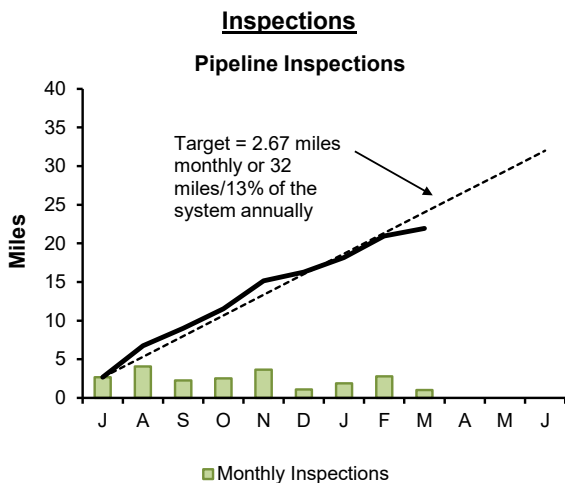
Blow-Off Valves Replaced



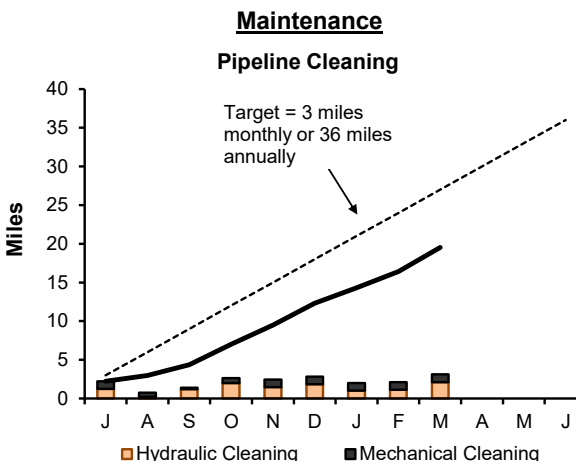
During 3rd quarter of FY24, there were 6 blow off valves replaced. The total replaced for the fiscal year to date is 20.

Wastewater Pipeline and Structure Inspections and Maintenance

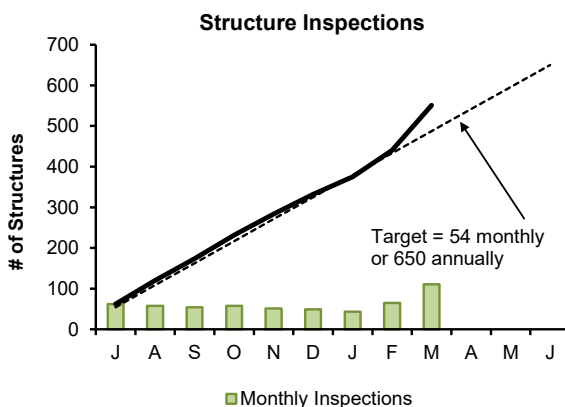
3rd Quarter - FY24



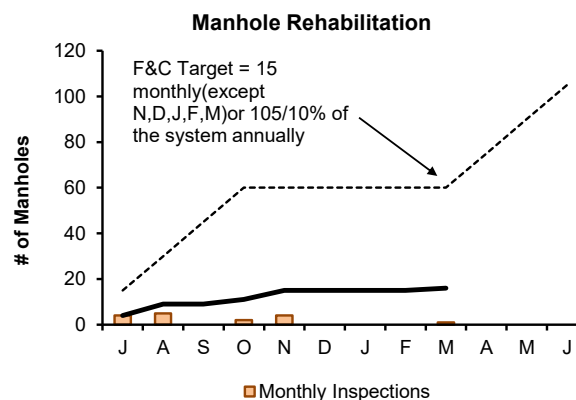
Staff internally inspected 5.67 miles of MWRA sewer pipe during this quarter. The year to date total is 21.94 miles. No Community Assistance was provided.



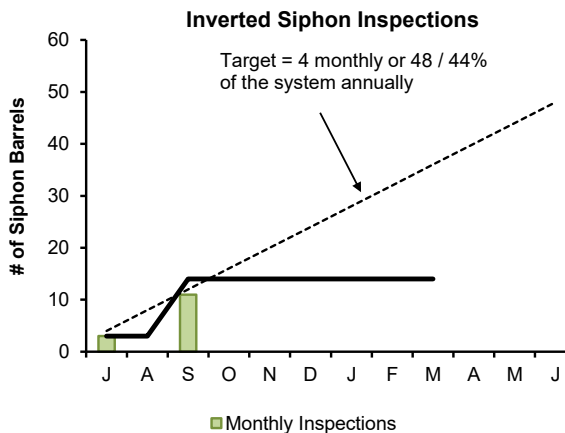
Staff cleaned 4.23 miles of MWRA sewer pipe, and removed 19 yards of grit. The year to date total is 19.53 miles. No Community Assistance was provided.



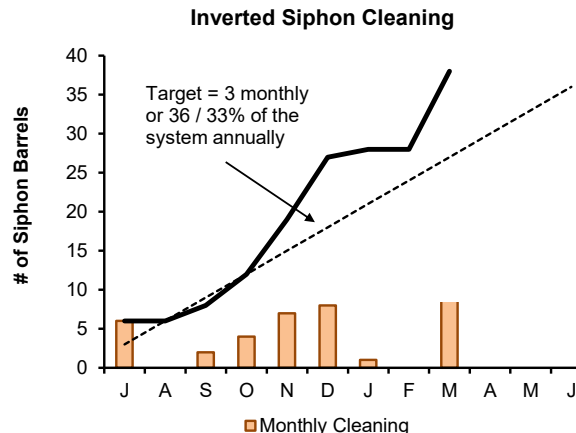
Staff inspected the 36 CSO structures and performed 183 other additional manhole/structure inspections during this quarter. The year to date total is 551 inspections.



Staff replaced 1 frame and cover replacement this quarter. The year to date total is 16.



Staff did not inspect any siphon barrels this quarter. The year total is 14 inspections.

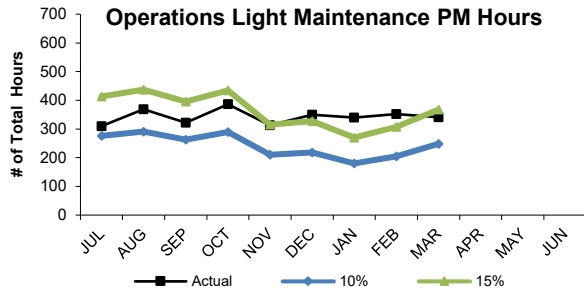


Staff cleaned 11 siphon barrels this quarter.

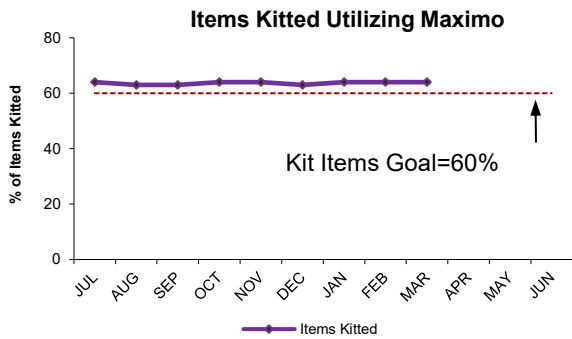
Field Operations' Metropolitan Equipment & Facility Maintenance

3rd Quarter - FY24

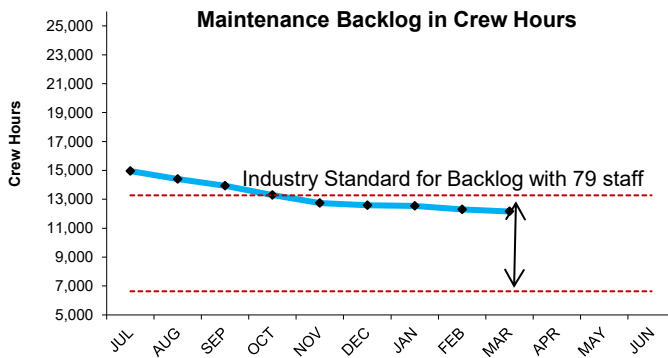
Several maintenance and productivity initiatives are in progress. The goal for the Overall PM completion and the Operator PM completion is 100%. The Operator PM and kitting initiatives frees up maintenance staff to perform corrective maintenance and project work, thus reducing maintenance spending. Backlog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



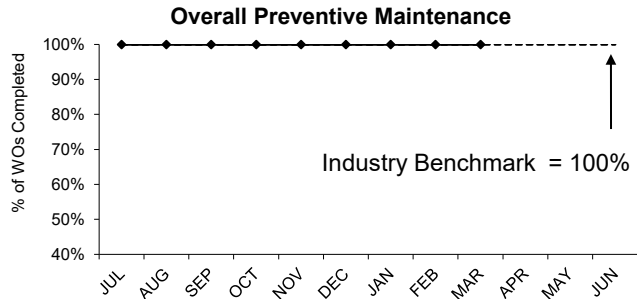
Operations staff averaged 344 hours per month of preventive maintenance during the 3rd Quarter of FY24, an average of 16% of the total PM hours for the 3rd Quarter, which is above the industry benchmark of 10% to 15%.



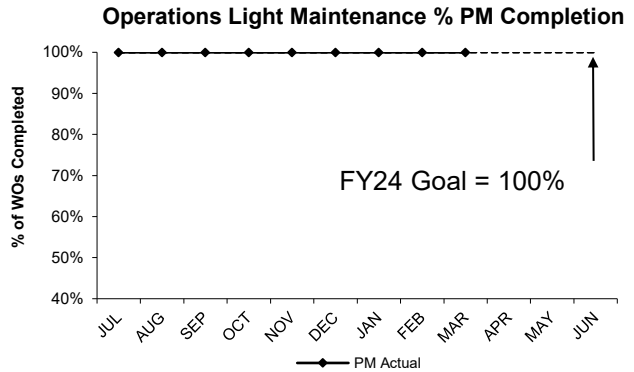
Operations' FY24 maintenance kitting goal has been set at 60% of all work orders to be kitted. Kitting is the staging of parts or material necessary to complete maintenance work. In the 3rd Quarter of FY24, 64% of all applicable work orders were kitted. This resulted in more wrench time and increased productivity.



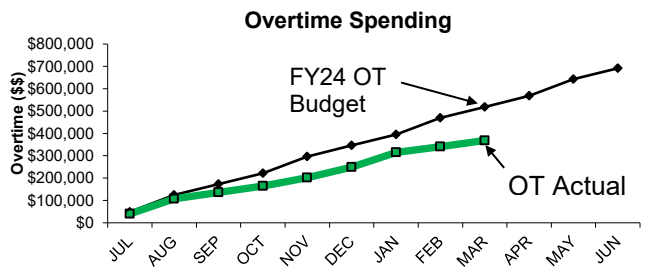
The 3rd Quarter of FY24 backlog average is 12,328 hours. Which is within the industry benchmark of 6,636 to 13,275 hours. The current backlog is due to vacancies and several large maintenance projects.



The Field Operations Department (FOD) preventive maintenance goal for FY24 is 100% of all PM work orders. Staff completed 100% of all PM work orders in the 3rd Quarter of FY24.



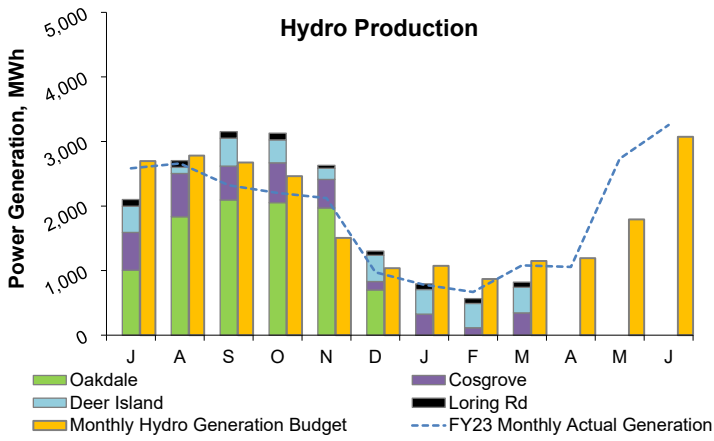
Wastewater Operations complete light maintenance PM's which frees up maintenance staff to perform corrective maintenance. Operations' FY24 PM goal is completion of 100% of all PM work orders assigned. Operations completed 100% of PM work orders in the 3rd Quarter of FY24.



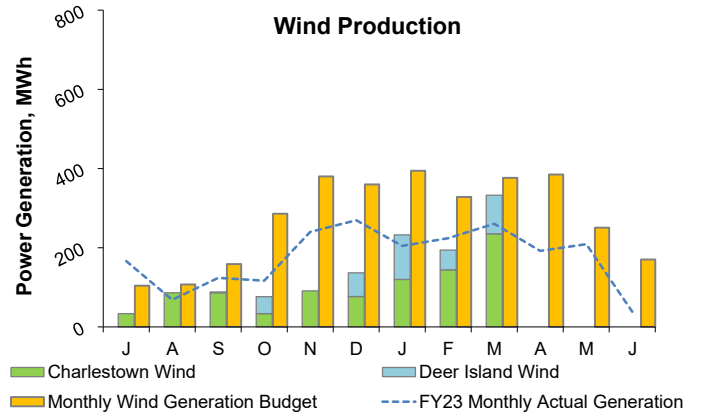
Maintenance overtime was \$17,910 under budget on average, per month, for the 3rd Quarter of FY24. Overtime is used for critical maintenance repairs and wet weather events. The overtime budget through the 3rd Quarter of FY24 is \$518,784. Overtime spending was \$368,471 which is \$150,313 under budget for the fiscal year.

Renewable Electricity Generation: Savings and Revenue

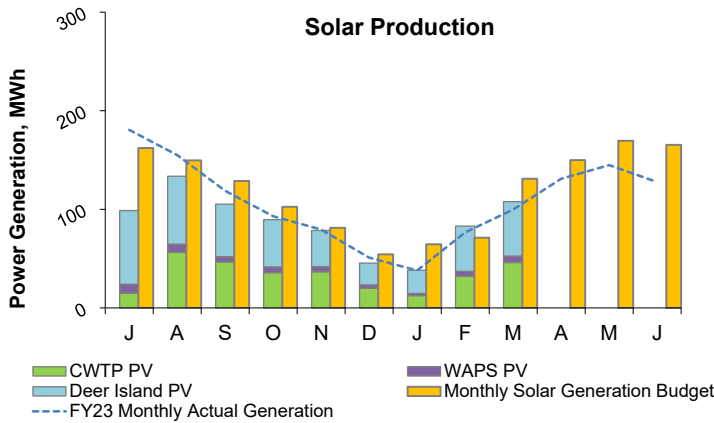
3rd Quarter - FY24



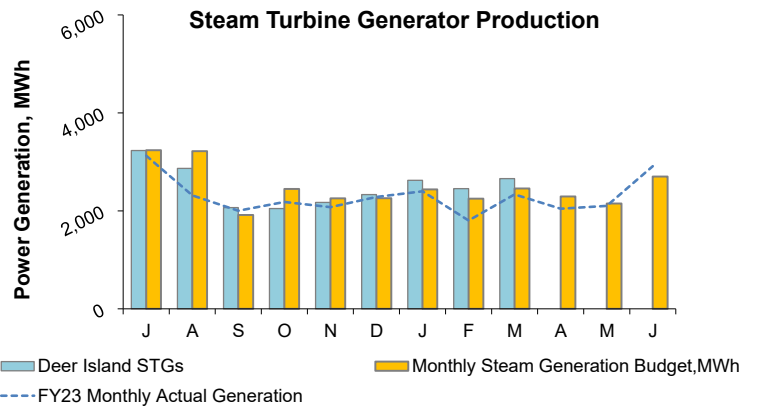
In Quarter 3, the renewable energy produced from all hydro turbines totaled 2,291 MWh; 26% below budget¹.



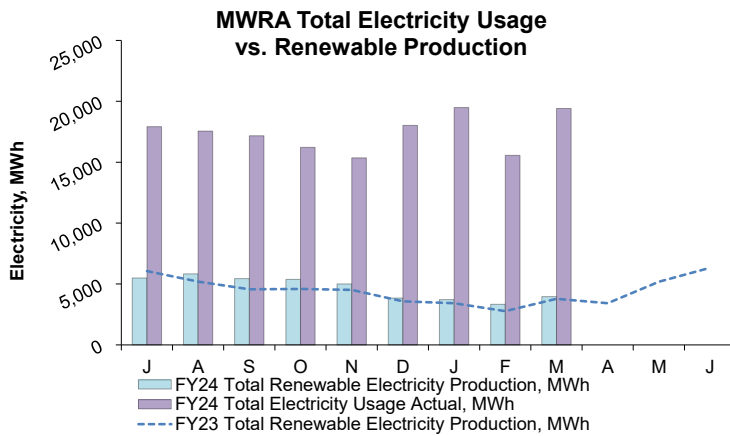
In March, the renewable energy produced from all wind turbines totaled 759 MWh; 31% below budget¹. Deer Island Turbine #1 has been out of service since April 2022, and was heavily damaged following a braking failure on May 29, 2023.



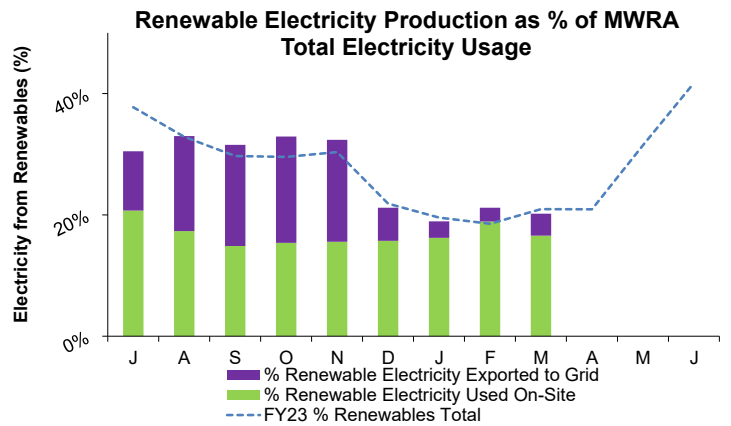
In February, the renewable energy produced from all solar PV systems totaled 229 MWh; 14% below budget¹. The Deer Island Residuals Odor Control roof mounted array has been offline since September 11, 2022 due to a failed inverter.



In Quarter 3, the renewable energy produced from all steam turbine generators totaled 7,735 MWh; 8% above budget¹.



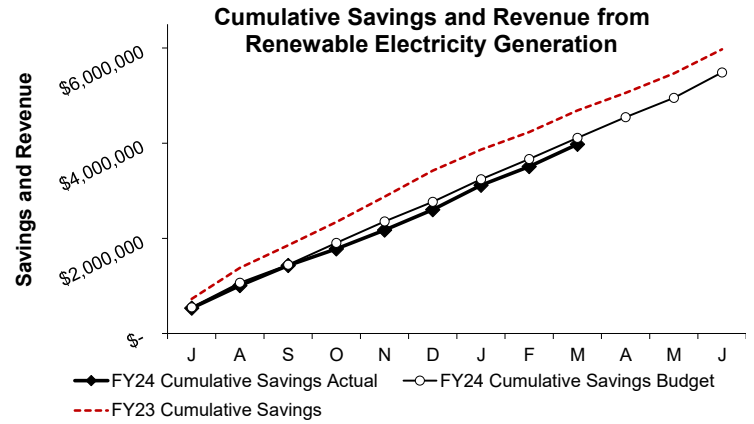
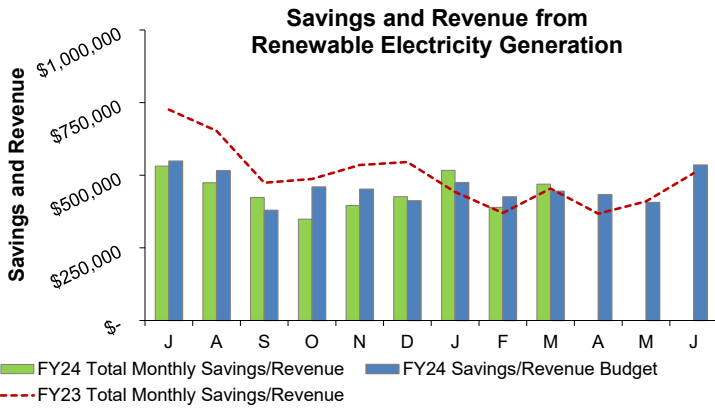
In Quarter 3, MWRA's electricity generation by renewable resources totaled 11,014 MWh, 5% below budget. MWRA's total electricity usage was approximately 54,469 MWh. Renewable resources were 20.2% of total usage. The MWRA total electricity usage is the sum of all electricity purchased for Deer Island and FOD plus electricity produced and used on-site at these facilities. Approximately 99% of FOD electrical accounts are accounted for by actual billing statements; minor accounts that are not tracked on a monthly basis such as meters and cathodic protection systems are estimated based on this year's budget. All renewable electricity generated on DI is used on-site (this accounts for more than 50% of MWRA renewable generation). Almost all renewable electricity generated off-DI is exported to the grid.



Notes: 1. Budget values are based on historical averages for each facility and include operational impacts due to maintenance work.

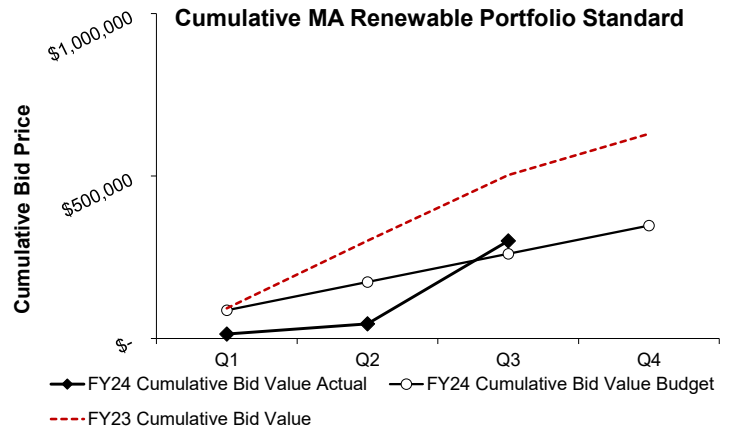
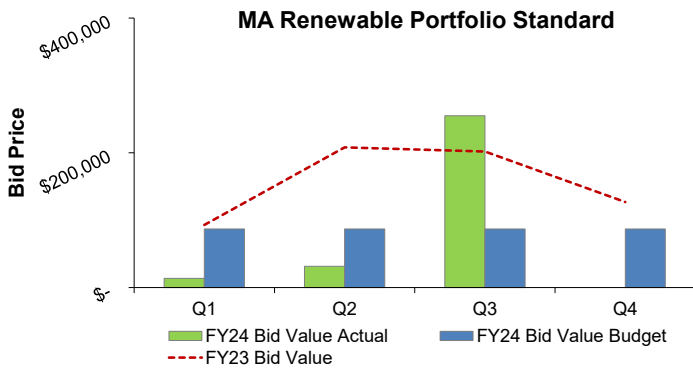
Renewable Electricity Generation: Savings and Revenue

3rd Quarter - FY24



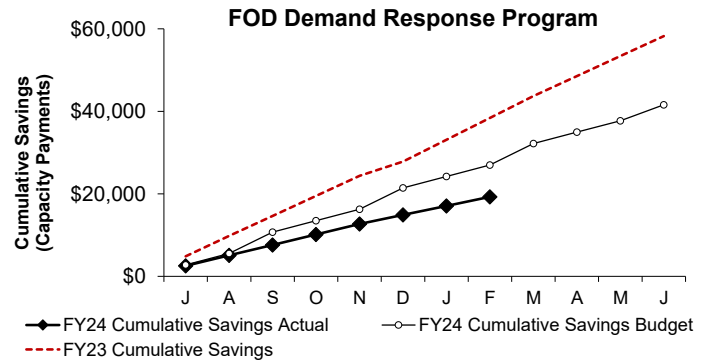
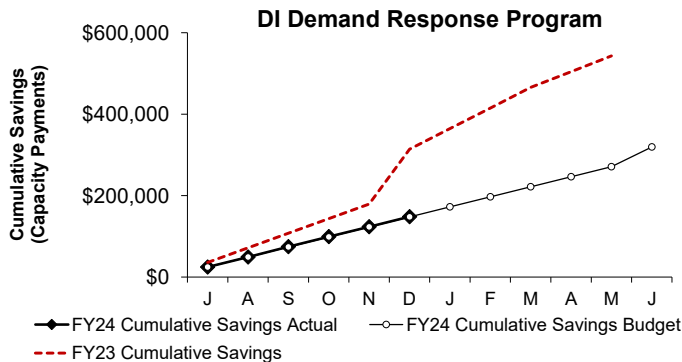
Savings and revenue from renewable energy sources totaled \$1,345,075 in Quarter 3. Cumulative Savings and Revenue is 3% below budget for the fiscal year.

Savings and revenue¹ from all renewable energy sources include wind turbines, hydroelectric generators, solar panels, and steam turbines (DI). This includes savings and revenue due to electricity generation (does not include avoided fuel costs and RPS RECs). The use of DITP digester gas as a fuel source provides the benefit of both electricity generation from the steam turbine generators, and provides thermal value for heating the plant, equivalent to approximately 5 million gallons of fuel oil per year (not included in charts above).



Bids were awarded during the 3rd Quarter² from MWRA's renewable energy assets; 479 Q2 FY23 Class I Renewable Energy Certificates (RECs); and 8,541 Q1 and Q2 FY24 Class 2 RECs were sold for a total value of \$255,027 RPS revenue; which is 194% above budget³ for the Quarter. Class 2 RECs are usually sold in Q2 but no qualifying bids were received, and banked RECs were sold in Q3. REC values reflect the bid value on the date that bids are accepted. Cumulative bid values reflects the total value of bids received to date.

*MWRA's SRECs have transitioned to the Class 1 REC category starting in FY23.

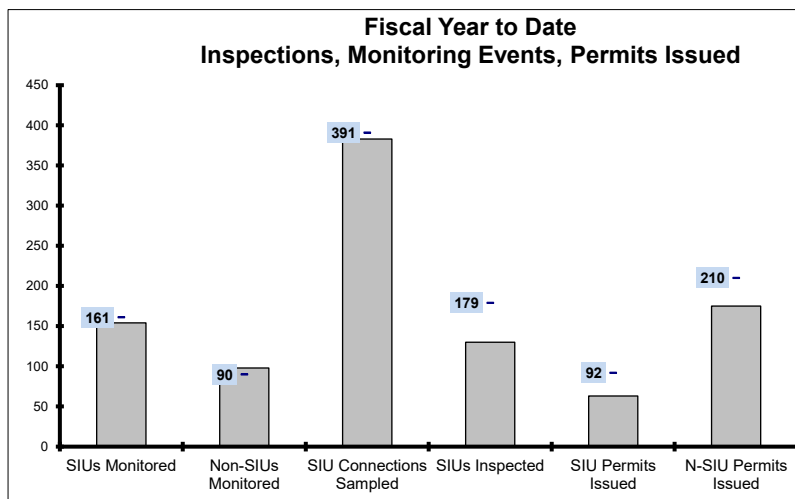


Currently Deer Island, Loring Rd, Brusch Hydro, and JCWTP participate in the ISO-New England Demand Response Programs. By agreeing to reduce demand and operate the facility generators to help reduce the ISO New England grid demand during periods of high energy demand, MWRA receives monthly Capacity Payments from ISO-NE. When MWRA operates the generators during an ISO-NE called event, MWRA also receives energy payments from ISO-NE. Capacity Payments for Deer Island total \$148,230 through September FY24, and payments for FOD total \$19,272 through February.

- Notes:
1. Savings and Revenue: Savings refers to any/all renewable energy produced that is used on-site therefore saving the cost of purchasing that electricity, and revenue refers to any value of renewable energy produced that is sold to the grid.
 2. Only the actual energy prices are being reported. Therefore, some of the data lags up to 3 months due to timing of invoice receipt.
 3. Budget values are based on historical averages for each facility and include operational impacts due to maintenance work.

Toxic Reduction and Control

3rd Quarter - FY24



EPA Required SIU Monitoring Events
for FY24: 161
YTD : **154**

Required Non-SIU Monitoring Events
for FY24: 90
YTD : **98**

SIU Connections to be Sampled
For FY24: 391
YTD: **383**

EPA Required SIU Inspections
for FY24: 179
YTD: **130**

SIU Permits due to Expire
In FY24: 92
YTD: **63**

Non-SIU Permits due to Expire
in FY24: 210
YTD: **175**

Significant Industrial Users (SIUs) are MWRA's highest priority industries due to their flow, type of industry, and/or their potential to violate limits. SIUs are defined by EPA and require a greater amount of oversight. EPA requires that all SIUs *with flow* be monitored at least once during the fiscal year.

The "SIU Monitored" data above, reflects the number of industries monitored; however, many of these industries have more than one sampling point and the "SIU Connections Sampled" data reflect samples taken from multiple sampling locations at these industries.

EPA requires MWRA to issue or renew 90 percent of SIU permits within 120 days of receipt of the application or the permit expiration date - whichever is later. EPA also requires the remaining 10 percent of SIU permits to be issued within 180 days.

	Number of Days to Issue a Permit						Permits Issued	
	0 to 120		121 to 180		181 or more		SIU	Non-SIU
	SIU	Non-SIU	SIU	Non-SIU	SIU	Non-SIU		
Jul	1	3	0	1	0	0	1	4
Aug	5	7	0	1	0	1	5	9
Sep	14	28	0	3	0	0	14	31
Oct	11	34	0	1	0	1	11	36
Nov	15	24	1	2	0	2	16	28
Dec	3	10	0	2	0	0	3	12
Jan	0	0	0	0	0	0	0	0
Feb	0	1	0	0	0	0	0	1
Mar	12	35	1	10	0	10	13	55
Apr								
May								
Jun								
% YTD	97%	81%	3%	11%	0%	8%	63	176

TRAC's annual monitoring and inspection goals are set at the beginning of each fiscal year but they can fluctuate due to the actual number of SIUs.

In addition to the Annual SIU inspections required under TRAC's EPA approved Industrial Pretreatment Program, other inspections are usually undertaken, including for enforcement, permit renewal, follow up, temporary construction dewatering sites, group/combined permit audits, spot, sampling locations, visit only and out of business facility.

Monitoring of SIUs and Non-SIUs is dynamic for several reasons, including: newly permitted facilities; sample site changes requiring a permit change; changes in operations necessitating a change in SIU designation; non-discharging industries; a partial sample event is counted as an event even though not enough sample was taken due to the discharge rate at the time; and sometimes increased/decreased inspections lead to permit category changes requiring additional monitoring events

Permit Categories, as defined in CMR 10.101(2):

DEW - Category 12 Temporary Construction Site Dewatering Permit

LFLP - Category 10 Non-Significant Industrial User with Low Flow and Low Pollutant

02 N-SIU - Category 2 Non-Significant Industrial User

Dental - Category D1 Dental Group Permit

G2 - Category G2 Group Permit for Food Processing

This is the third quarter of the MWRA fiscal year, FY24.

In this quarter, 69 permits issued.

There were 13 SIUs, of which 12 were issued on time.

There were 56 non-SIUs of which 36 were issued on time, with 10 late beyond 180 days.

All but 1 of the SIU permits were issued within the 120-day timeframe. The SIU was issued after 120 days due to the permit application being submitted before the facility was ready to be permitted and inspected.

In FY24, there have been 68 completely new permits issued: 1-04 SIU 10-DEW, 23-LFLP, 26-02 N-SIUs, 2-Dental, 4-G2s, 2-One Time discharge

For the Clinton Sewer Service area, there was 1 SIU permits issued during the FY24 fiscal year.

Field Operations Highlights

3rd Quarter 2024 – FY24

METRO WATER OPERATIONS AND MAINTENANCE

- Valve Program: Valve operations to support in-house work including providing isolations on: Section 91 (Blow Off Replacement), Section 70 (Blow off Replacement), Section 61 (Main Line Valve Installation), Section 87 (Air Valve Replacements). CIP Contractors were supported by isolation and dewatering of portions of Section 29 and 89 (Contract 7117), WASM 11 (Contract 6544), Section 23, 24 & 47 (Contract 6392) and WASM 4 and WASM 16 (Contract 7563).
- Water Pipeline Program: Staff completed Blow-Off replacements in Arlington (Section 61) and Melrose (Section 70). A main line valve was replaced in Arlington (Section 61). Leak repairs were completed in Malden (Section 49) and Lynn (Section 87). Leak detection was performed on over 22 miles of MWRA water mains.

OPERATIONS ENGINEERING

- Staff continued to provide technical support for Design and Construction Contracts including; Low System PRV Upgrades, Columbus Park and Ward St Headworks, Upgrades, Nut Island Odor Control Improvements, Hayes Pump Station Upgrades, Storage Tank Improvements, Sections 23, 24 and 47 Rehabilitation, Section 56 Saugus River Crossing, Steel Tank Improvements and Section 89 Replacement.
- Hydraulic Model Upgrades: Staff continued to provide an in-depth review of the draft model and review of calibrations and supported the work involved for the refined calibrations.
- Staff provided support for system expansion to the north and south and to the Metro communities.
- Staff continued to support the lead loop study at CWTP
- Staff managed the work involved with the installation of the new effluent couplings at Norumbega Storage facility and for the reactivation of the full facility.
- Staff assisted in several wet weather storm events, compiled and finalized storm reports,

monitored and reported on CSO/SSO activation durations and volumes and provided follow up on operational and SCADA issues.

- Staff provided bi-weekly onsite monitoring of the H2S levels for the Odor Control systems at BWRPS and HNPS and continued to monitor levels at NIHW.

SCADA

Water System Work

- Continued technical support for JCWTP PLC replacement project; configured and hardened SCADA Operating system; continued work on network management improvements in the JCWTP water system; moved some SCADA nodes into new control room at JCWTP; Supported soda ash improvements contractor at JCWTP; Improved control logic at Spot Pond; worked on Radio communication upgrades; supported ozone PLC replacement project; updated Verizon data lines at several facilities.

Wastewater System Work

- Configured and hardened SCADA Operating system; continued work on Ward/Columbus, Braintree/Weymouth Pump Station Improvements Project; made improvements to Nut Island SCADA tag database; improved alarm settings at Chelsea Creek; supported replacement of WR03 communications; supported replacement of communication line and network improvements at Prison Point; improved Nut Island PLC configuration; updated Verizon data lines at several facilities.

TRAC

Compliance and Enforcement

- TRAC issued 19 Notices of Noncompliance, 49 Notices of Violation, 4 Return to Permit Letters, 1 Demand Letter, 2 Extension Letters and 1 Ruling on Reconsideration of a Non/Order.

Inspections and Permitting

- TRAC issued 97 MWRA 8(m) Permits allowing companies to work within an easement or other property interest held by the Authority. The total number includes 57 permits issued for work within water infrastructure easements and 40 permits issued for work within sewer

Field Operations Highlights

3rd Quarter 2024 – FY24

infrastructure easements. Permits issued this quarter were issued in an average of 85 days from the date the application.

- TRAC monitored the septage receiving sites a total of 29 times. Staff conducted inspection at 23 new construction gasoline/oil separators and 66 existing gasoline/oil separators.
- TRAC staff conducted 44 Annual SIU Inspections and 255 other inspections.
- 69 MWRA Sewer Use Discharge Permits (Permits) were issued and/or renewed to its sewer users.

Monitoring

- TRAC completed 14 first time SIU monitoring events, 70 first time NSIU monitoring events and 152 other events including Clinton NPDES sampling, Clinton Local Limits sampling, Metropolitan Local Limits sampling, Clinton and Metropolitan Local Limits PFAS sampling, Special Sulfide sampling, Cosgrove and Oakdale NPDES sampling, CSO NPDES sampling, Sudbury Aqueduct monitoring and CSO Hypochlorite Tank chemical sampling

ENVIRONMENTAL QUALITY- WATER

- Algae: MWRA's algae monitoring season ended in October. All nuisance algae were below levels of concern.

Regulatory and Non-Regulatory Sampling

- Regulatory: Staff collected samples for all quarterly monitoring programs including EPA's Unregulated Contaminant Monitoring Rule 5, Disinfection Byproducts Rule, and Optimal Water Quality Parameters. Sampling occurred for the Wachusett Aqueduct Pump Station Geothermal NPDES permit and the CWTP NPDES permit related to half plant remediation operations.
- Non-Regulatory: As part of the future EPA Lead & Copper Rule revisions, MWRA voluntarily sampled at locations near residences with lead results over the lead action level.
- Community Support: Staff assisted Boston, Framingham, and Newton and Swampscott with sampling within their distribution systems. Staff

held two coliform sampler-training sessions for samplers from Wakefield, Boston, and MWRA.

- Internal Support: Staff provided a water quality complaint webinar on appropriate response to complaints. The CWTP lead pipe-rig study sample events occurred throughout the quarter.
- Projects: Staff sampled as part of Water Research Foundation research project, WRF 5156. Staff met regarding water quality monitoring associated with Contract 6832 Steel Tank Improvements 90% design review.

Contaminant Monitoring System (CMS):

- This quarter, staff responded to eight CMS alarms and followed routine response protocols during each event. Staff replaced CMS equipment with newer versions at four locations with rollout occurring as planned.

Data Management Group

- Staff submitted monthly DEP and DPH reports on schedule and fulfilled six data requests..

ENVIRONMENTAL QUALITY-WASTEWATER

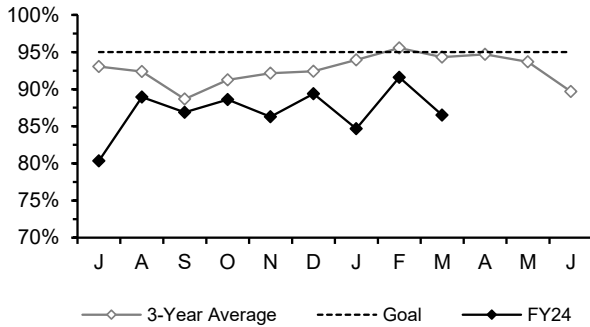
- Ambient Monitoring: The first two water column surveys of 2024 were successfully completed. Convened annual technical workshop for outfall monitoring team.
- Harbor/CSO Receiving Water Monitoring: Biweekly harbor monitoring continues Seasonal CSO receiving water sampling will restart in April.
- Permitting and Compliance Reporting: Submitted monthly and quarterly discharge monitoring reports, and as-needed notifications of CSOs, SSOs, and blending, and provided prior notice of essential maintenance. Reported Contingency Plan exceedance for annual average chlorophyll, resulting from a large Gulf of Maine wide algae bloom in late spring/early summer. Submitted annual certifications of annual CSO structure inspections and of Best Management Practices at drinking water facilities. Submitted quality assurance project plan for ambient phosphorus monitoring as required by the Clinton NPDES permit.

Laboratory Services

3rd Quarter - FY24

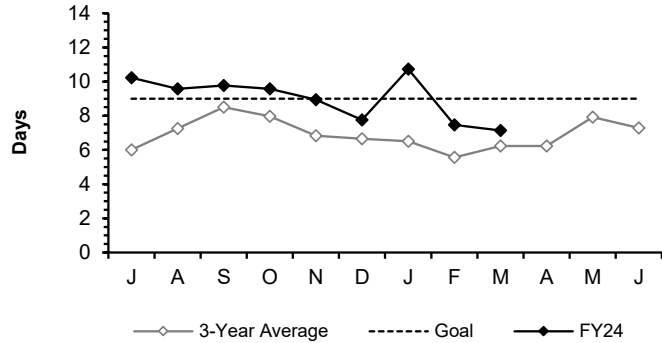
Laboratory Services supports the laboratory sampling, testing, and consulting needs of various client groups primarily in the Operations Division. This includes drinking water transmission and treatment, wastewater collection and treatment, wastewater residuals management, industrial-pretreatment monitoring, and environmental quality.

Percent On-Time Results



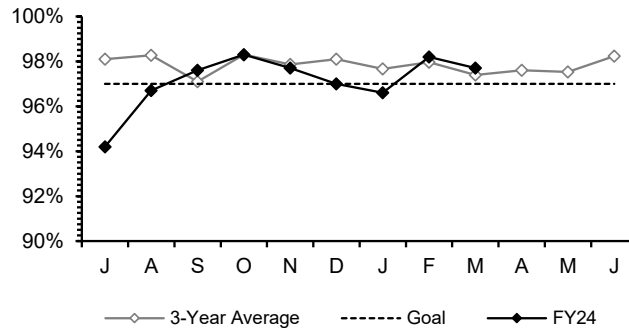
The Percent On-Time measurement assesses performance against internal client due dates. These due dates are shorter than the compliance reporting requirements to allow for internal review of the data.

Turnaround Time



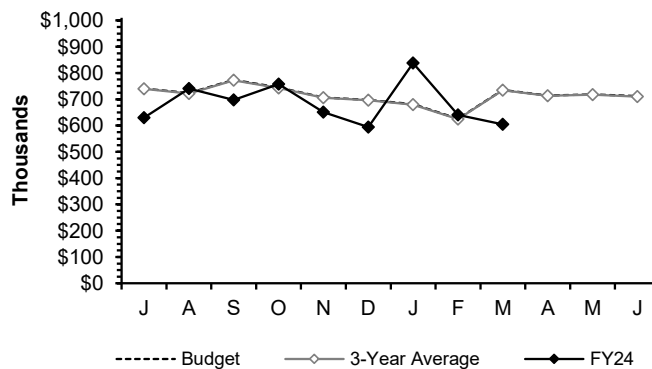
Turnaround Time measures the average time from sample receipt to sample completion.

Percent QC Within Specifications



Percent QC Within Specifications measures the fraction of Quality Control tests that met required limits during the month.

Value of Services Rendered



Value of Services Rendered models the true cost of the lab work performed, including fringe benefits that are not a part of the Laboratory Services budget.

Performance Summary: Turnaround Time and Percent QC within Specifications met the monthly goals. Department staffing was improved to ~95% of budgeted level, but we are still training new staff, which impacts productivity.

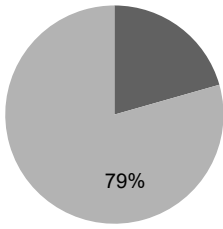
School Lead Program: During the 3rd quarter of FY24, MWRA’s lab completed 1204 tests from 30 schools and childcare facilities in 12 communities. Since 2016, MWRA’s Laboratory has conducted over 42,000 tests from 600 schools and daycares in 44 communities. We have also completed 961 home lead tests under the DPH sampling program since 2017.

CONSTRUCTION PROGRAMS

Engineering & Construction Projects In Construction

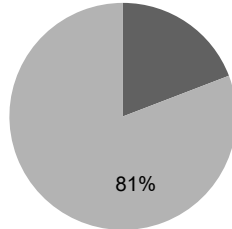
3rd Quarter – FY24

Cost



■ Amount Remaining
■ Billed to Date

Time



■ Time Remaining
■ Time Expended

Carroll Water Treatment Plant SCADA Improvements

Project Summary: The current SCADA control equipment has reached the end of its useful life, and future vendor support for the installed PLC base is no longer guaranteed. This contract includes the supply and installation of replacement instrumentation panels, PLC's, UPS backup power, fiber-optic communication network, wiring between the existing panels, and new equipment and refurbishment of the operator control room. In addition, a new server room equipped with HVAC and fire suppression is being constructed to house redundant computer hardware supporting active and backup SCADA systems.

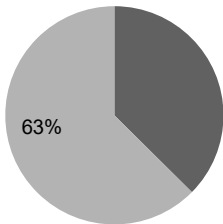
Contract Amount: \$13,451,674.07

Contract Duration: 1,127 Days

Notice to Proceed: 1-Sep-21

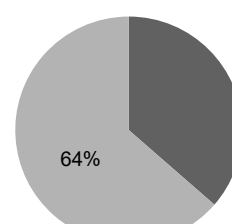
Contract Completion: 2-Oct-24

Cost



■ Amount Remaining
■ Billed to Date

Time



■ Time Remaining
■ Time Expended

Section 89 Replacement Pipeline

Project Summary: This project will include replacement of a 10,500-foot portion of PCCP with class IV reinforcing wire, line valves and appurtenances, and abandonment of the 118-year old, 24-inch diameter cast iron Section 29 pipeline.

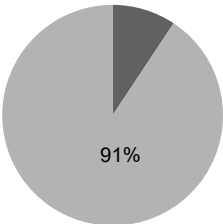
Contract Amount: \$35,275,662.11

Contract Duration: 1,475 Days

Notice to Proceed: 5-Aug-21

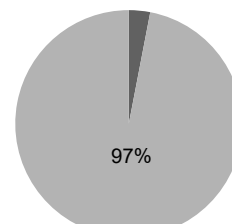
Contract Completion: 19-Aug-25

Cost



■ Amount Remaining
■ Billed to Date

Time



■ Time Remaining
■ Time Expended

Low Service PRV Improvements

Project Summary: This project will demolish the existing Nonantum Road and Mystic Valley Parkway PRV vault structures, including four 24-inch PRVs and appurtenances, and construct new, larger cast-in-place vaults. At Mystic Valley Parkway, two 42-inch PRVs and at Nonantum Road two 30-inch PRVs, isolation valves, piping, and other appurtenances will be installed. Additionally, a new master meter will be constructed at the Mystic Valley Parkway pressure reducing valves and the existing master meter located near the Nonantum Road pressure reducing valves will be upgraded to accommodate the increased flow.

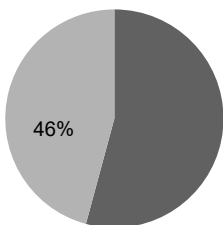
Contract Amount: \$12,205,837.64

Contract Duration: 990 Days

Notice to Proceed: 14-Jul-21

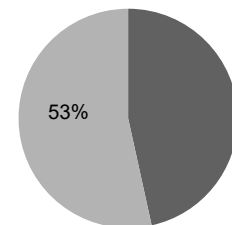
Contract Completion: 30-Mar-24

Cost



■ Amount Remaining
■ Billed to Date

Time



■ Time Remaining
■ Time Expended

Construction of Water Mains – Section 101

Project Summary: This construction contract consists of a new 36-inch diameter water main and appurtenances extending from MWRA's Meter 182 at the Waltham/Lexington town line down Lexington Street to Totten Pond Road, where it will connect to Waltham's water system. This new water main will provide sufficient capacity to maintain water service to Waltham during the anticipated shutdown of MWRA's WASM 3 pipeline and the Lexington Street Pumping Station for future rehabilitation.

Contract Amount: \$33,235,976.89

Contract Duration: 1175 Days

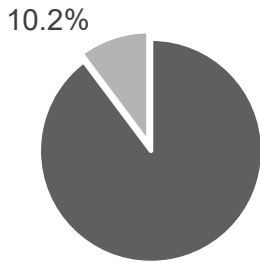
Notice to Proceed: 12-Jul-22

Contract Completion: 29-Sep-25

Deer Island Wastewater Treatment Plant Projects In Construction

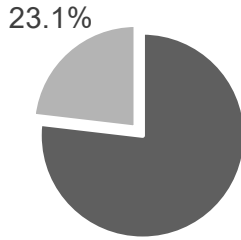
3rd Quarter - FY24

Cost



- Amount Remaining
- Billed to Date

Time



- Time Remaining
- Time Expended

7395 - Clarifier Rehabilitation Phase 2

Project Summary: This project involves the replacement of the original remaining scum and sludge equipment, as follows: over 400 Primary Clarifier influent, effluent, and dewatering gates; 384 primary effluent cross channel gate actuators; approximately 450 secondary scum influent gates and actuators; wear strip rails, 768 head shaft and idler sprockets; over 3000 linear feet of influent channel aerations piping systems; 360 head shafts collector drives and chains; return sludge line vent piping; approximately 400 concrete and aluminum hatches and associated electrical and control systems.

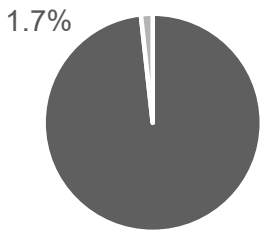
Contract Amount: \$289,359,690

Contract Duration: 1620 Days

Notice to Proceed: 10-Mar-23

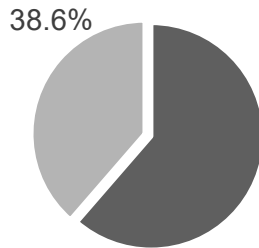
Contract Completion: 16-Aug-27

Cost



- Amount Remaining
- Billed to Date

Time



- Time Remaining
- Time Expended

7734 - Deer Island Treatment Plant Roofing

Replacement at Various Buildings

Project Summary: This project includes the removal and replacement of 86,500 square feet of roofing on the following buildings: Cryogenic Compressor; Gravity Thickener Complex; Thermal/Power Plant; Main Switchgear; and Digester Complex Modules 1, 2 and 3. Buildings to be reroofed in the Digester Complex include: Module 1- Digester Equipment Complex Roof, Elevator/Stair Lobby Roof and Elevator Penthouse Roof; Module 2 - Digester Equipment Complex Roof; and Module 3- Digester Equipment Complex Roof and Elevator Penthouse Roof.

Contract Amount: \$8,873,000

Contract Duration: 365 Days

Notice to Proceed: 28-Dec-2023

Contract Completion: 27-Dec-2024

CSO CONTROL PROGRAM

3rd Quarter – FY24

Overview

In compliance with milestones in the Federal District Court Order, all 35 projects in the CSO Long-Term Control Plan (LTCP) were complete as of December 2015. Subsequently, MWRA completed a multi-year CSO post-construction monitoring program and performance assessment, filing the Final CSO Post Construction Monitoring Program and Performance Assessment Report with the Court and submitted copies to EPA and DEP in December 2021. April 2024 Annual report shows an 88% reduction in CSO in a typical year, from 3.3 billion gallons to 397 million gallons, with 72 of 86 outfalls meet or materially meet the LTCP goals (6 of the 73 materially meet) for CSO activation frequency and volume. MWRA and its member CSO communities are moving forward with plans to bring 7 of the 13 (formerly 16) CSOs in line with the LTCP goals. With respect to the remaining 6 challenging CSO outfalls, MWRA and its CSO Consultant (AECOM) continue to investigate alternative to move closer to LTCP goals.

MWRA CSO Performance Assessment

- In November 2017, MWRA signed a contract for CSO Post-Construction Monitoring and Performance Assessment with AECOM Technical Services, Inc. The contract includes CSO inspections, overflow metering, hydraulic modeling, system performance assessments and water quality impact assessments, culminating in the submission of a report to EPA and MassDEP in December 2021 verifying whether the LTCP goals are attained.
- AECOM continues to support efforts to advance project identified to meet performance goals at 7 of the 13 CSOs that don't meet LTCP goals, evaluate alternatives for the remaining 6 challenging sites, and predict and report on annual CSO discharges.
- **Submit in December 2024 a Supplement to the Post-Construction Monitoring and Performance Assessment report with the MWRA's final results and conclusions as to the 16 outfalls that have not met their respective LTCP goals.**

Court Ordered Levels of CSO Control

Progress on the work to comply with the court ordered levels of CSO control is discussed with the EPA/MassDEP at progress meetings held quarterly. **Latest meeting held on 3/28/2024 and the next meeting will be in June.**

Ongoing Projects as of December 31, 2023

- *East Boston CSO Control:* As part of the East Boston CSO a FAA/MOU was executed in June 2021 for \$2.1M, BWSC design and construction. Work at BOS014, BOS003 is complete and are now meeting LTCP goals. Sewer separations is expected to be completed in spring of 2024. Plans for Phase 4 sewer separation with five new contracts starting summer 2024 (through 2030) will result in most of East Boston being separated.
- *Somerville Marginal New Pipe Connection* came out of the variance optimization study that recommended adding a new pipe from the facility's CSO influent conduit to the interceptor with an added control gate. The \$1.2M (est.) construction project is expected to be completed by **December 2025.**

- *Fort Point Channel and Mystic Confluence* – BOS013, BOS062, BOS065, BOS070 DBC and BOS017: The FAA/MOU was amended on December 13, 2023 to include BOS013. On December 14, 2023 the Commission awarded the contract to P. Gioioso & Sons in the amount \$10.4 million over the engineer's estimate of \$7.3 million. Anticipate completion of construction by December 2024.
- *CAM005 weir raising and lengthening* for reducing CSO activation and frequency volume. The **Scope of Services has been developed for the design.** Cost estimate \$250,000. **Anticipated completion of construction in 2025.**

CSO variances

MassDEP has issued a series of multi-year CSO variances that allow MWRA, Cambridge, and Somerville to continue to have limited CSO discharges to Alewife Brook and the Upper Mystic River, as well as the Charles River lower basin. The most recent variances, issued in 2019, require the development of Updated LTCP. The Updated LTCPs must include a description of the existing level of CSO control, an evaluation of the costs and the performance and water quality improvements achieved by additional CSO control alternatives, a public participation plan, and an affordability analysis. **Draft Updated Control Plan due December 2025 and the Final Plan due December 2027.**

- o MassDEP and EPA conditionally approved MWRA's Updated CSO Control Plan Scope of Work on 5/11/2022.
- o Schedule Extension Request for Deliverables Associated with Updated CSO Control Plan was submitted 9/22/22. In May 2023 EPA/MassDEP advised that MWRA, Cambridge and Somerville proceed according to our revised schedule.
 - As identified in the variance the progress is reported at monthly meetings with EPA/MassDEP. The next meeting is scheduled for **5/08/2024**. Key elements of the Updated CSO Control Plan are discussed including the development of Alternatives to be evaluated using the Unified Hydraulic Model.
- o The 3rd of 8 planned meetings was held on 11/15/2023. **The next Public Meeting is scheduled for late summer of 2024.**
- o Development and Submittal of Studies as required under variance included the following:
 - Alewife PS Optimization Evaluation was submitted on 4/27/2021
 - Somerville Marginal CSO Reduction, Study and Preliminary Design was submitted on 12/27/2021
 - Alewife Brook and Charles River System Optimization Evaluation was submitted on 12/28/2022
 - MWRA CSO Variances Additional System Optimization Measures Report was submitted on 1/31/2023.
- o Bi-annual meeting with CLF/Watershed groups held on 12/20/2023. Next meeting June to go over the April 2024 Annual Report for results based on calendar year 2023 and continued CSO abatement work.

CIP Expenditures

3rd Quarter – FY24

FY24 Capital Improvement Program Expenditure Variances through March by Program - (\$ in thousands)				
Program	FY24 Budget Through March	FY24 Actual Through March	Variance Amount	Variance Percent
Wastewater	\$79,758	\$56,022	(\$23,736)	-30%
Waterworks	\$97,785	\$86,588	(\$11,196)	-12%
Business and Operations Support	\$12,825	\$5,547	(\$7,279)	-57%
Total	\$190,368	\$148,157	(\$42,211)	-22%

Wastewater:

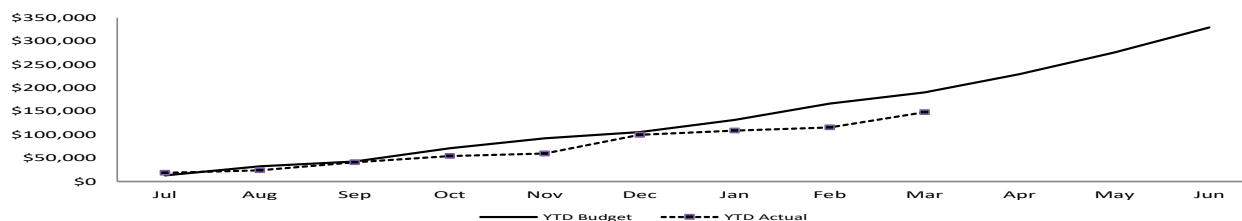
- Spending was less than planned in Wastewater due to timing of community loans and distributions for the I/I Local Financial Assistance program, timing of work, long lead time for equipment and delay in fabrication of structural steel for Braintree/Weymouth Improvements, delay in performing shaft inspections and issuing NTP for Final Design for Ward Street & Columbus Park Headworks Upgrades Design/CA, schedule changes for DITP Roofing Replacement, Somerville Marginal New Pipe Connection, DiStor Membrane Replacements, and Chemical Pipe Replacement, lower than projected task order work for Deer Island As-Needed Design, and work scheduled for FY24 that was completed in FY23 for Chelsea 008 Pipe Replacement.
- This less than planned spending was partially offset by claim settlement for Chelsea Creek Upgrades – Construction, and equipment received ahead of schedule for Clarifier Rehabilitation Phase 2 – Construction.

Water:

- Spending was less than planned in Waterworks due to timing of consultant work for Metropolitan Tunnel Redundancy Preliminary Design & Massachusetts Environmental Policy Act Review, WASM 3 MEPA/Design/CA/RI, and Geotechnical Support Services, timing of contractor work for CP-1 NEH Improvements and Section 89/29 Replacement, updated schedules for Section 75 Extension, Shaft 5 Improvements Design/CA and Construction, Steel Tank Improvements, and Maintenance Garage/Wash Bay/Storage Building, longer lead time on some larger items and a change in design for the multi-orifice valve for Wachusett Lower Gatehouse Pipe & Boiler Replacement, lower than projected task order work for CWTP Technical Assistance, and work scheduled for FY24 performed in FY23 for WASM 3 Rehabilitation CP-1.
- This less than planned spending was partially offset by timing of community distributions for the Water Loan program, work scheduled for FY23 that was completed in FY24 for Waltham Water Pipeline and CWTP Chemical Feed System.

Budget vs. Actual CIP Expenditures (\$ in thousands)

Total FY24 CIP Budget of \$302,200



Construction Fund Management

All payments to support the capital program are made from the Construction Fund. Sources of fund in-flows include bond proceeds, commercial paper, SRF reimbursements, loan repayments by municipalities, and current revenue. Accurate estimates of cash withdrawals and grant payments (both of which are derived from CIP spending projections) facilitate planning for future borrowings and maintaining an appropriate construction fund balance.

Cash Balance as of 3/20/24	\$77.8million
Unused capacity under the debt cap:	\$2.35 billion
Estimated date for exhausting construction fund without new borrowing:	June 2024
Estimated date for debt cap increase to support new borrowing:	Not anticipated at this time
Commercial paper/Revolving loan outstanding:	\$150 million
Commercial paper capacity / Revolving Loan	\$100 million
Budgeted FY24 Cash Flow Expectancy*:	\$246 million

DRINKING WATER QUALITY AND SUPPLY

Source Water – Microbial Results and UV Absorbance

3rd Quarter – FY24

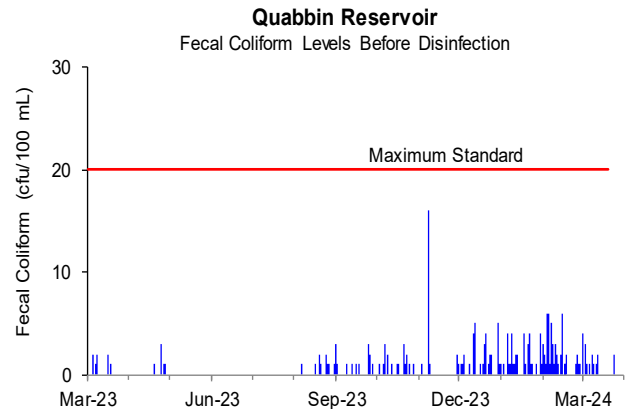
Source Water – Microbial Results

Total coliform bacteria are monitored in both source and treated water to provide an indication of overall bacteriological activity. Most coliforms are harmless. However, fecal coliforms, a subclass of the coliform group, are identified by their growth at temperatures comparable to those in the intestinal tract of mammals. They act as indicators of possible fecal contamination. The Surface Water Treatment Rule for unfiltered water supplies allows for no more than 10% of source water samples prior to disinfection over any six-month period to have more than 20 fecal coliforms per 100mL.

Sample Site: Quabbin Reservoir

Quabbin Reservoir water is sampled at the William A. Brutsch Water Treatment Facility raw water tap before being treated and entering the CVA system.

All samples collected during the quarter were below 20 cfu/100mL. **For the current six-month period, 0.0% of the samples have exceeded a count of 20 cfu/100mL.**

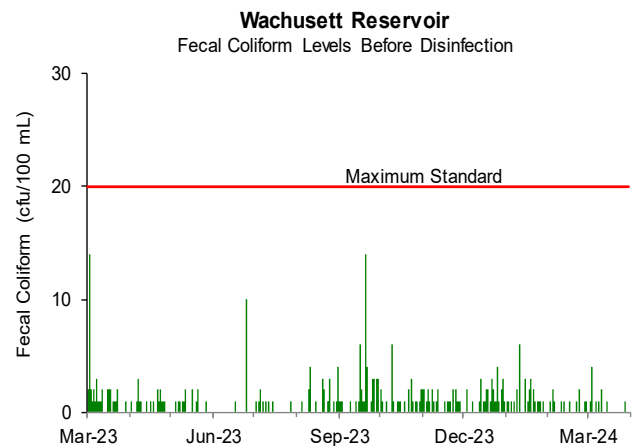


Sample Site: Wachusett Reservoir

Wachusett Reservoir water is sampled at the CWTP raw water tap in Marlborough before being treated and entering the MetroWest/Metropolitan Boston systems.

In the wintertime when smaller water bodies near Wachusett Reservoir freeze up, many waterfowl will roost in the main body of the reservoir - which freezes later. This increased bird activity tends to increase fecal coliform counts. DCR has an active bird harassment program to move the birds away from the intake area.

All samples collected during the 3rd Quarter were below 20 cfu/100mL. **For the current six-month period, 0.0% of the samples exceeded a count of 20 cfu/100mL.**

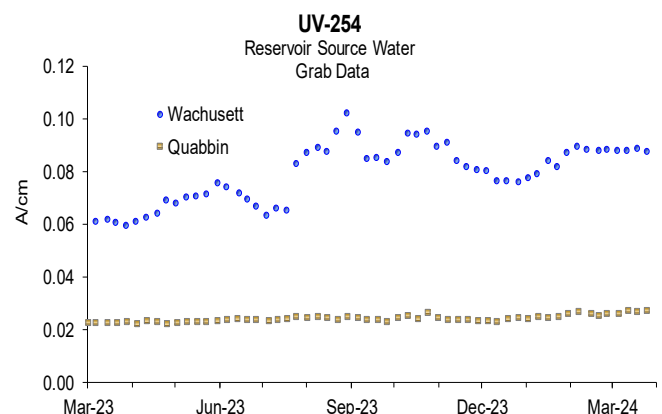


Source Water – UV Absorbance

UV Absorbance at 254nm wavelength (UV-254), is a measure of the amount and reactivity of natural organic material in source water. Higher UV-254 levels cause increased ozone and chlorine demand resulting in the need for higher ozone and chlorine doses, and can increase the level of disinfection by-products. UV-254 is impacted by tributary flows, water age, sunlight and other factors.

Quabbin Reservoir UV-254 levels averaged 0.026 A/cm for the quarter.

Wachusett Reservoir UV-254 levels averaged 0.086 A/cm for the quarter.



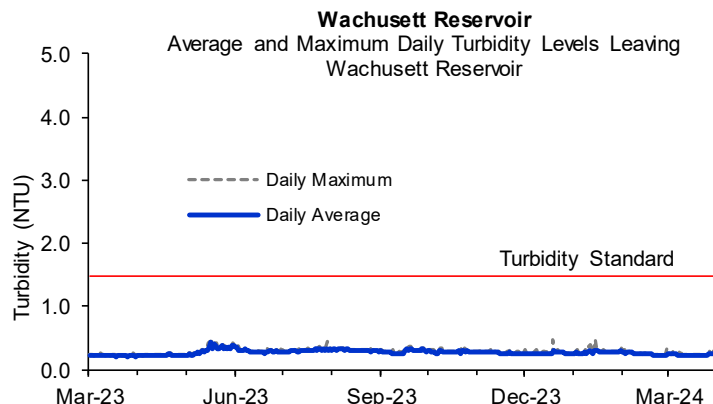
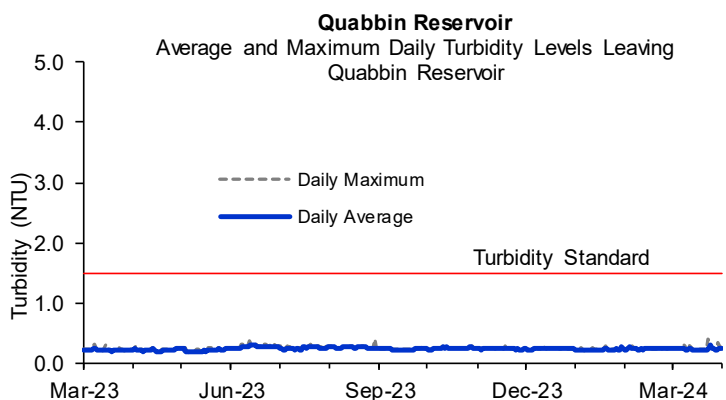
Source Water – Turbidity

3rd Quarter – FY24

Turbidity is a measure of suspended and colloidal particles including clay, silt, organic and inorganic matter, algae and microorganisms. The effects of turbidity depend on the nature of the matter that causes the turbidity. High levels of particulate matter may have a higher disinfectant demand or may protect bacteria from disinfection effects, thereby interfering with the disinfectant residual throughout the distribution system.

There are two standards for turbidity: all water must be below five NTU (Nephelometric Turbidity Units), and water only can be above one NTU if it does not interfere with effective disinfection.

Turbidity of Quabbin Reservoir water is monitored continuously at the Brutsch Water Treatment Facility (BWTF) before UV and chlorine disinfection. Turbidity of Wachusett Reservoir is monitored continuously at the Carroll Water Treatment Plant (CWTP) before ozonation and UV disinfection. Maximum turbidity results at Quabbin and Wachusett were within DEP standards for the quarter.

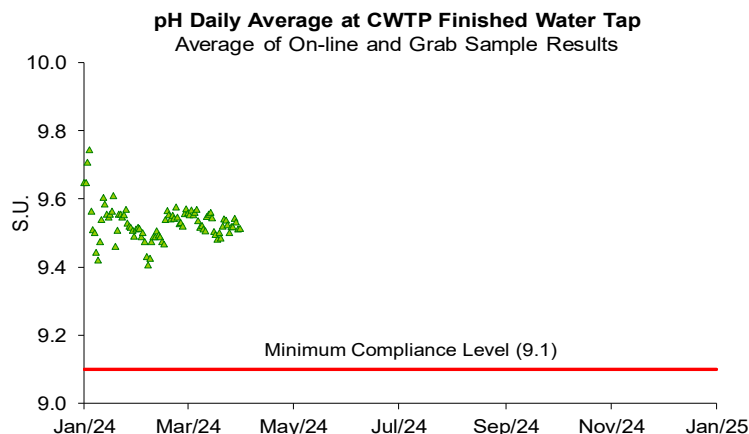
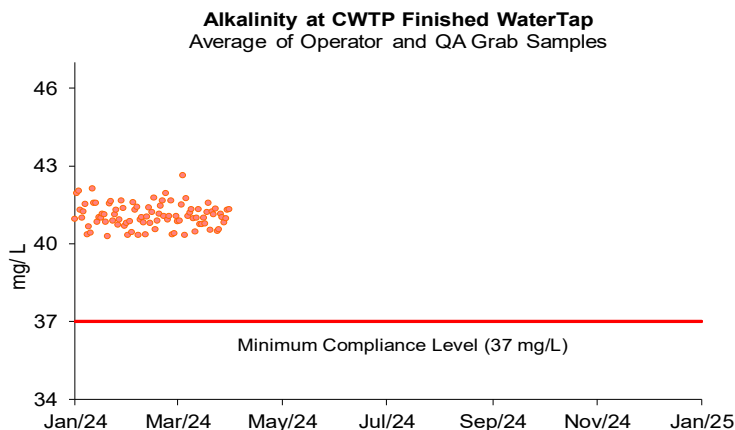


Treated Water – pH and Alkalinity Compliance

MWRA adjusts the alkalinity and pH of Wachusett water at CWTP to reduce its corrosivity, which minimizes the leaching of lead and copper from service lines and home plumbing systems into the water. MWRA tests finished water pH and alkalinity daily at the CWTP's Fin B sampling tap. MWRA's target for distribution system pH is 9.3; the target for alkalinity is 40 mg/l. Per DEP requirements, CWTP finished water samples have a minimum compliance level of 9.1 for pH and 37 mg/L for alkalinity. Samples from 27 distribution system locations have a minimum compliance level of 9.0 for pH and 37 mg/L for alkalinity. Results must not be below these levels for more than nine days in a six month period. Distribution system samples are collected in March, June, September, and December.

Each CVA community provides its own corrosion control treatment. See the CVA report: <https://www.mwra.com/annual/waterreport/2022results/PDFS/CVA.pdf>.

Quarterly distribution system samples were collected over a course of two weeks in March. Distribution system sample pH ranged from 9.5 to 9.7 and alkalinity ranged from 40 to 42 mg/L. No sample results were below DEP limits for this quarter.



Treated Water – Disinfection Effectiveness

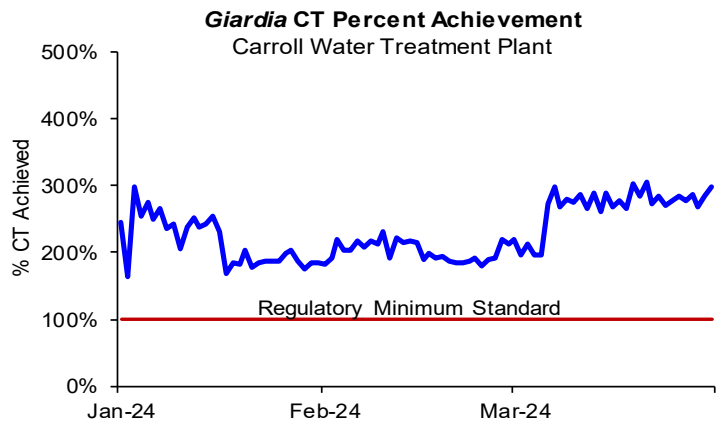
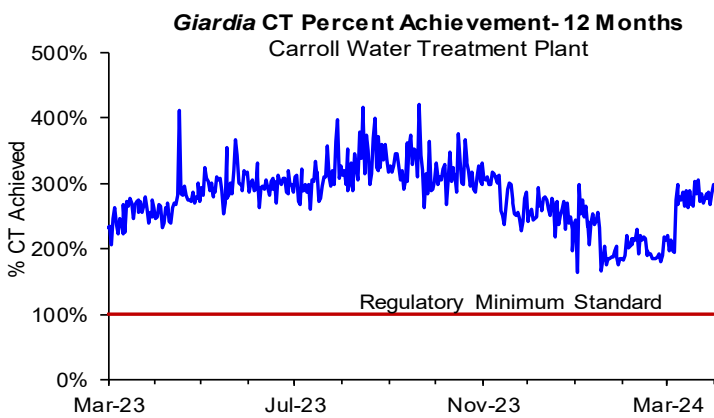
3rd Quarter – FY24

At the Carroll Water Treatment Plant (CWTP), MWRA meets the required 99.9% (3-log) inactivation of *Giardia* using ozone (reported as CT: concentration of disinfectant x contact time) and the required 99% (2-log) inactivation of *Cryptosporidium* using UV (reported as IT: intensity of UV x time). MWRA calculates inactivation rates hourly and reports *Giardia* inactivation at maximum flow and *Cryptosporidium* inactivation at minimum UV dose. MWRA must meet 100% of required CT and IT.

CT achievement for *Giardia* assures CT achievement for viruses, which have a lower CT requirement. For *Cryptosporidium*, there is also an “off-spec” requirement. Off-spec water is water that has not reached the full required UV dose or if the UV reactor is operated outside its validated ranges. No more than 5% off-spec water is allowed in a month.

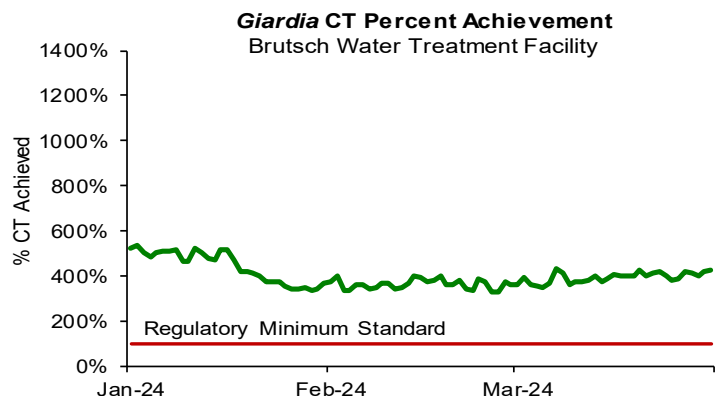
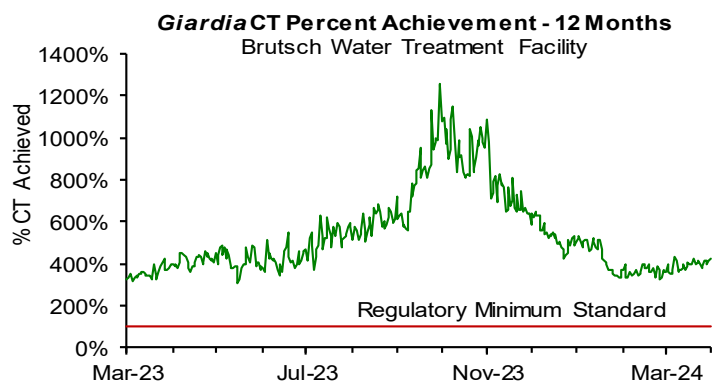
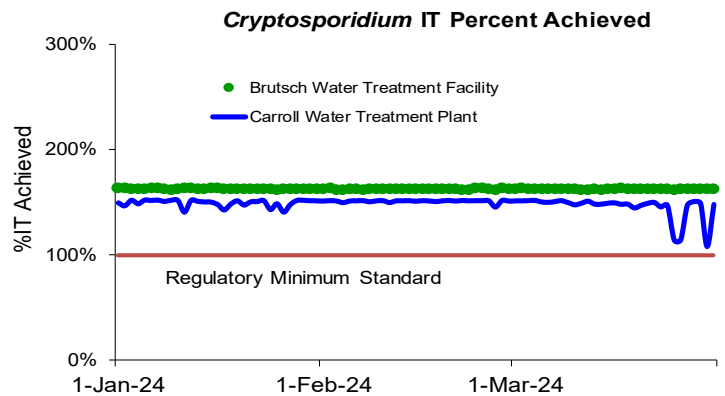
Wachusett Reservoir – MetroWest/Metro Boston Supply:

- The chlorine dose at the CWTP varied between 3.35 and 3.45 mg/L for the quarter.
- Ozone dose at the CWTP varied between 2.1 to 2.7 mg/L for the quarter.
- Giardia* CT was maintained above 100% at all times the plant was providing water into the distribution system this quarter, as well as every day for the last fiscal year.
- Cryptosporidium* IT was maintained above 100% for the quarter. Off-spec water was less than 5%.



Quabbin Reservoir (CVA Supply) at: Brutsch Water Treatment Facility

- The chlorine dose at BWTF is adjusted in order to achieve MWRA’s seasonal target of 0.75 - 0.85 mg/L (November 1 – May 31) and 0.85 - 1.05 mg/L (June 1 – October 31) at Ludlow Monitoring Station.
- The chlorine dose at BWTF varied between 1.30 to 1.45 mg/L for the quarter.
- Giardia* CT was maintained above 100% at all times the plant was providing water into the distribution system for the quarter.
- Cryptosporidium* IT was maintained above 100% for the quarter. Off-spec water was less than 5%.



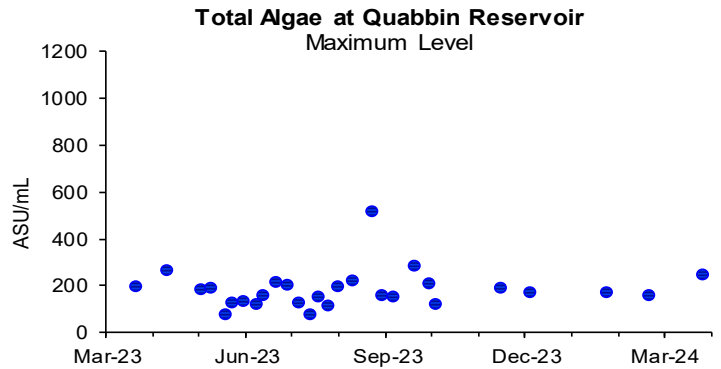
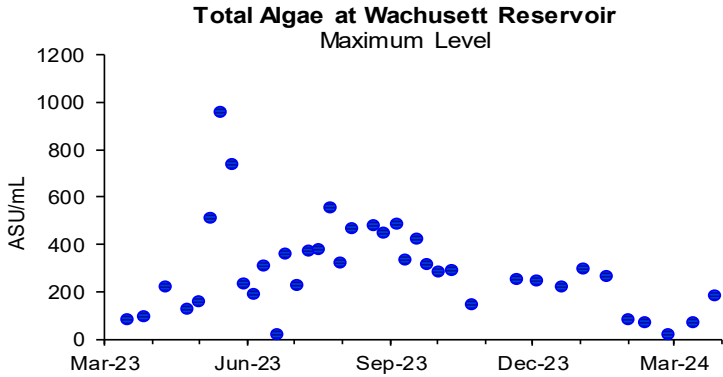
Source Water - Algae

3rd Quarter – FY24

Algae levels in the Wachusett and Quabbin Reservoir are monitored by DCR and MWRA. These results, along with taste and odor complaints, are used to make decisions on source water treatment for algae control.

Taste and odor complaints at the tap may be due to algae, which originate in source reservoirs, typically in trace amounts. Occasionally, a particular species grows rapidly, increasing its concentration in water. When *Synura*, *Anabaena*, or other nuisance algae bloom, MWRA may treat the reservoirs with copper sulfate, an algicide. During the winter and spring, diatom numbers may increase. While not a taste and odor concern, consumers that use filters may notice a more frequent need to change their filters.

In the 3rd quarter, there were no complaints which may be related to algae reported from the local water departments.



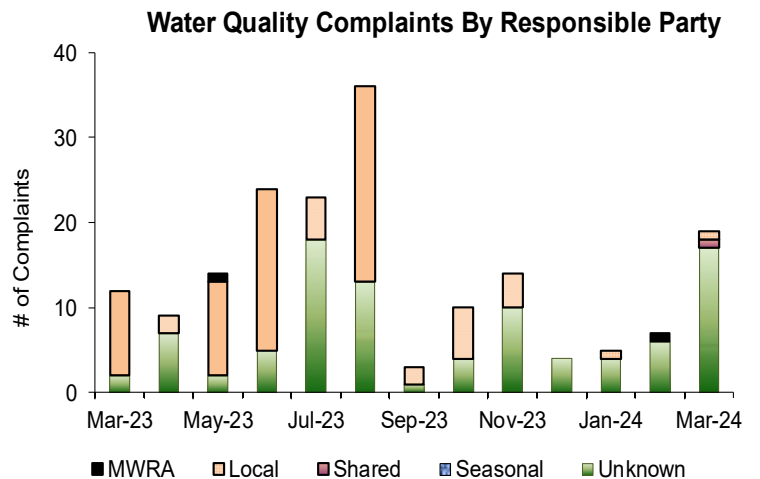
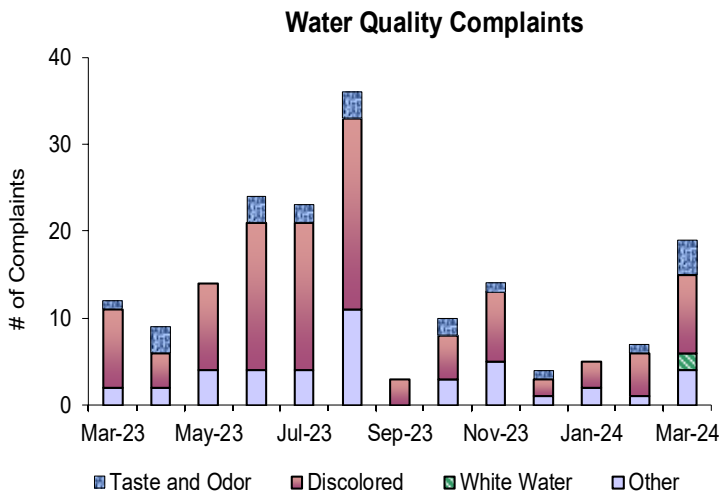
Drinking Water Quality Customer Complaints: Taste, Odor, or Appearance

MWRA collects information on water quality complaints that typically fall into four categories: 1) discoloration due to MWRA or local pipeline work; 2) taste and odor due to algae blooms in reservoirs or chlorine in the water; 3) white water caused by changes in pressure or temperature that traps air bubbles in the water; or 4) “other” complaints including no water, clogged filters or other issues.

MWRA routinely contacts communities to classify and tabulate water complaints from customers. This count, reflecting only telephone calls to towns, probably captures only a fraction of the total number of customer complaints. Field Operations staff have improved data collection and reporting by keeping track of more kinds of complaints, tracking complaints to street addresses and circulating results internally on a daily basis.

Communities reported 31 complaints during the quarter compared to 29 complaints from 3rd Quarter of FY23. Of these complaints, 17 were for “discolored water”, 5 were for “taste and odor”, 2 were for “white water”, and 7 were for “other”. Of these complaints, 2 were local community issues, one was a shared MWRA/community issue, and 27 were unknown in origin.

There were no discolored water complaints due to flushing this quarter.



Bacteria & Chlorine Residual Results for Communities in MWRA Testing Program

3rd Quarter – FY24

While all communities collect bacteria samples and chlorine residual data for the Total Coliform Rule (TCR), data from the 44 systems that use MWRA's Laboratory are reported below.

The MWRA TCR program has 144 sampling locations. These locations include sites along MWRA's transmission system, water storage tanks and pumping stations, as well as a subset of the community TCR locations.

Samples are tested for total coliform and *Escherichia coli* (*E.coli*). *E.coli* is a specific coliform species whose presence likely indicates potential contamination of fecal origin.

If *E.coli* are detected in a drinking water sample, this is considered evidence of a potential public health concern. Public notification is required if repeat tests confirm the presence of *E.coli* or total coliform.

Total coliform provide a general indication of the sanitary condition of a water supply. If total coliform are detected in more than 5% of samples in a month (or if more than one sample is positive when less than 40 samples are collected), the water system is required to investigate the possible source/cause with a Level 1 or 2 Assessment, and fix any identified problems.

A disinfectant residual is intended to maintain the sanitary integrity of the water; MWRA considers a residual of 0.2 mg/L a minimum target level at all points in the distribution system.

Highlights

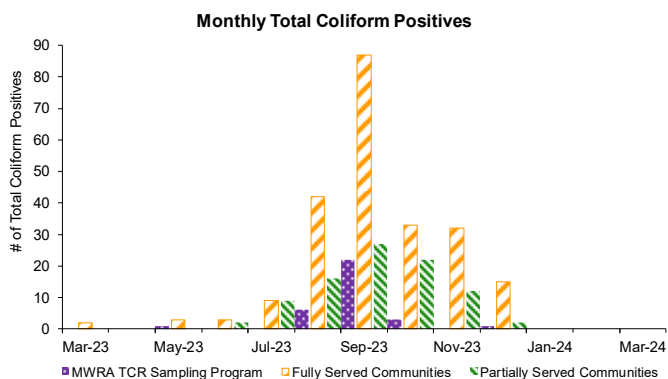
None of the 6,286 fully and partially served samples tested positive for total coliform during the month of March. None of the 1851 Shared Community/MWRA samples tested positive for total coliform during the month of March. None of the 395 CVA/MWRA community samples tested positive for total coliform during the month of March. No samples confirmed for *E.coli*.

0.3% of the Fully Served community quarterly samples had chlorine residuals lower than 0.2 mg/L.

NOTES:

- MWRA total coliform and chlorine residual results include data from community locations. In most cases these community results are indicative of MWRA water as it enters the community system; however, some are strongly influenced by local pipe conditions. Residuals in the MWRA system are typically between 1.0 and 2.8 mg/L.
- The number of samples collected depends on the population served and the number of repeat samples required.
- These communities are partially supplied, and may mix their chlorinated supply with MWRA chloraminated supply.
- Part of the Chicopee Valley Aqueduct System. Free chlorine system.

	Total Coliform		E.coli Positive	# Assessment Required
	# Samples (b)	# (%) Positive		
MWRA	MWRA Locations	350	0 (0%)	0
	Shared Community/MWRA sites	1501	0 (0%)	0
	Total: MWRA	1851	0 (0.0%)	0
Fully Served	ARLINGTON	156	0 (0%)	0
	BELMONT	104	0 (0%)	0
	BOSTON	780	0 (0%)	0
	BROOKLINE	237	0 (0%)	0
	CHELSEA	169	0 (0%)	0
	DEER ISLAND	52	0 (0%)	0
	EVERETT	169	0 (0%)	0
	FRAMINGHAM	237	0 (0%)	0
	LEXINGTON	120	0 (0%)	0
	LYNNFIELD	18	0 (0%)	0
	MALDEN	234	0 (0%)	0
	MARBLEHEAD	72	0 (0%)	0
	MARLBOROUGH	144	0 (0%)	0
	MEDFORD	214	0 (0%)	0
	MELROSE	117	0 (0%)	0
	MILTON	102	0 (0%)	0
	NAHANT	30	0 (0%)	0
	NEWTON	279	0 (0%)	0
	NORTHBOROUGH	48	0 (0%)	0
	NORWOOD	99	0 (0%)	0
	QUINCY	338	0 (0%)	0
	READING	130	0 (0%)	0
	REVERE	195	0 (0%)	0
	SAUGUS	104	0 (0%)	0
	SOMERVILLE	252	0 (0%)	0
	SOUTHBOROUGH	32	0 (0%)	0
	STONEHAM	91	0 (0%)	0
SWAMPSCOTT	57	0 (0%)	0	
WALTHAM	215	0 (0%)	0	
WATERTOWN	143	0 (0%)	0	
WESTON	45	0 (0%)	0	
WINTHROP	66	0 (0%)	0	
Total: Fully Served	5049	0 (0.0%)	0	
Partially Served	BEDFORD	56	0 (0%)	0
	BURLINGTON	136	0 (0%)	0
	CANTON	90	0 (0%)	0
	NEEDHAM	123	0 (0%)	0
	PEABODY	219	0 (0%)	0
	WAKEFIELD	123	0 (0%)	0
	WELLESLEY	114	0 (0%)	0
	WILMINGTON	87	0 (0%)	0
	WINCHESTER	94	0 (0%)	0
	WOBBURN	195	0 (0%)	0
Total: Partially Served	1237	0 (0.0%)	0	
Total: Community Samples No CVA		6286	0 (0.0%)	0
CVA	MWRA CVA Locations	104	0 (0%)	0
	CHICOPEE	186	0 (0%)	0
	SOUTH HADLEY FDI	60	0 (0%)	0
	WILBRAHAM	45	0 (0%)	0
Total: CVA	395	0 (0.0%)	0	



Chlorine Residuals in Fully Served Communities

	2023											2024		
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
% < 0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.2	0.2	0.3	0.1	0.0	0.0	
% < 0.2	0.1	0.0	0.0	0.0	0.1	0.3	1.8	1.0	1.2	1.0	0.5	0.4	0.1	
% < 0.5	0.5	0.3	0.3	1.0	1.2	3.1	6.2	5.2	5.7	3.2	2.4	1.9	0.6	
% < 1.0	1.3	1.4	1.9	3.4	4.8	12.5	16.0	13.2	14.4	8.4	5.8	3.7	2.6	
% > 1.0	98.7	98.6	98.1	96.6	95.2	87.5	84.0	86.8	85.6	91.6	94.2	96.3	97.4	

Treated Water Quality: Disinfection By-Product (DBP) Levels in Communities

3rd Quarter – FY24

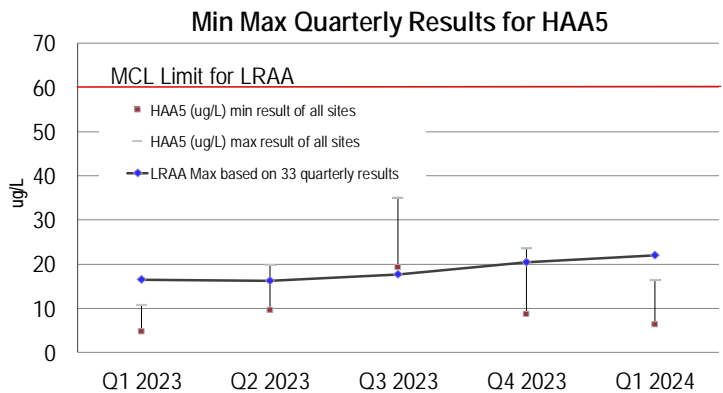
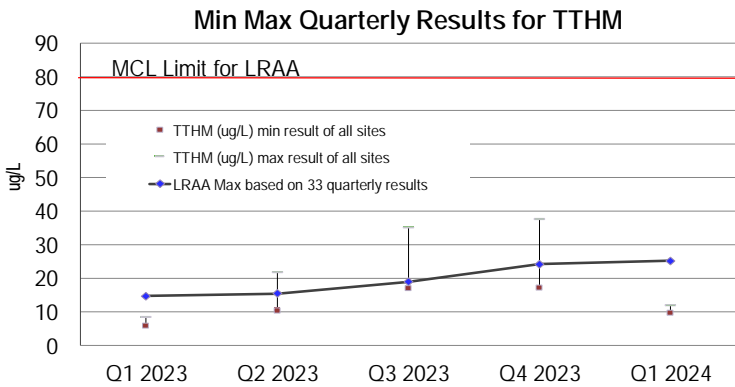
Total Trihalomethanes (TTHMs) and Haloacetic Acids (HAA5s) are by-products of disinfection treatment with chlorine. They are of concern due to their potential adverse health effects at high levels. EPA’s locational running annual average (LRAA) standard, using the most recent four quarterly results, is 80 µg/L for TTHMs and 60 µg/L for HAA5s. The locational running annual average at each individual sampling location must be below the standard.

Bromate is tested monthly as required for water systems, like CWTP, that treat with ozone. EPA’s RAA Maximum Contaminant Level (MCL) standard for bromate is 10 µg/L. The current RAA for Bromate at the CWTP finished water tap is 0.0 µg/L.

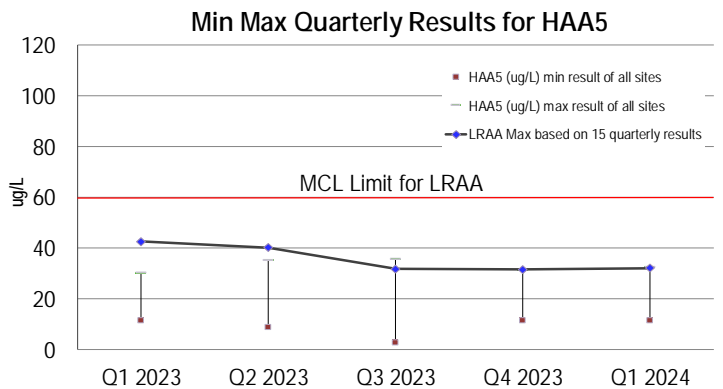
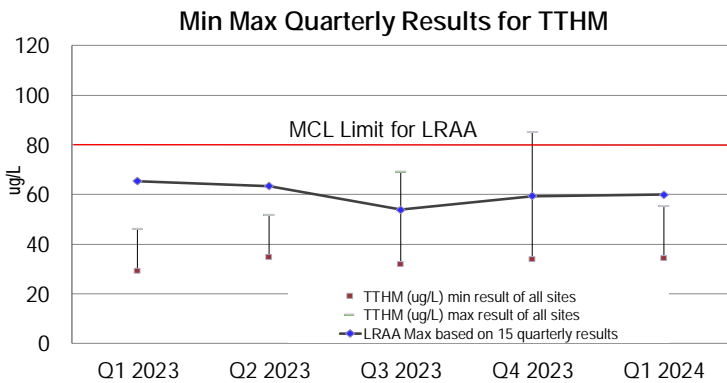
MWRA’s TTHM and HAA5 sampling program includes sampling at 33 MetroWest and Metro Boston communities sites. Partially served and CVA communities are responsible for their own compliance monitoring and are regulated individually.

The LRAA for TTHMs and HAA5s for MWRA’s Compliance Program (represented as the line in the top two graphs below) remains below current standards. The Max LRAA in the quarter for TTHMs = 25.3 µg/L; HAA5s = 22.1 µg/L. No LRAA exceedances or violations occurred this quarter for MetroBoston and for any of the CVA communities.

MetroBoston Disinfection By-Products



CVA Disinfection By-Products (Combined Results Chicopee, Wilbraham, & South Hadley FD1)



Water Supply and Source Water Management

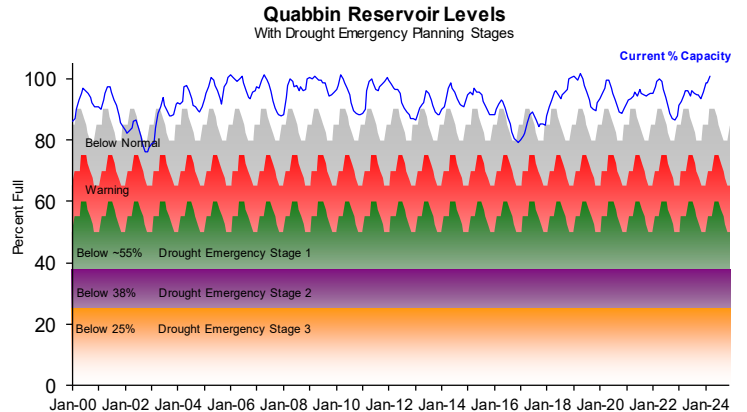
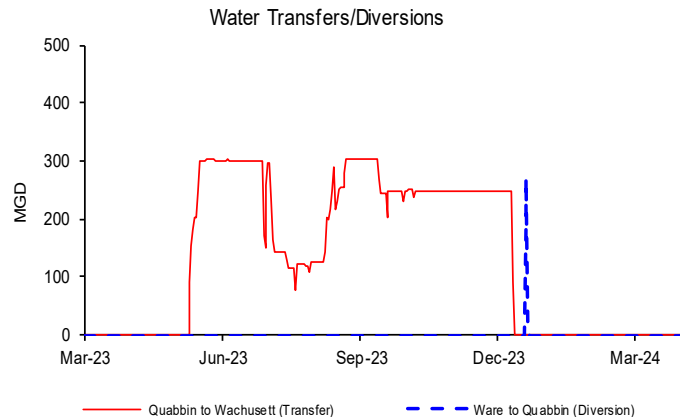
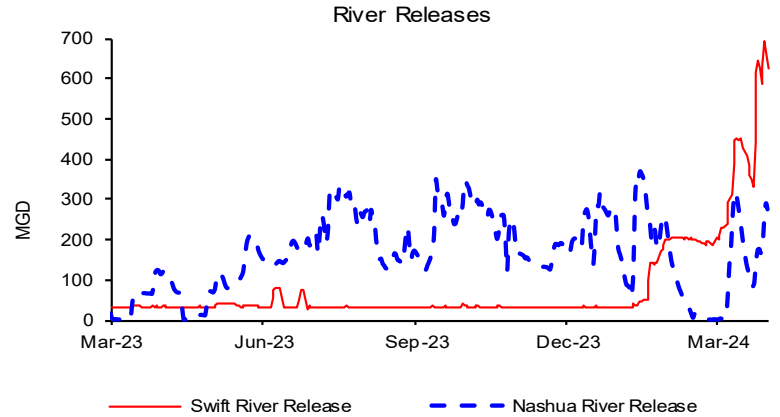
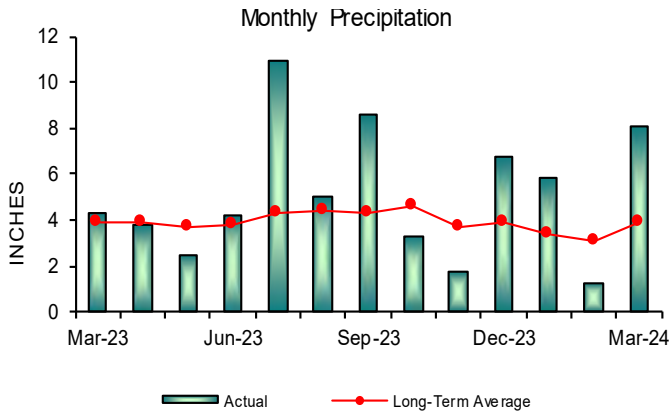
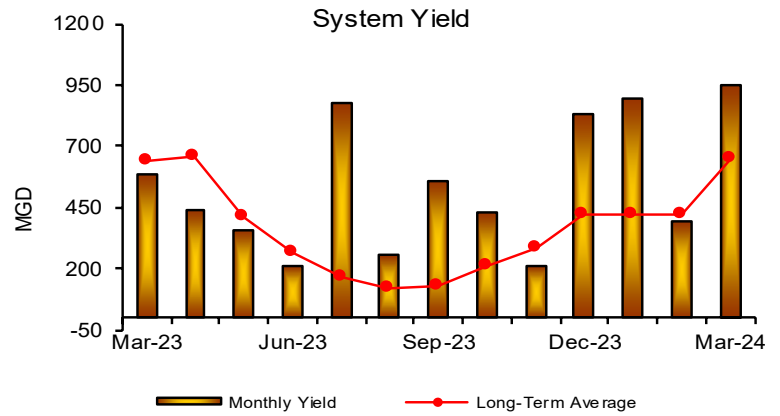
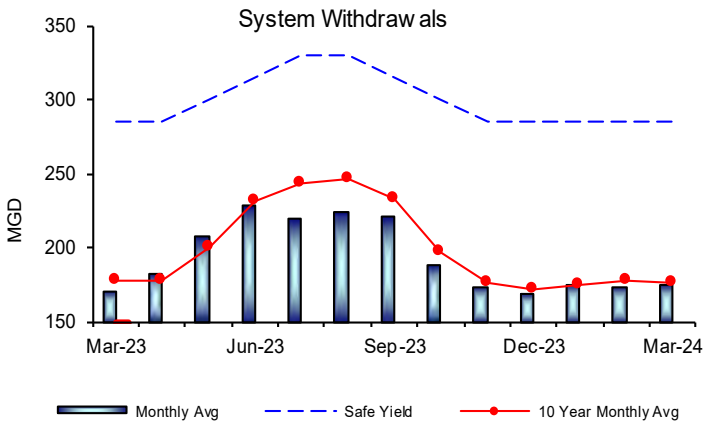
3rd Quarter – FY24

Background

A reliable supply of water in MWRA's reservoirs depends on adequate precipitation during the year and seasonal hydrologic inputs from watersheds that surround the reservoirs. Demand for water typically increases with higher summer temperatures and then decreases as temperatures decline. Quabbin Reservoir was designed to effectively supply water to the service areas under a range of climatic conditions and has the ability to endure a range of fluctuations. Wachusett Reservoir serves as a terminal reservoir to meet the daily demands of the Greater Boston area. A key component to this reservoir's operation is the seasonal transfer of Quabbin Reservoir water to enhance water quality during high demand periods. On an annual basis, Quabbin Reservoir accounts for nearly 50% of the water supplied to Greater Boston. The water quality of both reservoirs (as well as the Ware River, which is also part of the System Safe Yield) depend upon implementation of DCR's DEP-approved Watershed Protection Plans. System Yield is defined as the water produced by its sources, and is reported as the net change in water available for water supply and operating requirements.

Outcome

The volume of the Quabbin Reservoir was at 100.9% as of March 31, 2024; a 5.1 % increase for the quarter, which represents a gain of more than 21.4 billion gallons of storage and an increase in elevation of 2.72'. System withdrawal was below its long term quarterly average. Precipitation and Yield quarterly averages were above their respective long term quarterly averages. Quabbin is in Normal Operating Range for this time of year.



WASTEWATER QUALITY

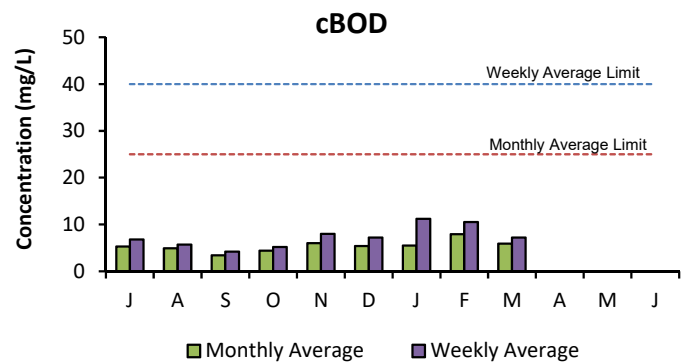
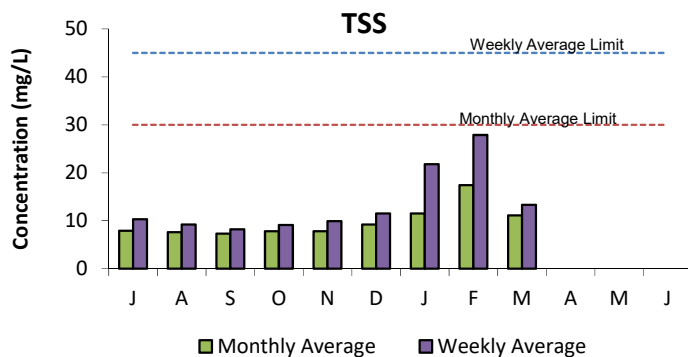
NPDES Permit Compliance: Deer Island Treatment Plant

3rd Quarter - FY24

NPDES Permit Limits

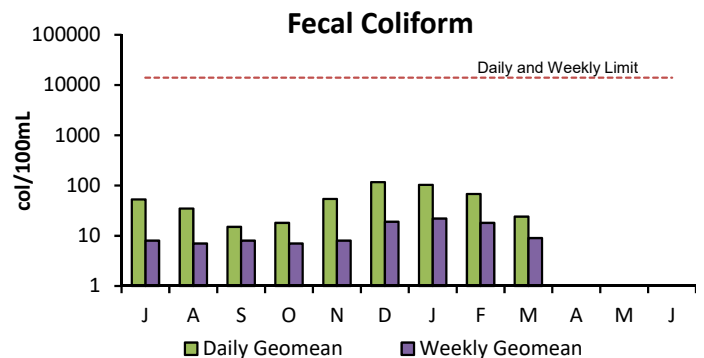
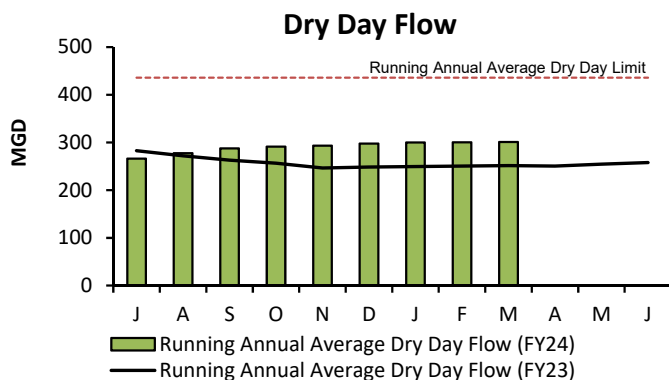
Effluent Characteristics	Units	Limits	January	February	March	3rd Quarter Violations	FY24 YTD Violations	
Dry Day Flow (365 Day Average):	mgd	436	300.1	300.4	301.2	0	0	
cBOD:	Monthly Average	mg/L	5.5	7.9	5.9	0	0	
	Weekly Average	mg/L	11.2	10.5	7.2	0	0	
TSS:	Monthly Average	mg/L	11.5	17.4	11.1	0	0	
	Weekly Average	mg/L	45	27.9	13.3	0	0	
TCR:	Monthly Average	ug/L	2.9	0.0	0.0	0	0	
	Daily Maximum	ug/L	631	90.0	0.0	0	0	
Fecal Coliform:	Daily Geometric Mean	col/100mL	14000	103	68	0	0	
	Weekly Geometric Mean	col/100mL	14000	22	18	0	0	
	% of Samples >14000	%	10	0	0	0	0	
	Consecutive Samples >14000	#	3	0	0	0	0	
pH:	SU	6.0-9.0	6.4-6.9	6.4-6.9	6.4-6.8	0	0	
PCB, Aroclors:	Monthly Average	ug/L	UNDETECTED			0	0	
Acute Toxicity:	Inland Silverside	%	≥50	>100	>100	>100	0	0
	Mysid Shrimp	%	≥50	>100	>100	>100	0	0
Chronic Toxicity:	Inland Silverside	%	≥1.5	50	50	50	0	0
	Sea Urchin	%	≥1.5	25	50	100	0	0

There have been no permit violations in FY24 to date at the Deer Island Treatment Plant (DITP).



Total Suspended Solids (TSS) in the effluent is a measure of the amount of solids that remain suspended after treatment. All TSS measurements for the 3rd Quarter were within permit limits.

Carbonaceous Biochemical Oxygen Demand (cBOD) is a measure of the amount of dissolved oxygen required for the decomposition of organic materials in the environment. All cBOD measurements for the 3rd Quarter were within permit limits.



Running Annual Average Dry Day Flow is the average of all dry weather influent flows over the previous 365 days. The Dry Day Flow for the 3rd Quarter was well below the permit limit of 436 MGD.

Fecal Coliform is an indicator for the possible presence of pathogens. The levels of these bacteria after disinfection show how effectively the plant is inactivating many forms of disease-causing microorganisms. In the 3rd Quarter, all permit conditions for fecal coliform were met.

NPDES Permit Compliance: Clinton Wastewater Treatment Plant

3rd Quarter - FY24

NPDES Permit Limits

Effluent Characteristics		Units	Limits	January	February	March	3rd Quarter Violations	FY24 YTD Violations
Flow:	12-month Rolling Average:	mgd	3.01	3.46	3.48	3.57	3	6
BOD:	Monthly Average:	mg/L	20	1.7	0.8	1.0	0	0
	Weekly Average:	mg/L	20	2.5	1.1	2.1	0	0
TSS:	Monthly Average:	mg/L	20	4.1	2.9	2.9	0	0
	Weekly Average:	mg/L	20	4.6	4.4	4.4	0	0
pH:		SU	6.5-8.3	7-7.5	7.2-7.5	7-7.7	0	0
Dissolved Oxygen:	Daily Average Minimum:	mg/L	6	11.6	11.9	10.8	0	0
E. Coli:	Monthly Geometric Mean:	cfu/100mL	126	5	5	5	0	0
	Daily Geometric Mean:	cfu/100mL	409	13	5	7	0	0
TCR:	Monthly Average:	ug/L	20	0.11	0.14	0.13	0	0
	Daily Maximum:	ug/L	30.4	3.33	4.00	4.00	0	0
Copper:	Monthly Average:	ug/L	11.6	4.98	5.83	6.75	0	0
	Daily Maximum:	ug/L	14.0	6.64	5.83	6.75	0	0
Total Ammonia Nitrogen: November 1st - March 31st	Monthly Average:	mg/L	6.6	0.02	0.05	0.16	0	0
	Daily Maximum:	mg/L	35.0	0.04	0.21	0.32	0	0
Total Phosphorus: November 1st - March 31st	Monthly Average:	mg/L	1.00	0.09	0.07	0.04	0	0
	Daily Maximum:	mg/L	RPT	0.09	0.08	0.07	0	0
Acute Toxicity ⁺ :	Daily Minimum:	%	≥100	>100	N/A	N/A	0	0
Chronic Toxicity ⁺ :	Daily Minimum:	%	≥62.5	100.0	N/A	N/A	0	0

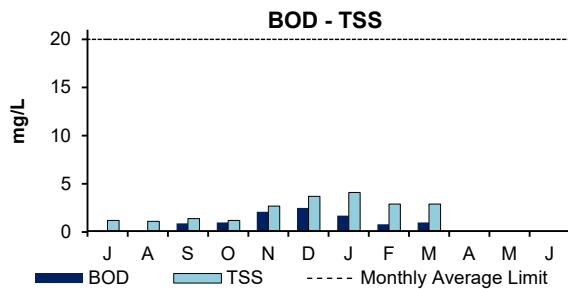
There have been three permit violations in FY24 at the Clinton Treatment Plant.

1st Quarter: There were no permit violations in the first quarter.

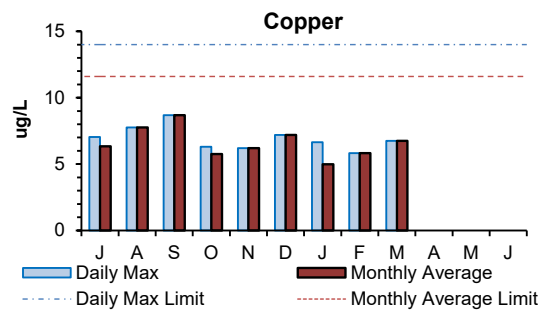
2nd Quarter: There were three permit violations in the second quarter, each for 12 month rolling-average flow.

3rd Quarter: There were three permit violations in the third quarter, each for 12 month rolling-average flow.

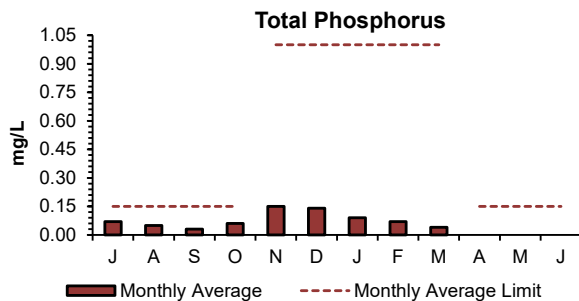
+ Toxicity testing at the Clinton Treatment Plant is conducted on a quarterly basis.



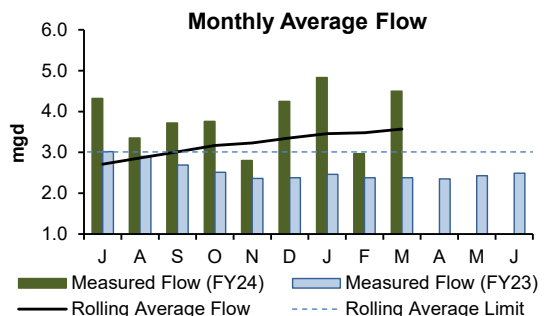
Monthly average concentrations of BOD and TSS were below permit limits in the 3rd Quarter. The permit monthly limit for both parameters is 20 mg/L.



Daily maximum and monthly average concentrations of copper were below permit limits in the 3rd Quarter. Permit daily and monthly limits are 14.0 ug/L and 11.6 ug/L respectively.



Total phosphorus limits are most stringent during the growing season from April to October. The 3rd Quarter's monthly average concentrations for total phosphorus were below permit limits.

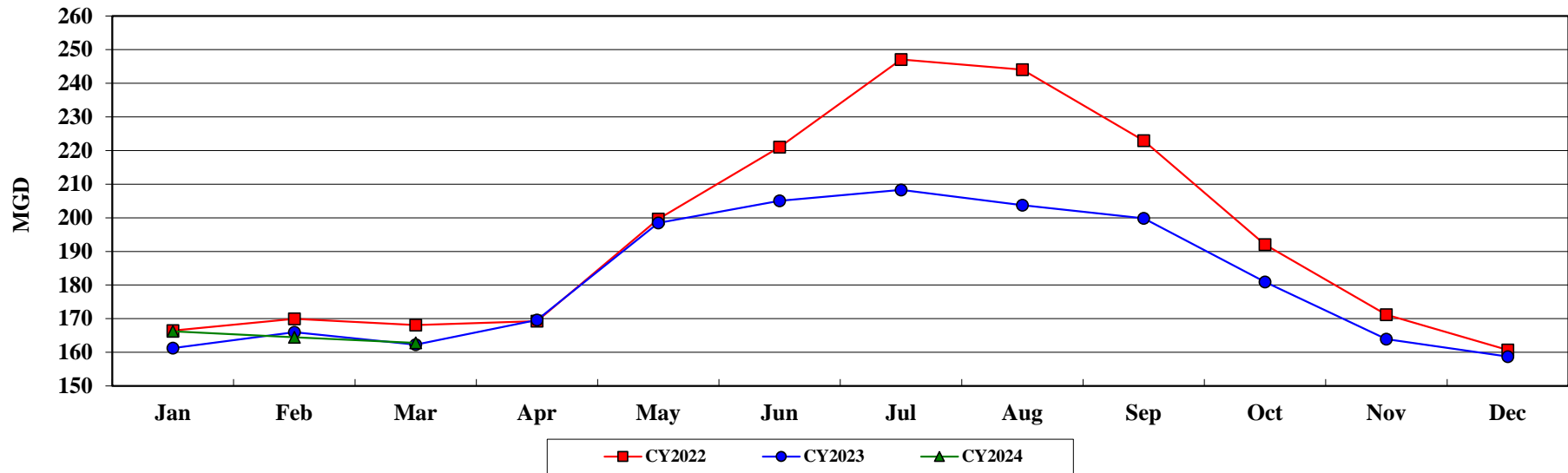


The graph depicts the rolling annual average monthly flow, measured in million gallons per day, exiting the plant. The 12-month rolling average flows during the 3rd Quarter were above the permit limit.

COMMUNITY FLOWS AND PROGRAMS

Customer Water Use 3rd Quarter - FY24

MWRA Water Supplied: All Revenue Customers



Water Use (million gallons per day)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD Average	Annual Average
CY2022	166.445	169.923	168.101	169.253	199.626	221.002	247.075	244.069	222.906	192.000	171.170	160.697	168.097	194.537
CY2023	161.272	165.989	162.292	169.594	198.499	205.042	208.304	203.762	199.844	180.948	163.937	158.736	163.091	181.612
CY2024	166.238	164.451	162.794	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	164.495	482.874

The March 2023 Community Water Use Report was recently distributed to communities and customers served by the MWRA's Metropolitan and Chicopee Valley waterworks systems. Each community's annual water use relative to the system as a whole is the primary factor in allocating the annual water rate revenue requirement to MWRA water communities. Calendar year 2023 water use will be used to allocate the FY2025 water utility rate revenue requirement.

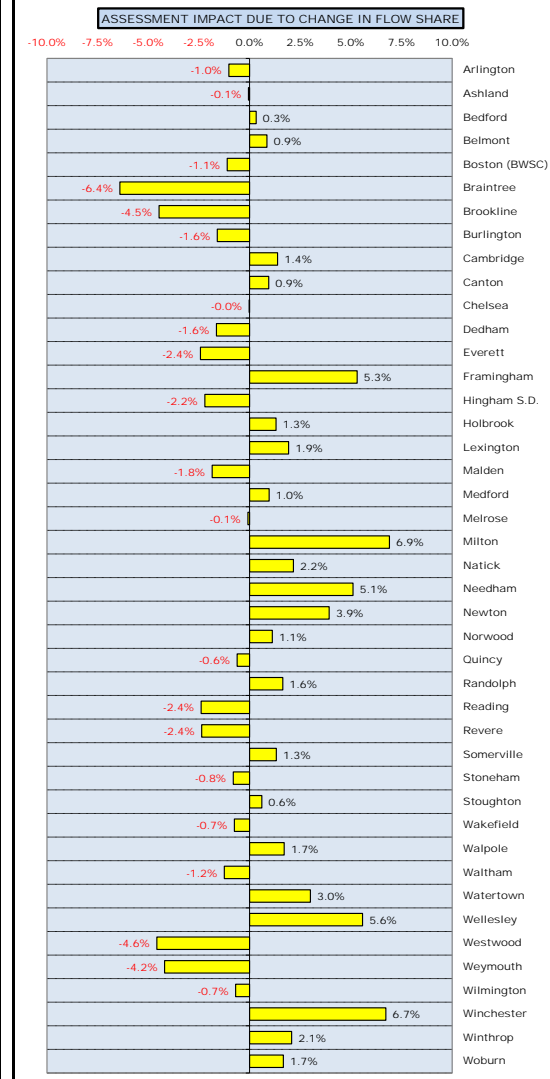
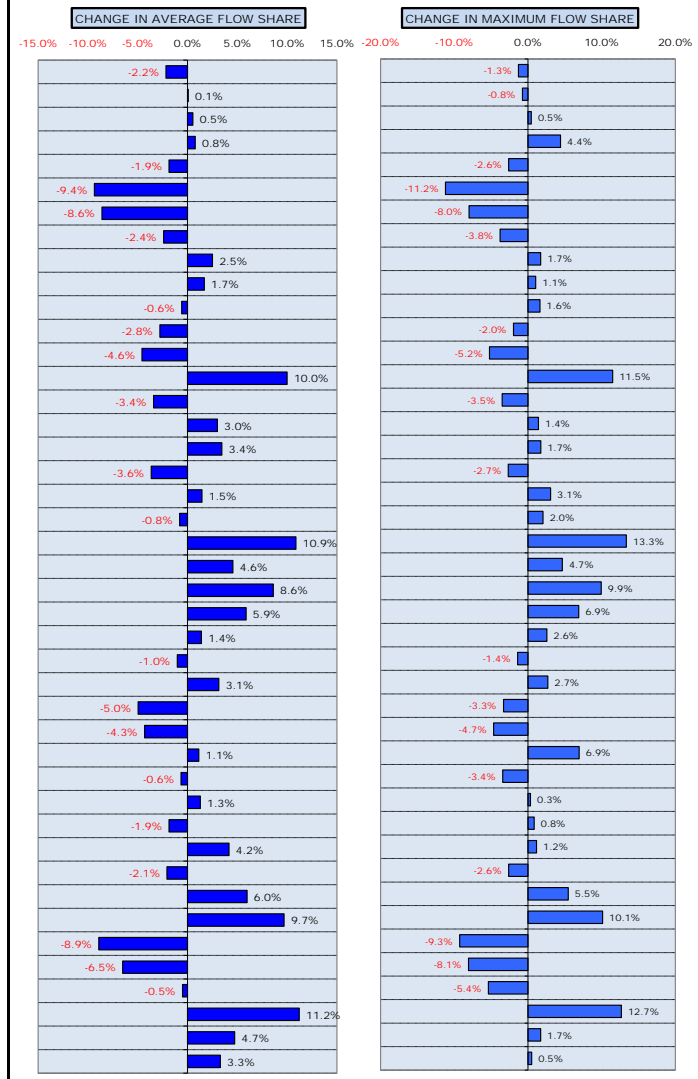
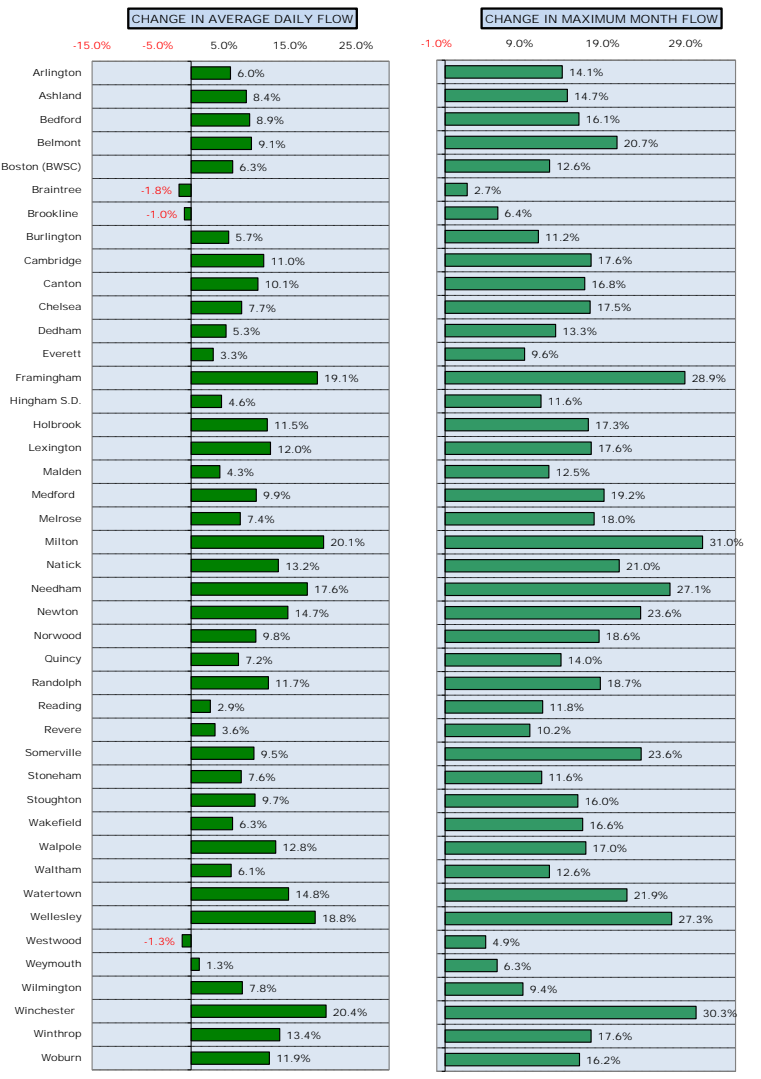
MWRA customers used an average of 164.5 mgd in the 3rd quarter (Jan-Mar 2024) of FY2024. This is an increase of 1.4 mgd or 0.9% compared to the 3rd quarter of FY2023.

How CY2022-24 Community Wastewater Flows Could Effect FY2026 Sewer Assessments ^{1,2,3}

The flow components of FY2026 sewer assessments will be calculated using a 3-year average of CY2022 to CY2024 wastewater flows compared to FY2025 assessments that will use a 3-year average of CY2021 to CY2023 wastewater flows.

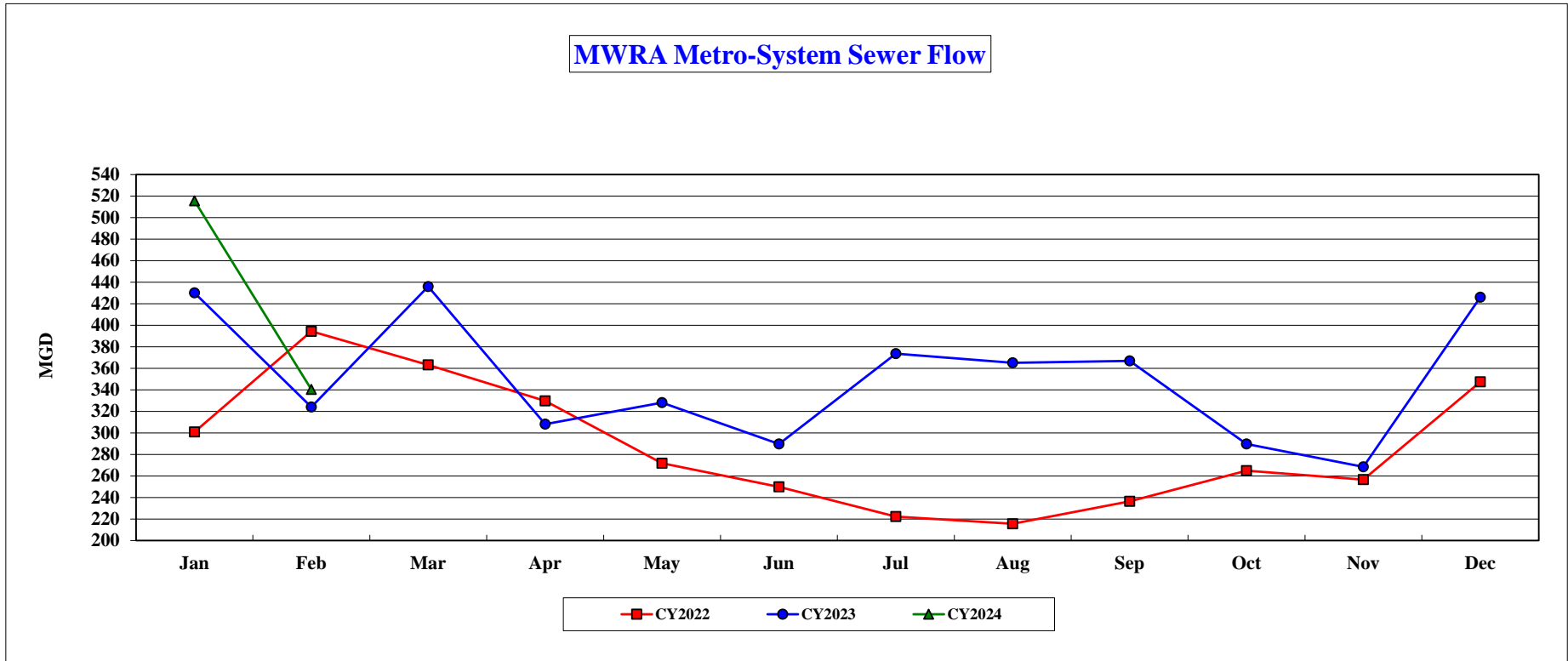
But as MWRA's sewer assessments are a ZERO-SUM calculation, a community's assessment is strongly influenced by the RELATIVE change in CY2022 to CY2024 flow share compared to CY2021 to CY2023 flow share, compared to all other communities in the system.

The chart below illustrates the change in the TOTAL BASE assessment due to FLOW SHARE CHANGES. ⁴



¹ MWRA uses a 3-year flow average to calculate sewer assessments. Three-year averaging smoothes the impact of year-to-year changes in community flow share, but does not eliminate the long-term impact of changes in each community's relative contribution to the total flow.
² Based on actual flows for 2022 through February 2024.
³ Flow data is preliminary and subject to change pending additional MWRA and community review.
⁴ Represents ONLY the impact on the total BASE assessment resulting from the changes in average and maximum wastewater FLOW SHARES.

Community Sewer Flow YTD - FY24



Sewer Flow (million gallons per day)														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD Average	Annual Average
CY2022	300.930	394.400	363.110	329.710	271.890	249.840	222.280	215.600	236.380	264.960	256.590	347.420	345.289	287.098
CY2023	430.060	323.980	435.990	308.110	328.160	289.710	373.540	365.130	366.840	289.680	268.470	426.070	379.717	351.159
CY2024	515.680	340.300											430.913	

The 2024 2-Month Community Sewer Flow Report was recently distributed to the 43 communities served by the MWRA's Metropolitan sewer system. Each community's share of sewer flow relative to the system as a whole is used to allocate the annual sewer rate revenue requirement to MWRA sewer communities. The average of calendar year 2022-2024 sewer flow will be used to allocate the FY2026 sewer utility rate revenue requirement.

MWRA customer sewer flow averaged 430.9 mgd in the first two months of FY2024. This is an increase of 52.7 mgd or 13.9% compared to the first two months of CY2023.

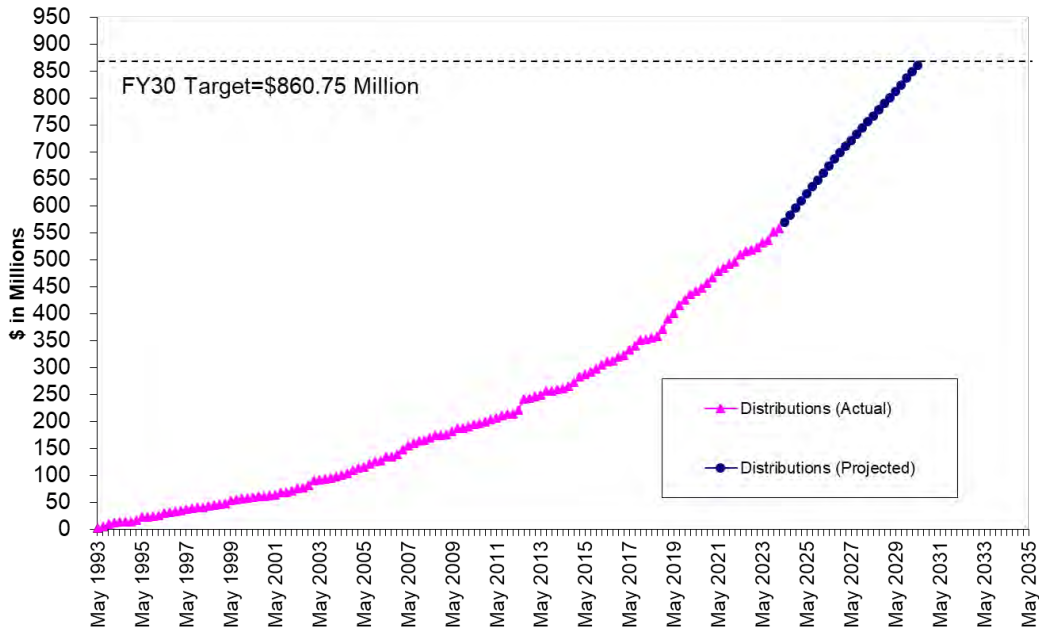
Community Support Programs

3rd Quarter – FY24

Infiltration/Inflow Local Financial Assistance Program

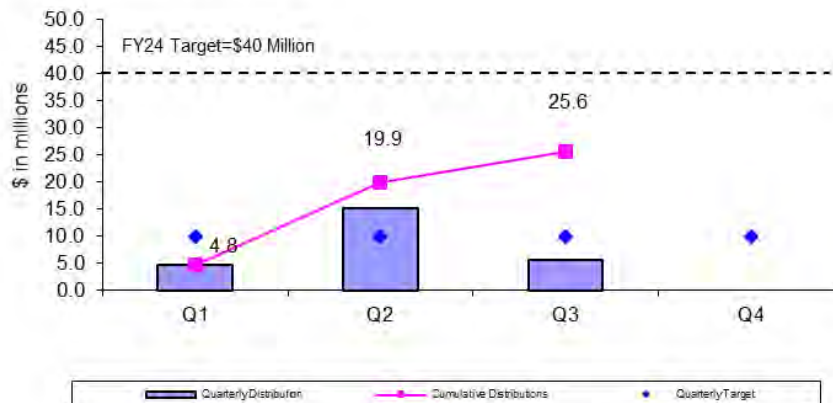
MWRA's Infiltration/Inflow (I/I) Local Financial Assistance Program provides \$860.75 million in grants and interest-free loans (average of about \$22 million per year from FY93 through FY30) to member sewer communities to perform I/I reduction and sewer system rehabilitation projects within their locally-owned collection systems. Eligible project costs include: sewer rehabilitation construction, pipeline replacement, removal of public and private inflow sources, I/I reduction planning, engineering design, engineering services during construction, etc. I/I Local Financial Assistance Program funds are allocated to member sewer communities based on their percent share of MWRA's wholesale sewer charge. Phase 1-8 funds (total \$300.75 million) were distributed as 45% grants and 55% loans with interest-free loans repaid to MWRA over a five-year period. Phase 9 through 12 funds (total \$360 million) are distributed as 75% grants and 25% loans with interest-free loans repaid to MWRA over a ten-year period. Phase 13 provides an additional \$100 million in ten-year loan-only funds. Phase 14 funds (total \$100 million) are distributed as 75% grants and 25% loans with interest-free loans repaid to MWRA over a ten-year period.

I/I Local Financial Assistance Program Distribution FY93-FY30



During the 3rd Quarter of FY24, \$5.7 million in financial assistance (grants and interest-free loans) was distributed to fund local sewer rehabilitation projects in Arlington, Braintree, Canton, Chelsea and Weymouth. Total grant/loan distribution to date for FY24 is \$25.6 million. From FY93 through the 3rd Quarter of FY24, all 43 member sewer communities have participated in the program and \$557 million has been distributed to fund 681 local I/I reduction and sewer system rehabilitation projects. Distribution of the remaining funds has been approved through FY30 and community loan repayments will be made through FY40. All scheduled community loan repayments have been made.

FY24 Quarterly Distributions of Sewer Grant/Loans



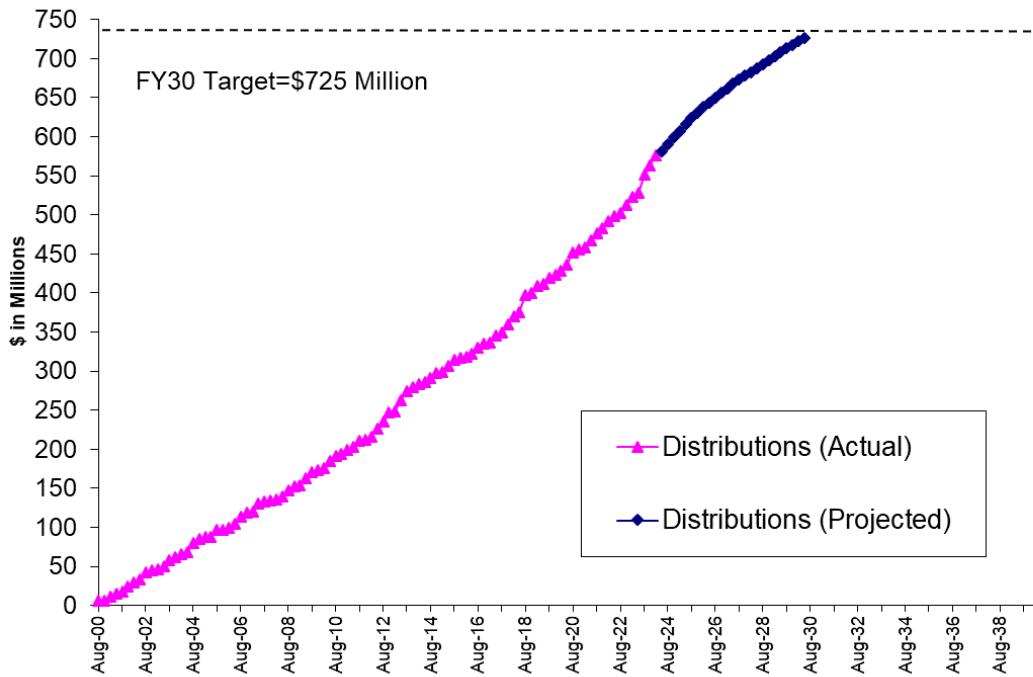
Community Support Programs

3rd Quarter – FY24

Local Water System Assistance Program

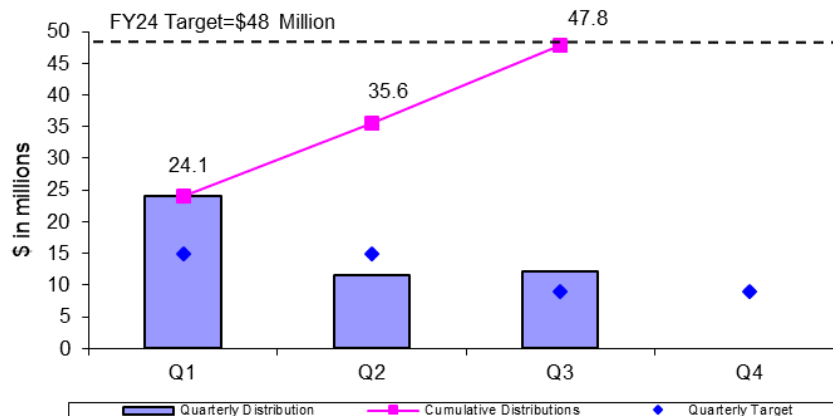
MWRA's Local Water System Assistance Programs (LWSAP) provides \$725 million in interest-free loans (an average of about \$24 million per year from FY01 through FY30) to member water communities to perform water main rehabilitation projects within their locally-owned water distribution systems. There have been three (3) funding phases: Phase 1 at \$222 Million, Phase 2 at \$210 Million, and Phase 3 at \$293 Million. Eligible project costs include: water main cleaning/lining, replacement of unlined water mains, lead service replacements, valve, hydrant, water meter, tank work, engineering design, engineering services during construction, etc. MWRA partially-supplied communities receive pro-rated funding allocations based on their percentage use of MWRA water. Interest-free loans are repaid to MWRA over a ten-year period beginning one year after distribution of the funds. The Phase 1 water loan program concluded in FY13 with \$222 million in loan distributions. The Phase 2 - LWSAP continues distributions through FY25. The Phase 3 Water Loan Program is authorized for distributions from FY18 through FY30.

Local Water System Assistance Program Distribution FY01-FY30



During the 3rd Quarter of FY24, \$12.2 million in interest-free loans was distributed to fund local water projects in Arlington, Medford, and Waltham. Total loan distribution to date for FY24 is \$47.8 million. From FY01 through the 3rd Quarter of FY24, \$575 million has been distributed to fund 533 local water system rehabilitation projects in 43 MWRA member water communities. Distribution of the remaining funds has been approved through FY30 and community loan repayments will be made through FY40. All scheduled community loan repayments have been made.

FY24 Quarterly Distributions of Water Loans



Community Support Programs

3rd Quarter – FY24

Lead Service Line Replacement Loan Program

By its vote on March 16, 2016, the Board approved an enhancement to the Local Water System Assistance Program to provide up to \$100 million in 10-year zero-interest loans to communities solely for efforts to fully replace lead service lines. The Lead Service Line Replacement Loan Program is also referenced as the Lead Loan Program or LLP. Each community can develop its own program, tailored to their local circumstances. MWRA’s goal in providing financial assistance to member communities is to improve local water systems so that the high quality water MWRA delivers can make it all the way to the consumer’s tap. The presence of a lead service line connecting a home to the main in the street can lead to elevated lead levels in tap water, especially if that water sits stagnant for an extended period. MWRA’s stable water quality and effective corrosion control treatment reduce the risk that a lead service line will cause elevated lead levels, and measured lead levels in high risk homes have decreased by 90 percent since corrosion control was brought on-line in 1996. However, the risk of elevated levels remains as long as lead service lines are in use. To date, \$42.3 million dollars has been distributed to 17 communities.

FY17 was the first year of the Lead Service Line Replacement Loan Program - MWRA made three Lead Loans.

FY18 was the second year of the Lead Loan Program - MWRA made five Lead Loans.

FY19 was the third year of the Lead Loan Program - MWRA made four Lead Loans.

FY20 was the fourth year of the Lead Loan Program - MWRA made eight Lead Loans.

FY21 was the fifth year of the Lead Loan Program - MWRA made seven Lead Loans.

FY22 was the sixth year of the Lead Loan Program - MWRA made six Lead Loans.

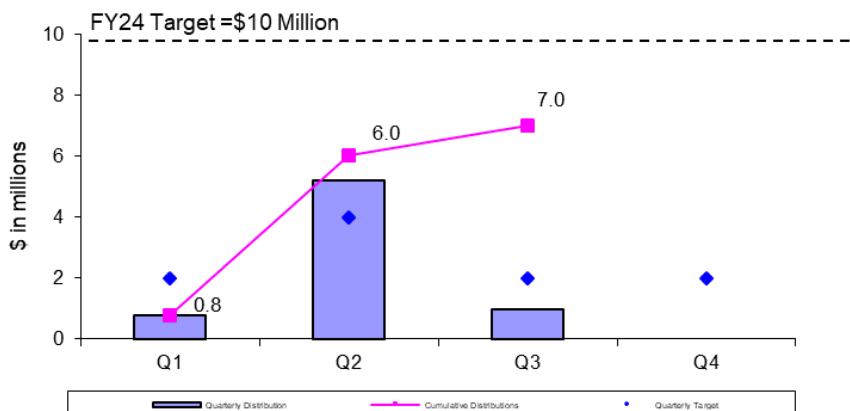
FY23 was the seventh year in the Lead Loan Program - MWRA has made six Lead Loans.

FY24 is the eighth year in the Lead Loan Program - MWRA has made six Lead Loans in the first three quarters.

Summary of Lead Loans:

Winthrop in FY24	\$0.98 Million	Somerville in FY22	\$1.60 Million	Everett in FY20	\$1.0 Million
Chelsea in FY24	\$0.30 Million	Revere in FY22	\$1.30 Million	Somerville in FY20	\$0.90 Million
Melrose in FY24	\$1.04 Million	Chelsea in FY22	\$0.30 Million	Chelsea in FY20	\$0.30 Million
Lexington in FY24	\$3.88 Million	Watertown in FY21	\$0.60 Million	Marlborough in FY19	\$1.0 Million
Watertown in FY24	\$0.30 Million	Marlborough in FY21	\$2.0 Million	Winthrop in FY19	\$0.50 Million
Malden in FY24	\$0.50 Million	Everett in FY21	\$1.50 Million	Chelsea in FY19	\$0.10 Million
Chelsea in FY23	\$0.50 Million	Boston in FY21	\$2.60 Million	Everett in FY19	\$1.0 Million
Watertown in FY23	\$0.30 Million	Winthrop in FY21	\$0.80 Million	Needham in FY18	\$1.0 Million
Winthrop in FY23	\$0.70 Million	Chelsea in FY21	\$0.30 Million	Winchester in FY18	\$0.50 Million
Reading in FY23	\$1.50 Million	Winchester in FY21	\$0.60 Million	Revere in FY18	\$0.20 Million
Watertown in FY23	\$0.30 Million	Everett in FY20	\$0.50 Million	Winthrop in FY18	\$0.30 Million
Winchester in FY23	\$0.60 Million	Marlborough in FY20	\$1.0 Million	Marlborough in FY18	\$1.0 Million
Everett in FY22	\$1.5 Million	Winchester in FY20	\$0.60 Million	Newton in FY17	\$4.0 Million
Boston in FY22	\$0.90 Million	Winthrop in FY20	\$0.70 Million	Quincy in FY17	\$1.5 Million
Winthrop in FY22	\$0.80 Million	Weston in FY20	\$0.20 Million	Winchester in FY17	\$0.50 Million
				TOTAL	\$42.30 Million

FY24 Quarterly Distributions of Lead Service Line Replacement Loans

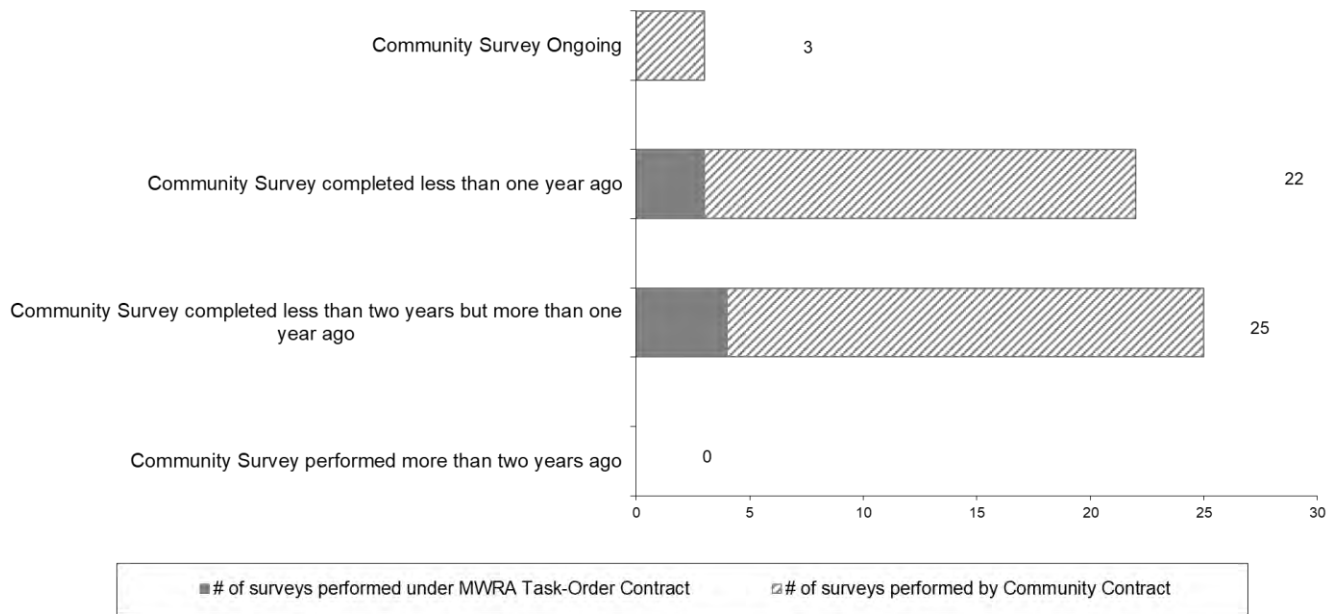


Community Support Programs

3rd Quarter – FY24

Community Water System Leak Detection

To ensure member water communities identify and repair leaks in locally-owned distribution systems, MWRA developed leak detection regulations that went into effect in July 1991. Communities purchasing water from MWRA are required to complete a leak detection survey of their entire distribution system at least once every two years. Communities can accomplish the survey using their own contractors or municipal crews, or alternatively, using MWRA’s task order leak detection contract. MWRA’s task order contract provides leak detection services at a reasonable cost that has been competitively procured (3-year, low-bid contract) taking advantage of the large volume of work anticipated throughout the regional system. Leak detection services performed under the task order contract are paid for by MWRA and the costs are billed to the community the following year. During the 3rd Quarter of FY24, all member water communities were in compliance with MWRA’s Leak Detection Regulation.



Community Water Conservation Outreach

MWRA’s Community Water Conservation Program helps to maintain average water demand below the regional water system’s safe yield of 300 mgd. Current 5-year average water demand is less than 200 mgd. The local Water Conservation Program includes distribution of water conservation education brochures (indoor - outdoor bill-stuffers) and low-flow water fixtures and related materials (shower heads, faucet aerators, and toilet leak detection dye tabs), all at no cost to member communities or individual customers. The Program’s annual budget is \$25,000 for printing and purchase of materials. Annual distribution targets and totals are provided in the table below. Distributions of water conservation materials are made based on requests from member communities and individual customers.

	Annual Target	Q1	Q2	Q3	Q4	Annual Total
Educational Brochures	100,000	357	8,330	350		9,037
Low-Flow Fixtures (showerheads and faucet aerators)	10,000	1,175	796	812		2,783
Toilet Leak Detection Dye Tablets	_____	1,065	193	1,354		2,612

BUSINESS SERVICES

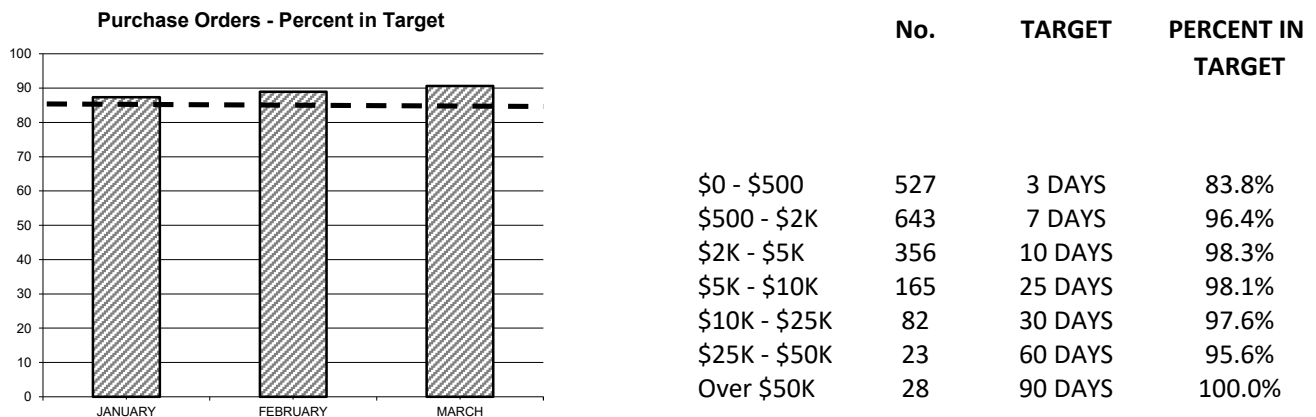
Procurement: Purchasing and Contracts

3rd Quarter - FY24

Background: Goal is to process 85% of Purchase Orders and 80% of Contracts within Target timeframes.

Highlights: Processed 99% of purchase orders within target; Average Processing Time was 4.14 days vs. 4.82 days in Qtr 3 of FY23. Processed 62% (8 of 13) of contracts within target timeframes; Average Processing Time was 145 days vs. 185 days in Qtr of FY23.

Purchasing



The Purchasing Unit processed 1824 purchase orders, 38 more than the 1786 processed in Qtr 3 of FY23 for a total value of \$12,290,457 versus a dollar value of \$11,341,237 in Qtr 3 of FY23.

The purchase order processing target was not met for the \$0 - \$500 category due to vendor delays providing quotes.

Contracts, Change Orders and Amendments

Procurement executed thirteen contracts with a value of \$16,481,011 and four amendments with a value of \$45,025. Five contracts were not executed within the target timeframes. One contract was delayed due to the consultant taking exception to many of the contract terms resulting in a delay in the execution of the contract. Another contract was delayed due to several staff transitions (new staff learning internal processes and retiring staff in related positions) which resulted in a delay in the execution of the contract. A third contract was delayed due to the contractor's unresponsiveness in addressing MWRA concerns regarding safety measures and the decision to deem the contractor ineligible, resulting in a bid protest. Consequently, the execution of the contract to the second lowest bidder was delayed. Another contract was delayed due to the nature of the contract and necessary selection committee meetings. The contract was in place prior to the expiration of the existing contract. The final contract was delayed due to resources and staff summary requirements.

Staff reviewed 70 proposed change orders and 25 draft change orders.

Forty two change orders were executed during the period. The dollar value of all non-credit change orders during Q3 FY24 was \$6,513,073 and the value of credit change orders was (\$432,119).

Note: A credit change order is a change order that results in a decrease in contract value.

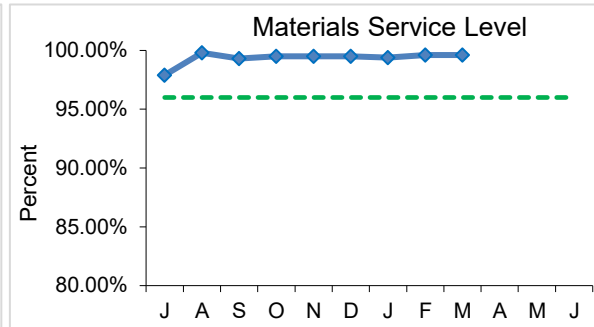
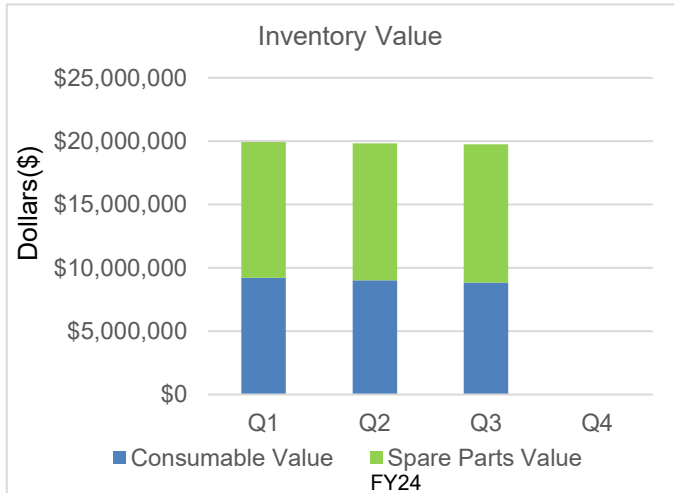
Materials Management

3rd Quarter - FY24

The Materials Management department manages the three regional warehouses (Chelsea, Deer Island and Southboro). This includes the replenishment and receipt of both consumable and spare parts items to meet the needs of the MWRA. Additionally, MWRA tools and equipment are safeguarded through the Property Pass unit within the Materials Management department.

Inventory goals focus on:

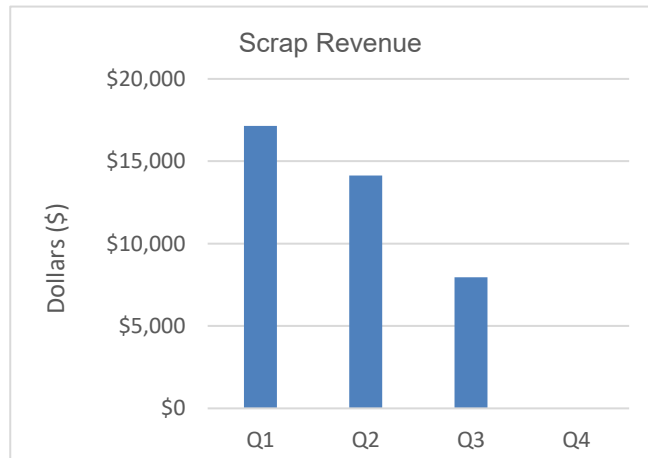
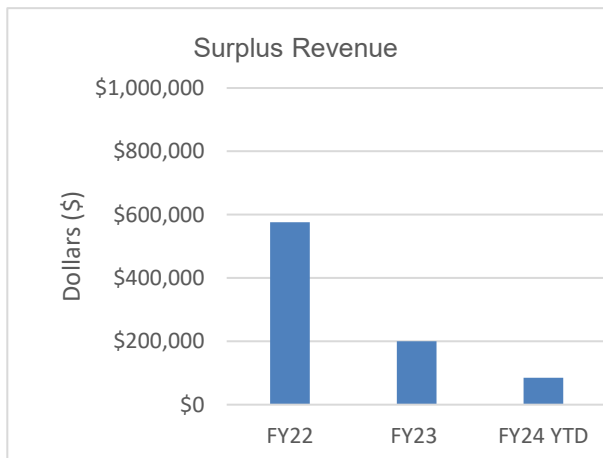
- Maintaining optimum levels of consumables inventory (office supplies, electrical, safety, etc.) and spare parts inventory (critical items such as actuators, motors, muffin monsters, etc.) necessary to support MWRA Operations and Maintenance. Typically spare parts carry longer lead times.
- Adding new items to inventory to meet changing business needs.
- Reviewing consumables and spare parts for obsolescence.
- Managing and controlling valuable equipment and tools via the Property Pass Program.



The service level is the percentage of stock requests filled. The goal is to maintain a service level of 96%. Staff issued 7,232 (99.6%) of the 7,263 items requested in Q3 from the inventory locations for a total dollar value of \$2,624,508.

Property Pass Program:

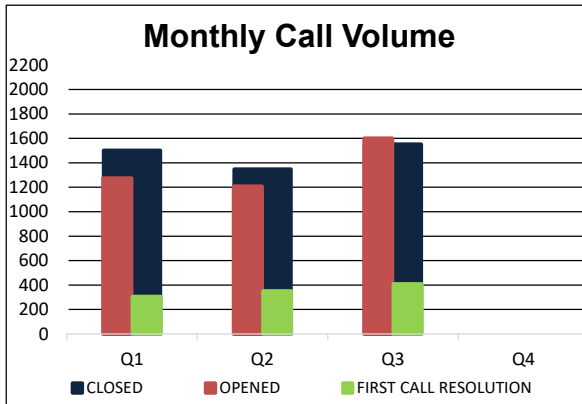
- Conducts audits of tools and equipment to ensure the safeguarding of MWRA assets.
- Manages the disposition and sale of surplus tools and equipment through GovDeals, an online auction site.
- Manages the surplusing of scrap metals and materials generating revenue to the MWRA staff.



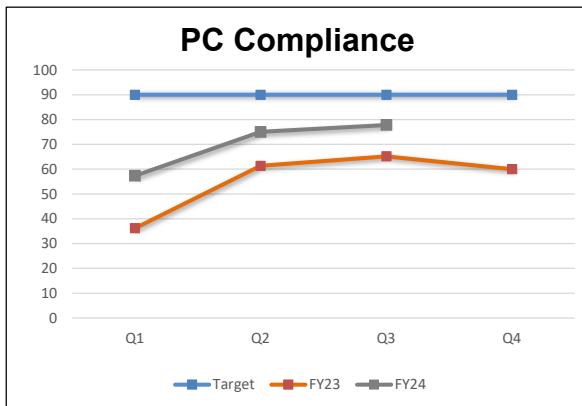
MIS Program

Third Quarter – FY24

Numbers & Statistics



Summary of calls managed by the Helpline.



Percentage of user endpoints that are in compliance with system updates. These numbers are a direct reflection of accessibility to these systems. Daytime patching began in January for mobile devices.

Project Updates

Infrastructure & Security

SD-WAN: SDWAN was implemented at Ward street, Norumbega, Ware and the two Barre sites. Columbus Park is scheduled for April. DITP awaiting cabling to facility.

VOIP: Ported 1500 numbers from CNY to Chelsea and Deer Island addresses and removed CNY site from VOIP locations with Verizon. Assigned 400+ unassigned devices to users in CUCM. Assigned devices from CNY into correct Device pool. Removed all references to CNY from CER and CUCM environment.

Core Switch Hardware Refresh: New hardware configured. Deployment postponed due to weather and rescheduled for May.

VMWare Workspace ONE: 981 devices migrated to WorkspaceONE for device management. Staff working with vendor to optimize deployment process and training. Migration of devices has increased ticket volume.

Oracle Database Appliance Hardware Refresh: Equipment received, kick off meeting to be schedule in April.

Server/Database Version Upgrades: Staff continue to meet monthly to review and identify migration paths of infrastructure to maintain support.

IT Kiosk: A second IT Kiosk was installed on DITP for staff self service.

Commvault Upgrade: Completed migration to new Media Agent hardware and version update.

Library, Record Center, & Training

Library: Undertook 7 research requests, supplied books and reports for circulation. Renewed various library subscriptions. The MWRA Library Portal supported 336 end user searches.

Record Center (RC): The Record Center Added 27 new boxes to the RC and handled 138 total boxes. The RC Manager attended 3 virtual RCB meetings. The RC shredded on-site sixteen, 65 gallon and Five, 96-gallon bins of confidential documentation. The RC performed 30 database / physical box searches for various departments. Research included: Invoices, staff summaries, personnel files, Geo samples and engineering project related information. The Record Center staff is involved with an on-going ECM training and testing to upgrade our Record Management database.

MIS Training: In Q3, 1 online IT lesson was taken (9 YTD), by 13 employees (137 YTD).

Applications

ECM/Electronic Document Management: Completed User Acceptance Testing and went live with all Engineering and Construction workflows in mid-November. Continued to work with vendor to fix minor issues as they occur. Plan to migrate all DITP drawings into production in January. Change order to make updates to the document search functionality within the website approved in March. Work on these updates will likely begin in May, with a tentative website go-live date scheduled in late summer/early fall

MWRA Website Refresh: Staff continue to work with the vendor to resolve identified bug. Contract Amendment 1 routing for approval to provide more robust search capabilities.

Infor Upgrade/Migration: MIS and end users performed data scrubbing on the Lawson Infor data in preparation for data migration. The Lawson ERP data has been migrated to the Infor CloudSuite test environment in the cloud; functional training has been performed; functional design workshops are in progress and a change readiness assessment has been completed. Once the design workshops are complete the functional specifications will be finalized and the development phase of the project will begin.

Maximo/Lawson Interface: MIS, Procurement and Operations are currently performing user acceptance testing on the upgraded interfaces between these two enterprise applications with an expected completion in early April and a production implementation to shortly follow.

Library Portal Upgrade (GeniePlus): MIS staff has completed the data migration, user acceptance testing and configuration work for the upgraded Library Portal with an expected implementation to the production environment planned for April.

Maximo Version Upgrade: MIS finalized and released upgraded versions of Maximo to the Development, Test and Pre-Production environments. User Acceptance testing is almost complete and implementation planning is now underway with the intent to release the upgrade in April. MIS is also working with the vendor (IBM) to resolve user entitlement and configuration issues that are impacting our licensing compliance.

Legal Matters

3rd Quarter - FY24

PROJECT ASSISTANCE

Real Estate, Contract, Energy, Environmental and Other Support:

- **8(m) Permits and License Agreements:** Reviewed ninety-seven (97) 8(m) permits, including any related MEPA Section 61 Findings. Reviewed three (3) Direct Connection Permits. Drafted three (3) one-day licenses related to public access on Deer Island.
- **Real Property:** Reviewed Quabbin Watershed WPR Acquisition W-001247 package for parcel in Wendell, MA and Quabbin Watershed WPR Acquisition W-001249 package for parcel in New Salem, MA. Prepared Eminent Domain Order of Taking for water easement rights on one property and acquired water easement rights on two properties in Winchester for MWRA Contract 7117 - Northern Intermediate High Section 89 Pipeline. Finalized Quincy Housing Authority and Town of Lexington licenses related to the use of certain property rights and needed for MWRA Contract 6224/6225 - Siphon and Junction Rehabilitation Phase I. Drafted terms related to water easement at 352 Broadway in Saugus, MA and acquired sewer access easement on parcel of land located at 1151-1177 Boston-Providence Turnpike. Reviewed language related to Article 97 in SEIR for Contract 7454, Section 56 Replacement of Saugus River Crossing. Drafted sewer access easement for parcel located at 1151-1177 Boston-Providence. Finalized electric service pole license for Hultman Aqueduct property interest at 281 Main Street, Wayland, Massachusetts. Finalized second amendment to MIT license. Revised revocable permit agreement template for Turkey Hill water tank. Reviewed Records Center second amendment to lease. Drafted license agreement with Town of Weston for its access and use of designated areas at Norumbega property on the microwave tower and at the base of the tower. Revised proposed sewer easements and plan related to Hingham Pump Station. Conveyed deed and recordable instruments for 12 Cleverly Court, Quincy. Reviewed property interests for Metropolitan Water Tunnel Program. Revised access letter for survey and boring work to support the Tunnel Program. Reviewed property rights for a parcel of land along Main Street in Somerville. Drafted grant of easement from MBTA to MWRA related MWRA Contract 7725 related to Sections 45/63 along Minuteman Bike Path in Lexington.
- **Environmental:** Assisted TRAC with potential revisions to the Sewer Use Regulations, 360 CMR 10. Prepared and finalized the Second Amendment to the Memorandum of Understanding and Financial Assistance Agreement with the Boston Water and Sewer Commission for the implementation of Fort Point Channel and Mystic/Chelsea Confluence Combined Sewer Overflow Control Projects.

Reviewed Notices of Proposed Activity and Use Limitation. Assisted Environmental and Deer Island teams in support of Termination of the Post Closure Period for the closed grit and screening landfill on Deer Island. Assisted Environmental Team with Cottage Farm PCB Interim Measure Status Report No. 3. Reviewed EPA's final Clean Water Act Hazardous Substance Facility Response Plans Rule.

- **Energy:** Assisted energy team with new power purchase and/or interconnection service agreements with National Grid regarding three of the authority's renewable energy facilities. Reviewed March 2024 U.S. DOE application guidance and solicitation materials for the Hydroelectric Production Incentives (EPAct 2005 Section 242) for the electricity generated and sold in calendar year 2023
- **Miscellaneous:** Reviewed documents for submission to Records Conservation Board for disposition. Reviewed and finalized revisions to various MWRA policies including ADM #39 Video Surveillance System Policy, Physical Security Incident Response Plan, MWRA Security and Contractor Access Policy and Physical Security Program. Drafted First Amendment to Memorandum of Agreement with City of Newton regarding MWRA Contract 6392 Sections 23, 24 and 47 Water Mains.
- **Public Records Requests:** During the months of January, February and March 2024, MWRA received and responded to **One Hundred Fifty Eight (158)** public records requests.

LITIGATION /TRAC - 3rd Quarter FY24

New Lawsuits:

- There are no new lawsuits in Third Quarter 2024.

New Claims:

- There are no new claims in Third Quarter 2024.

Significant Developments:

- Unified Contracting, Inc. v. MWRA; Suffolk Super Court C.A. No. 2384CV00927-BLS2. Discovery requests were served on MWRA in February. The parties participated in mediation in March.
- Massachusetts Water Resources Authority v. National Association of Government Employees (NAGE), Local R1-168, Suffolk Superior Court C. A. No. 2284CV02453. Hearing on Motion for Judgment on the Pleadings took place in March.
- The Authority's Motion to Enforce Settlement Agreement was allowed and a Judgment of Dismissal was entered in Suffolk Super Court C.A. No. 2186CV01434.
- The Authority received a draft motion by The Newark Group, Otter Farm, Inc. and Seaman Paper Company of Massachusetts, Inc. seeking to join the Authority, and other entities, in the action Thomas Ryan et al. v. The Newark Group, Inc. et al., USDC No. 4:22-cv-40089-MRG and assert claims against the Authority of indemnity, contribution and reimbursement and contribution under Chapter 21E.

Closed Cases:

- There is one closed case to report:

Teneo Funds SPVi LLC vs. Ermont Inc.; Suffolk Superior Court C.A. No. 2184CV01563. This matter relates to a notice of receivership for Ermont, Inc., a marijuana dispensary in Quincy. As of January 2024, the permit has been transferred from Ermont, Inc. to Panacea Wellness. The revised permit has been reviewed and is up to date.

Closed Claims:

- There are no closed claims to report in Third Quarter 2024.

Subpoenas:

- During the Third Quarter FY 2024, no new subpoenas were received and one subpoena is pending.

Wage Garnishments

- There is one wage garnishment matter that is active and monitored by Law Division

SUMMARY OF PENDING LITIGATION MATTERS

TYPE OF CASE/MATTER	As of March 2024
Construction/Contract/Bid Protest	1
Tort/Labor/Employment	3
Environmental/Regulatory/Other	3
Eminent Domain/Real Estate	0
TOTAL	7
Other Litigation matters (restraining orders, etc.) - Class Action suits	3
TOTAL – all pending lawsuits	10
Claims not in suit	0
Bankruptcy	4
Wage Garnishment	1
TRAC/Adjudicatory Appeals	3
Subpoenas	1
TOTAL – ALL LITIGATION MATTERS	19

TRAC/MISC. ADMIN. APPEALS

Appeals Pending:

- There are three pending TRAC appeals in Third Quarter 2024:

1058 Beacon Street, Newton, MA; MWRA Docket No. 22-01

Tri-Town Regional Water District; MWRA Docket No. 23-03

Courtyard Marriott Boston Downtown; MWRA Docket No. 23-04

Settlement by Agreement of Parties No Settlements by Agreement of the Parties during the 3rd Quarter FY 2024.

Stipulation of Dismissal No Stipulations of Dismissal in 3rd Quarter FY 2024.

**Notice of Dismissal
Fine paid in full** No Notices of Dismissal, Fines Paid in Full in 3rd Quarter FY 2024.

Tentative Decisions No Tentative Decisions were issued in 3rd Quarter FY 2024

**Final
Decisions**

No Final Decisions were issued in 3rd Quarter FY 2024.

LABOR AND EMPLOYMENT – 3rd Quarter FY24

New Matters

- A Union filed a request for arbitration because a member was denied a promotional opportunity.
- A Union filed a request for arbitration because a member was denied a promotional opportunity.
- A Union filed a request for arbitration disputing a member's promotional bypass.
- A Union filed a request for arbitration asserting that the MWRA violated the Collective Bargaining Agreement when it did not call members in for overtime on 2 occasions.
- A former employee filed an appeal of the Department of Unemployment Assistance's determination that the former employee is disqualified for unemployment benefits due to deliberate misconduct in willful disregard of the employing unit's interests.

Significant Developments

- The MCAD allowed an employee to amend a previously filed complaint to include additional allegations of disability discrimination and retaliation.

Matters Concluded

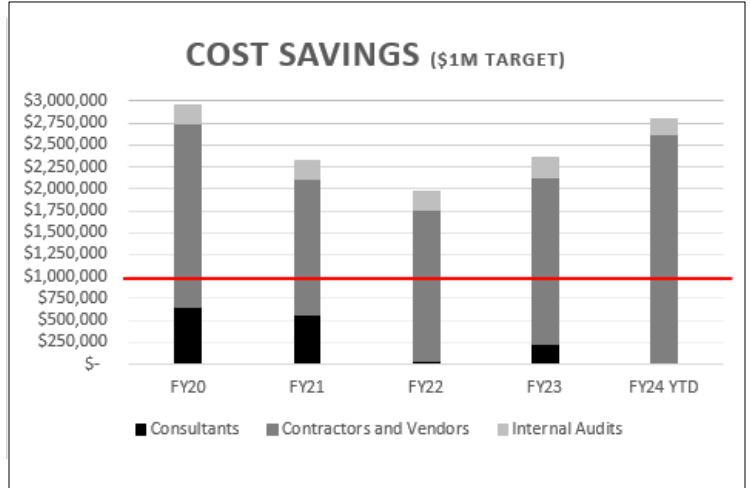
- A Union withdrew a request for arbitration because a member was denied a promotional opportunity.
- A Union withdrew a request for arbitration because a member was denied a promotional opportunity.
- Received an arbitrator's decision in favor of the MWRA for a grievance alleging that the Authority discriminated against an employee who did not receive a promotion.
- Received an arbitrator's decision in favor of the MWRA for a grievance alleging that the Authority reclassified an employee.

INTERNAL AUDIT AND CONTRACT AUDIT ACTIVITIES 3rd Quarter FY24

Purpose

Internal Audit evaluates the effectiveness of internal controls and procedures and monitors the quality, efficiency and integrity of the Authority's operating and capital programs. Through our audits and reviews, we assess whether internal controls are functioning as intended and that only reasonable, allowable and allocable costs are paid to consultants, contractors and vendors.

Cost Savings	FY24 YTD
Consultants	\$8,302
Contractors and Vendors	\$2,605,556
Internal Audits	\$178,596
Total	\$2,792,454



Highlights

During the 3rd quarter FY24, an audit of Accounts Payable Process controls and procedures was completed. Recommendations included enhancing documented policies and procedures, promoting sufficient segregation of duties, deploying vendor master management best practices and designing internal controls to reduce the risk of accounts payable error and/or fraud. Secondly, an audit of Payroll Process controls and procedures was completed. Recommendations included enhancing documented policies and procedures, and establishing enhanced management review and reconciliation procedures related to less frequent, non-standard payroll transactions. A review of travel reimbursement (employee owned car usage) is nearing completion and an internal review of MIS assets is nearing completion.

In addition, IA completed 1 incurred cost audits, 3 labor burden reviews, and 1 consultant preliminary reviews. There are 4 incurred cost audits, 2 labor burden reviews, and 1 consultant review in process. IA also issued 38 indirect cost rate letters to consultants following a review of their consultant disclosure statements.

Internal Audit also supported the creation of 5 new policies and updates related to 2 existing policies.

Status of Recommendations

During FY24, 3 recommendations were closed.

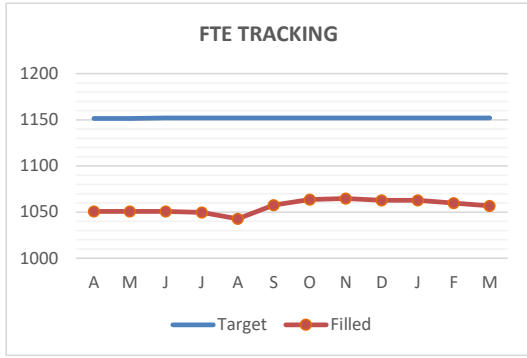
IA follows-up on open recommendations on a continuous basis. All open recommendations have target dates for implementation and are generally targeted to be closed within 12 months of the audit report issue date.

Report Title (issue date)	Audit Recommendations		
	Open	Closed	Total
Accounts Payable Process (3/14/2024)	6	0	6
MWRA Payroll (3/19/2024)	2	1	3
Total Recommendations	8	1	9

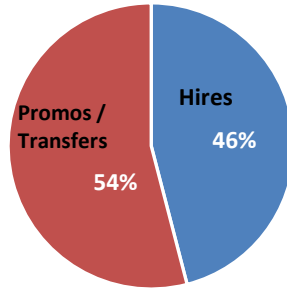
OTHER MANAGEMENT

Workforce Management

3rd Quarter - FY24



Position Filled by Hires/Promos & Transfer for YTD



	<u>Pr/Trns</u>	<u>Hires</u>	<u>Total</u>
FY22	138 (68%)	65 (32%)	203
FY23	133 (59%)	91(41%)	224
FY24	87 (54%)	74 (46%)	161

FY24 Budget for FTE's = 1152

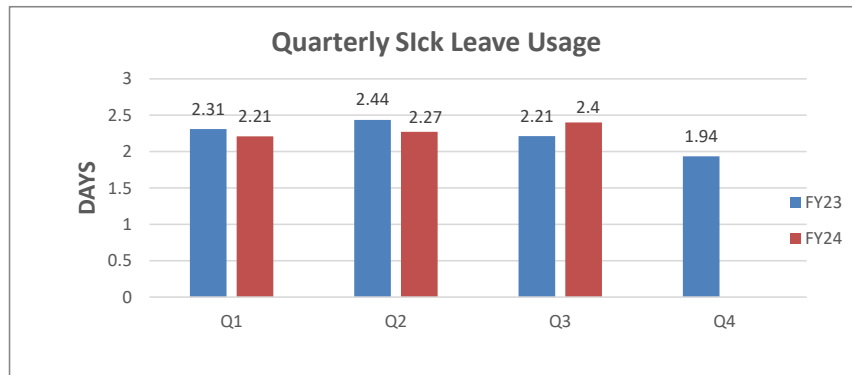
FTE's as of March = 1056.7

Tunnel Redundancy as of Mar 2024 = 11

POSITION CHANGE by FY

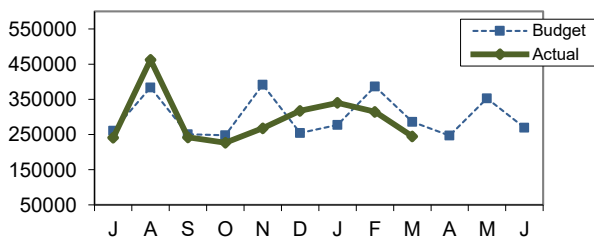
FY	HIRES	PROMOS	TRANSFER	RETIRE	RESIGN	DISMISS	DECEASED
FY20	58	70	14	38	23	2	1
FY21	64	66	15	58	15	2	2
FY22	65	108	30	82	45	2	3
FY23	91	118	15	46	31	5	5
FY24*	74	73	14	40	22	4	3

* as of 3/31/2024



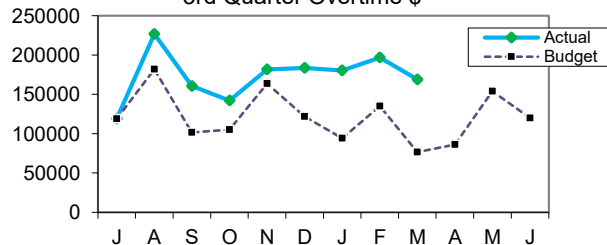
Average quarterly sick leave for the 3rd Quarter of FY24 has increased as compared to the 3rd Quarter of FY23. (2.21 to 2.4)

Field Operations 3rd Qtr Overtime \$



Total Overtime for FOD for 3rd Quarter FY24 was \$899k which is \$50k under budget, or 5%. Emergency overtime was \$421k, or 47% of total 3rd Qtr expended OT, primarily because of numerous rain/weather events. Rain events totaled \$274k and Emergency Maintenance was \$77k. Coverage overtime was \$198k, which is 19.3% over the 3rd Qtr OT budgeted amount, primarily due to numerous vacant shift coverage requirements. Planned overtime was \$299k, \$25k, or 9% over for the 3rd Quarter of FY24.

Deer Island Treatment Plant 3rd Quarter Overtime \$

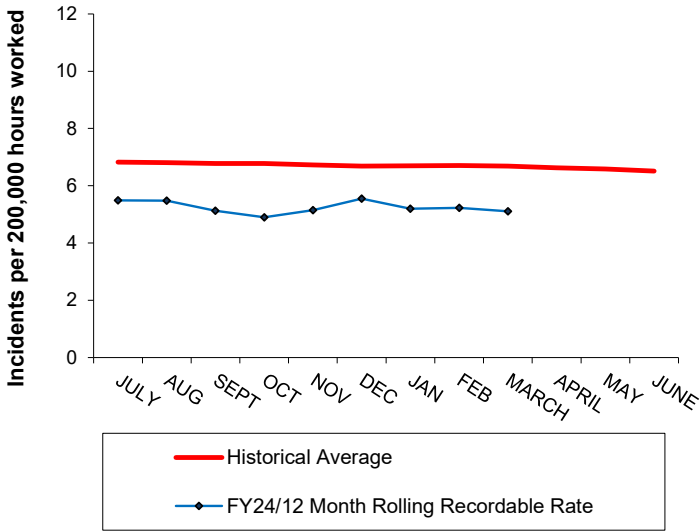


Deer Island's total overtime expenditure for the 3rd Quarter was \$546K, which is \$240K or 78.6% over budget due to higher than anticipated shift coverage of \$185K - driven by Wastewater Ops \$205K - offset by Thermal (\$21K). Planned/Unplanned overtime of \$45K. Storm Coverage of \$10K.

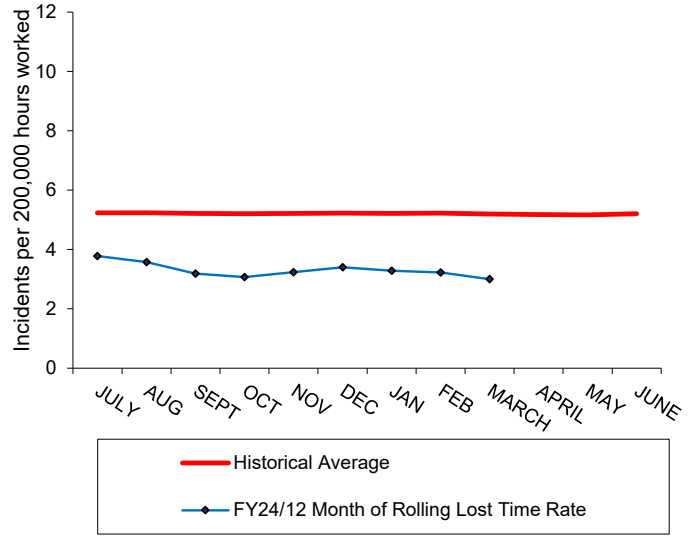
Workplace Safety

3rd Quarter - FY24

Recordable Injury & Illness Rates



Lost Time Injury & Illness Rates

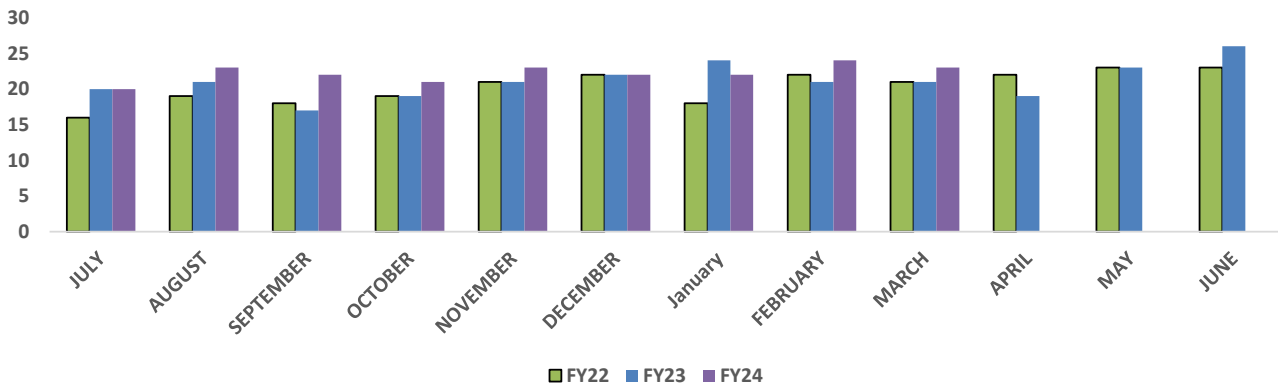


- 1 "Recordable" incidents are all work-related injuries and illnesses which result in death, loss of consciousness, restriction of work or motion, transfer to another job, or require medical treatment beyond first aid. Each month this rate is calculated using the previous 12 months of injury data.
- 2 "Lost-time" incidents, a subset of the recordable incidents, are only those incidents resulting in any days away from work, days of restricted work activity or both - beyond the first day of injury or onset of illness. Each month this rate is calculated using the previous 12 months of injury data.
- 3 The "Historical Average" is computed using the actual MWRA monthly incident rates for FY03 through FY24

WORKERS COMPENSATION HIGHLIGHTS

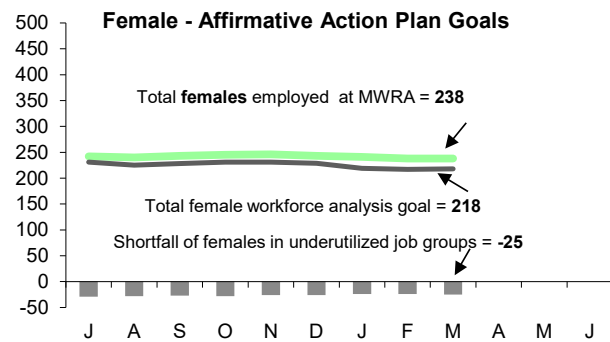
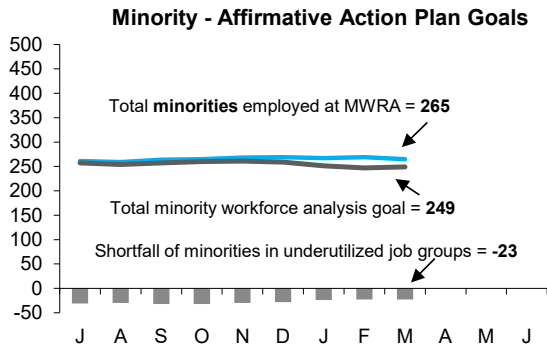
	3rd Quarter Information		
	New	Closed	Open Claims
Lost Time	2	0	27
Medical Only	5	0	105
Report Only	10	0	
	QYTD		FYTD
Regular Duty Returns	3		12
Light Duty Returns	0		1
Indemnity payments as of March 2024 included in open claims listed			23

Worker Compensation Settlements by FY



MWRA Job Group Representation

3rd Quarter - FY24



Highlights:

At the end of Q3 FY24, 5 job groups or a total of 23 positions are underutilized by minorities as compared to 6 job groups for a total of 33 positions at the end of Q3 FY23; for females 7 job groups or a total of 25 positions are underutilized by females as compared to 7 job groups or a total of 29 positions at the end of Q3 FY23. During Q3, 3 minorities and 4 females were hired. During this same period

Underutilized Job Groups - Workforce Representation

Job Group	Employees	Minorities	Achievement	Minority	Females	Achievement	Female
	as of 3/31/2024	as of 3/31/2024	Level	Over or Underutilized	As of 3/31/2024	Level	Over or Underutilized
Administrator A	23	4	3	1	9	6	3
Administrator B	25	4	6	-2	8	10	-2
Clerical A	23	8	5	3	19	17	2
Clerical B	22	6	3	3	3	6	-3
Engineer A	83	18	21	-3	19	23	-4
Engineer B	61	21	15	6	17	12	5
Craft A	117	20	24	-4	0	4	-4
Craft B	125	25	25	0	0	5	-5
Laborer	58	15	15	0	5	2	3
Management A	88	19	20	-1	34	26	8
Management B	38	11	7	4	5	9	-4
Operator A	62	3	16	-13	4	7	-3
Operator B	60	19	10	9	3	2	1
Professional A	28	8	7	1	14	13	1
Professional B	163	51	49	2	71	56	15
Para Professional	42	14	10	4	19	12	7
Technical A	49	16	12	4	7	7	0
Technical B	5	3	1	2	1	1	0
Total	1072	265	249	39/-23	238	218	39/-25

AACU Candidate Referrals for Underutilized Positions

Job Group	Job Title	# of Vacancies	Requisition Internal/ External	Promotions/ Transfers	AACU Referral External	Position Status = New Hire/Promotion
Clerical B	Inventory Control Specialist	1	Int.	1	1	PROMO= HM
Engineer A	Proj Mgr, Marine Info Analyst	1	Ext.	0	0	NH= WF
Engineer A	Sr Program Manager	1	Int./Ext.	1	0	PROMO= WM
Engineer A	Sr Engr Reservoir Operations	1	Int.	1	0	PROMO= WM
Engineer A	Sr Engineer	1	Int./Ext.	1	0	PROMO= WM
Craft A	Asst Auto Tech in Training	1	Int./Ext.	0	0	NH = WM
Craft A	WSS Foreman	2	Int./Ext.	2	0	PROMO= 1WM, 1HM
Craft A	Sewer Maint Supervisor	1	Int./Ext.	1	0	PROMO=WM
Craft B	Plumber/Pipefitter	1	Ext.	0	0	NH= WM
Craft B	Construction Pipelayer	1	Int.	1	0	PROMO = WM
Craft B	Heavy Equipment Operator I	1	Int.	1	0	PROMO = WM
Management B	Project Manager	1	Int.	1	0	PROMO = WM
Management B	Shift Operations Manager	1	Int.	1	0	PROMO = WM
Management B	Operations Supervisor	1	Int.	1	0	PROMO = WM
Operator A	Transmission & Treatment Oper	1	Ext.	0	0	NH= WM

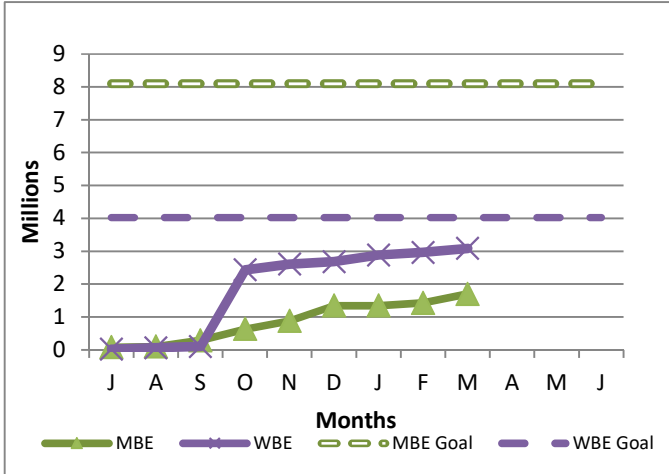
MBE/WBE Expenditures

3rd Quarter - FY24

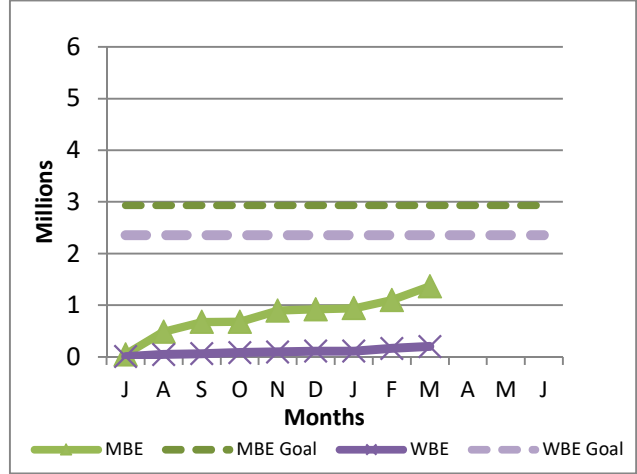
MBE/WBE targets are determined based on annual MWRA expenditure forecasts in the procurement categories noted below. The spending goals for FY24 are based on 85% of the total construction and 75% of the total professional projected spending for the year. Certain projects that do not meet the established monetary thresholds and/or have limited opportunities for subcontracting have been excluded from the goals as they have no MBE/WBE spending goals. The spending goals for FY24 for Goods and Services are based on the average spending of MBE/WBE dollars for the previous 5 years.

MBE/WBE percentages are the results from a 2002 Availability Analysis, and MassDEP's Availability Analysis. As a result of the Availability Analyses, the category of Non-Professional Services is included in Goods/Services. Consistent with contractor reporting requirements, MBE/WBE expenditure data is available through March.

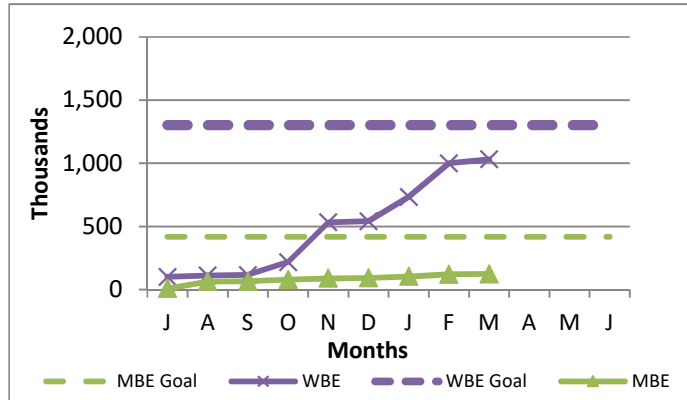
Construction



Professional Services



Goods/Services



FY24 spending and percentage of goals achieved, as well as FY23 performance are as follows:

MBE			
FY24 YTD		FY23	
Amount	Percent	Amount	Percent
1,701,938	22.1%	2,808,124	34.7%
1,366,350	29.7%	2,794,126	95.3%
123,536	30.3%	69,250	16.6%
3,191,824	25.1%	5,671,500	49.6%

WBE			
FY23 YTD		FY23	
Amount	Percent	Amount	Percent
3,086,463	80.5%	4,927,964	95.3%
201,066	5.4%	1,220,172	51.8%
1,031,507	75.7%	174,521	13.4%
4,319,036	48.6%	6,322,657	82.3%

Construction
Prof Svcs
Goods/Svcs
Totals

FY23 MBE/WBE dollar totals do not include MBE and WBE payments to prime contractors and consultants.

MWRA FY24 CEB Expenses

3rd Quarter – FY24

As of March 2024, total expenses are \$601.9 million, \$18.3 million or 3.0% lower than budget, and total revenue is \$662.2 million, \$7.3 million or 1.1% over the estimate, for a net variance of \$25.7 million.

Expenses –

Direct Expenses are \$210.3 million, \$17.0 million or 7.5% under budget.

- **Wages & Salaries** are \$9.9 million under budget or 10.7%. Regular pay is \$10.2 million under budget, due to lower head count, and timing of backfilling positions. YTD through March, the average Full Time Equivalent (FTE) positions were 1,067 or 101 below the 1,168 FTE's budgeted.
- **Chemicals** were lower than budget by \$4.4 million or 22.2%. Lower than budgeted spending on Sodium Hypochlorite of \$2.4 million was driven by Water Operations of \$1.5 million and Wastewater Operations of \$147,000 primarily due to contract pricing, and DITP of \$685,000 due to lower pricing for the new contract, which is offset by additional usage for disinfection due to higher flows earlier in the fiscal year. Lower Ferric Chloride of \$879,000 was due to decreased usage to maintain digested sludge orthophosphate levels within the target range. Lower Carbon Dioxide of \$539,000 was primarily due to lower volume, lower contract price, and lower dose required to meet target residual levels in finished water. Lower Aqua Ammonia of \$276,000 was due to lower price and lower flows. Lower Sodium Bisulfite of \$172,000 was primarily driven by Water Operations of \$118,000 due to lower dose and volume due to lower flows, lower price and volume at Clinton Wastewater Treatment Plant of \$48,000, and lower volume at DITP of \$15,000 due to lower quantities to dechlorinate the effluent. DITP flows are 12.1% greater than estimated and the CWTP flows are 2.7% less than estimated through March. It is important to note that Chemical variances are also based on deliveries which in general reflect the usage patterns. However, the timing of deliveries is an important factor.
- **Other Services** are lower than budget by \$4.4 million or 16.4% driven lower palletization spending of \$3.0 million due to lower potential landfill costs due to anticipated PFAS regulations that were budgeted in the second half of FY24, Telecommunications of \$844k due to updated and less than anticipated costs, and Grit & Screenings Removal of \$262k due to lower quantities.
- **Professional Services** expenses are \$1.5 million under budget or 19.1%, primarily due to lower than anticipated spending on Other Professional Services of \$591k, Legal Services of \$313k, Lab Testing & Analysis of \$305k, and lower Security expense of \$204k.
- **Ongoing Maintenance** expenses are \$1.7 million over budget or 6.2% primarily due to the actual timing of projects.
- **Fringe Benefits** expenses are \$1.1 million under budget or 5.9%, primarily due to under spending for Health Insurance of \$1.2 million, reflecting the lower than budget head count. As of March, FTEs were 101 below budget.
- **Utilities expenses** are over budget by \$1.6 million or 6.7%, reflecting higher electricity spending \$1.9 million over budget. This overspending primarily at DITP of \$1.1 million is driven by new pass through cost associated with the Mystic Power Station and higher demand usage charges due to the many rain events. Electricity in Field Operations was greater than budget by \$800k due to pumping for the many rain events. Diesel spending is \$309k under budget due to favorable pricing.

Indirect Expenses are \$55.0 million, \$1.3 million or 2.3% under budget due to lower Watershed Reimbursement of \$1.8 million.

Capital Finance Expenses totaled \$336.6 million, matching budget after the transfer of \$4.7 million to the Defeasance account. The transfer reflects lower variable rate debt expense due to lower than budget interest expense of \$3.3 million as a result of lower interest rates, savings from the swap terminations, and lower SRF spending of \$1.3 million due to timing.

Revenue and Income –

Total Revenue and Income is \$662.2 million, \$7.3 million or 1.1% over the estimate. The favorable variance was driven by Investment Income of \$22.5 million, \$6.4 million or 39.8% over the budget due to higher than budget interest rates and higher average balances.

	Mar 2024 Year-to-Date			
	Period 9 YTD Budget	Period 9 YTD Actual	Period 9 YTD Variance	%
EXPENSES				
WAGES AND SALARIES	\$ 91,928,496	\$ 82,077,715	\$ (9,850,781)	-10.7%
OVERTIME	4,323,161	4,585,095	261,934	6.1%
FRINGE BENEFITS	19,042,961	17,911,013	(1,131,948)	-5.9%
WORKERS' COMPENSATION	1,608,296	1,857,299	249,003	15.5%
CHEMICALS	20,004,687	15,563,785	(4,440,902)	-22.2%
ENERGY AND UTILITIES	23,269,619	24,839,862	1,570,243	6.7%
MAINTENANCE	28,370,393	30,117,995	1,747,602	6.2%
TRAINING AND MEETINGS	382,148	259,247	(122,901)	-32.2%
PROFESSIONAL SERVICES	7,626,260	6,170,024	(1,456,236)	-19.1%
OTHER MATERIALS	3,950,408	4,527,131	576,723	14.6%
OTHER SERVICES	26,844,244	22,430,953	(4,413,291)	-16.4%
TOTAL DIRECT EXPENSES	\$ 227,350,673	\$ 210,340,119	\$ (17,010,556)	-7.5%
INSURANCE	\$ 3,049,035	\$ 3,309,022	\$ 259,987	8.5%
WATERSHED/PILOT	24,167,546	22,378,672	(1,788,874)	-7.4%
HEEC PAYMENT	5,866,407	6,091,071	224,664	3.8%
MITIGATION	1,334,315	1,334,315	-	0.0%
ADDITIONS TO RESERVES	5,895,776	5,895,776	-	0.0%
RETIREMENT FUND	15,972,804	15,972,804	-	0.0%
POST EMPLOYEE BENEFITS	-	-	-	---
TOTAL INDIRECT EXPENSES	\$ 56,285,883	\$ 54,981,659	\$ (1,304,224)	-2.3%
STATE REVOLVING FUND	\$ 63,488,301	\$ 62,139,283	\$ (1,349,018)	-2.1%
SENIOR DEBT	219,794,858	219,794,858	-	0.0%
DEBT SERVICE ASSISTANCE	(1,187,297)	(1,187,297)	-	0.0%
CURRENT REVENUE/CAPITAL	-	-	-	---
SUBORDINATE MWRA DEBT	52,111,106	52,111,106	-	0.0%
LOCAL WATER PIPELINE CP	-	-	-	---
CAPITAL LEASE	2,412,795	2,412,795	-	0.0%
VARIABLE DEBT	-	(3,323,652)	(3,323,652)	---
DEFEASANCE ACCOUNT	-	4,672,671	4,672,671	---
DEBT PREPAYMENT	-	-	-	---
TOTAL CAPITAL FINANCE EXPENSE	\$ 336,619,763	\$ 336,619,764	\$ -	0.0%
TOTAL EXPENSES	\$ 620,256,319	\$ 601,941,542	\$ (18,314,780)	-3.0%
REVENUE & INCOME				
RATE REVENUE	\$ 625,701,000	\$ 625,701,000	\$ -	0.0%
OTHER USER CHARGES	7,784,470	7,967,352	182,882	2.3%
OTHER REVENUE	5,029,611	5,776,981	747,370	14.9%
RATE STABILIZATION	229,112	229,112	-	0.0%
INVESTMENT INCOME	16,087,129	22,492,370	6,405,241	39.8%
TOTAL REVENUE & INCOME	\$ 654,831,322	\$ 662,166,816	\$ 7,335,493	1.1%

Cost of Debt

3rd Quarter – FY24

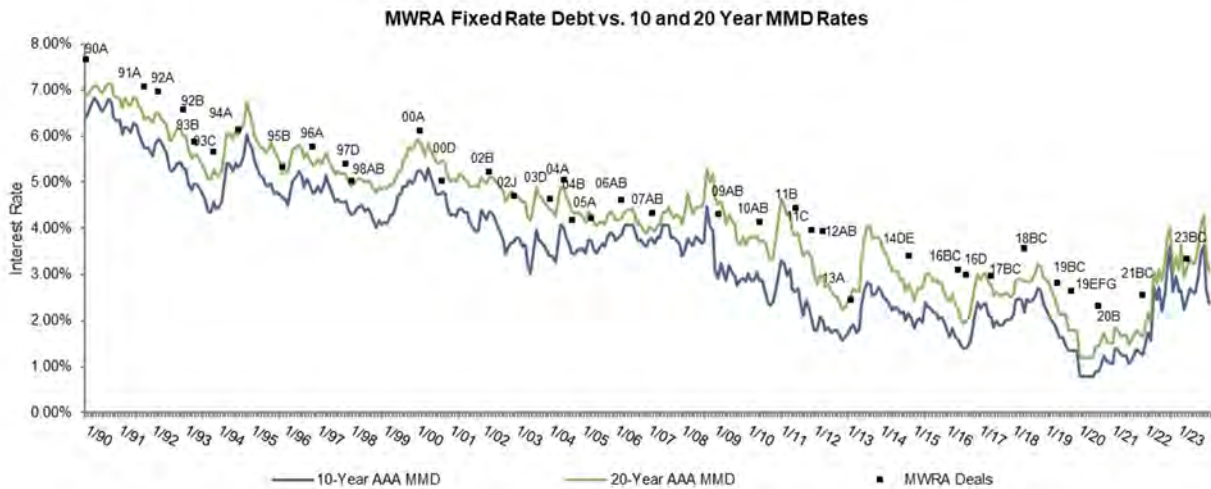
MWRA borrowing costs are a function of the fixed and variable tax exempt interest rate environment, the level of MWRA's variable interest rate exposure and the perceived creditworthiness of MWRA. Each of these factors has contributed to decreased MWRA borrowing costs since 1990.

Average Cost of MWRA Debt FYTD

Fixed Debt (\$2.91 billion)	3.12%
Variable Debt (\$382.4 million)	4.04%
SRF Debt (\$808.83 million)	1.70%
Weighted Average Debt Cost (\$4.11 billion)	2.93%

Most Recent Senior Fixed Debt Issue April 2023

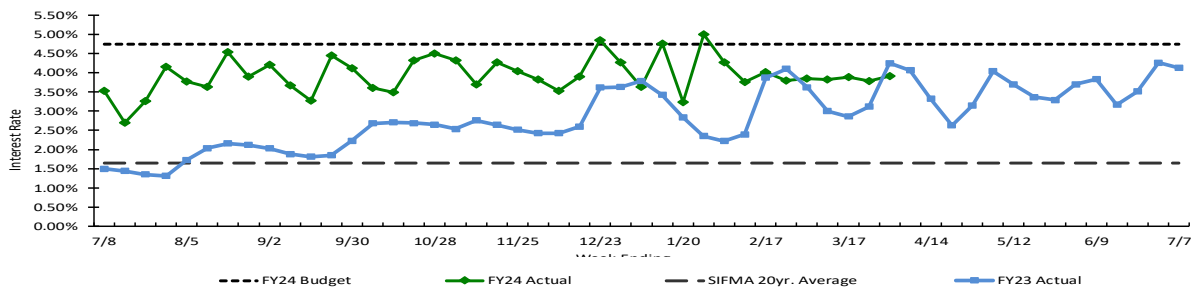
2023 Series B and C (\$234.3 million)	3.35%
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Bond Deal	1997D	1998AB	2000A	2000D	2002B	2002J	2003D	2004A	2004B	2005A	2006AB	2007AB	2009AB	2010AB
Rate	5.40%	5.04%	6.11%	5.03%	5.23%	4.71%	4.64%	5.05%	4.17%	4.22%	4.61%	4.34%	4.32%	4.14%
Avg Life	21.6 yrs	24.4 yrs	26.3 yrs	9.8 yrs	19.9 yrs	19.6 yrs	18.4 yrs	19.6 yrs	13.5 yrs	18.4 yrs	25.9 yrs	24.4 yrs	15.4 yrs	16.4 yrs
Bond Deal	2011B	2011C	2012AB	2013A	2014D	2016BC	2016D	2017BC	2018BC	2019BC	2019EFG	2020B	2021BC	2023BC
Rate	4.45%	3.95%	3.93%	2.45%	3.41%	3.12%	2.99%	2.98%	3.56%	2.82%	2.66%	2.33%	2.56%	3.35%
Avg Life	18.8 yrs	16.5 yrs	17.9 yrs	9.9 yrs	15.1 yrs	17.4 yrs	18.8 yrs	11.2 yrs	11.7 yrs	11.9 yrs	9.73 yrs	15.6 yrs	12.2 yrs	10.45 yrs

Weekly Average Variable Interest Rates vs. Budget

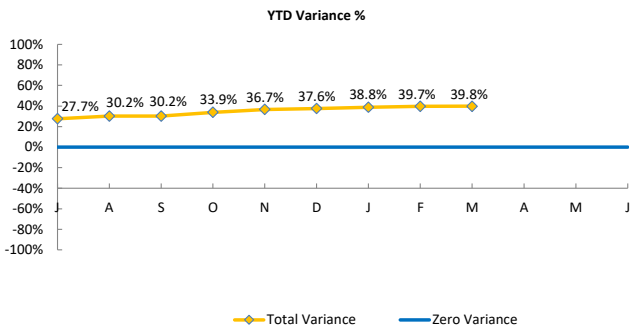
MWRA currently has eight variable rate debt issues with \$382.4 million outstanding, excluding commercial paper. Variable rate debt has been less expensive than fixed rate debt in recent years as short-term rates have remained lower than long-term rates on MWRA debt issues. In March, the Securities Industry and Financial Markets Association rate ranged from a high of 3.64% to a low of 3.30% for the month. MWRA's issuance of variable rate debt, although consistently less expensive in recent years, results in exposure to additional interest rate rise as compared to fixed rate debt.



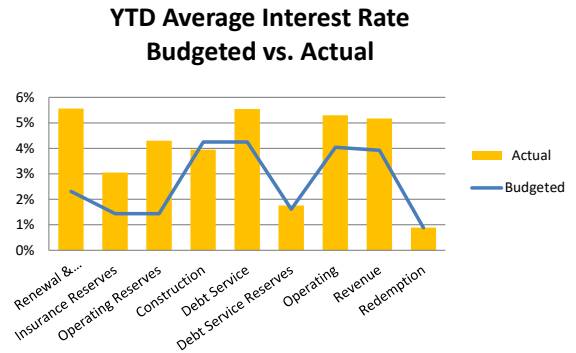
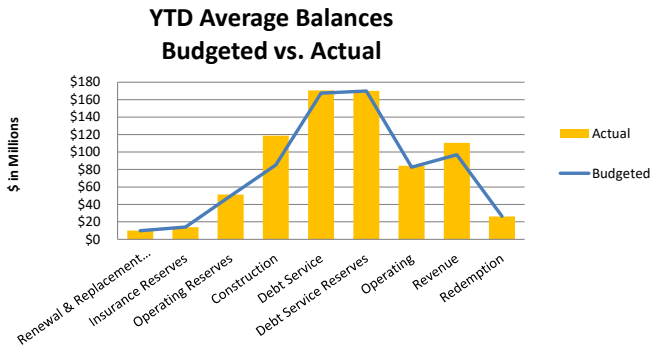
Investment Income

3rd Quarter – FY24

➤ YTD variance is 39.8%, \$6.4 million, over budget due to higher than budgeted interest rates and higher than budgeted average balance.



	YTD BUDGET VARIANCE			
	(\$000)			
	BALANCES IMPACT	RATES IMPACT	TOTAL	%
Renewal & Replacement Reserves	\$0	\$238	\$238	141.2%
Insurance Reserves	\$0	\$165	\$165	112.6%
Operating Reserves	\$15	\$1,075	\$1,089	208.1%
Construction	\$1,036	-\$224	\$812	30.6%
Debt Service	\$96	\$1,614	\$1,710	32.8%
Debt Service Reserves	\$1	\$176	\$177	8.8%
Operating	\$50	\$759	\$810	33.1%
Revenue	\$397	\$1,007	\$1,404	50.5%
Redemption	\$0	\$0	\$0	0.1%
Total Variance	\$1,595	\$4,810	\$6,406	39.8%



Monthly

